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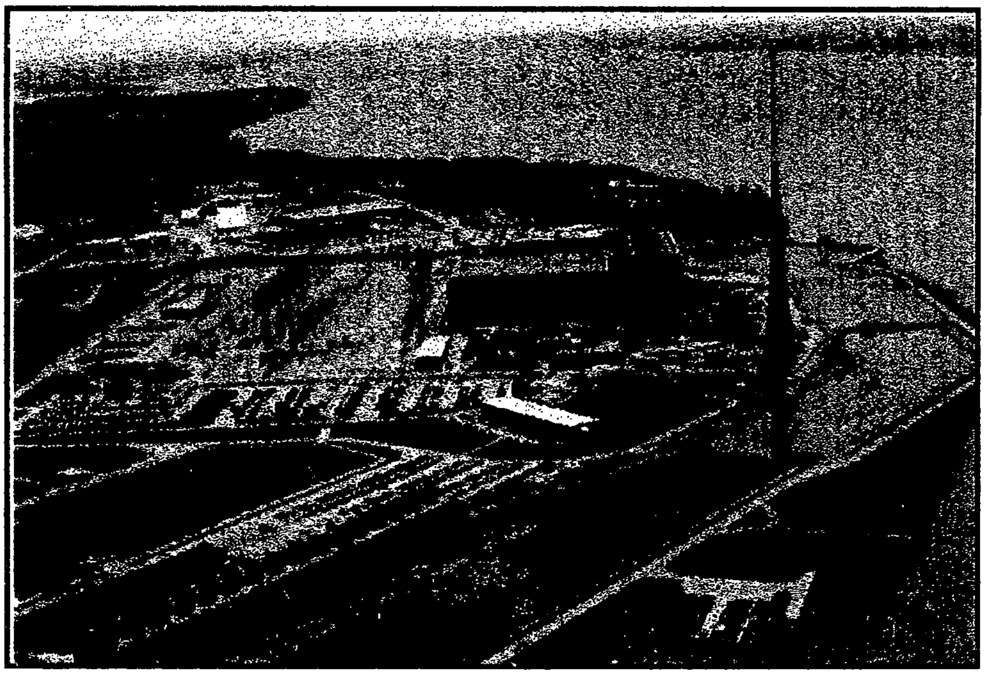
BROWNS FERRY NUCLEAR PLANT
USI A-46 SEISMIC EVALUATION REPORT

May 1996

REVISION 0



Prepared For:

TENNESSEE VALLEY AUTHORITY

EQE INTERNATIONAL

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EQE Report Number 50147-R-001

APPROVAL COVER SHEET

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REPORT NUMBER: 50147-R-001

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Revision No.	Date	Description of Revision
Revision 0	May 31, 1996	Initial Issue

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1. INTRODUCTION

1.1 PURPOSE

The purpose of this report is to document the evaluations performed to address Unresolved Safety Issue (USI) A-46 at Tennessee Valley Authority's (TVA) Browns Ferry Nuclear Plant (BFN), Units 2 and 3, using the Generic Implementation Procedure (GIP) as developed by the Seismic Qualification Utility Group (SQUG).

1.2 PLANT DESCRIPTION

The Browns Ferry site is located on the north shore of Wheeler Lake at river mile 294 in Limestone County in north Alabama. The site is approximately 10 miles southwest of Athens, Alabama, and 10 miles northwest of the center of Decatur, Alabama. The plant comprises three General Electric (GE) boiling water reactors with Mark I containments, each with an electrical output of about 1,100 megawatts. Commercial operation of each unit began on the following dates: Unit 1 on August 1, 1974; Unit 2 on March 1, 1975; and Unit 3 on March 1, 1977.

For the Browns Ferry project, TVA acts as its own engineer-constructor. GE designed, fabricated, and supplied the nuclear steam supply system (NSSS) and nuclear fuel for the plant, as well as the turbine-generators. GE also provided technical supervision for the installation and startup services of this equipment.

1.3 BACKGROUND

Seismic equipment qualification requirements have changed extensively since commercial nuclear power plants were first constructed. As a result, the U.S. Nuclear Regulatory Commission (NRC) initiated USI A-46, "Seismic Qualification of Equipment in Operating Nuclear Plants," in December 1980. The purpose of USI A-46 is to verify the seismic adequacy of essential equipment in older operating plants that have not been qualified in accordance with more recent criteria.

In 1982, SQUG was formed to develop a practical approach for seismic qualification of equipment in operating plants. The approach developed by SQUG utilizes the performance of power plant and industrial equipment in actual earthquakes as the primary basis for evaluating the seismic ruggedness and functionality of essential equipment in nuclear power plants. In 1983, the NRC issued NUREG 1018 which includes a general endorsement of the use of experience data to verify the seismic adequacy of equipment in nuclear plants.

In early 1987, the NRC issued Generic Letter (GL) 87-02 to owners of operating nuclear plants that were licensed prior to the development of modern seismic qualification standards. The recipients of GL 87-02, including Browns Ferry, are referred to as USI A-46 plants. GL 87-02 requires owners to take action to verify the seismic adequacy of important equipment in their plants. The SQUG approach embodied in the GIP is explicitly recognized by the NRC as the preferred method for accomplishing this objective.

In 1992, the NRC issued Supplement No. 1 to GL 87-02 (Reference 2), which transmitted Supplemental Safety Evaluation Report No. 2 on SQUG GIP, Revision 2, as corrected on February 14, 1992 (Reference 1). References 1 and 2 form the basis for the seismic evaluations described in this report.

Detailed plant walkdowns are considered to be the most cost-effective and beneficial aspect of the USI A-46 program. Combined USI A-46 and Individual Plant External Events Evaluations (IPEEE) walkdowns were performed by teams of TVA and EQE International (EQE) engineers in accordance with the SQUG GIP, and enhancements based on EPRI NP-6041 (Reference 3). References 4 and 5 describe TVA's overall approach for the resolution of USI A-46 at BFN. NRCs acceptance to the approach are contained in References 6 and 7.

1.4 REPORT ORGANIZATION

The remaining sections of this report are organized in accordance with Part II, Section 9.4 of the GIP. These sections include the following:

- Section 2: Project Team. The TVA and EQE project teams are discussed. Resumes for the Seismic Capability Engineers (SCEs) are included in Appendix A of this report. Qualifications of the third-party auditors are included in Appendix J.

- Section 3: Safe Shutdown Earthquake. The BFN Ground Response Spectra (GRS) and In-structure Response Spectra (IRS) are briefly described.

- Section 4: Safe Shutdown Equipment List (SSEL). This section contains information from the SSEL report recommended for submittal to the NRC, per Part II, Section 9.2 of the GIP. Descriptions of the safe shutdown path selection, plant operation procedures used, and TVA Operations Department review of the SSEL are discussed. The Composite SSEL is contained in Appendix B.

- Section 5: Mechanical and Electrical Equipment Review. This section briefly describes the various aspects of the seismic verification for mechanical and electrical equipment contained in the BFN Units 2 and 3 Seismic Review SSEL, which is presented in Appendix C. Screening verification and walkdown results are included in the Seismic Verification Data Sheets (SVDS) summary table, which is presented in Appendix D. Items not specifically addressed in the GIP are tabulated and presented in Appendix E. Instances of meeting the intent but not the letter of the caveat in the GIP are summarized in Appendices F-1 and F-2. Outlier summary tables are included in Appendix G.

- Section 6: Tanks and Heat Exchangers Review. Section 6 summarizes the results of the tanks and heat exchangers review. These results are documented in the SVDS summary table in Appendix D. Items not specifically addressed in the GIP are tabulated in Appendix H-1. Outliers are summarized in Appendix H-2.

- Section 7: Cable Tray and Conduit Raceway Review. Results of the cable tray and conduit raceway review are discussed in this section. Appendix I-1 presents a list of bounding samples selected for limited analytical reviews. A summary of the raceway outliers is presented in Appendix I-2.

- Section 8: Plan and Schedule for Unresolved Outliers. TVA's proposed plan and schedule for resolving and implementing the necessary design modifications are discussed in this section.

- Section 9: Significant or Programmatic Deviations from the GIP. Significant or programmatic deviations from the GIP, if any, are described in this section.

- Section 10: Audit Summary. A brief summary of the various A-46 third-party audits is contained in this section. Respective peer review reports are included in Appendix J.

- Section 11: References. References used in this document are listed in this section.

2. PROJECT TEAM

The USI A-46 resolution program at the Browns Ferry Nuclear Plant, Units 2 and 3, was accomplished using multidiscipline teams, which comprised both TVA and EQE engineers.

2.1 TVA REPRESENTATIVES

TVA provided overall project management of the USI A-46 effort as a well as engineering support in the structural, mechanical, electrical, and instrumentation & control (I&C) disciplines. Operations, licensing, and quality assurance representatives were also involved in the program.

2.2 SEISMIC CAPABILITY ENGINEERS

Seismic capability engineers (SCEs) consisted of highly qualified staff from both TVA and EQE organizations. The engineers who participated in the screening evaluation walkdown are listed below, together with their background and experience. Resumes of selected SCEs are contained in Appendix A.

Name	Org	Yrs Exp	Seismic	PE	SQUG Course	IPE Add-on
Richard D. Augustine	EQE	15	x	x	x	
Paul D. Baughman	EQE	26	x	x	x	x
Jerry W. Beason	TVA	26	x		x	x
Farzin R. Beigi	EQE	13	x		x	
Jakub J. Betka	TVA	15	x	x	x	
Brantley C. Buerger	EQE	14	x	x	x	
James R. Disser	EQE	15	x		x	
John O. Dizon	EQE	18	x	x	x	x
Eric J. Frevold	TVA	14	x		x	x
Partha S. Ghosal	TVA	17	x	x	x	x
Krystyn H. Gromek	TVA	23	x	x	x	x
Syed S. Haider	TVA	20	x		x	x
Russell O. Jansen	TVA	12	x	x	x	x
Steven A. Locke	TVA	14	x	x	x	x

Name	Org	Yrs Exp	Seismic	PE	SQUG Course	IPE Add-on
Jon E. McCord	TVA	23	x	x	x	
Cesar O. Pascua	TVA	17	x	x	x	x
Braulio M. Pedroso, Jr.	TVA	9	x		x	
Anand C. Relwani	TVA	15	x	x	x	x
Claude N. Simms	TVA	21	x		x	x
Angel G. Tambora	TVA	6	x		x	x
Thurman G. Thaxton, Jr.	TVA	23	x	x	x	x
William T. White	TVA	20	x	x	x	

Technical supports on systems-related issues, including mechanical and electrical SSELs, I&Cs, and relays, were provided by the following TVA and EQE personnel.

Name	Org	Yrs Exp	Systems	Relays	PE	SQUG Course	IPE Add-on
John D. McCamy	TVA	15	x			x	
David L. Moore	EQE	15	x	x		x	
Malcolm L. Pyatt	TVA	10		x		x	
Marc C. Quilici	EQE	15	x	x		x	
Thomas R. Roche	EQE	12		x	x	x	x

2.3 THIRD-PARTY AUDITORS

In accordance with Part I, Section 2.2.7 of the GIP, third-party audits were performed at various stages of the USI A-46 program at BFN. Dr. James J. Johnson and Mr. John O. Dizon of EQE International performed an initial peer review on August 23-26, 1994, to address specific procedural and programmatic issues relevant to BFN A-46 resolution, as well as to conduct a third-party audit for the Unit 3 raceway evaluation performed by TVA. Subsequently on March 22-24, 1995, Mr. Stephen Reichle of VECTRA Technologies performed a peer review of the Unit 2 SSEL. A final third-party audit was performed by Mr. Richard D. Cutsinger of TVA and Mr. Gregory S. Hardy of EQE International on January 9-11, 1996, to review the overall A-46 program resolution at BFN Units 2 and 3. None of the above individuals was part of the BFN Seismic Review Teams at the time the reviews were performed. Their resumes are presented in Appendix J.

3. DESIGN BASIS EARTHQUAKE

3.1 GROUND RESPONSE SPECTRA

The BFN licensing-basis design basis earthquake (DBE) ground motion acceleration response spectrum is defined in Sections 2.5.4 and 12.2 of the BFN Final Safety Analysis Report (Reference 8). Seismic requirements for Class I structures are defined in TVA General Design Criteria BFN-50-C-7102 (Reference 9). The horizontal peak ground acceleration (PGA) corresponding to the DBE is 0.20g as defined at the top of sound rock. Vertical ground motion is two-thirds of the horizontal ground motion as specified in the FSAR. The site DBE design ground spectrum is that of a Housner-shaped spectrum anchored to 0.2g PGA.

For the Category I structures included in the BFN USI A-46 evaluation, the "effective grade" elevations for the Reactor Buildings (RB), inside and outside of Drywell, Diesel Generator Buildings (DGB), and the Intake Pumping Station (IPS) were determined following the guidelines presented in Part II Section 4.2 of the GIP. For DGBs and IPS, all equipment in the BFN Seismic Review SSEL are located within about 40 feet of their respective "effective" grade elevations. A summary of the effective grade elevations for the RBs, DGBs, and IPS is shown below.

Building	Effective Grade Elevation
RB - Unit 1	561'
RB - Unit 2	550'
RB - Unit 3	563'
RB Drywell - All Units	550'
DGB - Units 1 and 2	573'
DGB - Unit 3	575'
IPS	541'

Since the DBE input motion for BFN is defined at the top of sound rock and not at the free-field elevation, additional analyses were performed to define an effective input ground response spectrum (seismic demand) for comparison with the appropriate seismic capacity curves such as the SQUG Bounding Spectrum or the Generic Equipment Ruggedness Spectrum (GERS) when establishing the capacity vs. demand requirement for equipment mounted below about 40 feet above the effective grade elevation and having a natural frequency of greater than about 8 Hz.

For the purposes of USI A-46 application, effective grade elevations were established for all 3 Reactor Buildings with a minimum effective grade at El. 550' for Unit 2 RB. The Unit 2 Reactor Building is founded on rock at El. 519' with a free-field elevation at El. 595' on the south side. The 76' soil column was modeled as a uniform layer, infinite in the horizontal direction with a rock halfspace below, and of low strain shear wave velocity based on that of the compacted soil. The program SHAKE (Reference 14) was used to propagate the 0.2g DBE input motion at the rock (El. 519') through the soil column up to the effective grade elevation to obtain an effective control motion within the soil column at about El. 550'. The resulting effective input response spectrum for the RB is enveloped by the SQUG Bounding Spectrum at all frequencies. Figure 3-1 shows an overplot of the 5% damped effective ground input spectrum for the RB along with the SQUG Bounding Spectrum and the Housner-shaped DBE design ground spectrum anchored to 0.2g PGA as defined at the top of sound rock.

Similarly, the DGB is founded on about 3 feet of compacted soil and 32 feet of crushed stone above the rock. Per BFN FSAR (Reference 8) and TVA General Design Criteria BFN-50-C-7102 (Reference 9), a horizontal amplification factor of 1.6 is applied to the 0.2g DBE input motion defined at the rock to account for the effects of soil-structure interaction. This scaled motion represents the input ground motion for the DGB. The resulting 5% damped input response spectrum for the DGB is bounded by the SQUG Bounding Spectrum at the entire frequency range of interest, as shown in Figure 3-2.

3.2 IN-STRUCTURE RESPONSE SPECTRA

Among the Category I structures included in the USI A-46 evaluation, the Reactor Buildings and the Intake Pumping Station are founded on rock while the Diesel Generator Buildings are supported on compacted soil and crushed stone backfills. An artificial time history corresponding to the 0.20g Housner-shaped site DBE ground spectrum was used as input for the generation of IRS for the Category I structures. For rock-supported structures such as RBs and IPS, the input motion was directly applied at the base of the structural model. For soil-supported structures such as DGB, horizontal and vertical soil amplification factors were applied to the ground input motion to account for the effects of soil-structure interaction. In addition, coupling effects between the horizontal and vertical responses were also considered for soil-supported structures.

The In-structure Response Spectra (IRS) of the above Category I structures, as generated from the respective building dynamic response analyses, are to be considered as median-centered response spectra for the resolution of USI A-46 at BFN (Reference 7).

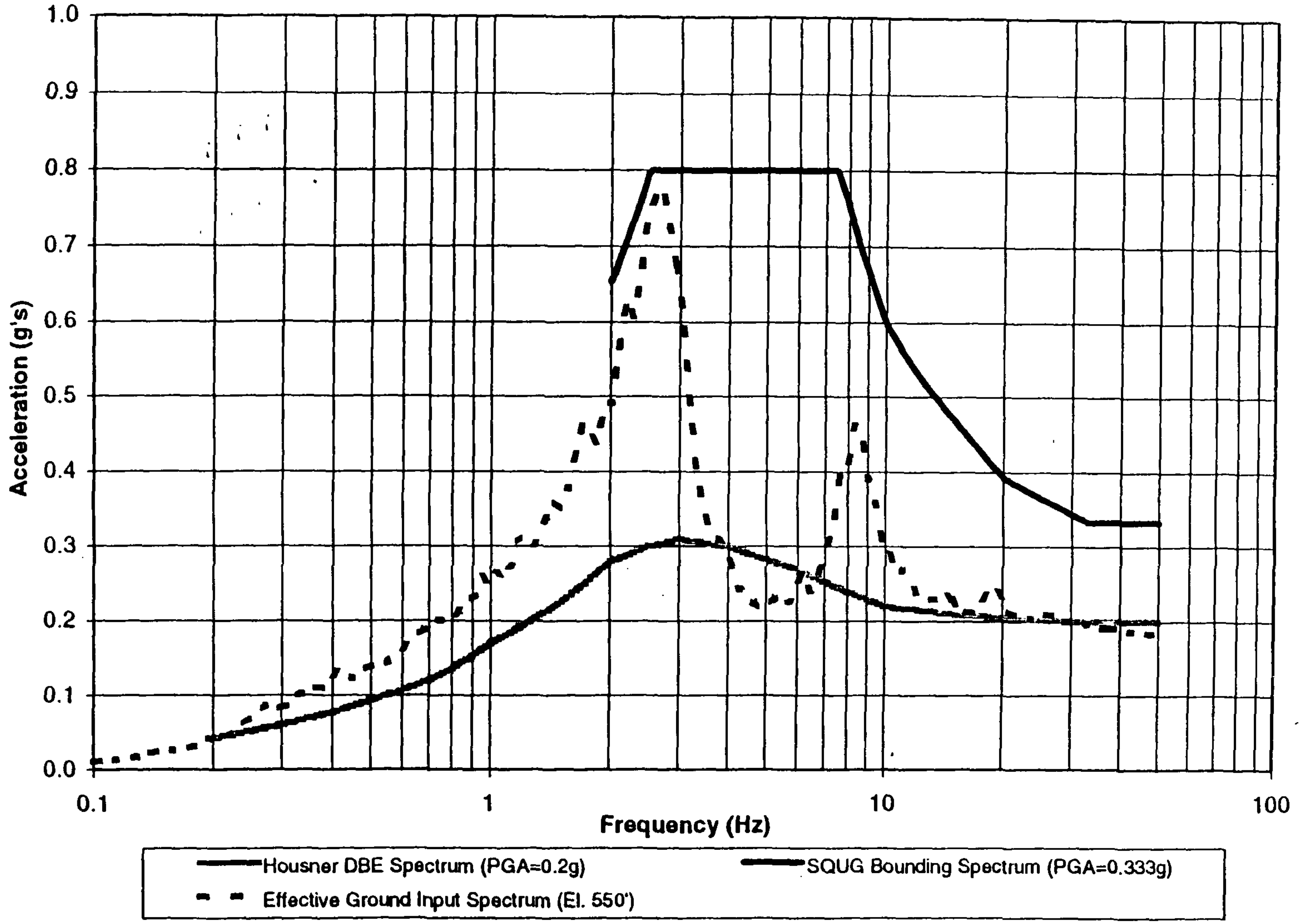

Figure 3-1: Overplot of the 5% Damped Effective Ground Input Spectrum for the Reactor Building with the SQUG Bounding Spectrum

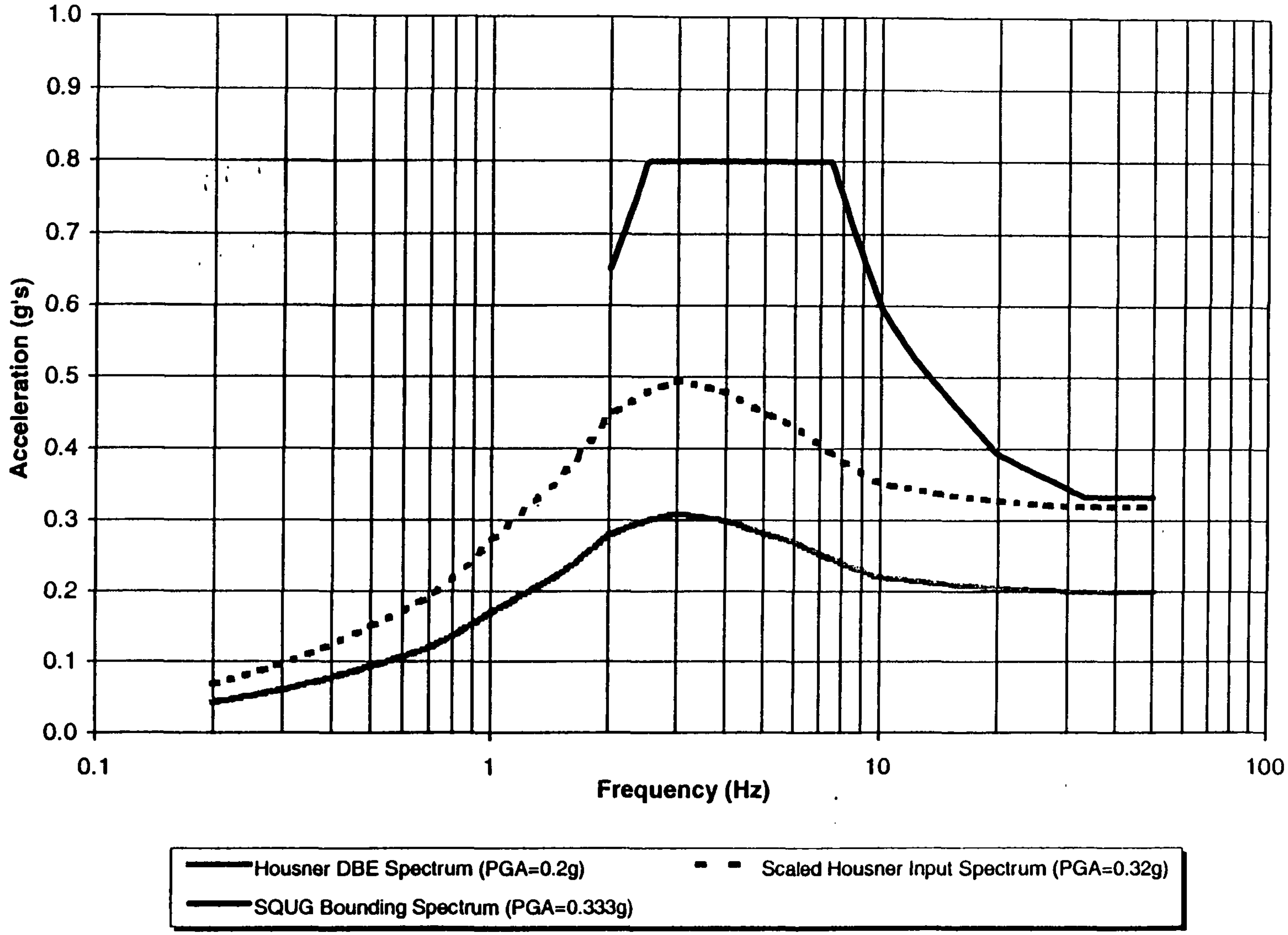

Figure 3-2: Overplot of the 5% Damped Effective Ground input Spectrum for the Diesel Generator Building with the SQUG Bounding Spectrum

4. SAFE SHUTDOWN EQUIPMENT LIST

4.1 SAFE SHUTDOWN REQUIREMENTS

The purpose of this section is to document the selection of Browns Ferry Nuclear Plant (BFN) Units 2 & 3 equipment needed to achieve and maintain a safe shutdown condition for resolution of Unresolved Safety Issue (USI) A-46.

The equipment identified in the Safe Shutdown Equipment List (SSEL) in this report is that required to bring the plant to a safe shutdown condition following an earthquake and to maintain it there for a minimum of 72 hours. The safe shutdown equipment selection is based on the rules and requirements of Section 3, "Identification of Safe Shutdown Equipment," and the guidelines of Appendix A of the Generic Implementation Procedure (GIP, Reference 1). The SSEL also identifies the additional equipment of the IPEEE success paths (containment isolation, etc.).

Four functions should be accomplished to achieve and maintain a safe shutdown condition following a Design Basis Earthquake (DBE). These are:

- Reactivity Control
- Reactor Coolant System Pressure Control
- Reactor Coolant System Inventory Control
- Decay Heat Removal

The systems selected to perform these safe shutdown functions for BFN Units 2 & 3 are identified in this report. The more significant criteria and assumptions used in selecting the safe shutdown systems, as primarily outlined in the GIP, are as follows:

- Safe shutdown is defined as bringing the plant to, and maintaining it in, a hot shutdown condition. The equipment and systems required should be capable of performing these functions for 72 hours following a DBE.

- The equipment and systems used to achieve and maintain safe shutdown conditions should be capable of being powered by emergency on-site power.
- Redundancy should be provided for each safe shutdown function such that out-of-service equipment or a single active failure of any item of equipment does not preclude the fulfillment of the safe shutdown function.
- With the exception of loss of off-site power, no accidents or extraordinary events are postulated to occur concurrently with or sequentially to the postulated DBE.
- The safe shutdown systems chosen should be consistent with the normal, abnormal, and emergency operating procedures, which are used to bring the plant to a safe shutdown condition.
- Operator action is permitted as a means of achieving and maintaining a safe shutdown condition.

4.2 SAFE SHUTDOWN FUNCTIONS

The purpose of this section is to describe the safe shutdown paths that were chosen to respond to a postulated DBE. Specifically, this section describes what systems are selected for performing the following four functions during shutdown:

- Reactivity Control
- Reactor Coolant System Pressure Control
- Reactor Coolant System Inventory Control
- Decay Heat Removal

Figures 4-1 through 4-4 illustrate the BFN systems that are available to perform the above four functions. The systems selected for performing the functions are described below. More detailed descriptions of these safe shutdown systems are provided in Section 4.3.

The primary path used for safe shutdown at BFN Units 2 & 3 is insertion of the control rods and depressurization of the reactor coolant system using the safety relief valves (SRVs) for pressure control. The Core Spray (CS) or Residual Heat Removal (RHR) system is then used to maintain reactor coolant inventory. The RHR system is also used for decay heat removal.

4.2.1 Reactivity Control

The first plant challenge in response to a seismic event is to control reactivity, thus reducing core power to decay heat levels. This function is accomplished by a reactor scram and the rapid insertion of the control rods into the core. The scram function will be provided by the Reactor Protection System (RPS) upon execution of a manual reactor trip by the operators. A primary and an alternate path of components are defined to provide the reactor trip function and subsequent insertion of the control rods. The paths are independent from each other except for the Hydraulic Control Units (HCUs) and the Control Rod Drives (CRDs), which are included in both paths. The control rods provide adequate shutdown margin to allow for the control rod of the highest worth to fail to insert. The inherent redundancy of this system therefore provides protection against a single active failure.

The function of reactivity control is achieved by interaction between the Reactor Protection System (RPS) and the Control Rod Drive Hydraulic Control Unit (CRD/HCU) system. The RPS contains the actuation circuitry, alarms, active equipment, and passive equipment required to trip the reactor, and the CRD system provides the passive mechanical means to insert the control rods. Interaction between these two systems will provide for reactivity control.

Browns Ferry has a Standby Liquid Control System (SLCS) as a backup to the control rods for reactivity control. However, SLCS was not considered a viable alternative for reactivity control for the purpose of this evaluation because of the time and operator actions required for initiation.

4.2.2 Reactor Coolant Pressure Control

Following a seismic event, if plant conditions cause or require a plant trip, the main steam isolation valves may close, increasing the Reactor Coolant System (RCS) pressure to the point that RCS pressure relief is required. The plant response to control RCS pressure is the lifting of the SRVs at their respective setpoints. Thereafter, the SRVs are manually operated by the control room operators to lower reactor pressure and allow low pressure injection for vessel makeup. The redundancy against a single active failure is provided by primary and alternate path designations of the multiple SRV capabilities and the redundancy of their pneumatic control source. Additionally, a number of the SRVs are provided with pneumatic accumulators for the storage of control pressure to facilitate a number of operations upon total loss of their pneumatic source.

The system comprises 13 valves, which are dependent on a pneumatic source for their motive force. Success is defined by the proper functioning of at least four SRVs to control and reduce reactor pressure. Although an alternate means to reduce reactor pressure is included in the Emergency Operating Instructions (EOIs) for emergency depressurization, this alternate path was not selected because of the redundancy of the SRVs and their support systems. This automatic depressurization system (ADS) is also inhibited by the control room operators in accordance with EOIs, so no credit for ADS is taken in this evaluation.

4.2.3 Reactor Coolant Inventory Control

The inventory of the RCS is controlled by injecting water and minimizing the loss of water from the various openings in the system. High pressure makeup is typically provided by the High Pressure Coolant Injection (HPCI) system for the Browns Ferry plant. However, industry experience has indicated that the system is only moderately reliable and for primary path shutdown at BFN, high pressure makeup is not necessary to achieve a safe shutdown condition. The SRVs are used for reactor coolant inventory control in addition to reactor coolant pressure control.

RCS Inventory Supply

Core Spray - (RCS Pressure < 450 psig)

The primary path for providing makeup to the RCS is provided by one loop of the CS system (in conjunction with manual depressurization to < 450 psig). For resolution of USI A-46, loop 1 is chosen as the primary path, with loop 2 as the secondary path. Each loop of CS pumps takes suction from the pressure suppression pool Emergency Core Cooling System (ECCS) header and inject into the RCS.

Residual Heat Removal - (RCS Pressure < 450 psig)

Additional alternate paths for providing makeup to the RCS are provided by each loop of the RHR system (in conjunction with manual depressurization to < 450 psig). For resolution of USI A-46, either loop will provide makeup via the Low Pressure Coolant Injection (LPCI) mode, taking suction from the pressure suppression pool and injecting into the RCS via a reactor recirculation loop.

RCS Inventory Discharge

The discharge from the RCS is controlled by minimizing the loss of inventory through various paths. Loss of inventory is minimized to that necessary in utilization of the SRVs for depressurization to enable the low pressure ECCS systems to be placed into service.

4.2.4 Decay Heat Removal

The final function required to meet safe shutdown is decay heat removal. Since safe shutdown for BFN is defined as hot shutdown, the primary means of decay heat removal following a seismic event is accomplished by placing one loop of the RHR system into operation in the suppression pool cooling mode. One RHR pump and heat exchanger combination will be operated taking suction from the suppression pool where decay heat is being deposited and transferring sensible heat to the Residual Heat Removal Service Water (RHRSW) system before recirculation of the primary water back to the suppression pool. For the resolution of USI A-46, loop I is chosen as the primary path, although either loop could be used. The redundancy against a single active failure is provided by the multiple loops of the RHR system.

4.3 SAFE SHUTDOWN SYSTEMS

This section describes the various plant systems used in the selected shutdown paths. Plant-specific systems for Browns Ferry that are available to perform the safety functions as defined in Section 4.2 above are discussed below.

4.3.1 Reactor Protection System (RPS)

System Function. In support of USI A-46, the RPS provides a means of reactor reactivity control. This is accomplished by the insertion of a manual reactor scram to initiate control rod insertion, which is dependent on opening of the reactor trip breakers or interruption of power to the motor-generator sets.

System Design. The RPS contains the actuation circuitry, alarms, active equipment, and passive equipment required to trip the reactor. The RPS components mounted on or in the reactor vessel are excluded from the scope of the USI A-46 review.

4.3.2 Control Rod Drive (CRD) System

System Function. In support of USI A-46, reactivity control is provided by the CRD system.

System Design. The CRD system required for reactivity control following a seismic event is limited to the hydraulic control units (HCUs), the scram and backup scram valves, the scram discharge and instrument volumes, and their associated vent and drain valves. The control rod drive itself is not listed on the SSEL, as it is a part of the NSSS equipment deemed to be seismically rugged and is exempted from further evaluation.

4.3.3 Safety Relief Valve (SRV) System

System Function. In support of USI A-46, the SRVs accomplish the safe shutdown function of reactor coolant pressure control and provide assistance in reactor coolant inventory control. The SRVs accomplish reactor coolant pressure control by manual depressurization of the nuclear system and assist in reactor coolant inventory control through pressure reduction of the nuclear system in conjunction with operation of the CS or RHR system.

System Design. The SRV system consists of 13 safety relief valves associated with reactor pressure vessel overpressure protection and associated instrumentation and controls. The valves are located on the four steam lines between the pressure vessel and the first Main Steam Isolation Valve (MSIV). When open, each valve discharges through a separate line to a point below the minimum water level of the suppression pool. The SRVs open by self-actuation at their set points or by manual actuation.

System Dependencies. The following systems supply support functions for the SRV system:

- *DC Power:* Instrument power for the SRVs is provided by two 250 VDC power sources.
- *Pneumatic Source:* The Containment Air Dilution (CAD) system provides the motive force for manual operation of the SRVs.

4.3.4 Core Spray (CS) System

System Function. The CS system is a low pressure Emergency Core Cooling System (ECCS). The CS system keeps the reactor core covered and prevents fuel cladding damage in the event that the core is uncovered by a design basis accident. In support of USI A-46, the CS system maintains reactor coolant inventory.

System Design. The CS system consists of two independent and redundant loops. Each loop has two motor-driven pumps, motor-operated valves, piping, instrumentation and controls and provides 100% of design basis required flow. The system takes suction from the suppression pool and discharges to the reactor vessel via sparger rings/spray nozzles located above the core.

System Dependencies. The following systems supply support functions to the CS system for successful operation:

- *AC Power:* Pumps and valves of the separate CS loops receive power from separate divisions of power.
- *EECW:* The Emergency Equipment Cooling Water (EECW) system provides cooling water to the CS pump room ventilation coolers.
- *HVAC:* The Heating, Ventilating, and Air Conditioning (HVAC) system provides cooling for CS system components.

4.3.5 Residual Heat Removal (RHR) System

System Function. The RHR system is a closed loop system capable of operating in several different modes for the purpose of maintaining reactor coolant inventory and for removing stored and decay heat from the reactor and containment during normal and accident conditions. In support of USI A-46, manual operation of the RHR system provides reactor coolant inventory control by makeup to the RCS system via the LPCI mode and also removes decay heat by manual operation in the Suppression Pool Cooling (SPC) Mode.

System Design. The RHR system consists of two independent and redundant loops. Each loop contains two pumps, piping, valves, two heat exchangers, and associated instrumentation and controls.

During the LPCI mode, the RHR system takes suction from the suppression pool and discharges to the RCS through the reactor recirculation system loops. During the SPC mode, the RHR system takes suction from and discharges to the suppression pool via the RHR heat exchangers. Although the alignment and state of the loops and components vary with operating mode, most components are common to all operation modes.

System Dependencies. The following systems supply support functions for the successful operation of the RHR system:

- *AC Power:* Pumps and valves of the separate RHR trains receive power from separate divisions of power.
- *RHR Service Water:* The RHRSW system provides cooling water to the RHR heat exchangers for the removal of decay heat from the suppression pool.
- *EECW:* The EECW system provides cooling water to the RHR pump seal and room ventilation coolers.
- *HVAC:* The HVAC system provides room cooling for RHR system components.

4.3.6 Safe Shutdown Equipment Instrumentation and Control

The safe shutdown of the plant involves monitoring a variety of plant systems with emphasis on the temperature, level, and pressure of the reactor vessel and the drywell area. The SSEL contains the minimum instrumentation sensors, transmitters, indicators, and process instruments necessary to monitor plant shutdown status and control the required SSEL systems.

4.4 SUPPORTING SYSTEMS

The safe shutdown listing for the supporting systems of the front line systems in Section 4.3 are described below.

Dependency Matrix. As a prelude to the presentation of summary descriptions of the support systems, having an overall perspective on the important systems and their interactions is useful. Dependency matrices for the BFN plant systems are provided in Table 4-1. This table identifies the direct dependencies of the front-line systems.

4.4.1 RHR Service Water (RHRSW) System

System Function. Under the USI A-46 scenario, the RHRSW functions as a decay heat removal support system supplying cooling water to the front-line RHR system required for decay heat removal. It supplies river water to the RHR heat exchangers to remove heat during normal and accident conditions.

System Design. The RHRSW system contains pumps, valves, piping, instrumentation, and controls. The pumps are located near the river in the seismic Category I intake structure. A barrier exists between opposite loop RHRSW system pumps to provide protection from jet impingement to the pump motors and associated equipment.

System Dependencies. The following systems supply support functions necessary for the successful operation of the RHRSW system:

- *AC Power:* The AC Power system provides power to the RHRSW pumps and valves.

4.4.2 AC Power (ACP) System

System Function. The AC power system comprises the off-site power system, the on-site normal and emergency power systems, and the emergency diesel generator system. Under USI A-46 conditions, the off-site power system may be unavailable for 72 hours. Therefore, AC power will be supplied by the emergency diesel generator system for the scenario.

System Design. Power is normally provided to safety-related shutdown boards by off-site power, but they can also be supplied by respective diesel generators under emergency conditions. Each shutdown board supplies power directly to various auxiliaries and motor control centers, which in turn supply power to the essential components and systems required for shutdown. Combinations of shutdown boards represent independent power systems for system trains with 100% emergency load capacity and contain independent control power and logic. If off-site power is not available, isolation of the shutdown boards from the non-safety power source and the shedding of all nonessential loads from the shutdown boards will occur and the emergency diesel generators will start and load on the boards. Essential loads on the shutdown boards will be automatically reloaded after the emergency diesel generators have successfully started and powered the shutdown boards.

The emergency diesel generators are supplied with fuel oil from the fuel oil system. Qualified storage tanks provide storage of fuel oil in sufficient quantity to run the diesels during the 72-hour mission time.

System Dependencies. The following systems provide support functions required for successful operation of the AC power system:

- *DC Power System:* The DC power system provides DC power for emergency switchgear control power, AC switchgear control power, diesel generator field flashing, and breaker control power to the shutdown boards.
- *EECW System:* The EECW system provides cooling water to the emergency diesel generator heat exchangers.
- *HVAC:* The HVAC system supports the AC power system by maintaining plant temperature conditions within the range of electrical equipment ratings and capacity limitations. HVAC is necessary in the diesel rooms to assure the functional capabilities of the emergency diesel generators.

4.4.3 DC Power (DCP) System

System Function. The 125/250 VDC Power system is a highly reliable system primarily used for accident mitigation during a loss of AC power. In support of USI A-46, the DC Power system helps mitigate the anticipated LOOP.

System Design. The DC power system comprises two independent 125 VDC vital trains. Each vital DC train includes batteries, chargers, and power distribution panels.

4.4.4 Heating, Ventilation, and Air Conditioning (HVAC)

System Function. The function of the HVAC system is to remove the normal heat gain within various rooms to enable the essential equipment within the rooms to function as designed and to provide adequate ventilation for personnel access to the rooms during normal and accident conditions. For purposes of the USI A-46 evaluation, the HVAC cooling function is included for the following locations:

- Emergency Diesel Generator Rooms
- RHR Pump Room Area
- CS Pump Room Area

System Design. The HVAC system comprises air handling, air cleaning, and air cooling units in addition to supply fans, exhaust fans, and dampers. The system configurations vary with the specific plant areas.

4.4.5 Essential Equipment Cooling Water (EECW) System

System Function. Under the USI A-46 scenario, the EECW system functions as an essential system providing cooling water to the front-line systems and system areas required for shutdown of the plant. The EECW is an open loop system that supplies cooling water from the river to the plant essential systems and discharges heated water back into the river. It provides cooling water to the RHR pump seal coolers, the RHR and CS pump room ventilation coolers, and the emergency diesel generator heat exchangers.

System Design. The EECW system contains pumps, valves, piping, instrumentation, and controls. The system is subdivided into north and south headers with pumps on each header. In support of USI A-46, the pump/header combinations provide sufficient cooling water for the dependent front-line systems.

System Dependencies. The following systems supply support functions necessary for the successful operation of the EECW system:

- *AC Power:* The AC Power system provides power to the EECW pumps and valves.

4.4.6 Containment Atmospheric Dilution System

System Function. The CAD system provides an independent, seismically qualified, long-term backup nitrogen source to the SRV accumulators. In support of USI A-46, it provides the pneumatic motive force to operate the SRVs.

System Design. The system comprises two redundant and physically separated trains so that the system can withstand a single failure without rendering both trains inoperable.

System Dependencies

- *AC Power:* The 120 VAC power supply and distribution system provides control power for the CAD solenoid valves.

4.5 OPERATIONS REVIEW OF SSEL

The SSEL was developed by two individuals who have held Senior Reactor Operator (SRO) licenses at Browns Ferry. An Operations SRO also reviewed the SSEL to confirm that the safe shutdown options selected for the SSEL were compatible with approved normal and emergency operating procedures and associated operator training. The operations review insured the required systems and equipment to safely shut down the plant during a seismic event, which were included in the SSEL. Additionally, instrumentation needed to monitor plant operation and required systems was verified. Changes initiated as a result of the review are noted below:

- AOI 100.5, "Earthquake Abnormal Operating Instructions," was revised to provide a listing of instrumentation with the reliability to operate and withstand the earthquake.

Table 4-1

MATRIX OF FRONT-LINE SYSTEM DIRECT DEPENDENCIES ON SUPPORT SYSTEMS

System	ACP	DCP	RHRSW	EECW	HVAC	CAD
RPS						
CRD/HCU						
SRVs		X				X
RHR	X	X	X	X	X	
CS	X	X		X	X	

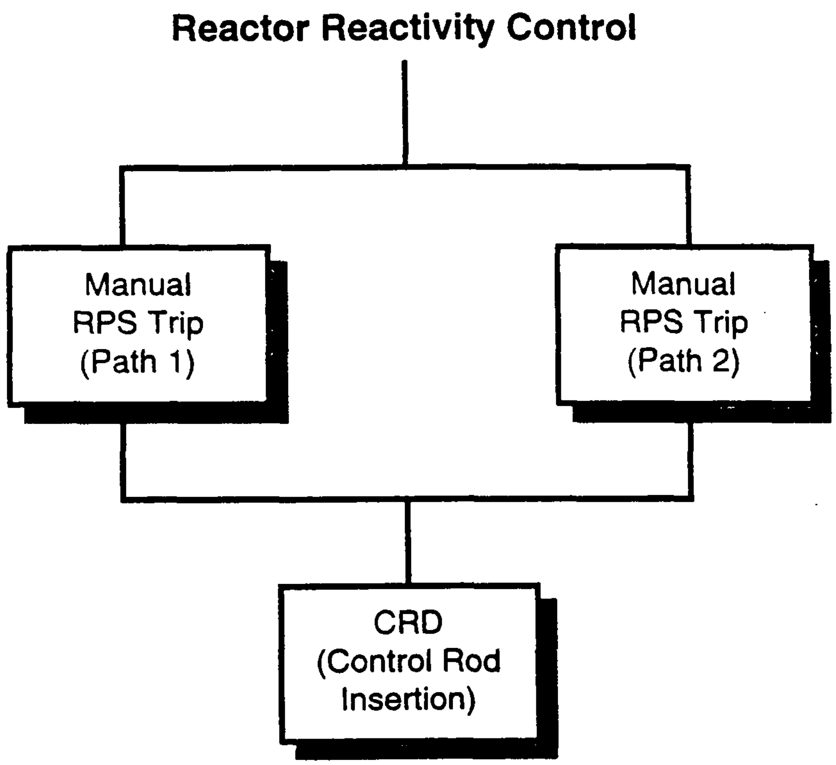

Figure 4-1: BFN safe shutdown for reactor reactivity control

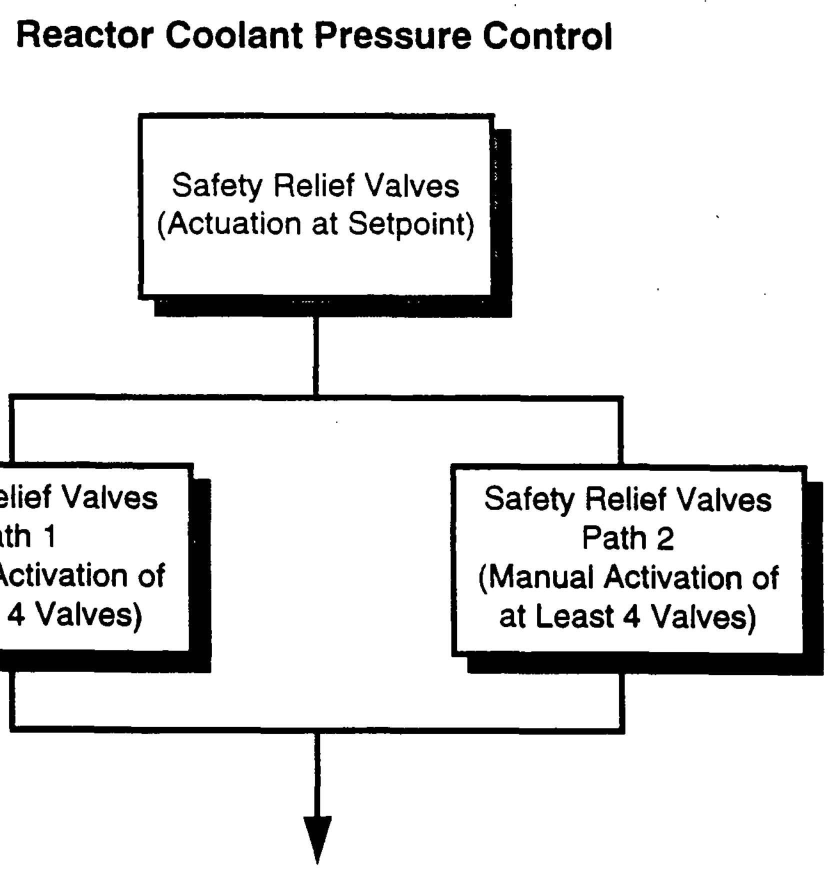

Figure 4-2: BFN safe shutdown for reactor coolant pressure control

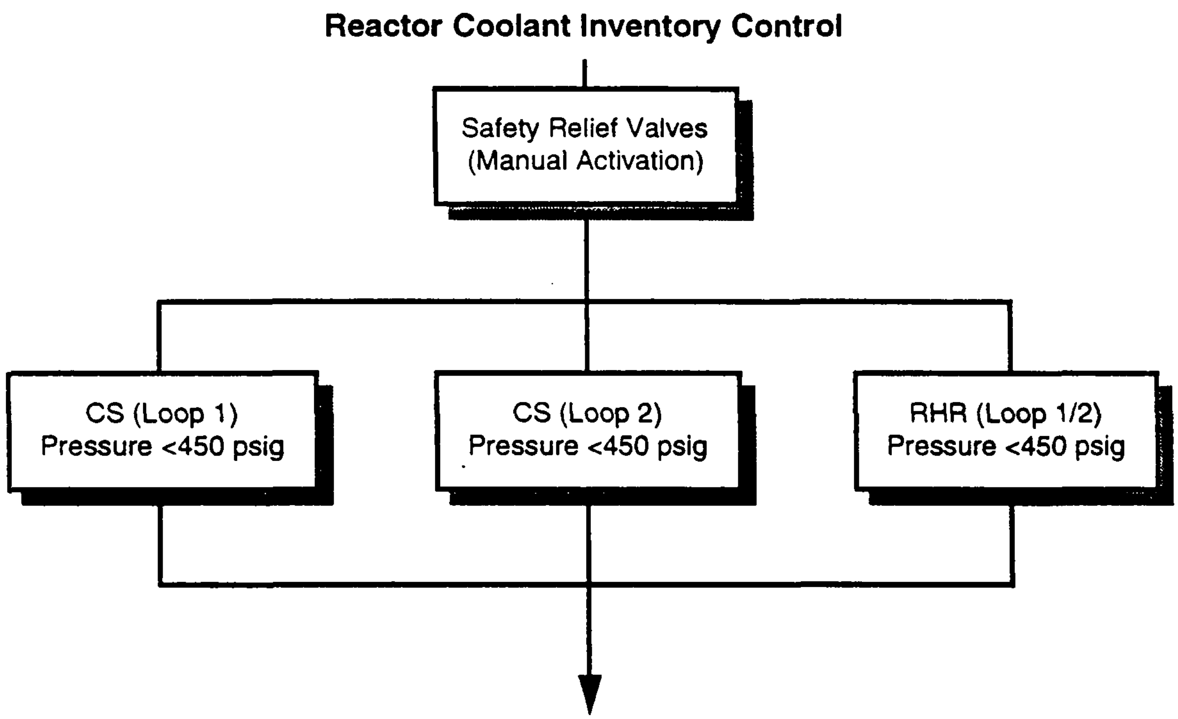

Figure 4-3: BFN safe shutdown for reactor coolant inventory control

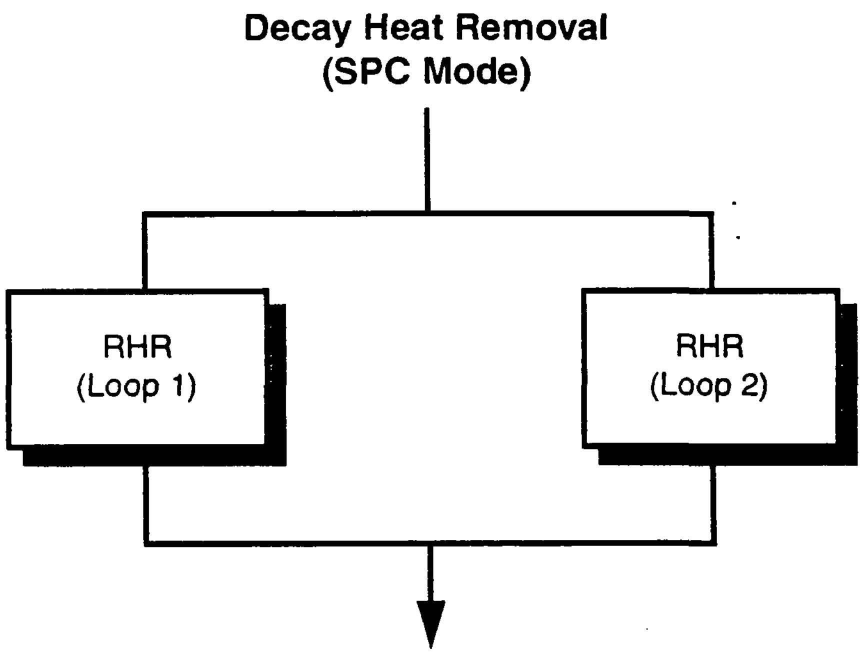

Figure 4-4: BFN safe shutdown for decay heat removal

5. MECHANICAL AND ELECTRICAL EQUIPMENT REVIEW

5.1 SUMMARY OF REVIEW

The reviews of the seismic adequacy of mechanical and electrical equipment and components on the BFN Units 2 and 3 Safe Shutdown Equipment List (SSEL) were performed in accordance with Part II, Section 4 of the Generic Implementation Procedure (GIP).

The BFN Unit 2 mechanical, Unit 3 mechanical, and Units 2 and 3 electrical SSEL are documented in References 11, 12, and 13. These three documents are combined into one list, which is designated as the Composite SSEL and is presented in Appendix B.

The Composite SSEL for the resolution of USI A-46 at BFN Units 2 and 3 is then reduced to eliminate those equipment identified as inherently rugged, such as check valves, as well as those identified specifically for the IPEEE program. The list is further enhanced to include those components within the loop of SSEL items, which are necessary for monitoring the equipment from the Main Control Rooms (MCRs). The resulting list is designated as the Seismic Review SSEL and is presented in Appendix C. It should be noted that some equipment class designations were modified in the Seismic Review SSEL during the screening walkdowns to accurately reflect the class of equipment represented in the GIP.

Each Seismic Review SSEL equipment item was evaluated by a Seismic Review Team (SRT) comprising a minimum of two Seismic Capability Engineers (SCEs), one of which was a registered Professional Engineer. In general, the walkdown evaluations were conducted either on an area-by-area basis within a given unit of the plant, or by equipment class basis. The walkdowns were coordinated with plant outages, BFN's Radiation Protection ALARA program, and equipment operational status to minimize disruption to the plant, reduce SRT exposure, and maximize walkdown effectiveness. Craft assistance was also utilized to provide access to various equipment for internal inspection as well as to perform anchor bolt tightness checks.

The results of the evaluations were documented on the respective Screening Evaluation Work Sheets (SEWS), and are tabulated on the Screening Verification Data Sheets (SVDSs), which are contained in Appendix D along with the SVDS certification.

In addition to the generic SSEL equipment evaluations per GIP, a BFN plant-specific seismic issue involving the seismic adequacy of flexible conduit within the SSEL equipment interface was also addressed during the A-46 screening evaluation walkdowns. Details of the flexible conduit evaluations are discussed in Section 5.1.5 below.

5.1.1 Seismic Capacity vs. Demand

The 5% damped SQUG Bounding Spectrum envelopes the Browns Ferry DBE effective ground input spectrum for the Reactor and Diesel Generator Buildings, as shown in Figures 3-1 and 3-2, respectively, as well as the Intake Pumping Station. Therefore, equipment located within about 40 feet of the "effective grade" elevation and having natural frequencies greater than 8 Hz satisfy the seismic capacity to seismic demand spectra comparison. It should be noted that for DBGs and IPS, all equipment in the BFN Seismic Review SSEL are located within about 40 feet of their respective effective grade elevations.

Seismic capacity versus demand can also be satisfied by comparing 1.5 times the SQUG Bounding Spectrum (Reference Spectrum) to the 5% damped, DBE In-structure Response Spectra (IRS), which are to be considered as median-centered spectra for use in the USI A-46 resolution. Plots comparing the Reference Spectrum to the A-46 IRS for the Reactor Building, Diesel Generator Building, and Intake Pumping Station were generated for use when appropriate (Reference 10). Table 5-1 summarizes the frequency range and locations where the A-46 IRS exceeds 1.5 times the SQUG Bounding Spectrum.

In cases where the equipment had a natural frequency of less than 8 Hz and/or was located more than about 40 feet above the "effective grade" elevation, the seismic capacity was based on either the 1.5 times the SQUG Bounding Spectrum or the Generic Equipment Ruggedness Spectrum (GERS) and was compared to the seismic demand established as the A-46 IRS or 1.5 times the A-46 IRS, respectively. When existing documentations were available, such as shake table test reports or analyses, the seismic capacity as established by the existing documentation was used to compare to the seismic demand based on the appropriate A-46 IRS.

Equipment that could not be screened using the GIP capacity vs. demand criteria are classified as outliers, and are discussed further in Section 5.3.

5.1.2 Equipment Class Descriptions

Table 5-2 presents the various classes of equipment included in the BFN Units 2 and 3 Seismic Review SSEL for the resolution of USI A-46 program. Several components that are within the loop of SSEL items, which are necessary for monitoring from the MCRs. The associated loop components for the various SSEL items are listed in Table 5-3. These components are either individually mounted or are mounted on equipment such as I&C panels and cabinets that are on the SSEL. Associated loop components that are individually mounted were evaluated separately per the GIP requirements. Other loop items, as well as other SSEL items, that are mounted in or on another SSEL item were evaluated by the "Rule-of-the-Box" with respect to the latter SSEL equipment.

In addition, components associated with a number of safe shutdown valves and room coolers (air handlers) were also evaluated per GIP requirements. These components, which are also included on the SSEL, consist of hand, pressure, and temperature switches, and are listed separately in Table 5-4. A brief description of the plant's SSEL components by equipment class is summarized below.

- Equipment Class 00 - Other. This class of equipment includes items that are not specifically addressed in the GIP. The BFN Seismic Review SSEL contains six components categorized in this equipment class and includes items such as CRD hydraulic control units and CAD/Nitrogen tank electric heaters and vaporizers. A list of these equipment with the respective evaluation method is presented in Appendix E.

- Equipment Class 01 - Motor Control Centers. Motor control centers are located in the Reactor Buildings for the Reactor MOV Boards, and in the Diesel Generator Buildings for the Diesel Auxiliary Boards. The maximum floor elevation at which MCCs are located is at RB El. 621'-3". Typical MCCs are manufactured and supplied by General Electric Co., GE7700 Line models, and are attached at the base to floor-mounted sill channels. Some MCCs have top-entry rigid conduits supported near the top.

- Equipment Class 02 - Low Voltage Switchgear. Low voltage switchgears are all located in the Reactor Buildings at El. 621'-3". These LV switchgears (480V) are manufactured and supplied by General Electric Co., and are welded or bolted to the embedded steel on the floor. Typical circuit breakers are of GE-type AKD-5.

- Equipment Class 03 - Medium Voltage Switchgear. Medium voltage switchgears are located in the Reactor Buildings and in Unit 3 DG Building. The maximum floor elevation at which MV switchgears are located is at RB El. 621'-3". These MV switchgears (4,160V) are manufactured and supplied by General Electric Co., and are welded or bolted to the embedded steel on the floor. Typical circuit breakers are of GE Magne-Blast type.

- Equipment Class 04 - Transformers. All larger 4 kV/480V transformers (ABB and GE) are located in the Reactor Buildings El. 621'-3", with the exception of two, which are located in Units 1 and 2 DG Building. Neutral ground transformers are located in the DG Buildings. Smaller transformers (480V-120/208V by Square D and 208V/120V by Solatron) are located in RBs, El. 593' and El. 621'-3". These transformers are typically floor-mounted except for the 208V/120V transformers, which are wall-mounted.

- Equipment Class 05 - Horizontal Pumps. No horizontal pumps are listed in the Seismic Review SSEL.

- Equipment Class 06 - Vertical Pumps. Vertical pumps in the Seismic Review SSEL include RHR Service Water pumps, RHR pumps, and Core Spray pumps. The RHRSW pumps are located at grade elevation (EL. 565') in the Intake Pumping Station. RHR and Core Spray pumps are located in the RB corner rooms at El. 519'.

- Equipment Class 07 - Fluid-Operated Valves. Fluid-operated valves are located throughout the Reactor Buildings and inside the Drywells. These valves are associated with various safe shutdown systems, including the Main Steam Relief and Isolation valves inside the Drywells. The maximum floor elevation in which these valves are located is at RB El. 621'-3". A variety of valve manufacturers are used, including Fisher and Bettis valves.

- Equipment Class 08A - Motor-Operated Valves. Motor-operated valves are located throughout the Reactor Buildings and inside the Drywells, and are associated with various safety systems. The maximum floor elevation in which these valves are located is at RB El. 593'. A variety of valve manufacturers are used, including Velan valves. Valve operators are typically manufactured by Limitorque.

- Equipment Class 08B - Solenoid-Operated Valves. Solenoid-operated valves are located throughout the Reactor Buildings and inside the Drywells, and are associated with various safe shutdown systems. The maximum floor elevation in which these valves are located is at RB El. 593'. A variety of valve manufacturers are used to supply these solenoid-operated valves.

- Equipment Class 09 - Fans. All fans are located in the Diesel Generator Buildings at El. 583'-6", and are associated with the DG room exhaust system.

- Equipment Class 10 - Air Handlers. This class of equipment includes air coolers for the RHR and Core Spray corner rooms in the Reactor

Buildings, below El. 565', as well as the inlet and outlet dampers for DG room exhaust fans located in DG Building at El. 583'-6". Air handling units for the corner rooms are manufactured by Bohn.

- Equipment Class 11 - Chillers. No chillers are listed in the Seismic Review SSEL.

- Equipment Class 12 - Air Compressors. No air compressors are listed in the Seismic Review SSEL.

- Equipment Class 13 - Motor-Generators. All Motor-Generators in the Seismic Review SSEL are located in the Reactor Buildings, at El. 621'-3" and El. 639'. These M-G sets are associated with the Low Pressure Core Injection (LPCI) system.

- Equipment Class 14 - Distribution Panels. Distribution panels are located throughout the Reactor Buildings including the Control Bay, and the DG Buildings. These panels are typically wall-mounted Hoffman enclosures, majority of which are located in RB at El. 621'-3" and below with a few panels at El. 639'.

- Equipment Class 15 - Batteries on Racks. This class of equipment includes the 250V Main Station batteries, the 250V Shutdown Board batteries and the 125V DC Diesel batteries, and are located in the Control Bay (El. 593'), Reactor Buildings (El. 621'-3"), and DG Buildings (El. 565'), respectively. The batteries are typically manufactured by C&D.

- Equipment Class 16 - Battery Chargers and Inverters. Battery chargers associated with the above batteries are located near the vicinity of these batteries, and are typically wall-mounted. Inverters are associated with the ECCS system and are floor-mounted at El. 593' and El. 621'-3" of the Reactor Buildings.

- Equipment Class 17 - Engine-Generators. This class of equipment includes all 8 Diesel Generators located at El. 565' of the DG Buildings. The diesel generators are manufactured by General Motors.

- Equipment Class 18 - Instruments on Racks. Instruments on racks are located throughout the Reactor Buildings at El. 593' and below. The instruments (pressure transmitters, pressure and temperature switches, etc.) are of a variety of manufacturers and the racks are typically floor-mounted with knee braces and/or top braces.

- Equipment Class 19 - Temperature Sensors. There are 32 temperature sensors identified in the Seismic Review SSEL. These temperature sensors are included as components that are within the loop of SSEL items which are necessary for temperature monitoring from the MCRs (see Table 5-3).

- Equipment Class 20 - Instrument and Control Panels and Cabinets. I&C panels and cabinets are located primarily in the MCRs at El. 617' and Auxiliary Instrument Rooms (AIRs) at El. 593' of the RB Control Bay. A few are located in the Reactor Buildings at a maximum floor elevation of 621'-3" and in the DG Buildings at a maximum floor elevation of 583'-6". BFN Seismic Review SSEL for this equipment class includes items such as benchboards and upright cabinets in the MCRs, electrical cabinets in the AIRs, DG electrical control cabinets at El. 565' and Diesel central information panel at El. 583'-6", and other panels and cabinets located in the Reactor and Diesel Generator Buildings, as well as in the Intake Pumping Station. These equipment are typically floor-mounted with the exception of a few smaller ones which are wall-mounted.

- Equipment Class 21 - Tanks and Heat Exchangers. BFN Seismic Review SSEL includes items such as the DG 7-day fuel oil tanks, DG starting air receiver tanks, CAD/Nitrogen tanks, MSRV accumulator tanks, scram instrument volume tanks, and RHR heat exchangers among others. No large vertical flat-bottom tanks are on the SSEL.

Detailed description of the evaluation of tanks and heat exchangers is presented in Section 6.

5.1.3 Equipment Anchorage

A significant part of the USI A-46 evaluation is focused on the verification of seismic adequacy of the anchorage for mechanical and electrical equipment. Lack of anchorage or inadequate anchorage has been a major cause of equipment failure during and following past earthquakes.

The screening approach for verifying the seismic adequacy of equipment anchorage is based on a combination of field inspections, analytical calculations, and engineering judgments. The Seismic Capability Engineers (SCEs) considered the various design attributes and equipment characteristics when evaluating the equipment anchorage.

During the prescreening of the equipment, existing calculations, drawings, vendor manuals, and other plant documentation were reviewed to determine the type of anchorage used for the specific component. If the information was available, it was documented in the Seismic Evaluation Work Sheets (SEWS) for reference by the Seismic Review Team (SRT) during the walkdown. The SRT used this information to verify the as-installed anchorage configuration and supplement any additional field observations and notes as appropriate. If no information were readily available, this was noted in the prescreening notes so that the SRT could as-built the as-installed anchorage configuration and incorporate it into the SEWS.

During the field inspection process, the SRT noted attributes such as equipment characteristics, type of anchorage, size and location of anchorage, installation adequacy, embedment length, gaps, spacing, and edge distance as applicable. Tightness checks were also performed for accessible floor-mounted expansion anchors through craft support. Anchorages for equipment that were recently upgraded through Design Change Notices (DCNs) or Engineering Change Notices (ECNs), as part of Unit 2 restart and/or Unit 3 recovery programs, were assumed to have been installed to the site Quality Control (QC) procedures, and therefore, only spot checks were performed to verify the bolt tightness.

Existing anchorage calculations and/or other plant documentation, when available, were reviewed for applicability and seismic adequacy by the SRT. In cases where the SRT could verify the as-installed anchorage configuration against available plant documentation, the anchorage caveat was marked as being seismically adequate. If no plant documentation were available but the SRT were able to specifically identify and accept the as-built anchorage attributes, engineering judgment was utilized. In cases where the SRT were unable to clearly identify and evaluate all attributes of the anchorage to use engineering judgment, the component anchorage was then identified as requiring analytical calculations to verify its seismic adequacy. Bounding anchorage calculations were performed to address the seismic adequacy of similar configurations.

Most of the anchorages observed during the screening walkdown were expansion anchors typically of Phillips Redhead self-drilling type, cast-in-place headed studs and J-bolts, and welded or bolted connections to embedded channels and plates. Based on a review of the applicable plant drawings, the embedded channels and plates are typically anchored to the concrete with Nelson-type welded studs.

The larger equipment components, such as the RHR and Core Spray pumps, RHRSW pumps, M-G sets and diesel generators, were typically anchored using cast-in-place anchor details provided on engineering drawings. Although original plant drawings provided structural and installation details for such anchor types, only limited analytical evaluations were usually available for the SRT to satisfactorily verify the seismic adequacy of these anchorage configurations. In these cases, anchorage calculations were performed to demonstrate that the seismic capacity is greater than the demand.

Other mechanical and electrical components were generally installed using the expansion anchors, or welded or bolted connections as described above. Items in the same equipment class with similar anchorage installations were reviewed for a worst-case, bounding configuration and their anchorages were evaluated for seismic adequacy by analytical calculations. Several worst-case bounding anchorage evaluations were performed to address the seismic adequacy of the various equipment classes (MCCs, switchgears, transformers, distribution panels, battery chargers, and electrical cabinets, etc.). Others were accepted based on comparison to existing anchorage calculations or engineering judgment.

Most components were determined to have adequate anchorage capacity based on a combination of field inspection, analytical evaluation, and engineering judgment. Any components whose anchorage capacity could not be verified using these methods were identified as outliers.

5.1.4 Seismic Interaction

The GIP screening guidelines require that the SRT evaluate SSEL equipment items for possible seismic interactions with nearby equipment, structures, and other plant features. The seismic interactions of concern are:

1. Proximity effects
2. Structural failure and falling
3. Flexibility of attached lines

The SRT evaluated credible and significant interaction hazards for all the SSEL equipment items and components, and documented them on the SEWS. The teams utilized training, judgment, and past earthquake experience to differentiate between likely and unlikely interactions. The guidelines presented in the GIP (Part II, Section 4.5 and Appendix D of the GIP) were closely followed by the SRTs during the screening walkdown and evaluation process. Any credible seismic interaction concerns are identified and documented as outliers.

5.1.5 Flexible Conduit Evaluations

As part of the USI A-46 resolution, BFN is committed to evaluate the seismic adequacy of flexible conduit installations within the equipment interface of the SSEL equipment. The seismic requirements and acceptance criteria for the flexibility evaluation of these flexible conduit are based on the installation criteria contained in TVA General Engineering Specifications G-40 (Reference 14), which have been accepted by the

NRC for use as the long-term criteria for conduit integrity evaluation at BFN (Reference 15). Flexible conduit installations not meeting the G-40 requirements were identified as outliers and documented within the SEWS packages for the respective SSEL items. Any G-40 variances accepted by further evaluations and/or engineering judgment were also documented in the respective SEWS packages.

Verification of the seismic adequacy of flexible conduit installations at BFN was performed in conjunction with the A-46 screening evaluation walkdowns of the applicable SSEL equipment. All flexible conduit installations within the equipment interface of the SSEL equipment for BFN Units 2 and 3 were found to be acceptable, either by meeting the G-40 criteria or by further evaluations and/or engineering judgment based on the as-installed configurations. No further rework, replacements, or modifications is required.

5.2 INSTANCES OF MEETING THE INTENT BUT NOT THE LETTER OF THE CAVEAT

In verifying the capacity to demand criteria of the GIP, there were instances where special exception had to be taken (Part II, Section 4.2 of the GIP) in order to satisfy the capacity to demand enveloping criteria. Instances in which the capacity exceeds the demand at and above the conservatively estimated lowest natural frequency of the equipment are identified and tabulated in Appendix F-1. Similarly, during the screening walkdown of the SSEL equipment, there were also instances where the letter of a caveat was not met. Instances in which the intent of a caveat is met without meeting the specific wording of the caveat are identified and described in Appendix F-2.

5.3 SUMMARY OF OUTLIERS

A total of 130 outliers were identified, affecting 114 equipment items on the Seismic Review SSEL for BFN Units 2 and 3 mechanical and electrical equipment. The types of outlier condition include:

1. Anchorage
2. Capacity vs. Demand
3. Caveats
4. Interactions - include proximity, housekeeping, etc.
5. Others - include those not represented in the earthquake experience database (MSIVs)

Several equipment have multiple outliers associated with them. The identified outliers and respective resolution methods are presented in Appendix G. A distribution of the outliers for the mechanical and electrical equipment by type is shown below.

Outlier Type	No. of Outliers
Anchorage	59
Capacity vs. Demand	9
Caveats	15
Interactions	31
Others	16

Table 5-1

SUMMARY OF FREQUENCIES AND LOCATIONS OF SQUG REFERENCE SPECTRUM EXCEEDANCES

Category I Structure	Elevation (ft)	Frequency Range of Exceedances (Hz)
Reactor Building	639	4.8 - 7.3
	621	5.0 - 7.0
	593	5.5 - 6.2
	565	None
	519	None
Diesel Generator Building	583	> 8.3
	561	9.5 - 15.5
Intake Pumping Station	565	> 14.5
	518	None

Table 5-2

BFN UNITS 2 & 3 USI A-46 EQUIPMENT CLASSES

Class	Description	No. of Equipment Items on SSEL
00	Other	6
01	Motor Control Centers	22
02	Low Voltage Switchgear	6
03	Medium Voltage Switchgear	8
04	Transformers	24
05	Horizontal Pumps	0
06	Vertical Pumps	24
07	Fluid-Operated Valves	68
08A	Motor-Operated Valves	120
08B	Solenoid-Operated Valves	55
09	Fans	16
10	Air Handlers	60
11	Chillers	0
12	Air Compressors	0
13	Motor-Generators	8
14	Distribution Panels	144
15	Batteries on Racks	20
16	Battery Chargers and Inverters	28
17	Engine-Generators	8
18	Instruments on Racks	187
19	Temperature Sensors	32
20	I & C Panels and Cabinets	175
21	Tanks and Heat Exchangers	140
ROB	See Note [1] Below	174

Note [1] - The "ROB" equipment class designation indicates that the component has been seismically verified using the "rule of the box" as outlined in the GIP. That is, the component has been evaluated with and as an integral part of the equipment which houses the component or to which it is attached. See the SEWS package for the SSEL item for pertinent references to the evaluation.

Table 5-3 (Page 1 of 7)

ASSOCIATED LOOP COMPONENTS OF SSEL ITEMS

SSEL No.	Equipment I.D.	Associated Loop Components
1018	2-FI-74-50	2-BKR-211
		2-BKR-402
		2-FE-74-50
		2-FM-74-50
		2-FR-74-64
		2-FS-74-50
		2-FT-74-50
1019	2-FI-74-56	2-FE-74-56
		2-FM-74-56
		2-FT-74-56
1046	2-FI-74-64	2-BKR-322
		2-BKR-402
		2-FE-74-64
		2-FM-74-64
		2-FR-74-64
		2-FS-74-64
		2-FT-74-64
1047	2-FI-74-70	2-FE-74-70
		2-FM-74-70
		2-FT-74-70
3053	2-LI-3-58A	2-LT-3-58B
3054	2-LI-3-58B	2-LT-3-58D
3055	2-PI-3-74A	2-PT-3-74A
3056	2-PI-3-74B	2-PT-3-74B

Table 5-3 (Page 2 of 7)

ASSOCIATED LOOP COMPONENTS OF SSEL ITEMS

SSEL No.	Equipment I.D.	Associated Loop Components
3057	2-XR-64-159	2-BKR-323
		2-LT-64-159B
		2-PT-64-160B
3058	2-LI-64-159A	2-BKR-223
		2-LT-64-159A
3059	2-TI-64-161	2-TE-64-161A
		2-TE-64-161B
		2-TE-64-161C
		2-TE-64-161D
		2-TE-64-161E
		2-TE-64-161F
		2-TE-64-161G
		2-TE-64-161H
3060	2-TI-64-162	2-TE-64-162A
		2-TE-64-162B
		2-TE-64-162C
		2-TE-64-162D
		2-TE-64-162E
		2-TE-64-162F
		2-TE-64-162G
		2-TE-64-162H
3061	2-PI-64-67B	2-PS-64-67B
		2-PT-64-67
3062	2-PI-64-160A	2-PT-64-160A

Table 5-3 (Page 3 of 7)

ASSOCIATED LOOP COMPONENTS OF SSEL ITEMS

SSEL No.	Equipment I.D.	Associated Loop Components
3063	2-TI-64-52AB	2-BKR-832
		2-TE-64-52A
		2-TI-64-52AA
		2-TM-64-52AA
		2-TS-64-52A
		2-XS-64-52
3064	2-XR-64-50	2-BKR-204
		2-PI-64-50
		2-PS-64-50
		2-PT-64-50
		2-TE-64-52C
		2-TM-64-52CA
5011	2-FI-75-21	2-FE-75-21
		2-FM-75-21
		2-FT-75-21
		2-PX-75-21
5025	2-FI-75-49	2-FE-75-49
		2-FM-75-49
		2-FT-75-49
		2-PX-75-49
8027	2-FI-23-36	2-FE-23-36
		2-FM-23-36
		2-FS-90-133B
		2-FT-23-36

Table 5-3 (Page 4 of 7)

ASSOCIATED LOOP COMPONENTS OF SSEL ITEMS

SSEL No.	Equipment I.D.	Associated Loop Components
8028	2-FI-23-42	2-FE-23-42
		2-FM-23-42
		2-FS-90-133C
		2-FT-23-42
8029	2-FI-23-48	2-BKR-329
		2-FE-23-48
		2-FM-23-48
		2-FS-90-134B
		2-FT-23-48
8030	2-FI-23-54	2-FE-23-54
		2-FM-23-54
		2-FS-90-134C
		2-FT-23-54
31018	3-FI-74-50	3-BKR-211
		3-BKR-402
		3-FE-74-50
		3-FM-74-50
		3-FS-74-50
		3-FT-74-50
31019	3-FI-74-56	3-FE-74-56
		3-FM-74-56
		3-FT-74-56
31043	3-FI-74-64	3-BKR-322
		3-BKR-402
		3-FE-74-64
		3-FM-74-64

Table 5-3 (Page 5 of 7)

ASSOCIATED LOOP COMPONENTS OF SSEL ITEMS

SSEL No.	Equipment I.D.	Associated Loop Components
31043 (Cont.)	3-FI-74-64	3-FR-74-64
		3-FS-74-64
		3-FT-74-64
31044	3-FI-74-70	3-FE-74-70
		3-FM-74-70
		3-FT-74-70
33051	3-LI-3-58A	3-LT-3-58B
33052	3-LI-3-58B	3-LT-3-58D
33053	3-PI-3-74A	3-PT-3-74A
33054	3-PI-3-74B	3-PT-3-74B
33055	3-XR-64-159	3-BKR-323
		3-LT-64-159B
		3-PT-64-160B
33056	3-LI-64-159A	3-BKR-223
		3-LT-64-159A
33057	3-TI-64-161	3-TE-64-161A
		3-TE-64-161B
		3-TE-64-161C
		3-TE-64-161D
		3-TE-64-161E
		3-TE-64-161F
		3-TE-64-161G
		3-TE-64-161H
33058	3-TI-64-162	3-TE-64-162A
		3-TE-64-162B
		3-TE-64-162C

Table 5-3 (Page 6 of 7)

ASSOCIATED LOOP COMPONENTS OF SSEL ITEMS

SSEL No.	Equipment I.D.	Associated Loop Components
33058 (Cont.)	3-TI-64-162	3-TE-64-162D
		3-TE-64-162E
		3-TE-64-162F
		3-TE-64-162G
		3-TE-64-162H
33059	3-PI-64-67B	3-PS-64-67B
		3-PT-64-67
33060	3-PI-64-160A	3-PT-64-160A
33061	3-PI-64-52AB	3-BKR-832
		3-TE-64-52A
		3-TI-64-52AA
		3-TM-64-52AA
		3-TS-64-52A
		3-XS-64-52
33062	3-XR-64-50	3-BKR-204
		3-PI-64-50
		3-PS-64-50
		3-PT-64-50
		3-TE-64-52C
		3-TM-64-52CA
35011	3-FI-75-21	3-FE-75-21
		3-FM-75-21
		3-FT-75-21
		3-PX-75-21

Table 5-3 (Page 7 of 7)

ASSOCIATED LOOP COMPONENTS OF SSEL ITEMS

SSEL No.	Equipment I.D.	Associated Loop Components
35025	3-FI-75-49	3-FE-75-49
		3-FM-75-49
		3-FT-75-49
		3-PX-75-49
38009	3-FI-23-36	3-FE-23-36
		3-FM-23-36
		3-FS-90-133B
		3-FT-23-36
38010	3-FI-23-42	3-FE-23-42
		3-FM-23-42
		3-FS-90-133C
		3-FT-23-42
38011	3-FI-23-48	3-FE-23-48
		3-FM-23-48
		3-FS-90-134B
		3-FT-23-48
38012	3-FI-23-54	3-FE-23-54
		3-FM-23-54
		3-FS-90-134C
		3-FT-23-54

Table 5-4 (Page 1 of 8)

ADDITIONAL COMPONENTS ASSOCIATED WITH SSEL VALVES AND AIR HANDLERS

SSEL No.	Equipment I.D.	SSEL No.	Associated Components
1001	2-FCV-74-1	9345	2-HS-74-1B
1002	2-FCV-74-2	9348	2-HS-74-2B
1003	2-FCV-74-96	9352	2-HS-74-96B
1004	2-PMP-74-005	9235	2-HS-74-0005B
1006	2-FCV-74-7	9195	2-HS-74-7B
1010	2-FCV-74-100	9330	2-HS-74-100B
1011	2-FCV-74-12	9343	2-HS-74-12B
1012	2-FCV-74-13	9344	2-HS-74-13B
1013	2-FCV-74-97	9353	2-HS-74-97B
1014	2-PMP-74-016	9237	2-HS-74-0016B
1020	2-FCV-74-57	9197	2-HS-74-57B
1021	2-FCV-74-59	9199	2-HS-74-59B
1022	2-FCV-74-58	9200	2-HS-74-58B
1023	2-FCV-74-52	9201	2-HS-74-52B
1024	2-FCV-74-53	9203	2-HS-74-53B
1026	2-FCV-74-61	9206	2-HS-74-61B
1026	2-FCV-78-61	9363	2-HS-78-61B
1027	2-FCV-74-60	9204	2-HS-74-60B
1029	2-FCV-74-24	9346	2-HS-74-24B
1030	2-FCV-74-25	9347	2-HS-74-25B
1031	2-FCV-74-98	9354	2-HS-74-98B
1032	2-PMP-74-028	9236	2-HS-74-0028B
1034	2-FCV-74-30	9207	2-HS-74-30B
1038	2-FCV-74-101	9389	2-HS-74-101B
1039	2-FCV-74-35	9349	2-HS-74-35B
1040	2-FCV-74-36	9350	2-HS-74-36B

Table 5-4 (Page 2 of 8)

ADDITIONAL COMPONENTS ASSOCIATED WITH SSEL VALVES AND AIR HANDLERS

SSEL No.	Equipment I.D.	SSEL No.	Associated Components
1041	2-FCV-74-99	9331	2-HS-74-99B
1042	2-PMP-74-039	9238	2-HS-74-0039B
1048	2-FCV-74-71	9209	2-HS-74-71B
1049	2-FCV-74-73	9351	2-HS-74-73B
1050	2-FCV-74-72	9211	2-HS-74-72B
1051	2-FCV-74-66	9212	2-HS-74-66B
1052	2-FCV-74-67	9214	2-HS-74-67B
1055	2-FCV-74-75	9217	2-HS-74-75B
3034	2-FCV-69-2	9338	2-HS-69-2B
3036	2-FCV-70-47	9218	2-HS-70-47B
3038	2-FCV-71-2	9340	2-HS-71-2B
3040	2-FCV-71-18	9339	2-HS-71-18B
3042	2-FCV-73-3	9342	2-HS-73-3B
3043	2-FCV-73-81	9324	2-HS-73-81B
3044	2-FCV-73-27	9341	2-HS-73-27B
4001	0-PMP-23-085	9244	0-HS-23-85B
4006	2-CLR-67-917	9332 9366	2-HS-64-68 2-TS-64-68
4007	2-CLR-67-919	9336 9370	2-HS-64-72 2-TS-64-72
4008	2-CLR-67-921	9334 9368	2-HS-64-70 2-TS-64-70
4011	0-PMP-23-091	9248	0-HS-23-91B
4015	0-FCV-67-49	9323	0-HS-67-49B
4017	2-FCV-67-50	9364	2-PS-67-50
4018	3-FCV-67-50	9390	3-PS-67-50

Table 5-4 (Page 3 of 8)

ADDITIONAL COMPONENTS ASSOCIATED WITH SSEL VALVES AND AIR HANDLERS

SSEL No.	Equipment I.D.	SSEL No.	Associated Components
4044	0-PMP-23-088	9246	0-HS-23-88B
4049	2-CLR-67-918	9333	2-HS-64-69
		9367	2-TS-64-69
4050	2-CLR-67-920	9337	2-HS-64-73
		9371	2-TS-64-73
4051	2-CLR-67-922	9335	2-HS-64-71
		9369	2-TS-64-71
4054	0-PMP-23-094	9250	0-HS-23-94B
4058	0-FCV-67-48	9322	0-HS-67-48B
4060	2-FCV-67-51	9365	2-PS-67-51
4061	3-FCV-67-51	9392	3-PS-67-51
5001	2-FCV-75-2	9358	2-HS-75-2B
5002	2-PMP-75-005	9239	2-HS-75-0005B
5005	2-FCV-75-9	9220	2-HS-75-9B
5006	2-FCV-75-11	9355	2-HS-75-11B
5007	2-PMP-75-014	9241	2-HS-75-0014B
5010	2-FCV-75-22	9356	2-HS-75-22B
5012	2-FCV-75-23	9357	2-HS-75-23B
5013	2-FCV-75-25	9222	2-HS-75-25B
5015	2-FCV-75-30	9359	2-HS-75-30B
5016	2-PMP-75-033	9240	2-HS-75-0033B
5019	2-FCV-75-37	9224	2-HS-75-37B
5020	2-FCV-75-39	9360	2-HS-75-39B
5021	2-PMP-75-042	9242	2-HS-75-0042B
5024	2-FCV-75-50	9361	2-HS-75-50B
5026	2-FCV-75-51	9362	2-HS-75-51B

Table 5-4 (Page 4 of 8)

ADDITIONAL COMPONENTS ASSOCIATED WITH SSEL VALVES AND AIR HANDLERS

SSEL No.	Equipment I.D.	SSEL No.	Associated Components
5027	2-FCV-75-53	9226	2-HS-75-53B
7015	0-FAN-30-64	9256	0-HS-30-64
7016	0-FAN-30-65	9258	0-HS-30-65
7037	0-FAN-30-66	9260	0-HS-30-66
7038	0-FAN-30-67	9262	0-HS-30-67
7039	0-FAN-30-68	9266	0-HS-30-68
7040	0-FAN-30-69	9264	0-HS-30-69
7041	0-FAN-30-70	9270	0-HS-30-70
7042	0-FAN-30-71	9268	0-HS-30-71
7103	3-FAN-30-230	9272	3-HS-30-230
7121	3-FAN-30-232	9274	3-HS-30-232
8001	0-PMP-23-005	9243	0-HS-23-5B
8002	3-FCV-23-34	39181	3-HS-23-34B
8004	3-FCV-23-40	39183	3-HS-23-40B
8004	1-FCV-23-034	9325	1-HS-23-34B
8005	2-FCV-23-34	9227	2-HS-23-34B
8007	0-PMP-23-012	9247	0-HS-23-12B
8010	1-FCV-23-040	9326	1-HS-23-40B
8011	2-FCV-23-40	9229	2-HS-23-40B
8013	0-PMP-23-019	9245	0-HS-23-19B
8016	1-FCV-23-046	9327	1-HS-23-46B
8017	2-FCV-23-46	9230	2-HS-23-46B
8019	0-PMP-23-027	9249	0-HS-23-27B
8022	1-FCV-23-052	9328	1-HS-23-52B
8023	2-FCV-23-52	9232	2-HS-23-52B
8025	1-FCV-23-57	9329	1-HS-23-57B

Table 5-4 (Page 5 of 8)

ADDITIONAL COMPONENTS ASSOCIATED WITH SSEL VALVES AND AIR HANDLERS

SSEL No.	Equipment I.D.	SSEL No.	Associated Components
8026	2-FCV-23-57	9388	2-HS-23-57B
9043	PANEL 2-9-5	18	2-HS-99-5A-S1
9043	PANEL 2-9-5	16	2-HS-99-5A/S3A
9043	PANEL 2-9-5	17	2-HS-99-5A/S3B
31001	3-FCV-74-1	39252	3-HS-74-1B
31002	3-FCV-74-2	39255	3-HS-74-2B
31004	3-PMP-74-005	39187	3-HS-74-0005B
31006	3-FCV-74-7	39146	3-HS-74-7B
31010	3-FCV-74-100	39249	3-HS-74-100B
31011	3-FCV-74-12	39250	3-HS-74-12B
31012	3-FCV-74-13	39251	3-HS-74-13B
31013	3-FCV-74-97	39259	3-HS-74-97B
31014	3-PMP-74-016	39189	3-HS-74-0016B
31020	3-FCV-74-57	39148	3-HS-74-57B
31021	3-FCV-74-59	39150	3-HS-74-59B
31022	3-FCV-74-58	39151	3-HS-74-58B
31023	3-FCV-74-52	39153	3-HS-74-52B
31024	3-FCV-74-53	39155	3-HS-74-53B
31026	3-FCV-74-61	39158	3-HS-74-61B
31026	3-FCV-78-61	39268	3-HS-78-61B
31027	3-FCV-74-60	39156	3-HS-74-74-60B
31029	3-FCV-74-24	39253	3-HS-74-24B
31030	3-FCV-74-25	39254	3-HS-74-25B
31031	3-PMP-74-028	39188	3-HS-74-0028B
31033	3-FCV-74-30	39160	3-HS-74-30B
31037	3-FCV-74-35	39256	3-HS-74-35B

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ADDITIONAL COMPONENTS ASSOCIATED WITH SSEL VALVES AND AIR HANDLERS

SSEL No.	Equipment I.D.	SSEL No.	Associated Components
31038	3-FCV-74-36	39257	3-HS-74-36B
31039	3-PMP-74-039	39190	3-HS-74-0039B
31045	3-FCV-74-71	39162	3-HS-74-71B
31046	3-FCV-74-73	39258	3-HS-74-73B
31047	3-FCV-74-72	39164	3-HS-74-72B
31048	3-FCV-74-66	39165	3-HS-74-66B
31049	3-FCV-74-67	39167	3-HS-74-67B
31052	3-FCV-74-75	39170	3-HS-74-75B
33033	3-FCV-69-2	39243	3-HS-69-2B
33035	3-FCV-70-47	39171	3-HS-70-47B
33037	3-FCV-71-2	39245	3-HS-71-2B
33039	3-FCV-71-18	39244	3-HS-71-18B
33041	3-FCV-73-3	39247	3-HS-73-3B
33042	3-FCV-73-81	39248	3-HS-73-81B
33043	3-FCV-73-27	39246	3-HS-73-27B
34001	3-CLR-67-917	39239 39271	3-HS-64-68 3-TS-64-68
34002	3-CLR-67-919	39269 39291	3-HS-64-72 3-TS-64-72
34003	3-CLR-67-921	39241 39273	3-HS-64-70 3-TS-64-70
34013	3-CLR-67-918	39240 39272	3-HS-64-69 3-TS-64-69
34014	3-CLR-67-920	39270 39292	3-HS-64-73 3-TS-64-73

Table 5-4 (Page 7 of 8)

ADDITIONAL COMPONENTS ASSOCIATED WITH SSEL VALVES AND AIR HANDLERS

SSEL No.	Equipment I.D.	SSEL No.	Associated Components
34015	3-CLR-67-922	39242 39274	3-HS-64-71 3-TS-64-71
35001	3-FCV-75-2	39263	3-HS-75-2B
35002	3-PMP-75-005	39191	3-HS-75-0005B
35005	3-FCV-75-9	39173	3-HS-75-9B
35006	3-FCV-75-11	39260	3-HS-75-11B
35007	3-PMP-75-014	39193	3-HS-75-0014B
35010	3-FCV-75-22	39261	3-HS-75-22B
35012	3-FCV-75-23	39262	3-HS-75-23B
35013	3-FCV-75-25	39175	3-HS-75-25B
35015	3-FCV-75-30	39264	3-HS-75-30B
35016	3-PMP-75-033	39192	3-HS-75-0033B
35019	3-FCV-75-37	39177	3-HS-75-37B
35020	3-FCV-75-39	39265	3-HS-75-39B
35021	3-PMP-75-042	39194	3-HS-75-0042B
35024	3-FCV-75-50	39266	3-HS-75-50B
35026	3-FCV-75-51	39267	3-HS-75-51B
35027	3-FCV-75-53	39179	3-HS-75-53B
37015	3-FAN-30-234	39057	3-HS-30-234
37016	3-FAN-30-235	39059	3-HS-30-235
37037	3-FAN-30-236	39061	3-HS-30-236
37038	3-FAN-30-237	39063	3-HS-30-237
37045	3-FAN-30-231	39065	3-HS-30-231
38006	3-FCV-23-46	39184	3-HS-23-46B
38008	3-FCV-23-52	39186	3-HS-23-52B

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ADDITIONAL COMPONENTS ASSOCIATED WITH SSEL VALVES AND AIR HANDLERS

SSEL No.	Equipment I.D.	SSEL No.	Associated Components
39117	PANEL 3-9-5	30018	3-HS-99-5A-S1
39117	PANEL 3-9-5	30016	3-HS-99-5A/S3A
39117	PANEL 3-9-5	30017	3-HS-99-5A/S3B

6. TANKS AND HEAT EXCHANGERS REVIEW

6.1 SUMMARY OF REVIEW

Tanks and heat exchangers were evaluated per the requirements of the GIP, where applicable, and documented on the Screening and Evaluation Work Sheets (SEWS) for Equipment Class 21. Anchorage calculations were performed for selected items on the SSEL, although some anchorages were determined to be adequate by engineering judgment. The tanks evaluated as part of the BFN USI A-46 effort were generally smaller tanks (Diesel Generator starting air receiver tanks), although there were some exceptions to this (CAD/Nitrogen tanks and DG 7-day fuel oil tanks). Heat exchangers are all vertically mounted.

The results of the evaluation are included in the SVDSs, which are presented in Appendix D. Appendix H-1 shows a list of SSEL tanks and heat exchangers that are not specifically covered by the GIP but had capacities that were judged by SRT to be greater than the seismic demand due to the inherent ruggedness of their configurations. Outliers are identified in Appendix H-2.

6.1.1 Vertical and Horizontal Tanks

No large vertical flat-bottom tanks are on the BFN Seismic Review SSEL. With the exception of CAD/Nitrogen tanks and the DG 7-day fuel oil tanks, the rest of the tanks on the SSEL are small and adequately supported, and were judged to be seismically adequate by the SRT. The DG seven-day fuel oil tanks are encased in the concrete base mat of the DG Buildings. Seismic adequacy of these tanks was verified through the review of plant drawings and documentation. The CAD/Nitrogen tanks located in the yard were evaluated, per GIP guidelines for horizontal tanks on saddle supports, and were found to be acceptable.

6.1.2 Heat Exchangers

The 16 heat exchangers (HXs) on the BFN Units 2 and 3 SSEL, all of which are vertically mounted, include eight RHR HXs and eight small sealed HXs for the RHR pumps on both units. The small sealed HXs are inherently rugged and mounted directly to the pumps. These HXs were judged to be seismically adequate by the SRT. The RHR HXs were identified as outliers for further evaluation of anchorage adequacy since the GIP guidelines address horizontal HXs only.

6.2 SUMMARY OF OUTLIERS

Appendix H-2 summarizes the identified outliers and the respective resolution methods associated with the Equipment Class 21 - Tanks and Heat Exchangers.

7. CABLE TRAY AND CONDUIT RACEWAY REVIEW

7.1 SUMMARY OF RACEWAY REVIEW

The review for cable tray and conduit systems at Browns Ferry Units 2 and 3 was performed in accordance with the guidelines of Part II, Section 8 of the Generic Implementation Procedure (GIP) and was conducted on an area-by-area basis. All Class I structures that housed the SSEL equipment were included in the walkdown. In general, all rooms in these buildings were walked down unless it was fairly certain that no cable trays or conduit associated with the SSEL were located or passed through the room. In a limited number of cases, access to rooms was limited due to radiation concerns. In all cases, the walkdown was performed by a minimum of two qualified Seismic Capability Engineers (SCEs), with at least one of them being a Registered Professional Engineer.

Conduit and cable trays are the main routing methods for cables at Browns Ferry. The size of the conduit varies up to 5 inches in nominal diameter and the conduit is predominantly of aluminum. Cable trays are predominantly 18-inch wide and 4-inch deep ladder-type construction.

Based on the SSEL equipment location, the majority of the conduit and cable trays are located in the Control Bay (CB) cable spreading rooms at El. 606', Control Bay hallway at EL. 593', areas near the ceiling of the Reactor Building (RB) floor elevations of 565', 593', 621'-3", P Line wall at RB El. 593' and the Shutdown Board rooms. For the purpose of this walkdown, the entire plant area was divided into 51 areas, which included all three units of the plant and the open yard area.

In general, the cable tray and conduit raceway systems at BFN are well supported. Support installations consisted primarily of light steel strut-frame construction. Structural steel members such as tube steel and angle sections, and threaded rod hangers with and without lateral braces were also utilized. The strut hangers vary from the very simple single cantilever strut supporting one or more conduit to multiple-tier three-dimensional strut space frames supporting several conduit and cable trays. The conduit and cable trays are attached to the supports using standard tray and conduit-type clamps. The supports are attached to the structure using expansion anchors, or welded to structural steel or embedments. Supports can be found attached to the ceiling, walls, and floor.

The SCEs were cognizant of the seismic joints throughout the Reactor Building and considered the building displacements along with the support flexibility in determining the seismic adequacy of the raceway systems, including flexible conduit, and associated supports. However, it should be noted that the Reactor Building displacements at the floor elevations of interest are relatively small.

During the course of walkdown, raceway systems and associated supports not meeting the GIP requirements were identified and documented as outliers. In addition, many minor maintenance and housekeeping items were also identified and various Work Requests have been initiated to restore these conditions to their original designs. Summary of outliers is presented in Section 7.3. Furthermore, worst-case bounding samples were also selected for further evaluations based on the Limited Analytical Review guidelines as presented in the GIP. The selection of the worst-case bounding samples is discussed in Section 7.2.

7.2 EVALUATION OF BOUNDING SAMPLES

As part of the in-plant review, worst-case bounding samples of raceway supports were selected for further analytical review. The SCEs selected representative, worst-case bounding samples of the raceway supports based upon a thorough walkdown of the applicable areas. Bounding samples were selected to encompass the diversity and design attributes of the plant's raceway support systems using the SCEs experience and technical judgment.

Some of the characteristics used by the SCEs in establishing the worst-case bounding samples were:

- Most heavily loaded supports
- Unique support configuration or orientation
- High load to member size ratio
- High load to anchor bolt size ratio
- High load to span ratio

A total of 11 supports were selected for the Limited Analytical Review. Appendix I-1 provides a brief description of each selected sample.

7.3 SUMMARY OF OUTLIERS

The SCEs utilized the requirements of Section 8 of the GIP to check the raceway systems for compliance with the inclusion rules, other seismic performance concerns, and seismic interaction. The conditions that did not meet the requirements were identified as outliers.

In addition, the SCEs identified other installation configurations that may adversely affect the seismic performance of the raceway systems, which were not specifically discussed in the GIP. In particular, the distance between the Unistrut clamp and the free edge of the Unistrut channel were carefully evaluated. The concern is that if the distance is too small, the clamp may slide off the free end of the Unistrut channel.

A total of 120 outliers were identified during the conduit and cable tray raceway walkdown. Only 16 outliers needed modifications, the remaining outliers were either accepted based on further evaluations and/or analytical reviews, or resolved simply through initiating Work Requests. Appendix I-2 provides a listing of each outlier along with the respective resolution for the raceway systems evaluated.

8. PLAN AND SCHEDULE FOR UNRESOLVED OUTLIERS

A list of outliers identified during the screening walkdown and the respective resolution methods is presented in Appendix G for the mechanical and electrical SSEL equipment. Similarly, outliers and the respective resolution methods for tanks and heat exchangers, as well as cable tray and conduit raceway systems, are listed in Appendices H-2 and I-2, respectively. Any unresolved outliers, such as anchorage modifications, interaction issues, or housekeeping items, will be addressed in a timely manner.

Based on the current plan, all Design Change Notice (DCN) packages associated with the USI A-46 program resolution for BFN Units 2 and 3 are scheduled to be issued before the end of Fiscal Year 1996 (September 1996). Implementation of the design modifications will take place during the Cycle 7 Refueling Outage for Unit 3 and during the Cycle 9 Refuleing Outage for Unit 2.

9. SIGNIFICANT OR PROGRAMMATIC DEVIATIONS FROM THE GIP

No significant or programmatic deviations from the GIP have been made in the resolution of BFN Units 2 and 3 USI A-46 program.

10. THIRD-PARTY AUDIT SUMMARY

The Browns Ferry USI A-46 third-party audits were performed at various stages of the program. Dr. James J. Johnson and Mr. John O. Dizon of EQE International participated in the initial stage of the program (August 1994) to address specific procedural and programmatic issues relevant to BFN, and performed an independent review of the Unit 3 cable tray and conduit raceway evaluation completed by TVA. Subsequently in March 1995, Mr. Stephen Reichle of VECTRA Technologies performed a third-party audit of the Unit 2 SSEL. A final third-party audit was performed by Mr. Richard D. Cutsinger of TVA and Mr. Gregory S. Hardy of EQE international in January 1996 to review the overall A-46 program implementation. Personal qualifications of the auditors are summarized and included in Appendix J. The final third-party audit report is briefly summarized below. Audit reports and corresponding responses for the peer reviews conducted at various stages of the USI A-46 program at BFN are also included in Appendix J.

The USI A-46 program for the Browns Ferry Units 2 and 3 was found to have been conducted in a very thorough and competent manner. The auditors found that the effort is being performed in accordance with the guidance of the GIP. The results and findings from the program appear to be reasonable and are consistent with the expectations for plants of this vintage. A number of equipment and general housekeeping upgrades that have resulted in improved seismic ruggedness were also noted during the plant walk-through. This can be attributed to the various design upgrades that were performed as part of the recent Unit 2 restart and Unit 3 recovery programs at BFN.

Several questions were raised during the course of the audit regarding documentation and calculations pertaining to certain equipment caveats and anchorage attributes. Subsequent responses and justifications were provided to the reviewers addressing these questions.

11. REFERENCES

1. Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment. February 1992. Copyright Seismic Qualification Utility Group (SQUG), Revision 2, corrected February 14, 1992.

2. U.S. Nuclear Regulatory Commission. "Supplement No. 1 to Generic Letter (GL) 87-02 that Transmits Supplemental Safety Evaluation Report No. 2 (SSER No. 2) on SQUG Generic Implementation Procedure, Revision 2, as Corrected on February 14, 1992 (GIP-2)." May 22, 1992.

3. Electric Power Research Institute. "A Methodology for Assessment of Nuclear Power Plant Seismic Margin." EPRI NP-6041-SL, Revision 1. August 1991.

4. Letter from TVA (O.J. Zeringue) to NRC describing approach for the resolution of USI A-46 and the implementation of seismic IPEEE (Initial 120-day response to Supplement 1 of GL 87-02). R08 920921 671. September 21, 1992.

5. Letter from TVA (O.J. Zeringue) to NRC providing additional information on the approach for the resolution of USI A-46 and the implementation of seismic IPEEE. R08 930119 958. January 19, 1993.

6. Letter from NRC (F.J. Hebdon) to TVA (M.O. Medford) requesting clarification and additional information on TVA's initial 120-day response to Supplement 1 of GL 87-02. November 19, 1992.

7. Letter from NRC (F.J. Hebdon) to TVA (M.O. Medford) accepting TVA's approach for the resolution of USI A-46 at BFN. March 19, 1993.

8. Tennessee Valley Authority. "Browns Ferry Nuclear Plant Final Safety Analysis Report."

9. Tennessee Valley Authority. General Design Criteria No. BFN-50-C-7102, "Browns Ferry Nuclear Plant - Seismic Design."

10. Tennessee Valley Authority. DNE Calculation No. CD-Q0000-940339, "Basic Parameters for USI A-46 and Seismic IPEEE Programs at BFN."

11. Browns Ferry Nuclear Plant (BFN) - Unit 2 Mechanical Safe Shutdown Equipment List (SSEL) for USI A-46 and Seismic IPEEE. May 31, 1995. RIMS No. R92 950512 863.

12. Browns Ferry Nuclear Plant (BFN) - Unit 3 Mechanical Safe Shutdown Equipment List (SSEL) for USI A-46 and Seismic IPEEE. June 9, 1995. RIMS No. R92 950512 864.

13. Browns Ferry Nuclear Plant (BFN) - Units 2 and 3 Electrical Support Systems Safe Shutdown Equipment List (SSEL) for USI A-46 and Seismic IPEEE. QIR No. BFEBFN94058.

14. Tennessee Valley Authority (TVA). General Engineering Specification G-40, Installation, Modification, and Maintenance of Electrical Conduit Cable Trays, Boxes, Containment Electrical Penetrations, Electric Conductors Seal Assemblies, Lighting and Miscellaneous Systems, Revision 13.

15. Letter from NRC (J. F. Williams) to TVA (O. D. Kingsley, Jr.) accepting TVA's approach and criteria for the resolution of flexible conduit seismic issues at BFN. October 3, 1995.

APPENDIX A

SEISMIC REVIEW TEAM QUALIFICATIONS

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Richard D. Augustine
Degree:	B. S. Civil Engineering - 1979
Institution:	Colorado State University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	January 13 - 19, 1993 San Francisco, CA
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
15 years (see attached resume)	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Paul D. Baughman
Degree:	M. S. Civil Engineering - 1978
Institution:	Northeastern University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 9 - 13, 1992 Dallas, TX
Course:	Seismic IPE Add-on Training Course
Date and Location:	November 2 - 4, 1992 Cromwell, CT
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
26 years (see attached resume)	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Jerry W. Beason
Degree:	B. S. Civil Engineering - 1967
Institution:	University of Tennessee
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 9 - 13, 1992 Dallas, TX
Course:	Seismic IPE Add-on Training Course
Date and Location:	June 8 - 10, 1993 New Orleans, LA
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
28 years engineering experience	
26 years nuclear experience	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Farzin R. Beigi
Degree:	B. S. Civil Engineering - 1981
Institution:	San Francisco State University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	May 1993 New Orleans, LA
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
13 years (see attached resume)	
Licensed professional engineer:	Yes ☐ No ☑

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Jakub J. Betka
Degree:	M. S. Civil Engineering - 1952
Institution:	Warsaw Polytechnic - Warsaw, Poland
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course for Raceways
Date and Location:	June 14 - 16, 1994 Browns Ferry Site
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
15 years	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Brantley C. Buerger
Degree:	B. S. Civil Engineering - 1981
Institution:	University of Virginia
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	January 1994 Southport, NC
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
14 years (see attached resume)	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

**Tennessee Valley Authority
Browns Ferry Nuclear Plant**

Name:	James R. Disser
Degree:	B. S. Civil Engineering - 1980
Institution:	University of Michigan
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	January 1994 Southport, NC
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
15 years (see attached resume)	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	John O. Dizon
Degree:	M. S. Structural Engineering - 1975 Engineer Degree - 1977
Institution:	Stanford University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	January 13 - 19, 1993 San Francisco, CA
Course:	Seismic IPE Add-on Training Course
Date and Location:	October 13 - 15, 1992 Chicago, IL
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
18 years (see attached resume)	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team.

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Eric J. Frevold
Degree:	B. S. Mechanical Engineering - 1980
Institution:	University of Central Florida
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 1 - 5, 1993 Charlotte, NC
Course:	Seismic IPE Add-on Training Course
Date and Location:	December 6 - 8, 1993 Charlotte, NC
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
14 years	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Partha S. Ghosal
Degree:	M. S. Structural Engineering - 1982
Institution:	Illinois Institute of Technology
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	February 1 - 5, 1993 Denver, CO
Course:	Seismic IPE Add-on Training Course
Date and Location:	June 8 - 10, 1993 New Orleans, LA
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
24 years of experience in Structural Engineering	
17 years of experience in Earthquake Engineering applicable to nuclear plants	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Krystyn H. Gromek	
Degree:	M. S. Civil Engineering - 1977	B.S. Civil Engineering - 1971
Institution:	University of Tennessee	Michigan State University
	or:	
Equivalent:		
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:		
Course:	Walkdown Screening & Seismic Evaluation Training Course	
Date and Location:	February 1 - 5, 1993 Denver, CO	
Course:	Seismic IPE Add-on Training Course	
Date and Location:	June 8 - 10, 1993 New Orleans, LA	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:		
23 years of engineering experience		
14 years in Civil Design Group at BFN		
Licensed professional engineer: Yes ☑ No ☐		

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Syed S. Haider
Degree:	M. S. Civil Engineering - 1980
Institution:	Illinois Institute of Technology
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 9 - 13, 1992 Dallas, TX
Course:	Seismic IPE Add-on Training Course
Date and Location:	November, 1992 Dallas, TX
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
20 years of nuclear experience	
25 years of engineering experience	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team.

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Russell O. Jansen	
Degree:	B. S. Civil Engineering - 1974	M. S. Civil Engineering - 1983
Institution:	University of Maryland	University of Tennessee
	or:	
Equivalent:		
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:		
Course:	Walkdown Screening & Seismic Evaluation Training Course	
Date and Location:	February 28 - March 4, 1994 Denver, CO	
Course:	Seismic IPE Add-on Training Course	
Date and Location:	April 25 - 27, 1994 Denver, CO	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:		
12 years of seismic design experience at BFN		
Licensed professional engineer: Yes ☑ No ☐		

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Steven A. Locke
Degree:	B. S. Civil Engineering - 1980
Institution:	University of Tennessee
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	August 2 - 6, 1993 Boston, MA
Course:	Seismic IPE Add-on Training Course
Date and Location:	August 31 - September 2, 1993 Boston, MA
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
3 years in Nuclear Construction at Bellefonte	
11 years in Civil Design Group at Browns Ferry	
Licensed professional engineer:	Yes ☑ No ☐

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Jon E. McCord
Degree:	M. S. Mechanical Engineering - 1971
Institution:	University of Tennessee
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	February 28 - March 4, 1994 Denver, CO
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
23 years at TVA	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Cesar O. Pascua
Degree:	B. S. Civil Engineering - 1974
Institution:	FEATI University - Manila, Philippines
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	August 2 - 6, 1993 Boston, MA
Course:	Seismic IPE Add-on Training Course
Date and Location:	August 31 - September 2, 1993 Boston, MA
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
17 years of design engineering experience in piping, raceway, and HVAC supports	
for nuclear and fossil plants.	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Braulio M. Pedroso, Jr.
Degree:	B. S. Civil Engineering - 1968
Institution:	Central Philippine University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course for Raceways
Date and Location:	June 14 - 16, 1994 Browns Ferry Site
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
9 years	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Anand C. Relwani
Degree:	M. S. Civil Engineering - 1975
Institution:	Illinois Institute of Technology
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 9 - 13, 1992 Dallas, TX
Course:	Seismic IPE Add-on Training Course
Date and Location:	June 8 - 10, 1993 New Orleans, LA
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
15 years of nuclear experience	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Claude N. Simms
Degree:	B. S. Civil Engineering - 1968
Institution:	Tennessee Technological University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 1 - 5, 1993 Charlotte, NC
Course:	Seismic IPE Add-on Training Course
Date and Location:	December 6 - 8, 1993 Charlotte, NC
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
26 years of experience in structural engineering	
21 years of experience in nuclear plants	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Angel G. Tambora
Degree:	B. S. Mechanical Engineering - 1964
Institution:	Central Philippine University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 1 - 5, 1993 Charlotte, NC
Course:	Seismic IPE Add-on Training Course
Date and Location:	December 6 - 8, 1993 Charlotte, NC
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
More than 20 years of mechanical engineering experience	
6 years of experience at BFN	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Thurman G. Thaxton, Jr.
Degree:	B. S. Civil Engineering - 1966
Institution:	Tennessee Technological University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 1 - 5, 1993 Charlotte, NC
Course:	Seismic IPE Add-on Training Course
Date and Location:	December 6 - 8, 1993 Charlotte, NC
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
28 years of engineering experience	
23 years working on the design of nuclear plants	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	William T. White
Degree:	B. S. Civil Engineering - 1966
Institution:	University of Tennessee
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course for Raceways
Date and Location:	June 14 - 16, 1994 Browns Ferry Site
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
Over 20 years	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SYSTEMS ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	John D. McCamy
Degree:	B. S. Physics - 1994
Institution:	University of Alabama
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Equipment Selection and Relay Evaluation Training Course
Date and Location:	August 25 - 27, 1992 Washington, D.C.
Course:	
Date and Location:	
Number of years experience in engineering applicable to nuclear power plants and in systems or mechanical engineering:	
15 years of systems and operations experience in nuclear plants	
(see attached resume)	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SYSTEMS/RELAY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	David L. Moore	
Degree:	B. S. Physics - 1970	M. S. Structural Engineering - 1979
Institution:	University of Texas - Austin	University of Washington - Seattle
or:		
Equivalent:		
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:		
Course:	Safe Shutdown Equipment Selection and Relay Screening and	
	Evaluation Training Course	
Date and Location:	February 1996	Stockholm, Sweden
Course:		
Date and Location:		
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural, mechanical, or electrical engineering:		
More than 16 years experience in analyzing electrical and mechanical systems at nuclear power plants. Participated/guided systems selection and/or relay evaluations for nine plants.		
(see attached resume)		
Licensed professional engineer:	Yes ☐	No ☑

RESUME

LEAD RELAY REVIEWER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Malcolm L. Pyatt
Degree:	B. S. Electrical Engineering
Institution:	Florida Institute of Technology
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Equipment Selection and Relay Evaluation Training Course
Date and Location:	April, 1995 Washington, D.C.
Course:	
Date and Location:	
Number of years experience in electrical engineering applicable to nuclear power plants:	
25 years of experience	
10 years of nuclear experience	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SYSTEMS/RELAY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Marc C. Quilici
Degree:	B. S. Engineering
Institution:	Idaho State University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Equipment Selection and Relay Evaluation Training Course
Date and Location:	March 22 - 24, 1993 Rockville, Maryland
Course:	
Date and Location:	
Number of years experience in engineering applicable to nuclear power plants and in systems or mechanical engineering:	
16 years experience in systems engineering	
3 years experience in seismic relay evaluation and SSEL work	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SYSTEMS/RELAY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Thomas R. Roche
Degree:	B. S. Engineering - 1982
Institution:	California Polytechnic State University, San Luis Obispo
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Equipment Selection and Relay Evaluation Training Course
Date and Location:	March 27 - 29, 1990 Bethesda, Maryland
Course:	Walkdown Screening and Seismic Evaluation Training Course
Date and Location:	January 13 - 19, 1993 Irvine, California
Course:	Seismic IPE Add-On Training Course
Date and Location:	December 1 - 3, 1992 Dallas, Texas
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
12 years (see attached resume)	
Licensed professional engineer: Yes ☑ No ☐	

RICHARD D. AUGUSTINE

PROFESSIONAL HISTORY

EQE Incorporated, Stratham, New Hampshire, Principal Engineer, 1987-present
Impell Corporation, New York, New York, Project Engineer, 1986-1987
Cygna Energy Services, Boston, Massachusetts, Structural Engineer, 1985-1986
Butler Service Group, Charlotte, North Carolina, Structural Engineer, 1984-1985
Pullman-Higgins, Seabrook, New Hampshire, Field Engineer, 1983-1984
Butler Service Group, Braintree, Massachusetts, Design Engineer, 1981-1982
Bechtel Power Corporation, San Francisco, California, Design Engineer, 1980-1981

PROFESSIONAL EXPERIENCE

Mr. Augustine has 15 years of professional engineering experience consisting of project management and civil / structural design. He has performed new building design and analysis in addition to retrofits of existing structures, equipment seismic qualification and anchorage modification design, piping analysis, finite element analysis, and tank and heat exchanger review. He has also investigated structural damage at numerous industrial facilities following earthquakes which have occurred in North and Central America.

Mr. Augustine has been involved in projects relating to the EQE seismic experience data base. This experience has been used to seismically qualify electrical and mechanical equipment and nuclear-plant cranes. He has used his extensive knowledge of nuclear piping in conjunction with data base experience to perform piping qualification tasks and develop performance criteria. In addition he has been involved in organizing and updating the seismic experience data base.

As a principal engineer for EQE, Mr. Augustine has participated in the following projects:

- USI A-46 Task Leader at Indian Point Unit 2.
- Performed IPEEE/A-46 walkdowns as a Seismic Capability Engineer at the Browns Ferry 2 and 3, TMI, Savannah River, Oyster Creek, Calvert Cliffs 1 and 2, and Keonee facilities.
- Seismic review of relays, raceways, control panels, piping, and equipment in the K, L, and P reactors at the DOE Savannah River Plant.
- Project engineer for the seismic evaluation of Tritium handling systems at the DOE Princeton Plasma Physics Laboratory.
- Project lead for the seismic verification of the diesel air start system at the Ginna Nuclear Plant.
- Addition to existing facility for Fleet Bank.
- Column and framing design for residential housing.
- Seismic II/I interaction review at Browns Ferry Unit 2 and Salem Unit 1.

Before joining EQE, Mr. Augustine participated in the following projects:

- At the Pilgrim Nuclear Power Station, he was involved in the seismic requalification of the main fuel pool hoist and trolley.

- Also at the Pilgrim Station, he designed a reinforced concrete shield-wall to be placed on the operating floor of the turbine building

- At the Seabrook Nuclear Station, he was involved in reconciliation of ASME Class 1, 2, and 3 piping and pipe supports

- In a prior assignment at Seabrook, Mr. Augustine was the responsible field engineer for the installation of piping and supports in the diesel generator building

- At the Brunswick Steam Electric Plant, he worked in the engineering support group during refueling and plant modification outages performing engineering evaluations and modifications as required.

- At the McGuire Nuclear Station, he designed the supporting structure framework for the mainsteam, feedwater, and pressurizer piping systems

- With Bechtel, he supervised the simplified stress piping analysis group for the Susquehanna Nuclear project

EDUCATION

Colorado State University: B.S. Civil Engineering, 1979

REGISTRATIONS

Civil Engineer: New Hampshire
Structural Engineer: New Hampshire

PAUL D. BAUGHMAN

PROFESSIONAL HISTORY

EQE International, Stratham, New Hampshire, Associate, 1987-present
Cygna Energy Services, Boston, Massachusetts, Vice President, 1980-1987
Yankee Atomic Electric Company, Westboro, Massachusetts, Senior Structural Engineer, 1976-1980
Stone & Webster Engineering Corp., Boston, Massachusetts, Mechanical/Structural Engineer, 1969-1976

SUMMARY

Mr. Baughman has over 24 years of professional engineering and project management experience in the power and industry fields. He has held a wide variety of positions encompassing structural and mechanical design, safety and risk evaluations, and nuclear licensing.

PROFESSIONAL EXPERIENCE

Mr. Baughman leads structural engineering and evaluation programs, safety and reliability assessments, earthquake verification programs, and risk evaluations. He was Project Manager for the seismic IPEEE/A-46 projects at Indian Point 2, Three Mile Island, Oyster Creek and Calvert Cliffs Nuclear Power Plants.

Other project assignments have included the seismic review of the Kozloduy Nuclear Power Plant in Bulgaria, the Palo Verde Equipment Qualification Enhancement Program, the D.C. Cook Small Bore Piping Confirmation Program, the Salem II/I Interaction Program, the Virginia Power STERI Procedures Project, the Indian Point 2 Control Room Seismic Verification Baseline Project, the Tokamak Fusion Test Reactor Tritium Handling Systems Review, and the Darlington Station II/I Piping Review.

He has performed mechanical equipment seismic evaluations for Boston Edison, Maine Yankee, Public Service of New Hampshire, Consolidated Edison, Gulf States Utilities, Rochester Gas and Electric, Southern Electric International, Virginia Power, Ontario Hydro, Public Service Electric and Gas, and GPU Nuclear; electrical equipment evaluations for Vermont Yankee, Boston Edison, Maine Yankee, GPU Nuclear, Philadelphia Electric, Virginia Power, Rochester Gas and Electric, and Consolidated Edison; and piping evaluations for Vermont Yankee, Tennessee Valley Authority, Ontario Hydro, Princeton Plasma Physics Laboratory, Westinghouse Savannah River, Rochester Gas and Electric, Public Service Electric and Gas, Puerto Rico Electric Power Authority, American Electric Power, Northeast Utilities, and Mesquite Lake Resource Recovery Center.

He has performed seismic verifications of cable tray, conduit, instrument tubing, and ductwork for Princeton Plasma Physics Laboratory, Tennessee Valley Authority, Public Service of New Hampshire, Consolidated Edison, GPU Nuclear, and Rochester Gas and Electric.

PROFESSIONAL EXPERIENCE (Continued)

He has prepared procedures for seismic technical evaluation of replacement items (STERI) for Maine Yankee, GPU Nuclear and Virginia Power, and presented training in STERI and Equipment Verification at Virginia Power, GPU Nuclear and Rochester Gas and Electric.

He has carried out numerous structural engineering and design activities for nuclear power plants, fossil power plants, cogen facilities and commercial projects. Clients have included City of Boston, Hanscomb Air Force Base, Quincy City Hospital, Brocton Veterans Administration Medical Center, Boston Edison, Consolidated Edison, Northeast Utilities and Puerto Rico Electric Power Authority.

At Cygna Energy Services, Mr. Baughman managed structural and mechanical activities for the eastern United States. He directed technical activities at more than 30 nuclear plants, including seismic evaluations of critical structures, piping, and equipment. Assignments included failure modes and effects analysis (FMEA) for high energy piping at Seabrook Station, probabilistic risk evaluations of the reactor containment at Seabrook Station, and FMEA of spent fuel cask handling systems at Yankee Rowe. He also provided licensing consultation services related to structural and mechanical issues for Yankee Rowe, Vermont Yankee, Maine Yankee, Pilgrim, Millstone Units 1 and 2, Seabrook, Three Mile Island Unit 1, Davis-Besse, and R. E. Ginna.

While at Yankee Atomic, Mr. Baughman was responsible for many structural and mechanical issues, including seismic upgrade of structures and equipment, spent fuel pool modifications at Yankee Rowe, and spent fuel storage expansions at Vermont Yankee, Pilgrim, and Maine Yankee. Spent fuel pool modifications at Yankee Rowe required FMEA of the 75-ton overhead crane and evaluation of smaller cranes used during construction or operation. Spent fuel storage expansions required FMEA of the spent fuel storage pools, fuel handling systems, and movement of heavy loads near stored fuel. Mr. Baughman also performed a structural safety evaluation of the polar crane in the reactor containment at Maine Yankee. He was a member of the Nuclear Safety Audit and Review Committee for Maine Yankee.

With Stone & Webster, Mr. Baughman carried out a variety of design assignments on nuclear plants under construction in the Mechanical Analysis and Structural Mechanics groups, including containment design, building seismic analysis, generation of floor response spectra, and equipment seismic qualification.

EDUCATION

NORTHEASTERN UNIVERSITY: M.B.A., 1984
NORTHEASTERN UNIVERSITY: M.S. Civil Engineering, 1978
NORTHEASTERN UNIVERSITY: B.S. Civil Engineering, 1972

AFFILIATIONS

American Society of Civil Engineers
American Concrete Institute
American Society of Mechanical Engineers

REGISTRATION

Structural Engineer: Massachusetts
Structural Engineer: New Hampshire
Civil Engineer: New Hampshire

SELECTED PUBLICATIONS

"Seismic Qualification and STERI Guidelines." August 1993. Prepared for Arizona Public Service.

"Level 1 Seismic Technical Evaluation of Commercial Grade Replacement Items, Surry Power Station, North Anna Power Station." July 1991. Prepared for Virginia Power.

"Level 2 Seismic Technical Evaluation of Commercial Grade Replacement Items, Surry Power Station, North Anna Power Station." July 1991. Prepared for Virginia Power.

"Planning Report, Comparison of Methods for Responding to Seismic IPEEE for Pilgrim Nuclear Power Station." December 1990. Prepared for Boston Edison Company.

"Experience Data Methodology for Seismic evaluation of Alternative Commercial Grade Replacement Items (Level 1) for Oyster Creek and TMI Unit 1." June 1990. Prepared for GPU Nuclear.

"Management Report, Scoping Review for Resolution of Unresolved Safety Issue A-46, R.E. Ginna Nuclear Power Station." January 1990. Prepared for Rochester Gas and Electric Corporation.

With M. Aggarwal. 1989. "Seismic Evaluation of Piping Using Experience Data." ASME Pressure Vessels and Piping Conference, July 1989.

"Seismic Verification of Control Room Design Changes for Indian Point Unit 2." June 1989. Prepared for Consolidated Edison Company.

With H. Johnson, G. Hardy, and N. Horstman. 1989. "Use of Seismic Experience Data for Replacement and New Equipment." Second Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment, and Piping with Emphasis on Resolution of Seismic Issues in Low-seismicity Regions, May 1989.

With M. Aggarwal, S. Harris, and R. Campbell. 1989. "Seismic Evaluation of Piping Using Experience Data." Second Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment, and Piping with Emphasis on Resolution of Seismic Issues in Low-seismicity Regions, May 1989.

"Procedure for Seismic II/I Interaction Hazards Evaluation for Pilgrim Nuclear Power Station." January 1989. Prepared for Boston Edison Company.

"Seismic Evaluation of Tritium Handling System, Tokamak Fusion Test Reactor, Princeton Plasma Physics Laboratory." December 1988. Prepared for Burns and Roe.

SELECTED PUBLICATIONS (Continued)

"Generic Criteria for Seismic Evaluation of Piping at Darlington Nuclear Generating Station." March 1988. Prepared for Ontario Hydro.

"Seismic Evaluation of Non-safety Piping at Darlington Nuclear Generating Station Using Earthquake Experience Data." December 1987. Presented to the Atomic Energy Control Board of Canada.

"Procedure for Overview Walkdown for Seismic Interaction Hazards, Salem Nuclear Generating Station." November 1987. Prepared for Public Service Electric and Gas.

FARZIN R. BEIGI

PROFESSIONAL HISTORY

EQE International, San Francisco, California, Principal Engineer, 1990-Present
TENERA L.P., Berkeley, California, Structural Engineer, 1982-1990

PROFESSIONAL EXPERIENCE

Mr. Beigi has over thirteen years of professional structural and civil engineering experience. As a principal engineer for EQE's Engineering Consultants Division, Mr. Beigi provides consulting engineering services for civil, structural, and structural mechanics engineering solutions primarily for seismic evaluation projects.

Most recently, Mr. Beigi has been involved in development of design verification criteria for seismic adequacy of HVAC duct systems at Salem Nuclear Power Plant. He has performed field verification of as-installed HVAC systems and provided engineering evaluations documenting seismic adequacy of these systems, which included dynamic analyses of selected worst-case bounding samples.

Mr. Beigi has performed non-linear analysis of bridge cranes at DOE's Paducah Gaseous Diffusion Plant utilizing Drain-2Dx non-linear structural program.

Mr. Beigi has generated simplified models of structures for facilities at Los Alamos National Lab and Cooper Nuclear Station for use in development of building response spectra considering the effects of soil-structure-interactions.

Mr. Beigi has participated as a seismic capability engineer for resolution of A-46 issues and Seismic Margin Assessment at the Browns Ferry Nuclear Power Plant (TVA), Oconee Nuclear Plant (Duke Power Co.), Duane Arnold Energy Center (Iowa Electric Company), Calvert Cliffs Nuclear Power Plant (Baltimore Gas and Electric), and Robinson Nuclear Power Plant (Carolina Power & Light). He has performed extensive fragility studies of the equipment and components in the switchyard at the Oconee power plant.

Mr. Beigi has developed standards for design of distributive systems to be utilized in the new generation of Light Water Reactor (LWR) power plants. These standards are based on the seismic experience data base, testing results, and analytical methods.

Mr. Beigi managed EQE's on-site office at the Tennessee Valley Authority Watts Bar Nuclear Power Plant. His responsibilities included staff supervision and technical oversight for closure of seismic systems interaction issues in support of the Watts Bar start-up schedule. Interaction issues that related to qualification for Category I systems and components included seismic and thermal proximity issues, structural failure and falling of non-seismic Category I plant features, flexibility of systems crossing between adjacent building structures, and seismic-induced spray and flooding concerns. Mr. Beigi utilized seismic experience data coupled with analytical methods to address these seismic issues.

PROFESSIONAL EXPERIENCE (Continued)

As a project engineer, Mr. Beigi conducted the seismic qualification of electrical raceway supports at the Watts Bar Plant. The qualification method involved in-plant walkdown screening evaluations and bounding analysis of critical case samples. The acceptance criteria for the bounding analyses utilized ductility-based criteria to ensure consistent design margins. Mr. Beigi also provided conceptual design modifications and assisted in the assessment of the constructability of these modifications. Mr. Beigi utilized similar methods for qualification of all non-seismic Category I HVAC ducts and supports at Watts Bar, and assisted criteria and procedures development for HVAC ducting, cable trays, conduit and supports at the TVA Bellefonte nuclear power plant.

Mr. Beigi also has extensive experience utilizing finite element computer codes in performing design and analysis of heavy industrial structures, systems, and components in accordance with AISC and ACI structural design codes. At the Texas Utility Comanche Peak Nuclear Power Plant, Mr. Beigi administered and scheduled individuals to execute design reviews of cable tray supports; evaluated generic design criteria for the design and construction of nuclear power plant systems and components and authored engineering evaluations documenting these reviews. He performed various construction inspections, walkdowns, and as-builting at nuclear power plants.

Also, Mr. Beigi's engineering experience includes: analysis of reinforced concrete slabs and walls due to impactive loads; design and analysis of conduit and cable tray supports for earthquake loading; determination of the adequacy of reinforced concrete slabs and walls due to omission of reinforcing bars or improper cutting of bars; dynamic analysis of heavy steel structures; and design of seismic supports for tanks and other equipment at industrial facilities.

EDUCATION

SAN FRANCISCO STATE UNIVERSITY, San Francisco, CA: B.S. Civil Engineering, 1982

REGISTRATION

Engineer-in-Training: California
Certified as Seismic Capability Engineer for SQUG Seismic Evaluation Walkdowns

BRANTLEY C. BUERGER

PROFESSIONAL HISTORY

EQE International, Stratham, New Hampshire, Project Engineer, 1993-present
ABB Impell Corporation, Syracuse, New York, Supervisor - Engineering Mechanics Division, 1991-1992; 1988-1990
Senc Technical Services, Southport, North Carolina, Engineer, 1990-1991
Mielczarek Construction, Deerfield, Illinois, Carpenter, 1988
Gilbert Commonwealth (Tennessee Valley Authority), Engineer, 1986-1988
Duke Power Company, Charlotte, North Carolina, Engineer, 1981-1986

EXPERIENCE SUMMARY

Mr. Buerger has over 13 years of professional engineering experience as a structural engineer in the nuclear utility industry. participating in a wide range of projects. Currently, he is a Project Engineer for EQE's Engineering Consultants Division.

Mr. Buerger's experience includes:

- Seismic IPEEE/A46 implementation and outlier resolution
- Seismic Margins Assessments and Fragilities Development
- Piping Analysis
- Structural Steel Analysis and Design
- Reinforced Concrete and Masonry Analysis and Design
- Finite Element Qualification
- Major Building Design
- General Civil Projects

As a Project Engineer for EQE's Engineering Consultants, Mr. Buerger has been responsible for:

- IPEEE/A46 inspections and subsequent resolution of outliers
- Seismic Margins Assessments and the development of Seismic Fragilities for piping and structures
- MSIV leakage inspections and outlier resolutions
- STERI evaluations for replacement parts

PROFESSIONAL EXPERIENCE (Continued)

As Supervisor for the Engineering Mechanics Division at ABB Impell, Mr. Buerger provided the following services:

- Design and analysis of block walls
- Structural design and dynamic qualification of I&C performance monitoring equipment on diesel generators
- Analysis/failure evaluation of bound intake water head gate; subsequent requalification of all intake/discharge gates/hoists/ rigging
- Reportability evaluations and occurrence reports
- Systems Turnover Program for reload/restart
- Design and analysis of lead shielding, heavy equipment anchorages, and building steel modifications
- Implementation of the client's modification program with supporting 10CFR50.59 evaluations
- Authored procedures, specifications, and technical reports

For Senc Technical Services, Mr. Buerger provided the following:

- Extensive use of ALGOR SUPERSAP finite element analysis program for qualification of plate/shell structures; performed benchmark of same
- Formal training on Class 1 plate/shell design and analysis per ASME code, and on finite element modeling/theory/methods
- Analysis, design, and short-term structural integrity reviews of pipe supports and miscellaneous steel to support calculation reconciliation effort

For Gilbert Commonwealth, Mr. Buerger performed various engineering tasks at Browns Ferry and Sequoyah Nuclear Plants. Work included the following:

- Qualification of miscellaneous steel components for seismic loadings; performed detailed failure evaluation and subsequent redesign of upper drywell floor steel; identified errors in GTSTRUDL NF17 code check method of computing torsional stresses
- Seismic qualification and design of electrical conduit supports; extensive use of AISI code

For Duke Power Company, Mr. Buerger provided services at McGuire and Oconee Nuclear Stations that included:

- Seismic design of major addition to the Reactor Building. Two hundred (200) tons of steel and connections; included 150 ton bridge crane. Mat slab over caisson foundation.

PROFESSIONAL EXPERIENCE (Continued)

- Lead responsible for scope, schedule, and cost development on several major projects ($2 to 3 million range)
- Civil lead on analysis of turbine-generator foundation vibration
- IEB 79-14 design and analysis of pipe supports and misc. steel

EDUCATION

UNIVERSITY OF VIRGINIA, Charlottesville, VA: B.S. Civil Engineering, 1981

PROFESSIONAL REGISTRATIONS

Professional Engineer: Vermont (18-0006271)
Professional Engineer: Illinois (062-044370)
Professional Engineer: North Carolina (13321)

JAMES R. DISSER

PROFESSIONAL HISTORY

EQE International, Stratham, New Hampshire, Project Engineer, 1993-present
Mitchell, Jobe & Company, Dallas, Texas, Senior Engineer, 1992-1993
TU Electric, Glen Rose, Texas, Senior Engineer, 1987-1992
Stone & Webster Engineering Corporation, Engineering Supervisor, 1980-1987

PROFESSIONAL EXPERIENCE

Mr. Disser has over 14 years of experience in civil and structural engineering, earthquake engineering, field engineering, construction and project management. His responsibilities have included seismic design and analysis of nuclear power piping, piping support systems, cable tray, conduit and HVAC support systems; seismic qualification of equipment; analysis of structures and development of design criteria, design procedures, test procedures and construction specifications. He has also been active in the implementation of several USI A-46 projects, a major material condition upgrade program, various MSIV leakage path seismic evaluation projects and seismic margins evaluations. Mr. Disser has supervised engineering design teams and successfully managed a variety of engineering and test projects. Selected project accomplishments include the following:

- *USI A-46 Seismic Verification Program and IPEEE Seismic Margins Assessment for TVA Browns Ferry Units 2 and 3.* Seismic verification of BWR safe shutdown equipment using the Seismic Qualification Utilities Group (SQUG) Generic Implementation Procedure (GIP) and EPRI NP-6041 methodology. Performed walkdowns, anchorage calculations, outlier evaluations and HCLPF calculations. Participated in Safe Shutdown Equipment List (SSEL) evaluation to ensure completeness and development of the A-46 and IPEEE response spectra.

- *MSIV Leakage Path Seismic Verification Program for TVA Browns Ferry Unit 3.* Performed walkdowns and evaluation of piping, active valves and equipment in the BWR Main Steam Isolatiotion Valve leakage path boundary to the condenser using earthquake experience data and seismic margins evaluation criteria. Participated in identification of system boundary valves/equipment and production of the walkdown report.

- *MSIV Leakage Path Seismic Verification Program for CP&L Brunswick Nuclear Plant Unit 1.* Performed walkdowns and evaluation of piping, active valves and equipment in the BWR Main Steam Isolatiotion Valve leakage path boundary to the condenser using earthquake experience data and seismic margins evaluation criteria. Also performed calculations for the evaluation of the anchorage for the main turbine stop and control valves, the bypass valve chest and the main condenser. Outlier evaluations, analysis of the main steam drain supports and development and design of modifications were also performed. Participated in production of the walkdown report.

- *USI A-46 Seismic Verification Program and IPEEE Seismic Margins Assessment for CP&L Brunswick Nuclear Plant Units 1 and 2.* Seismic verification of BWR safe shutdown equipment using the GIP and EPRI NP-6041. Performed walkdowns, anchorage calculations, outlier evaluations and HCLPF calculations.

PROFESSIONAL EXPERIENCE (Continued)

Also performed the A-46 conduit and cable tray walkdowns, and selected the worst case representative samples for the Limited Analytical Review. Participated in completing the SVDS, and the final evaluation of outliers in preparation for the NRC submittal.

- *MSIV Leakage Path Seismic Verification Program for WPPSS WNP Unit 2.* Performed walkdowns and evaluation of piping, piping supports, active valves and equipment in the BWR Main Steam Isolatiotion Valve leakage path boundary to the condenser using earthquake experience data and seismic margins evaluation criteria. Prepared walkdown and outlier documentation. Provided recommendations for evaluation or modification of outliers. Participated in production of the walkdown report.

- *USI A-46 Seismic Verification Program and IPEEE Seismic Margins Assessment for Duke Power Oconee Units 1, 2 and 3.* Seismic verification of selected PWR safe shutdown equipment. The equipment involved was a subset of the SSEL which for the most part could not be seismically verified strictly by database comparison. The project scope included development of A-46 and IPEEE seismic floor response spectra for the areas involved, walkdowns of the equipment previously identified as problems by the utility, research into existing documentation, performance of anchorage calculations and resolution of outliers. Performed the outlier evaluation and A-46 verification by calculation of the CCW vertical deepwell pumps, and the A-46 and IPEEE verification by calculation of the anchorage for the steam turbine driven feedwater pumps. HCLPF calculations were performed for the CCW pumps. Walkdowns were performed using the GIP and EPRI NP-6041 methodology.

- *USI A-46 Seismic Verification Program and IPEEE Seismic Margins Assessment for Toledo Edison Davis-Besse Nuclear Plant.* Seismic verification of PWR safe shutdown equipment using the GIP and EPRI NP-6041 methodology. Performed walkdowns and anchorage calculations considering A-46 and IPEEE seismic response for a large group of mechanical and electrical equipment including the 4.16 kv switchgear.

- *USI A-46 Seismic Verification Program and IPEEE Seismic Margins Assessment for GPU Oyster Creek Nuclear Generating Station.* Seismic verification of BWR safe shutdown equipment using the SQUG Generic Implementation Procedure and EPRI NP-6041 methodology. Performed walkdowns, anchorage calculations and outlier evaluations considering A-46 and IPEEE seismic response for a large group of electrical and mechanical equipment including the station's RHR Service Water Pumps. Lead Walkdown Engineer for the A-46 Cable Tray and Conduit walkdowns. Selected the worst case bounding samples and performed the calculations for the Raceway Limited Analytical Review.

- *USI A-46 Seismic Verification Program for CP&L Robinson Nuclear Plant.* Walkdown Engineer for the A-46 Cable Tray and Conduit Walkdown. Performed walkdowns, selected cases for the bounding sample and reviewed the calculations for the conduit and cable tray Limited Analytical Review. Also reviewed SSEL equipment anchorage calculations.

- *MSIV Leakage Path Seismic Verification Program for PP&L Susquehanna Unit 2.* Performed walkdowns and evaluation of piping, active valves and equipment

PROFESSIONAL EXPERIENCE (Continued)

in the BWR Main Steam Isolatiotion Valve leakage path boundary to the condenser using earthquake experience data and seismic margins evaluation criteria. Prepared walkdown and outlier documentation. Provided recommendations for evaluation or modification of outliers.

- *MSIV Leakage Path Seismic Verification Program for Iowa Electric Duane Arnold Energy Center.* Prepared and reviewed load path calculations for the main steam drain support system and anchorage calculations for the SJAEs and other equipment included in the MSIV steam leakage boundary in support of the effort to seismically qualify the drain path piping using seismic margins evaluation criteria.

- *Material Condition Upgrade Program at CP&L Brunswick Nuclear Plant Units 1 and 2.* Provided engineering resolutions to ensure short-term structural integrity (STSI) for a wide variety of plant equipment, including structural elements of the plant buildings, suspended systems, and mechanical and electrical equipment. STSI resolutions were provided using established plant short-term acceptance criteria; accepted USI A-46 methodology; and/or other sound, short-term engineering qualification methods. Performed in-plant walkdowns to identify potential material condition deficiencies; research of design documentation related to the identified concerns; evaluation of the structural condition, production, review, and design verification of supporting calculations; initiation and design of any modifications to support the STSI resolutions; and engineering support of construction or maintenance crews in the installation of the modifications. The project was also responsible for follow-up engineering to provide long-term qualification of the STSI resolutions within the Plant Design Basis. This included additional engineering work and/or plant modifications for long-term qualification of the equipment and commodities involved. The project's STSI and long-term resolutions qualified the equipment and commodities for operational, seismic, and postulated accident conditions as required by the Plant's current Design Basis. Also performed the STSI seismic qualification evaluation for the BNP vertical deepwell Service Water pumps and the long term seismic qualification for the replacement vertical deepwell Service Water Pumps.

- *Unit 2 Construction Completion Project for TU Electric Comanche Peak Steam Electric Station.* TU Electric Unit 2 Civil/Structural, Engineering Mechanics, and Suspended Support Systems Engineering Manager. Provided oversight and management of the A/E performing engineering services for CPSES Unit 2 for the civil, structural, engineering mechanics, seismic equipment qualification, protective coatings, HVAC supports, conduit and conduit supports, cable tray and cable tray supports, instrumentation tubing and supports, non-ASME piping and support, pipe rupture and commodity clearance disciplines. Also oversaw and managed the subcontractor performing the CPSES Unit 2 Seismic Category II/I Adequacy Evaluation. Reviewed and approved budgets; provided technical management of the architect/engineer and subcontractor; conducted detailed technical assessments of the contractors' products and programs; reviewed and approved design criteria and process procedures; and was responsible for interface with project management, construction, startup, Quality Assurance (QA)/Quality Control (QC), CPSES Unit 1, and the NRC.

- *TU Electric CPSES Unit 2 Reactor Containment Structural Integrity Test (SIT) Milestone Project.* Project Manager of the SIT. Responsible for all aspects of the

PROFESSIONAL EXPERIENCE (Continued)

Unit 2 SIT and directed all related activities performed by the Civil/Structural Engineer, Startup, and Construction. Developed the schedule and budget; revised the engineering specification; wrote and obtained approval of the test procedures; directed pre-test preparations, engineering and startup test activities and the restoration of the Containment building after completion of the test; reviewed and approved the SIT test report; and was responsible for coordination with personnel associated with the concurrently conducted Integrated Leakage Rate Test. Also performed the Volume Calculations for the Containment Integrated Leakage Rate Test.

- *TU Electric CPSES Unit 2 Construction Restart Estimating Project.* Member of the project group that developed the engineering baseline scope, man-hour estimate, and budget for the Unit 2 Completion Project that preceded restart of CPSES Unit 2 engineering activities in 1990. Responsibilities included Project Lead Engineer for development of the baseline scope for the ASME and non-ASME piping and supports analysis scope, the Unit 2 Seismic Category II/I Adequacy Evaluation; project member for preparation of the baseline scope for the civil/structural, engineering mechanics, mechanical systems, and NSSS Engineering scopes of work; preparation of the technical requirements and workscope sections of the contracts; and member of the committees charged with selection of the ASME Pipe Stress and Supports A/E and the Civil Structural A/E.

- *TU Electric CPSES Unit 2 in Unit 1 Seismic Evaluation Project.* TU Electric Project Manager for the seismic evaluation of incomplete Unit 2 construction in Unit 1 areas in support of the Unit 1 operating license. The project performed walkdowns of the Unit 2/Unit 1 common areas, documented seismically inadequate incomplete construction, performed engineering evaluations and recommended hardware resolutions to ensure seismic integrity or removal of inadequate partial installations.

- *TU Electric CPSES Seismic Evaluation of Non-Seismic and Seismic Category II Piping in Seismic Category I Areas Program.* Lead Engineer for the engineering group performing the seismic qualification of the piping and supports evaluated in this program. Performed detailed seismic analysis of piping systems selected as bounding samples during walkdowns performed in all seismic areas of the plant. The walkdown program and qualifying calculations were reviewed in detail by the NRC, which eventually accepted the program as justification for closure of one of the major issues that delayed the issuance of the CPSES operating license.

- *TU Electric CPSES Balance of Plant Piping Completion Project.* Performed analysis of non-seismic piping and designed their support systems in support of the construction completion of CPSES. Also performed analysis in support of modifications to structures, ASME piping and seismic suspended systems in TU Electric Operations custody.

- *Comanche Peak Review Team (CPRT) QA/QC Review of TU Electric Comanche Peak Steam Electric Station.* Engineer in the CPRT Mechanical Safety Significance Evaluation Group. Performed evaluations of deviation reports generated as a result of inspections for construction deviations from design requirements. The evaluations determined the safety significance of the deviations through research into design requirements in effect during the construction phase of Comanche Peak Unit 1. Analyzed the design and

PROFESSIONAL EXPERIENCE (Continued)

construction evolution of the deviating item and performed calculations, as required, to determine the effects of the deviation on the integrity of the item.

- *Duquesne Light Company Beaver Valley Nuclear Power Station Unit 2 Project.* Engineering Supervisor responsible for final qualification of pipe stress calculations in support of the BVPS-2 ASME III N-5 Certification Program. Responsibilities included preparation and independent review of the final stress calculations for ASME III Class 2 and 3 piping. Also performed analysis and calculation reviews for ASME buried piping.

  Site Engineering Supervisor responsible for special tasks related to pipe and duct supports including maintenance of the pipe and duct support installation specifications, resolution of construction problems, disposition of nonconformances, development and implementation of backfit construction and inspection programs, resolution of NRC Infractions and Open Items related to pipe supports, resolution of vendor problems, and supervision of all pipe support engineering activities of the Site Engineering Group. Also responsible for engineering evaluation of deviations documented in the Commodity Clearance Program.

  Engineering/Design Supervisor responsible for pipe support engineering and design activities in the home office for the BV-2 Project. Responsibilities included redesign of supports in support of construction, support of licensing activities related to pipe supports, engineering support of the site instrumentation tubing stress analysis and support group, design support of the stress reconciliation program, and general pipe support engineering support of the Site Engineering Group, Toronto and New York offices. Developed and implemented project design criteria for piping, tubing and supports.

  Site Engineering/Design Supervisor responsible for pipe, duct, and instrumentation tubing support engineering activities at the BV-2 site. Responsible for technical direction and supervision of all BV-2 site assigned Engineering Mechanics Division support engineers and all design personnel engaged in the instrumentation tubing stress analysis and support design effort. Also developed field construction procedures and installation specifications for supports, provided generic resolution of construction problems with support installations, and was responsible for interface with NRC personnel during site inspections.

- *Final Safety Analysis Report (FSAR) Development Project for Duquesne Light Company Beaver Valley Nuclear Power Station Unit 2.* Lead Engineer for a project group responsible for writing and developing the BV-2 FSAR sections related to Civil/Structural and Engineering Mechanics plant design. Also responsible for technical review of BV-2 resolutions to licensing issues (NRC infractions, open items, etc.).

- *Shoreham Nuclear Power Station Project for Long Island Lighting Company.* Performed ASME III Class 1 pipe stress analysis.

EDUCATION

University of Michigan: B.S. Civil Engineering, 1980

TRAINING

Seismic Qualification Utility Group Walkdown Screening and Seismic Evaluation Training , January, 1994

AFFILIATIONS

Past Utility Representative, ASME Section IX Subgroup for Repairs and Replacements
Past Alternate Member, NCIG-14, Seismic Evaluation and Design of Small Bore Piping Advisory Group

PUBLICATIONS

With T. Roche, C. Abou-Jaoude, and J. P. Conoscente. "Comparison Between Analytical and Test Results for Transformer Base Details." ASME Pressure Vessel and Piping Conference, Seismic Engineering, July 1993.

JOHN O. DIZON

PROFESSIONAL HISTORY

EQE International, San Francisco, California, Associate and Group Manager, 1986-present
Engineering Decision Analysis Company, Cupertino, California, Project Engineer, 1984-1986
General Electric Company, San Jose, California, Senior Engineer, 1984
URS/John A. Blume & Associates, San Francisco, California, Senior Engineer, 1982-1984; Associate Engineer, 1977-1980
Structural Systems Engineering, Inc., Lafayette, California, Senior Engineer, 1980-1982
Stanford University, John A. Blume Earthquake Engineering Center, Palo Alto, California, Teaching and Research Assistant, 1975-1977

PROFESSIONAL EXPERIENCE

Mr. Dizon has over 18 years of experience in the field of civil and structural engineering, earthquake engineering and project management. He has extensive knowledge in the areas of seismic analyses and design assessments of primary structures and piping systems, seismic qualification of mechanical and electrical systems and components, and technical development of seismic evaluation criteria and programs. As a Group Manager for EQE's San Francisco Engineering Operations, he has taken primary responsibility for the technical development of several seismic evaluation programs. These include acting as Group Manager for evaluating essential systems and components at the Savannah River Site; Project Manager for the USI A-46 and seismic IPEEE programs at Davis-Besse and Browns Ferry nuclear plants; developing alternate analysis criteria for Category I small bore piping at the Donald C. Cook plant; alternate design criteria for Category I(L) piping at Sequoyah and Bellefonte nuclear plants and alternate design and evaluation criteria for Category I HVAC duct systems and supports at Browns Ferry and Salem nuclear plants; and providing guidance to the seismic equipment qualification program for the Plutonium Handling Facility at Lawrence Livermore National Laboratory.

As Project Manager for the A-46/IPEEE programs at Browns Ferry and Davis-Beese plants, Mr. Dizon is responsible for the resolution of USI A-46 using the SQUG GIP methodology, and IPEEE using the EPRI seismic margins assessment methodology. He is also involved in the outlier resolution and equipment fragility evaluation for Duane Arnold and H.B. Robinson plants. Mr. Dizon served as Project Manager for the II/I spray program at Browns Ferry Nuclear Plant and has participated in the Integrated Interaction Program (IIP) at Watts Bar Nuclear Plant. As Group Manager for EQE at the Savannah River Site, Mr. Dizon was responsible for the seismic verification program of safety-related mechanical and electrical systems and components. His tasks included developing seismic evaluation criteria and procedures for restart and long-term seismic programs, consistent with the SQUG Generic Implementation Procedure for use in USI A-46 plants; managing the seismic walkdown and evaluation efforts; providing

PROFESSIONAL EXPERIENCE (Continued)

technical support in resolving seismic issues; and serving as an interface with the client. Mr. Dizon also acted as one of the instructors for the SQUG GIP training course given at the Savannah River Site and recently at the OKG plant in Sweden. Mr. Dizon has participated in the seismic evaluation of the High Flux Isotope Reactor at Oak Ridge National Laboratory. This project involved performing seismic analyses and upgrades for the primary coolant piping system and related equipment, and the reactor and control buildings. He was responsible for the raceway evaluation program for Browns Ferry Nuclear Plant, Cooper Nuclear Station, and H. B. Robinson 2, and participated in the seismic piping reevaluation programs for Sequoyah Nuclear Plant and Comanche Peak Nuclear Plant where he performed plant walkdowns and pipe stress analyses for piping systems.

At EDAC, Mr. Dizon was responsible for the development and verification of a pipe support optimization program (OPTPIPE). He was responsible for the snubber reduction pilot program for La Salle Unit 1. Other areas of his involvement consisted of finite element analyses of the MX-missile launch tube components and systems for thermal and pressure loads, equipment qualification of major mechanical and electrical components, and seismic evaluation of cooling towers for the Vermont Yankee plant.

With General Electric Company, Mr. Dizon was responsible for stress analysis and code conformation of main steam and recirculation piping systems for BWR power plants. He was also involved in the developmental phase of an in-house pipe support optimization program.

At URS/Blume & Associates, Mr. Dizon was responsible for the development and maintenance of in-house computer programs for both linear and nonlinear analyses of structural and piping systems. He was also involved in the seismic analysis and evaluation of the reactor, turbine and administration buildings for Nine Mile Point 2. He helped develop a soil-structure interaction computer program using a three-dimensional finite element technique to evaluate the dynamic response of structures due to arbitrary plane body and surface wave excitations. He performed a research study involving soil-structure interaction analysis using the finite element FLUSH program to investigate the dynamic response of typical containment structures due to underground blast excitations. He was also involved in the linear and nonlinear dynamic analyses, finite element modeling, and generation of floor response spectra for the containment and turbine buildings at the Diablo Canyon Nuclear Power Plant.

Mr. Dizon worked as a consultant to Bechtel Power Corporation with Structural Systems Engineering, Inc. He performed structural analyses and design assessments of the primary containment structure and the reactor/control buildings of Limerick Generating Station for various types of hydrodynamic loads. He was involved in the Limerick in-plant test procedures, data reduction and correlation study to determine the dynamic response, including soil-structure interaction of the reactor/control buildings during Mark II hydrodynamic load actuation in the primary containment.

At Stanford University, Mr. Dizon performed statistical analyses of earthquake accelerograms and various response parameters, as part of his research work under Professor Haresh Shah. He also conducted seismic risk analyses and formulated seismic design criteria for Nicaragua. In addition, he was involved in the dynamic testing of structural models and equipment.

EDUCATION

STANFORD UNIVERSITY, Palo Alto, California: Engineer Degree, 1977
STANFORD UNIVERSITY, Palo Alto, California: M.S. Structural Engineering, 1975
MAPUA INSTITUTE OF TECHNOLOGY, Manila, Philippines: B.S. Civil Engineering, 1973

AFFILIATIONS AND AWARDS

Earthquake Engineering Research Institute, Member
Philippine Board Examination for Civil Engineers, Fifth Place, 1973
Philippine Association of Civil Engineers, Certificate of Merit, 1974

REGISTRATION

California: Civil Engineer
Philippines: Civil Engineer

PUBLICATIONS

With F. R. Beigi. 1995. "Application of Seismic Experience Based Criteria for Safety Related HVAC Duct System Evaluation." Fifth DOE Natural Phenomena Hazards Mitigation Symposium, Denver, Colorado, November 13-14, 1995.

With S. J. Eder, J. F. Giova, and R. L. Koch. 1994. "Seismic Adequacy Verification of HVAC Duct Systems and Supports for an USI A-46 Nuclear Power Plant." Fifth Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment and Piping, Orlando, Florida, December 14-16, 1994.

With E. J. Frevold and P. D. Osborne. 1993. "Seismic Qualification of Safety-related HVAC Duct Systems and Supports." ASME Pressure Vessel and Piping Division Conference, Denver, Colorado, July 1993.

With S. J. Eder. 1991. "Advancement in Design Standards for Raceway Supports and Its Applicability to Piping Systems." ASME Pressure Vessel and Piping Division Conference, San Diego, California, June 1991.

With R. D. Campbell and L. W. Tiong. 1990. "Response Predictions for Piping Systems Which Have Experienced Strong Motion Earthquakes." ASME Pressure Vessel and Piping Conference, Nashville, Tennessee, June 17-21, 1990.

With S. P. Harris, R. S. Hashimoto, and R. L. Stover. 1989. "Seismic, High Wind, and Probabilistic Risk Assessments of the High Flux Isotope Reactor." Second DOE Natural Phenomena Hazards Mitigation Conference.

With D. Ray and A. Kabir. 1979. "A 3-D Seismic Analysis for Arbitrary Plane Body and Surface Wave Excitations." American Society of Civil Engineers Nuclear Specialty Conference, Boston, Massachusetts.

With D. Ray and A. Zebarjadian. 1978. "Dynamic Response of Surface and Embedded Disk Foundations for SH, SV, P and Rayleigh Wave Excitations." Sixth Indian Symposium on Earthquake Engineering, Roorkee, India.

PUBLICATIONS (Continued)

"A Statistical Analysis of Earthquake Acclerograms and Response Parameters." 1977. Thesis, Stanford University, Palo Alto, California,

With H. Shah, T. Zsutty, H. Krawinkler, and L. Padilla. 1977. "A Seismic Design Procedure for Nicaragua." Paper presented at the Sixth World Conference on Earthquake Engineering, New Delhi, India.

With H. Shah, T. Zsutty, H. Krawinkler, C. P. Mortgat, and A. Kiremidjian. 1976. "A Study of Seismic Risk for Nicaragua, Part II, Summary and Commentary." John A. Blume Earthquake Engineering Center, Report No. 12A and 12B. Stanford University, Palo Alto, California.

DAVID L. MOORE

PROFESSIONAL HISTORY

EQE International, Senior Consultant, 1995-Present
NUS, a Division of HALLIBURTON NUS Corporation, 1989-1994
EI International, Inc., 1981-1988
Oceanographic Institute of Washington, 1977-1981

PROFESSIONAL EXPERIENCE

As Senior Associate, has technical responsibilities for safety analysis and risk assessment projects. Responsibilities include management of risk assessment manpower and resources, direction of PRA methods and software development, and coordination with clients on technical/administrative items. Has developed particular expertise in issue prioritization, facility siting, seismic, fire, and external events analysis; relay chatter systems analysis; and in application of PRA techniques to plant licensing and severe accident issues, design and operation.

As Project Manager for the PSE&G external events risk assessment (IPEEE), is responsible for all tasks of the seismic and fire PRAs for the Salem (PWR) and Hope Creek (BWR) units. Seismic equipment lists are developed based on EPRI procedures and the internal events PRA, considering all potential success paths. The EPRI Seismic Margins Assessment procedures are used for the seismic walkdowns, with computerized checklists (SEWS) and databases. Seismic relay evaluations follow SQUG and Seismic Margins approaches to identify low ruggedness relays, and evaluate impacts of potential relay chatter. Fire walkdowns and analysis follow the FIVE and fire PRA methods developed by NUMARC. The evaluations examine both Level 1 (systems and core damage) and Level 2 (severe accident) issues. Project involves extensive technology transfer with utility staff, including formal training in all tasks, written procedures, seminars, integrated software, and hands-on training.

Task Leader for the Consolidated Edison seismic PRA for Indian Point 2, leader of the A-46 SSEL verification task, and consultant to relay chatter evaluation task. Project includes utilizing current IPE models to develop seismic PRA model, combined walkdowns for both A-46 and IPEEE requirements, and IPEEE and A-46 documentation to meet NRC requirements. Relay chatter evaluation included development of plant-specific screening techniques to optimize effort among chatter evaluation phases.

Consultant for the IPEEE program for Southern California Edison, including seismic PRA, FIVE/fire PRA, and evaluation of other external events. Responsibilities include planning the IPEEE project and interfaces with contractors and plant staff, development of procedures for tasks, guidance and training on all IPEEE tasks, review of work packages, assistance with documentation, and identification/resolution on problem issues. The Seismic Equipment List and Seismic Relay List were developed in accordance with plant-specific procedures, and walkdowns are being performed using the SQUG/Seismic Margins SEWS. Relay chatter evaluation, due to high potential accelerations, has enhanced procedures for systems assessments and operator action evaluations. The fire analysis is using FIVE as the overall guide, with plant-specific procedures for the conditional core damage frequency calculations using modified internal events models.

PROFESSIONAL EXPERIENCE (Continued)

Project Manager for the Callaway Seismic Margins Assessment using the EPRI approach, with overall responsibility for project guidance, schedule, and subcontractor coordination. Worked with plant staff to select success paths, and to develop SSEL. Performed seismic systems walkdown and assisted with seismic capacity walkdowns. Reviewed all technical documentation as well as assist with external correspondence and peer review comment resolution. Reviewed relay assessment and revised to address all NRC issues and concerns.

Consultant for the seismic hazard evaluation and potential impacts of the Independence coal-fired power plant in Arkansas. Reviewed previous study that indicated need for multi-million dollar retrofits, and provided comments on conservatisms in the seismic hazard evaluation, and in the damage estimates. Provided second opinion to plant risk managers on the prioritization of potential seismic modifications.

Senior Consultant for Level 2 severe accident issues for the Callaway PRA. Responsibilities include training, guidance, performance and review of all containment performance tasks. This includes Level 1/Level 2 interface analysis, containment capacity analysis, containment event tree analysis, severe accident deterministic analysis (MAAP), and source term binning analysis. Sensitivity studies were used to examine severe accident issues such as hydrogen generation and combustion, direct containment heating, steam explosions, equipment operability, in-vessel and debris bed cooling, containment bypass, and operator recovery actions.

As Project Manager for the Borssele Shutdown Risk Assessment for a Netherlands utility, responsible for development and application of new techniques for assessing safety of plant systems and operations during periods of shutdown and transitions. Project is phased to provide early screening of risk significant plant features, operator actions, and initiators, with second phase for detailed quantitative assessment. Project also includes incorporation of potential operator errors of commission during full power operations and emergencies.

Project Manager for the Borssele PSA for a Netherlands utility. The PSA was in response to regulatory requirement, and was performed to U.S. IPE and international IAEA standards. Directed all Level 1 tasks, and performed Level 2/Severe Accident tasks for Level 1/2 integration and containment event tree/source term category analysis. Also task leader and walkdown leader for external events analyses, including seismic, fire, and flooding, which were included in the scope. Seismic walkdown used EPRI seismic margins screening guidelines. Project results received very favorable reviews from IAEA IPERS review group, and is being used extensively by plant staff in plant modifications, tech spec enhancements, and procedural upgrades.

As Project Manager, developed and applied techniques for extending the concept of seismic high confidence of a low probability of failure (HCLPF) to plant damage states. Also evaluated impacts of nonseismic failures, system successes, and operator errors on seismic risk estimates. Project included evaluation of both PWR and BWR seismic margins analyses, and walkdowns of Hatch during EPRI trial seismic margins assessment. Draft NUREG is referenced as the acceptable methodology for IPEEE seismic margins assessments. Provided results and guidance during NRC/NUMARC meetings on seismic IPEEE.

PROFESSIONAL EXPERIENCE (Continued)

Served as Project Manager for systems analysis task of Seismic Margins Program. Program involved development and use of fault and event tree techniques to model trial plant (Maine Yankee) earthquake response; performance of two seismic walkdowns of plant; and application of a high-confidence-of-a-low-probability-of-failure (HCLPF) approach to evaluate seismic adequacy. An effective resolution to a licensing action was also evolved, and testimony was presented before ACRS.

As Program Manager, Task Leader, and Senior Quality Assurance Reviewer, provided overall management for Salem and Hope Creek level-1 PRAs. Developed QA Manual and implemented QA procedures for the PRA; directed analysis of seismic risk, which included systems analysis, determination of hazard characteristics, and fragility analysis; and directed development of module for cost-benefit evaluation of potential hardware and procedural modifications.

Served as Principal Investigator for several Industry Degraded Core Rulemaking (IDCOR) Program tasks, including reevaluation of current reactor risk based on IDCOR Program and MAAP code results, development of containment event trees, and calculation of risk reduction potential of changes in reactor design and operations for four plants based on current understanding of accident sequence phenomenology; seismic, fire, and flood contributions; containment failure phenomenology; and fission product transport. Also participated in numerous NRC Severe Accident Rulemaking meetings and proceedings.

Served as PRA Program Manager, and Task Leader for analysis of external events (e.g., earthquakes, fires, floods, hurricanes, aircraft impacts) for Brunswick PRA. Analysis included screening of external events to develop a plant risk profile, as well as more detailed analysis of risks of seismic events and internal fires and floods. Presented results to NRC's staff in support of Technical Specification relaxation and licensing design changes.

Performed vertical slice review of auxiliary feedwater system design, construction, and operation for Temelin (VVER 1000) plant. Review concentrated on interfaces between Russian NSSS design, AE design of balance of plant, and utility construction/operation.. AFW selected as typical safety system, with interfaces to support systems such as power, actuation, and cooling, and to BOP systems such as main feedwater and main steam relief system. Evaluation included all U.S. NRC Standard Review Plan criteria, and current European design practice.

Served as Management Consultant for a PRA of Loviisa plant, a Finnish PWR with Soviet-supplied NSSS and ice condenser containment. Activities included event tree development, success criteria definition, integration of system fault tree analysis, data development, and technical consultation for PRA team analytical tasks.

Conducted numerous PRA courses for utilities (e.g., OPPD, NYPA, KCB, Union Electric, PSE&G, CP&L, and WPSC), EPRI, and NRC. Courses covered PRA fundamentals, probability and reliability concepts, event and fault tree techniques, accident sequence quantification, external events, seismic margins walkdowns, dependent failures, human reliability, accident process and containment response, consequence analysis, and application of PRA results to licensing, plant modification evaluation, and severe accident issues.

PROFESSIONAL EXPERIENCE (Continued)

Reviewed Petition for Variance for Calcined Solids Storage Facility at INEL for DOE. Evaluated techniques, assumptions, and results, and provided comments for incorporation.

For SNL and DOE, developed and applied a technique combining PRA with decision analysis methods to evaluate benefits of alternative designs of nuclear facilities. Task involved an evaluation of safety benefits of new policies and regulations for nuclear plants.

Performed safety analysis and licensing evaluation of reactor coolant system high-point vent designs for PWRs, and containment isolation systems of Westinghouse and Combustion Engineering commercial nuclear power plants. Work included determination of system success and acceptance criteria, development of review procedures, review of instrumentation and control features, evaluation of system design features and emergency operating procedures, and documentation of evaluation in Technical Evaluation Reports (TERs) to NRC branches.

Performed seismic walkdown and evaluation of GE Nuclear Fuels Facility for HAZOP study. Used EPRI seismic margins walkdown guidelines to assess and screen seismic capacity of structures and components. Potential vulnerabilities of facility were identified, and prioritized using HAZOP risk matrix incorporating health risks, facility operation risks, and frequency of occurrence.

For SNL, served as Project Manager for performance of a PRA of a PWR with an ice condenser containment as part of Severe Accident Rulemaking process. Tasks included methodology development, initiator selection, event and fault tree development, human reliability analysis, data base estimation, sequence quantification, uncertainty and sensitivity assessment, and plant damage state definition.

Surveyed use of PRA techniques for assessment of nuclear facility safety. Evaluated benefits and problems of past large-scale PRAs, examined state-of-the-art PRA procedures, and outlined current and future applications of PRA methods to reactor safety evaluation.

Modeled and assessed risks of fire, explosion, and oil spill for large petroleum import facilities and for LNG terminals; evaluated port and vessel characteristics for risk of collisions and groundings, hence casualties; and developed methods for incorporating subjective information on seismic risk in PRAs to facilitate design, construction, and siting decisions.

EDUCATION

University of Washington, M.S., Civil/Structural Engineering Department, 1979
University of Texas, B.S., Physics, 1970

PUBLICATIONS

Enhancing the NRC and EPRI Seismic Margin Review Methodologies to Analyze the Importance of Non-Seismic Failures, Human Errors, Opportunities for Recovery, and Large Radiological Releases (co-author), NUREG/CR-draft for publication.

PUBLICATIONS (Continued)

Review of External Event Hazards (co-author), prepared for GE Nuclear Fuels Facility, July 1992.

Probabilistic Safety Assessment for the Borssele NPP - for Power Conditions (co-author), PSAB-C-FR-1, 5 volumes and Appendices A-K, Consortium KCB-PSA, March 1992.

"Experience with the PSA-Borssele" (co-author), in International Symposium on the Use of Probabilistic Safety Assessment for Operational Safety, PSA '91, Vienna, Austria, 3-7 June 1991.

"Recent PRA Applications" (co-author), paper for Second Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment and Piping, Orlando, Florida, December 7-9, 1988.

Salem Units 1 and 2 Probabilistic Risk Assessment (co-author), prepared for Public Service Electric & Gas of New Jersey, October 1988.

Kewaunee Nuclear Power Plant Auxiliary Feedwater System Probabilistic Risk Assessment (co-author), prepared for Wisconsin Public Service Corporation, October 1987.

Brunswick Steam Electric Plant Probabilistic Risk Assessment (co-author), prepared for Carolina Power & Light, September 1987.

"Seismic Margin Reviews of Nuclear Power Plants: Identification of Important Functions and Systems" (co-author), *Reliability and System Safety* 20 (1988) 263-275, and also Transactions of the 9th International Conference on Structural Mechanics in Reactor Technology, Lausanne, Switzerland, 17-21 August 1987.

Seismic Margin Review of the Maine Yankee Atomic Power Station (co-author), NUREG/CR-4826, Volume 2, March 1987.

Extending a HCLPF-Based Seismic Margin Review to Analyze the Potential for Large Radiological Releases and the Importance of Human Factors and Non-Seismic Failures (co-author), Future Resources Associates, Berkeley, CA, March 1987.

Analysis of Core Damage Frequency From Internal Events: Sequoyah, Unit 1 (co-author), NUREG/CR-4550/Volume 5, February 1987.

Risk Reduction Potential (co-author), IDCOR Technical Report 21.1, June 1985.

"Risk Reduction Modifications" (co-author), *Proceedings, International Meeting on Light Water Reactor Severe Accident Evaluation*, Cambridge, Mass., August 28 - September 1, 1983.

Risk Significance Profile for ESF and Other Equipment (co-author), IDCOR Technical Report 6.1, November 1983.

Baseline Risk Profile for Current Generation Plants (co-author), IDCOR Technical Report 7.1, May 1983.

PUBLICATIONS (Continued)

Study to Assess the Potential Uses of Cost/Benefit Techniques (co-author), Sandia National Laboratories, ALO-1018, May 1983.

THOMAS R. ROCHE

PROFESSIONAL HISTORY

EQE International, Inc., Irvine, California, Technical Manager, 1987-present
Bechtel Western Power Corporation, Arizona Nuclear Power Project, Principal Startup Engineer, 1983-1987
Bechtel Western Power Corporation, Norwalk, California, Mechanical Engineer, 1982-1983

SUMMARY

Mr. Roche has over twelve years of experience in the design, engineering, startup and analysis of systems and equipment at power, industrial and Department of Energy facilities. His responsibilities have included evaluation and analysis of systems and equipment for seismic events, preoperational testing of nuclear power plant systems, system engineer for nuclear and non-nuclear power plant systems, equipment qualification and post earthquake investigations.

PROFESSIONAL EXPERIENCE

At EQE Mr. Roche is a Technical Manager and Group Manager in the Engineering Consultants Division. He is responsible for various seismic evaluation efforts for systems and equipment. The efforts involve development of criteria, analysis, field investigations and retrofit design. Systems and components evaluated include mechanical, electrical, instrumentation, control, raceway and piping systems.

Mr. Roche is responsible for seismic evaluation efforts related to Nuclear Regulatory Commission Unresolved Safety Issue A-46 and Individual Plant Examination of External Events (IPEEE) for nuclear facilities. He is the Project Manager for A-46 and seismic IPEEE programs for the Brunswick, H.B. Robinson, Shearon Harris and Comanche Peak power plants. In this capacity, he evaluates the performance of equipment, subsystems and relays for design basis as well as beyond design basis seismic events. He also participated in related programs for the Beznau, Limerick, San Onofre and Donald C. Cook nuclear power plants as well as the Department of Energy Advance Test Reactor and Savannah River Site.

Recently, Mr. Roche has focused on the performance of lifelines and industrial facilities during the 1994 Northridge earthquake. Investigations were performed to gain a better understanding of the performance of industrial facilities and electrical power systems in order to help mitigate the effects of future earthquakes. He was a Principal Investigator for post-earthquake reconnaissance efforts sponsored by the Electric Power Research Institute (EPRI), Lawrence Livermore National Laboratory (LLNL), and the National Earthquake Hazards Reduction Program (NEHRP). He was the industrial facilities Group Coordinator for Earthquake Engineering Research Institute (EERI) post-earthquake reconnaissance publications. He also contributed sections on industrial facilities and lifelines to reports published by the National Center for Earthquake Engineering Research (NCEER), and the California Seismic Safety Commission.

Mr. Roche has performed and supervised the startup of nuclear power plant systems and equipment, including mechanical, electrical, instrumentation and control systems. In this capacity, Mr. Roche successfully supervised the testing and commissioning of Palo Verde Nuclear Generating Station emergency cooling water and related systems.

PROFESSIONAL EXPERIENCE (Continued)

Mr. Roche evaluated the performance of non-seismically designed piping and condensers in past earthquakes in support of the Main Steam Isolation Valve Leakage Closure Committee of the boiling water reactor (BWR) Owners' Group. This study involved research and field investigations of secondary side systems and equipment during past earthquakes and comparison to nuclear power BWR plants. He analyzed the seismic capacity to seismic demand for large steam surface condensers for earthquake experience database power plants and representative BWR plants. He participated in Nuclear Regulatory Commission (NRC) presentations related to this issue.

Mr. Roche has contributed to the development of the earthquake experience data base generated for the Seismic Qualification Utilities Group (SQUG). He concentrates on the response of systems to earthquakes at power and industrial facilities. Systems are investigated for the effects of power interruption, relay actuations due to vibration, relay actuations due to system transients, spurious electrical and pneumatic signals, and control room alarms. He performed post-earthquake investigations following the 1987 Whittier Narrows, the 1987 Superstition Hills, the 1989 Loma Prieta, and the 1994 Northridge Earthquakes. This seismic experience data is being utilized by the nuclear industry to resolve the seismic issues associated with the NRC's Unresolved Safety Issue A-46.

Mr. Roche was the systems engineer for safety and non-safety systems at the Palo Verde Nuclear Generating Station. Systems included feedwater, steam, sulfuric acid, hypochlorite, cooling water and emergency core cooling. He resolved design and hardware problems encountered during construction, startup and operation of Palo Verde Units 1, 2 and 3. He provided revised designs, dispositions to nonconformances and resolved licensing issues.

Mr. Roche performed high energy line break analysis for San Onofre Nuclear Generating Station Unit 1. Analysis involved establishing guidelines, field verifications, calculations, system evaluation for safe shutdown and technical writing. Mr. Roche also administered contracts for replacement of emergency cooling water storage tanks for unit 1, conducted studies for upgrading San Onofre Units 2 and 3 water cooling supply to reactor coolant pumps and provided engineering for system modifications.

EDUCATION

CALIFORNIA POLYTECHNIC STATE UNIVERSITY, San Luis Obispo, B.S., 1982
UNIVERSITY OF CALIFORNIA, Irvine, "Management Practice for Engineers and Professionals," University Extension Program

REGISTRATION

Mechanical Engineer: California

RELATED TRAINING

Completed the Seismic Qualification Utility Group (SQUG) "Systems and Relay Evaluation Course"

Completed the Seismic Qualification Utility Group (SQUG) "Walkdown Screening and Seismic Evaluation Training Course"

Completed the EPRI "Add-on Seismic IPE Training Course"

JOHN D. McCAMY

PROFESSIONAL HISTORY

Tennessee Valley Authority, Tennessee, 1980-present: Safety Analysis Manager, Browns Ferry Nuclear Plant, 1994-present; NSSS Engineering Specialist, Browns Ferry Nuclear Plant, 1989-1994; Nuclear Evaluator, Chattanooga, 1987-1989; Project Manager, Sequoyah Nuclear Plant, 1985-1987; Lead Engineer, Sequoyah Nuclear Plant, 1982-1985; Quality Assurance Engineer, Chattanooga, 1980-1982
United States Navy, Officer, 1975-1980

SUMMARY

Mr. McCamy has over 20 years experience in the nuclear industry as an engineer and manager. Acted as a manager for several multi-million dollar projects (including Appendix R, Generic Letter 89-10 [MOVs], and IPE/IPEEE). He obtained STA certification at Sequoyah and SRO license at Browns Ferry Nuclear Plants.

PROFESSIONAL EXPERIENCE

Mr. McCamy manages the production effort of mechanical/nuclear design activities and makes recommendations on problem resolution associated with accident analyses. He provides oversight of design activities and manages activities necessary to ensure an effective and efficient safety analysis program. He provides emergency engineering support for continued plant operation. He provides technical expertise on plant systems, design bases, operational configurations and evaluations affecting nuclear safety, and interpretations of safety system functions to satisfy 10 CFR 50.49 and 50.59.

He has managed the successful completion of design aspects of the environmental qualification and GL 89-10 upgrades for Unit 3 MOVs, Appendix R project, IPE and IPEEE design studies at Browns Ferry Nuclear Plant. He completed SRO training and obtained an SRO license.

He served on a special management team which conducts reviews of activities and programs associated with the design, construction, operation, and support of TVA nuclear plants.

He was responsible for the successful completion of the Appendix R project at Sequoyah Nuclear Plant, including both design and modification; he also provided technical and engineering expertise for all primary and secondary systems, in addition to overall responsibility for the ASME Section XI program at the plant.

As a Quality Assurance Engineer, he reviewed plant activities and documentation to ensure compliance with NRC regulations, technical specifications, and industry codes and standards.

EDUCATION

UNIVERSITY OF ALABAMA: B.S. Physics, 1994

AFFILIATIONS

American Nuclear Society
American Physical Society
Commander, United States Naval Reserve

CERTIFICATION AND LICENSES

Shift Technical Advisor, Sequoyah Nuclear Plant, 1982
Senior Reactor Operator, Browns Ferry Nuclear Plant, 1991

APPENDIX B

COMPOSITE SSEL

APPENDIX B

COMPOSITE SSEL

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers~~)~~ as defined by Ref. 1). 6/21/96

J.D. McClamy / Safety Analysis Mgr. | [signature] | 6/21/96
Print or type name/Title | Signature | Date

Signature attests to correct mechanical SSEL only

R.H. Wright / Elec Engr. | [signature] | 6-21-96
Print or type name/Title | Signature | Date

R.H. Wright Signature attests to correct electrical/SSEL only

| N/A |
Print or type name/Title | Signature | Date

| N/A |
Print or type name/Title | Signature | Date

| N/A |
Print or type name/Title | Signature | Date

| N/A |
Print or type name/Title | Signature | Date

APPENDIX B

COMPOSITE SSEL

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
1	00	2-HCU-85,1-185	CRD\HYDRAULIC CONTROL UNIT	U2 RB	565	P-S/R9&13	AI	1,2
2	07	2-FCV-85-82A	CRD\WEST SDV VENT VALVE	U2 RB	565	R9/S	AI	1
3	07	2-FCV-85-82	CRD\WEST SDV VENT VALVE	U2 RB	565	S/R9	AI	2
4	07	2-FCV-85-37C	CRD\WEST SDV DRAIN VALVE	U2 RB	565	P/R9	AI	1
5	07	2-FCV-85-37D	CRD\WEST SDV DRAIN VALVE	U2 RB	565	P/R9	AI	2
6	07	2-FCV-85-83A	CRD\EAST SDV VENT VALVE	U2 RB	565	S/R13	AI	1
7	07	2-FCV-85-83	CRD\EAST SDV VENT VALVE	U2 RB	565	R13/S	AI	2
8	07	2-FCV-85-37E	CRD\EAST SDV DRAIN VALVE	U2 RB	565	P/R13	AI	1
9	07	2-FCV-85-37F	CRD\EAST SDV DRAIN VALVE	U2 RB	565	R13/P	AI	2
10	21	2-TNK-85-901	CRD\WEST SCRAM INSTRUMENT VOLUME	U2 RB	565	P/R9	AI	1,2
11	21	2-TNK-85-902	CRD\EAST SCRAM INSTRUMENT VOLUME	U2 RB	565	P/R13	AI	1,2
12	08B	2-FSV-85-37A	CRD\SCRAM DUMP VALVE	U2 RB	565	R12/N	AI	1
13	08B	2-FSV-85-37B	CRD\SCRAM DUMP VALVE	U2 RB	565	R12/N	AI	1
14	08B	2-FSV-85-35A	CRD\BACKUP SCRAM VALVE	U2 RB	565	R12/N	AI	2
15	08B	2-FSV-85-35B	CRD\BACKUP SCRAM VALVE	U2 RB	565	R12/N	AI	2
16	20	2-HS-99-5A/S3A	RPS\REACTOR MANUAL SCRAM CHANNEL A3	U2 CB	617	U2 MCR	AI	1
17	20	2-HS-99-5A/S3B	RPS\REACTOR MANUAL SCRAM CHANNEL B3	U2 CB	617	U2 MCR	AI	1
18	20	2-HS-99-5A-S1	RPS\REACTOR MODE SWITCH	U2 CB	617	U2 MCR	AI	2
1001	08A	2-FCV-74-1	RHR/PUMP 2A SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SW CORNER	AI	1
1002	08A	2-FCV-74-2	RHR/PUMP 2A SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SW CORNER	AI	1
1003	08A	2-FCV-74-96	RHR/UNIT 2 TO UNIT 1 RHR X-TIE ISOLATION VALVE	U2 RB	519	SW CORNER	AI	1
1004	06	2-PMP-74-5	RHR/PUMP 2A	U2 RB	519	SW CORNER	AI	1
1005	R	2-CKV-74-560A	RHR/PUMP 2A MINIMUM FLOW CHECK VALVE	U2 RB	519		AI	1
1006	08A	2-FCV-74-7	RHR/PUMP 2A&2C MINIMUM FLOW VALVE	U2 RB	519	SW CORNER	AI	1
1007	R	2-CKV-71-547	RCIC/RCIC MINIMUM FLOW CHECK VALVE	U2 RB			AI	1
1008	R	2-CKV-74-559A	RHR/PUMP 2A DISCHARGE CHECK VALVE	U2 RB	519		AI	1
1009	21	2-HEX-74-900A	RHR/HEAT EXCHANGER 2A	U2 RB	565	SW HX	AI	1
1010	08A	2-FCV-74-100	RHR/U2 TO U1 RHR DISCHARGE X-TIE ISOLATION VALVE	U2 RB	565	R8/T	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
1011	08A	2-FCV-74-12	RHR/PUMP 2C SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SW CORNER	AI	1A
1012	08A	2-FCV-74-13	RHR/PUMP 2C SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SE CORNER	AI	1A
1013	08A	2-FCV-74-97	RHR/UNIT 2 TO UNIT 1 RHR X-TIE ISOLATION VALVE	U2 RB	519	SW CORNER	AI	1A
1014	06	2-PMP-74-16	RHR/PUMP 2C	U2 RB	519	SW CORNER	AI	1A
1015	R	2-CKV-74-560C	RHR/PUMP 2C MINIMUM FLOW CHECK VALVE	U2 RB	519		AI	1A
1016	R	2-CKV-74-559C	RHR/PUMP 2C DISCHARGE CHECK VALVE	U2 RB	519		AI	1A
1017	21	2-HEX-74-900C	RHR/HEAT EXCHANGER 2C	U2 RB	565	SW HX	AI	1A
1018	18	2-FI-74-50	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	AI	1
1019	18	2-FI-74-56	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	AI	1
1020	08A	2-FCV-74-57	RHR/LOOP I TORUS CONTAINMENT COOLING/SPRAY VALVE	U2 RB	519	R9/S	AI	1
1021	08A	2-FCV-74-59	RHR/LOOP I SUPRESSION POOL COOLING VALVE	U2 RB	519	R9/S	AI	1
1022	08A	2-FCV-74-58	RHR/LOOP I SUPRESSION POOL SPRAY VALVE	U2 RB	519	R9/R	I	1
1023	08A	2-FCV-74-52	RHR/LOOP I OUTBOARD INJECTION VALVE	U2 RB	565	T/R11	AI	1
1024	08A	2-FCV-74-53	RHR/LOOP I INBOARD INJECTION VALVE	U2 RB	565	T/R11	AI	1
1025	R	2-FCV-74-54	RHR/LOOP I TESTABLE CHECK VALVE	U2 DW			AI	1
1026	08A	2-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U2 RB	621	R10/S	AI	1
1027	08A	2-FCV-74-60	RHR/LOOP I OUTBOARD DRYWELL SPRAY VALVE	U2 RB	565	R9/S	AI	1
1028	08A	2-FCV-74-61	RHR/LOOP I INBOARD DRYWELL SPRAY VALVE	U2 RB	565	R9/S	I	1
1029	08A	2-FCV-74-24	RHR/PUMP 2B SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SE CORNER	AI	2
1030	08A	2-FCV-74-25	RHR/PUMP 2B SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SE CORNER	AI	2
1031	08A	2-FCV-74-98	RHR/UNIT 2 TO UNIT 3 RHR X-TIE ISOLATION VALVE	U2 RB	519	SE CORNER	AI	2
1032	06	2-PMP-74-28	RHR/PUMP 2B	U2 RB	519	SE CORNER	AI	2
1033	R	2-CKV-74-560B	RHR/PUMP 2B MINIMUM FLOW CHECK VALVE	U2 RB	519		AI	2
1034	08A	2-FCV-74-30	RHR/PUMP 2B&2D MINIMUM FLOW VALVE	U2 RB	519	SE CORNER	AI	2
1035	R	2-CKV-73-559	HPCI/HPCI PUMP MINIMUM FLOW CHECK VALVE	U2 RB			AI	2
1036	R	2-CKV-74-559B	RHR/PUMP 2B DISCHARGE CHECK VALVE	U2 RB	519		AI	2
1037	21	2-HEX-74-900B	RHR/HEAT EXCHANGER 2B	U2 RB	565	SE HX	AI	2
1038	08A	2-FCV-74-101	RHR/U2 TO U3 RHR DISCHARGE X-TIE ISOLATION VALVE	U2 RB	565	R13/T	AI	2
1039	08A	2-FCV-74-35	RHR/PUMP 2D SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SE CORNER	AI	2A
1040	08A	2-FCV-74-36	RHR/PUMP 2D SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SE CORNER	AI	2A
1041	08A	2-FCV-74-99	RHR/UNIT 2 TO UNIT 3 RHR X-TIE ISOLATION VALVE	U2 RB	519	SE CORNER	AI	2A
1042	06	2-PMP-74-39	RHR/PUMP 2D	U2 RB	519	SE CORNER	AI	2A
1043	R	2-CKV-74-560D	RHR/PUMP 2D MINIMUM FLOW CHECK VALVE	U2 RB	519		AI	2A

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
1044	R	2-CKV-74-559D	RHR/PUMP 2D DISCHARGE CHECK VALVE	U2 RB	519		AI	2A
1045	21	2-HEX-74-900D	RHR/HEAT EXCHANGER 2D	U2 RB	565	SE HX	AI	2A
1046	18	2-FI-74-64	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	AI	2
1047	18	2-FI-74-70	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	AI	2
1048	08A	2-FCV-74-71	RHR/LOOP II TORUS CONTAINMENT COOLING/SPRAY VALVE	U2 RB	519	R13/S	AI	2
1049	08A	2-FCV-74-73	RHR/LOOP II SUPRESSION POOL COOLING VALVE	U2 RB	519	R13/R	AI	2
1050	08A	2-FCV-74-72	RHR/LOOP II SUPRESSION POOL SPRAY VALVE	U2 RB	519	R13/R	I	2
1051	08A	2-FCV-74-66	RHR/LOOP II OUTBOARD INJECTION VALVE	U2 RB	565	T/R11	AI	2
1052	08A	2-FCV-74-67	RHR/LOOP II INBOARD INJECTION VALVE	U2 RB	565	T/R11	AI	2
1053	R	2-FCV-74-68	RHR/LOOP II TESTABLE CHECK VALVE	U2 DW			AI	2
1054	08A	2-FCV-74-74	RHR/LOOP II OUTBOARD DRYWELL SPRAY VALVE	U2 RB	593	R12/S	AI	2
1055	08A	2-FCV-74-75	RHR/LOOP II INBOARD DRYWELL SPRAY VALVE	U2 RB	593	R12/S	I	2
1056	08B	2-FSV-43-50	PASS LIQUID SAMPLE VALVE	U2 RB	565	S/R8	AI	1
2000	07	2-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2001	R	2-CKV-10-506	RVVD/MSRV 1-4 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2002	R	2-CKV-10-521	RVVD/MSRV 1-4 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2003	07	2-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2004	R	2-CKV-10-507	RVVD/MSRV 1-5 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2005	R	2-CKV-10-522	RVVD/MSRV 1-5 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2006	07	2-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2007	R	2-CKV-10-508	RVVD/MSRV 1-18 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2008	R	2-CKV-10-523	RVVD/MSRV 1-18 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2009	07	2-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2010	R	2-CKV-10-509	RVVD/MSRV 1-19 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2011	R	2-CKV-10-524	RVVD/MSRV 1-19 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2012	07	2-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2013	R	2-CKV-10-510	RVVD/MSRV 1-22 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2014	R	2-CKV-10-525	RVVD/MSRV 1-22 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2015	07	2-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2016	R	2-CKV-10-511	RVVD/MSRV 1-23 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2017	R	2-CKV-10-526	RVVD/MSRV 1-23 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2018	07	2-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2019	R	2-CKV-10-519	RVVD/MSRV 1-179 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
2020	R	2-CKV-10-532	RVVD/MSRV 1-179 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2021	07	2-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	2
2022	R	2-CKV-10-512	RVVD/MSRV 1-30 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2023	R	2-CKV-10-527	RVVD/MSRV 1-30 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2024	07	2-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	2
2025	R	2-CKV-10-513	RVVD/MSRV 1-31 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2026	R	2-CKV-10-528	RVVD/MSRV 1-31 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2027	07	2-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	2
2028	R	2-CKV-10-514	RVVD/MSRV 1-34 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2029	R	2-CKV-10-529	RVVD/MSRV 1-34 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2030	07	2-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	2
2031	R	2-CKV-10-515	RVVD/MSRV 1-41 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2032	R	2-CKV-10-530	RVVD/MSRV 1-41 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2033	07	2-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	2
2034	R	2-CKV-10-516	RVVD/MSRV 1-42 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2035	R	2-CKV-10-531	RVVD/MSRV 1-42 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2036	07	2-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	2
2037	R	2-CKV-10-520	RVVD/MSRV 1-180 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2038	R	2-CKV-10-533	RVVD/MSRV 1-180 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
3001	07	2-FCV-1-14	MSIV "A" INBOARD ISOLATION VALVE	U2 DW	563	DW	AI	1
3002	07	2-FCV-1-15	MSIV "A" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	AI	2
3003	07	2-FCV-1-26	MSIV "B" INBOARD ISOLATION VALVE	U2 DW	563	DW	AI	1
3004	07	2-FCV-1-27	MSIV "B" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	AI	2
3005	07	2-FCV-1-37	MSIV "C" INBOARD ISOLATION VALVE	U2 DW	563	DW	AI	1
3006	07	2-FCV-1-38	MSIV "C" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	AI	2
3007	07	2-FCV-1-51	MSIV "D" INBOARD ISOLATION VALVE	U2 DW	563	DW	AI	1
3008	07	2-FCV-1-52	MSIV "D" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	AI	2
3009	08A	2-FCV-1-55	MAIN STEAM LINE DRAIN ISOLATION VALVE	U2 DW	563	DW	AI	1
3010	R	2-CKV-3-558	FEEDWATER "A" INBOARD ISOLATION VALVE	U2 DW			AI	1
3011	R	2-CKV-3-554	FEEDWATER "A" OUTBOARD ISOLATION VALVE	U2 RB			AI	2
3012	R	2-CKV-3-572	FEEDWATER "B" INBOARD ISOLATION VALVE	U2 DW			AI	1
3013	R	2-CKV-3-568	FEEDWATER "B" OUTBOARD ISOLATION VALVE	U2 RB			AI	2
3014	07	2-FCV-32-63	DRYWELL CONTROL AIR SUCTION VALVE	U2 RB	565	R11/T	I	1,2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
3015	07	2-FCV-64-17	CONTAINMENT VENTILATION ISOLATION VALVE	U2 RB	565	R12/T	I	1,2
3016	07	2-FCV-64-30	CONTAINMENT VENTILATION ISOLATION VALVE	U2 RB	621	R12/Q	I	1,2
3017	07	2-FCV-64-33	CONTAINMENT VENTILATION ISOLATION VALVE	U2 RB	565	R9/P	I	1,2
3018	07	2-FCV-64-139	CONTAINMENT DW DP ISOLATION VALVE	U2 RB	565	R9/P	I	1,2
3019	07	2-FCV-64-140	CONTAINMENT DW DP ISOLATION VALVE	U2 RB	565	R9/P	I	1,2
3020	07	2-FCV-64-28A	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3021	07	2-FCV-64-28B	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3022	07	2-FCV-64-28C	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3023	07	2-FCV-64-28D	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3024	07	2-FCV-64-28E	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3025	07	2-FCV-64-28F	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3026	07	2-FCV-64-28G	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3027	07	2-FCV-64-28H	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3028	07	2-FCV-64-28J	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3029	07	2-FCV-64-28K	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3030	07	2-FCV-64-28L	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3031	07	2-FCV-64-28M	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3032	07	2-FCV-64-222	HARDENED WETWELL VENT	U2 RB	565	R10/T	I	1,2
3033	08A	2-FCV-69-1	RWCU INBOARD ISOLATION VALVE	U2 DW	584	DW	AI	1
3034	08A	2-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U2 RB	593	R10/S	AI	2
3035	R	2-CKV-69-630	RWCU SYSTEM RETURN CHECK VALVE	U2 RB			AI	2
3036	08A	2-FCV-70-47	RBCCW DRYWELL RETURN VALVE	U2 RB	519	Q/R13	I	1,2
3037	R	2-CKV-70-506	RBCCW DRYWELL SUPPLY CHECK VALVE	U2 RB			I	1,2
3038	08A	2-FCV-71-2	RCIC INBOARD ISOLATION VALVE	U2 DW	584	DW	AI	1
3039	08A	2-FCV-71-3	RCIC OUTBOARD ISOLATION VALVE	U2 RB	565	MSIV VAULT	AI	2
3040	08A	2-FCV-71-18	RCIC OUTBOARD SUCTION VALVE	U2 RB	519	NW CORNER	I	1,2
3041	08A	2-FCV-73-2	HPCI STEAM SUPPLY ISOLATION VALVE	U2 DW	563	DW	AI	1
3042	08A	2-FCV-73-3	HPCI STEAM SUPPLY ISOLATION VALVE	U2 RB	519	TORUS	AI	2
3043	08A	2-FCV-73-81	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	U2 RB	519	TORUS	AI	2
3044	08A	2-FCV-73-27	HPCI OUTBOARD SUCTION VALVE	U2 RB	519	HPCI	I	1,2
3045	07	2-FCV-75-57	PSC PUMP SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	AI	1
3046	07	2-FCV-75-58	PSC PUMP SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	AI	2
3047	07	2-FCV-76-17	CONTAINMENT INERTING N2 MAKEUP	U2 RB	565	R12/T	I	1,2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
3048	07	2-FCV-76-24	PRIMARY CONTAINMENT ISOLATION VALVE	U2 RB	565	R12/T	I	1,2
3049	07	2-FCV-77-2B	DRYWELL FLOOR DRAIN SUMP DISCHARGE	U2 RB	519	TORUS	I	1,2
3050	07	2-FCV-77-15B	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE	U2 RB	519	TORUS	I	1,2
3051	07	2-FCV-84-19	CAD ISOLATION VALVE	U2 RB	621	R12/Q	I	1,2
3052	07	2-FCV-84-20	CAD ISOLATION VALVE	U2 RB	621	R12/Q	I	1,2
3053	20	2-LI-3-58A	RPV LEVEL INSTRUMENT	N/A	N/A	N/A	AI	1
3054	20	2-LI-3-58B	RPV LEVEL INSTRUMENT	N/A	N/A	N/A	AI	2
3055	20	2-PI-3-74A	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	AI	1
3056	20	2-PI-3-74B	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	AI	2
3057	20	2-XR-64-159	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	AI	1
3058	20	2-LI-64-159A	TORUS LEVEL INSTRUMENT	N/A	N/A	N/A	AI	2
3059	20	2-TI-64-161	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	AI	1
3060	20	2-TI-64-162	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	AI	2
3061	20	2-PI-64-67B	DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	I	1
3062	20	2-PI-64-160A	DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	I	2
3063	20	2-TI-64-52AB	DRYWELL TEMPERATURE INSTRUMENT	N/A	N/A	N/A	I	1
3064	20	2-XR-64-50	DRYWELL TEMPERATURE AND PRESSURE DEVICE	N/A	N/A	N/A	I	2
3065	20	2-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U2 MCR	AI	1
3066	20	2-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U2 MCR	AI	2
4001	06	0-PMP-23-85	RHRSW PUMP A3	INTAKE	565	A	AI	1
4002	R	0-CKV-23-588	RHRSW PMP A3 DISCHARGE CHECK VALVE	INTAKE	565		AI	1
4003	00	0-STN-67-925	A EECW PUMP DISCHARGE STRAINER	INTAKE	565	A	AI	1
4004	08A	0-FCV-67-1	A EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	A	AI	1
4005	R	0-CKV-67-622	EECW SYSTEM HORTH HEADER CHECK VALVE	U1/2 DG	565		AI	1
4006	10	2-CLR-67-917	EECW/RHR PUMP 2A ROOM COOLER	U2 RB	519	SW CORNER	AI	1
4007	10	2-CLR-67-919	EECW/CS PUMP 2A ROOM COOLER	U2 RB	519	NW CORNER	AI	1
4008	10	2-CLR-67-921	EECW/RHR PUMP 2C ROOM COOLER	U2 RB	519	SW CORNER	AI	1
4009	21	2-HEX-67-915	EECW/RHR SEAL HX 2A	U2 RB	519	SW CORNER	AI	1
4010	R	0-CKV-67-671	EECW SYSTEM HORTH HEADER CHECK VALVE	RB	565		AI	1
4011	06	0-PMP-23-91	RHRSW PUMP C3	INTAKE	565	C	AI	1
4012	R	0-CKV-23-594	RHRSW PMP C3 DISCHARGE CHECK VALVE	INTAKE	565		AI	1
4013	00	0-STN-67-927	C EECW PUMP DISCHARGE STRAINER	INTAKE	565	C	AI	1
4014	08A	0-FCV-67-8	C EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	C	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
4015	08A	0-FCV-67-49	RHRSW PUMP C1 TO EECW SYSTEM CROSS-CONNECT	INTAKE	565	C	AI	1
4016	07	1-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U1 RB	593	R3/P	AI	1
4017	07	2-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U2 RB	593	P/R13	AI	1
4018	07	3-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U3 RB	593	R20/P	AI	1
4019	07	0-FCV-67-53	EECW SYSTEM NORTH HEADER BACKUP TO THE AIR COMPRESSORS	U1 RB	565	R3/N	AI	1
4020	R	2-CKV-67-638	EECW NORTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U2 RB	565		AI	1
4021	R	2-CKV-67-639	EECW NORTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U2 RB	565		AI	1
4022	R	2-CKV-67-648	EECW NORTH HEADER SUPPLY CHECK VALVE TO A CS	U2 RB	565		AI	1
4023	R	2-CKV-67-649	EECW NORTH HEADER SUPPLY CHECK VALVE TO A CS	U2 RB	565		AI	1
4024	R	2-CKV-67-659	EECW NORTH HEADER SUPPLY CHECK VALVE TO B&D RHR	U2 RB	565		AI	1
4025	R	2-CKV-67-660	EECW NORTH HEADER SUPPLY CHECK VALVE TO B&D RHR	U2 RB	565		AI	1
4026	R	2-CKV-67-656	EECW NORTH HEADER SUPPLY CHECK VALVE TO B CS	U2 RB	565		AI	1
4027	R	2-CKV-67-657	EECW NORTH HEADER SUPPLY CHECK VALVE TO B CS	U2 RB	565		AI	1
4028	R	0-CKV-67-634	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE A DG	U1/2 DG	565		AI	1
4029	R	0-CKV-67-635	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE A DG	U1/2 DG	565		AI	1
4030	R	0-CKV-67-630	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE B DG	U1/2 DG	565		AI	1
4031	R	0-CKV-67-631	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE B DG	U1/2 DG	565		AI	1
4032	R	0-CKV-67-624	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE C DG	U1/2 DG	565		AI	1
4033	R	0-CKV-67-625	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE C DG	U1/2 DG	565		AI	1
4034	R	0-CKV-67-627	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE D DG	U1/2 DG	565		AI	1
4035	R	0-CKV-67-628	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE D DG	U1/2 DG	565		AI	1
4036	R	3-CKV-67-693	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE 3EA DG	U3 DG	565		AI	1
4037	R	3-CKV-67-694	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE 3EA DG	U3 DG	565		AI	1
4038	R	3-CKV-67-703	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE 3EB DG	U3 DG	565		AI	1
4039	R	3-CKV-67-704	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE 3EB DG	U3 DG	565		AI	1
4040	21	2-HEX-67-916	EECW/RHR SEAL HX 2C	U2 RB	519	SW CORNER	AI	1
4041	20	0-EI-23-85/3	EECW PUMP A3 AMPERAGE INDICATION	N/A	N/A	N/A	AI	1
4042	20	0-EI-23-91/3	EECW PUMP C3 AMPERAGE INDICATION	N/A	N/A	N/A	AI	1
4044	06	0-PMP-23-88	RHRSW PUMP B3	INTAKE	565	B	AI	2
4045	R	0-CKV-23-591	RHRSW PMP B3 DISCHARGE CHECK VALVE	INTAKE	565		AI	2
4046	00	0-STN-67-926	B EECW PUMP DISCHARGE STRAINER	INTAKE	565	B	AI	2
4047	08A	0-FCV-67-5	B EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	B	AI	2
4048	R	0-CKV-67-502	EECW SYSTEM SOUTH HEADER CHECK VALVE	U1/2 DG	565		AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
4049	10	2-CLR-67-918	EECW/RHR PUMP 2B ROOM COOLER	U2 RB	519	SE CORNER	AI	2
4050	10	2-CLR-67-920	EECW/CS PUMP 2B ROOM COOLER	U2 RB	519	NE CORNER	AI	2
4051	10	2-CLR-67-922	EECW/RHR PUMP 2D ROOM COOLER	U2 RB	519	SE CORNER	AI	2
4052	21	2-HEX-67-923	EECW/RHR SEAL HX 2B	U2 RB	519	SE CORNER	AI	2
4053	R	0-CKV-67-619	EECW SYSTEM SOUTH HEADER CHECK VALVE	RB	565		AI	2
4054	06	0-PMP-23-94	RHRSW PUMP D3	INTAKE	565	D	AI	2
4055	R	0-CKV-23-597	RHRSW PMP D3 DISCHARGE CHECK VALVE	INTAKE	565		AI	2
4056	00	0-STN-67-928	D EECW PUMP DISCHARGE STRAINER	INTAKE	565	D	AI	2
4057	08A	0-FCV-67-11	D EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	D	AI	2
4058	08A	0-FCV-67-48	RHRSW PUMP D1 TO EECW SYSTEM CROSS-CONNECT	INTAKE	565	D	AI	2
4059	07	1-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U1 RB	565	R3/T	AI	2
4060	07	2-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U2 RB	565	R13/T	AI	2
4061	07	3-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U3 RB	565	R20/T	AI	2
4062	R	2-CKV-67-558	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U2 RB	593		AI	2
4063	R	2-CKV-67-559	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U2 RB	593		AI	2
4064	R	2-CKV-67-541	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A CS	U2 RB	593		AI	2
4065	R	2-CKV-67-542	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A CS	U2 RB	593		AI	2
4066	R	2-CKV-67-600	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B & D RHR	U2 RB	593		AI	2
4067	R	2-CKV-67-601	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B & D RHR	U2 RB	593		AI	2
4068	R	2-CKV-67-584	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B CS	U2 RB	593		AI	2
4069	R	2-CKV-67-585	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B CS	U2 RB	593		AI	2
4070	R	0-CKV-67-528	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE A DG	U1/2 DG	565		AI	2
4071	R	0-CKV-67-529	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE A DG	U1/2 DG	565		AI	2
4072	R	0-CKV-67-514	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE C DG	U1/2 DG	565		AI	2
4073	R	0-CKV-67-515	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE C DG	U1/2 DG	565		AI	2
4074	R	0-CKV-67-521	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE B DG	U1/2 DG	565		AI	2
4075	R	0-CKV-67-522	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE B DG	U1/2 DG	565		AI	2
4076	R	0-CKV-67-507	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE D DG	U1/2 DG	565		AI	2
4077	R	0-CKV-67-508	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE D DG	U1/2 DG	565		AI	2
4078	R	3-CKV-67-695	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE 3EA DG	U3 DG	565		AI	2
4079	R	3-CKV-67-696	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE 3EA DG	U3 DG	565		AI	2
4080	R	3-CKV-67-705	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE 3EB DG	U3 DG	565		AI	2
4081	R	3-CKV-67-706	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE 3EB DG	U3 DG	565		AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
4082	21	2-HEX-67-924	EECW/RHR SEAL HX 2D	U2 RB	519	SE CORNER	AI	2
4083	20	0-EI-23-88/3	EECW PUMP B3 AMPERAGE INDICATION	N/A	N/A	N/A	AI	2
4084	20	0-EI-23-94/3	EECW PUMP D3 AMPERAGE INDICATION	N/A	N/A	N/A	AI	2
5001	08A	2-FCV-75-2	CS/PUMP 2A SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	AI	1
5002	06	2-PMP-75-5	CS/PUMP 2A	U2 RB	519	NW CORNER	AI	1
5003	R	2-CKV-75-537A	CS/PUMP 2A DISCHARGE CHECK VALVE	U2 RB			AI	1
5004	R	2-CKV-75-570A	CS/PUMP 2A MINI-FLOW CHECK VALVE	U2 RB			AI	1
5005	08A	2-FCV-75-9	CS/PUMPS 2A & 2C MINI-FLOW VALVE	U2 RB	519	NW CORNER	AI	1
5006	08A	2-FCV-75-11	CS/PUMP 2C SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	AI	1
5007	06	2-PMP-75-14	CS/PUMP 2C	U2 RB	519	NW CORNER	AI	1
5008	R	2-CKV-75-537C	CS/PUMP 2C DISCHARGE CHECK VALVE	U2 RB			AI	1
5009	R	2-CKV-75-570C	CS/PUMP 2C MINI-FLOW CHECK VALVE	U2 RB			AI	1
5010	08A	2-FCV-75-22	CS/PUMPS 2A & 2C TEST ISOLATION VALVE	U2 RB	519	NW CORNER	AI	1
5011	18	2-FI-75-21	CS/PUMPS 2A & 2C FLOW INDICATOR	N/A	N/A	N/A	AI	1
5012	08A	2-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U2 RB	593	P/R10	AI	1
5013	08A	2-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U2 RB	593	P/R10	AI	1
5014	R	2-FCV-75-26	CS/DIV I TESTABLE CHECK VALVE	U2 DW			AI	1
5015	08A	2-FCV-75-30	CS/PUMP 2B SUCTION ISOLATION VALVE	U2 RB	519	NE CORNER	AI	2
5016	06	2-PMP-75-33	CS/PUMP 2B	U2 RB	519	NE CORNER	AI	2
5017	R	2-CKV-75-537B	CS/PUMP 2B DISCHARGE CHECK VALVE	U2 RB			AI	2
5018	R	2-CKV-75-570B	CS/PUMP 2B MINI-FLOW CHECK VALVE	U2 RB			AI	2
5019	08A	2-FCV-75-37	CS/PUMPS 2B & 2D MINI-FLOW VALVE	U2 RB	519	NE CORNER	AI	2
5020	08A	2-FCV-75-39	CS/PUMP 2D SUCTION ISOLATION VALVE	U2 RB	519	NE CORNER	AI	2
5021	06	2-PMP-75-42	CS/PUMP 2D	U2 RB	519	NE CORNER	AI	2
5022	R	2-CKV-75-537D	CS/PUMP 2D DISCHARGE CHECK VALVE	U2 RB			AI	2
5023	R	2-CKV-75-570D	CS/PUMP 2D MINI-FLOW CHECK VALVE	U2 RB			AI	2
5024	08A	2-FCV-75-50	CS/PUMPS 2B & 2D TEST ISOLATION VALVE	U2 RB	519	NE CORNER	AI	2
5025	18	2-FI-75-49	CS/PUMPS 2B & 2D FLOW INDICATOR	N/A	N/A	N/A	AI	2
5026	08A	2-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U2 RB	593	P/R11	AI	2
5027	08A	2-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U2 RB	593	P/R11	AI	2
5028	R	2-FCV-75-54	CS/DIV II TESTABLE CHECK VALVE	U2 DW			AI	2
6001	21	0-TNK-84-635	CAD/NITROGEN STORAGE TANK "A"	YARD	565	YARD	AI	1
6002	07	O-FCV-84-5	CAD/N2 TANK "A" ISOLATION VALVE	YARD	565	YARD	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
6003	08B	O-FSV-84-5	CAD/N2 TANK "A" ISOLATION SOLENOID VALVE	YARD	565	YARD	AI	1
6004	00	0-VPR-84-639	CAD/N2 TANK "A" VAPORIZER	YARD	565	YARD	AI	1
6005	00	0-HTR-84-5	CAD/N2 TANK "A" ELECTRIC HEATER	YARD	565	YARD	AI	1
6006	08B	2-FSV-84-8A	CAD/CAD TO DW (2-FCV-64-18) SOLENOID VALVE	U2 RB	565	R12/T	AI	1
6007	08B	2-FSV-84-8B	CAD/CAD TO DW (2-FCV-64-19) SOLENOID VALVE	U2 RB	565	R10/S	AI	1
6008	07	2-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	R11/U	AI	1
6009	08B	2-FSV-84-48	CAD/CAD SYSTEM "A" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	S/R10	AI	1
6010	R	2-CKV-32-2521	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 1	U2 RB			AI	1
6011	R	2-CKV-32-2516	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 1	U2 DW			AI	1
6012	R	2-CKV-32-826	CA/DRYWELL CONTROL AIR TO PSV-1-19	U2 DW			AI	1
6013	21	2-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U2 DW	563	DW	AI	1
6014	08B	2-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19	U2 DW	591	DW	AI	1
6015	R	2-CKV-32-872	CA/DRYWELL CONTROL AIR TO PSV-1-22	U2 DW			AI	1
6016	21	2-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U2 DW	563	DW	AI	1
6017	08B	2-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22	U2 DW	590	DW	AI	1
6018	R	2-CKV-32-869	CA/DRYWEWLL CONTROL AIR TO PSV-1-5	U2 DW			AI	1
6019	21	2-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U2 DW	563	DW	AI	1
6020	08B	2-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5	U2 DW	590	DW	AI	1
6021	08B	2-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23	U2 DW	590	DW	AI	1
6022	08B	2-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179	U2 DW	590	DW	AI	1
6023	08B	2-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4	U2 DW	590	DW	AI	1
6024	08B	2-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18	U2 DW	590	DW	AI	1
6025	21	0-TNK-84-636	CAD/NITROGEN STORAGE TANK "B"	YARD	565	YARD	AI	2
6026	07	0-FCV-84-16	CAD/N2 TANK "B" ISOLATION VALVE	YARD	565	YARD	AI	2
6027	08B	O-FSV-84-16	CAD/N2 TANK "B" ISOLATION SOLENOID VALVE	YARD	565	YARD	AI	2
6028	00	0-VPR-84-640	VAD/N2 TANK "B" VAPORIZER	YARD	565	YARD	AI	2
6029	00	0-HTR-84-16	CAD/N2 TANK "B" ELECTRIC HEATER	YARD	565	YARD	AI	2
6030	08B	2-FSV-84-8C	CAD/CAD TO DW (2-FCV-64-19) SOLENOID VALVE	U2 RB	565	R10/S	AI	2
6031	08B	2-FSV-84-8D	CAD/CAD TO DW (2-FCV-64-18) SOLENOID VALVE	U2 RB	565	R12/T	AI	2
6032	07	2-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	R11/U	AI	2
6033	08B	2-FSV-84-49	CAD/CAD SYSTEM "B" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	S/R12	AI	2
6034	R	2-CKV-32-336	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 2	U2 RB			AI	2
6035	R	2-CKV-32-2163	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 2	U2 DW			AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
6036	R	2-CKV-32-892	CA/DRYWELL CONTROL AIR TO PSV-1-30	U2 DW			AI	2
6037	21	2-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U2 DW	563	DW	AI	2
6038	08B	2-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30	U2 DW	591	DW	AI	2
6039	R	2-CKV-32-915	CA/DRYWELL CONTROL AIR TO PSV-1-31	U2 DW			AI	2
6040	21	2-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U2 DW	563	DW	AI	2
6041	08B	2-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31	U2 DW	591	DW	AI	2
6042	R	2-CKV-32-919	CA/DRYWELL CONTROL AIR TO PSV-1-34	U2 DW			AI	2
6043	21	2-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U2 DW	563	DW	AI	2
6044	08B	2-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34	U2 DW	591	DW	AI	2
6045	08B	2-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41	U2 DW	590	DW	AI	2
6046	08B	2-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42	U2 DW	590	DW	AI	2
6047	08B	2-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180	U2 DW	590	DW	AI	2
7001	17	0-GEN-82-A	UNIT 1 & 2 DIESEL GENERATOR "A"	U1/2 DG	565	DG A	AI	1
7002	21	0-TNK-18-45/1	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	AI	1
7003	21	0-TNK-18-45/2	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	AI	1
7004	21	0-TNK-18-45/3	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	AI	1
7005	21	0-TNK-86-650A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7006	21	0-TNK-86-651A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7007	21	0-TNK-86-652A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7008	21	0-TNK-86-653A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7009	21	0-TNK-86-654A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7010	21	0-TNK-86-655A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7011	21	0-TNK-86-656A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7012	21	0-TNK-86-657A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7013	21	0-TNK-86-658A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7014	21	0-TNK-86-659A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7015	09	0-FAN-30-64	DG ROOM A EXHAUST FAN "A"	U1/2 DG	583	DG A	AI	1
7016	09	0-FAN-30-65	DG ROOM A EXHAUST FAN "B"	U1/2 DG	583	DG A	AI	1
7017	10	0-FCO-30-64A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
7018	10	0-FCO-30-64B	INLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
7019	10	0-FCO-30-64C	INLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
7020	10	0-FCO-30-65A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
7021	10	0-FCO-30-65B	INLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
7022	10	0-FCO-30-65C	INLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
7023	17	0-GEN-82-B	UNIT 1 & 2 DIESEL GENERATOR "B"	U1/2 DG	565	DG B	AI	1
7024	21	0-TNK-18-46/1	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	AI	1
7025	21	0-TNK-18-46/2	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	AI	1
7026	21	0-TNK-18-46/3	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	AI	1
7027	21	0-TNK-86-650B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
7028	21	0-TNK-86-651B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
7029	21	0-TNK-86-652B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
7030	21	0-TNK-86-653B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
7031	21	0-TNK-86-654B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
7032	21	0-TNK-86-655B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
7033	21	0-TNK-86-656B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
7034	21	0-TNK-86-657B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
7035	21	0-TNK-86-658B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
7036	21	0-TNK-86-659B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
7037	09	0-FAN-30-66	DG ROOM B EXHAUST FAN "A"	U1/2 DG	583	DG B	AI	1
7038	09	0-FAN-30-67	DG ROOM B EXHAUST FAN "B"	U1/2 DG	583	DG B	AI	1
7039	10	0-FCO-30-66A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
7040	10	0-FCO-30-66B	INLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
7041	10	0-FCO-30-66C	INLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
7042	10	0-FCO-30-67A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
7043	10	0-FCO-30-67B	INLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
7044	10	0-FCO-30-67C	INLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
7045	17	0-GEN-82-C	UNIT 1 & 2 DIESEL GENERATOR "C"	U1/2 DG	565	DG C	AI	2
7046	21	0-TNK-18-47/1	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	AI	2
7047	21	0-TNK-18-47/2	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	AI	2
7048	21	0-TNK-18-47/3	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	AI	2
7049	21	0-TNK-86-650C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7050	21	0-TNK-86-651C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7051	21	0-TNK-86-652C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7052	21	0-TNK-86-653C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7053	21	0-TNK-86-654C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7054	21	0-TNK-86-655C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
7055	21	0-TNK-86-656C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7056	21	0-TNK-86-657C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7057	21	0-TNK-86-658C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7058	21	0-TNK-86-659C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7059	09	0-FAN-30-68	DG ROOM C EXHAUST FAN "A"	U1/2 DG	583	DG C	AI	2
7060	09	0-FAN-30-69	DG ROOM C EXHAUST FAN "B"	U1/2 DG	583	DG C	AI	2
7061	10	0-FCO-30-68A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
7062	10	0-FCO-30-68B	INLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
7063	10	0-FCO-30-68C	INLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
7064	10	0-FCO-30-69A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
7065	10	0-FCO-30-69B	INLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
7066	10	0-FCO-30-69C	INLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
7067	17	0-GEN-82-D	UNIT 1 & 2 DIESEL GENERATOR "D"	U1/2 DG	565	DG D	AI	2
7068	21	0-TNK-18-48/1	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	AI	2
7069	21	0-TNK-18-48/2	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	AI	2
7070	21	0-TNK-18-48/3	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	AI	2
7071	21	0-TNK-86-650D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7072	21	0-TNK-86-651D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7073	21	0-TNK-86-652D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7074	21	0-TNK-86-653D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7075	21	0-TNK-86-654D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7076	21	0-TNK-86-655D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7077	21	0-TNK-86-656D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7078	21	0-TNK-86-657D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7079	21	0-TNK-86-658D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7080	21	0-TNK-86-659D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7081	09	0-FAN-30-70	DG ROOM D EXHAUST FAN "A"	U1/2 DG	583	DG D	AI	2
7082	09	0-FAN-30-71	DG ROOM D EXHAUST FAN "B"	U1/2 DG	583	DG D	AI	2
7083	10	0-FCO-30-70A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
7084	10	0-FCO-30-70B	INLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
7085	10	0-FCO-30-70C	INLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
7086	10	0-FCO-30-71A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
7087	10	0-FCO-30-71B	INLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
7088	10	0-FCO-30-71C	INLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
7089	17	3-GEN-82-3A	UNIT 3 DIESEL GENERATOR A	U3 DG	565	DG A	AI	1
7090	21	3-TNK-18-61/1	DG "3A" 7 DAY FUEL OIL TANK	U3 DG	565	DG A	AI	1
7091	21	3-TNK-18-61/2	DG "3A" 7 DAY FUEL OIL TANK	U3 DG	565	DG A	AI	1
7092	21	3-TNK-18-61/3	DG "3A" 7 DAY FUEL OIL TANK	U3 DG	565	DG A	AI	1
7093	21	3-TNK-86-650A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7094	21	3-TNK-86-651A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7095	21	3-TNK-86-652A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7096	21	3-TNK-86-653A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7097	21	3-TNK-86-654A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7098	21	3-TNK-86-655A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7099	21	3-TNK-86-656A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7100	21	3-TNK-86-657A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7101	21	3-TNK-86-658A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7102	21	3-TNK-86-659A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7103	09	3-FAN-30-230	DG ROOM 3A EXHAUST FAN "A"	U3 DG	583	DG A	AI	1
7104	10	3-FCO-30-230A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3A"	U3 DG	583	DG A	AI	1
7105	10	3-FCO-30-230B	INLET DAMPER FOR FAN "A" IN DG ROOM "3A"	U3 DG	583	DG A	AI	1
7106	10	3-FCO-30-230C	INLET DAMPER FOR FAN "A" IN DG ROOM "3A"	U3 DG	583	DG A	AI	1
7107	17	3-GEN-82-3B	UNIT 3 DIESEL GENERATOR B	U3 DG	565	DG B	AI	1
7108	21	3-TNK-18-62/1	DG "3B" 7 DAY FUEL OIL TANK	U3 DG	565	DG B	AI	1
7109	21	3-TNK-18-62/2	DG "3B" 7 DAY FUEL OIL TANK	U3 DG	565	DG B	AI	1
7110	21	3-TNK-18-62/3	DG "3B" 7 DAY FUEL OIL TANK	U3 DG	565	DG B	AI	1
7111	21	3-TNK-86-650B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7112	21	3-TNK-86-651B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7113	21	3-TNK-86-652B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7114	21	3-TNK-86-653B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7115	21	3-TNK-86-654B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7116	21	3-TNK-86-655B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7117	21	3-TNK-86-656B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7118	21	3-TNK-86-657B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7119	21	3-TNK-86-658B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7120	21	3-TNK-86-659B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
7121	09	3-FAN-30-232	DG ROOM 3B EXHAUST FAN "A"	U3 DG	583	DG B	AI	1
7122	10	3-FCO-30-232A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3B"	U3 DG	583	DG B	AI	1
7123	10	3-FCO-30-232B	INLET DAMPER FOR FAN "A" IN DG ROOM "3B"	U3 DG	583	DG B	AI	1
7124	10	3-FCO-30-232C	INLET DAMPER FOR FAN "A" IN DG ROOM "3B"	U3 DG	583	DG B	AI	1
8001	06	0-PMP-23-005	RHRSW PUMP A2	INTAKE	565	A	AI	1
8002	R	0-CKV-23-506	RHRSW PMP A2 DISCHARGE CHECK VALVE	INTAKE	565		AI	1
8003	R	2-CKV-23-579	RHRSW TO HX A INLET CHECK VALVE	U2 RB	565		AI	1
8004	08A	1-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U1 RB	565	R2/U	AI	1
8005	08A	2-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U2 RB	565	R9/U	AI	1
8006	08A	3-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U3 RB	565	R17/T	AI	1
8007	06	0-PMP-23-012	RHRSW PUMP C2	INTAKE	565	C	AI	1
8008	R	0-CKV-23-542	RHRSW PMP C2 DISCHARGE CHECK VALVE	INTAKE	565		AI	1
8009	R	2-CKV-23-581	RHRSW TO HX C INLET CHECK VALVE	U2 RB	565		AI	1
8010	08A	1-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U1 RB	565	R2/U	AI	1
8011	08A	2-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U2 RB	565	R9/U	AI	1
8012	08A	3-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U3 RB	565	R17/T	AI	1
8013	06	0-PMP-23- 19	RHRSW PUMP B2	INTAKE	565	B	AI	2
8014	R	0-CKV-23-526	RHRSW PMP B2 DISCHARGE CHECK VALVE	INTAKE	565		AI	2
8015	R	2-CKV-23-580	RHRSW TO HX B INLET CHECK VALVE	U2 RB	565		AI	2
8016	08A	1-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U1 RB	565	R5/T	AI	2
8017	08A	2-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U2 RB	565	R13/U	AI	2
8018	08A	3-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U3 RB	565	R19/U	AI	2
8019	06	0-PMP-23-027	RHRSW PUMP D2	INTAKE	565	D	AI	2
8020	R	0-CKV-23-561	RHRSW PMP D2 DISCHARGE CHECK VALVE	INTAKE	565		AI	2
8021	R	2-CKV-23-582	RHRSW TO HX D INLET CHECK VALVE	U2 RB	565		AI	2
8022	08A	1-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U1 RB	565	R5/T	AI	2
8023	08A	2-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U2 RB	565	R13/U	AI	2
8024	08A	3-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U3 RB	565	R19/U	AI	2
8025	08A	1-FCV-23-57	RHR/RHRSW CROSS CONNECT VALVE	U1 RB	565	R6/S	AI	2
8026	08A	2-FCV-23-57	RHR/RHRSW CROSS CONNECT VALVE	U2 RB	565	R13/T	AI	2
8027	20	2-FI-23-36	RHRSW HX A FLOW INDICATOR	N/A	N/A	N/A	AI	1
8028	20	2-FI-23-42	RHRSW HX C FLOW INDICATOR	N/A	N/A	N/A	AI	1
8029	20	2-FI-23-48	RHRSW HX B FLOW INDICATOR	N/A	N/A	N/A	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
8030	20	2-FI-23-54	RHRSW HX D FLOW INDICATOR	N/A	N/A	N/A	AI	2
9001	04	2-XFA-231-TS2A	4KV/480V XFMR TS2A	U2 RB	621	T/R13	AI	IB
9002	04	2-XFA-231-TS2B	4KV/480V XFMR TS2B	U2 RB	621	T/R14	AI	IID
9003	04	3-XFA-231-TS3A	4KV/480V XFMR TS3A	U3 RB	621	S/R20	AI	I3A
9004	04	0-OXF-219-TDA	4KV/480V XFMR TDA	U1/2 DG	583	T/R1	AI	IA
9005	04	0-OXF-219-TDB	4KV/480V XFMR TDB	U1/2 DG	583	P/R1	AI	IID
9006	04	2-XFA-253-0002A1	480V-120/208V XFMR FOR I&C BUS 2A	U2 RB	621	P/R13	AI	I
9007	04	2-XFA-253-0002A2	208V/120V REG XFMR FOR I&C BUS 2A	U2 RB	621	P/R13	AI	I
9008	04	2-XFA-253-0002B1	480V-120/208V XFMR FOR I&C BUS 2B	U2 RB	593	R/R13	AI	II
9009	04	2-XFA-253-0002B2	208V/120V REG XFMR FOR I&C BUS 2B	U2 RB	593	R/R13	AI	II
9010	14	2-JBOX-253-7193	I&C BUS BREAKER BOX BUS 2A	U2 RB	621	P/R13	AI	I
9011	14	2-JBOX-253-7196	I&C BUS BREAKER BOX BUS 2B	U2 RB	593	P/R10	AI	II
9012	03	0-BDAA-211-0000A	4KV SHDN BD A	U1 RB	621	R/R2	AI	IA
9013	03	0-BDAA-211-0000B	4KV SHDN BD B	U1 RB	593	Q/R2	AI	IB
9014	03	0-BDAA-211-0000C	4KV SHDN BD C	U2 RB	621	R/R13	AI	IIC
9015	03	0-BDAA-211-0000D	4KV SHDN BD D	U2 RB	593	Q/R13	AI	IID
9016	03	3-BDAA-211-0003EA	4KV SHDN BD 3EA	U3 DG	583	4KV SD BD	AI	I3A
9017	03	3-BDAA-211-0003EB	4KV SHDN BD 3EB	U3 DG	565	4KV SD BD	AI	I3B
9018	02	1-BDBB-231-0001A	480V SHDN BD 1A	U1 RB	621	S/R1	AI	I
9019	02	1-BDBB-231-0001B	480V SHDN BD 1B	U1 RB	621	S/R2	AI	II
9020	02	2-BDBB-231-0002A	480V SHDN BD 2A	U2 RB	621	S/R13	AI	I
9021	02	2-BDBB-231-0002B	480V SHDN BD 2B	U2 RB	621	S/R14	AI	II
9022	02	3-BDBB-231-0003A	480V SHDN BD 3A	U3 RB	621	S/R20	AI	I
9023	01	1-BDBB-268-0001A	480V RMOV BD 1A	U1 RB	621	R/R1	AI	I
9024	01	1-BDBB-268-0001B	480V RMOV BD 1B	U1 RB	593	R/R1	AI	II
9025	01	2-BDBB-268-0002A	480V RMOV BD 2A	U2 RB	621	R/R14	AI	I
9026	01	2-BDBB-268-0002B	480V RMOV BD 2B	U2 RB	593	R/R14	AI	II
9027	01	2-BDBB-268-0002D	480V RMOV BD 2D	U2 RB	593	T/R11	AI	I
9028	01	2-BDBB-268-0002E	480V RMOV BD 2E	U2 RB	621	U/R8	AI	II
9031	01	0-BDBB-219-0000A	480V DSL AUX BD A	U1/2 DG	583	480V AUX BD	AI	I
9032	01	0-BDBB-219-0000B	480V DSL AUX BD B	U1/2 DG	583	480V AUX BD	AI	II
9033	01	3-BDBB-219-0003EA	480V DSL AUX BD 3EA	U3 DG	583	48OV AUX BD	AI	I
9034	01	2-BDBB-281-0002A	250V RMOV BD 2A	U2 RB	621	Q/R14	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9035	01	2-BDBB-281-0002B	250V RMOV BD 2B	U2 RB	593	Q/R14	AI	I
9036	01	2-BDBB-281-0002C	250V RMOV BD 2C	U2 RB	565	Q/R8	AI	I
9037	14	0-BDDD-280-0001	250V BATTERY BD 1	U1 RB	593	P/R4	AI	
9038	14	0-BDDD-280-0002	250V BATTERY BD 2	U2 RB	593	P/R10	AI	
9039	14	0-BDDD-280-0003	250V BATTERY BD 3	U3 RB	593	P/R18	AI	
9040	20	2-PNLA-009-0003A	PANEL 9-3A	U2 CB	617	U2 MCR	AI	
9041	20	2-PNLA-009-0003B	PANEL 9-3B	U2 CB	617	U2 MCR	AI	
9042	20	2-PNLA-009-0004	PANEL 9-4	U2 CB	617	U2 MCR	AI	
9043	20	2-PNLA-009-0005	PANEL 9-5	U2 CB	617	U2 MCR	AI	
9044	20	2-PNLA-009-0006	PANEL 9-6	U2 CB	617	U2 MCR	AI	
9045	20	2-PNLA-009-0009	PANEL 9-9	U2 CB	617	U2 MCR	AI	
9046	20	2-PNLA-009-0015	PANEL 9-15	U2 CB	593	U2 AIR	AI	
9047	20	2-PNLA-009-0017	PANEL 9-17	U2 CB	593	U2 AIR	AI	
9048	20	2-PNLA-009-0018	PANEL 9-18	U2 CB	593	U2 AIR	AI	
9049	20	2-PNLA-009-0019	PANEL 9-19	U2 CB	593	U2 AIR	AI	
9050	20	2-PNLA-009-0021	PANEL 9-21	U2 CB	617	U2 MCR	AI	
9051	20	0-PNLA-009-0023/7	PANEL 0-9-23-7	U2 CB	617	U2 MCR	AI	
9052	20	0-PNLA-009-0023/8	PANEL 0-9-23-8	U2 CB	617	U2 MCR	AI	
9053	20	3-PNLA-009-0023A	PANEL 3-9-23A	U3 CB	617	U3 MCR	AI	
9054	20	3-PNLA-009-0023B	PANEL 3-9-23B	U3 CB	617	U3 MCR	AI	
9055	20	3-PNLA-009-0023C	PANEL 3-9-23C	U3 CB	617	U3 MCR	AI	
9056	20	3-PNLA-009-0023D	PANEL 3-9-23D	U3 CB	617	U3 MCR	AI	
9057	20	0-PNLA-009-0028	PANEL 9-28	U2 CB	593	U2 AIR	AI	
9058	20	2-PNLA-009-0030	PANEL 9-30	U2 CB	593	U2 AIR	AI	
9059	20	2-PNLA-009-0032	PANEL 9-32	U2 CB	593	U2 AIR	AI	
9060	20	2-PNLA-009-0033	PANEL 9-33	U2 CB	593	U2 AIR	AI	
9061	20	2-PNLA-009-0039	PANEL 9-39	U2 CB	593	U2 AIR	AI	
9062	20	2-PNLA-009-0042	PANEL 9-42	U2 CB	593	U2 AIR	AI	
9063	20	2-PNLA-009-0043	PANEL 9-43	U2 CB	593	U2 AIR	AI	
9064	20	2-PNLA-009-0054	PANEL 9-54	U2 CB	617	U2 MCR	AI	
9065	20	2-PNLA-009-0055	PANEL 9-55	U2 CB	617	U2 MCR	AI	
9066	20	2-PNLA-009-0081	PANEL 9-81	U2 CB	593	U2 AIR	AI	I
9067	20	2-PNLA-009-0082	PANEL 9-82	U2 CB	593	U2 AIR	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9068	20	2-PNLA-009-0083	PANEL 9-83	U2 CB	593	U2 AIR	AI	
9069	20	2-PNLA-009-0084	PANEL 9-84	U2 CB	593	U2 AIR	AI	
9070	20	2-PNLA-009-0085	PANEL 9-85	U2 CB	593	U2 AIR	AI	
9071	20	2-PNLA-009-0086	PANEL 9-86	U2 CB	593	U2 AIR	AI	
9072	20	2-PNLA-009-0087	PANEL 9-87	U2 CB	593	U2 AIR	AI	I
9073	20	2-PNLA-009-0088	PANEL 9-88	U2 CB	593	U2 AIR	AI	II
9074	20	2-LPNL-925-0031	PANEL 25-31	U2 RB	621	Q/R13	AI	
9075	20	2-LPNL-925-0032	PANEL 25-32	U2 RB	621	Q/R13	AI	
9076	20	0-LPNL-925-0041A	PANEL 25-41A	U1/2 DG	583	NORTH END	AI	
9077	20	0-LPNL-925-0041B	PANEL 25-41B	U1/2 DG	583	NORTH END	AI	
9078	20	0-LPNL-925-0041C	PANEL 25-41C	U1/2 DG	583	NORTH END	AI	
9079	20	0-LPNL-925-0041D	PANEL 25-41D	U1/2 DG	583	NORTH END	AI	
9080	20	0-LPNL-925-0042A1	PANEL 25-42A1	U2 RB	621	R/R14	AI	
9081	20	0-LPNL-925-0042A2	PANEL 25-42A2	U2 RB	621	R/R14	AI	
9082	20	0-LPNL-925-0042B1	PANEL 25-42B1	U2 RB	621	Q/R14	AI	
9083	20	0-LPNL-925-0042B2	PANEL 25-42B2	U2 RB	621	Q/R14	AI	
9084	20	0-LPNL-925-0043A1	PANEL 25-43A1	U1/2 DG	583	HALLWAY	AI	
9085	20	0-LPNL-925-0043A2	PANEL 25-43A2	U1/2 DG	583	HALLWAY	AI	
9086	20	0-LPNL-925-0043B1	PANEL 25-43B1	U1/2 DG	583	HALLWAY	AI	
9087	20	0-LPNL-925-0043B2	PANEL 25-43B2	U1/2 DG	583	HALLWAY	AI	
9088	20	2-LPNL-925-044A/11	PANEL 25-44A11	U2 RB	621	S/R13	AI	
9089	20	2-LPNL-925-044A/12	PANEL 25-44A12	U2 RB	621	S/R14	AI	
9090	20	2-LPNL-925-044B/11	PANEL 25-44B11	U2 RB	621	S/R13	AI	
9091	20	2-LPNL-925-044B/12	PANEL 25-44B12	U2 RB	621	S/R14	AI	
9092	20	0-LPNL-925-0045A	PANEL 25-45A	U1 RB	621	R/R2	AI	
9093	20	0-LPNL-925-0045B	PANEL 25-45B	U1 RB	593	R/R2	AI	
9094	20	0-LPNL-925-0045C	PANEL 25-45C	U2 RB	621	R/R13	AI	
9095	20	0-LPNL-925-0045D	PANEL 25-45D	U2 RB	593	R/R13	AI	
9096	20	0-LPNL-925-0046A	PANEL 25-46A	U1/2 DG	565	DG A	AI	
9097	20	0-LPNL-925-0046B	PANEL 25-46B	U1/2 DG	565	DG B	AI	
9098	20	0-LPNL-925-0046C	PANEL 25-46C	U1/2 DG	565	DG C	AI	
9099	20	0-LPNL-925-0046D	PANEL 25-46D	U1/2 DG	565	DG D	AI	
9100	20	0-LPNL-925-0047A	PANEL 0-25-47A	U1/2 DG	565	DG A	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9101	20	0-LPNL-925-0047B	PANEL 0-25-47B	U1/2 DG	565	DG B	AI	
9102	20	0-LPNL-925-0047C	PANEL 0-25-47C	U1/2 DG	565	DG C	AI	
9103	20	0-LPNL-925-0047D	PANEL 0-25-47D	U1/2 DG	565	DG D	AI	
9104	20	3-LPNL-925-0047A	PANEL 3-25-47A	U3 DG	565	DG A	AI	
9105	20	3-LPNL-925-0047B	PANEL 3-25-47B	U3 DG	565	DG B	AI	
9106	20	3-LPNL-925-0047C	PANEL 3-25-47C	U3 DG	565	DG C	AI	
9107	20	3-LPNL-925-0047D	PANEL 3-25-47D	U3 DG	565	DG D	AI	
9108	20	0-PNLA-082-0000A	DG A ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG A	AI	
9109	20	0-PNLA-082-0000B	DG B ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG B	AI	
9110	20	0-PNLA-082-0000C	DG C ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG C	AI	
9111	20	0-PNLA-082-0000D	DG D ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG D	AI	
9112	20	3-PNLA-082-00003A	DG 3A ELECTRICAL CONTROL CABINET	U3 DG	565	DG A	AI	
9113	20	3-PNLA-082-00003B	DG 3B ELECTRICAL CONTROL CABINET	U3 DG	565	DG B	AI	
9114	16	2-INV-256-0001	DIVISION I ECCS ATU INVERTER	U2 RB	593	Q/R14	AI	I
9115	16	2-INV-256-0002	DIVISION II ECCS ATU INVERTER	U2 RB	621	P/R14	AI	II
9116	14	0-XSW-248-0001	250V MAIN BATT CHGR OUTPUT XFR SW 1	U1 RB	593	P/R4	AI	
9117	14	0-XSW-248-0002A	250V MAIN BATT CHGR OUTPUT XFR SW 2A	U2 RB	593	P/R9	AI	
9118	14	0-XSW-248-0003	250V MAIN BATT CHGR OUTPUT XFR SW 3	U3 RB	593	P/R16	AI	
9119	15	0-BATA-248-0000A	250V BATTERY SB-A	U1 RB	621	S/R2	AI	IA
9120	14	0-PNLA-248-0000A	250V DISTRIBUTION PANEL SB-A	U1 RB	621	S/R2	AI	IA
9121	16	0-CHGA-248-0000A	250V BATTERY CHARGER SB-A	U1 RB	621	S/R2	AI	IA
9122	15	0-BATA-248-0000B	250V BATTERY SB-B	U1 RB	621	S/R2	AI	IB
9123	14	0-PNLA-248-0000B	250V DISTRIBUTION PANEL SB-B	U1 RB	621	S/R2	AI	IB
9124	16	0-CHGA-248-0000B	250V BATTERY CHARGER SB-B	U1 RB	621	S/R2	AI	IB
9125	15	0-BATA-248-0000C	250V BATTERY SB-C	U2 RB	621	S/R13	AI	IIC
9126	14	0-PNLA-248-0000C	250V DISTRIBUTION PANEL SB-C	U2 RB	621	S/R13	AI	IIC
9127	16	0-CHGA-248-0000C	250V BATTERY CHARGER SB-C	U2 RB	621	S/R13	AI	IIC
9128	15	0-BATA-248-0000D	250V BATTERY SB-D	U2 RB	621	S/R13	AI	IID
9129	14	0-PNLA-248-0000D	250V DISTRIBUTION PANEL SB-D	U2 RB	621	S/R13	AI	IID
9130	16	0-CHGA-248-0000D	250V BATTERY CHARGER SB-D	U2 RB	621	S/R13	AI	IID
9131	15	3-BATA-248-0003EB	250V BATTERY SB-3EB	U3 DG	583	SE CORNER	AI	I3B
9132	14	3-PNLA-248-0003EB	250V DISTRIBUTION PANEL SB-3EB	U3 DG	583	SE CORNER	AI	I3B
9133	16	3-CHGA-248-0003EB	250V BATTERY CHARGER SB-3EB	U3 DG	583	SE CORNER	AI	I3B

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9134	16	0-CHGA-248-0001	250V BATTERY CHARGER 1	U1 RB	593	P/R4	AI	
9135	16	0-CHGA-248-0002A	250V BATTERY CHARGER 2A	U2 RB	593	P/R9	AI	
9136	16	0-CHGA-248-0003	250V BATTERY CHARGER 3	U3 RB	593	P/R18	AI	
9137	15	0-BATA-248-0001	250V MAIN BATTERY 1	U1 RB	593	P/R4	AI	
9138	15	0-BATA-248-0002	250V MAIN BATTERY 2	U2 RB	593	P/R9	AI	
9139	15	0-BATA-248-0003	250V MAIN BATTERY 3	U3 RB	593	P/R18	AI	
9140	13	2-MGEN-268-0002DN	LPCI M-G SET 2DN	U2 RB	621	U/R13	AI	I
9141	13	2-MGEN-268-0002EN	LPCI M-G SET 2EN	U2 RB	639	U/R14	AI	II
9142	15	0-BATB-254-0000A	125V DC DSL BATT A	U1/2 DG	565	DG A	AI	IA
9143	15	0-BATB-254-0000B	125V DC DSL BATT B	U1/2 DG	565	DG B	AI	IB
9144	15	0-BATB-254-0000C	125V DC DSL BATT C	U1/2 DG	565	DG C	AI	IIC
9145	15	0-BATB-254-0000D	125V DC DSL BATT D	U1/2 DG	565	DG D	AI	IID
9146	14	0-BDGG-254-0000A	125V DC DSL BATT BD A	U1/2 DG	565	DG A	AI	IA
9147	14	0-BDGG-254-0000B	125V DC DSL BATT BD B	U1/2 DG	565	DG B	AI	IB
9148	14	0-BDGG-254-0000C	125V DC DSL BATT BD C	U1/2 DG	565	DG C	AI	IIC
9149	14	0-BDGG-254-0000D	125V DC DSL BATT BD D	U1/2 DG	565	DG D	AI	IID
9150	16	0-CHGB-254-0000AA	125V DSL GEN A BATT CHGR A	U1/2 DG	565	DG A	AI	I
9151	16	0-CHGB-254-0000BA	125V DSL GEN B BATT CHGR A	U1/2 DG	565	DG B	AI	I
9152	16	0-CHGB-254-0000CB	125V DSL GEN C BATT CHGR B	U1/2 DG	565	DG C	AI	II
9153	16	0-CHGB-254-0000DB	125V DSL GEN D BATT CHGR B	U1/2 DG	565	DG D	AI	II
9154	15	3-BATB-254-0000A	125V DC DSL BATT 3A	U3 DG	565	DG A	AI	I3A
9155	15	3-BATB-254-0000B	125V DC DSL BATT 3B	U3 DG	565	DG B	AI	I3B
9156	14	3-BDGG-254-0003A	125V DC DSL BATT BD 3A	U3 DG	565	DG A	AI	I3A
9157	14	3-BDGG-254-0003B	125V DC DSL BATT BD 3B	U3 DG	565	DG B	AI	I3B
9158	16	3-CHGB-254-0000AA	125V DC DSL 3A BATT CHGR A	U3 DG	565	DG A	AI	I
9159	16	3-CHGB-254-0000BA	125V DC DSL 3B BATT CHGR A	U3 DG	565	DG B	AI	I
9168	00	2-PX-64-67B	POWER SUPPLY (PNL 2-9-19 ; SUPPORTS 2-PI-64-67B)	N/A	N/A	N/A	AI	
9169	00	2-PX-71-60-1	ECCS ATU CAB 2-9-81 POWER SUPPLY	N/A	N/A	N/A	AI	I
9170	00	2-PX-71-60-1A	ECCS ATU CAB 2-9-81 POWER SUPPLY	N/A	N/A	N/A	AI	I
9171	00	2-PX-71-60-2	ECCS ATU CAB 2-9-82 POWER SUPPLY	N/A	N/A	N/A	AI	II
9172	00	2-PX-71-60-2A	ECCS ATU CAB 2-9-82 POWER SUPPLY	N/A	N/A	N/A	AI	II
9173	00	2-PX-64-159A	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	AI	I
9174	00	2-PX-64-160A	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	AI	I

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9175	00	2-PXMC-23-114	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	AI	I
9176	00	2-PXMC-23-115	POWER SUPPLY (PNL 2-9-19)	N/A	N/A	N/A	AI	II
9177	14	2-JBOX-253-7192	DISC SW BOX (I&C BUS A)	U2 RB	621	SD BD C	AI	I
9178	14	2-JBOX-253-7194	DISC SW BOX (I&C BUS A)	U2 CB	593	BATT BD 2	AI	I
9179	14	2-JBOX-253-7195	DISC SW BOX (I&C BUS B)	U2 RB	593	SD BD D	AI	II
9180	14	2-JBOX-253-7197	DISC SW BOX (I&C BUS B)	U2 CB	593	BATT BD 2	AI	II
9181	14	2-JBOX-268-5990	MG SET 2DN CONTROL STATION (2-HS-268-0002DN)	U2 RB	621	U/R13	AI	I
9182	14	2-JBOX-268-5992	MG SET 2EN CONTROL STATION (2-HS-268-0002EN)	U2 RB	639	U/R14	AI	II
9183	20	2-PNLA-009-0093	CONTROL PANEL 9-93	U2 CB	593	U2 AIR	AI	
9184	18	2-LPNL-925-005A	LOCAL PANEL 25-5A	U2 RB	593	S/R10	AI	
9185	18	2-LPNL-925-005B	LOCAL PANEL 25-5B	U2 RB	593	S/R10	AI	
9186	18	2-LPNL-925-005D	LOCAL PANEL 25-5D	U2 RB	593	S/R10	AI	
9187	18	2-LPNL-925-006A	LOCAL PANEL 25-6A	U2 RB	593	P/R12	AI	
9188	18	2-LPNL-925-006D	LOCAL PANEL 25-6D	U2 RB	593	P/R12	AI	
9189	18	2-LPNL-925-0059	LOCAL PANEL 25-59	U2 RB	519	T/R8	AI	
9190	18	2-LPNL-925-0062	LOCAL PANEL 25-62	U2 RB	519	T/R14	AI	
9191	00	2-PX-74-56	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	AI	I
9192	00	2-PX-74-70	POWER SUPPLY (2-9-19)	N/A	N/A	N/A	AI	II
9193	14	2-JBOX-256-9722	DIV I ECCS ATU INV FUSE BOX	U2 RB	593	Q/R14	AI	I
9194	04	1-XFA-231-TS1A	4KV/480V TRANSFORMER TS1A	U1 RB	621	T/R1	AI	IA
9195	18	2-HS-74-7B	LOCAL HS STATION	U2 RB	541	T/R9	AI	I
9196	14	2-JBOX-74-2255	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	T/R9	AI	I
9197	18	2-HS-74-57B	LOCAL HS STATION	U2 RB	519	TORUS	AI	I
9198	14	2-JBOX-74-2309	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	R/R8	AI	I
9199	18	2-HS-74-59B	LOCAL HS STATION	U2 RB	519	TORUS	AI	I
9200	18	2-HS-74-58B	LOCAL HS STATION	U2 RB	519	TORUS	I	I
9201	18	2-HS-74-52B	LOCAL HS STATION	U2 RB	565	S/R10	AI	II
9202	14	2-JBOX-74-2134	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	T/R10	AI	
9203	18	2-HS-74-53B	LOCAL HS STATION	U2 RB	565	T/R10	AI	I
9204	18	2-HS-74-60B	LOCAL HS STATION	U2 RB	565	S/R10	AI	I
9205	14	2-JBOX-74-2146	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	S/R10	AI	I
9206	18	2-HS-74-61B	LOCAL HS STATION	U2 RB	565	S/R10	I	I
9207	18	2-HS-74-30B	LOCAL HS STATION	U2 RB	541	T/R13	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9208	14	2-JBOX-74-2296	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	T/R13	AI	II
9209	18	2-HS-74-71B	LOCAL HS STATION	U2 RB	519	TORUS	AI	II
9210	14	2-JBOX-74-2310	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	R/R14	AI	II
9211	18	2-HS-74-72B	LOCAL HS STATION	U2 RB	519	TORUS	I	II
9212	18	2-HS-74-66B	LOCAL HS STATION	U2 RB	565	T/R11	AI	II
9213	14	2-JBOX-74-2132	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	T/R11	AI	II
9214	18	2-HS-74-67B	LOCAL HS STATION	U2 RB	565	T/R11	AI	II
9215	14	2-JBOX-75-1223	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593	P/R11	AI	II
9216	14	2-JBOX-74-2938	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593	S/R12	AI	II
9217	18	2-HS-74-75B	LOCAL HS STATION	U2 RB	593	S/R12	I	II
9218	18	2-HS-70-47B	LOCAL HS STATION	U2 RB	541	TORUS	I	II
9219	14	2-JBOX-70-2111	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	P/R13	AI	II
9220	18	2-HS-75-9B	LOCAL HS STATION	U2 RB	541	N/R9	AI	II
9221	14	2-JBOX-75-2237	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	N/R9	AI	II
9222	18	2-HS-75-25B	LOCAL HS STATION	U2 RB	593	P/R11	AI	I
9223	14	2-JBOX-75-1222	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593	P/R11	AI	I
9224	18	2-HS-75-37B	LOCAL HS STATION	U2 RB	519	N/R13	AI	II
9225	14	2-JBOX-75-2246	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	519	N/R13	AI	II
9226	18	2-HS-75-53B	LOCAL HS STATION	U2 RB	593	P/R11	AI	II
9227	18	2-HS-23-34B	LOCAL HS STATION	U2 RB	565	U/R9	AI	I
9228	14	2-JBOX-23-2115	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	U/R9	AI	I
9229	18	2-HS-23-40B	LOCAL HS STATION	U2 RB	565	U/R9	AI	I
9230	18	2-HS-23-46B	LOCAL HS STATION	U2 RB	565	U/R13	AI	II
9231	14	2-JBOX-23-2116	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	U/R13	AI	II
9232	18	2-HS-23-52B	LOCAL HS STATION	U2 RB	565	U/R13	AI	II
9235	18	2-HS-74-0005B	LOCAL HS STATION - RHR PUMP 2A	U2 RB	519	U/R8	AI	I
9236	18	2-HS-74-0028B	LOCAL HS STATION - RHR PUMP 2B	U2 RB	519	U/R13	AI	II
9237	18	2-HS-74-0016B	LOCAL HS STATION - RHR PUMP 2C	U2 RB	519	U/R9	AI	I
9238	18	2-HS-74-0039B	LOCAL HS STATION - RHR PUMP 2D	U2 RB	519	U/R13	AI	II
9239	18	2-HS-75-0005B	LOCAL HS STATION - CS PUMP 2A	U2 RB	519	N/R8	AI	I
9240	18	2-HS-75-0033B	LOCAL HS STATION - CS PUMP 2B	U2 RB	519	N/R14	AI	II
9241	18	2-HS-75-0014B	LOCAL HS STATION - CS PUMP 2C	U2 RB	519	N/R9	AI	I
9242	18	2-HS-75-0042B	LOCAL HS STATION - CS PUMP 2D	U2 RB	519	N/R14	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9243	18	0-HS-23-5B	LOCAL HS STATION - RHRSW PUMP A2	INTAKE	565	A	AI	I
9244	18	0-HS-23-85B	LOCAL HS STATION - RHRSW PUMP A3	INTAKE	565	A	AI	I
9245	18	0-HS-23-19B	LOCAL HS STATION - RHRSW PUMP B2	INTAKE	565	B	AI	II
9246	18	0-HS-23-88B	LOCAL HS STATION - RHRSW PUMP B3	INTAKE	565	B	AI	II
9247	18	0-HS-23-12B	LOCAL HS STATION - RHRSW PUMP C2	INTAKE	565	C	AI	I
9248	18	0-HS-23-91B	LOCAL HS STATION - RHRSW PUMP C3	INTAKE	565	C	AI	I
9249	18	0-HS-23-27B	LOCAL HS STATION - RHRSW PUMP D2	INTAKE	565	D	AI	II
9250	18	0-HS-23-94B	LOCAL HS STATION - RHRSW PUMP D3	INTAKE	565	D	AI	IID
9251	20	2-JBOX-268-5951	MG SET 2DN CONTROL BOX	U2 RB	621	U/R13	AI	I
9252	20	2-JBOX-268-5953	MG SET 2EN CONTROL BOX	U2 RB	639	U/R14	AI	II
9253	14	NONE	LPCI MG SET 2DN VOLTAGE REGULATOR BOX	U2 RB	621	480V BD 2A	AI	I
9254	14	NONE	LPCI MG SET 2EN VOLTAGE REGULATOR BOX	U2 RB	621	480V BD 2A	AI	II
9255	14	0-JBOX-30-0640	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM A	AI	I
9256	18	0-HS-30-64	LOCAL HS STATION - DG A EXH FAN A	U1/2 DG	583	ELEC BD A	AI	I
9257	14	0-JBOX-30-1817	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM A	AI	II
9258	18	0-HS-30-65	LOCAL HS STATION - DG A EXH FAN B	U1/2 DG	583	ELEC BD A	AI	II
9259	14	0-JBOX-30-1825	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM B	AI	I
9260	18	0-HS-30-66	LOCAL HS STATION - DG B EXH FAN A	U1/2 DG	583	ELEC BD A	AI	I
9261	14	0-JBOX-30-1826	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM B	AI	II
9262	18	0-HS-30-67	LOCAL HS STATION - DG B EXH FAN B	U1/2 DG	583	ELEC BD A	AI	II
9263	14	0-JBOX-30-1828	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM C	AI	I
9264	18	0-HS-30-69	LOCAL HS STATION - DG C EXH FAN B	U1/2 DG	583	ELEC BD B	AI	I
9265	14	0-JBOX-30-1827	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM C	AI	II
9266	18	0-HS-30-68	LOCAL HS STATION - DG C EXH FAN A	U1/2 DG	583	ELEC BD B	AI	II
9267	14	0-JBOX-30-1830	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM D	AI	I
9268	18	0-HS-30-71	LOCAL HS STATION - DG D EXH FAN B	U1/2 DG	583	ELEC BD B	AI	I
9269	14	0-JBOX-30-1829	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM D	AI	II
9270	18	0-HS-30-70	LOCAL HS STATION - DG D EXH FAN A	U1/2 DG	583	ELEC BD B	AI	II
9271	14	3-JBOX-30-4239	JUNCTION BOX (TERM BLOCK)	U3 DG	583	FAN RM 3A	AI	I
9272	18	3-HS-30-230	LOCAL HS STATION - DG 3A EXH FAN A	U3 DG	583	ELEC BD 3EA	AI	I
9273	14	3-JBOX-30-4241	JUNCTION BOX (TERM BLOCK)	U3 DG	583	FAN RM 3B	AI	I
9274	18	3-HS-30-232	LOCAL HS STATION - DG 3B EXH FAN A	U3 DG	583	ELEC BD 3EA	AI	I
9275	00	2-PX-64-159B	POWER SUPPLY (PNL 9-19)	N/A	N/A	N/A	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9276	00	2-PX-64-160B	POWER SUPPLY (PNL 9-19)	N/A	N/A	N/A	AI	II
9277	00	2-PX-64-50	POWER SUPPLY (PNL 25-32)	N/A	N/A	N/A	AI	
9278	00	2-PX-64-161	POWER SUPPLY (PNL 9-87)	N/A	N/A	N/A	AI	I
9279	00	2-PX-64-162	POWER SUPPLY (PNL 9-88)	N/A	N/A	N/A	AI	II
9280	18	2-LPNL-925-0001	PANEL 25-0001	U2 RB	519	NW CORNER	AI	
9281	18	2-LPNL-925-0060	PANEL 25-60	U2 RB	519	NE CORNER	AI	
9282	04	1-XFA-231-TS1B	4KV/480V TRANSFORMER TS1B	U1 RB	621	T/R1	AI	
9283	13	2-MGEN-268-0002DA	LPCI MG SET 2DA	U2 RB	639	U/R14	AI	
9284	14	NONE	MG SET 2DA VOLTAGE REGULATOR BOX	U2 RB	621	480V SD 2	AI	
9285	14	2-JBOX-268-5991	MG SET 2DA CONTROL STATION (2-HS-268-0002DA)	U2 RB	639	U/R14	AI	
9286	20	2-JBOX-268-5952	MG SET 2DA CONTROL BOX (RELAYS)	U2 RB	639	U/R14	AI	
9287	13	2-MGEN-268-0002EA	LPCI MG SET 2EA	U2 RB	621	U/R14	AI	
9288	14	NONE	MG SET 2EA VOLTAGE REGULATOR BOX	U2 RB	621	480V BD 2A	AI	
9289	14	2-JBOX-268-5993	MG SET 2EA CONTROL STATION (2-HS-268-0002EA)	U2 RB	621	U/R14	AI	
9290	20	2-JBOX-268-5954	MG SET 2EA CONTROL BOX (RELAYS)	U2 RB	621	U/R14	AI	
9291	20	0-ECAB-067-0925	EECW PUMP DISCHARGE STRAINER A CONTROL PANEL	INTAKE	565	A	AI	
9292	20	0-ECAB-067-0926	EECW PUMP DISCHARGE STRAINER B CONTROL PANEL	INTAKE	565	B	AI	
9293	20	0-ECAB-067-0927	EECW PUMP DISCHARGE STRAINER C CONTROL PANEL	INTAKE	565	C	AI	
9294	20	0-ECAB-067-0928	EECW PUMP DISCHARGE STRAINER D CONTROL PANEL	INTAKE	565	D	AI	
9295	20	2-ECAB-099-0002A1	RPS CIRCUIT PROTECTOR CABINET 2A1	U2 RB	593	BATT BD 2	AI	
9296	20	2-ECAB-099-0002A2	RPS CIRCUIT PROTECTOR CABINET 2A2	U2 RB	593	BATT BD 2	AI	
9297	20	2-ECAB-099-0002B1	RPS CIRCUIT PROTECTOR CABINET 2B1	U2 RB	593	BATT BD 2	AI	
9298	20	2-ECAB-099-0002B2	RPS CIRCUIT PROTECTOR CABINET 2B2	U2 RB	593	BATT BD 2	AI	
9299	20	2-ECAB-099-0002C1	RPS CIRCUIT PROTECTOR CABINET 2C1	U2 RB	593	BATT BD 2	AI	
9300	20	2-ECAB-099-0002C2	RPS CIRCUIT PROTECTOR CABINET 2C2	U2 RB	593	BATT BD 2	AI	
9301	20	1-PNLA-009-0054	PANEL 1-9-54	U1 CB	617	U1 MCR	AI	
9302	20	1-PNLA-009-0055	PANEL 1-9-55	U1 CB	617	U1 MCR	AI	
9303	20	0-LPNL-925-0246A	PANEL 25-246A (CAD N2 SUPPLY PNL A)	YARD	565	YARD	AI	
9304	20	0-LPNL-925-0246B	PANEL 25-246B (CAD N2 SUPPLY PNL B)	YARD	565	YARD	AI	
9305	18	2-LPNL-925-247A	LOCAL PANEL 2-25-247A (CAD DRYWELL & SUPP. CHAM. V.)	U2 RB	621	Q/R11	AI	
9306	01	2-BDBB-265-0002B	48OV RB VENT BD 2B	U2 RB	565	U/R11	AI	
9307	20	2-PNLA-009-0036A	PANEL 2-9-36A	U2 CB	593	U2 AIR	AI	
9308	18	2-LPNL-925-0247B	LOCAL PANEL 2-25-247B (CAD N2 SUPPLY PANEL B)	U2 RB	621	Q/R12	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9309	20	1-PNLA-009-0020	PANEL 1-9-20	U1 CB	617	U1 MCR	AI	
9310	20	2-PNLA-009-0020	PANEL 2-9-20	U2 CB	617	U2 MCR	AI	
9311	20	NONE	CO2 RELAY PNL FOR 39-10	U1/2 DG	565	DG D	AI	
9312	20	NONE	CO2 RELAY PNL FOR 39-7	U1/2 DG	565	DG A	AI	
9313	20	NONE	CO2 RELAY PNL FOR 39-8	U1/2 DG	565	DG B	AI	
9314	20	NONE	CO2 RELAY PNL FOR 39-9	U1/2 DG	565	DG C	AI	
9315	20	1-LPNL-925-0032	LOCAL PANEL 1-25-32	U1 RB	621	Q/R2	AI	
9316	18	1-LPNL-925-0223	LOCAL PANEL 1-25-233	U1 RB	593	Q/R2	AI	
9317	20	2-PNLA-009-0008	PANEL 2-9-8	U2 CB	617	U2 MCR	AI	
9318	20	1-PNLA-009-0003	PANEL 1-9-3	U1 CB	617	U1 MCR	AI	
9319	18	2-LPNL-925-0223	LOCAL PANEL 2-25-223	U2 RB	593	Q/R12	AI	
9320	18	2-LPNL-925-0007A	LOCAL PANEL 2-25-7A	U2 RB	541	SW CORNER	AI	
9321	18	2-LPNL-925-0007B	LOCAL PANEL 2-25-7B	U2 RB	541	SW CORNER	AI	
9322	18	0-HS-67-48B	HANDSWITCH FOR 0-FCV-67-48 (4058)	INTAKE	565	D	AI	
9323	18	0-HS-67-49B	HANDSWITCH FOR 0-FCV-67-49 (4015)	INTAKE	565	C	AI	
9324	18	2-HS-73-81B	HANDSWITCH FOR 2-FCV-73-81 (3043)	U2 RB	519	TORUS	AI	
9325	18	1-HS-23-34B	HANDSWITCH FOR 1-FCV-23-034 (8004)	U1 RB	565	R2/U	AI	
9326	18	1-HS-23-40B	HANDSWITCH FOR 1-FCV-23-040 (8010)	U1 RB	565	R2/U	AI	
9327	14	1-HS-23-46B	HANDSWITCH FOR 1-FCV-23-046 (8016)	U1 RB	565	R5/T	AI	
9328	14	1-HS-23-52B	HANDSWITCH FOR 1-FCV-23-052 (8022)	U1 RB	565	R5/T	AI	
9329	14	1-HS-23-57B	HANDSWITCH FOR 1-FCV-23-57 (8025)	U1 RB	565	R6/S	AI	
9330	14	2-HS-74-100B	HANDSWITCH FOR 2-FCV-74-100 (1010)	U2 RB	565	R8/T	AI	
9331	14	2-HS-74-99B	HANDSWITCH FOR 2-FCV-74-99 (1041)	U2 RB	519	SE CORNER	AI	
9332	18	2-HS-64-68	HANDSWITCH FOR 2-CLR-67-917 (4006)	U2 RB	519	SW CORNER	AI	
9333	18	2-HS-64-69	HANDSWITCH FOR 2-CLR-67-918 (4049)	U2 RB	519	SE CORNER	AI	
9334	18	2-HS-64-70	HANDSWITCH FOR 2-CLR-67-921 (4008)	U2 RB	519	SW CORNER	AI	
9335	18	2-HS-64-71	HANDSWITCH FOR 2-CLR-67-922 (4051)	U2 RB	519	SE CORNER	AI	
9336	14	2-HS-64-72	HANDSWITCH FOR 2-CLR-67-919 (4007)	U2 RB	519	NW CORNER	AI	
9337	14	2-HS-64-73	HANDSWITCH FOR 2-CLR-67-920 (4050)	U2 RB	519	NE CORNER	AI	
9338	14	2-HS-69-2B	HANDSWITCH FOR 2-FCV-69-2 (3034)	U2 RB	593	R10/S	AI	
9339	14	2-HS-71-18B	HANDSWITCH FOR 2-FCV-71-18 (3040)	U2 RB	519	NW CORNER	I	
9340	20	2-HS-71-2B	HANDSWITCH FOR 2-FCV-71-2 (3038)	U2 RB	593	R/R14	AI	
9341	14	2-HS-73-27B	HANDSWITCH FOR 2-FCV-73-27 (3044)	U2 RB	519	HPCI	I	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9342	18	2-HS-73-3B	HANDSWITCH FOR 2-FCV-73-3 (3042)	U2 RB	519	TORUS	AI	
9343	14	2-HS-74-12B	HANDSWITCH FOR 2-FCV-74-12 (1011)	U2 RB	519	SW CORNER	AI	
9344	14	2-HS-74-13B	HANDSWITCH FOR 2-FCV-74-13 (1012)	U2 RB	519	SE CORNER	AI	
9345	14	2-HS-74-1B	HAND SWITCH FOR 2-FCV-74-1 (1001)	U2 RB	519	SW CORNER	AI	
9346	14	2-HS-74-24B	HANDSWITCH FOR 2-FCV-74-24 (1029)	U2 RB	519	SE CORNER	AI	
9347	18	2-HS-74-25B	HANDSWITCH FOR 2-FCV-74-25 (1030)	U2 RB	519	SE CORNER	AI	
9348	14	2-HS-74-2B	HANDSWITCH FOR 2-FCV-74-2 (1002)	U2 RB	519	SW CORNER	AI	
9349	14	2-HS-74-35B	HANDSWITCH FOR 2-FCV-74-35 (1039)	U2 RB	519	SE CORNER	AI	
9350	18	2-HS-74-36B	HANDSWITCH FOR 2-FCV-74-36 (1040)	U2 RB	519	SE CORNER	AI	
9351	18	2-HS-74-73B	HANDSWITCH FOR 2-FCV-74-73 (1049)	U2 RB	519	TORUS	AI	
9352	14	2-HS-74-96B	HANDSWITCH FOR 2-FCV-74-96 (1003)	U2 RB	519	SW CORNER	AI	
9353	14	2-HS-74-97B	HANDSWITCH FOR 2-FCV-74-97 (1013)	U2 RB	519	SW CORNER	AI	
9354	14	2-HS-74-98B	HANDSWITCH FOR 2-FCV-74-98 (1031)	U2 RB	519	SE CORNER	AI	
9355	18	2-HS-75-11B	HANDSWITCH FOR 2-FCV-75-11 (5006)	U2 RB	519	NW CORNER	AI	
9356	14	2-HS-75-22B	HANDSWITCH FOR 2-FCV-75-22 (5010)	U2 RB	519	NW CORNER	AI	
9357	14	2-HS-75-23B	HANDSWITCH FOR 2-FCV-75-23 (5012)	U2 RB	593	P/R10	AI	
9358	18	2-HS-75-2B	HANDSWITCH FOR 2-FCV-75-2 (5001)	U2 RB	519	NW CORNER	AI	
9359	18	2-HS-75-30B	HANDSWITCH FOR 2-FCV-75-30 (5015)	U2 RB	519	NE CORNER	AI	
9360	18	2-HS-75-39B	HANDSWITCH FOR 2-FCV-75-39 (5020)	U2 RB	519	NE CORNER	AI	
9361	14	2-HS-75-50B	HANDSWITCH FOR 2-FCV-75-50 (5024)	U2 RB	519	NE CORNER	AI	
9362	14	2-HS-75-51B	HANDSWITCH FOR 2-FCV-75-51 (5026)	U2 RB	593	P/R11	AI	
9363	14	2-HS-78-61B	HANDSWITCH FOR 2-FCV-78-61 (1026)	U2 RB	621	R10/S	AI	
9364	18	2-PS-67-50	PRESSURE SWITCH FOR 2-FCV-67-50 (4017)	U2 RB	593	P/R13	AI	
9365	18	2-PS-67-51	PRESSURE SWITCH FOR 2-FCV-67-51 (4060)	U2 RB	565	R13/T	AI	
9366	18	2-TS-64-68	TEMPERATURE SWITCH FOR 2-CLR-67-917 (4006)	U2 RB	519	SW CORNER	AI	
9367	18	2-TS-64-69	TEMPERATURE SWITCH FOR 2-CLR-67-918 (4049)	U2 RB	519	SE CORNER	AI	
9368	18	2-TS-64-70	TEMPERATURE SWITCH FOR 2-CLR-67-921 (4008)	U2 RB	519	SW CORNER	AI	
9369	18	2-TS-64-71	TEMPERATURE SWITCH FOR 2-CLR-67-922 (4051)	U2 RB	519	SE CORNER	AI	
9370	18	2-TS-64-72	TEMPERATURE SWITCH FOR 2-CLR-67-919 (4007)	U2 RB	519	NW CORNER	AI	
9371	18	2-TS-64-73	TEMPERATURE SWITCH FOR 2-CLR-67-920 (4050)	U2 RB	519	NE CORNER	AI	
9372	18	2-TS-1-17A	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	AI	
9373	18	2-TS-1-17B	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	AI	
9374	18	2-TS-1-17C	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9375	18	2-TS-1-17D	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	AI	
9376	18	2-TS-1-29A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	AI	
9377	18	2-TS-1-29B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	AI	
9378	18	2-TS-1-29C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	AI	
9379	18	2-TS-1-29D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	AI	
9380	18	2-TS-1-40A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9381	18	2-TS-1-40B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9382	18	2-TS-1-40C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9383	18	2-TS-1-40D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9384	18	2-TS-1-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9385	18	2-TS-1-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9386	18	2-TS-1-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9387	18	2-TS-1-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9388	14	2-HS-23-57B	HANDSWITCH FOR 2-FCV-23-57 (8026)	U2 RB	565	R13/T	AI	
9389	14	2-HS-74-101B	HANDSWITCH FOR 2-FCV-74-101 (1038)	U2 RB	565	R13/T	AI	
9390	18	3-PS-67-50	PRESSURE SWITCH FOR 3-FCV-67-50 (4018)	U3 RB	593	P/R20	AI	
9391	20	1-PNLA-009-0008	PANEL 1-9-8	U1 CB	617	U1 MCR	AI	
9392	18	3-PS-67-51	PRESSURE SWITCH FOR 3-FCV-67-51 (4061)	U3 RB	565	R20/T	AI	
9393	00	2-AMP-092-0007/41A	IRM CH. "A" VOLTAGE PREAMPLIFIER 7-34A	RB	565	S/R10	AI	
9394	00	2-AMP-092-0007/41B	IRM CH. "B" VOLTAGE PREAMPLIFIER 7-34B	RB	565	S/R10	AI	
9395	14	2-LPNL-925-0027	PANEL 2-25-27 IRM PREAMP. RPS I	RB	565	S/R10	AI	
9396	00	2-AMP-092-0007/41C	IRM CH. "C" VOLTAGE PREAMPLIFIER 7-34C	RB	577	Q/R12	AI	
9397	00	2-AMP-092-0007/41D	IRM CH. "D" VOLTAGE PREAMPLIFIER 7-34D	RB	577	Q/R12	AI	
9398	14	2-LPNL-925-0061	PANEL 2-25-61 IRM PREAMP. RPS II	RB	577	Q/R12	AI	
9399	20	2-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U2 MCR	AI	
9400	20	2-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U2 MCR	AI	
9401	20	2-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	CB	617	U2 MCR	AI	
9402	20	2-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	CB	617	U2 MCR	AI	
9403	20	2-PNLA-009-012	PANEL 2-9-12	CB	617	U2 MCR	AI	
9404	15	2-BATD-283-000A2	24V NEUTRON MONITORING BATTERY, U2 CHANNEL A	CB	593	BAT RM 2	AI	
9405	15	2-BATD-283-000B2	24V NEUTRON MONITORING BATTERY, U2 CHANNEL B	CB	593	BAT RM 2	AI	
9406	16	2-CHGD-283-A1-2	24V NEUTRON BATTERY CHARGERS A1-2	CB	593	BAT BD RM 2	AI	
9407	16	2-CHGD-283-A2-2	24V NEUTRON BATTERY CHARGERS A2-2	CB	593	BAT BD RM 2	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9408	16	2-CHGD-283-B1-2	24V NEUTRON BATTERY CHARGERS B1-2	CB	593	BAT BD RM 2	AI	
9409	16	2-CHGD-283-B2-2	24V NEUTRON BATTERY CHARGERS B2-2	CB	593	BAT BD RM 2	AI	
30001	00	3-HCU-85-1-185	CRD\HYDRAULIC CONTROL UNIT	U3 RB	565	R16&20/P-S	AI	1,2
30002	07	3-FCV-85-82A	CRD\WEST SDV VENT VALVE	U3 RB	565	R16/S	AI	1
30003	07	3-FCV-85-82	CRD\WEST SDV VENT VALVE	U3 RB	565	R16/S	AI	2
30004	07	3-FCV-85-37C	CRD\WEST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	AI	1
30005	07	3-FCV-85-37D	CRD\WEST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	AI	2
30006	07	3-FCV-85-83A	CRD\EAST SDV VENT VALVE	U3 RB	565	R20/S	AI	1
30007	07	3-FCV-85-83	CRD\EAST SDV VENT VALVE	U3 RB	565	R20/S	AI	2
30008	07	3-FCV-85-37E	CRD\EAST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	AI	1
30009	07	3-FCV-85-37F	CRD\EAST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	AI	2
30010	21	3-TNK-85-901	CRD\WEST SCRAM INSTRUMENT VOLUME	U3 RB	565	P/R16	AI	1,2
30011	21	3-TNK-85-902	CRD\EAST SCRAM INSTRUMENT VOLUME	U3 RB	565	P/R20	AI	1,2
30012	08B	3-FSV-85-37A	CRD\SCRAM DUMP VALVE	U3 RB	565	R19/N	AI	1
30013	08B	3-FSV-85-37B	CRD\SCRAM DUMP VALVE	U3 RB	565	R19/N	AI	1
30014	08B	3-FSV-85-35A	CRD\BACKUP SCRAM VALVE	U3 RB	565	R19/N	AI	2
30015	08B	3-FSV-85-35B	CRD\BACKUP SCRAM VALVE	U3 RB	565	R19/N	AI	2
30016	20	3-HS-99-5A/S3A	RPS\REACTOR MANUAL SCRAM CHANNEL A3	U3 CB	617	U3 MCR	AI	1
30017	20	3-HS-99-5A/S3B	RPS\REACTOR MANUAL SCRAM CHANNEL B3	U3 CB	617	U3 MCR	AI	1
30018	20	3-HS-99-5A-S1	RPS\REACTOR MODE SWITCH	U3 CB	617	U3 MCR	AI	2
31001	08A	3-FCV-74-1	RHR/PUMP 3A SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SW CORNER	AI	1
31002	08A	3-FCV-74-2	RHR/PUMP 3A SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SW CORNER	AI	1
31003	08A	3-FCV-74-96	RHR/UNIT 3 TO UNIT 2 RHR X-TIE ISOLATION VALVE	U3 RB	519	SW CORNER	AI	1
31004	06	3-PMP-74-5	RHR/PUMP 3A	U3 RB	519	SW CORNER	AI	1
31005	R	3-CKV-74-560A	RHR/PUMP 3A MINIMUM FLOW CHECK VALVE	U3 RB	519		AI	1
31006	08A	3-FCV-74-7	RHR/PUMP 3A&3C MINIMUM FLOW VALVE	U3 RB	519	SW CORNER	AI	1
31007	R	3-CKV-71-547	RCIC/RCIC MINIMUM FLOW CHECK VALVE	U3 RB			AI	1
31008	R	3-CKV-74-559A	RHR/PUMP 3A DISCHARGE CHECK VALVE	U3 RB	519		AI	1
31009	21	3-HEX-74-900A	RHR/HEAT EXCHANGER 3A	U3 RB	565	SW HX	AI	1
31010	08A	3-FCV-74-100	RHR/U3 TO U2 RHR DISCHARGE X-TIE ISOLATION VALVE	U3 RB	565	R14/T	AI	1
31011	08A	3-FCV-74-12	RHR/PUMP 3C SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SW CORNER	AI	1A
31012	08A	3-FCV-74-13	RHR/PUMP 3C SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SW CORNER	AI	1A
31013	08A	3-FCV-74-97	RHR/UNIT 3 TO UNIT 2 RHR X-TIE ISOLATION VALVE	U3 RB	519	SW CORNER	AI	1A

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
31014	06	3-PMP-74-16	RHR/PUMP 3C	U3 RB	519	SW CORNER	AI	1A
31015	R	3-CKV-74-560C	RHR/PUMP 3C MINIMUM FLOW CHECK VALVE	U3 RB	519		AI	1A
31016	R	3-CKV-74-559C	RHR/PUMP 3C DISCHARGE CHECK VALVE	U3 RB	519		AI	1A
31017	21	3-HEX-74-900C	RHR/HEAT EXCHANGER 3C	U3 RB	565	SW HX	AI	1A
31018	18	3-FI-74-50	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	AI	1
31019	18	3-FI-74-56	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	AI	1
31020	08A	3-FCV-74-57	RHR/LOOP I TORUS CONTAINMENT COOLING/SPRAY VALVE	U3 RB	519	TORUS	AI	1
31021	08A	3-FCV-74-59	RHR/LOOP I SUPRESSION POOL COOLING VALVE	U3 RB	519	TORUS	AI	1
31022	08A	3-FCV-74-58	RHR/LOOP I SUPRESSION POOL SPRAY VALVE	U3 RB	519	TORUS	I	1
31023	08A	3-FCV-74-52	RHR/LOOP I OUTBOARD INJECTION VALVE	U3 RB	565	T/R18	AI	1
31024	08A	3-FCV-74-53	RHR/LOOP I INBOARD INJECTION VALVE	U3 RB	565	T/R18	AI	1
31025	R	3-FCV-74-54	RHR/LOOP I TESTABLE CHECK VALVE	U3 DW			AI	1
31026	08A	3-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U3 RB	621	R17/S	AI	1
31027	08A	3-FCV-74-60	RHR/LOOP I OUTBOARD DRYWELL SPRAY VALVE	U3 RB	565	R16/S	AI	1
31028	08A	3-FCV-74-61	RHR/LOOP I INBOARD DRYWELL SPRAY VALVE	U3 RB	565	R16/S	I	1
31029	08A	3-FCV-74-24	RHR/PUMP 3B SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SE CORNER	AI	2
31030	08A	3-FCV-74-25	RHR/PUMP 3B SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SE CORNER	AI	2
31031	06	3-PMP-74-28	RHR/PUMP 3B	U3 RB	519	SE CORNER	AI	2
31032	R	3-CKV-74-560B	RHR/PUMP 3B MINIMUM FLOW CHECK VALVE	U3 RB	519		AI	2
31033	08A	3-FCV-74-30	RHR/PUMP 3B&3D MINIMUM FLOW VALVE	U3 RB	519	SE CORNER	AI	2
31034	R	3-CKV-73-559	HPCI/HPCI PUMP MINIMUM FLOW CHECK VALVE	U3 RB			AI	2
31035	R	3-CKV-74-559B	RHR/PUMP 3B DISCHARGE CHECK VALVE	U3 RB	519		AI	2
31036	21	3-HEX-74-900B	RHR/HEAT EXCHANGER 3B	U3 RB	565	SE HX	AI	2
31037	08A	3-FCV-74-35	RHR/PUMP 3D SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SE CORNER	AI	2A
31038	08A	3-FCV-74-36	RHR/PUMP 3D SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SE CORNER	AI	2A
31039	06	3-PMP-74-39	RHR/PUMP 3D	U3 RB	519	SE CORNER	AI	2A
31040	R	3-CKV-74-560D	RHR/PUMP 3D MINIMUM FLOW CHECK VALVE	U3 RB	519		AI	2A
31041	R	3-CKV-74-559D	RHR/PUMP 3D DISCHARGE CHECK VALVE	U3 RB	519		AI	2A
31042	21	3-HEX-74-900D	RHR/HEAT EXCHANGER 3D	U3 RB	565	SE HX	AI	2A
31043	18	3-FI-74-64	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	AI	2
31044	18	3-FI-74-70	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	AI	2
31045	08A	3-FCV-74-71	RHR/LOOP II TORUS CONTAINMENT COOLING/SPRAY VALVE	U3 RB	519	TORUS	AI	2
31046	08A	3-FCV-74-73	RHR/LOOP II SUPRESSION POOL COOLING VALVE	U3 RB	519	TORUS	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
31047	08A	3-FCV-74-72	RHR/LOOP II SUPRESSION POOL SPRAY VALVE	U3 RB	519	TORUS	I	2
31048	08A	3-FCV-74-66	RHR/LOOP II OUTBOARD INJECTION VALVE	U3 RB	565	T/R18	AI	2
31049	08A	3-FCV-74-67	RHR/LOOP II INBOARD INJECTION VALVE	U3 RB	565	T/R18	AI	2
31050	R	3-FCV-74-68	RHR/LOOP II TESTABLE CHECK VALVE	U3 DW			AI	2
31051	08A	3-FCV-74-74	RHR/LOOP II OUTBOARD DRYWELL SPRAY VALVE	U3 RB	593	R19/S	AI	2
31052	08A	3-FCV-74-75	RHR/LOOP II INBOARD DRYWELL SPRAY VALVE	U3 RB	593	R19/S	I	2
32000	07	3-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32001	R	3-CKV-10-506	RVVD/MSRV 1-4 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32002	R	3-CKV-10-521	RVVD/MSRV 1-4 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32003	07	3-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32004	R	3-CKV-10-507	RVVD/MSRV 1-5 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32005	R	3-CKV-10-522	RVVD/MSRV 1-5 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32006	07	3-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32007	R	3-CKV-10-508	RVVD/MSRV 1-18 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32008	R	3-CKV-10-523	RVVD/MSRV 1-18 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32009	07	3-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32010	R	3-CKV-10-509	RVVD/MSRV 1-19 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32011	R	3-CKV-10-524	RVVD/MSRV 1-19 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32012	07	3-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32013	R	3-CKV-10-510	RVVD/MSRV 1-22 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32014	R	3-CKV-10-525	RVVD/MSRV 1-22 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32015	07	3-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32016	R	3-CKV-10-511	RVVD/MSRV 1-23 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32017	R	3-CKV-10-526	RVVD/MSRV 1-23 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32018	07	3-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32019	R	3-CKV-10-519	RVVD/MSRV 1-179 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32020	R	3-CKV-10-532	RVVD/MSRV 1-179 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32021	07	3-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	2
32022	R	3-CKV-10-512	RVVD/MSRV 1-30 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32023	R	3-CKV-10-527	RVVD/MSRV 1-30 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32024	07	3-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	2
32025	R	3-CKV-10-513	RVVD/MSRV 1-31 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32026	R	3-CKV-10-528	RVVD/MSRV 1-31 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
32027	07	3-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	2
32028	R	3-CKV-10-514	RVVD/MSRV 1-34 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32029	R	3-CKV-10-529	RVVD/MSRV 1-34 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32030	07	3-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	2
32031	R	3-CKV-10-515	RVVD/MSRV 1-41 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32032	R	3-CKV-10-530	RVVD/MSRV 1-41 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32033	07	3-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	2
32034	R	3-CKV-10-516	RVVD/MSRV 1-42 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32035	R	3-CKV-10-531	RVVD/MSRV 1-42 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32036	07	3-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	2
32037	R	3-CKV-10-520	RVVD/MSRV 1-180 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32038	R	3-CKV-10-533	RVVD/MSRV 1-180 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
33001	07	3-FCV-1-14	MSIV "A" INBOARD ISOLATION VALVE	U3 DW	563	DW	AI	1
33002	07	3-FCV-1-15	MSIV "A" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	AI	2
33003	07	3-FCV-1-26	MSIV "B" INBOARD ISOLATION VALVE	U3 DW	563	DW	AI	1
33004	07	3-FCV-1-27	MSIV "B" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	AI	2
33005	07	3-FCV-1-37	MSIV "C" INBOARD ISOLATION VALVE	U3 DW	563	DW	AI	1
33006	07	3-FCV-1-38	MSIV "C" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	AI	2
33007	07	3-FCV-1-51	MSIV "D" INBOARD ISOLATION VALVE	U3 DW	563	DW	AI	1
33008	07	3-FCV-1-52	MSIV "D" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	AI	2
33009	08A	3-FCV-1-55	MAIN STEAM LINE DRAIN ISOLATION VALVE	U3 DW	563	DW	AI	1
33010	R	3-CKV-3-558	FEEDWATER "A" INBOARD ISOLATION VALVE	U3 DW			AI	1
33011	R	3-CKV-3-554	FEEDWATER "A" OUTBOARD ISOLATION VALVE	U3 RB			AI	2
33012	R	3-CKV-3-572	FEEDWATER "B" INBOARD ISOLATION VALVE	U3 DW			AI	1
33013	R	3-CKV-3-568	FEEDWATER "B" OUTBOARD ISOLATION VALVE	U3 RB			AI	2
33014	07	3-FCV-32-63	DRYWELL CONTROL AIR SUCTION VALVE	U3 RB	565	CLEAN RM	I	1,2
33015	07	3-FCV-64-17	CONTAINMENT VENTILATION ISOLATION VALVE	U3 RB	565	RR19/T	I	1,2
33016	07	3-FCV-64-30	CONTAINMENT VENTILATION ISOLATION VALVE	U3 RB	621	Q/R18	I	1,2
33017	07	3-FCV-64-33	CONTAINMENT VENTILATION ISOLATION VALVE	U3 RB	565	P/R16	I	1,2
33018	07	3-FCV-64-139	CONTAINMENT DW DP ISOLATION VALVE	U3 RB	565	P/R16	I	1,2
33019	07	3-FCV-64-140	CONTAINMENT DW DP ISOLATION VALVE	U3 RB	565	P/R16	I	1,2
33020	07	3-FCV-64-28A	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33021	07	3-FCV-64-28B	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
33022	07	3-FCV-64-28C	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33023	07	3-FCV-64-28D	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33024	07	3-FCV-64-28E	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33025	07	3-FCV-64-28F	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33026	07	3-FCV-64-28G	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33027	07	3-FCV-64-28H	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33028	07	3-FCV-64-28J	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33029	07	3-FCV-64-28K	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33030	07	3-FCV-64-28L	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33031	07	3-FCV-64-28M	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33032	08A	3-FCV-69-1	RWCU INBOARD ISOLATION VALVE	U3 DW	584	DW	AI	1
33033	08A	3-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U3 RB	593	R17/S	AI	2
33034	R	3-CKV-69-629	RWCU SYSTEM RETURN CHECK VALVE	U3 RB			AI	2
33035	08A	3-FCV-70-47	RBCCW DRYWELL RETURN VALVE	U3 RB	519	TORUS	I	1,2
33036	R	3-CKV-70-506	RBCCW DRYWELL SUPPLY CHECK VALVE	U3 RB			I	1,2
33037	08A	3-FCV-71-2	RCIC INBOARD ISOLATION VALVE	U3 DW	584	DW	AI	1
33038	08A	3-FCV-71-3	RCIC OUTBOARD ISOLATION VALVE	U3 RB	565	MSIV VAULT	AI	2
33039	08A	3-FCV-71-18	RCIC OUTBOARD SUCTION VALVE	U3 RB	519	R15/N	I	1,2
33040	08A	3-FCV-73-2	HPCI STEAM SUPPLY ISOLATION VALVE	U3 DW	563	DW	AI	1
33041	08A	3-FCV-73-3	HPCI STEAM SUPPLY ISOLATION VALVE	U3 RB	519	TORUS	AI	2
33042	08A	3-FCV-73-81	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	U3 RB	519	TORUS	AI	2
33043	08A	3-FCV-73-27	HPCI OUTBOARD SUCTION VALVE	U3 RB	519	R19/V	I	1,2
33044	07	3-FCV-75-57	PSC PUMP SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	AI	1
33045	07	3-FCV-75-58	PSC PUMP SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	AI	2
33046	07	3-FCV-76-24	PRIMARY CONTAINMENT ISOLATION VALVE	U3 RB	565	R19/T	I	1,2
33047	07	3-FCV-77-2B	DRYWELL FLOOR DRAIN SUMP DISCHARGE	U3 RB	519	TORUS	I	1,2
33048	07	3-FCV-77-15B	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE	U3 RB	519	TORUS	I	1,2
33049	07	3-FCV-84-19	CAD ISOLATION VALVE	U3 RB	621	R18/Q	I	1,2
33050	07	3-FCV-84-20	CAD ISOLATION VALVE	U3 RB	621	Q/R18	I	1,2
33051	20	3-LI-3-58A	RPV LEVEL INSTRUMENT	N/A	N/A	N/A	AI	1
33052	20	3-LI-3-58B	RPV LEVEL INSTRUMENT	U3 CB	N/A	N/A	AI	2
33053	20	3-PI-3-74A	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	AI	1
33054	20	3-PI-3-74B	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
33055	20	3-XR-64-159	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	AI	1
33056	20	3-LI-64-159A	TORUS LEVEL INSTRUMENT	N/A	N/A	N/A	AI	2
33057	20	3-TI-64-161	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	AI	1
33058	20	3-TI-64-162	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	AI	2
33059	20	3-PI-64-67B	DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	I	1
33060	20	3-PI-64-160A	DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	I	2
33061	20	3-TI-64-52AB	DRYWELL TEMPERATURE INSTRUMENT	N/A	N/A	N/A	I	1
33062	20	3-XR-64-50	DRYWELL TEMPERATURE AND PRESSURE INSTRUMENT	N/A	N/A	N/A	I	2
33063	07	3-FCV-76-17	CONTAINMENT INERTING N2 MAKEUP	U3 RB	565	R19/T	I	1,2
33064	07	3-FCV-64-222	HARDENED WETWELL VENT	U3 RB	565	R17/T	I	1,2
33065	20	3-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U3 MCR	AI	1
33066	20	3-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U3 MCR	AI	2
34001	10	3-CLR-67-917	EECW/RHR PUMP 3A ROOM COOLER	U3 RB	519	SW CORNER	AI	1
34002	10	3-CLR-67-919	EECW/CS PUMP 3A ROOM COOLER	U3 RB	519	NW CORNER	AI	1
34003	10	3-CLR-67-921	EECW/RHR PUMP 3C ROOM COOLER	U3 RB	519	SW CORNER	AI	1
34004	21	3-HEX-67-915	EECW/RHR SEAL HX 3A	U3 RB	519	SW CORNER	AI	1
34005	R	3-CKV-67-638	EECW NORTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U3 RB	565		AI	1
34006	R	3-CKV-67-639	EECW NORTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U3 RB	565		AI	1
34007	R	3-CKV-67-648	EECW NORTH HEADER SUPPLY CHECK VALVE TO A CS	U3 RB	565		AI	1
34008	R	3-CKV-67-649	EECW NORTH HEADER SUPPLY CHECK VALVE TO A CS	U3 RB	565		AI	1
34009	R	3-CKV-67-659	EECW NORTH HEADER SUPPLY CHECK VALVE TO B&D RHR	U3 RB	565		AI	1
34010	R	3-CKV-67-660	EECW NORTH HEADER SUPPLY CHECK VALVE TO B&D RHR	U3 RB	565		AI	1
34011	R	3-CKV-67-656	EECW NORTH HEADER SUPPLY CHECK VALVE TO B CS	U3 RB	565		AI	1
34012	R	3-CKV-67-657	EECW NORTH HEADER SUPPLY CHECK VALVE TO B CS	U3 RB	565		AI	1
34013	10	3-CLR-67-918	EECW/RHR PUMP 3B ROOM COOLER	U3 RB	519	SE CORNER	AI	2
34014	10	3-CLR-67-920	EECW/CS PUMP 3B ROOM COOLER	U3 RB	519	NE CORNER	AI	2
34015	10	3-CLR-67-922	EECW/RHR PUMP 3D ROOM COOLER	U3 RB	519	SE CORNER	AI	2
34016	21	3-HEX-67-923	EECW/RHR SEAL HX 3B	U3 RB	519	SE CORNER	AI	2
34017	R	3-CKV-67-558	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U3 RB	593		AI	2
34018	R	3-CKV-67-559	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U3 RB	593		AI	2
34019	R	3-CKV-67-541	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A CS	U3 RB	593		AI	2
34020	R	3-CKV-67-542	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A CS	U3 RB	593		AI	2
34021	R	3-CKV-67-600	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B & D RHR	U3 RB	593		AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
34022	R	3-CKV-67-601	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B & D RHR	U3 RB	593		AI	2
34023	R	3-CKV-67-584	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B CS	U3 RB	593		AI	2
34024	R	3-CKV-67-585	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B CS	U3 RB	593		AI	2
34025	21	3-HEX-67-916	EECW/RHR SEAL HX 3C	U3 RB	519	SW CORNER	AI	1
34026	21	3-HEX-67-924	EECW/RHR SEAL HX 3D	U3 RB	519	SE CORNER	AI	2
34027	R	3-CKV-67-598	EECW SEAL DISCHARGE CHECK VALVE	U3 RB	593		AI	2
34028	R	3-CKV-67-713	EECW NORTH HEADER SUPPLY CHECK VALVE TO 3EC DG	U3 DG	565		AI	1
34029	R	3-CKV-67-714	EECW NORTH HEADER SUPPLY CHECK VALVE TO 3EC DG	U3 DG	565		AI	1
34030	R	3-CKV-67-723	EECW NORTH HEADER SUPPLY CHECK VALVE TO 3ED DG	U3 DG	565		AI	1
34031	R	3-CKV-67-724	EECW NORTH HEADER SUPPLY CHECK VALVE TO 3ED DG	U3 DG	565		AI	1
34032	R	3-CKV-67-715	EECW SOUTH HEADER SUPPLY CHECK VALVE TO 3EC DG	U3 DG	565		AI	2
34033	R	3-CKV-67-716	EECW SOUTH HEADER SUPPLY CHECK VALVE TO 3EC DG	U3 DG	565		AI	2
34034	R	3-CKV-67-725	EECW SOUTH HEADER SUPPLY CHECK VALVE TO 3ED DG	U3 DG	565		AI	2
34035	R	3-CKV-67-726	EECW SOUTH HEADER SUPPLY CHECK VALVE TO 3ED DG	U3 DG	565		AI	2
35001	08A	3-FCV-75-2	CS/PUMP 3A SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	AI	1
35002	06	3-PMP-75-5	CS/PUMP 3A	U3 RB	519	NW CORNER	AI	1
35003	R	3-CKV-75-537A	CS/PUMP 3A DISCHARGE CHECK VALVE	U3 RB			AI	1
35004	R	3-CKV-75-570A	CS/PUMP 3A MINI-FLOW CHECK VALVE	U3 RB			AI	1
35005	08A	3-FCV-75-9	CS/PUMPS 3A & 3C MINI-FLOW VALVE	U3 RB	519	NW CORNER	AI	1
35006	08A	3-FCV-75-11	CS/PUMP 3C SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	AI	1
35007	06	3-PMP-75-14	CS/PUMP 3C	U3 RB	519	NW CORNER	AI	1
35008	R	3-CKV-75-537C	CS/PUMP 3C DISCHARGE CHECK VALVE	U3 RB			AI	1
35009	R	3-CKV-75-570C	CS/PUMP 3C MINI-FLOW CHECK VALVE	U3 RB			AI	1
35010	08A	3-FCV-75-22	CS/PUMPS 3A & 3C TEST ISOLATION VALVE	U3 RB	519	NW CORNER	AI	1
35011	18	3-FI-75-21	CS/PUMPS 3A & 3C FLOW INDICATOR	N/A	N/A	N/A	AI	1
35012	08A	3-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U3 RB	593	P/R18	AI	1
35013	08A	3-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U3 RB	593	P/R18	AI	1
35014	R	3-FCV-75-26	CS/DIV I TESTABLE CHECK VALVE	U3 DW			AI	1
35015	08A	3-FCV-75-30	CS/PUMP 3B SUCTION ISOLATION VALVE	U3 RB	519	NE CORNER	AI	2
35016	06	3-PMP-75-33	CS/PUMP 3B	U3 RB	519	NE CORNER	AI	2
35017	R	3-CKV-75-537B	CS/PUMP 3B DISCHARGE CHECK VALVE	U3 RB			AI	2
35018	R	3-CKV-75-570B	CS/PUMP 3B MINI-FLOW CHECK VALVE	U3 RB			AI	2
35019	08A	3-FCV-75-37	CS/PUMPS 3B & 3D MINI-FLOW VALVE	U3 RB	519	NE CORNER	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
35020	08A	3-FCV-75-39	CS/PUMP 3D SUCTION ISOLATION VALVE	U3 RB	519	NE CORNER	AI	2
35021	06	3-PMP-75-42	CS/PUMP 3D	U3 RB	519	NE CORNER	AI	2
35022	R	3-CKV-75-537D	CS/PUMP 3D DISCHARGE CHECK VALVE	U3 RB			AI	2
35023	R	3-CKV-75-570D	CS/PUMP 3D MINI-FLOW CHECK VALVE	U3 RB			AI	2
35024	08A	3-FCV-75-50	CS/PUMPS 3B & 3D TEST ISOLATION VALVE	U3 RB	519	NE CORNER	AI	2
35025	18	3-FI-75-49	CS/PUMPS 3B & 3D FLOW INDICATOR	N/A	N/A	N/A	AI	2
35026	08A	3-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U3 RB	593	P/R18	AI	2
35027	08A	3-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U3 RB	593	P/R18	AI	2
35028	R	3-FCV-75-54	CS/DIV II TESTABLE CHECK VALVE	U3 DW			AI	2
36001	08B	3-FSV-84-8A	CAD/CAD TO DW (3-FCV-64-18) SOLENOID VALVE	U3 RB	565	R19/T	AI	1
36002	08B	3-FSV-84-8B	CAD/CAD TO DW (3-FCV-64-19) SOLENOID VALVE	U3 RB	565	R17/S	AI	1
36003	07	3-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R17/U	AI	1
36004	08B	3-FSV-84-48	CAD/CAD SYSTEM "A" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R17/S	AI	1
36005	R	3-CKV-32-2521	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 1	U3 RB			AI	1
36006	R	3-CKV-32-2163	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 2	U3 DW			AI	2
36007	R	3-CKV-32-2516	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 1	U3 DW			AI	1
36008	R	3-CKV-32-826	CA/DRYWELL CONTROL AIR TO PSV-1-19	U3 DW			AI	1
36009	21	3-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U3 DW	584	DW	AI	1
36010	08B	3-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19	U3 DW	584	DW	AI	1
36011	R	3-CKV-32-892	CA/DRYWELL CONTROL AIR TO PSV-1-22	U3 DW			AI	1
36012	21	3-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U3 DW	584	DW	AI	1
36013	08B	3-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22	U3 DW	584	DW	AI	1
36014	R	3-CKV-32-869	CA/DRYWEWLL CONTROL AIR TO PSV-1-5	U3 DW			AI	1
36015	21	3-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U3 DW	584	DW	AI	1
36016	08B	3-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5	U3 DW	584	DW	AI	1
36017	08B	3-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23	U3 DW	584	DW	AI	1
36018	08B	3-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179	U3 DW	584	DW	AI	1
36019	08B	3-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4	U3 DW	584	DW	AI	1
36020	21	3-ACC-32-6104	CA/ACCUMULATOR FOR PSV-1-18	U3 DW	584	DW	AI	2
36021	08B	3-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18	U3 DW	584	DW	AI	2
36022	R	3-CKV-32-872	CA/DRYWELL CONTROL AIR TO PSV-1-18	U3 DW			AI	2
36023	08B	3-FSV-84-8C	CAD/CAD TO DW (3-FCV-64-19) SOLENOID VALVE	U3 RB	565	R17/S	AI	2
36024	08B	3-FSV-84-8D	CAD/CAD TO DW (3-FCV-64-18) SOLENOID VALVE	U3 RB	565	R19/T	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
36025	07	3-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R18/U	AI	2
36026	08B	3-FSV-84-49	CAD/CAD SYSTEM "B" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R19/Q	AI	2
36027	R	3-CKV-32-336	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 2	U3 RB			AI	2
36028	R	3-CKV-32-2376	CA/DRYWELL CONTROL AIR TO PSV-1-30	U3 DW			AI	2
36029	21	3-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U3 DW	584	DW	AI	2
36030	08B	3-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30	U3 DW	584	DW	AI	2
36031	R	3-CKV-32-2378	CA/DRYWELL CONTROL AIR TO PSV-1-31	U3 DW	584		AI	2
36032	21	3-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U3 DW	584	DW	AI	2
36033	08B	3-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31	U3 DW	584	DW	AI	2
36034	R	3-CKV-32-919	CA/DRYWELL CONTROL AIR TO PSV-1-34	U3 DW			AI	2
36035	21	3-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U3 DW	584	DW	AI	2
36036	08B	3-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34	U3 DW	584	DW	AI	2
36037	21	3-ACC-32-6110	CA/ACCUMULATOR FOR PSV-1-41	U3 DW	584	DW	AI	2
36038	08B	3-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41	U3 DW	584	DW	AI	2
36039	R	3-CKV-32-915	CA/DRYWELL CONTROL AIR TO PSV-1-41	U3 DW			AI	2
36040	08B	3-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42	U3 DW	584	DW	AI	2
36041	08B	3-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180	U3 DW	584	DW	AI	2
36042	R	3-CKV-32-3749	CAD/CONTROL AIR/CAD CHECK VALVE	U3 RB			AI	1
37001	17	3-GEN-82-3C	UNIT 3 DIESEL GENERATOR "C"	U3 DG	565	DG C	AI	2
37002	21	3-TNK-18-63/1	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565	DG C	AI	2
37003	21	3-TNK-18-63/2	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565	DG C	AI	2
37004	21	3-TNK-18-63/3	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565	DG C	AI	2
37005	21	3-TNK-86-650C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI	2
37006	21	3-TNK-86-651C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI	2
37007	21	3-TNK-86-652C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI	2
37008	21	3-TNK-86-653C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI	2
37009	21	3-TNK-86-654C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI	2
37010	21	3-TNK-86-655C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI	2
37011	21	3-TNK-86-656C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI	2
37012	21	3-TNK-86-657C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI	2
37013	21	3-TNK-86-658C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI	2
37014	21	3-TNK-86-659C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI	2
37015	09	3-FAN-30-234	DG ROOM 3C EXHAUST FAN "A"	U3 DG	583	DG C	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
37016	09	3-FAN-30-235	DG ROOM 3C EXHAUST FAN "B"	U3 DG	583	DG C	AI	2
37017	10	3-FCO-30-234A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3C"	U3 DG	583	DG C	AI	2
37018	10	3-FCO-30-234B	INLET DAMPER FOR FAN "A" IN DG ROOM "3C"	U3 DG	583	DG C	AI	2
37019	10	3-FCO-30-234C	INLET DAMPER FOR FAN "A" IN DG ROOM "3C"	U3 DG	583	DG C	AI	2
37020	10	3-FCO-30-235A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3C"	U3 DG	583	DG C	AI	2
37021	10	3-FCO-30-235B	INLET DAMPER FOR FAN "B" IN DG ROOM "3C"	U3 DG	583	DG C	AI	2
37022	10	3-FCO-30-235C	INLET DAMPER FOR FAN "B" IN DG ROOM "3C"	U3 DG	583	DG C	AI	2
37023	17	3-GEN-82-3D	UNIT 3 DIESEL GENERATOR "D"	U3 DG	565	DG D	AI	2
37024	21	3-TNK-18-64/1	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565	DG D	AI	2
37025	21	3-TNK-18-64/2	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565	DG D	AI	2
37026	21	3-TNK-18-64/3	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565	DG D	AI	2
37027	21	3-TNK-86-650D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI	2
37028	21	3-TNK-86-651D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI	2
37029	21	3-TNK-86-652D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI	2
37030	21	3-TNK-86-653D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI	2
37031	21	3-TNK-86-654D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI	2
37032	21	3-TNK-86-655D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI	2
37033	21	3-TNK-86-656D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI	2
37034	21	3-TNK-86-657D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI	2
37035	21	3-TNK-86-658D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI	2
37036	21	3-TNK-86-659D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI	2
37037	09	3-FAN-30-236	DG ROOM 3D EXHAUST FAN "A"	U3 DG	583	DG D	AI	2
37038	09	3-FAN-30-237	DG ROOM 3D EXHAUST FAN "B"	U3 DG	583	DG D	AI	2
37039	10	3-FCO-30-236A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3D"	U3 DG	583	DG D	AI	2
37040	10	3-FCO-30-236B	INLET DAMPER FOR FAN "A" IN DG ROOM "3D"	U3 DG	583	DG D	AI	2
37041	10	3-FCO-30-236C	INLET DAMPER FOR FAN "A" IN DG ROOM "3D"	U3 DG	583	DG D	AI	2
37042	10	3-FCO-30-237A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3D"	U3 DG	583	DG D	AI	2
37043	10	3-FCO-30-237B	INLET DAMPER FOR FAN "B" IN DG ROOM "3D"	U3 DG	583	DG D	AI	2
37044	10	3-FCO-30-237C	INLET DAMPER FOR FAN "B" IN DG ROOM "3D"	U3 DG	583	DG D	AI	2
37045	09	3-FAN-30-231	DG ROOM 3A EXHAUST FAN "B"	U3 DG	583	DG A	AI	1
37046	10	3-FCO-30-231A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3A"	U3 DG	583	DG A	AI	1
37047	10	3-FCO-30-231B	INLET DAMPER FOR FAN "B" IN DG ROOM "3A"	U3 DG	583	DG A	AI	1
37048	10	3-FCO-30-231C	INLET DAMPER FOR FAN "B" IN DG ROOM "3A"	U3 DG	583	DG A	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
37049	09	3-FAN-30-233	DG ROOM 3B EXHAUST FAN "B"	U3 DG	583	DG B	AI	1
37050	10	3-FCO-30-233A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3B"	U3 DG	583	DG B	AI	1
37051	10	3-FCO-30-233B	INLET DAMPER FOR FAN "B" IN DG ROOM "3B"	U3 DG	583	DG B	AI	1
37052	10	3-FCO-30-233C	INLET DAMPER FOR FAN "B" IN DG ROOM "3B"	U3 DG	583	DG B	AI	1
38001	R	3-CKV-23-579	RHRSW TO HX A INLET CHECK VALVE	U3 RB	565		AI	1
38002	08A	3-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U3 RB	565	R17/T	AI	1
38003	R	3-CKV-23-581	RHRSW TO HX C INLET CHECK VALVE	U3 RB	565		AI	1
38004	08A	3-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U3 RB	565	R17/T	AI	1
38005	R	3-CKV-23-580	RHRSW TO HX B INLET CHECK VALVE	U3 RB	565		AI	2
38006	08A	3-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U3 RB	565	R19/U	AI	2
38007	R	3-CKV-23-582	RHRSW TO HX D INLET CHECK VALVE	U3 RB	565		AI	2
38008	08A	3-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U3 RB	565	R19/U	AI	2
38009	20	3-FI-23-36	RHRSW HX A FLOW INDICATOR	N/A	N/A	N/A	AI	1
38010	20	3-FI-23-42	RHRSW HX C FLOW INDICATOR	N/A	N/A	N/A	AI	1
38011	20	3-FI-23-48	RHRSW HX B FLOW INDICATOR	N/A	N/A	N/A	AI	2
38012	20	3-FI-23-54	RHRSW HX D FLOW INDICATOR	N/A	N/A	N/A	AI	2
39001	03	3-BDAA-211-0003EC	4KV SHUTDOWN BOARD 3EC	U3 DG	583	4KV SD BD	AI	II3C
39002	15	3-BATB-254-0000C	DIESEL 3C 125V BATTERY	U3 DG	565	DG C	AI	II3C
39003	14	3-BDGG-254-0003C	DIESEL 3C 125V BATTERY BOARD	U3 DG	565	DG C	AI	II3C
39004	16	3-CHGB-254-0000CB	DIESEL 3C BATTERY CHARGER B	U3 DG	565	DG C	AI	II3C
39005	01	3-BDBB-219-0003EB	480V DIESEL AUX BOARD 3EB	U3 DG	583	480V AUX BD	AI	II
39006	04	3-XFA-231-TS3B	4KV/480V TRANSFORMER TS3B	U3 RB	621	S/R21	AI	II3C
39007	02	3-BDBB-231-0003B	480V SD BOARD 3B	U3 RB	621	SD BD F	AI	II
39008	01	3-BDBB-268-0003A	480V RMOV BOARD 3A	U3 RB	621	SD BD E	AI	I
39009	01	3-BDBB-268-0003B	480V RMOV BOARD 3B	U3 RB	593	SD BD F	AI	II
39010	14	3-JBOX-268-5994	MG SET 3DN CONTROL STATION (3-HS-268-0003DN)	U3 RB	621	U/R18	AI	I
39011	14	3-JBOX-268-5996	MG SET 3EN CONTROL STATION (3-HS-268-0003EN)	U3 RB	621	S/R21	AI	II
39012	20	3-JBOX-268-5955	MG SET 3DN CONTROL BOX (RELAYS) - SEALED BOX	U3 RB	621	U/R18	AI	I
39013	14	NONE	MG SET 3DN VOLTAGE REGULATOR BOX	U3 RB	621	S/R20	AI	I
39014	20	3-JBOX-268-5957	MG SET 3EN CONTROL BOX (RELAYS) - SEALED BOX	U3 RB	621	S/R21	AI	II
39015	13	3-MGEN-268-0003DN	LPCI MG SET 3DN	U3 RB	621	U/R18	AI	I
39016	01	3-BDBB-268-0003D	480V RMOV BOARD 3D	U3 RB	593	U/R17	AI	I
39017	13	3-MGEN-268-0003EN	LPCI MG SET 3EN	U3 RB	621	U/R21	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39018	01	3-BDBB-268-0003E	480V RMOV BOARD 3E	U3 RB	621	S/R20	AI	II
39019	14	NONE	MG SET 3EN VOLTAGE REGULATOR BOX	U3 RB	621	S/R20	AI	II
39020	03	3-BDAA-211-0003ED	4KV SHUTDOWN BOARD 3ED	U3 DG	565	HALLWAY	AI	II3D
39021	15	3-BATB-254-0000D	DIESEL 3D 125V BATTERY	U3 DG	565	DG D	AI	II
39022	14	3-BDGG-254-0003D	DIESEL 3D 125V BATTERY BOARD	U3 DG	565	DG D	AI	II3D
39023	16	3-CHGB-254-0000DB	DIESEL 3D BATTERY CHARGER B	U3 DG	565	DG D	AI	II3D
39030	01	3-BDBB-281-0003A	250V DC RMOV BOARD 3A	U3 RB	621	SD BD E	AI	II
39031	01	3-BDBB-281-0003B	250V DC RMOV BOARD 3B	U3 RB	593	SD BD F	AI	I
39033	01	3-BDBB-281-0003C	250V DC RMOV BOARD 3C	U3 RB	565	P/R15	AI	I
39039	14	3-JBOX-253-7163	I&C BUS 3A DISC SWITCH	U3 RB	593	SD BD E	AI	I
39040	04	3-XFA-253-0003A1	I&C BUS A 480/208-120V TRANSFORMER	U3 RB	621	SD BD E	AI	I
39041	04	3-XFA-253-0003A2	I&C BUS 3A REGULATING TRANSFORMER	U3 RB	621	SD BD E	AI	I
39042	14	3-JBOX-253-7159	I&C BUS 3A BREAKER BOX	U3 RB	621	SD BD E	AI	I
39043	14	3-JBOX-253-8866	I&C BUS 3A DISC SWITCH	U3 RB	621	SD BD E	AI	I
39044	14	3-JBOX-253-7158	I&C BUS 3A DISC SWITCH	U3 RB	621	SD BD E	AI	I
39045	20	3-PNLA-009-0009	I&C BUS 3A (CAB 2 OF PNL 3-9-9) {(SEE 39119)}	U3 CB	617	U3 MCR	AI	I
39046	00	3-PX-64-160B	POWER SUPPLY (PNL 3-9-19: 3-LI-64-159B,160B)	N/A	N/A	N/A	AI	I
39047	00	3-PXMC-23-114	POWER SUPPLY (PNL 3-9-18: FI-23-36,42 : FI-74-50)	N/A	N/A	N/A	AI	I
39048	00	3-PXMC-23-115 A&B	POWER SUPPLY (PNL 3-9-19: FI-23-48,54; FI-74-64)	N/A	N/A	N/A	AI	II
39049	04	3-XFA-253-0003B1	I&C BUS 3B 480/208-120V TRANSFORMER	U3 RB	593	SD BD F	AI	II
39050	04	3-XFA-253-0003B2	I&C BUS B REGULATING TRANSFORMER	U3 RB	593	SD BD F	AI	II
39051	14	3-JBOX-253-7162	I&C BUS 3B BREAKER BOX	U3 RB	593	SD BD F	AI	II
39052	14	3-JBOX-253-7161	I&C BUS 3B DISC SWITCH	U3 RB	593	SD BD F	AI	II
39053	14	3-JBOX-253-8868	I&C BUS 3B DISC SWITCHES	U3 RB	593	SD BD F	AI	II
39054	20	3-PNLA-009-0009	I&C BUS 3B (CAB 3 OF PNL 3-9-9) {(SEE 39119)}	U3 CB	617	U3 MCR	AI	II
39055	00	3-PX-64-159B	POWER SUPPLY (PNL 3-9-19)	N/A	N/A	N/A	AI	II
39056	14	3-JBOX-30-4243	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3C	AI	II
39057	18	3-HS-30-234	LOCAL HS STATION - DG 3C EXH FAN A	U3 DG	583	BD 3EB	AI	II
39058	14	3-JBOX-30-4244	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3C	AI	I
39059	18	3-HS-30-235	LOCAL HS STATION - DG 3C EXH FAN B	U3 DG	583	BD 3EB	AI	I
39060	14	3-JBOX-30-4245	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3D	AI	II
39061	18	3-HS-30-236	LOCAL HS STATION - DG 3D EXH FAN A	U3 DG	583	BD 3EB	AI	II
39062	14	3-JBOX-30-4246	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3D	AI	I

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39063	18	3-HS-30-237	LOCAL HS STATION - DG 3D EXH FAN B	U3 DG	583	BD 3EB	AI	I
39064	14	3-JBOX-30-4240	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3A	AI	II
39065	18	3-HS-30-231	LOCAL HS STATION - DG 3A EXH FAN B	U3 DG	583	BD 3EA	AI	II
39066	14	3-JBOX-30-4242	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3B	AI	II
39067	18	3-HS 30-233	LOCAL HS STATION - DG 3B EXH FAN B	U3 DG	583	BD 3EA	AI	II
39068	14	3-JBOX-253-7160	I&C BUS 3B DISC SWITCH	U3 RB	593	SD BD F	AI	II
39070	16	3-INVT-256-0001	DIV I ECCS ATU INVERTER	U3 RB	593	SD BD F	AI	I
39071	00	3-PX-71-60-1	ECCS ATU CAB 3-9-81 POWER SUPPLY	N/A	N/A	N/A	AI	I
39072	00	3-PX-71-60-1A	ECCS ATU CAB 3-9-81 POWER SUPPLY	N/A	N/A	N/A	AI	I
39073	00	3-PX-64-50	POWER SUPPLY (PNL 3-25-31: XR-64-50 [DEV BA TERM 11/12)	N/A	N/A	N/A	AI	I
39074	00	3-PX-74-56	POWER SUPPLY (PNL 3-9-18: FI-74-56)	N/A	N/A	N/A	AI	I
39075	16	3-INVT-256-0002	DIV II ECCS ATU INVERTER	U3 RB	621	SD BD E	AI	II
39076	00	3-PX-71-60-2	ECCS ATU CAB 3-9-82 POWER SUPPLY	N/A	N/A	N/A	AI	II
39077	00	3-PX-71-60-2A	ECCS ATU CAB 3-9-82 POWER SUPPLY	N/A	N/A	N/A	AI	II
39078	00	3-PX-74-70	POWER SUPPLY (PNL 3-9-19: FI-74-70)	N/A	N/A	N/A	AI	II
39079	00	3-PX-64-159A	POWER SUPPLY (3-9-18)	N/A	N/A	N/A	AI	I
39080	00	3-PX-64-160A	POWER SUPPLY (3-9-18)	N/A	N/A	N/A	AI	I
39081	00	3-PX-64-67B	POWER SUPPLY (3-9-19)	N/A	N/A	N/A	AI	II
39082	00	3-PX-64-161	POWER SUPPLY (PNL 9-87)	N/A	N/A	N/A	AI	I
39083	00	3-PX-64-162	POWER SUPPLY (PNL 9-88)	N/A	N/A	N/A	AI	II
39099	20	3-PNLA-009-0042	MSRV (OUTBOARD) DIV I PNL	U3 CB	593	U3 AIR	AI	
39100	14	3-ECAB-231-003A	250V DC CONT PWR TRANSFER SW - 480V SD BD 3A	U3 RB	593	SD BD F	AI	I
39101	14	3-ECAB-231-003B	250V DC CONT PWR TRANSFER SW - 480V SD BD 3B	U3 RB	593	SD BD F	AI	II
39105	20	3-LPNL-925-654A	DIV I LOAD SHED LOGIC PANEL - DCN W21284	U3 RB	621	SD BD E	AI	I
39106	20	3-LPNL-925-654B	DIV II LOAD SHED LOGIC PANEL - DCN W21284	U3 RB	593	SD BD F	AI	II
39107	20	3-LPNL-925-656A	480V RMOV BD 3A LOAD SHED PANEL - DCN W21284	U3 RB	621	SD BD E	AI	I
39108	20	3-LPNL-925-656B	480V RMOV BD 3B LOAD SHED PANEL - DCN W21284	U3 RB	593	SD BD F	AI	II
39110	20	3-LPNL-925-0658	MSRV TRANSFER CONTROL PANEL (DCN W21814)	U3 RB	593	SD BD F	AI	
39115	20	3-PNLA-009-0003	REACTOR SD & CONT. COOLING PNL	U3 CB	617	U3 MCR	AI	
39116	20	3-PNLA-009-0004	CLEANUP & RECIRC PNL	U3 CB	617	U3 MCR	AI	
39117	20	3-PNLA-009-0005	REACTOR CONTROL PNL	U3 CB	617	U3 MCR	AI	
39118	20	3-PNLA-009-0006	FW & COND. PNL	U3 CB	617	U3 MCR	AI	
39119	20	3-PNLA-009-0009	PNL 9-9 (I&C CONT PWR, CAB 2&3)	U3 CB	617	U3 MCR	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39120	20	3-PNLA-009-0015	RPS CH A (DIV I)	U3 CB	593	U3 AIR	AI	I
39121	20	3-PNLA-009-0016	RPS CH A, B, C, D	U3 CB	593	U3 AIR	AI	
39122	20	3-PNLA-009-0017	RPS CH B (DIV II)	U3 CB	593	U3 AIR	AI	II
39123	20	3-PNLA-009-0018	FW & RECIRC PNL	U3 CB	593	U3 AIR	AI	
39124	20	3-PNLA-009-0019	PROCESS INSTR PNL	U3 CB	593	U3 AIR	AI	
39125	20	3-PNLA-009-0021	TEMP RECORDING PNL	U3 CB	617	U3 MCR	AI	
39126	20	3-PNLA-009-0028	CRD SELECT RELAY AUX PNL	U3 CB	593	U3 AIR	AI	
39127	20	3-PNLA-009-0030	AUTO BLOWNDOWN AUX PNL	U3 CB	593	U3 AIR	AI	
39128	20	3-PNLA-009-0032	RHR, CS, & HPCI (CH A) PNL	U3 RB	593	U3 AIR	AI	
39129	20	3-PNLA-009-0033	RHR, CS, & HPCI (CH B) PNL	U3 CB	593	U3 AIR	AI	
39130	20	3-PNLA-009-0039	HPCI RELAY AUX PNL	U3 CB	593	U3 AIR	AI	
39132	20	3-PNLA-009-0043	MSIV (OUTBOARD) DIV II PNL	U3 CB	593	U3 AIR	AI	
39133	20	3-PNLA-009-0054	CONTAINMENT ATM. DILUTION PNL	U3 CB	617	U3 MCR	AI	
39134	20	3-PNLA-009-0055	CONTAINMENT ATM. DILUTION PNL	U3 CB	617	U3 MCR	AI	
39135	20	3-PNLA-009-0081	DIV I ECCS ATU CABINET	U3 CB	593	U3 AIR	AI	
39136	20	3-PNLA-009-0082	DIV II ECCS ATU CABINET	U3 CB	593	U3 AIR	AI	II
39137	20	3-PNLA-009-0083	RPS ATU CAB	U3 CB	593	U3 AIR	AI	I
39138	20	3-PNLA-009-0084	RPS ATU CAB	U3 CB	593	U3 AIR	AI	I
39139	20	3-PNLA-009-0085	RPS ATU CAB	U3 CB	593	U3 AIR	AI	II
39140	20	3-PNLA-009-0086	RPS ATU CAB	U3 CB	593	U3 AIR	AI	II
39141	20	3-PNLA-009-0087	DIV I TORUS TEMP MONITORING	U3 CB	593	U3 AIR	AI	I
39142	20	3-PNLA-009-0088	DIV II TORUS TEMP MONITORING	U3 CB	593	U3 AIR	AI	II
39145	20	3-PNLA-009-0093	NEW PNL (INSTALLED BY DCN W19433)	U3 CB	593	U3 AIR	AI	
39146	18	3-HS-74-7B	LOCAL HS STATION	U3 RB	519	T/R16	AI	I
39147	14	3-JBOX-74-3503	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	T/R16	AI	I
39148	18	3-HS-74-57B	LOCAL HS STATION	U3 RB	519	TORUS	AI	I
39149	14	3-JBOX-74-3391	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	R/R16	AI	I
39150	18	3-HS-74-59B	LOCAL HS STATION	U3 RB	519	TORUS	AI	I
39151	18	3-HS-74-58B	LOCAL HS STATION	U3 RB	519	TORUS	I	I
39152	14	3-JBOX-74-3391	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	R/R16	AI	II
39153	18	3-HS-74-52B	LOCAL HS STATION	U3 RB	565	T/R17	AI	II
39154	14	3-JBOX-74-2135	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	580	T/R17	AI	II
39155	18	3-HS-74-53B	LOCAL HS STATION	U3 RB	565	T/R17	AI	I

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39156	18	3-HS-74-60B	LOCAL HS STATION	U3 RB	565	S/R17	AI	I
39157	14	3-JBOX-74-3543	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	S/R17	AI	I
39158	18	3-HS-74-61B	LOCAL HS STATION	U3 RB	565	S/R17	I	I
39160	18	3-HS-74-30B	LOCAL HS STATION	U3 RB	541	T/R20	AI	II
39161	14	3-JBOX-74-3535	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	T/R20	AI	II
39162	18	3-HS-74-71B	LOCAL HS STATION	U3 RB	519	TORUS	AI	II
39163	14	3-JBOX-74-3840	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	S/R20	AI	II
39164	18	3-HS-74-72B	LOCAL HS STATION	U3 RB	519	TORUS	I	II
39165	18	3-HS-74-66B	LOCAL HS STATION	U3 RB	519	TORUS	AI	II
39166	14	3-JBOX-74-2133	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	T/R18	AI	II
39167	18	3-HS-74-67B	LOCAL HS STATION	U3 RB	565	T/R18	AI	II
39169	14	3-JBOX-74-2939	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	593	S/R19	AI	II
39170	18	3-HS-74-75B	LOCAL HS STATION	U3 RB	593	S/R19	I	II
39171	18	3-HS-70-47B	LOCAL HS STATION	U3 RB	519	TORUS	I	II
39172	14	3-JBOX-70-3398	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	P/R20	AI	II
39173	18	3-HS-75-9B	LOCAL HS STATION	U3 RB	519	N/R16	AI	I
39174	14	3-JBOX-75-3390	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	N/R16	AI	I
39175	18	3-HS-75-25B	LOCAL HS STATION	U3 RB	565	P/R18	AI	I
39176	14	3-JBOX-75-3333	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	593	P/R18	AI	I
39177	18	3-HS-75-37B	LOCAL HS STATION	U3 RB	519	N/R20	AI	II
39178	14	3-JBOX-75-3448	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	N/R20	AI	I
39179	18	3-HS-75-53B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	593	P/R18	AI	II
39180	14	3-JBOX-75-3345	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	593	P/R18	AI	II
39181	18	3-HS-23-34B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	565	T/R17	AI	I
39182	14	3-JBOX-23-4190	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	U/R20	AI	I
39183	18	3-HS-23-40B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	565	T/R17	AI	I
39184	18	3-HS-23-46B	LOCAL HS STATION	U3 RB	565	U/R20	AI	II
39185	14	3-JBOX-23-4189	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	U/R20	AI	II
39186	18	3-HS-23-52B	LOCAL HS STATION	U3 RB	565	U/R20	AI	II
39187	18	3-HS-74-0005B	LOCAL HS STATION - RHR PUMP 3A	U3 RB	519	U/R16	AI	I
39188	18	3-HS-74-0028B	LOCAL HS STATION - RHR PUMP 3B	U3 RB	519	S/R20	AI	II
39189	18	3-HS-74-0016B	LOCAL HS STATION - RHR PUMP 3C	U3 RB	519	T/R16	AI	I
39190	18	3-HS-74-0039B	LOCAL HS STATION - RHR PUMP 3D	U3 RB	519	U/R20	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39191	18	3-HS-75-0005B	LOCAL HS STATION - CS PUMP 3A	U3 RB	519	N/R16	AI	I
39192	18	3-HS-75-0033B	LOCAL HS STATION - CS PUMP 3B	U3 RB	519	N/R20	AI	II
39193	18	3-HS-75-0014B	LOCAL HS STATION - CS PUMP 3C	U3 RB	519	N/R16	AI	I
39194	18	3-HS-75-0042B	LOCAL HS STATION - CS PUMP 3D	U3 RB	519	N/R20	AI	II
39195	18	3-LPNL-925-005A	LOCAL PANEL 25-5A	U3 RB	593	S/R17	AI	
39196	18	3-LPNL-925-005B	LOCAL PANEL 25-5B	U3 RB	593	S/R17	AI	
39197	18	3-LPNL-925-005D	LOCAL PANEL 25-5D	U3 RB	593	S/R17	AI	
39198	18	3-LPNL-925-006A	LOCAL PANEL 25-6A	U3 RB	593	Q/R19	AI	
39199	18	3-LPNL-925-006D	LOCAL PANEL 25-6D	U3 RB	593	Q/R19	AI	
39200	18	3-LPNL-925-0059	LOCAL PANEL 25-59	U3 RB	519	T/R15	AI	
39201	18	3-LPNL-925-0062	LOCAL PANEL 25-62	U3 RB	519	T/R15	AI	
39202	20	3-PNLA-082-00003C	DG 3C ELECTRICAL CONTROL CABINET	U3 DG	565	DG C	AI	II3C
39203	20	3-PNLA-082-00003D	DG 3D ELECTRICAL CONTROL CABINET	U3 DG	565	DG D	AI	II3D
39204	20	3-PNLA-925-0031	LOCAL PANEL 25-31	U3 RB	621	Q/R20	AI	
39205	20	3-PNLA-925-0032	LOCAL PANEL 25-32	U3 RB	621	SD BD E	AI	
39206	18	3-LPNL-925-0001	LOCAL PANEL 25-1	U3 RB	519	N/R15	AI	
39207	18	3-LPNL-925-0060	LOCAL PANEL 25-60	U3 RB	519	N/R21	AI	
39208	13	3-MGEN-268-0003DA	LPCI MG SET 3DA	U3 RB	621	T/R20	AI	
39209	14	NONE	MG SET 3DA VOLTAGE REGULATOR BOX	U3 RB	621	480V BD 3B	AI	
39210	14	3-JBOX-268-5995	MG SET 3DA CONTROL STATION (3-HS-268-0003DA)	U3 RB	621	S/R20	AI	
39211	20	3-JBOX-268-5956	MG SET 3DA CONTROL BOX (RELAYS)	U3 RB	621	S/R20	AI	
39212	13	3-MGEN-268-0003EA	LPCI MG SET 3EA	U3 RB	621	T/R19	AI	
39213	14	NONE	MG SET 3EA VOLTAGE REGULATOR BOX	U3 RB	621	480V BD 3A	AI	
39214	14	3-JBOX-268-5997	MG SET 3EA CONTROL STATION (3-HS-268-0003EA)	U3 RB	621	S/R20	AI	
39215	20	3-JBOX-268-5958	MG SET 3EA CONTROL BOX (RELAYS)	U3 RB	621	S/R20	AI	
39216	20	3-LPNL-925-655A	DIV I LOAD SHED LOGIC PANEL	U3 RB	621	480V BD 3A	AI	
39217	20	3-LPNL-925-655B	DIV II LOAD SHED LOGIC PANEL	U3 RB	621	480V BD 3B	AI	
39218	20	3-LPNL-925-657A	DIV I LOAD SHED LOGIC PANEL	U3 DG	583	HALLWAY	AI	
39219	20	3-LPNL-925-657B	DIV II LOAD SHED LOGIC PANEL	U3 DG	583	HALLWAY	AI	
39220	20	3-PROT-099-0003A1	RPS CIRCUIT PROTECTOR CABINET 3A1	U3 RB	593	BATT BD 3	AI	
39221	20	3-PROT-099-0003A2	RPS CIRCUIT PROTECTOR CABINET 3A2	U3 RB	593	BATT BD 3	AI	
39222	20	3-PROT-099-0003B1	RPS CIRCUIT PROTECTOR CABINET 3B1	U3 RB	593	BATT BD 3	AI	
39223	20	3-PROT-099-0003B2	RPS CIRCUIT PROTECTOR CABINET 3B2	U3 RB	593	BATT BD 3	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39224	20	3-PROT-099-0003C1	RPS CIRCUIT PROTECTOR CABINET 3C1	U3 RB	593	BATT BD 3	AI	
39225	20	3-PROT-099-0003C2	RPS CIRCUIT PROTECTOR CABINET 3C2	U3 RB	593	BATT BD 3	AI	
39226	18	3-LPNL-925-247A	LOCAL PANEL 3-25-247A (CAD DRYWELL & SUPP. CHAMB. V.)	U3 RB	621	Q/R18	AI	
39227	01	3-BDBB-265-0003B	480V RB VENT BD 3B	U3 RB	565	U/R19	AI	
39228	20	3-PNLA-009-0036A	PANEL 3-9-36A	U3 CB	593	U3 AIR	AI	
39229	18	3-LPNL-925-0247B	LOCAL PANEL 3-25-247B (CAD N2 SUPPLY PANEL B)	U3 RB	621	Q/R19	AI	
39230	20	3-PNLA-009-0020	PANEL 3-9-20	U3 CB	617	U3 MCR	AI	
39231	20	NONE	CO2 RELAY PNL FOR 3-39-38	U3 DG	565	DG A	AI	
39232	20	NONE	CO2 RELAY PNL FOR 3-39-39	U3 DG	565	DG B	AI	
39233	20	NONE	CO2 RELAY PNL FOR 3-39-40	U3 DG	565	DG C	AI	
39234	20	NONE	CO2 RELAY PNL FOR 3-39-41	U3 DG	565	DG D	AI	
39235	18	3-LPNL-925-0007A	LOCAL PANEL 3-25-7A	U3 RB	541	SW CORNER	AI	
39236	18	3-LPNL-925-0007B	LOCAL PANEL 3-25-7A	U3 RB	541	SW CORNER	AI	
39237	18	3-LPNL-925-0223	LOCAL PANEL 3-25-223	U3 RB	593	Q/R19	AI	
39238	20	3-PNLA-009-0008	PANEL 3-9-8	U3 CB	617	U3 MCR	AI	
39239	18	3-HS-64-68	HANDSWITCH FOR 3-CLR-67-917 (34001)	U3 RB	519	SW CORNER	AI	
39240	18	3-HS-64-69	HANDSWITCH FOR 3-CLR-67-918 (34013)	U3 RB	519	SE CORNER	AI	
39241	18	3-HS-64-70	HANDSWITCH FOR 3-CLR-67-921 (34003)	U3 RB	519	SW CORNER	AI	
39242	18	3-HS-64-71	HANDSWITCH FOR 3-CLR-67-922 (34015)	U3 RB	519	SE CORNER	AI	
39243	14	3-HS-69-2B	HANDSWITCH FOR 3-FCV-69-2 (33033)	U3 RB	593	R17/S	AI	
39244	14	3-HS-71-18B	HANDSWITCH FOR 3-FCV-71-18 (33039)	U3 RB	519	NW CORNER	I	
39245	20	3-HS-71-2B	HANDSWITCH FOR 3-FCV-71-2 (33037)	U3 RB	593	R/R14	AI	
39246	14	3-HS-73-27B	HANDSWITCH FOR 3-FCV-73-27 (33043)	U3 RB	519	HPCI	I	
39247	18	3-HS-73-3B	HANDSWITCH FOR 3-FCV-73-3 (33041)	U3 RB	519	TORUS	AI	
39248	18	3-HS-73-81B	HANDSWITCH FOR 3-FCV-73-81 (33042)	U3 RB	519	TORUS	AI	
39249	14	3-HS-74-100B	HANDSWITCH FOR 3-FCV-74-100 (31010)	U3 RB	565	SW CORNER	AI	
39250	14	3-HS-74-12B	HANDSWITCH FOR 3-FCV-74-12 (31011)	U3 RB	519	SW CORNER	AI	
39251	14	3-HS-74-13B	HANDSWITCH FOR 3-FCV-74-13 (31012)	U3 RB	519	SW CORNER	AI	
39252	14	3-HS-74-1B	HANDSWITCH FOR 3-FCV-74-1 (31001)	U3 RB	519	SW CORNER	AI	
39253	14	3-HS-74-24B	HANDSWITCH FOR 3-FCV-74-24 (31029)	U3 RB	519	SE CORNER	AI	
39254	14	3-HS-74-25B	HANDSWITCH FOR 3-FCV-74-25 (31030)	U3 RB	519	SE CORNER	AI	
39255	14	3-HS-74-2B	HANDSWITCH FOR 3-FCV-74-2 (31002)	U3 RB	519	SW CORNER	AI	
39256	14	3-HS-74-35B	HANDSWITCH FOR 3-FCV-74-35 (31037)	U3 RB	519	SE CORNER	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39257	14	3-HS-74-36B	HANDSWITCH FOR 3-FCV-74-36 (31038)	U3 RB	519	SE CORNER	AI	
39258	18	3-HS-74-73B	HANDSWITCH FOR 3-FCV-74-73 (31046)	U3 RB	519	TORUS	AI	
39259	14	3-HS-74-97B	HANDSWITCH FOR 3-FCV-74-97 (31013)	U3 RB	519	SW CORNER	AI	
39260	18	3-HS-75-11B	HANDSWITCH FOR 3-FCV-75-11 (35006)	U3 RB	519	NW CORNER	AI	
39261	14	3-HS-75-22B	HANDSWITCH FOR 3-FCV-75-22 (35010)	U3 RB	519	NW CORNER	AI	
39262	18	3-HS-75-23B	HANDSWITCH FOR 3-FCV-75-23 (35012)	U3 RB	593	P/R18	AI	
39263	18	3-HS-75-2B	HANDSWITCH FOR 3-FCV-75-2 (35001)	U3 RB	519	NW CORNER	AI	
39264	18	3-HS-75-30B	HANDSWITCH FOR 3-FCV-75-30 (35015)	U3 RB	519	NE CORNER	AI	
39265	18	3-HS-75-39B	HANDSWITCH FOR 3-FCV-75-39 (35020)	U3 RB	519	NE CORNER	AI	
39266	14	3-HS-75-50B	HANDSWITCH FOR 3-FCV-75-50 (35024)	U3 RB	519	NE CORNER	AI	
39267	18	3-HS-75-51B	HANDSWITCH FOR 3-FCV-75-51 (35026)	U3 RB	593	P/R18	AI	
39268	14	3-HS-78-61B	HANDSWITCH FOR 3-FCV-78-61 (31026)	U3 RB	621	R17/S	AI	
39269	14	3-HS-64-72	HANDSWITCH FOR 3-CLR-67-919 (34002)	U3 RB	519	NW CORNER	AI	
39270	14	3-HS-64-73	HANDSWITCH FOR 3-CLR-67-920 (34014)	U3 RB	519	NE CORNER	AI	
39271	18	3-TS-64-68	TEMPERATURE SWITCH FOR 3-CLR-67-917 (34001)	U3 RB	519	SW CORNER	AI	
39272	18	3-TS-64-69	TEMPERATURE SWITCH FOR 3-CLR-67-918 (34013)	U3 RB	519	SE CORNER	AI	
39273	18	3-TS-64-70	TEMPERATURE SWITCH FOR 3-CLR-67-921 (34003)	U3 RB	519	SW CORNER	AI	
39274	18	3-TS-64-71	TEMPERATURE SWITCH FOR 3-CLR-67-922 (34015)	U3 RB	519	SE CORNER	AI	
39275	18	3-TS-1-17A	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	AI	
39276	18	3-TS-1-17B	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	AI	
39277	18	3-TS-1-17C	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	AI	
39278	18	3-TS-1-17D	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	AI	
39279	18	3-TS-1-29A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	AI	
39280	18	3-TS-1-29B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	AI	
39281	18	3-TS-1-29C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	AI	
39282	18	3-TS-1-29D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	AI	
39283	18	3-TS-1-40A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39284	18	3-TS-1-40B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39285	18	3-TS-1-40C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39286	18	3-TS-1-40D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39287	18	3-TS-1-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39288	18	3-TS-1-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39289	18	3-TS-1-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39290	18	3-TS-1-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39291	18	3-TS-64-72	TEMPERATURE SWITCH FOR 3-CLR-67-919 (34002)	U3 RB	519	NW CORNER	AI	
39292	18	3-TS-64-73	TEMPERATURE SWITCH FOR 3-CLR-67-920 (34014)	U3 RB	519	NE CORNER	AI	
39293	14	3-HS-74-96B	HAND SWITCH FOR 3-FCV-74-96 (SSEL # 31003)	RB	519	SW CORNER	AI	
39294	00	3-AMP-092-0007/41A	IRM CH. "A" VOLTAGE PREAMPLIFIER 7-34A	RB	565	S/R17	AI	
39295	00	3-AMP-092-0007/41B	IRM CH. "B" VOLTAGE PREAMPLIFIER 7-34B	RB	565	S/R17	AI	
39296	14	3-LPNL-925-0027	PANEL 3-25-27 IRM PREAMP. RPS I	RB	565	S/R17	AI	
39297	00	3-AMP-092-0007/41C	IRM CH. "C" VOLTAGE PREAMPLIFIER 7-34C	RB	577	Q/R19	AI	
39298	00	3-AMP-092-0007/41D	IRM CH. "D" VOLTAGE PREAMPLIFIER 7-34D	RB	577	Q/R19	AI	
39299	14	3-LPNL-925-0061	PANEL 3-25-61 IRM PREAMP. RPS II	RB	577	Q/R19	AI	
39300	20	3-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U3 MCR	AI	
39301	20	3-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U3 MCR	AI	
39302	20	3-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	CB	617	U3 MCR	AI	
39303	20	3-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	CB	617	U3 MCR	AI	
39304	20	3-PNLA-009-012	PANEL 3-9-12	CB	617	U3 MCR	AI	
39305	15	3-BATD-283-000A3	24V NEUTRON MONITORING BATTERY, U3 CHANNEL A	CB	593	BAT RM 3	AI	
39306	15	3-BATD-283-000B3	24V NEUTRON MONITORING BATTERY, U3 CHANNEL B	CB	593	BAT RM 3	AI	
39307	16	3-CHGD-283-A1-3	24V NEUTRON BATTERY CHARGERS A1-3	CB	593	BAT BD RM 3	AI	
39308	16	3-CHGD-283-A2-3	24V NEUTRON BATTERY CHARGERS A2-3	CB	593	BAT BD RM 3	AI	
39309	16	3-CHGD-283-B1-3	24V NEUTRON BATTERY CHARGERS B1-3	CB	593	BAT BD RM 3	AI	
39310	16	3-CHGD-283-B2-3	24V NEUTRON BATTERY CHARGERS B2-3	CB	593	BAT BD RM 3	AI	
9160	04	0-XFA-082-000AA	DG-A NEUTRAL GRN XFMR	DGB 1/2	565	DG - A	AI	
9161	04	0-XFA-082-000BA	DG-B NEUTRAL GRN XFMR	DGB 1/2	565	DG - B	AI	
9162	04	0-XFA-082-000CA	DG-C NEUTRAL GRN XFMR	DGB 1/2	565	DG - C	AI	
9163	04	0-XFA-082-000DA	DG-D NEUTRAL GRN XFMR	DGB 1/2	565	DG - D	AI	
9164	04	3-XFA-082-0003AA	DG-3A NEUTRAL GRN XFMR	DGB 3	565	DG - 3A	AI	
9165	04	3-XFA-082-0003BA	DG-3B NEUTRAL GRN XFMR	DGB 3	565	DG - 3B	AI	
9166	04	3-XFA-082-0003CA	DG-3C NEUTRAL GRN XFMR	DGB 3	565	DG - 3C	AI	
9167	04	3-XFA-082-0003DA	DG-3D NEUTRAL GRN XFMR	DGB 3	565	DG - 3D	AI	

APPENDIX C

SEISMIC REVIEW SSEL

APPENDIX C

SEISMIC REVIEW SSEL

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
1		00	2-HCU-85,1-185	CRD\HYDRAULIC CONTROL UNIT	U2 RB	565	P-S/R9&13	AI
2		07	2-FCV-85-82A	CRD\WEST SDV VENT VALVE	U2 RB	565	R9/S	AI
3		07	2-FCV-85-82	CRD\WEST SDV VENT VALVE	U2 RB	565	S/R9	AI
4		07	2-FCV-85-37C	CRD\WEST SDV DRAIN VALVE	U2 RB	565	P/R9	AI
5		07	2-FCV-85-37D	CRD\WEST SDV DRAIN VALVE	U2 RB	565	P/R9	AI
6		07	2-FCV-85-83A	CRD\EAST SDV VENT VALVE	U2 RB	565	S/R13	AI
7		07	2-FCV-85-83	CRD\EAST SDV VENT VALVE	U2 RB	565	R13/S	AI
8		07	2-FCV-85-37E	CRD\EAST SDV DRAIN VALVE	U2 RB	565	P/R13	AI
9		07	2-FCV-85-37F	CRD\EAST SDV DRAIN VALVE	U2 RB	565	R13/P	AI
10		21	2-TNK-85-901	CRD\WEST SCRAM INSTRUMENT VOLUME	U2 RB	565	P/R9	AI
11		21	2-TNK-85-902	CRD\EAST SCRAM INSTRUMENT VOLUME	U2 RB	565	P/R13	AI
12		08B	2-FSV-85-37A	CRD\SCRAM DUMP VALVE	U2 RB	565	R12/N	AI
13		08B	2-FSV-85-37B	CRD\SCRAM DUMP VALVE	U2 RB	565	R12/N	AI
14		08B	2-FSV-85-35A	CRD\BACKUP SCRAM VALVE	U2 RB	565	R12/N	AI
15		08B	2-FSV-85-35B	CRD\BACKUP SCRAM VALVE	U2 RB	565	R12/N	AI
16		20	2-HS-99-5A/S3A	RPS\REACTOR MANUAL SCRAM CHANNEL A3	U2 CB	617	U2 MCR	AI
17		20	2-HS-99-5A/S3B	RPS\REACTOR MANUAL SCRAM CHANNEL B3	U2 CB	617	U2 MCR	AI
18		20	2-HS-99-5A-S1	RPS\REACTOR MODE SWITCH	U2 CB	617	U2 MCR	AI
1001		08A	2-FCV-74-1	RHR/PUMP 2A SUCTION VALVE FROM UPRESSION POOL	U2 RB	519	SW CORNER	AI
1002		08A	2-FCV-74-2	RHR/PUMP 2A SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SW CORNER	AI
1003		08A	2-FCV-74-96	RHR/UNIT 2 TO UNIT 1 RHR X-TIE ISOLATION VALVE	U2 RB	519	SW CORNER	AI
1004		06	2-PMP-74-5	RHR/PUMP 2A	U2 RB	519	SW CORNER	AI
1006		08A	2-FCV-74-7	RHR/PUMP 2A&2C MINIMUM FLOW VALVE	U2 RB	519	SW CORNER	AI
1009		21	2-HEX-74-900A	RHR/HEAT EXCHANGER 2A	U2 RB	565	SW HX	AI
1010		08A	2-FCV-74-100	RHR/U2 TO U1 RHR DISCHARGE X-TIE ISOLATION VALVE	U2 RB	565	R8/T	AI
1011		08A	2-FCV-74-12	RHR/PUMP 2C SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SW CORNER	AI
1012		08A	2-FCV-74-13	RHR/PUMP 2C SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SE CORNER	AI
1013		08A	2-FCV-74-97	RHR/UNIT 2 TO UNIT 1 RHR X-TIE ISOLATION VALVE	U2 RB	519	SW CORNER	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
1014		06	2-PMP-74-16	RHR/PUMP 2C	U2 RB	519	SW CORNER	AI
1017		21	2-HEX-74-900C	RHR/HEAT EXCHANGER 2C	U2 RB	565	SW HX	AI
1018		ROB	2-FI-74-50	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	AI
1018	B	ROB	2-FT-74-50	RHR LOOP I FLOW TRANSMITTER	N/A	N/A	N/A	AI
1018	C	ROB	2-FS-74-50	RHR LOOP I FLOW SWITCH	N/A	N/A	N/A	AI
1018	D	ROB	2-FM-74-50	RHR LOOP I FLOW DEVICE	N/A	N/A	N/A	AI
1018	E	ROB	2-FR-74-64	RHR LOOP I FLOW DEVICE	N/A	N/A	N/A	AI
1018	F	ROB	2-BKR-402	RHR LOOP I FLOW INDICATION BREAKER	N/A	N/A	N/A	AI
1018	G	ROB	2-BKR-211	RHR LOOP I FLOW INDICATION BREAKER	N/A	N/A	N/A	AI
1019		ROB	2-FI-74-56	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	AI
1019	B	ROB	2-FT-74-56	RHR LOOP I FLOW TRANSMITTER	N/A	N/A	N/A	AI
1019	C	ROB	2-FM-74-56	RHR LOOP I FLOW INSTRUMENT	N/A	N/A	N/A	AI
1020		08A	2-FCV-74-57	RHR/LOOP I TORUS CONTAINMENT COOLING/SPRAY VALVE	U2 RB	519	R9/S	AI
1021		08A	2-FCV-74-59	RHR/LOOP I SUPRESSION POOL COOLING VALVE	U2 RB	519	R9/S	AI
1023		08A	2-FCV-74-52	RHR/LOOP I OUTBOARD INJECTION VALVE	U2 RB	565	T/R11	AI
1024		08A	2-FCV-74-53	RHR/LOOP I INBOARD INJECTION VALVE	U2 RB	565	T/R11	AI
1026		08A	2-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U2 RB	621	R10/S	AI
1027		08A	2-FCV-74-60	RHR/LOOP I OUTBOARD DRYWELL SPRAY VALVE	U2 RB	565	R9/S	AI
1029		08A	2-FCV-74-24	RHR/PUMP 2B SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SE CORNER	AI
1030		08A	2-FCV-74-25	RHR/PUMP 2B SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SE CORNER	AI
1031		08A	2-FCV-74-98	RHR/UNIT 2 TO UNIT 3 RHR X-TIE ISOLATION VALVE	U2 RB	519	SE CORNER	AI
1032		06	2-PMP-74-28	RHR/PUMP 2B	U2 RB	519	SE CORNER	AI
1034		08A	2-FCV-74-30	RHR/PUMP 2B&2D MINIMUM FLOW VALVE	U2 RB	519	SE CORNER	AI
1037		21	2-HEX-74-900B	RHR/HEAT EXCHANGER 2B	U2 RB	565	SE HX	AI
1038		08A	2-FCV-74-101	RHR/U2 TO U3 RHR DISCHARGE X-TIE ISOLATION VALVE	U2 RB	565	R13/T	AI
1039		08A	2-FCV-74-35	RHR/PUMP 2D SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SE CORNER	AI
1040		08A	2-FCV-74-36	RHR/PUMP 2D SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SE CORNER	AI
1041		08A	2-FCV-74-99	RHR/UNIT 2 TO UNIT 3 RHR X-TIE ISOLATION VALVE	U2 RB	519	SE CORNER	AI
1042		06	2-PMP-74-39	RHR/PUMP 2D	U2 RB	519	SE CORNER	AI
1045		21	2-HEX-74-900D	RHR/HEAT EXCHANGER 2D	U2 RB	565	SE HX	AI
1046		ROB	2-FI-74-64	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	AI
1046	B	ROB	2-FT-74-64	RHR LOOP II FLOW TRANSMITTER	N/A	N/A	N/A	AI
1046	C	ROB	2-FS-74-64	RHR LOOP II FLOW SWITCH	N/A	N/A	N/A	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
1046	D	ROB	2-FM-74-64	RHR LOOP II FLOW DEVICE	N/A	N/A	N/A	AI
1046	E	ROB	2-FR-74-64	RHR LOOP II FLOW DEVICE	N/A	N/A	N/A	AI
1046	F	ROB	2-BKR-402	RHR LOOP II FLOW INDICATION BREAKER	N/A	N/A	N/A	AI
1046	G	ROB	2-BKR-322	RHR LOOP II FLOW INDICATION BREAKER	N/A	N/A	N/A	AI
1047		ROB	2-FI-74-70	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	AI
1047	B	ROB	2-FT-74-70	RHR LOOP II FLOW TRANSMITTER	N/A	N/A	N/A	AI
1047	C	ROB	2-FM-74-70	RHR LOOP II FLOW DEVICE	N/A	N/A	N/A	AI
1048		08A	2-FCV-74-71	RHR/LOOP II TORUS CONTAINMENT COOLING/SPRAY VALVE	U2 RB	519	R13/S	AI
1049		08A	2-FCV-74-73	RHR/LOOP II SUPRESSION POOL COOLING VALVE	U2 RB	519	R13/R	AI
1051		08A	2-FCV-74-66	RHR/LOOP II OUTBOARD INJECTION VALVE	U2 RB	565	T/R11	AI
1052		08A	2-FCV-74-67	RHR/LOOP II INBOARD INJECTION VALVE	U2 RB	565	T/R11	AI
1054		08A	2-FCV-74-74	RHR/LOOP II OUTBOARD DRYWELL SPRAY VALVE	U2 RB	593	R12/S	AI
1056		08B	2-FSV-43-50	PASS LIQUID SAMPLE VALVE	U2 RB	565	S/R8	AI
2000		07	2-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
2003		07	2-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
2006		07	2-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
2009		07	2-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
2012		07	2-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
2015		07	2-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
2018		07	2-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
2021		07	2-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
2024		07	2-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
2027		07	2-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
2030		07	2-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
2033		07	2-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
2036		07	2-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI
3001		07	2-FCV-1-14	MSIV "A" INBOARD ISOLATION VALVE	U2 DW	563	DW	AI
3002		07	2-FCV-1-15	MSIV "A" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	AI
3003		07	2-FCV-1-26	MSIV "B" INBOARD ISOLATION VALVE	U2 DW	563	DW	AI
3004		07	2-FCV-1-27	MSIV "B" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	AI
3005		07	2-FCV-1-37	MSIV "C" INBOARD ISOLATION VALVE	U2 DW	563	DW	AI
3006		07	2-FCV-1-38	MSIV "C" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	AI
3007		07	2-FCV-1-51	MSIV "D" INBOARD ISOLATION VALVE	U2 DW	563	DW	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
3008		07	2-FCV-1-52	MSIV "D" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	AI
3009		08A	2-FCV-1-55	MAIN STEAM LINE DRAIN ISOLATION VALVE	U2 DW	563	DW	AI
3033		08A	2-FCV-69-1	RWCU INBOARD ISOLATION VALVE	U2 DW	584	DW	AI
3034		08A	2-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U2 RB	593	R10/S	AI
3038		08A	2-FCV-71-2	RCIC INBOARD ISOLATION VALVE	U2 DW	584	DW	AI
3039		08A	2-FCV-71-3	RCIC OUTBOARD ISOLATION VALVE	U2 RB	565	MSIV VAULT	AI
3041		08A	2-FCV-73-2	HPCI STEAM SUPPLY ISOLATION VALVE	U2 DW	563	DW	AI
3042		08A	2-FCV-73-3	HPCI STEAM SUPPLY ISOLATION VALVE	U2 RB	519	TORUS	AI
3043		08A	2-FCV-73-81	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	U2 RB	519	TORUS	AI
3045		07	2-FCV-75-57	PSC PUMP SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	AI
3046		07	2-FCV-75-58	PSC PUMP SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	AI
3053		ROB	2-LI-3-58A	RPV LEVEL INSTRUMENT	N/A	N/A	N/A	AI
3053	A	ROB	2-LT-3-58B	RPV LEVEL TRANSMITTER	N/A	N/A	N/A	AI
3054		ROB	2-LI-3-58B	RPV LEVEL INSTRUMENT	N/A	N/A	N/A	AI
3054	A	ROB	2-LT-3-58D	RPV LEVEL TRANSMITTER	N/A	N/A	N/A	AI
3055		ROB	2-PI-3-74A	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	AI
3055	A	ROB	2-PT-3-74A	RPV PRESSURE TRANSMITTER	N/A	N/A	N/A	AI
3056		ROB	2-PI-3-74B	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	AI
3056	A	ROB	2-PT-3-74B	RPV PRESSURE TRANSMITTER	N/A	N/A	N/A	AI
3057		ROB	2-XR-64-159	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	AI
3057	A	18	2-LT-64-159B	TORUS LEVEL TRANSMITTER	U2 RB	519	TORUS	AI
3057	B	ROB	2-PT-64-160B	TORUS PRESSURE TRANSMITTER	N/A	N/A	N/A	AI
3057	C	ROB	2-BKR-323	TORUS LEVEL/PRESSURE INDICATION BREAKER	N/A	N/A	N/A	AI
3058		ROB	2-LI-64-159A	TORUS LEVEL INSTRUMENT	N/A	N/A	N/A	AI
3058	A	18	2-LT-64-159A	TORUS LEVEL TRANSMITTER	U2 RB	519	TORUS	AI
3058	B	ROB	2-BKR-223	TORUS LEVEL INDICATION BREAKER	N/A	N/A	N/A	AI
3059		ROB	2-TI-64-161	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	AI
3059	A	19	2-TE-64-161A	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3059	B	19	2-TE-64-161B	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3059	C	19	2-TE-64-161C	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3059	D	19	2-TE-64-161D	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3059	E	19	2-TE-64-161E	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3059	F	19	2-TE-64-161F	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
3059	G	19	2-TE-64-161G	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3059	H	19	2-TE-64-161H	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3060		ROB	2-TI-64-162	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	AI
3060	A	19	2-TE-64-162A	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3060	B	19	2-TE-64-162B	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3060	C	19	2-TE-64-162C	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3060	D	19	2-TE-64-162D	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3060	E	19	2-TE-64-162E	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3060	F	19	2-TE-64-162F	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3060	G	19	2-TE-64-162G	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3060	H	19	2-TE-64-162H	TORUS TEMP ELEMENT	U2 RB	519	TORUS	AI
3065		ROB	2-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U2 MCR	AI
3066		ROB	2-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U2 MCR	AI
4001		06	0-PMP-23-85	RHRSW PUMP A3	INTAKE	565	A	AI
4003		08A	0-STN-67-925	A EECW PUMP DISCHARGE STRAINER	INTAKE	565	A	AI
4004		08A	0-FCV-67-1	A EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	A	AI
4006		10	2-CLR-67-917	EECW/RHR PUMP 2A ROOM COOLER	U2 RB	519	SW CORNER	AI
4007		10	2-CLR-67-919	EECW/CS PUMP 2A ROOM COOLER	U2 RB	519	NW CORNER	AI
4008		10	2-CLR-67-921	EECW/RHR PUMP 2C ROOM COOLER	U2 RB	519	SW CORNER	AI
4009		21	2-HEX-67-915	EECW/RHR SEAL HX 2A	U2 RB	519	SW CORNER	AI
4011		06	0-PMP-23-91	RHRSW PUMP C3	INTAKE	565	C	AI
4013		08A	0-STN-67-927	C EECW PUMP DISCHARGE STRAINER	INTAKE	565	C	AI
4014		08A	0-FCV-67-8	C EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	C	AI
4015		08A	0-FCV-67-49	RHRSW PUMP C1 TO EECW SYSTEM CROSS-CONNECT	INTAKE	565	C	AI
4016		07	1-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U1 RB	593	R3/P	AI
4017		07	2-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U2 RB	593	P/R13	AI
4018		07	3-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U3 RB	593	R20/P	AI
4019		07	0-FCV-67-53	EECW SYSTEM NORTH HEADER BACKUP TO THE AIR COMPRESSORS	U1 RB	565	R3/N	AI
4040		21	2-HEX-67-916	EECW/RHR SEAL HX 2C	U2 RB	519	SW CORNER	AI
4041		ROB	0-EI-23-85/3	EECW PUMP A3 AMPERAGE INDICATION	N/A	N/A	N/A	AI
4042		ROB	0-EI-23-91/3	EECW PUMP C3 AMPERAGE INDICATION	N/A	N/A	N/A	AI
4044		06	0-PMP-23-88	RHRSW PUMP B3	INTAKE	565	B	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
4046		08A	0-STN-67-926	B EECW PUMP DISCHARGE STRAINER	INTAKE	565	B	AI
4047		08A	0-FCV-67-5	B EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	B	AI
4049		10	2-CLR-67-918	EECW/RHR PUMP 2B ROOM COOLER	U2 RB	519	SE CORNER	AI
4050		10	2-CLR-67-920	EECW/CS PUMP 2B ROOM COOLER	U2 RB	519	NE CORNER	AI
4051		10	2-CLR-67-922	EECW/RHR PUMP 2D ROOM COOLER	U2 RB	519	SE CORNER	AI
4052		21	2-HEX-67-923	EECW/RHR SEAL HX 2B	U2 RB	519	SE CORNER	AI
4054		06	0-PMP-23-94	RHRSW PUMP D3	INTAKE	565	D	AI
4056		08A	0-STN-67-928	D EECW PUMP DISCHARGE STRAINER	INTAKE	565	D	AI
4057		08A	0-FCV-67-11	D EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	D	AI
4058		08A	0-FCV-67-48	RHRSW PUMP D1 TO EECW SYSTEM CROSS-CONNECT	INTAKE	565	D	AI
4059		07	1-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U1 RB	565	R3/T	AI
4060		07	2-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U2 RB	565	R13/T	AI
4061		07	3-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U3 RB	565	R20/T	AI
4082		21	2-HEX-67-924	EECW/RHR SEAL HX 2D	U2 RB	519	SE CORNER	AI
4083		ROB	0-EI-23-88/3	EECW PUMP B3 AMPERAGE INDICATION	N/A	N/A	N/A	AI
4084		ROB	0-EI-23-94/3	EECW PUMP D3 AMPERAGE INDICATION	N/A	N/A	N/A	AI
5001		08A	2-FCV-75-2	CS/PUMP 2A SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	AI
5002		06	2-PMP-75-5	CS/PUMP 2A	U2 RB	519	NW CORNER	AI
5005		08A	2-FCV-75-9	CS/PUMPS 2A & 2C MINI-FLOW VALVE	U2 RB	519	NW CORNER	AI
5006		08A	2-FCV-75-11	CS/PUMP 2C SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	AI
5007		06	2-PMP-75-14	CS/PUMP 2C	U2 RB	519	NW CORNER	AI
5010		08A	2-FCV-75-22	CS/PUMPS 2A & 2C TEST ISOLATION VALVE	U2 RB	519	NW CORNER	AI
5011		ROB	2-FI-75-21	CS/PUMPS 2A & 2C FLOW INDICATOR	N/A	N/A	N/A	AI
5011	A	ROB	2-FM-75-21	CS PUMPS 2A & 2C FLOW DEVICE	N/A	N/A	N/A	AI
5011	B	ROB	2-PX-75-21	CS PUMPS 2A & 2C FLOW INDICATION POWER SUPPLY	N/A	N/A	N/A	AI
5011	C	ROB	2-FT-75-21	CS PUMPS 2A & 2C FLOW TRANSMITTER	N/A	N/A	N/A	AI
5012		08A	2-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U2 RB	593	P/R10	AI
5013		08A	2-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U2 RB	593	P/R10	AI
5015		08A	2-FCV-75-30	CS/PUMP 2B SUCTION ISOLATION VALVE	U2 RB	519	NE CORNER	AI
5016		06	2-PMP-75-33	CS/PUMP 2B	U2 RB	519	NE CORNER	AI
5019		08A	2-FCV-75-37	CS/PUMPS 2B & 2D MINI-FLOW VALVE	U2 RB	519	NE CORNER	AI
5020		08A	2-FCV-75-39	CS/PUMP 2D SUCTION ISOLATION VALVE	U2 RB	519	NE CORNER	AI
5021		06	2-PMP-75-42	CS/PUMP 2D	U2 RB	519	NE CORNER	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
5024		08A	2-FCV-75-50	CS/PUMPS 2B & 2D TEST ISOLATION VALVE	U2 RB	519	NE CORNER	AI
5025		ROB	2-FI-75-49	CS/PUMPS 2B & 2D FLOW INDICATOR	N/A	N/A	N/A	AI
5025	A	ROB	2-FM-75-49	CS PUMPS 2B & 2D FLOW DEVICE	N/A	N/A	N/A	AI
5025	B	ROB	2-PX-75-49	CS PUMPS 2B & 2D FLOW INDICATION POWER SUPPLY	N/A	N/A	N/A	AI
5025	C	ROB	2-FT-75-49	CS PUMPS 2B & 2D FLOW TRANSMITTER	N/A	N/A	N/A	AI
5026		08A	2-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U2 RB	593	P/R11	AI
5027		08A	2-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U2 RB	593	P/R11	AI
6001		21	0-TNK-84-635	CAD/NITROGEN STORAGE TANK "A"	YARD	565	YARD	AI
6002		07	O-FCV-84-5	CAD/N2 TANK "A" ISOLATION VALVE	YARD	565	YARD	AI
6003		08B	O-FSV-84-5	CAD/N2 TANK "A" ISOLATION SOLENOID VALVE	YARD	565	YARD	AI
6004		00	0-VPR-84-639	CAD/N2 TANK "A" VAPORIZER	YARD	565	YARD	AI
6005		00	0-HTR-84-5	CAD/N2 TANK "A" ELECTRIC HEATER	YARD	565	YARD	AI
6006		08B	2-FSV-84-8A	CAD/CAD TO DW (2-FCV-64-18) SOLENOID VALVE	U2 RB	565	R12/T	AI
6007		08B	2-FSV-84-8B	CAD/CAD TO DW (2-FCV-64-19) SOLENOID VALVE	U2 RB	565	R10/S	AI
6008		07	2-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	R11/U	AI
6009		08B	2-FSV-84-48	CAD/CAD SYSTEM "A" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	S/R10	AI
6013		21	2-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U2 DW	563	DW	AI
6014		08B	2-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19	U2 DW	591	DW	AI
6016		21	2-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U2 DW	563	DW	AI
6017		08B	2-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22	U2 DW	590	DW	AI
6019		21	2-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U2 DW	563	DW	AI
6020		08B	2-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5	U2 DW	590	DW	AI
6021		08B	2-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23	U2 DW	590	DW	AI
6022		08B	2-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179	U2 DW	590	DW	AI
6023		08B	2-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4	U2 DW	590	DW	AI
6024		08B	2-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18	U2 DW	590	DW	AI
6025		21	0-TNK-84-636	CAD/NITROGEN STORAGE TANK "B"	YARD	565	YARD	AI
6026		07	0-FCV-84-16	CAD/N2 TANK "B" ISOLATION VALVE	YARD	565	YARD	AI
6027		08B	O-FSV-84-16	CAD/N2 TANK "B" ISOLATION SOLENOID VALVE	YARD	565	YARD	AI
6028		00	0-VPR-84-640	VAD/N2 TANK "B" VAPORIZER	YARD	565	YARD	AI
6029		00	0-HTR-84-16	CAD/N2 TANK "B" ELECTRIC HEATER	YARD	565	YARD	AI
6030		08B	2-FSV-84-8C	CAD/CAD TO DW (2-FCV-64-19) SOLENOID VALVE	U2 RB	565	R10/S	AI
6031		08B	2-FSV-84-8D	CAD/CAD TO DW (2-FCV-64-18) SOLENOID VALVE	U2 RB	565	R12/T	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
6032		07	2-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	R11/U	AI
6033		08B	2-FSV-84-49	CAD/CAD SYSTEM "B" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	S/R12	AI
6037		21	2-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U2 DW	563	DW	AI
6038		08B	2-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30	U2 DW	591	DW	AI
6040		21	2-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U2 DW	563	DW	AI
6041		08B	2-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31	U2 DW	591	DW	AI
6043		21	2-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U2 DW	563	DW	AI
6044		08B	2-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34	U2 DW	591	DW	AI
6045		08B	2-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41	U2 DW	590	DW	AI
6046		08B	2-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42	U2 DW	590	DW	AI
6047		08B	2-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180	U2 DW	590	DW	AI
7001		17	0-GEN-82-A	UNIT 1 & 2 DIESEL GENERATOR "A"	U1/2 DG	565	DG A	AI
7002		21	0-TNK-18-45/1	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	AI
7003		21	0-TNK-18-45/2	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	AI
7004		21	0-TNK-18-45/3	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	AI
7005		21	0-TNK-86-650A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI
7006		21	0-TNK-86-651A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI
7007		21	0-TNK-86-652A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI
7008		21	0-TNK-86-653A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI
7009		21	0-TNK-86-654A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI
7010		21	0-TNK-86-655A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI
7011		21	0-TNK-86-656A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI
7012		21	0-TNK-86-657A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI
7013		21	0-TNK-86-658A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI
7014		21	0-TNK-86-659A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI
7015		09	0-FAN-30-64	DG ROOM A EXHAUST FAN "A"	U1/2 DG	583	DG A	AI
7016		09	0-FAN-30-65	DG ROOM A EXHAUST FAN "B"	U1/2 DG	583	DG A	AI
7017		10	0-FCO-30-64A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	AI
7018		10	0-FCO-30-64B	INLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	AI
7019		10	0-FCO-30-64C	INLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	AI
7020		10	0-FCO-30-65A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	AI
7021		10	0-FCO-30-65B	INLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	AI
7022		10	0-FCO-30-65C	INLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
7023		17	0-GEN-82-B	UNIT 1 & 2 DIESEL GENERATOR "B"	U1/2 DG	565	DG B	AI
7024		21	0-TNK-18-46/1	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	AI
7025		21	0-TNK-18-46/2	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	AI
7026		21	0-TNK-18-46/3	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	AI
7027		21	0-TNK-86-650B	DG "B" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG B	AI
7028		21	0-TNK-86-651B	DG "B" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG B	AI
7029		21	0-TNK-86-652B	DG "B" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG B	AI
7030		21	0-TNK-86-653B	DG "B" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG B	AI
7031		21	0-TNK-86-654B	DG "B" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG B	AI
7032		21	0-TNK-86-655B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI
7033		21	0-TNK-86-656B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI
7034		21	0-TNK-86-657B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI
7035		21	0-TNK-86-658B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI
7036		21	0-TNK-86-659B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI
7037		09	0-FAN-30-66	DG ROOM B EXHAUST FAN "A"	U1/2 DG	583	DG B	AI
7038		09	0-FAN-30-67	DG ROOM B EXHAUST FAN "B"	U1/2 DG	583	DG B	AI
7039		10	0-FCO-30-66A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	AI
7040		10	0-FCO-30-66B	INLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	AI
7041		10	0-FCO-30-66C	INLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	AI
7042		10	0-FCO-30-67A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	AI
7043		10	0-FCO-30-67B	INLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	AI
7044		10	0-FCO-30-67C	INLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	AI
7045		17	0-GEN-82-C	UNIT 1 & 2 DIESEL GENERATOR "C"	U1/2 DG	565	DG C	AI
7046		21	0-TNK-18-47/1	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	AI
7047		21	0-TNK-18-47/2	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	AI
7048		21	0-TNK-18-47/3	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	AI
7049		21	0-TNK-86-650C	DG "C" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG C	AI
7050		21	0-TNK-86-651C	DG "C" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG C	AI
7051		21	0-TNK-86-652C	DG "C" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG C	AI
7052		21	0-TNK-86-653C	DG "C" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG C	AI
7053		21	0-TNK-86-654C	DG "C" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG C	AI
7054		21	0-TNK-86-655C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI
7055		21	0-TNK-86-656C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
7056		21	0-TNK-86-657C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI
7057		21	0-TNK-86-658C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI
7058		21	0-TNK-86-659C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI
7059		09	0-FAN-30-68	DG ROOM C EXHAUST FAN "A"	U1/2 DG	583	DG C	AI
7060		09	0-FAN-30-69	DG ROOM C EXHAUST FAN "B"	U1/2 DG	583	DG C	AI
7061		10	0-FCO-30-68A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	AI
7062		10	0-FCO-30-68B	INLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	AI
7063		10	0-FCO-30-68C	INLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	AI
7064		10	0-FCO-30-69A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	AI
7065		10	0-FCO-30-69B	INLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	AI
7066		10	0-FCO-30-69C	INLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	AI
7067		17	0-GEN-82-D	UNIT 1 & 2 DIESEL GENERATOR "D"	U1/2 DG	565	DG D	AI
7068		21	0-TNK-18-48/1	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	AI
7069		21	0-TNK-18-48/2	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	AI
7070		21	0-TNK-18-48/3	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	AI
7071		21	0-TNK-86-650D	DG "D" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG D	AI
7072		21	0-TNK-86-651D	DG "D" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG D	AI
7073		21	0-TNK-86-652D	DG "D" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG D	AI
7074		21	0-TNK-86-653D	DG "D" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG D	AI
7075		21	0-TNK-86-654D	DG "D" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG D	AI
7076		21	0-TNK-86-655D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI
7077		21	0-TNK-86-656D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI
7078		21	0-TNK-86-657D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI
7079		21	0-TNK-86-658D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI
7080		21	0-TNK-86-659D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI
7081		09	0-FAN-30-70	DG ROOM D EXHAUST FAN "A"	U1/2 DG	583	DG D	AI
7082		09	0-FAN-30-71	DG ROOM D EXHAUST FAN "B"	U1/2 DG	583	DG D	AI
7083		10	0-FCO-30-70A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	AI
7084		10	0-FCO-30-70B	INLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	AI
7085		10	0-FCO-30-70C	INLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	AI
7086		10	0-FCO-30-71A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	AI
7087		10	0-FCO-30-71B	INLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	AI
7088		10	0-FCO-30-71C	INLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
7089		17	3-GEN-82-3A	UNIT 3 DIESEL GENERATOR A	U3 DG	565	DG A	AI
7090		21	3-TNK-18-61/1	DG "3A" 7 DAY FUEL OIL TANK	U3 DG	565	DG A	AI
7091		21	3-TNK-18-61/2	DG "3A" 7 DAY FUEL OIL TANK	U3 DG	565	DG A	AI
7092		21	3-TNK-18-61/3	DG "3A" 7 DAY FUEL OIL TANK	U3 DG	565	DG A	AI
7093		21	3-TNK-86-650A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI
7094		21	3-TNK-86-651A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI
7095		21	3-TNK-86-652A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI
7096		21	3-TNK-86-653A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI
7097		21	3-TNK-86-654A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI
7098		21	3-TNK-86-655A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI
7099		21	3-TNK-86-656A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI
7100		21	3-TNK-86-657A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI
7101		21	3-TNK-86-658A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI
7102		21	3-TNK-86-659A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI
7103		09	3-FAN-30-230	DG ROOM 3A EXHAUST FAN "A"	U3 DG	583	DG A	AI
7104		10	3-FCO-30-230A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3A"	U3 DG	583	DG A	AI
7105		10	3-FCO-30-230B	INLET DAMPER FOR FAN "A" IN DG ROOM "3A"	U3 DG	583	DG A	AI
7106		10	3-FCO-30-230C	INLET DAMPER FOR FAN "A" IN DG ROOM "3A"	U3 DG	583	DG A	AI
7107		17	3-GEN-82-3B	UNIT 3 DIESEL GENERATOR B	U3 DG	565	DG B	AI
7108		21	3-TNK-18-62/1	DG "3B" 7 DAY FUEL OIL TANK	U3 DG	565	DG B	AI
7109		21	3-TNK-18-62/2	DG "3B" 7 DAY FUEL OIL TANK	U3 DG	565	DG B	AI
7110		21	3-TNK-18-62/3	DG "3B" 7 DAY FUEL OIL TANK	U3 DG	565	DG B	AI
7111		21	3-TNK-86-650B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI
7112		21	3-TNK-86-651B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI
7113		21	3-TNK-86-652B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI
7114		21	3-TNK-86-653B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI
7115		21	3-TNK-86-654B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI
7116		21	3-TNK-86-655B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI
7117		21	3-TNK-86-656B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI
7118		21	3-TNK-86-657B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI
7119		21	3-TNK-86-658B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI
7120		21	3-TNK-86-659B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI
7121		09	3-FAN-30-232	DG ROOM 3B EXHAUST FAN "A"	U3 DG	583	DG B	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
7122		10	3-FCO-30-232A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3B"	U3 DG	583	DG B	AI
7123		10	3-FCO-30-232B	INLET DAMPER FOR FAN "A" IN DG ROOM "3B"	U3 DG	583	DG B	AI
7124		10	3-FCO-30-232C	INLET DAMPER FOR FAN "A" IN DG ROOM "3B"	U3 DG	583	DG B	AI
8001		06	0-PMP-23-005	RHRSW PUMP A2	INTAKE	565	A	AI
8004		08A	1-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U1 RB	565	R2/U	AI
8005		08A	2-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U2 RB	565	R9/U	AI
8006		08A	3-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U3 RB	565	R17/T	AI
8007		06	0-PMP-23-012	RHRSW PUMP C2	INTAKE	565	C	AI
8010		08A	1-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U1 RB	565	R2/U	AI
8011		08A	2-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U2 RB	565	R9/U	AI
8012		08A	3-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U3 RB	565	R17/T	AI
8013		06	0-PMP-23- 19	RHRSW PUMP B2	INTAKE	565	B	AI
8016		08A	1-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U1 RB	565	R5/T	AI
8017		08A	2-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U2 RB	565	R13/U	AI
8018		08A	3-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U3 RB	565	R19/U	AI
8019		06	0-PMP-23-027	RHRSW PUMP D2	INTAKE	565	D	AI
8022		08A	1-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U1 RB	565	R5/T	AI
8023		08A	2-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U2 RB	565	R13/U	AI
8024		08A	3-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U3 RB	565	R19/U	AI
8025		08A	1-FCV-23-57	RHR/RHRSW CROSS CONNECT VALVE	U1 RB	565	R6/S	AI
8026		08A	2-FCV-23-57	RHR/RHRSW CROSS CONNECT VALVE	U2 RB	565	R13/T	AI
8027		ROB	2-FI-23-36	RHRSW HX A FLOW INDICATOR	N/A	N/A	N/A	AI
8027	B	ROB	2-FT-23-36	RHRSW HX A FLOW TRANSMITTER	N/A	N/A	N/A	AI
8027	C	ROB	2-FM-23-36	RHRSW HX A FLOW DEVICE	N/A	N/A	N/A	AI
8027	D	ROB	2-FS-90-133B	RHRSW HX A FLOW SWITCH	N/A	N/A	N/A	AI
8028		ROB	2-FI-23-42	RHRSW HX C FLOW INDICATOR	N/A	N/A	N/A	AI
8028	B	ROB	2-FT-23-42	RHRSW HX C FLOW TRANSMITTER	N/A	N/A	N/A	AI
8028	C	ROB	2-FM-23-42	RHRSW HX C FLOW DEVICE	N/A	N/A	N/A	AI
8028	D	ROB	2-FS-90-133C	RHRSW HX C FLOW SWITCH	N/A	N/A	N/A	AI
8029		ROB	2-FI-23-48	RHRSW HX B FLOW INDICATOR	N/A	N/A	N/A	AI
8029	B	ROB	2-FT-23-48	RHRSW HX B FLOW TRANSMITTER	N/A	N/A	N/A	AI
8029	C	ROB	2-FM-23-48	RHRSW HX B FLOW DEVICE	N/A	N/A	N/A	AI
8029	D	ROB	2-FS-90-134B	RHRSW HX B FLOW SWITCH	N/A	N/A	N/A	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
8029	E	ROB	2-BKR-329	RHRSW HX B FLOW INDICATION BREAKER	N/A	N/A	N/A	AI
8030		ROB	2-FI-23-54	RHRSW HX D FLOW INDICATOR	N/A	N/A	N/A	AI
8030	B	ROB	2-FT-23-54	RHRSW HX D FLOW TRANSMITTER	N/A	N/A	N/A	AI
8030	C	ROB	2-FM-23-54	RHRSW HX D FLOW DEVICE	N/A	N/A	N/A	AI
8030	D	ROB	2-FS-90-134C	RHRSW HX D FLOW SWITCH	N/A	N/A	N/A	AI
9001		04	2-XFA-231-TS2A	4KV/480V XFMR TS2A	U2 RB	621	T/R13	AI
9002		04	2-XFA-231-TS2B	4KV/480V XFMR TS2B	U2 RB	621	T/R14	AI
9003		04	3-XFA-231-TS3A	4KV/480V XFMR TS3A	U3 RB	621	S/R20	AI
9004		04	0-OXF-219-TDA	4KV/480V XFMR TDA	U1/2 DG	583	T/R1	AI
9005		04	0-OXF-219-TDB	4KV/480V XFMR TDB	U1/2 DG	583	P/R1	AI
9006		04	2-XFA-253-0002A1	480V-120/208V XFMR FOR I&C BUS 2A	U2 RB	621	P/R13	AI
9007		04	2-XFA-253-0002A2	208V/120V REG XFMR FOR I&C BUS 2A	U2 RB	621	P/R13	AI
9008		04	2-XFA-253-0002B1	480V-120/208V XFMR FOR I&C BUS 2B	U2 RB	593	R/R13	AI
9009		04	2-XFA-253-0002B2	208V/120V REG XFMR FOR I&C BUS 2B	U2 RB	593	R/R13	AI
9010		14	2-JBOX-253-7193	I&C BUS BREAKER BOX BUS 2A	U2 RB	621	P/R13	AI
9011		14	2-JBOX-253-7196	I&C BUS BREAKER BOX BUS 2B	U2 RB	593	P/R10	AI
9012		03	0-BDAA-211-0000A	4KV SHDN BD A	U1 RB	621	R/R2	AI
9013		03	0-BDAA-211-0000B	4KV SHDN BD B	U1 RB	593	Q/R2	AI
9014		03	0-BDAA-211-0000C	4KV SHDN BD C	U2 RB	621	R/R13	AI
9015		03	0-BDAA-211-0000D	4KV SHDN BD D	U2 RB	593	Q/R13	AI
9016		03	3-BDAA-211-0003EA	4KV SHDN BD 3EA	U3 DG	583	4KV SD BD	AI
9017		03	3-BDAA-211-0003EB	4KV SHDN BD 3EB	U3 DG	565	4KV SD BD	AI
9018		02	1-BDBB-231-0001A	480V SHDN BD 1A	U1 RB	621	S/R1	AI
9019		02	1-BDBB-231-0001B	480V SHDN BD 1B	U1 RB	621	S/R2	AI
9020		02	2-BDBB-231-0002A	480V SHDN BD 2A	U2 RB	621	S/R13	AI
9021		02	2-BDBB-231-0002B	480V SHDN BD 2B	U2 RB	621	S/R14	AI
9022		02	3-BDBB-231-0003A	480V SHDN BD 3A	U3 RB	621	S/R20	AI
9023		01	1-BDBB-268-0001A	480V RMOV BD 1A	U1 RB	621	R/R1	AI
9024		01	1-BDBB-268-0001B	480V RMOV BD 1B	U1 RB	593	R/R1	AI
9025		01	2-BDBB-268-0002A	480V RMOV BD 2A	U2 RB	621	R/R14	AI
9026		01	2-BDBB-268-0002B	480V RMOV BD 2B	U2 RB	593	R/R14	AI
9027		01	2-BDBB-268-0002D	480V RMOV BD 2D	U2 RB	593	T/R11	AI
9028		01	2-BDBB-268-0002E	480V RMOV BD 2E	U2 RB	621	U/R8	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
9031		01	0-BDBB-219-0000A	480V DSL AUX BD A	U1/2 DG	583	480V AUX BD	AI
9032		01	0-BDBB-219-0000B	480V DSL AUX BD B	U1/2 DG	583	480V AUX BD	AI
9033		01	3-BDBB-219-0003EA	480V DSL AUX BD 3EA	U3 DG	583	48OV AUX BD	AI
9034		01	2-BDBB-281-0002A	250V RMOV BD 2A	U2 RB	621	Q/R14	AI
9035		01	2-BDBB-281-0002B	250V RMOV BD 2B	U2 RB	593	Q/R14	AI
9036		01	2-BDBB-281-0002C	250V RMOV BD 2C	U2 RB	565	Q/R8	AI
9037		14	0-BDDD-280-0001	250V BATTERY BD 1	U1 RB	593	P/R4	AI
9038		14	0-BDDD-280-0002	250V BATTERY BD 2	U2 RB	593	P/R10	AI
9039		14	0-BDDD-280-0003	250V BATTERY BD 3	U3 RB	593	P/R18	AI
9040		20	2-PNLA-009-0003A	PANEL 9-3A	U2 CB	617	U2 MCR	AI
9041		20	2-PNLA-009-0003B	PANEL 9-3B	U2 CB	617	U2 MCR	AI
9042		20	2-PNLA-009-0004	PANEL 9-4	U2 CB	617	U2 MCR	AI
9043		20	2-PNLA-009-0005	PANEL 9-5	U2 CB	617	U2 MCR	AI
9044		20	2-PNLA-009-0006	PANEL 9-6	U2 CB	617	U2 MCR	AI
9045		20	2-PNLA-009-0009	PANEL 9-9	U2 CB	617	U2 MCR	AI
9046		20	2-PNLA-009-0015	PANEL 9-15	U2 CB	593	U2 AIR	AI
9047		20	2-PNLA-009-0017	PANEL 9-17	U2 CB	593	U2 AIR	AI
9048		20	2-PNLA-009-0018	PANEL 9-18	U2 CB	593	U2 AIR	AI
9049		20	2-PNLA-009-0019	PANEL 9-19	U2 CB	593	U2 AIR	AI
9050		20	2-PNLA-009-0021	PANEL 9-21	U2 CB	617	U2 MCR	AI
9051		20	0-PNLA-009-0023/7	PANEL 0-9-23-7	U2 CB	617	U2 MCR	AI
9052		20	0-PNLA-009-0023/8	PANEL 0-9-23-8	U2 CB	617	U2 MCR	AI
9053		20	3-PNLA-009-0023A	PANEL 3-9-23A	U3 CB	617	U3 MCR	AI
9054		20	3-PNLA-009-0023B	PANEL 3-9-23B	U3 CB	617	U3 MCR	AI
9055		20	3-PNLA-009-0023C	PANEL 3-9-23C	U3 CB	617	U3 MCR	AI
9056		20	3-PNLA-009-0023D	PANEL 3-9-23D	U3 CB	617	U3 MCR	AI
9057		20	0-PNLA-009-0028	PANEL 9-28	U2 CB	593	U2 AIR	AI
9058		20	2-PNLA-009-0030	PANEL 9-30	U2 CB	593	U2 AIR	AI
9059		20	2-PNLA-009-0032	PANEL 9-32	U2 CB	593	U2 AIR	AI
9060		20	2-PNLA-009-0033	PANEL 9-33	U2 CB	593	U2 AIR	AI
9061		20	2-PNLA-009-0039	PANEL 9-39	U2 CB	593	U2 AIR	AI
9062		20	2-PNLA-009-0042	PANEL 9-42	U2 CB	593	U2 AIR	AI
9063		20	2-PNLA-009-0043	PANEL 9-43	U2 CB	593	U2 AIR	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
9064		20	2-PNLA-009-0054	PANEL 9-54	U2 CB	617	U2 MCR	AI
9065		20	2-PNLA-009-0055	PANEL 9-55	U2 CB	617	U2 MCR	AI
9066		20	2-PNLA-009-0081	PANEL 9-81	U2 CB	593	U2 AIR	AI
9067		20	2-PNLA-009-0082	PANEL 9-82	U2 CB	593	U2 AIR	AI
9068		20	2-PNLA-009-0083	PANEL 9-83	U2 CB	593	U2 AIR	AI
9069		20	2-PNLA-009-0084	PANEL 9-84	U2 CB	593	U2 AIR	AI
9070		20	2-PNLA-009-0085	PANEL 9-85	U2 CB	593	U2 AIR	AI
9071		20	2-PNLA-009-0086	PANEL 9-86	U2 CB	593	U2 AIR	AI
9072		20	2-PNLA-009-0087	PANEL 9-87	U2 CB	593	U2 AIR	AI
9073		20	2-PNLA-009-0088	PANEL 9-88	U2 CB	593	U2 AIR	AI
9074		20	2-LPNL-925-0031	PANEL 25-31	U2 RB	621	Q/R13	AI
9075		20	2-LPNL-925-0032	PANEL 25-32	U2 RB	621	Q/R13	AI
9076		20	0-LPNL-925-0041A	PANEL 25-41A	U1/2 DG	583	NORTH END	AI
9077		20	0-LPNL-925-0041B	PANEL 25-41B	U1/2 DG	583	NORTH END	AI
9078		20	0-LPNL-925-0041C	PANEL 25-41C	U1/2 DG	583	NORTH END	AI
9079		20	0-LPNL-925-0041D	PANEL 25-41D	U1/2 DG	583	NORTH END	AI
9080		20	0-LPNL-925-0042A1	PANEL 25-42A1	U2 RB	621	R/R14	AI
9081		20	0-LPNL-925-0042A2	PANEL 25-42A2	U2 RB	621	R/R14	AI
9082		20	0-LPNL-925-0042B1	PANEL 25-42B1	U2 RB	621	Q/R14	AI
9083		20	0-LPNL-925-0042B2	PANEL 25-42B2	U2 RB	621	Q/R14	AI
9084		20	0-LPNL-925-0043A1	PANEL 25-43A1	U1/2 DG	583	HALLWAY	AI
9085		20	0-LPNL-925-0043A2	PANEL 25-43A2	U1/2 DG	583	HALLWAY	AI
9086		20	0-LPNL-925-0043B1	PANEL 25-43B1	U1/2 DG	583	HALLWAY	AI
9087		20	0-LPNL-925-0043B2	PANEL 25-43B2	U1/2 DG	583	HALLWAY	AI
9088		20	2-LPNL-925-044A/11	PANEL 25-44A11	U2 RB	621	S/R13	AI
9089		20	2-LPNL-925-044A/12	PANEL 25-44A12	U2 RB	621	S/R14	AI
9090		20	2-LPNL-925-044B/11	PANEL 25-44B11	U2 RB	621	S/R13	AI
9091		20	2-LPNL-925-044B/12	PANEL 25-44B12	U2 RB	621	S/R14	AI
9092		20	0-LPNL-925-0045A	PANEL 25-45A	U1 RB	621	R/R2	AI
9093		20	0-LPNL-925-0045B	PANEL 25-45B	U1 RB	593	R/R2	AI
9094		20	0-LPNL-925-0045C	PANEL 25-45C	U2 RB	621	R/R13	AI
9095		20	0-LPNL-925-0045D	PANEL 25-45D	U2 RB	593	R/R13	AI
9096		20	0-LPNL-925-0046A	PANEL 25-46A	U1/2 DG	565	DG A	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
9097		20	0-LPNL-925-0046B	PANEL 25-46B	U1/2 DG	565	DG B	AI
9098		20	0-LPNL-925-0046C	PANEL 25-46C	U1/2 DG	565	DG C	AI
9099		20	0-LPNL-925-0046D	PANEL 25-46D	U1/2 DG	565	DG D	AI
9100		20	0-LPNL-925-0047A	PANEL 0-25-47A	U1/2 DG	565	DG A	AI
9101		20	0-LPNL-925-0047B	PANEL 0-25-47B	U1/2 DG	565	DG B	AI
9102		20	0-LPNL-925-0047C	PANEL 0-25-47C	U1/2 DG	565	DG C	AI
9103		20	0-LPNL-925-0047D	PANEL 0-25-47D	U1/2 DG	565	DG D	AI
9104		20	3-LPNL-925-0047A	PANEL 3-25-47A	U3 DG	565	DG A	AI
9105		20	3-LPNL-925-0047B	PANEL 3-25-47B	U3 DG	565	DG B	AI
9106		20	3-LPNL-925-0047C	PANEL 3-25-47C	U3 DG	565	DG C	AI
9107		20	3-LPNL-925-0047D	PANEL 3-25-47D	U3 DG	565	DG D	AI
9108		20	0-PNLA-082-0000A	DG A ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG A	AI
9109		20	0-PNLA-082-0000B	DG B ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG B	AI
9110		20	0-PNLA-082-0000C	DG C ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG C	AI
9111		20	0-PNLA-082-0000D	DG D ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG D	AI
9112		20	3-PNLA-082-00003A	DG 3A ELECTRICAL CONTROL CABINET	U3 DG	565	DG A	AI
9113		20	3-PNLA-082-00003B	DG 3B ELECTRICAL CONTROL CABINET	U3 DG	565	DG B	AI
9114		16	2-INV-256-0001	DIVISION I ECCS ATU INVERTER	U2 RB	593	Q/R14	AI
9115		16	2-INV-256-0002	DIVISION II ECCS ATU INVERTER	U2 RB	621	P/R14	AI
9116		14	0-XSW-248-0001	250V MAIN BATT CHGR OUTPUT XFR SW 1	U1 RB	593	P/R4	AI
9117		14	0-XSW-248-0002A	250V MAIN BATT CHGR OUTPUT XFR SW 2A	U2 RB	593	P/R9	AI
9118		14	0-XSW-248-0003	250V MAIN BATT CHGR OUTPUT XFR SW 3	U3 RB	593	P/R16	AI
9119		15	0-BATA-248-0000A	250V BATTERY SB-A	U1 RB	621	S/R2	AI
9120		14	0-PNLA-248-0000A	250V DISTRIBUTION PANEL SB-A	U1 RB	621	S/R2	AI
9121		16	0-CHGA-248-0000A	250V BATTERY CHARGER SB-A	U1 RB	621	S/R2	AI
9122		15	0-BATA-248-0000B	250V BATTERY SB-B	U1 RB	621	S/R2	AI
9123		14	0-PNLA-248-0000B	250V DISTRIBUTION PANEL SB-B	U1 RB	621	S/R2	AI
9124		16	0-CHGA-248-0000B	250V BATTERY CHARGER SB-B	U1 RB	621	S/R2	AI
9125		15	0-BATA-248-0000C	250V BATTERY SB-C	U2 RB	621	S/R13	AI
9126		14	0-PNLA-248-0000C	250V DISTRIBUTION PANEL SB-C	U2 RB	621	S/R13	AI
9127		16	0-CHGA-248-0000C	250V BATTERY CHARGER SB-C	U2 RB	621	S/R13	AI
9128		15	0-BATA-248-0000D	250V BATTERY SB-D	U2 RB	621	S/R13	AI
9129		14	0-PNLA-248-0000D	250V DISTRIBUTION PANEL SB-D	U2 RB	621	S/R13	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
9130		16	0-CHGA-248-0000D	250V BATTERY CHARGER SB-D	U2 RB	621	S/R13	AI
9131		15	3-BATA-248-0003EB	250V BATTERY SB-3EB	U3 DG	583	SE CORNER	AI
9132		14	3-PNLA-248-0003EB	250V DISTRIBUTION PANEL SB-3EB	U3 DG	583	SE CORNER	AI
9133		16	3-CHGA-248-0003EB	250V BATTERY CHARGER SB-3EB	U3 DG	583	SE CORNER	AI
9134		16	0-CHGA-248-0001	250V BATTERY CHARGER 1	U1 RB	593	P/R4	AI
9135		16	0-CHGA-248-0002A	250V BATTERY CHARGER 2A	U2 RB	593	P/R9	AI
9136		16	0-CHGA-248-0003	250V BATTERY CHARGER 3	U3 RB	593	P/R18	AI
9137		15	0-BATA-248-0001	250V MAIN BATTERY 1	U1 RB	593	P/R4	AI
9138		15	0-BATA-248-0002	250V MAIN BATTERY 2	U2 RB	593	P/R9	AI
9139		15	0-BATA-248-0003	250V MAIN BATTERY 3	U3 RB	593	P/R18	AI
9140		13	2-MGEN-268-0002DN	LPCI M-G SET 2DN	U2 RB	621	U/R13	AI
9141		13	2-MGEN-268-0002EN	LPCI M-G SET 2EN	U2 RB	639	U/R14	AI
9142		15	0-BATB-254-0000A	125V DC DSL BATT A	U1/2 DG	565	DG A	AI
9143		15	0-BATB-254-0000B	125V DC DSL BATT B	U1/2 DG	565	DG B	AI
9144		15	0-BATB-254-0000C	125V DC DSL BATT C	U1/2 DG	565	DG C	AI
9145		15	0-BATB-254-0000D	125V DC DSL BATT D	U1/2 DG	565	DG D	AI
9146		14	0-BDGG-254-0000A	125V DC DSL BATT BD A	U1/2 DG	565	DG A	AI
9147		14	0-BDGG-254-0000B	125V DC DSL BATT BD B	U1/2 DG	565	DG B	AI
9148		14	0-BDGG-254-0000C	125V DC DSL BATT BD C	U1/2 DG	565	DG C	AI
9149		14	0-BDGG-254-0000D	125V DC DSL BATT BD D	U1/2 DG	565	DG D	AI
9150		16	0-CHGB-254-0000AA	125V DSL GEN A BATT CHGR A	U1/2 DG	565	DG A	AI
9151		16	0-CHGB-254-0000BA	125V DSL GEN B BATT CHGR A	U1/2 DG	565	DG B	AI
9152		16	0-CHGB-254-0000CB	125V DSL GEN C BATT CHGR B	U1/2 DG	565	DG C	AI
9153		16	0-CHGB-254-0000DB	125V DSL GEN D BATT CHGR B	U1/2 DG	565	DG D	AI
9154		15	3-BATB-254-0000A	125V DC DSL BATT 3A	U3 DG	565	DG A	AI
9155		15	3-BATB-254-0000B	125V DC DSL BATT 3B	U3 DG	565	DG B	AI
9156		14	3-BDGG-254-0003A	125V DC DSL BATT BD 3A	U3 DG	565	DG A	AI
9157		14	3-BDGG-254-0003B	125V DC DSL BATT BD 3B	U3 DG	565	DG B	AI
9158		16	3-CHGB-254-0000AA	125V DC DSL 3A BATT CHGR A	U3 DG	565	DG A	AI
9159		16	3-CHGB-254-0000BA	125V DC DSL 3B BATT CHGR A	U3 DG	565	DG B	AI
9168		ROB	2-PX-64-67B	POWER SUPPLY (PNL 2-9-19 ; SUPPORTS 2-PI-64-67B)	N/A	N/A	N/A	AI
9169		ROB	2-PX-71-60-1	ECCS ATU CAB 2-9-81 POWER SUPPLY	N/A	N/A	N/A	AI
9170		ROB	2-PX-71-60-1A	ECCS ATU CAB 2-9-81 POWER SUPPLY	N/A	N/A	N/A	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
9171		ROB	2-PX-71-60-2	ECCS ATU CAB 2-9-82 POWER SUPPLY	N/A	N/A	N/A	AI
9172		ROB	2-PX-71-60-2A	ECCS ATU CAB 2-9-82 POWER SUPPLY	N/A	N/A	N/A	AI
9173		ROB	2-PX-64-159A	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	AI
9174		ROB	2-PX-64-160A	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	AI
9175		ROB	2-PXMC-23-114	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	AI
9176		ROB	2-PXMC-23-115	POWER SUPPLY (PNL 2-9-19)	N/A	N/A	N/A	AI
9177		14	2-JBOX-253-7192	DISC SW BOX (I&C BUS A)	U2 RB	621	SD BD C	AI
9178		14	2-JBOX-253-7194	DISC SW BOX (I&C BUS A)	U2 CB	593	BATT BD 2	AI
9179		14	2-JBOX-253-7195	DISC SW BOX (I&C BUS B)	U2 RB	593	SD BD D	AI
9180		14	2-JBOX-253-7197	DISC SW BOX (I&C BUS B)	U2 CB	593	BATT BD 2	AI
9181		14	2-JBOX-268-5990	MG SET 2DN CONTROL STATION (2-HS-268-0002DN)	U2 RB	621	U/R13	AI
9182		14	2-JBOX-268-5992	MG SET 2EN CONTROL STATION (2-HS-268-0002EN)	U2 RB	639	U/R14	AI
9183		20	2-PNLA-009-0093	CONTROL PANEL 9-93	U2 CB	593	U2 AIR	AI
9184		18	2-LPNL-925-005A	LOCAL PANEL 25-5A	U2 RB	593	S/R10	AI
9185		18	2-LPNL-925-005B	LOCAL PANEL 25-5B	U2 RB	593	S/R10	AI
9186		18	2-LPNL-925-005D	LOCAL PANEL 25-5D	U2 RB	593	S/R10	AI
9187		18	2-LPNL-925-006A	LOCAL PANEL 25-6A	U2 RB	593	P/R12	AI
9188		18	2-LPNL-925-006D	LOCAL PANEL 25-6D	U2 RB	593	P/R12	AI
9189		18	2-LPNL-925-0059	LOCAL PANEL 25-59	U2 RB	519	T/R8	AI
9190		18	2-LPNL-925-0062	LOCAL PANEL 25-62	U2 RB	519	T/R14	AI
9191		ROB	2-PX-74-56	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	AI
9192		ROB	2-PX-74-70	POWER SUPPLY (2-9-19)	N/A	N/A	N/A	AI
9193		14	2-JBOX-256-9722	DIV I ECCS ATU INV FUSE BOX	U2 RB	593	Q/R14	AI
9194		04	1-XFA-231-TS1A	4KV/480V TRANSFORMER TS1A	U1 RB	621	T/R1	AI
9195		18	2-HS-74-7B	LOCAL HS STATION	U2 RB	541	T/R9	AI
9196		14	2-JBOX-74-2255	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	T/R9	AI
9197		18	2-HS-74-57B	LOCAL HS STATION	U2 RB	519	TORUS	AI
9198		14	2-JBOX-74-2309	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	R/R8	AI
9199		18	2-HS-74-59B	LOCAL HS STATION	U2 RB	519	TORUS	AI
9201		18	2-HS-74-52B	LOCAL HS STATION	U2 RB	565	S/R10	AI
9202		14	2-JBOX-74-2134	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	T/R10	AI
9203		18	2-HS-74-53B	LOCAL HS STATION	U2 RB	565	T/R10	AI
9204		18	2-HS-74-60B	LOCAL HS STATION	U2 RB	565	S/R10	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
9205		14	2-JBOX-74-2146	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	S/R10	AI
9207		18	2-HS-74-30B	LOCAL HS STATION	U2 RB	541	T/R13	AI
9208		14	2-JBOX-74-2296	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	T/R13	AI
9209		18	2-HS-74-71B	LOCAL HS STATION	U2 RB	519	TORUS	AI
9210		14	2-JBOX-74-2310	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	R/R14	AI
9212		18	2-HS-74-66B	LOCAL HS STATION	U2 RB	565	T/R11	AI
9213		14	2-JBOX-74-2132	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	T/R11	AI
9214		18	2-HS-74-67B	LOCAL HS STATION	U2 RB	565	T/R11	AI
9215		14	2-JBOX-75-1223	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593	P/R11	AI
9216		14	2-JBOX-74-2938	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593	S/R12	AI
9219		14	2-JBOX-70-2111	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	P/R13	AI
9220		18	2-HS-75-9B	LOCAL HS STATION	U2 RB	541	N/R9	AI
9221		14	2-JBOX-75-2237	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	N/R9	AI
9222		18	2-HS-75-25B	LOCAL HS STATION	U2 RB	593	P/R11	AI
9223		14	2-JBOX-75-1222	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593	P/R11	AI
9224		18	2-HS-75-37B	LOCAL HS STATION	U2 RB	519	N/R13	AI
9225		14	2-JBOX-75-2246	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	519	N/R13	AI
9226		18	2-HS-75-53B	LOCAL HS STATION	U2 RB	593	P/R11	AI
9227		18	2-HS-23-34B	LOCAL HS STATION	U2 RB	565	U/R9	AI
9228		14	2-JBOX-23-2115	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	U/R9	AI
9229		18	2-HS-23-40B	LOCAL HS STATION	U2 RB	565	U/R9	AI
9230		18	2-HS-23-46B	LOCAL HS STATION	U2 RB	565	U/R13	AI
9231		14	2-JBOX-23-2116	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	U/R13	AI
9232		18	2-HS-23-52B	LOCAL HS STATION	U2 RB	565	U/R13	AI
9235		18	2-HS-74-0005B	LOCAL HS STATION - RHR PUMP 2A	U2 RB	519	U/R8	AI
9236		18	2-HS-74-0028B	LOCAL HS STATION - RHR PUMP 2B	U2 RB	519	U/R13	AI
9237		18	2-HS-74-0016B	LOCAL HS STATION - RHR PUMP 2C	U2 RB	519	U/R9	AI
9238		18	2-HS-74-0039B	LOCAL HS STATION - RHR PUMP 2D	U2 RB	519	U/R13	AI
9239		18	2-HS-75-0005B	LOCAL HS STATION - CS PUMP 2A	U2 RB	519	N/R8	AI
9240		18	2-HS-75-0033B	LOCAL HS STATION - CS PUMP 2B	U2 RB	519	N/R14	AI
9241		18	2-HS-75-0014B	LOCAL HS STATION - CS PUMP 2C	U2 RB	519	N/R9	AI
9242		18	2-HS-75-0042B	LOCAL HS STATION - CS PUMP 2D	U2 RB	519	N/R14	AI
9243		18	0-HS-23-5B	LOCAL HS STATION - RHRSW PUMP A2	INTAKE	565	A	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
9244		18	0-HS-23-85B	LOCAL HS STATION - RHRSW PUMP A3	INTAKE	565	A	AI
9245		18	0-HS-23-19B	LOCAL HS STATION - RHRSW PUMP B2	INTAKE	565	B	AI
9246		18	0-HS-23-88B	LOCAL HS STATION - RHRSW PUMP B3	INTAKE	565	B	AI
9247		18	0-HS-23-12B	LOCAL HS STATION - RHRSW PUMP C2	INTAKE	565	C	AI
9248		18	0-HS-23-91B	LOCAL HS STATION - RHRSW PUMP C3	INTAKE	565	C	AI
9249		18	0-HS-23-27B	LOCAL HS STATION - RHRSW PUMP D2	INTAKE	565	D	AI
9250		18	0-HS-23-94B	LOCAL HS STATION - RHRSW PUMP D3	INTAKE	565	D	AI
9251		20	2-JBOX-268-5951	MG SET 2DN CONTROL BOX	U2 RB	621	U/R13	AI
9252		20	2-JBOX-268-5953	MG SET 2EN CONTROL BOX	U2 RB	639	U/R14	AI
9253		14	NONE	LPCI MG SET 2DN VOLTAGE REGULATOR BOX	U2 RB	621	480V BD 2A	AI
9254		14	NONE	LPCI MG SET 2EN VOLTAGE REGULATOR BOX	U2 RB	621	480V BD 2A	AI
9255		14	0-JBOX-30-0640	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM A	AI
9256		18	0-HS-30-64	LOCAL HS STATION - DG A EXH FAN A	U1/2 DG	583	ELEC BD A	AI
9257		14	0-JBOX-30-1817	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM A	AI
9258		18	0-HS-30-65	LOCAL HS STATION - DG A EXH FAN B	U1/2 DG	583	ELEC BD A	AI
9259		14	0-JBOX-30-1825	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM B	AI
9260		18	0-HS-30-66	LOCAL HS STATION - DG B EXH FAN A	U1/2 DG	583	ELEC BD A	AI
9261		14	0-JBOX-30-1826	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM B	AI
9262		18	0-HS-30-67	LOCAL HS STATION - DG B EXH FAN B	U1/2 DG	583	ELEC BD A	AI
9263		14	0-JBOX-30-1828	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM C	AI
9264		18	0-HS-30-69	LOCAL HS STATION - DG C EXH FAN B	U1/2 DG	583	ELEC BD B	AI
9265		14	0-JBOX-30-1827	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM C	AI
9266		18	0-HS-30-68	LOCAL HS STATION - DG C EXH FAN A	U1/2 DG	583	ELEC BD B	AI
9267		14	0-JBOX-30-1830	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM D	AI
9268		18	0-HS-30-71	LOCAL HS STATION - DG D EXH FAN B	U1/2 DG	583	ELEC BD B	AI
9269		14	0-JBOX-30-1829	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM D	AI
9270		18	0-HS-30-70	LOCAL HS STATION - DG D EXH FAN A	U1/2 DG	583	ELEC BD B	AI
9271		14	3-JBOX-30-4239	JUNCTION BOX (TERM BLOCK)	U3 DG	583	FAN RM 3A	AI
9272		18	3-HS-30-230	LOCAL HS STATION - DG 3A EXH FAN A	U3 DG	583	ELEC BD 3EA	AI
9273		14	3-JBOX-30-4241	JUNCTION BOX (TERM BLOCK)	U3 DG	583	FAN RM 3B	AI
9274		18	3-HS-30-232	LOCAL HS STATION - DG 3B EXH FAN A	U3 DG	583	ELEC BD 3EA	AI
9275		ROB	2-PX-64-159B	POWER SUPPLY (PNL 9-19)	N/A	N/A	N/A	AI
9276		ROB	2-PX-64-160B	POWER SUPPLY (PNL 9-19)	N/A	N/A	N/A	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
9277		ROB	2-PX-64-50	POWER SUPPLY (PNL 25-32)	N/A	N/A	N/A	AI
9278		ROB	2-PX-64-161	POWER SUPPLY (PNL 9-87)	N/A	N/A	N/A	AI
9279		ROB	2-PX-64-162	POWER SUPPLY (PNL 9-88)	N/A	N/A	N/A	AI
9280		18	2-LPNL-925-0001	PANEL 25-0001	U2 RB	519	NW CORNER	AI
9281		18	2-LPNL-925-0060	PANEL 25-60	U2 RB	519	NE CORNER	AI
9282		04	1-XFA-231-TS1B	4KV/480V TRANSFORMER TS1B	U1 RB	621	T/R1	AI
9283		13	2-MGEN-268-0002DA	LPCI MG SET 2DA	U2 RB	639	U/R14	AI
9284		14	NONE	MG SET 2DA VOLTAGE REGULATOR BOX	U2 RB	621	480V SD 2	AI
9285		14	2-JBOX-268-5991	MG SET 2DA CONTROL STATION (2-HS-268-0002DA)	U2 RB	639	U/R14	AI
9286		20	2-JBOX-268-5952	MG SET 2DA CONTROL BOX (RELAYS)	U2 RB	639	U/R14	AI
9287		13	2-MGEN-268-0002EA	LPCI MG SET 2EA	U2 RB	621	U/R14	AI
9288		14	NONE	MG SET 2EA VOLTAGE REGULATOR BOX	U2 RB	621	480V BD 2A	AI
9289		14	2-JBOX-268-5993	MG SET 2EA CONTROL STATION (2-HS-268-0002EA)	U2 RB	621	U/R14	AI
9290		20	2-JBOX-268-5954	MG SET 2EA CONTROL BOX (RELAYS)	U2 RB	621	U/R14	AI
9291		20	0-ECAB-067-0925	EECW PUMP DISCHARGE STRAINER A CONTROL PANEL	INTAKE	565	A	AI
9292		20	0-ECAB-067-0926	EECW PUMP DISCHARGE STRAINER B CONTROL PANEL	INTAKE	565	B	AI
9293		20	0-ECAB-067-0927	EECW PUMP DISCHARGE STRAINER C CONTROL PANEL	INTAKE	565	C	AI
9294		20	0-ECAB-067-0928	EECW PUMP DISCHARGE STRAINER D CONTROL PANEL	INTAKE	565	D	AI
9295		20	2-ECAB-099-0002A1	RPS CIRCUIT PROTECTOR CABINET 2A1	U2 RB	593	BATT BD 2	AI
9296		20	2-ECAB-099-0002A2	RPS CIRCUIT PROTECTOR CABINET 2A2	U2 RB	593	BATT BD 2	AI
9297		20	2-ECAB-099-0002B1	RPS CIRCUIT PROTECTOR CABINET 2B1	U2 RB	593	BATT BD 2	AI
9298		20	2-ECAB-099-0002B2	RPS CIRCUIT PROTECTOR CABINET 2B2	U2 RB	593	BATT BD 2	AI
9299		20	2-ECAB-099-0002C1	RPS CIRCUIT PROTECTOR CABINET 2C1	U2 RB	593	BATT BD 2	AI
9300		20	2-ECAB-099-0002C2	RPS CIRCUIT PROTECTOR CABINET 2C2	U2 RB	593	BATT BD 2	AI
9301		20	1-PNLA-009-0054	PANEL 1-9-54	U1 CB	617	U1 MCR	AI
9302		20	1-PNLA-009-0055	PANEL 1-9-55	U1 CB	617	U1 MCR	AI
9303		20	0-LPNL-925-0246A	PANEL 25-246A (CAD N2 SUPPLY PNL A)	YARD	565	YARD	AI
9304		20	0-LPNL-925-0246B	PANEL 25-246B (CAD N2 SUPPLY PNL B)	YARD	565	YARD	AI
9305		18	2-LPNL-925-247A	LOCAL PANEL 2-25-247A (CAD DRYWELL & SUPP. CHAM. V.)	U2 RB	621	Q/R11	AI
9306		01	2-BDBB-265-0002B	48OV RB VENT BD 2B	U2 RB	565	U/R11	AI
9307		20	2-PNLA-009-0036A	PANEL 2-9-36A	U2 CB	593	U2 AIR	AI
9308		18	2-LPNL-925-0247B	LOCAL PANEL 2-25-247B (CAD N2 SUPPLY PANEL B)	U2 RB	621	Q/R12	AI
9309		20	1-PNLA-009-0020	PANEL 1-9-20	U1 CB	617	U1 MCR	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
9310		20	2-PNLA-009-0020	PANEL 2-9-20	U2 CB	617	U2 MCR	AI
9311		20	NONE	CO2 RELAY PNL FOR 39-10	U1/2 DG	565	DG D	AI
9312		20	NONE	CO2 RELAY PNL FOR 39-7	U1/2 DG	565	DG A	AI
9313		20	NONE	CO2 RELAY PNL FOR 39-8	U1/2 DG	565	DG B	AI
9314		20	NONE	CO2 RELAY PNL FOR 39-9	U1/2 DG	565	DG C	AI
9315		20	1-LPNL-925-0032	LOCAL PANEL 1-25-32	U1 RB	621	Q/R2	AI
9316		18	1-LPNL-925-0223	LOCAL PANEL 1-25-233	U1 RB	593	Q/R2	AI
9317		20	2-PNLA-009-0008	PANEL 2-9-8	U2 CB	617	U2 MCR	AI
9318		20	1-PNLA-009-0003	PANEL 1-9-3	U1 CB	617	U1 MCR	AI
9319		18	2-LPNL-925-0223	LOCAL PANEL 2-25-223	U2 RB	593	Q/R12	AI
9320		18	2-LPNL-925-0007A	LOCAL PANEL 2-25-7A	U2 RB	541	SW CORNER	AI
9321		18	2-LPNL-925-0007B	LOCAL PANEL 2-25-7B	U2 RB	541	SW CORNER	AI
9322		18	0-HS-67-48B	HANDSWITCH FOR 0-FCV-67-48 (4058)	INTAKE	565	D	AI
9323		18	0-HS-67-49B	HANDSWITCH FOR 0-FCV-67-49 (4015)	INTAKE	565	C	AI
9324		18	2-HS-73-81B	HANDSWITCH FOR 2-FCV-73-81 (3043)	U2 RB	519	TORUS	AI
9325		18	1-HS-23-34B	HANDSWITCH FOR 1-FCV-23-034 (8004)	U1 RB	565	R2/U	AI
9326		18	1-HS-23-40B	HANDSWITCH FOR 1-FCV-23-040 (8010)	U1 RB	565	R2/U	AI
9327		14	1-HS-23-46B	HANDSWITCH FOR 1-FCV-23-046 (8016)	U1 RB	565	R5/T	AI
9328		14	1-HS-23-52B	HANDSWITCH FOR 1-FCV-23-052 (8022)	U1 RB	565	R5/T	AI
9329		14	1-HS-23-57B	HANDSWITCH FOR 1-FCV-23-57 (8025)	U1 RB	565	R6/S	AI
9330		14	2-HS-74-100B	HANDSWITCH FOR 2-FCV-74-100 (1010)	U2 RB	565	R8/T	AI
9331		14	2-HS-74-99B	HANDSWITCH FOR 2-FCV-74-99 (1041)	U2 RB	519	SE CORNER	AI
9332		18	2-HS-64-68	HANDSWITCH FOR 2-CLR-67-917 (4006)	U2 RB	519	SW CORNER	AI
9333		18	2-HS-64-69	HANDSWITCH FOR 2-CLR-67-918 (4049)	U2 RB	519	SE CORNER	AI
9334		18	2-HS-64-70	HANDSWITCH FOR 2-CLR-67-921 (4008)	U2 RB	519	SW CORNER	AI
9335		18	2-HS-64-71	HANDSWITCH FOR 2-CLR-67-922 (4051)	U2 RB	519	SE CORNER	AI
9336		14	2-HS-64-72	HANDSWITCH FOR 2-CLR-67-919 (4007)	U2 RB	519	NW CORNER	AI
9337		14	2-HS-64-73	HANDSWITCH FOR 2-CLR-67-920 (4050)	U2 RB	519	NE CORNER	AI
9338		14	2-HS-69-2B	HANDSWITCH FOR 2-FCV-69-2 (3034)	U2 RB	593	R10/S	AI
9340		20	2-HS-71-2B	HANDSWITCH FOR 2-FCV-71-2 (3038)	U2 RB	593	R/R14	AI
9342		18	2-HS-73-3B	HANDSWITCH FOR 2-FCV-73-3 (3042)	U2 RB	519	TORUS	AI
9343		14	2-HS-74-12B	HANDSWITCH FOR 2-FCV-74-12 (1011)	U2 RB	519	SW CORNER	AI
9344		14	2-HS-74-13B	HANDSWITCH FOR 2-FCV-74-13 (1012)	U2 RB	519	SE CORNER	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
9345		14	2-HS-74-1B	HAND SWITCH FOR 2-FCV-74-1 (1001)	U2 RB	519	SW CORNER	AI
9346		14	2-HS-74-24B	HANDSWITCH FOR 2-FCV-74-24 (1029)	U2 RB	519	SE CORNER	AI
9347		18	2-HS-74-25B	HANDSWITCH FOR 2-FCV-74-25 (1030)	U2 RB	519	SE CORNER	AI
9348		14	2-HS-74-2B	HANDSWITCH FOR 2-FCV-74-2 (1002)	U2 RB	519	SW CORNER	AI
9349		14	2-HS-74-35B	HANDSWITCH FOR 2-FCV-74-35 (1039)	U2 RB	519	SE CORNER	AI
9350		18	2-HS-74-36B	HANDSWITCH FOR 2-FCV-74-36 (1040)	U2 RB	519	SE CORNER	AI
9351		18	2-HS-74-73B	HANDSWITCH FOR 2-FCV-74-73 (1049)	U2 RB	519	TORUS	AI
9352		14	2-HS-74-96B	HANDSWITCH FOR 2-FCV-74-96 (1003)	U2 RB	519	SW CORNER	AI
9353		14	2-HS-74-97B	HANDSWITCH FOR 2-FCV-74-97 (1013)	U2 RB	519	SW CORNER	AI
9354		14	2-HS-74-98B	HANDSWITCH FOR 2-FCV-74-98 (1031)	U2 RB	519	SE CORNER	AI
9355		18	2-HS-75-11B	HANDSWITCH FOR 2-FCV-75-11 (5006)	U2 RB	519	NW CORNER	AI
9356		14	2-HS-75-22B	HANDSWITCH FOR 2-FCV-75-22 (5010)	U2 RB	519	NW CORNER	AI
9357		14	2-HS-75-23B	HANDSWITCH FOR 2-FCV-75-23 (5012)	U2 RB	593	P/R10	AI
9358		18	2-HS-75-2B	HANDSWITCH FOR 2-FCV-75-2 (5001)	U2 RB	519	NW CORNER	AI
9359		18	2-HS-75-30B	HANDSWITCH FOR 2-FCV-75-30 (5015)	U2 RB	519	NE CORNER	AI
9360		18	2-HS-75-39B	HANDSWITCH FOR 2-FCV-75-39 (5020)	U2 RB	519	NE CORNER	AI
9361		14	2-HS-75-50B	HANDSWITCH FOR 2-FCV-75-50 (5024)	U2 RB	519	NE CORNER	AI
9362		14	2-HS-75-51B	HANDSWITCH FOR 2-FCV-75-51 (5026)	U2 RB	593	P/R11	AI
9363		14	2-HS-78-61B	HANDSWITCH FOR 2-FCV-78-61 (1026)	U2 RB	621	R10/S	AI
9364		18	2-PS-67-50	PRESSURE SWITCH FOR 2-FCV-67-50 (4017)	U2 RB	593	P/R13	AI
9365		18	2-PS-67-51	PRESSURE SWITCH FOR 2-FCV-67-51 (4060)	U2 RB	565	R13/T	AI
9366		18	2-TS-64-68	TEMPERATURE SWITCH FOR 2-CLR-67-917 (4006)	U2 RB	519	SW CORNER	AI
9367		18	2-TS-64-69	TEMPERATURE SWITCH FOR 2-CLR-67-918 (4049)	U2 RB	519	SE CORNER	AI
9368		18	2-TS-64-70	TEMPERATURE SWITCH FOR 2-CLR-67-921 (4008)	U2 RB	519	SW CORNER	AI
9369		18	2-TS-64-71	TEMPERATURE SWITCH FOR 2-CLR-67-922 (4051)	U2 RB	519	SE CORNER	AI
9370		18	2-TS-64-72	TEMPERATURE SWITCH FOR 2-CLR-67-919 (4007)	U2 RB	519	NW CORNER	AI
9371		18	2-TS-64-73	TEMPERATURE SWITCH FOR 2-CLR-67-920 (4050)	U2 RB	519	NE CORNER	AI
9372		18	2-TS-1-17A	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	AI
9373		18	2-TS-1-17B	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	AI
9374		18	2-TS-1-17C	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	AI
9375		18	2-TS-1-17D	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	AI
9376		18	2-TS-1-29A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	AI
9377		18	2-TS-1-29B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
9378		18	2-TS-1-29C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	AI
9379		18	2-TS-1-29D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	AI
9380		18	2-TS-1-40A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI
9381		18	2-TS-1-40B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI
9382		18	2-TS-1-40C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI
9383		18	2-TS-1-40D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI
9384		18	2-TS-1-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI
9385		18	2-TS-1-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI
9386		18	2-TS-1-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI
9387		18	2-TS-1-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI
9388		14	2-HS-23-57B	HANDSWITCH FOR 2-FCV-23-57 (8026)	U2 RB	565	R13/T	AI
9389		14	2-HS-74-101B	HANDSWITCH FOR 2-FCV-74-101 (1038)	U2 RB	565	R13/T	AI
9390		18	3-PS-67-50	PRESSURE SWITCH FOR 3-FCV-67-50 (4018)	U3 RB	593	P/R20	AI
9391		20	1-PNLA-009-0008	PANEL 1-9-8	U1 CB	617	U1 MCR	AI
9392		18	3-PS-67-51	PRESSURE SWITCH FOR 3-FCV-67-51 (4061)	U3 RB	565	R20/T	AI
9393		ROB	2-AMP-092-0007/41A	IRM CH. "A" VOLTAGE PREAMPLIFIER 7-34A	RB	565	S/R10	AI
9394		ROB	2-AMP-092-0007/41B	IRM CH. "B" VOLTAGE PREAMPLIFIER 7-34B	RB	565	S/R10	AI
9395		14	2-LPNL-925-0027	PANEL 2-25-27 IRM PREAMP. RPS I	RB	565	S/R10	AI
9396		ROB	2-AMP-092-0007/41C	IRM CH. "C" VOLTAGE PREAMPLIFIER 7-34C	RB	577	Q/R12	AI
9397		ROB	2-AMP-092-0007/41D	IRM CH. "D" VOLTAGE PREAMPLIFIER 7-34D	RB	577	Q/R12	AI
9398		14	2-LPNL-925-0061	PANEL 2-25-61 IRM PREAMP. RPS II	RB	577	Q/R12	AI
9399		ROB	2-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U2 MCR	AI
9400		ROB	2-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U2 MCR	AI
9401		ROB	2-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	CB	617	U2 MCR	AI
9402		ROB	2-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	CB	617	U2 MCR	AI
9403		20	2-PNLA-009-012	PANEL 2-9-12	CB	617	U2 MCR	AI
9404		15	2-BATD-283-000A2	24V NEUTRON MONITORING BATTERY, U2 CHANNEL A	CB	593	BAT RM 2	AI
9405		15	2-BATD-283-000B2	24V NEUTRON MONITORING BATTERY, U2 CHANNEL B	CB	593	BAT RM 2	AI
9406		16	2-CHGD-283-A1-2	24V NEUTRON BATTERY CHARGERS A1-2	CB	593	BAT BD RM 2	AI
9407		16	2-CHGD-283-A2-2	24V NEUTRON BATTERY CHARGERS A2-2	CB	593	BAT BD RM 2	AI
9408		16	2-CHGD-283-B1-2	24V NEUTRON BATTERY CHARGERS B1-2	CB	593	BAT BD RM 2	AI
9409		16	2-CHGD-283-B2-2	24V NEUTRON BATTERY CHARGERS B2-2	CB	593	BAT BD RM 2	AI
30001		00	3-HCU-85,1-185	CRD\HYDRAULIC CONTROL UNIT	U3 RB	565	R16&20/P-S	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
30002		07	3-FCV-85-82A	CRD\WEST SDV VENT VALVE	U3 RB	565	R16/S	AI
30003		07	3-FCV-85-82	CRD\WEST SDV VENT VALVE	U3 RB	565	R16/S	AI
30004		07	3-FCV-85-37C	CRD\WEST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	AI
30005		07	3-FCV-85-37D	CRD\WEST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	AI
30006		07	3-FCV-85-83A	CRD\EAST SDV VENT VALVE	U3 RB	565	R20/S	AI
30007		07	3-FCV-85-83	CRD\EAST SDV VENT VALVE	U3 RB	565	R20/S	AI
30008		07	3-FCV-85-37E	CRD\EAST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	AI
30009		07	3-FCV-85-37F	CRD\EAST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	AI
30010		21	3-TNK-85-901	CRD\WEST SCRAM INSTRUMENT VOLUME	U3 RB	565	P/R16	AI
30011		21	3-TNK-85-902	CRD\EAST SCRAM INSTRUMENT VOLUME	U3 RB	565	P/R20	AI
30012		08B	3-FSV-85-37A	CRD\SCRAM DUMP VALVE	U3 RB	565	R19/N	AI
30013		08B	3-FSV-85-37B	CRD\SCRAM DUMP VALVE	U3 RB	565	R19/N	AI
30014		08B	3-FSV-85-35A	CRD\BACKUP SCRAM VALVE	U3 RB	565	R19/N	AI
30015		08B	3-FSV-85-35B	CRD\BACKUP SCRAM VALVE	U3 RB	565	R19/N	AI
30016		20	3-HS-99-5A/S3A	RPS\REACTOR MANUAL SCRAM CHANNEL A3	U3 CB	617	U3 MCR	AI
30017		20	3-HS-99-5A/S3B	RPS\REACTOR MANUAL SCRAM CHANNEL B3	U3 CB	617	U3 MCR	AI
30018		20	3-HS-99-5A-S1	RPS\REACTOR MODE SWITCH	U3 CB	617	U3 MCR	AI
31001		08A	3-FCV-74-1	RHR/PUMP 3A SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SW CORNER	AI
31002		08A	3-FCV-74-2	RHR/PUMP 3A SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SW CORNER	AI
31003		08A	3-FCV-74-96	RHR/UNIT 3 TO UNIT 2 RHR X-TIE ISOLATION VALVE	U3 RB	519	SW CORNER	AI
31004		06	3-PMP-74-5	RHR/PUMP 3A	U3 RB	519	SW CORNER	AI
31006		08A	3-FCV-74-7	RHR/PUMP 3A&3C MINIMUM FLOW VALVE	U3 RB	519	SW CORNER	AI
31009		21	3-HEX-74-900A	RHR/HEAT EXCHANGER 3A	U3 RB	565	SW HX	AI
31010		08A	3-FCV-74-100	RHR/U3 TO U2 RHR DISCHARGE X-TIE ISOLATION VALVE	U3 RB	565	R14/T	AI
31011		08A	3-FCV-74-12	RHR/PUMP 3C SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SW CORNER	AI
31012		08A	3-FCV-74-13	RHR/PUMP 3C SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SW CORNER	AI
31013		08A	3-FCV-74-97	RHR/UNIT 3 TO UNIT 2 RHR X-TIE ISOLATION VALVE	U3 RB	519	SW CORNER	AI
31014		06	3-PMP-74-16	RHR/PUMP 3C	U3 RB	519	SW CORNER	AI
31017		21	3-HEX-74-900C	RHR/HEAT EXCHANGER 3C	U3 RB	565	SW HX	AI
31018		ROB	3-FI-74-50	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	AI
31018	B	ROB	3-FT-74-50	RHR LOOP I FLOW TRANSMITTER	N/A	N/A	N/A	AI
31018	C	ROB	3-FS-74-50	RHR LOOP I FLOW SWITCH	N/A	N/A	N/A	AI
31018	D	ROB	3-FM-74-50	RHR LOOP I FLOW DEVICE	N/A	N/A	N/A	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
31018	E	ROB	3-BKR-402	RHR LOOP I FLOW INDICATION BREAKER	N/A	N/A	N/A	AI
31018	F	ROB	3-BKR-211	RHR LOOP I FLOW INDICATION BREAKER	N/A	N/A	N/A	AI
31019		ROB	3-FI-74-56	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	AI
31019	B	ROB	3-FT-74-56	RR LOOP I FLOW TRANSMITTER	N/A	N/A	N/A	AI
31019	C	ROB	3-FM-74-56	RHR LOOP I FLOW DEVICE	N/A	N/A	N/A	AI
31020		08A	3-FCV-74-57	RHR/LOOP I TORUS CONTAINMENT COOLING/SPRAY VALVE	U3 RB	519	TORUS	AI
31021		08A	3-FCV-74-59	RHR/LOOP I SUPRESSION POOL COOLING VALVE	U3 RB	519	TORUS	AI
31023		08A	3-FCV-74-52	RHR/LOOP I OUTBOARD INJECTION VALVE	U3 RB	565	T/R18	AI
31024		08A	3-FCV-74-53	RHR/LOOP I INBOARD INJECTION VALVE	U3 RB	565	T/R18	AI
31026		08A	3-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U3 RB	621	R17/S	AI
31027		08A	3-FCV-74-60	RHR/LOOP I OUTBOARD DRYWELL SPRAY VALVE	U3 RB	565	R16/S	AI
31029		08A	3-FCV-74-24	RHR/PUMP 3B SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SE CORNER	AI
31030		08A	3-FCV-74-25	RHR/PUMP 3B SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SE CORNER	AI
31031		06	3-PMP-74-28	RHR/PUMP 3B	U3 RB	519	SE CORNER	AI
31033		08A	3-FCV-74-30	RHR/PUMP 3B&3D MINIMUM FLOW VALVE	U3 RB	519	SE CORNER	AI
31036		21	3-HEX-74-900B	RHR/HEAT EXCHANGER 3B	U3 RB	565	SE HX	AI
31037		08A	3-FCV-74-35	RHR/PUMP 3D SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SE CORNER	AI
31038		08A	3-FCV-74-36	RHR/PUMP 3D SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SE CORNER	AI
31039		06	3-PMP-74-39	RHR/PUMP 3D	U3 RB	519	SE CORNER	AI
31042		21	3-HEX-74-900D	RHR/HEAT EXCHANGER 3D	U3 RB	565	SE HX	AI
31043		ROB	3-FI-74-64	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	AI
31043	B	ROB	3-FT-74-64	RHR LOOP II FLOW TRANSMITTER	N/A	N/A	N/A	AI
31043	C	ROB	3-FS-74-64	RHR LOOP II FLOW SWITCH	N/A	N/A	N/A	AI
31043	D	ROB	3-FM-74-64	RHR LOOP II FLOW DEVICE	N/A	N/A	N/A	AI
31043	E	ROB	3-FR-74-64	RHR LOOP II FLOW DEVICE	N/A	N/A	N/A	AI
31043	F	ROB	3-BKR-402	RHR LOOP II FLOW INDICATION BREAKER	N/A	N/A	N/A	AI
31043	G	ROB	3-BKR-322	RHR LOOP II FLOW INDICATION BREAKER	N/A	N/A	N/A	AI
31044		ROB	3-FI-74-70	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	AI
31044	B	ROB	3-FT-74-70	RHR LOOP II FLOW TRANSMITTER	N/A	N/A	N/A	AI
31044	C	ROB	3-FM-74-70	RHR LOOP II FLOW DEVICE	N/A	N/A	N/A	AI
31045		08A	3-FCV-74-71	RHR/LOOP II TORUS CONTAINMENT COOLING/SPRAY VALVE	U3 RB	519	TORUS	AI
31046		08A	3-FCV-74-73	RHR/LOOP II SUPRESSION POOL COOLING VALVE	U3 RB	519	TORUS	AI
31048		08A	3-FCV-74-66	RHR/LOOP II OUTBOARD INJECTION VALVE	U3 RB	565	T/R18	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
31049		08A	3-FCV-74-67	RHR/LOOP II INBOARD INJECTION VALVE	U3 RB	565	T/R18	AI
31051		08A	3-FCV-74-74	RHR/LOOP II OUTBOARD DRYWELL SPRAY VALVE	U3 RB	593	R19/S	AI
32000		07	3-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
32003		07	3-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
32006		07	3-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
32009		07	3-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
32012		07	3-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
32015		07	3-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
32018		07	3-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
32021		07	3-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
32024		07	3-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
32027		07	3-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
32030		07	3-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
32033		07	3-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
32036		07	3-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI
33001		07	3-FCV-1-14	MSIV "A" INBOARD ISOLATION VALVE	U3 DW	563	DW	AI
33002		07	3-FCV-1-15	MSIV "A" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	AI
33003		07	3-FCV-1-26	MSIV "B" INBOARD ISOLATION VALVE	U3 DW	563	DW	AI
33004		07	3-FCV-1-27	MSIV "B" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	AI
33005		07	3-FCV-1-37	MSIV "C" INBOARD ISOLATION VALVE	U3 DW	563	DW	AI
33006		07	3-FCV-1-38	MSIV "C" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	AI
33007		07	3-FCV-1-51	MSIV "D" INBOARD ISOLATION VALVE	U3 DW	563	DW	AI
33008		07	3-FCV-1-52	MSIV "D" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	AI
33009		08A	3-FCV-1-55	MAIN STEAM LINE DRAIN ISOLATION VALVE	U3 DW	563	DW	AI
33032		08A	3-FCV-69-1	RWCU INBOARD ISOLATION VALVE	U3 DW	584	DW	AI
33033		08A	3-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U3 RB	593	R17/S	AI
33037		08A	3-FCV-71-2	RCIC INBOARD ISOLATION VALVE	U3 DW	584	DW	AI
33038		08A	3-FCV-71-3	RCIC OUTBOARD ISOLATION VALVE	U3 RB	565	MSIV VAULT	AI
33040		08A	3-FCV-73-2	HPCI STEAM SUPPLY ISOLATION VALVE	U3 DW	563	DW	AI
33041		08A	3-FCV-73-3	HPCI STEAM SUPPLY ISOLATION VALVE	U3 RB	519	TORUS	AI
33042		08A	3-FCV-73-81	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	U3 RB	519	TORUS	AI
33044		07	3-FCV-75-57	PSC PUMP SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	AI
33045		07	3-FCV-75-58	PSC PUMP SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
33051		ROB	3-LI-3-58A	RPV LEVEL INSTRUMENT	N/A	N/A	N/A	AI
33051	A	ROB	3-LT-3-58B	RPV LEVEL TRANSMITTER	N/A	N/A	N/A	AI
33052		ROB	3-LI-3-58B	RPV LEVEL INSTRUMENT	U3 CB	N/A	N/A	AI
33052	A	ROB	3-LT-3-58D	RPV LEVEL TRANSMITTER	N/A	N/A	N/A	AI
33053		ROB	3-PI-3-74A	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	AI
33053	A	ROB	3-PT-3-74A	RPV PRESSURE TRANSMITTER	N/A	N/A	N/A	AI
33054		ROB	3-PI-3-74B	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	AI
33054	A	ROB	3-PT-3-74B	RPV LEVEL TRANSMITTER	N/A	N/A	N/A	AI
33055		ROB	3-XR-64-159	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	AI
33055	A	18	3-LT-64-159B	TORUS LEVEL TRANSMITTER	U3 RB	519	TORUS	AI
33055	B	ROB	3-PT-64-160B	DRYWELL PRESSURE TRANSMITTER	N/A	N/A	N/A	AI
33055	C	ROB	3-BKR-323	TORUS LEVEL INDICATON BREAKER	N/A	N/A	N/A	AI
33056		ROB	3-LI-64-159A	TORUS LEVEL INSTRUMENT	N/A	N/A	N/A	AI
33056	A	18	3-LT-64-159A	TORUS LEVEL TRANSMITTER	U3 RB	519	TORUS	AI
33056	B	ROB	3-BKR-223	TORUS LEVEL INDICATION BREAKER	N/A	N/A	N/A	AI
33057		ROB	3-TI-64-161	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	AI
33057	A	19	3-TE-64-161A	TORUS TEMOERATURE ELEMENT	U3 RB	519	TORUS	AI
33057	B	19	3-TE-64-161B	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI
33057	C	19	3-TE-64-161C	TORUS TEMPERATURE ELELMENT	U3 RB	519	TORUS	AI
33057	D	19	3-TE-64-161D	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI
33057	E	19	3-TE-64-161E	TORUS TEMPERATURE ELELMENT	U3 RB	519	TORUS	AI
33057	F	19	3-TE-64-161F	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI
33057	G	19	3-TE-64-161G	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI
33057	H	19	3-TE-64-161H	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI
33058		ROB	3-TI-64-162	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	AI
33058	A	19	3-TE-64-162A	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI
33058	B	19	3-TE-64-162B	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI
33058	C	19	3-TE-64-162C	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI
33058	D	19	3-TE-64-162D	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI
33058	E	19	3-TE-64-162E	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI
33058	F	19	3-TE-64-162F	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI
33058	G	19	3-TE-64-162G	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI
33058	H	19	3-TE-64-162H	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
33065		ROB	3-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U3 MCR	AI
33066		ROB	3-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U3 MCR	AI
34001		10	3-CLR-67-917	EECW/RHR PUMP 3A ROOM COOLER	U3 RB	519	SW CORNER	AI
34002		10	3-CLR-67-919	EECW/CS PUMP 3A ROOM COOLER	U3 RB	519	NW CORNER	AI
34003		10	3-CLR-67-921	EECW/RHR PUMP 3C ROOM COOLER	U3 RB	519	SW CORNER	AI
34004		21	3-HEX-67-915	EECW/RHR SEAL HX 3A	U3 RB	519	SW CORNER	AI
34013		10	3-CLR-67-918	EECW/RHR PUMP 3B ROOM COOLER	U3 RB	519	SE CORNER	AI
34014		10	3-CLR-67-920	EECW/CS PUMP 3B ROOM COOLER	U3 RB	519	NE CORNER	AI
34015		10	3-CLR-67-922	EECW/RHR PUMP 3D ROOM COOLER	U3 RB	519	SE CORNER	AI
34016		21	3-HEX-67-923	EECW/RHR SEAL HX 3B	U3 RB	519	SE CORNER	AI
34025		21	3-HEX-67-916	EECW/RHR SEAL HX 3C	U3 RB	519	SW CORNER	AI
34026		21	3-HEX-67-924	EECW/RHR SEAL HX 3D	U3 RB	519	SE CORNER	AI
35001		08A	3-FCV-75-2	CS/PUMP 3A SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	AI
35002		06	3-PMP-75-5	CS/PUMP 3A	U3 RB	519	NW CORNER	AI
35005		08A	3-FCV-75-9	CS/PUMPS 3A & 3C MINI-FLOW VALVE	U3 RB	519	NW CORNER	AI
35006		08A	3-FCV-75-11	CS/PUMP 3C SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	AI
35007		06	3-PMP-75-14	CS/PUMP 3C	U3 RB	519	NW CORNER	AI
35010		08A	3-FCV-75-22	CS/PUMPS 3A & 3C TEST ISOLATION VALVE	U3 RB	519	NW CORNER	AI
35011		ROB	3-FI-75-21	CS/PUMPS 3A & 3C FLOW INDICATOR	N/A	N/A	N/A	AI
35011	A	ROB	3-FM-75-21	CS PUMPS 3A & 3C FLOW DEVICE	N/A	N/A	N/A	AI
35011	B	ROB	3-PX-75-21	CS PUMPS 3A & 3C FLOW INDICATION POWER SUPPLY	N/A	N/A	N/A	AI
35011	C	ROB	3-FT-75-21	CS PUMPS 3A & 3C FLOW TRANSMITTER	N/A	N/A	N/A	AI
35012		08A	3-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U3 RB	593	P/R18	AI
35013		08A	3-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U3 RB	593	P/R18	AI
35015		08A	3-FCV-75-30	CS/PUMP 3B SUCTION ISOLATION VALVE	U3 RB	519	NE CORNER	AI
35016		06	3-PMP-75-33	CS/PUMP 3B	U3 RB	519	NE CORNER	AI
35019		08A	3-FCV-75-37	CS/PUMPS 3B & 3D MINI-FLOW VALVE	U3 RB	519	NE CORNER	AI
35020		08A	3-FCV-75-39	CS/PUMP 3D SUCTION ISOLATION VALVE	U3 RB	519	NE CORNER	AI
35021		06	3-PMP-75-42	CS/PUMP 3D	U3 RB	519	NE CORNER	AI
35024		08A	3-FCV-75-50	CS/PUMPS 3B & 3D TEST ISOLATION VALVE	U3 RB	519	NE CQRNER	AI
35025		ROB	3-FI-75-49	CS/PUMPS 3B & 3D FLOW INDICATOR	N/A	N/A	N/A	AI
35025	A	ROB	3-FM-75-49	CS PUMPS 3B & 3D FLOW DEVICE	N/A	N/A	N/A	AI
35025	B	ROB	3-PX-75-49	CS PUMPS 3B & 3D FLOW INDICATION POWER SUPPLY	N/A	N/A	N/A	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
35025	C	ROB	3-FT-75-49	CS PUMPS 3B & 3D FLOW TRANSMITTER	N/A	N/A	N/A	AI
35026		08A	3-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U3 RB	593	P/R18	AI
35027		08A	3-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U3 RB	593	P/R18	AI
36001		08B	3-FSV-84-8A	CAD/CAD TO DW (3-FCV-64-18) SOLENOID VALVE	U3 RB	565	R19/T	AI
36002		08B	3-FSV-84-8B	CAD/CAD TO DW (3-FCV-64-19) SOLENOID VALVE	U3 RB	565	R17/S	AI
36003		07	3-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R17/U	AI
36004		08B	3-FSV-84-48	CAD/CAD SYSTEM "A" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R17/S	AI
36009		21	3-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U3 DW	584	DW	AI
36010		08B	3-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19	U3 DW	584	DW	AI
36012		21	3-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U3 DW	584	DW	AI
36013		08B	3-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22	U3 DW	584	DW	AI
36015		21	3-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U3 DW	584	DW	AI
36016		08B	3-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5	U3 DW	584	DW	AI
36017		08B	3-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23	U3 DW	584	DW	AI
36018		08B	3-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179	U3 DW	584	DW	AI
36019		08B	3-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4	U3 DW	584	DW	AI
36020		21	3-ACC-32-6104	CA/ACCUMULATOR FOR PSV-1-18	U3 DW	584	DW	AI
36021		08B	3-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18	U3 DW	584	DW	AI
36023		08B	3-FSV-84-8C	CAD/CAD TO DW (3-FCV-64-19) SOLENOID VALVE	U3 RB	565	R17/S	AI
36024		08B	3-FSV-84-8D	CAD/CAD TO DW (3-FCV-64-18) SOLENOID VALVE	U3 RB	565	R19/T	AI
36025		07	3-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R18/U	AI
36026		08B	3-FSV-84-49	CAD/CAD SYSTEM "B" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R19/Q	AI
36029		21	3-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U3 DW	584	DW	AI
36030		08B	3-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30	U3 DW	584	DW	AI
36032		21	3-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U3 DW	584	DW	AI
36033		08B	3-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31	U3 DW	584	DW	AI
36035		21	3-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U3 DW	584	DW	AI
36036		08B	3-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34	U3 DW	584	DW	AI
36037		21	3-ACC-32-6110	CA/ACCUMULATOR FOR PSV-1-41	U3 DW	584	DW	AI
36038		08B	3-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41	U3 DW	584	DW	AI
36040		08B	3-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42	U3 DW	584	DW	AI
36041		08B	3-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180	U3 DW	584	DW	AI
37001		17	3-GEN-82-3C	UNIT 3 DIESEL GENERATOR "C"	U3 DG	565	DG C	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
37002		21	3-TNK-18-63/1	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565	DG C	AI
37003		21	3-TNK-18-63/2	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565	DG C	AI
37004		21	3-TNK-18-63/3	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565	DG C	AI
37005		21	3-TNK-86-650C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI
37006		21	3-TNK-86-651C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI
37007		21	3-TNK-86-652C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI
37008		21	3-TNK-86-653C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI
37009		21	3-TNK-86-654C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI
37010		21	3-TNK-86-655C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI
37011		21	3-TNK-86-656C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI
37012		21	3-TNK-86-657C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI
37013		21	3-TNK-86-658C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI
37014		21	3-TNK-86-659C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI
37015		09	3-FAN-30-234	DG ROOM 3C EXHAUST FAN "A"	U3 DG	583	DG C	AI
37016		09	3-FAN-30-235	DG ROOM 3C EXHAUST FAN "B"	U3 DG	583	DG C	AI
37017		10	3-FCO-30-234A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3C"	U3 DG	583	DG C	AI
37018		10	3-FCO-30-234B	INLET DAMPER FOR FAN "A" IN DG ROOM "3C"	U3 DG	583	DG C	AI
37019		10	3-FCO-30-234C	INLET DAMPER FOR FAN "A" IN DG ROOM "3C"	U3 DG	583	DG C	AI
37020		10	3-FCO-30-235A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3C"	U3 DG	583	DG C	AI
37021		10	3-FCO-30-235B	INLET DAMPER FOR FAN "B" IN DG ROOM "3C"	U3 DG	583	DG C	AI
37022		10	3-FCO-30-235C	INLET DAMPER FOR FAN "B" IN DG ROOM "3C"	U3 DG	583	DG C	AI
37023		17	3-GEN-82-3D	UNIT 3 DIESEL GENERATOR "D"	U3 DG	565	DG D	AI
37024		21	3-TNK-18-64/1	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565	DG D	AI
37025		21	3-TNK-18-64/2	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565	DG D	AI
37026		21	3-TNK-18-64/3	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565	DG D	AI
37027		21	3-TNK-86-650D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI
37028		21	3-TNK-86-651D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI
37029		21	3-TNK-86-652D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI
37030		21	3-TNK-86-653D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI
37031		21	3-TNK-86-654D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI
37032		21	3-TNK-86-655D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI
37033		21	3-TNK-86-656D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI
37034		21	3-TNK-86-657D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
37035		21	3-TNK-86-658D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI
37036		21	3-TNK-86-659D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI
37037		09	3-FAN-30-236	DG ROOM 3D EXHAUST FAN "A"	U3 DG	583	DG D	AI
37038		09	3-FAN-30-237	DG ROOM 3D EXHAUST FAN "B"	U3 DG	583	DG D	AI
37039		10	3-FCO-30-236A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3D"	U3 DG	583	DG D	AI
37040		10	3-FCO-30-236B	INLET DAMPER FOR FAN "A" IN DG ROOM "3D"	U3 DG	583	DG D	AI
37041		10	3-FCO-30-236C	INLET DAMPER FOR FAN "A" IN DG ROOM "3D"	U3 DG	583	DG D	AI
37042		10	3-FCO-30-237A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3D"	U3 DG	583	DG D	AI
37043		10	3-FCO-30-237B	INLET DAMPER FOR FAN "B" IN DG ROOM "3D"	U3 DG	583	DG D	AI
37044		10	3-FCO-30-237C	INLET DAMPER FOR FAN "B" IN DG ROOM "3D"	U3 DG	583	DG D	AI
37045		09	3-FAN-30-231	DG ROOM 3A EXHAUST FAN "B"	U3 DG	583	DG A	AI
37046		10	3-FCO-30-231A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3A"	U3 DG	583	DG A	AI
37047		10	3-FCO-30-231B	INLET DAMPER FOR FAN "B" IN DG ROOM "3A"	U3 DG	583	DG A	AI
37048		10	3-FCO-30-231C	INLET DAMPER FOR FAN "B" IN DG ROOM "3A"	U3 DG	583	DG A	AI
37049		09	3-FAN-30-233	DG ROOM 3B EXHAUST FAN "B"	U3 DG	583	DG B	AI
37050		10	3-FCO-30-233A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3B"	U3 DG	583	DG B	AI
37051		10	3-FCO-30-233B	INLET DAMPER FOR FAN "B" IN DG ROOM "3B"	U3 DG	583	DG B	AI
37052		10	3-FCO-30-233C	INLET DAMPER FOR FAN "B" IN DG ROOM "3B"	U3 DG	583	DG B	AI
38002		08A	3-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U3 RB	565	R17/T	AI
38004		08A	3-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U3 RB	565	R17/T	AI
38006		08A	3-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U3 RB	565	R19/U	AI
38008		08A	3-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U3 RB	565	R19/U	AI
38009		ROB	3-FI-23-36	RHRSW HX A FLOW INDICATOR	N/A	N/A	N/A	AI
38009	B	ROB	3-FT-23-36	RHRSW HX A FLOW TRANSMITTER	N/A	N/A	N/A	AI
38009	C	ROB	3-FM-23-36	RHRSW HX A FLOW DEVICE	N/A	N/A	N/A	AI
38009	D	ROB	3-FS-90-133B	RHRSW HX A FLOW SWITCH	N/A	N/A	N/A	AI
38010		ROB	3-FI-23-42	RHRSW HX C FLOW INDICATOR	N/A	N/A	N/A	AI
38010	B	ROB	3-FT-23-42	RHRSW HX C FLOW TRANSMITTER	N/A	N/A	N/A	AI
38010	C	ROB	3-FM-23-42	RHRSW HX C FLOW DEVICE	N/A	N/A	N/A	AI
38010	D	ROB	3-FS-90-133C	RHRSW HX C FLOW SWITCH	N/A	N/A	N/A	AI
38011		ROB	3-FI-23-48	RHRSW HX B FLOW INDICATOR	N/A	N/A	N/A	AI
38011	B	ROB	3-FT-23-48	RHRSW HX B FLOW TRANSMITTER	N/A	N/A	N/A	AI
38011	C	ROB	3-FM-23-48	RHRSW HX B FLOW DEVICE	N/A	N/A	N/A	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
38011	D	ROB	3-FS-90-134B	RHRSW HX B FLOW SWITCH	N/A	N/A	N/A	AI
38012		ROB	3-FI-23-54	RHRSW HX D FLOW INDICATOR	N/A	N/A	N/A	AI
38012	B	ROB	3-FT-23-54	RHRSW HX D FLOW TRANSMITTER	N/A	N/A	N/A	AI
38012	C	ROB	3-FM-23-54	RHRSW HX D FLOW DEVICE	N/A	N/A	N/A	AI
38012	D	ROB	3-FS-90-134C	RHRSW HX D FLOW SWITCH	N/A	N/A	N/A	AI
39001		03	3-BDAA-211-0003EC	4KV SHUTDOWN BOARD 3EC	U3 DG	583	4KV SD BD	AI
39002		15	3-BATB-254-0000C	DIESEL 3C 125V BATTERY	U3 DG	565	DG C	AI
39003		14	3-BDGG-254-0003C	DIESEL 3C 125V BATTERY BOARD	U3 DG	565	DG C	AI
39004		16	3-CHGB-254-0000CB	DIESEL 3C BATTERY CHARGER B	U3 DG	565	DG C	AI
39005		01	3-BDBB-219-0003EB	480V DIESEL AUX BOARD 3EB	U3 DG	583	480V AUX BD	AI
39006		04	3-XFA-231-TS3B	4KV/480V TRANSFORMER TS3B	U3 RB	621	S/R21	AI
39007		02	3-BDBB-231-0003B	480V SD BOARD 3B	U3 RB	621	SD BD F	AI
39008		01	3-BDBB-268-0003A	480V RMOV BOARD 3A	U3 RB	621	SD BD E	AI
39009		01	3-BDBB-268-0003B	480V RMOV BOARD 3B	U3 RB	593	SD BD F	AI
39010		14	3-JBOX-268-5994	MG SET 3DN CONTROL STATION (3-HS-268-0003DN)	U3 RB	621	U/R18	AI
39011		14	3-JBOX-268-5996	MG SET 3EN CONTROL STATION (3-HS-268-0003EN)	U3 RB	621	S/R21	AI
39012		20	3-JBOX-268-5955	MG SET 3DN CONTROL BOX (RELAYS) - SEALED BOX	U3 RB	621	U/R18	AI
39013		14	NONE	MG SET 3DN VOLTAGE REGULATOR BOX	U3 RB	621	S/R20	AI
39014		20	3-JBOX-268-5957	MG SET 3EN CONTROL BOX (RELAYS) - SEALED BOX	U3 RB	621	S/R21	AI
39015		13	3-MGEN-268-0003DN	LPCI MG SET 3DN	U3 RB	621	U/R18	AI
39016		01	3-BDBB-268-0003D	480V RMOV BOARD 3D	U3 RB	593	U/R17	AI
39017		13	3-MGEN-268-0003EN	LPCI MG SET 3EN	U3 RB	621	U/R21	AI
39018		01	3-BDBB-268-0003E	480V RMOV BOARD 3E	U3 RB	621	S/R20	AI
39019		14	NONE	MG SET 3EN VOLTAGE REGULATOR BOX	U3 RB	621	S/R20	AI
39020		03	3-BDAA-211-0003ED	4KV SHUTDOWN BOARD 3ED	U3 DG	565	HALLWAY	AI
39021		15	3-BATB-254-0000D	DIESEL 3D 125V BATTERY	U3 DG	565	DG D	AI
39022		14	3-BDGG-254-0003D	DIESEL 3D 125V BATTERY BOARD	U3 DG	565	DG D	AI
39023		16	3-CHGB-254-0000DB	DIESEL 3D BATTERY CHARGER B	U3 DG	565	DG D	AI
39030		01	3-BDBB-281-0003A	250V DC RMOV BOARD 3A	U3 RB	621	SD BD E	AI
39031		01	3-BDBB-281-0003B	250V DC RMOV BOARD 3B	U3 RB	593	SD BD F	AI
39033		01	3-BDBB-281-0003C	250V DC RMOV BOARD 3C	U3 RB	565	P/R15	AI
39039		14	3-JBOX-253-7163	I&C BUS 3A DISC SWITCH	U3 RB	593	SD BD E	AI
39040		04	3-XFA-253-0003A1	I&C BUS A 480/208-120V TRANSFORMER	U3 RB	621	SD BD E	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
39041		04	3-XFA-253-0003A2	I&C BUS 3A REGULATING TRANSFORMER	U3 RB	621	SD BD E	AI
39042		14	3-JBOX-253-7159	I&C BUS 3A BREAKER BOX	U3 RB	621	SD BD E	AI
39043		14	3-JBOX-253-8866	I&C BUS 3A DISC SWITCH	U3 RB	621	SD BD E	AI
39044		14	3-JBOX-253-7158	I&C BUS 3A DISC SWITCH	U3 RB	621	SD BD E	AI
39045		20	3-PNLA-009-0009	I&C BUS 3A (CAB 2 OF PNL 3-9-9) {(SEE 39119)}	U3 CB	617	U3 MCR	AI
39046		ROB	3-PX-64-160B	POWER SUPPLY (PNL 3-9-19: 3-LI-64-159B,160B)	N/A	N/A	N/A	AI
39047		ROB	3-PXMC-23-114	POWER SUPPLY (PNL 3-9-18: FI-23-36,42 : FI-74-50)	N/A	N/A	N/A	AI
39048		ROB	3-PXMC-23-115 A&B	POWER SUPPLY (PNL 3-9-19: FI-23-48,54; FI-74-64)	N/A	N/A	N/A	AI
39049		04	3-XFA-253-0003B1	I&C BUS 3B 480/208-120V TRANSFORMER	U3 RB	593	SD BD F	AI
39050		04	3-XFA-253-0003B2	I&C BUS B REGULATING TRANSFORMER	U3 RB	593	SD BD F	AI
39051		14	3-JBOX-253-7162	I&C BUS 3B BREAKER BOX	U3 RB	593	SD BD F	AI
39052		14	3-JBOX-253-7161	I&C BUS 3B DISC SWITCH	U3 RB	593	SD BD F	AI
39053		14	3-JBOX-253-8868	I&C BUS 3B DISC SWITCHES	U3 RB	593	SD BD F	AI
39054		20	3-PNLA-009-0009	I&C BUS 3B (CAB 3 OF PNL 3-9-9) {(SEE 39119)}	U3 CB	617	U3 MCR	AI
39055		ROB	3-PX-64-159B	POWER SUPPLY (PNL 3-9-19)	N/A	N/A	N/A	AI
39056		14	3-JBOX-30-4243	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3C	AI
39057		18	3-HS-30-234	LOCAL HS STATION - DG 3C EXH FAN A	U3 DG	583	BD 3EB	AI
39058		14	3-JBOX-30-4244	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3C	AI
39059		18	3-HS-30-235	LOCAL HS STATION - DG 3C EXH FAN B	U3 DG	583	BD 3EB	AI
39060		14	3-JBOX-30-4245	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3D	AI
39061		18	3-HS-30-236	LOCAL HS STATION - DG 3D EXH FAN A	U3 DG	583	BD 3EB	AI
39062		14	3-JBOX-30-4246	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3D	AI
39063		18	3-HS-30-237	LOCAL HS STATION - DG 3D EXH FAN B	U3 DG	583	BD 3EB	AI
39064		14	3-JBOX-30-4240	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3A	AI
39065		18	3-HS-30-231	LOCAL HS STATION - DG 3A EXH FAN B	U3 DG	583	BD 3EA	AI
39066		14	3-JBOX-30-4242	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3B	AI
39067		18	3-HS 30-233	LOCAL HS STATION - DG 3B EXH FAN B	U3 DG	583	BD 3EA	AI
39068		14	3-JBOX-253-7160	I&C BUS 3B DISC SWITCH	U3 RB	593	SD BD F	AI
39070		16	3-INVT-256-0001	DIV I ECCS ATU INVERTER	U3 RB	593	SD BD F	AI
39071		ROB	3-PX-71-60-1	ECCS ATU CAB 3-9-81 POWER SUPPLY	N/A	N/A	N/A	AI
39072		ROB	3-PX-71-60-1A	ECCS ATU CAB 3-9-81 POWER SUPPLY	N/A	N/A	N/A	AI
39073		ROB	3-PX-64-50	POWER SUPPLY (PNL 3-25-31: XR-64-50 [DEV BA TERM 11/12)	N/A	N/A	N/A	AI
39074		ROB	3-PX-74-56	POWER SUPPLY (PNL 3-9-18: FI-74-56)	N/A	N/A	N/A	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
39075		16	3-INVT-256-0002	DIV II ECCS ATU INVERTER	U3 RB	621	SD BD E	AI
39076		ROB	3-PX-71-60-2	ECCS ATU CAB 3-9-82 POWER SUPPLY	N/A	N/A	N/A	AI
39077		ROB	3-PX-71-60-2A	ECCS ATU CAB 3-9-82 POWER SUPPLY	N/A	N/A	N/A	AI
39078		ROB	3-PX-74-70	POWER SUPPLY (PNL 3-9-19: FI-74-70)	N/A	N/A	N/A	AI
39079		ROB	3-PX-64-159A	POWER SUPPLY (3-9-18)	N/A	N/A	N/A	AI
39080		ROB	3-PX-64-160A	POWER SUPPLY (3-9-18)	N/A	N/A	N/A	AI
39081		ROB	3-PX-64-67B	POWER SUPPLY (3-9-19)	N/A	N/A	N/A	AI
39082		ROB	3-PX-64-161	POWER SUPPLY (PNL 9-87)	N/A	N/A	N/A	AI
39083		ROB	3-PX-64-162	POWER SUPPLY (PNL 9-88)	N/A	N/A	N/A	AI
39099		20	3-PNLA-009-0042	MSRV (OUTBOARD) DIV I PNL	U3 CB	593	U3 AIR	AI
39100		14	3-ECAB-231-003A	250V DC CONT PWR TRANSFER SW - 480V SD BD 3A	U3 RB	593	SD BD F	AI
39101		14	3-ECAB-231-003B	250V DC CONT PWR TRANSFER SW - 480V SD BD 3B	U3 RB	593	SD BD F	AI
39105		20	3-LPNL-925-654A	DIV I LOAD SHED LOGIC PANEL - DCN W21284	U3 RB	621	SD BD E	AI
39106		20	3-LPNL-925-654B	DIV II LOAD SHED LOGIC PANEL - DCN W21284	U3 RB	593	SD BD F	AI
39107		20	3-LPNL-925-656A	480V RMOV BD 3A LOAD SHED PANEL - DCN W21284	U3 RB	621	SD BD E	AI
39108		20	3-LPNL-925-656B	480V RMOV BD 3B LOAD SHED PANEL - DCN W21284	U3 RB	593	SD BD F	AI
39110		20	3-LPNL-925-0658	MSRV TRANSFER CONTROL PANEL (DCN W21814)	U3 RB	593	SD BD F	AI
39115		20	3-PNLA-009-0003	REACTOR SD & CONT. COOLING PNL	U3 CB	617	U3 MCR	AI
39116		20	3-PNLA-009-0004	CLEANUP & RECIRC PNL	U3 CB	617	U3 MCR	AI
39117		20	3-PNLA-009-0005	REACTOR CONTROL PNL	U3 CB	617	U3 MCR	AI
39118		20	3-PNLA-009-0006	FW & COND. PNL	U3 CB	617	U3 MCR	AI
39119		20	3-PNLA-009-0009	PNL 9-9 (I&C CONT PWR, CAB 2&3)	U3 CB	617	U3 MCR	AI
39120		20	3-PNLA-009-0015	RPS CH A (DIV I)	U3 CB	593	U3 AIR	AI
39121		20	3-PNLA-009-0016	RPS CH A, B, C, D	U3 CB	593	U3 AIR	AI
39122		20	3-PNLA-009-0017	RPS CH B (DIV II)	U3 CB	593	U3 AIR	AI
39123		20	3-PNLA-009-0018	FW & RECIRC PNL	U3 CB	593	U3 AIR	AI
39124		20	3-PNLA-009-0019	PROCESS INSTR PNL	U3 CB	593	U3 AIR	AI
39125		20	3-PNLA-009-0021	TEMP RECORDING PNL	U3 CB	617	U3 MCR	AI
39126		20	3-PNLA-009-0028	CRD SELECT RELAY AUX PNL	U3 CB	593	U3 AIR	AI
39127		20	3-PNLA-009-0030	AUTO BLOWNDOWN AUX PNL	U3 CB	593	U3 AIR	AI
39128		20	3-PNLA-009-0032	RHR, CS, & HPCI (CH A) PNL	U3 RB	593	U3 AIR	AI
39129		20	3-PNLA-009-0033	RHR, CS, & HPCI (CH B) PNL	U3 CB	593	U3 AIR	AI
39130		20	3-PNLA-009-0039	HPCI RELAY AUX PNL	U3 CB	593	U3 AIR	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
39132		20	3-PNLA-009-0043	MSIV (OUTBOARD) DIV II PNL	U3 CB	593	U3 AIR	AI
39133		20	3-PNLA-009-0054	CONTAINMENT ATM. DILUTION PNL	U3 CB	617	U3 MCR	AI
39134		20	3-PNLA-009-0055	CONTAINMENT ATM. DILUTION PNL	U3 CB	617	U3 MCR	AI
39135		20	3-PNLA-009-0081	DIV I ECCS ATU CABINET	U3 CB	593	U3 AIR	AI
39136		20	3-PNLA-009-0082	DIV II ECCS ATU CABINET	U3 CB	593	U3 AIR	AI
39137		20	3-PNLA-009-0083	RPS ATU CAB	U3 CB	593	U3 AIR	AI
39138		20	3-PNLA-009-0084	RPS ATU CAB	U3 CB	593	U3 AIR	AI
39139		20	3-PNLA-009-0085	RPS ATU CAB	U3 CB	593	U3 AIR	AI
39140		20	3-PNLA-009-0086	RPS ATU CAB	U3 CB	593	U3 AIR	AI
39141		20	3-PNLA-009-0087	DIV I TORUS TEMP MONITORING	U3 CB	593	U3 AIR	AI
39142		20	3-PNLA-009-0088	DIV II TORUS TEMP MONITORING	U3 CB	593	U3 AIR	AI
39145		20	3-PNLA-009-0093	NEW PNL (INSTALLED BY DCN W19433)	U3 CB	593	U3 AIR	AI
39146		18	3-HS-74-7B	LOCAL HS STATION	U3 RB	519	T/R16	AI
39147		14	3-JBOX-74-3503	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	T/R16	AI
39148		18	3-HS-74-57B	LOCAL HS STATION	U3 RB	519	TORUS	AI
39149		14	3-JBOX-74-3391	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	R/R16	AI
39150		18	3-HS-74-59B	LOCAL HS STATION	U3 RB	519	TORUS	AI
39152		14	3-JBOX-74-3391	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	R/R16	AI
39153		18	3-HS-74-52B	LOCAL HS STATION	U3 RB	565	T/R17	AI
39154		14	3-JBOX-74-2135	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	580	T/R17	AI
39155		18	3-HS-74-53B	LOCAL HS STATION	U3 RB	565	T/R17	AI
39156		18	3-HS-74-60B	LOCAL HS STATION	U3 RB	565	S/R17	AI
39157		14	3-JBOX-74-3543	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	S/R17	AI
39160		18	3-HS-74-30B	LOCAL HS STATION	U3 RB	541	T/R20	AI
39161		14	3-JBOX-74-3535	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	T/R20	AI
39162		18	3-HS-74-71B	LOCAL HS STATION	U3 RB	519	TORUS	AI
39163		14	3-JBOX-74-3840	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	S/R20	AI
39165		18	3-HS-74-66B	LOCAL HS STATION	U3 RB	519	TORUS	AI
39166		14	3-JBOX-74-2133	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	T/R18	AI
39167		18	3-HS-74-67B	LOCAL HS STATION	U3 RB	565	T/R18	AI
39169		14	3-JBOX-74-2939	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	593	S/R19	AI
39172		14	3-JBOX-70-3398	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	P/R20	AI
39173		18	3-HS-75-9B	LOCAL HS STATION	U3 RB	519	N/R16	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
39174		14	3-JBOX-75-3390	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	N/R16	AI
39175		18	3-HS-75-25B	LOCAL HS STATION	U3 RB	565	P/R18	AI
39176		14	3-JBOX-75-3333	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	593	P/R18	AI
39177		18	3-HS-75-37B	LOCAL HS STATION	U3 RB	519	N/R20	AI
39178		14	3-JBOX-75-3448	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	N/R20	AI
39179		18	3-HS-75-53B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	593	P/R18	AI
39180		14	3-JBOX-75-3345	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	593	P/R18	AI
39181		18	3-HS-23-34B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	565	T/R17	AI
39182		14	3-JBOX-23-4190	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	U/R20	AI
39183		18	3-HS-23-40B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	565	T/R17	AI
39184		18	3-HS-23-46B	LOCAL HS STATION	U3 RB	565	U/R20	AI
39185		14	3-JBOX-23-4189	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	U/R20	AI
39186		18	3-HS-23-52B	LOCAL HS STATION	U3 RB	565	U/R20	AI
39187		18	3-HS-74-0005B	LOCAL HS STATION - RHR PUMP 3A	U3 RB	519	U/R16	AI
39188		18	3-HS-74-0028B	LOCAL HS STATION - RHR PUMP 3B	U3 RB	519	S/R20	AI
39189		18	3-HS-74-0016B	LOCAL HS STATION - RHR PUMP 3C	U3 RB	519	T/R16	AI
39190		18	3-HS-74-0039B	LOCAL HS STATION - RHR PUMP 3D	U3 RB	519	U/R20	AI
39191		18	3-HS-75-0005B	LOCAL HS STATION - CS PUMP 3A	U3 RB	519	N/R16	AI
39192		18	3-HS-75-0033B	LOCAL HS STATION - CS PUMP 3B	U3 RB	519	N/R20	AI
39193		18	3-HS-75-0014B	LOCAL HS STATION - CS PUMP 3C	U3 RB	519	N/R16	AI
39194		18	3-HS-75-0042B	LOCAL HS STATION - CS PUMP 3D	U3 RB	519	N/R20	AI
39195		18	3-LPNL-925-005A	LOCAL PANEL 25-5A	U3 RB	593	S/R17	AI
39196		18	3-LPNL-925-005B	LOCAL PANEL 25-5B	U3 RB	593	S/R17	AI
39197		18	3-LPNL-925-005D	LOCAL PANEL 25-5D	U3 RB	593	S/R17	AI
39198		18	3-LPNL-925-006A	LOCAL PANEL 25-6A	U3 RB	593	Q/R19	AI
39199		18	3-LPNL-925-006D	LOCAL PANEL 25-6D	U3 RB	593	Q/R19	AI
39200		18	3-LPNL-925-0059	LOCAL PANEL 25-59	U3 RB	519	T/R15	AI
39201		18	3-LPNL-925-0062	LOCAL PANEL 25-62	U3 RB	519	T/R15	AI
39202		20	3-PNLA-082-00003C	DG 3C ELECTRICAL CONTROL CABINET	U3 DG	565	DG C	AI
39203		20	3-PNLA-082-00003D	DG 3D ELECTRICAL CONTROL CABINET	U3 DG	565	DG D	AI
39204		20	3-PNLA-925-0031	LOCAL PANEL 25-31	U3 RB	621	Q/R20	AI
39205		20	3-PNLA-925-0032	LOCAL PANEL 25-32	U3 RB	621	SD BD E	AI
39206		18	3-LPNL-925-0001	LOCAL PANEL 25-1	U3 RB	519	N/R15	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
39207		18	3-LPNL-925-0060	LOCAL PANEL 25-60	U3 RB	519	N/R21	AI
39208		13	3-MGEN-268-0003DA	LPCI MG SET 3DA	U3 RB	621	T/R20	AI
39209		14	NONE	MG SET 3DA VOLTAGE REGULATOR BOX	U3 RB	621	480V BD 3B	AI
39210		14	3-JBOX-268-5995	MG SET 3DA CONTROL STATION (3-HS-268-0003DA)	U3 RB	621	S/R20	AI
39211		20	3-JBOX-268-5956	MG SET 3DA CONTROL BOX (RELAYS)	U3 RB	621	S/R20	AI
39212		13	3-MGEN-268-0003EA	LPCI MG SET 3EA	U3 RB	621	T/R19	AI
39213		14	NONE	MG SET 3EA VOLTAGE REGULATOR BOX	U3 RB	621	480V BD 3A	AI
39214		14	3-JBOX-268-5997	MG SET 3EA CONTROL STATION (3-HS-268-0003EA)	U3 RB	621	S/R20	AI
39215		20	3-JBOX-268-5958	MG SET 3EA CONTROL BOX (RELAYS)	U3 RB	621	S/R20	AI
39216		20	3-LPNL-925-655A	DIV I LOAD SHED LOGIC PANEL	U3 RB	621	480V BD 3A	AI
39217		20	3-LPNL-925-655B	DIV II LOAD SHED LOGIC PANEL	U3 RB	621	480V BD 3B	AI
39218		20	3-LPNL-925-657A	DIV I LOAD SHED LOGIC PANEL	U3 DG	583	HALLWAY	AI
39219		20	3-LPNL-925-657B	DIV II LOAD SHED LOGIC PANEL	U3 DG	583	HALLWAY	AI
39220		20	3-PROT-099-0003A1	RPS CIRCUIT PROTECTOR CABINET 3A1	U3 RB	593	BATT BD 3	AI
39221		20	3-PROT-099-0003A2	RPS CIRCUIT PROTECTOR CABINET 3A2	U3 RB	593	BATT BD 3	AI
39222		20	3-PROT-099-0003B1	RPS CIRCUIT PROTECTOR CABINET 3B1	U3 RB	593	BATT BD 3	AI
39223		20	3-PROT-099-0003B2	RPS CIRCUIT PROTECTOR CABINET 3B2	U3 RB	593	BATT BD 3	AI
39224		20	3-PROT-099-0003C1	RPS CIRCUIT PROTECTOR CABINET 3C1	U3 RB	593	BATT BD 3	AI
39225		20	3-PROT-099-0003C2	RPS CIRCUIT PROTECTOR CABINET 3C2	U3 RB	593	BATT BD 3	AI
39226		18	3-LPNL-925-247A	LOCAL PANEL 3-25-247A (CAD DRYWELL & SUPP. CHAMB. V.)	U3 RB	621	Q/R18	AI
39227		01	3-BDBB-265-0003B	480V RB VENT BD 3B	U3 RB	565	U/R19	AI
39228		20	3-PNLA-009-0036A	PANEL 3-9-36A	U3 CB	593	U3 AIR	AI
39229		18	3-LPNL-925-0247B	LOCAL PANEL 3-25-247B (CAD N2 SUPPLY PANEL B)	U3 RB	621	Q/R19	AI
39230		20	3-PNLA-009-0020	PANEL 3-9-20	U3 CB	617	U3 MCR	AI
39231		20	NONE	CO2 RELAY PNL FOR 3-39-38	U3 DG	565	DG A	AI
39232		20	NONE	CO2 RELAY PNL FOR 3-39-39	U3 DG	565	DG B	AI
39233		20	NONE	CO2 RELAY PNL FOR 3-39-40	U3 DG	565	DG C	AI
39234		20	NONE	CO2 RELAY PNL FOR 3-39-41	U3 DG	565	DG D	AI
39235		18	3-LPNL-925-0007A	LOCAL PANEL 3-25-7A	U3 RB	541	SW CORNER	AI
39236		18	3-LPNL-925-0007B	LOCAL PANEL 3-25-7A	U3 RB	541	SW CORNER	AI
39237		18	3-LPNL-925-0223	LOCAL PANEL 3-25-223	U3 RB	593	Q/R19	AI
39238		20	3-PNLA-009-0008	PANEL 3-9-8	U3 CB	617	U3 MCR	AI
39239		18	3-HS-64-68	HANDSWITCH FOR 3-CLR-67-917 (34001)	U3 RB	519	SW CORNER	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
39240		18	3-HS-64-69	HANDSWITCH FOR 3-CLR-67-918 (34013)	U3 RB	519	SE CORNER	AI
39241		18	3-HS-64-70	HANDSWITCH FOR 3-CLR-67-921 (34003)	U3 RB	519	SW CORNER	AI
39242		18	3-HS-64-71	HANDSWITCH FOR 3-CLR-67-922 (34015)	U3 RB	519	SE CORNER	AI
39243		14	3-HS-69-2B	HANDSWITCH FOR 3-FCV-69-2 (33033)	U3 RB	593	R17/S	AI
39245		20	3-HS-71-2B	HANDSWITCH FOR 3-FCV-71-2 (33037)	U3 RB	593	R/R14	AI
39247		18	3-HS-73-3B	HANDSWITCH FOR 3-FCV-73-3 (33041)	U3 RB	519	TORUS	AI
39248		18	3-HS-73-81B	HANDSWITCH FOR 3-FCV-73-81 (33042)	U3 RB	519	TORUS	AI
39249		14	3-HS-74-100B	HANDSWITCH FOR 3-FCV-74-100 (31010)	U3 RB	565	SW CORNER	AI
39250		14	3-HS-74-12B	HANDSWITCH FOR 3-FCV-74-12 (31011)	U3 RB	519	SW CORNER	AI
39251		14	3-HS-74-13B	HANDSWITCH FOR 3-FCV-74-13 (31012)	U3 RB	519	SW CORNER	AI
39252		14	3-HS-74-1B	HANDSWITCH FOR 3-FCV-74-1 (31001)	U3 RB	519	SW CORNER	AI
39253		14	3-HS-74-24B	HANDSWITCH FOR 3-FCV-74-24 (31029)	U3 RB	519	SE CORNER	AI
39254		14	3-HS-74-25B	HANDSWITCH FOR 3-FCV-74-25 (31030)	U3 RB	519	SE CORNER	AI
39255		14	3-HS-74-2B	HANDSWITCH FOR 3-FCV-74-2 (31002)	U3 RB	519	SW CORNER	AI
39256		14	3-HS-74-35B	HANDSWITCH FOR 3-FCV-74-35 (31037)	U3 RB	519	SE CORNER	AI
39257		14	3-HS-74-36B	HANDSWITCH FOR 3-FCV-74-36 (31038)	U3 RB	519	SE CORNER	AI
39258		18	3-HS-74-73B	HANDSWITCH FOR 3-FCV-74-73 (31046)	U3 RB	519	TORUS	AI
39259		14	3-HS-74-97B	HANDSWITCH FOR 3-FCV-74-97 (31013)	U3 RB	519	SW CORNER	AI
39260		18	3-HS-75-11B	HANDSWITCH FOR 3-FCV-75-11 (35006)	U3 RB	519	NW CORNER	AI
39261		14	3-HS-75-22B	HANDSWITCH FOR 3-FCV-75-22 (35010)	U3 RB	519	NW CORNER	AI
39262		18	3-HS-75-23B	HANDSWITCH FOR 3-FCV-75-23 (35012)	U3 RB	593	P/R18	AI
39263		18	3-HS-75-2B	HANDSWITCH FOR 3-FCV-75-2 (35001)	U3 RB	519	NW CORNER	AI
39264		18	3-HS-75-30B	HANDSWITCH FOR 3-FCV-75-30 (35015)	U3 RB	519	NE CORNER	AI
39265		18	3-HS-75-39B	HANDSWITCH FOR 3-FCV-75-39 (35020)	U3 RB	519	NE CORNER	AI
39266		14	3-HS-75-50B	HANDSWITCH FOR 3-FCV-75-50 (35024)	U3 RB	519	NE CORNER	AI
39267		18	3-HS-75-51B	HANDSWITCH FOR 3-FCV-75-51 (35026)	U3 RB	593	P/R18	AI
39268		14	3-HS-78-61B	HANDSWITCH FOR 3-FCV-78-61 (31026)	U3 RB	621	R17/S	AI
39269		14	3-HS-64-72	HANDSWITCH FOR 3-CLR-67-919 (34002)	U3 RB	519	NW CORNER	AI
39270		14	3-HS-64-73	HANDSWITCH FOR 3-CLR-67-920 (34014)	U3 RB	519	NE CORNER	AI
39271		18	3-TS-64-68	TEMPERATURE SWITCH FOR 3-CLR-67-917 (34001)	U3 RB	519	SW CORNER	AI
39272		18	3-TS-64-69	TEMPERATURE SWITCH FOR 3-CLR-67-918 (34013)	U3 RB	519	SE CORNER	AI
39273		18	3-TS-64-70	TEMPERATURE SWITCH FOR 3-CLR-67-921 (34003)	U3 RB	519	SW CORNER	AI
39274		18	3-TS-64-71	TEMPERATURE SWITCH FOR 3-CLR-67-922 (34015)	U3 RB	519	SE CORNER	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
39275		18	3-TS-1-17A	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	AI
39276		18	3-TS-1-17B	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	AI
39277		18	3-TS-1-17C	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	AI
39278		18	3-TS-1-17D	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	AI
39279		18	3-TS-1-29A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	AI
39280		18	3-TS-1-29B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	AI
39281		18	3-TS-1-29C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	AI
39282		18	3-TS-1-29D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	AI
39283		18	3-TS-1-40A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI
39284		18	3-TS-1-40B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI
39285		18	3-TS-1-40C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI
39286		18	3-TS-1-40D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI
39287		18	3-TS-1-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI
39288		18	3-TS-1-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI
39289		18	3-TS-1-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI
39290		18	3-TS-1-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI
39291		18	3-TS-64-72	TEMPERATURE SWITCH FOR 3-CLR-67-919 (34002)	U3 RB	519	NW CORNER	AI
39292		18	3-TS-64-73	TEMPERATURE SWITCH FOR 3-CLR-67-920 (34014)	U3 RB	519	NE CORNER	AI
39293		14	3-HS-74-96B	HAND SWITCH FOR 3-FCV-74-96 (SSEL # 31003)	RB	519	SW CORNER	AI
39294		ROB	3-AMP-092-0007/41A	IRM CH. "A" VOLTAGE PREAMPLIFIER 7-34A	RB	565	S/R17	AI
39295		ROB	3-AMP-092-0007/41B	IRM CH. "B" VOLTAGE PREAMPLIFIER 7-34B	RB	565	S/R17	AI
39296		14	3-LPNL-925-0027	PANEL 3-25-27 IRM PREAMP. RPS I	RB	565	S/R17	AI
39297		ROB	3-AMP-092-0007/41C	IRM CH. "C" VOLTAGE PREAMPLIFIER 7-34C	RB	577	Q/R19	AI
39298		ROB	3-AMP-092-0007/41D	IRM CH. "D" VOLTAGE PREAMPLIFIER 7-34D	RB	577	Q/R19	AI
39299		14	3-LPNL-925-0061	PANEL 3-25-61 IRM PREAMP. RPS II	RB	577	Q/R19	AI
39300		ROB	3-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U3 MCR	AI
39301		ROB	3-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U3 MCR	AI
39302		ROB	3-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	CB	617	U3 MCR	AI
39303		ROB	3-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	CB	617	U3 MCR	AI
39304		20	3-PNLA-009-012	PANEL 3-9-12	CB	617	U3 MCR	AI
39305		15	3-BATD-283-000A3	24V NEUTRON MONITORING BATTERY, U3 CHANNEL A	CB	593	BAT RM 3	AI
39306		15	3-BATD-283-000B3	24V NEUTRON MONITORING BATTERY, U3 CHANNEL B	CB	593	BAT RM 3	AI
39307		16	3-CHGD-283-A1-3	24V NEUTRON BATTERY CHARGERS A1-3	CB	593	BAT BD RM 3	AI

SSEL NUMBER	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE
39308		16	3-CHGD-283-A2-3	24V NEUTRON BATTERY CHARGERS A2-3	CB	593	BAT BD RM 3	AI
39309		16	3-CHGD-283-B1-3	24V NEUTRON BATTERY CHARGERS B1-3	CB	593	BAT BD RM 3	AI
39310		16	3-CHGD-283-B2-3	24V NEUTRON BATTERY CHARGERS B2-3	CB	593	BAT BD RM 3	AI
9160		04	0-XFA-082-000AA	DG-A NEUTRAL GRN XFMR	DGB 1/2	565	DG - A	AI
9161		04	0-XFA-082-000BA	DG-B NEUTRAL GRN XFMR	DGB 1/2	565	DG - B	AI
9162		04	0-XFA-082-000CA	DG-C NEUTRAL GRN XFMR	DGB 1/2	565	DG - C	AI
9163		04	0-XFA-082-000DA	DG-D NEUTRAL GRN XFMR	DGB 1/2	565	DG - D	AI
9164		04	3-XFA-082-0003AA	DG-3A NEUTRAL GRN XFMR	DGB 3	565	DG - 3A	AI
9165		04	3-XFA-082-0003BA	DG-3B NEUTRAL GRN XFMR	DGB 3	565	DG - 3B	AI
9166		04	3-XFA-082-0003CA	DG-3C NEUTRAL GRN XFMR	DGB 3	565	DG - 3C	AI
9167		04	3-XFA-082-0003DA	DG-3D NEUTRAL GRN XFMR	DGB 3	565	DG - 3D	AI

APPENDIX D

SCREENING VERIFICATION DATA SHEETS

APPENDIX D

SCREENING VERIFICATION DATA SHEETS (SVDS)

CERTIFICATION:

All the information contained on these Screening Verification Data Sheets (SVDS) is, to the best of our knowledge and belief, correct and accurate. This includes each entry and conclusion (whether verified to be seismically adequate or not).

Approved: (Signatures of all Seismic Capability Engineers on the Seismic Review Team (SRT) are required; there should be at least two on the SRT. All signatories should agree with all the entries and conclusions. One signatory should be a licensed professional engineer.)

Print or type name	Signature	Date
Richard D. Augustine (RDA)	Richard D. Augustine	4-29-96
Farzin R. Beigi (FRB)	Farzin Beigi	4-24-96
Brantley C. Buerger (BCB)		4-29-96
James R. Disser (JRD)		4-29-96
John O. Dizon (JOD)	John O. Dizon	4-19-96
Partha S. Ghosal (PSG)	P. S. Ghosal	4-10-96

APPENDIX D

SCREENING VERIFICATION DATA SHEETS (SVDS)

Krystyn H. Gromek (KHG)	Krystyn H. Gromek	4-10-96
Print or type name	Signature	Date
Steven A. Locke (SAL)	Steven A. Locke	4-11-96
Print or type name	Signature	Date
Cesar O. Pascua (COP)	[illegible]	4-10-96
Print or type name	Signature	Date
Anand C. Relwani (ACR)	Anand C. Relwani	4-10-96
Print or type name	Signature	Date
Angel G. Tambora (AGT)	[illegible]	4-11-96
Print or type name	Signature	Date
Thurman G. Thaxton, Jr. (TGT)	Thurman G. Thaxton Jr.	4-11-96
Print or type name	Signature	Date

APPENDIX D

SCREENING VERIFICATION DATA SHEETS

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
1		00	2-HCU-85,1-185	CRD\HYDRAULIC CONTROL UNIT	U2 RB	565	P-S/R9&13	565	YES	DOC	RRS	YES	N/A	YES	YES	YES	BCB/RDA	
2		07	2-FCV-85-82A	CRD\WEST SDV VENT VALVE	U2 RB	565	R9/S	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
3		07	2-FCV-85-82	CRD\WEST SDV VENT VALVE	U2 RB	565	S/R9	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
4		07	2-FCV-85-37C	CRD\WEST SDV DRAIN VALVE	U2 RB	565	P/R9	566	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
5		07	2-FCV-85-37D	CRD\WEST SDV DRAIN VALVE	U2 RB	565	P/R9	566	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/JRD	
6		07	2-FCV-85-83A	CRD\EAST SDV VENT VALVE	U2 RB	565	S/R13	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
7		07	2-FCV-85-83	CRD\EAST SDV VENT VALVE	U2 RB	565	R13/S	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8		07	2-FCV-85-37E	CRD\EAST SDV DRAIN VALVE	U2 RB	565	P/R13	566	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
9		07	2-FCV-85-37F	CRD\EAST SDV DRAIN VALVE	U2 RB	565	R13/P	566	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
10		21	2-TNK-85-901	CRD\WEST SCRAM INSTRUMENT VOLUME	U2 RB	565	P/R9	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	JRD/BCB	
11		21	2-TNK-85-902	CRD\EAST SCRAM INSTRUMENT VOLUME	U2 RB	565	P/R13	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	JRD/BCB	
12		08B	2-FSV-85-37A	CRD\SCRAM DUMP VALVE	U2 RB	565	R12/N	570	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
13		08B	2-FSV-85-37B	CRD\SCRAM DUMP VALVE	U2 RB	565	R12/N	570	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
14		08B	2-FSV-85-35A	CRD\BACKUP SCRAM VALVE	U2 RB	565	R12/N	570	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
15		08B	2-FSV-85-35B	CRD\BACKUP SCRAM VALVE	U2 RB	565	R12/N	570	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
16		20	2-HS-99-5A/S3A	RPS\REACTOR MANUAL SCRAM CHANNEL A3	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/BCB	
17		20	2-HS-99-5A/S3B	RPS\REACTOR MANUAL SCRAM CHANNEL B3	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/BCB	
18		20	2-HS-99-5A-S1	RPS\REACTOR MODE SWITCH	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/BCB	
1001		08A	2-FCV-74-1	RHR/PUMP 2A SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1002		08A	2-FCV-74-2	RHR/PUMP 2A SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/JRD	
1003		08A	2-FCV-74-96	RHR/UNIT 2 TO UNIT 1 RHR X-TIE ISOLATION VALVE	U2 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1004		06	2-PMP-74-5	RHR/PUMP 2A	U2 RB	519	SW CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	RDA/BCB	
1006		08A	2-FCV-74-7	RHR/PUMP 2A&2C MINIMUM FLOW VALVE	U2 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1009		21	2-HEX-74-900A	RHR/HEAT EXCHANGER 2A	U2 RB	565	SW HX	587	YES	N/A	N/A	N/A	N/A	NO	YES	NO	JRD/JOD	
1010		08A	2-FCV-74-100	RHR/U2 TO U1 RHR DISCHARGE X-TIE ISOLATION VALVE	U2 RB	565	R8/T	577	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/JRD	
1011		08A	2-FCV-74-12	RHR/PUMP 2C SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/JRD	
1012		08A	2-FCV-74-13	RHR/PUMP 2C SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1013		08A	2-FCV-74-97	RHR/UNIT 2 TO UNIT 1 RHR X-TIE ISOLATION VALVE	U2 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1014		06	2-PMP-74-16	RHR/PUMP 2C	U2 RB	519	SW CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	RDA/BCB	
1017		21	2-HEX-74-900C	RHR/HEAT EXCHANGER 2C	U2 RB	565	SW HX	587	YES	N/A	N/A	N/A	N/A	NO	YES	NO	JRD/JOD	
1018		ROB	2-FI-74-50	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
1018	B	ROB	2-FT-74-50	RHR LOOP I FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1018	C	ROB	2-FS-74-50	RHR LOOP I FLOW SWITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
1018	D	ROB	2-FM-74-50	RHR LOOP I FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1018	E	ROB	2-FR-74-64	RHR LOOP I FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1018	F	ROB	2-BKR-402	RHR LOOP I FLOW INDICATION BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1018	G	ROB	2-BKR-211	RHR LOOP I FLOW INDICATION BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1019		ROB	2-FI-74-56	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
1019	B	ROB	2-FT-74-56	RHR LOOP I FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1019	C	ROB	2-FM-74-56	RHR LOOP I FLOW INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1020		08A	2-FCV-74-57	RHR/LOOP I TORUS CONTAINMENT COOLING/SPRAY VALVE	U2 RB	519	R9/S	555	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1021		08A	2-FCV-74-59	RHR/LOOP I SUPRESSION POOL COOLING VALVE	U2 RB	519	R9/S	555	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1023		08A	2-FCV-74-52	RHR/LOOP I OUTBOARD INJECTION VALVE	U2 RB	565	T/R11	573	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1024		08A	2-FCV-74-53	RHR/LOOP I INBOARD INJECTION VALVE	U2 RB	565	T/R11	573	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1026		08A	2-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U2 RB	621	R10/S	622	NO	ABS	RRS	YES	YES	N/A	YES	YES	JRD/BCB	
1027		08A	2-FCV-74-60	RHR/LOOP I OUTBOARD DRYWELL SPRAY VALVE	U2 RB	565	R9/S	577	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1029		08A	2-FCV-74-24	RHR/PUMP 2B SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1030		08A	2-FCV-74-25	RHR/PUMP 2B SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1031		08A	2-FCV-74-98	RHR/UNIT 2 TO UNIT 3 RHR X-TIE ISOLATION VALVE	U2 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1032		06	2-PMP-74-28	RHR/PUMP 2B	U2 RB	519	SE CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	RDA/BCB	
1034		08A	2-FCV-74-30	RHR/PUMP 2B&2D MINIMUM FLOW VALVE	U2 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1037		21	2-HEX-74-900B	RHR/HEAT EXCHANGER 2B	U2 RB	565	SE HX	587	YES	N/A	N/A	N/A	N/A	NO	YES	NO	JRD/JOD	
1038		08A	2-FCV-74-101	RHR/U2 TO U3 RHR DISCHARGE X-TIE ISOLATION VALVE	U2 RB	565	R13/T	577	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1039		08A	2-FCV-74-35	RHR/PUMP 2D SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1040		08A	2-FCV-74-36	RHR/PUMP 2D SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1041		08A	2-FCV-74-99	RHR/UNIT 2 TO UNIT 3 RHR X-TIE ISOLATION VALVE	U2 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1042		06	2-PMP-74-39	RHR/PUMP 2D	U2 RB	519	SE CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	RDA/BCB	
1045		21	2-HEX-74-900D	RHR/HEAT EXCHANGER 2D	U2 RB	565	SE HX	587	YES	N/A	N/A	N/A	N/A	NO	YES	NO	JRD/JOD	
1046		ROB	2-FI-74-64	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
1046	B	ROB	2-FT-74-64	RHR LOOP II FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1046	C	ROB	2-FS-74-64	RHR LOOP II FLOW SWITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1046	D	ROB	2-FM-74-64	RHR LOOP II FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1046	E	ROB	2-FR-74-64	RHR LOOP II FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1046	F	ROB	2-BKR-402	RHR LOOP II FLOW INDICATION BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1046	G	ROB	2-BKR-322	RHR LOOP II FLOW INDICATION BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1047		ROB	2-FI-74-70	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
1047	B	ROB	2-FT-74-70	RHR LOOP II FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1047	C	ROB	2-FM-74-70	RHR LOOP II FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
1048		08A	2-FCV-74-71	RHR/LOOP II TORUS CONTAINMENT COOLING/SPRAY VALVE	U2 RB	519	R13/S	555	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1049		08A	2-FCV-74-73	RHR/LOOP II SUPRESSION POOL COOLING VALVE	U2 RB	519	R13/R	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1051		08A	2-FCV-74-66	RHR/LOOP II OUTBOARD INJECTION VALVE	U2 RB	565	T/R11	573	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
1052		08A	2-FCV-74-67	RHR/LOOP II INBOARD INJECTION VALVE	U2 RB	565	T/R11	573	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
1054		08A	2-FCV-74-74	RHR/LOOP II OUTBOARD DRYWELL SPRAY VALVE	U2 RB	593	R12/S	596	NO	ABS	RRS	YES	YES	N/A	YES	YES	JRD/BCB	
1056		08B	2-FSV-43-50	PASS LIQUID SAMPLE VALVE	U2 RB	565	S/R8	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
2000		07	2-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
2003		07	2-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
2006		07	2-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
2009		07	2-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
2012		07	2-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
2015		07	2-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
2018		07	2-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
2021		07	2-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
2024		07	2-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
2027		07	2-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
2030		07	2-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
2033		07	2-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
2036		07	2-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
3001		07	2-FCV-1-14	MSIV "A" INBOARD ISOLATION VALVE	U2 DW	563	DW	563	YES	BS	GRS	YES	NO	N/A	YES	NO	KHG/AGT	
3002		07	2-FCV-1-15	MSIV "A" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	565	YES	BS	GRS	YES	NO	N/A	YES	NO	TGT/SAL	
3003		07	2-FCV-1-26	MSIV "B" INBOARD ISOLATION VALVE	U2 DW	563	DW	563	YES	BS	GRS	YES	NO	N/A	YES	NO	KHG/AGT	
3004		07	2-FCV-1-27	MSIV "B" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	565	YES	BS	GRS	YES	NO	N/A	YES	NO	SAL/TGT	
3005		07	2-FCV-1-37	MSIV "C" INBOARD ISOLATION VALVE	U2 DW	563	DW	563	YES	BS	GRS	YES	NO	N/A	YES	NO	KHG/AGT	
3006		07	2-FCV-1-38	MSIV "C" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	564	YES	BS	GRS	YES	NO	N/A	YES	NO	TGT/SAL	
3007		07	2-FCV-1-51	MSIV "D" INBOARD ISOLATION VALVE	U2 DW	563	DW	563	YES	BS	GRS	YES	NO	N/A	YES	NO	KHG/AGT	
3008		07	2-FCV-1-52	MSIV "D" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	565	YES	BS	GRS	YES	NO	N/A	YES	NO	SAL/TGT	
3009		08A	2-FCV-1-55	MAIN STEAM LINE DRAIN ISOLATION VALVE	U2 DW	563	DW	563	YES	BS	GRS	YES	YES	N/A	YES	YES	KHG/AGT	
3033		08A	2-FCV-69-1	RWCU INBOARD ISOLATION VALVE	U2 DW	584	DW	584	YES	BS	GRS	YES	YES	N/A	YES	YES	SAL/TGT	
3034		08A	2-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U2 RB	593	R10/S	604	NO	ABS	RRS	YES	YES	N/A	YES	YES	JRD/BCB	
3038		08A	2-FCV-71-2	RCIC INBOARD ISOLATION VALVE	U2 DW	584	DW	584	YES	BS	GRS	YES	YES	N/A	YES	YES	TGT/SAL	
3039		08A	2-FCV-71-3	RCIC OUTBOARD ISOLATION VALVE	U2 RB	565	MSIV VAULT	585	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/JOD	
3041		08A	2-FCV-73-2	HPCI STEAM SUPPLY ISOLATION VALVE	U2 DW	563	DW	563	YES	BS	GRS	YES	YES	N/A	YES	YES	SAL/TGT	
3042		08A	2-FCV-73-3	HPCI STEAM SUPPLY ISOLATION VALVE	U2 RB	519	TORUS	555	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
3043		08A	2-FCV-73-81	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	U2 RB	519	TORUS	555	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
3045		07	2-FCV-75-57	PSC PUMP SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	523	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
3046		07	2-FCV-75-58	PSC PUMP SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	523	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
3053		ROB	2-LI-3-58A	RPV LEVEL INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
3053	A	ROB	2-LT-3-58B	RPV LEVEL TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
3054		ROB	2-LI-3-58B	RPV LEVEL INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
3054	A	ROB	2-LT-3-58D	RPV LEVEL TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
3055		ROB	2-PI-3-74A	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
3055	A	ROB	2-PT-3-74A	RPV PRESSURE TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
3056		ROB	2-PI-3-74B	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
3056	A	ROB	2-PT-3-74B	RPV PRESSURE TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
3057		ROB	2-XR-64-159	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
3057	A	18	2-LT-64-159B	TORUS LEVEL TRANSMITTER	U2 RB	519	TORUS	523	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	2
3057	B	ROB	2-PT-64-160B	TORUS PRESSURE TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
3057	C	ROB	2-BKR-323	TORUS LEVEL/PRESSURE INDICATION BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
3058		ROB	2-LI-64-159A	TORUS LEVEL INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
3058	A	18	2-LT-64-159A	TORUS LEVEL TRANSMITTER	U2 RB	519	TORUS	523	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	2
3058	B	ROB	2-BKR-223	TORUS LEVEL INDICATION BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
3059		ROB	2-TI-64-161	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
3059	A	19	2-TE-64-161A	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3059	B	19	2-TE-64-161B	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3059	C	19	2-TE-64-161C	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3059	D	19	2-TE-64-161D	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3059	E	19	2-TE-64-161E	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3059	F	19	2-TE-64-161F	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3059	G	19	2-TE-64-161G	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3059	H	19	2-TE-64-161H	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3060		ROB	2-TI-64-162	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
3060	A	19	2-TE-64-162A	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3060	B	19	2-TE-64-162B	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3060	C	19	2-TE-64-162C	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3060	D	19	2-TE-64-162D	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3060	E	19	2-TE-64-162E	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3060	F	19	2-TE-64-162F	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3060	G	19	2-TE-64-162G	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3060	H	19	2-TE-64-162H	TORUS TEMP ELEMENT	U2 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
3065		ROB	2-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U2 MCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1, 6
3066		ROB	2-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U2 MCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1, 6
4001		06	0-PMP-23-85	RHRSW PUMP A3	INTAKE	565	A	565	YES	BS	GRS	YES	NO	NO	YES	NO	JRD/RDA	
4003		08A	0-STN-67-925	A EECW PUMP DISCHARGE STRAINER	INTAKE	565	A	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
4004		08A	0-FCV-67-1	A EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	A	565	YES	BS	GRS	YES	YES	N/A	YES	YES	FRB/JOD	
4006		10	2-CLR-67-917	EECW/RHR PUMP 2A ROOM COOLER	U2 RB	519	SW CORNER	560	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
4007		10	2-CLR-67-919	EECW/CS PUMP 2A ROOM COOLER	U2 RB	519	NW CORNER	560	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
4008		10	2-CLR-67-921	EECW/RHR PUMP 2C ROOM COOLER	U2 RB	519	SW CORNER	560	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
4009		21	2-HEX-67-915	EECW/RHR SEAL HX 2A	U2 RB	519	SW CORNER	522	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
4011		06	0-PMP-23-91	RHRSW PUMP C3	INTAKE	565	C	565	YES	BS	GRS	YES	NO	NO	YES	NO	JRD/RDA	
4013		08A	0-STN-67-927	C EECW PUMP DISCHARGE STRAINER	INTAKE	565	C	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
4014		08A	0-FCV-67-8	C EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	C	565	YES	BS	GRS	YES	YES	N/A	YES	YES	FRB/JOD	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
4015		08A	0-FCV-67-49	RHRSW PUMP C1 TO EECW SYSTEM CROSS-CONNECT	INTAKE	565	C	565	YES	BS	GRS	YES	YES	N/A	YES	YES	FRB/JOD	
4016		07	1-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U1 RB	593	R3/P	605	NO	ABS	RRS	YES	YES	N/A	YES	YES	JRD/BCB	
4017		07	2-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U2 RB	593	P/R13	593	NO	ABS	RRS	YES	YES	N/A	YES	YES	JRD/BCB	
4018		07	3-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U3 RB	593	R20/P	593	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
4019		07	0-FCV-67-53	EECW SYSTEM NORTH HEADER BACKUP TO THE AIR COMPRESSORS	U1 RB	565	R3/N	575	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/JRD	
4040		21	2-HEX-67-916	EECW/RHR SEAL HX 2C	U2 RB	519	SW CORNER	522	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
4041		ROB	0-EI-23-85/3	EECW PUMP A3 AMPERAGE INDICATION	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
4042		ROB	0-EI-23-91/3	EECW PUMP C3 AMPERAGE INDICATION	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
4044		06	0-PMP-23-88	RHRSW PUMP B3	INTAKE	565	B	565	YES	BS	GRS	YES	NO	NO	YES	NO	JRD/RDA	
4046		08A	0-STN-67-926	B EECW PUMP DISCHARGE STRAINER	INTAKE	565	B	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
4047		08A	0-FCV-67-5	B EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	B	565	YES	BS	GRS	YES	YES	N/A	YES	YES	FRB/JOD	
4049		10	2-CLR-67-918	EECW/RHR PUMP 2B ROOM COOLER	U2 RB	519	SE CORNER	560	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
4050		10	2-CLR-67-920	EECW/CS PUMP 2B ROOM COOLER	U2 RB	519	NE CORNER	560	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
4051		10	2-CLR-67-922	EECW/RHR PUMP 2D ROOM COOLER	U2 RB	519	SE CORNER	560	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
4052		21	2-HEX-67-923	EECW/RHR SEAL HX 2B	U2 RB	519	SE CORNER	522	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
4054		06	0-PMP-23-94	RHRSW PUMP D3	INTAKE	565	D	565	YES	BS	GRS	YES	NO	NO	YES	NO	JRD/RDA	
4056		08A	0-STN-67-928	D EECW PUMP DISCHARGE STRAINER	INTAKE	565	D	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
4057		08A	0-FCV-67-11	D EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	D	565	YES	BS	GRS	YES	YES	N/A	YES	YES	FRB/JOD	
4058		08A	0-FCV-67-48	RHRSW PUMP D1 TO EECW SYSTEM CROSS-CONNECT	INTAKE	565	D	565	YES	BS	GRS	YES	YES	N/A	YES	YES	FRB/JOD	
4059		07	1-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U1 RB	565	R3/T	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
4060		07	2-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U2 RB	565	R13/T	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
4061		07	3-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U3 RB	565	R20/T	565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
4082		21	2-HEX-67-924	EECW/RHR SEAL HX 2D	U2 RB	519	SE CORNER	522	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
4083		ROB	0-EI-23-88/3	EECW PUMP B3 AMPERAGE INDICATION	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
4084		ROB	0-EI-23-94/3	EECW PUMP D3 AMPERAGE INDICATION	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
5001		08A	2-FCV-75-2	CS/PUMP 2A SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	521	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
5002		06	2-PMP-75-5	CS/PUMP 2A	U2 RB	519	NW CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	JRD/BCB	
5005		08A	2-FCV-75-9	CS/PUMPS 2A & 2C MINI-FLOW VALVE	U2 RB	519	NW CORNER	540	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
5006		08A	2-FCV-75-11	CS/PUMP 2C SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	521	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
5007		06	2-PMP-75-14	CS/PUMP 2C	U2 RB	519	NW CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	JRD/BCB	
5010		08A	2-FCV-75-22	CS/PUMPS 2A & 2C TEST ISOLATION VALVE	U2 RB	519	NW CORNER	543	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
5011		ROB	2-FI-75-21	CS/PUMPS 2A & 2C FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
5011	A	ROB	2-FM-75-21	CS PUMPS 2A & 2C FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
5011	B	ROB	2-PX-75-21	CS PUMPS 2A & 2C FLOW INDICATION POWER SUPPLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
5011	C	ROB	2-FT-75-21	CS PUMPS 2A & 2C FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
5012		08A	2-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U2 RB	593	P/R10	608	NO	ABS	RRS	YES	YES	N/A	YES	YES	BCB/JRD	
5013		08A	2-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U2 RB	593	P/R10	608	NO	ABS	RRS	YES	YES	N/A	YES	YES	JRD/BCB	
5015		08A	2-FCV-75-30	CS/PUMP 2B SUCTION ISOLATION VALVE	U2 RB	519	NE CORNER	521	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
5016		06	2-PMP-75-33	CS/PUMP 2B	U2 RB	519	NE CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	JRD/BCB	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
5019		08A	2-FCV-75-37	CS/PUMPS 2B & 2D MINI-FLOW VALVE	U2 RB	519	NE CORNER	540	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
5020		08A	2-FCV-75-39	CS/PUMP 2D SUCTION ISOLATION VALVE	U2 RB	519	NE CORNER	521	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
5021		06	2-PMP-75-42	CS/PUMP 2D	U2 RB	519	NE CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	JRD/BCB	
5024		08A	2-FCV-75-50	CS/PUMPS 2B & 2D TEST ISOLATION VALVE	U2 RB	519	NE CORNER	543	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
5025		ROB	2-FI-75-49	CS/PUMPS 2B & 2D FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
5025	A	ROB	2-FM-75-49	CS PUMPS 2B & 2D FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
5025	B	ROB	2-PX-75-49	CS PUMPS 2B & 2D FLOW INDICATION POWER SUPPLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
5025	C	ROB	2-FT-75-49	CS PUMPS 2B & 2D FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
5026		08A	2-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U2 RB	593	P/R11	608	NO	ABS	RRS	YES	YES	N/A	YES	YES	JRD/BCB	
5027		08A	2-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U2 RB	593	P/R11	608	NO	ABS	RRS	YES	YES	N/A	YES	YES	JRD/BCB	
6001		21	0-TNK-84-635	CAD/NITROGEN STORAGE TANK "A"	YARD	565	YARD	565	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
6002		07	O-FCV-84-5	CAD/N2 TANK "A" ISOLATION VALVE	YARD	565	YARD	569	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/RDA	
6003		08B	O-FSV-84-5	CAD/N2 TANK "A" ISOLATION SOLENOID VALVE	YARD	565	YARD	569	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/RDA	
6004		00	0-VPR-84-639	CAD/N2 TANK "A" VAPORIZER	YARD	565	YARD	565	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/RDA	
6005		00	0-HTR-84-5	CAD/N2 TANK "A" ELECTRIC HEATER	YARD	565	YARD	565	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/RDA	
6006		08B	2-FSV-84-8A	CAD/CAD TO DW (2-FCV-64-18) SOLENOID VALVE	U2 RB	565	R12/T	574	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
6007		08B	2-FSV-84-8B	CAD/CAD TO DW (2-FCV-64-19) SOLENOID VALVE	U2 RB	565	R10/S	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
6008		07	2-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	R11/U	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
6009		08B	2-FSV-84-48	CAD/CAD SYSTEM "A" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	S/R10	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
6013		21	2-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U2 DW	563	DW	584	YES	BS	GRS	YES	N/A	YES	YES	YES	TGT/SAL	
6014		08B	2-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19	U2 DW	591	DW	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
6016		21	2-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U2 DW	563	DW	584	YES	BS	GRS	YES	N/A	YES	YES	YES	TGT/SAL	
6017		08B	2-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22	U2 DW	590	DW	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
6019		21	2-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U2 DW	563	DW	584	YES	BS	GRS	YES	N/A	YES	YES	YES	TGT/SAL	
6020		08B	2-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5	U2 DW	590	DW	590	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
6021		08B	2-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23	U2 DW	590	DW	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
6022		08B	2-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179	U2 DW	590	DW	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
6023		08B	2-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4	U2 DW	590	DW	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
6024		08B	2-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18	U2 DW	590	DW	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
6025		21	0-TNK-84-636	CAD/NITROGEN STORAGE TANK "B"	YARD	565	YARD	565	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
6026		07	0-FCV-84-16	CAD/N2 TANK "B" ISOLATION VALVE	YARD	565	YARD	569	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/RDA	
6027		08B	O-FSV-84-16	CAD/N2 TANK "B" ISOLATION SOLENOID VALVE	YARD	565	YARD	569	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/RDA	
6028		00	0-VPR-84-640	VAD/N2 TANK "B" VAPORIZER	YARD	565	YARD	565	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/RDA	
6029		00	0-HTR-84-16	CAD/N2 TANK "B" ELECTRIC HEATER	YARD	565	YARD	565	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/RDA	
6030		08B	2-FSV-84-8C	CAD/CAD TO DW (2-FCV-64-19) SOLENOID VALVE	U2 RB	565	R10/S	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
6031		08B	2-FSV-84-8D	CAD/CAD TO DW (2-FCV-64-18) SOLENOID VALVE	U2 RB	565	R12/T	577	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
6032		07	2-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	R11/U	570	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/JRD	
6033		08B	2-FSV-84-49	CAD/CAD SYSTEM "B" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	S/R12	582	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
6037		21	2-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U2 DW	563	DW	584	YES	BS	GRS	YES	N/A	YES	YES	YES	TGT/SAL	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
6038		08B	2-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30	U2 DW	591	DW	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
6040		21	2-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U2 DW	563	DW	584	YES	BS	GRS	YES	N/A	YES	YES	YES	TGT/SAL	
6041		08B	2-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31	U2 DW	591	DW	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
6043		21	2-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U2 DW	563	DW	584	YES	BS	GRS	YES	N/A	YES	YES	YES	TGT/SAL	
6044		08B	2-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34	U2 DW	591	DW	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
6045		08B	2-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41	U2 DW	590	DW	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
6046		08B	2-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42	U2 DW	590	DW	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
6047		08B	2-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180	U2 DW	590	DW	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	AGT/KHG	
7001		17	0-GEN-82-A	UNIT 1 & 2 DIESEL GENERATOR "A"	U1/2 DG	565	DG A	565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7002		21	0-TNK-18-45/1	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7003		21	0-TNK-18-45/2	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7004		21	0-TNK-18-45/3	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	556	YES	BS	GRS	YES	N/A	YES	YES	YES	BCB/JRD	
7005		21	0-TNK-86-650A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	BCB/JRD	
7006		21	0-TNK-86-651A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7007		21	0-TNK-86-652A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7008		21	0-TNK-86-653A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7009		21	0-TNK-86-654A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7010		21	0-TNK-86-655A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7011		21	0-TNK-86-656A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7012		21	0-TNK-86-657A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7013		21	0-TNK-86-658A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7014		21	0-TNK-86-659A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7015		09	0-FAN-30-64	DG ROOM A EXHAUST FAN "A"	U1/2 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7016		09	0-FAN-30-65	DG ROOM A EXHAUST FAN "B"	U1/2 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7017		10	0-FCO-30-64A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7018		10	0-FCO-30-64B	INLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7019		10	0-FCO-30-64C	INLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7020		10	0-FCO-30-65A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7021		10	0-FCO-30-65B	INLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7022		10	0-FCO-30-65C	INLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7023		17	0-GEN-82-B	UNIT 1 & 2 DIESEL GENERATOR "B"	U1/2 DG	565	DG B	565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7024		21	0-TNK-18-46/1	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7025		21	0-TNK-18-46/2	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7026		21	0-TNK-18-46/3	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7027		21	0-TNK-86-650B	DG "B" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7028		21	0-TNK-86-651B	DG "B" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7029		21	0-TNK-86-652B	DG "B" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7030		21	0-TNK-86-653B	DG "B" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7031		21	0-TNK-86-654B	DG "B" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
7032		21	0-TNK-86-655B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7033		21	0-TNK-86-656B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7034		21	0-TNK-86-657B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7035		21	0-TNK-86-658B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7036		21	0-TNK-86-659B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7037		09	0-FAN-30-66	DG ROOM B EXHAUST FAN "A"	U1/2 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7038		09	0-FAN-30-67	DG ROOM B EXHAUST FAN "B"	U1/2 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7039		10	0-FCO-30-66A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7040		10	0-FCO-30-66B	INLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7041		10	0-FCO-30-66C	INLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7042		10	0-FCO-30-67A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7043		10	0-FCO-30-67B	INLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7044		10	0-FCO-30-67C	INLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7045		17	0-GEN-82-C	UNIT 1 & 2 DIESEL GENERATOR "C"	U1/2 DG	565	DG C	565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7046		21	0-TNK-18-47/1	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7047		21	0-TNK-18-47/2	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7048		21	0-TNK-18-47/3	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7049		21	0-TNK-86-650C	DG "C" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7050		21	0-TNK-86-651C	DG "C" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7051		21	0-TNK-86-652C	DG "C" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7052		21	0-TNK-86-653C	DG "C" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7053		21	0-TNK-86-654C	DG "C" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7054		21	0-TNK-86-655C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7055		21	0-TNK-86-656C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7056		21	0-TNK-86-657C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7057		21	0-TNK-86-658C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7058		21	0-TNK-86-659C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7059		09	0-FAN-30-68	DG ROOM C EXHAUST FAN "A"	U1/2 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7060		09	0-FAN-30-69	DG ROOM C EXHAUST FAN "B"	U1/2 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7061		10	0-FCO-30-68A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7062		10	0-FCO-30-68B	INLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7063		10	0-FCO-30-68C	INLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7064		10	0-FCO-30-69A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7065		10	0-FCO-30-69B	INLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7066		10	0-FCO-30-69C	INLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7067		17	0-GEN-82-D	UNIT 1 & 2 DIESEL GENERATOR "D"	U1/2 DG	565	DG D	565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7068		21	0-TNK-18-48/1	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7069		21	0-TNK-18-48/2	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7070		21	0-TNK-18-48/3	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	

SSEL NO.	SUB COMP	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
7071		21	0-TNK-86-650D	DG "D" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7072		21	0-TNK-86-651D	DG "D" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7073		21	0-TNK-86-652D	DG "D" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7074		21	0-TNK-86-653D	DG "D" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7075		21	0-TNK-86-654D	DG "D" LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7076		21	0-TNK-86-655D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7077		21	0-TNK-86-656D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7078		21	0-TNK-86-657D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7079		21	0-TNK-86-658D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7080		21	0-TNK-86-659D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7081		09	0-FAN-30-70	DG ROOM D EXHAUST FAN "A"	U1/2 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7082		09	0-FAN-30-71	DG ROOM D EXHAUST FAN "B"	U1/2 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7083		10	0-FCO-30-70A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7084		10	0-FCO-30-70B	INLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7085		10	0-FCO-30-70C	INLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7086		10	0-FCO-30-71A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7087		10	0-FCO-30-71B	INLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7088		10	0-FCO-30-71C	INLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7089		17	3-GEN-82-3A	UNIT 3 DIESEL GENERATOR A	U3 DG	565	DG A	565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7090		21	3-TNK-18-61/1	DG "3A" 7 DAY FUEL OIL TANK	U3 DG	565	DG A	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7091		21	3-TNK-18-61/2	DG "3A" 7 DAY FUEL OIL TANK	U3 DG	565	DG A	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7092		21	3-TNK-18-61/3	DG "3A" 7 DAY FUEL OIL TANK	U3 DG	565	DG A	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7093		21	3-TNK-86-650A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7094		21	3-TNK-86-651A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7095		21	3-TNK-86-652A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7096		21	3-TNK-86-653A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7097		21	3-TNK-86-654A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7098		21	3-TNK-86-655A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7099		21	3-TNK-86-656A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7100		21	3-TNK-86-657A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7101		21	3-TNK-86-658A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7102		21	3-TNK-86-659A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7103		09	3-FAN-30-230	DG ROOM 3A EXHAUST FAN "A"	U3 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7104		10	3-FCO-30-230A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3A"	U3 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7105		10	3-FCO-30-230B	INLET DAMPER FOR FAN "A" IN DG ROOM "3A"	U3 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7106		10	3-FCO-30-230C	INLET DAMPER FOR FAN "A" IN DG ROOM "3A"	U3 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7107		17	3-GEN-82-3B	UNIT 3 DIESEL GENERATOR B	U3 DG	565	DG B	565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7108		21	3-TNK-18-62/1	DG "3B" 7 DAY FUEL OIL TANK	U3 DG	565	DG B	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7109		21	3-TNK-18-62/2	DG "3B" 7 DAY FUEL OIL TANK	U3 DG	565	DG B	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
7110		21	3-TNK-18-62/3	DG "3B" 7 DAY FUEL OIL TANK	U3 DG	565	DG B	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7111		21	3-TNK-86-650B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7112		21	3-TNK-86-651B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7113		21	3-TNK-86-652B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7114		21	3-TNK-86-653B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7115		21	3-TNK-86-654B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7116		21	3-TNK-86-655B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7117		21	3-TNK-86-656B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7118		21	3-TNK-86-657B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7119		21	3-TNK-86-658B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7120		21	3-TNK-86-659B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
7121		09	3-FAN-30-232	DG ROOM 3B EXHAUST FAN "A"	U3 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7122		10	3-FCO-30-232A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3B"	U3 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7123		10	3-FCO-30-232B	INLET DAMPER FOR FAN "A" IN DG ROOM "3B"	U3 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
7124		10	3-FCO-30-232C	INLET DAMPER FOR FAN "A" IN DG ROOM "3B"	U3 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
8001		06	0-PMP-23-005	RHRSW PUMP A2	INTAKE	565	A	565	YES	BS	GRS	YES	YES	NO	YES	NO	JRD/RDA	
8004		08A	1-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U1 RB	565	R2/U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	JRD/BCB	6
8005		08A	2-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U2 RB	565	R9/U	565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8006		08A	3-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U3 RB	565	R17/T	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8007		06	0-PMP-23-012	RHRSW PUMP C2	INTAKE	565	C	565	YES	BS	GRS	YES	YES	NO	YES	NO	JRD/RDA	
8010		08A	1-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U1 RB	565	R2/U	569	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8011		08A	2-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U2 RB	565	R9/U	565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8012		08A	3-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U3 RB	565	R17/T	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8013		06	0-PMP-23- 19	RHRSW PUMP B2	INTAKE	565	B	565	YES	BS	GRS	YES	YES	NO	YES	NO	JRD/RDA	
8016		08A	1-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U1 RB	565	R5/T	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8017		08A	2-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U2 RB	565	R13/U	577	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8018		08A	3-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U3 RB	565	R19/U	568	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8019		06	0-PMP-23-027	RHRSW PUMP D2	INTAKE	565	D	565	YES	BS	GRS	YES	YES	NO	YES	NO	JRD/RDA	
8022		08A	1-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U1 RB	565	R5/T	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8023		08A	2-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U2 RB	565	R13/U	577	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8024		08A	3-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U3 RB	565	R19/U	568	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8025		08A	1-FCV-23-57	RHR/RHRSW CROSS CONNECT VALVE	U1 RB	565	R6/S	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8026		08A	2-FCV-23-57	RHR/RHRSW CROSS CONNECT VALVE	U2 RB	565	R13/T	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
8027		ROB	2-FI-23-36	RHRSW HX A FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
8027	B	ROB	2-FT-23-36	RHRSW HX A FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
8027	C	ROB	2-FM-23-36	RHRSW HX A FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
8027	D	ROB	2-FS-90-133B	RHRSW HX A FLOW SWITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
8028		ROB	2-FI-23-42	RHRSW HX C FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
8028	B	ROB	2-FT-23-42	RHRSW HX C FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
8028	C	ROB	2-FM-23-42	RHRSW HX C FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
8028	D	ROB	2-FS-90-133C	RHRSW HX C FLOW SWITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
8029		ROB	2-FI-23-48	RHRSW HX B FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
8029	B	ROB	2-FT-23-48	RHRSW HX B FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
8029	C	ROB	2-FM-23-48	RHRSW HX B FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
8029	D	ROB	2-FS-90-134B	RHRSW HX B FLOW SWITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
8029	E	ROB	2-BKR-329	RHRSW HX B FLOW INDICATION BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
8030		ROB	2-FI-23-54	RHRSW HX D FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
8030	B	ROB	2-FT-23-54	RHRSW HX D FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
8030	C	ROB	2-FM-23-54	RHRSW HX D FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
8030	D	ROB	2-FS-90-134C	RHRSW HX D FLOW SWITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
9001		04	2-XFA-231-TS2A	4KV/480V XFMR TS2A	U2 RB	621	T/R13	621	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9002		04	2-XFA-231-TS2B	4KV/480V XFMR TS2B	U2 RB	621	T/R14	621	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9003		04	3-XFA-231-TS3A	4KV/480V XFMR TS3A	U3 RB	621	S/R20	621	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9004		04	0-OXF-219-TDA	4KV/480V XFMR TDA	U1/2 DG	583	T/R1	583	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9005		04	0-OXF-219-TDB	4KV/480V XFMR TDB	U1/2 DG	583	P/R1	583	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9006		04	2-XFA-253-0002A1	480V-120/208V XFMR FOR I&C BUS 2A	U2 RB	621	P/R13	621	NO	GERS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9007		04	2-XFA-253-0002A2	208V/120V REG XFMR FOR I&C BUS 2A	U2 RB	621	P/R13	627	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9008		04	2-XFA-253-0002B1	480V-120/208V XFMR FOR I&C BUS 2B	U2 RB	593	R/R13	593	YES	GERS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9009		04	2-XFA-253-0002B2	208V/120V REG XFMR FOR I&C BUS 2B	U2 RB	593	R/R13	596	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9010		14	2-JBOX-253-7193	I&C BUS BREAKER BOX BUS 2A	U2 RB	621	P/R13	627	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9011		14	2-JBOX-253-7196	I&C BUS BREAKER BOX BUS 2B	U2 RB	593	P/R10	599	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9012		03	0-BDAA-211-0000A	4KV SHDN BD A	U1 RB	621	R/R2	621	NO	ABS	RRS	YES	YES	YES	NO	NO	FRB/JOD	
9013		03	0-BDAA-211-0000B	4KV SHDN BD B	U1 RB	593	Q/R2	593	YES	BS	GRS	YES	YES	YES	NO	NO	FRB/JOD	
9014		03	0-BDAA-211-0000C	4KV SHDN BD C	U2 RB	621	R/R13	621	NO	ABS	RRS	YES	YES	YES	NO	NO	FRB/JOD	
9015		03	0-BDAA-211-0000D	4KV SHDN BD D	U2 RB	593	Q/R13	593	YES	BS	GRS	YES	YES	YES	NO	NO	FRB/JOD	
9016		03	3-BDAA-211-0003EA	4KV SHDN BD 3EA	U3 DG	583	4KV SD BD	583	YES	BS	GRS	YES	YES	NO	YES	NO	FRB/JOD	
9017		03	3-BDAA-211-0003EB	4KV SHDN BD 3EB	U3 DG	565	4KV SD BD	565	YES	BS	GRS	YES	YES	NO	YES	NO	FRB/JOD	
9018		02	1-BDBB-231-0001A	480V SHDN BD 1A	U1 RB	621	S/R1	621	NO	ABS	RRS	YES	YES	NO	NO	NO	FRB/JOD	
9019		02	1-BDBB-231-0001B	480V SHDN BD 1B	U1 RB	621	S/R2	621	NO	ABS	RRS	YES	YES	NO	NO	NO	FRB/JOD	
9020		02	2-BDBB-231-0002A	480V SHDN BD 2A	U2 RB	621	S/R13	621	NO	ABS	RRS	YES	YES	YES	NO	NO	FRB/JOD	
9021		02	2-BDBB-231-0002B	480V SHDN BD 2B	U2 RB	621	S/R14	621	NO	ABS	RRS	YES	YES	YES	NO	NO	FRB/JOD	
9022		02	3-BDBB-231-0003A	480V SHDN BD 3A	U3 RB	621	S/R20	621	NO	ABS	RRS	YES	YES	NO	YES	NO	FRB/JOD	
9023		01	1-BDBB-268-0001A	480V RMOV BD 1A	U1 RB	621	R/R1	621	NO	ABS	RRS	NO	YES	NO	YES	NO	FRB/JOD	
9024		01	1-BDBB-268-0001B	480V RMOV BD 1B	U1 RB	593	R/R1	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9025		01	2-BDBB-268-0002A	480V RMOV BD 2A	U2 RB	621	R/R14	621	NO	ABS	RRS	NO	YES	NO	YES	NO	FRB/JOD	
9026		01	2-BDBB-268-0002B	480V RMOV BD 2B	U2 RB	593	R/R14	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9027		01	2-BDBB-268-0002D	480V RMOV BD 2D	U2 RB	593	T/R11	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9028		01	2-BDBB-268-0002E	480V RMOV BD 2E	U2 RB	621	U/R8	621	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
9031		01	0-BDBB-219-0000A	480V DSL AUX BD A	U1/2 DG	583	480V AUX BD	583	YES	ABS	RRS	NO	YES	YES	YES	NO	FRB/JOD	
9032		01	0-BDBB-219-0000B	480V DSL AUX BD B	U1/2 DG	583	480V AUX BD	583	YES	ABS	RRS	NO	YES	YES	YES	NO	FRB/JOD	
9033		01	3-BDBB-219-0003EA	480V DSL AUX BD 3EA	U3 DG	583	480V AUX BD	583	YES	ABS	RRS	NO	YES	YES	YES	NO	FRB/JOD	
9034		01	2-BDBB-281-0002A	250V RMOV BD 2A	U2 RB	621	Q/R14	621	NO	ABS	RRS	NO	YES	NO	YES	NO	FRB/JOD	
9035		01	2-BDBB-281-0002B	250V RMOV BD 2B	U2 RB	593	Q/R14	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9036		01	2-BDBB-281-0002C	250V RMOV BD 2C	U2 RB	565	Q/R8	565	YES	BS	GRS	YES	YES	YES	NO	NO	FRB/JOD	
9037		14	0-BDDD-280-0001	250V BATTERY BD 1	U1 RB	593	P/R4	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/RDA	
9038		14	0-BDDD-280-0002	250V BATTERY BD 2	U2 RB	593	P/R10	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/RDA	
9039		14	0-BDDD-280-0003	250V BATTERY BD 3	U3 RB	593	P/R18	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/RDA	
9040		20	2-PNLA-009-0003A	PANEL 9-3A	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	NO	YES	NO	NO	FRB/JOD	
9041		20	2-PNLA-009-0003B	PANEL 9-3B	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9042		20	2-PNLA-009-0004	PANEL 9-4	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9043		20	2-PNLA-009-0005	PANEL 9-5	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9044		20	2-PNLA-009-0006	PANEL 9-6	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9045		20	2-PNLA-009-0009	PANEL 9-9	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	YES	YES	NO	NO	FRB/JOD	
9046		20	2-PNLA-009-0015	PANEL 9-15	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9047		20	2-PNLA-009-0017	PANEL 9-17	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9048		20	2-PNLA-009-0018	PANEL 9-18	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9049		20	2-PNLA-009-0019	PANEL 9-19	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9050		20	2-PNLA-009-0021	PANEL 9-21	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	NO	YES	NO	NO	FRB/JOD	
9051		20	0-PNLA-009-0023/7	PANEL 0-9-23-7	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	NO	YES	NO	NO	FRB/JOD	
9052		20	0-PNLA-009-0023/8	PANEL 0-9-23-8	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	NO	YES	YES	NO	FRB/JOD	
9053		20	3-PNLA-009-0023A	PANEL 3-9-23A	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9054		20	3-PNLA-009-0023B	PANEL 3-9-23B	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9055		20	3-PNLA-009-0023C	PANEL 3-9-23C	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9056		20	3-PNLA-009-0023D	PANEL 3-9-23D	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9057		20	0-PNLA-009-0028	PANEL 9-28	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9058		20	2-PNLA-009-0030	PANEL 9-30	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9059		20	2-PNLA-009-0032	PANEL 9-32	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9060		20	2-PNLA-009-0033	PANEL 9-33	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9061		20	2-PNLA-009-0039	PANEL 9-39	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9062		20	2-PNLA-009-0042	PANEL 9-42	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9063		20	2-PNLA-009-0043	PANEL 9-43	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9064		20	2-PNLA-009-0054	PANEL 9-54	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	YES	YES	NO	NO	FRB/JOD	
9065		20	2-PNLA-009-0055	PANEL 9-55	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	YES	YES	NO	NO	FRB/JOD	
9066		20	2-PNLA-009-0081	PANEL 9-81	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/BCB	
9067		20	2-PNLA-009-0082	PANEL 9-82	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/BCB	
9068		20	2-PNLA-009-0083	PANEL 9-83	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/BCB	
9069		20	2-PNLA-009-0084	PANEL 9-84	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/BCB	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
9070		20	2-PNLA-009-0085	PANEL 9-85	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/BCB	
9071		20	2-PNLA-009-0086	PANEL 9-86	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/BCB	
9072		20	2-PNLA-009-0087	PANEL 9-87	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/FRB	
9073		20	2-PNLA-009-0088	PANEL 9-88	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/FRB	
9074		20	2-LPNL-925-0031	PANEL 25-31	U2 RB	621	Q/R13	621	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9075		20	2-LPNL-925-0032	PANEL 25-32	U2 RB	621	Q/R13	621	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9076		20	0-LPNL-925-0041A	PANEL 25-41A	U1/2 DG	583	NORTH END	583	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9077		20	0-LPNL-925-0041B	PANEL 25-41B	U1/2 DG	583	NORTH END	583	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9078		20	0-LPNL-925-0041C	PANEL 25-41C	U1/2 DG	583	NORTH END	583	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9079		20	0-LPNL-925-0041D	PANEL 25-41D	U1/2 DG	583	NORTH END	583	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9080		20	0-LPNL-925-0042A1	PANEL 25-42A1	U2 RB	621	R/R14	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JOD/FRB	
9081		20	0-LPNL-925-0042A2	PANEL 25-42A2	U2 RB	621	R/R14	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JOD/FRB	
9082		20	0-LPNL-925-0042B1	PANEL 25-42B1	U2 RB	621	Q/R14	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JOD/FRB	
9083		20	0-LPNL-925-0042B2	PANEL 25-42B2	U2 RB	621	Q/R14	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JOD/FRB	
9084		20	0-LPNL-925-0043A1	PANEL 25-43A1	U1/2 DG	583	HALLWAY	586	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9085		20	0-LPNL-925-0043A2	PANEL 25-43A2	U1/2 DG	583	HALLWAY	586	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9086		20	0-LPNL-925-0043B1	PANEL 25-43B1	U1/2 DG	583	HALLWAY	586	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9087		20	0-LPNL-925-0043B2	PANEL 25-43B2	U1/2 DG	583	HALLWAY	586	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9088		20	2-LPNL-925-044A/11	PANEL 25-44A11	U2 RB	621	S/R13	626	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9089		20	2-LPNL-925-044A/12	PANEL 25-44A12	U2 RB	621	S/R14	626	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9090		20	2-LPNL-925-044B/11	PANEL 25-44B11	U2 RB	621	S/R13	626	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9091		20	2-LPNL-925-044B/12	PANEL 25-44B12	U2 RB	621	S/R14	626	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9092		20	0-LPNL-925-0045A	PANEL 25-45A	U1 RB	621	R/R2	628	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9093		20	0-LPNL-925-0045B	PANEL 25-45B	U1 RB	593	R/R2	600	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9094		20	0-LPNL-925-0045C	PANEL 25-45C	U2 RB	621	R/R13	628	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9095		20	0-LPNL-925-0045D	PANEL 25-45D	U2 RB	593	R/R13	600	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9096		20	0-LPNL-925-0046A	PANEL 25-46A	U1/2 DG	565	DG A	566	YES	BS	GRS	YES	NO	YES	YES	NO	FRB/JOD	
9097		20	0-LPNL-925-0046B	PANEL 25-46B	U1/2 DG	565	DG B	566	YES	BS	CRS	YES	NO	YES	YES	NO	FRB/JOD	
9098		20	0-LPNL-925-0046C	PANEL 25-46C	U1/2 DG	565	DG C	566	YES	BS	GRS	YES	NO	YES	YES	NO	FRB/JOD	
9099		20	0-LPNL-925-0046D	PANEL 25-46D	U1/2 DG	565	DG D	566	YES	BS	GRS	YES	NO	YES	YES	NO	FRB/JOD	
9100		20	0-LPNL-925-0047A	PANEL 0-25-47A	U1/2 DG	565	DG A	566	YES	BS	GRS	YES	NO	YES	YES	NO	FRB/JOD	
9101		20	0-LPNL-925-0047B	PANEL 0-25-47B	U1/2 DG	565	DG B	566	YES	BS	GRS	YES	NO	YES	YES	NO	FRB/JOD	
9102		20	0-LPNL-925-0047C	PANEL 0-25-47C	U1/2 DG	565	DG C	566	YES	BS	GRS	YES	NO	YES	YES	NO	FRB/JOD	
9103		20	0-LPNL-925-0047D	PANEL 0-25-47D	U1/2 DG	565	DG D	566	YES	BS	GRS	YES	NO	YES	YES	NO	FRB/JOD	
9104		20	3-LPNL-925-0047A	PANEL 3-25-47A	U3 DG	565	DG A	566	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9105		20	3-LPNL-925-0047B	PANEL 3-25-47B	U3 DG	565	DG B	566	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9106		20	3-LPNL-925-0047C	PANEL 3-25-47C	U3 DG	565	DG C	566	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9107		20	3-LPNL-925-0047D	PANEL 3-25-47D	U3 DG	565	DG D	566	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9108		20	0-PNLA-082-0000A	DG A ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG A	566	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
9109		20	0-PNLA-082-0000B	DG B ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG B	566	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9110		20	0-PNLA-082-0000C	DG C ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG C	566	YES	BS	GRS	YES	NO	YES	YES	NO	FRB/JOD	
9111		20	0-PNLA-082-0000D	DG D ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG D	566	YES	BS	GRS	YES	NO	YES	YES	NO	FRB/JOD	
9112		20	3-PNLA-082-00003A	DG 3A ELECTRICAL CONTROL CABINET	U3 DG	565	DG A	565	YES	BS	GRS	YES	YES	NO	NO	NO	FRB/JOD	
9113		20	3-PNLA-082-00003B	DG 3B ELECTRICAL CONTROL CABINET	U3 DG	565	DG B	565	YES	BS	GRS	YES	YES	NO	NO	NO	FRB/JOD	
9114		16	2-INV-256-0001	DIVISION I ECCS ATU INVERTER	U2 RB	593	Q/R14	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9115		16	2-INV-256-0002	DIVISION II ECCS ATU INVERTER	U2 RB	621	P/R14	621	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9116		14	0-XSW-248-0001	250V MAIN BATT CHGR OUTPUT XFR SW 1	U1 RB	593	P/R4	598	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/RDA	
9117		14	0-XSW-248-0002A	250V MAIN BATT CHGR OUTPUT XFR SW 2A	U2 RB	593	P/R9	598	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/RDA	
9118		14	0-XSW-248-0003	250V MAIN BATT CHGR OUTPUT XFR SW 3	U3 RB	593	P/R16	598	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/RDA	
9119		15	0-BATA-248-0000A	250V BATTERY SB-A	U1 RB	621	S/R2	621	NO	GERS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9120		14	0-PNLA-248-0000A	250V DISTRIBUTION PANEL SB-A	U1 RB	621	S/R2	621	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9121		16	0-CHGA-248-0000A	250V BATTERY CHARGER SB-A	U1 RB	621	S/R2	621	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9122		15	0-BATA-248-0000B	250V BATTERY SB-B	U1 RB	621	S/R2	621	NO	GERS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9123		14	0-PNLA-248-0000B	250V DISTRIBUTION PANEL SB-B	U1 RB	621	S/R2	621	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9124		16	0-CHGA-248-0000B	250V BATTERY CHARGER SB-B	U1 RB	621	S/R2	621	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9125		15	0-BATA-248-0000C	250V BATTERY SB-C	U2 RB	621	S/R13	621	NO	GERS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9126		14	0-PNLA-248-0000C	250V DISTRIBUTION PANEL SB-C	U2 RB	621	S/R13	621	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9127		16	0-CHGA-248-0000C	250V BATTERY CHARGER SB-C	U2 RB	621	S/R13	621	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9128		15	0-BATA-248-0000D	250V BATTERY SB-D	U2 RB	621	S/R13	621	NO	GERS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9129		14	0-PNLA-248-0000D	250V DISTRIBUTION PANEL SB-D	U2 RB	621	S/R13	621	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9130		16	0-CHGA-248-0000D	250V BATTERY CHARGER SB-D	U2 RB	621	S/R13	621	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9131		15	3-BATA-248-0003EB	250V BATTERY SB-3EB	U3 DG	583	SE CORNER	583	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9132		14	3-PNLA-248-0003EB	250V DISTRIBUTION PANEL SB-3EB	U3 DG	583	SE CORNER	583	YES	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9133		16	3-CHGA-248-0003EB	250V BATTERY CHARGER SB-3EB	U3 DG	583	SE CORNER	583	YES	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
9134		16	0-CHGA-248-0001	250V BATTERY CHARGER 1	U1 RB	593	P/R4	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/RDA	
9135		16	0-CHGA-248-0002A	250V BATTERY CHARGER 2A	U2 RB	593	P/R9	593	YES	BS	GRS	YES	NO	YES	NO	NO	FRB/RDA	
9136		16	0-CHGA-248-0003	250V BATTERY CHARGER 3	U3 RB	593	P/R18	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/RDA	
9137		15	0-BATA-248-0001	250V MAIN BATTERY 1	U1 RB	593	P/R4	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9138		15	0-BATA-248-0002	250V MAIN BATTERY 2	U2 RB	593	P/R9	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9139		15	0-BATA-248-0003	250V MAIN BATTERY 3	U3 RB	593	P/R18	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9140		13	2-MGEN-268-0002DN	LPCI M-G SET 2DN	U2 RB	621	U/R13	621	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9141		13	2-MGEN-268-0002EN	LPCI M-G SET 2EN	U2 RB	639	U/R14	639	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9142		15	0-BATB-254-0000A	125V DC DSL BATT A	U1/2 DG	565	DG A	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9143		15	0-BATB-254-0000B	125V DC DSL BATT B	U1/2 DG	565	DG B	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9144		15	0-BATB-254-0000C	125V DC DSL BATT C	U1/2 DG	565	DG C	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9145		15	0-BATB-254-0000D	125V DC DSL BATT D	U1/2 DG	565	DG D	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9146		14	0-BDGG-254-0000A	125V DC DSL BATT BD A	U1/2 DG	565	DG A	569	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9147		14	0-BDGG-254-0000B	125V DC DSL BATT BD B	U1/2 DG	565	DG B	569	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
9148		14	0-BDGG-254-0000C	125V DC DSL BATT BD C	U1/2 DG	565	DG C	569	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9149		14	0-BDGG-254-0000D	125V DC DSL BATT BD D	U1/2 DG	565	DG D	569	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9150		16	0-CHGB-254-0000AA	125V DSL GEN A BATT CHGR A	U1/2 DG	565	DG A	571	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9151		16	0-CHGB-254-0000BA	125V DSL GEN B BATT CHGR A	U1/2 DG	565	DG B	571	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9152		16	0-CHGB-254-0000CB	125V DSL GEN C BATT CHGR B	U1/2 DG	565	DG C	571	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9153		16	0-CHGB-254-0000DB	125V DSL GEN D BATT CHGR B	U1/2 DG	565	DG D	571	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9154		15	3-BATB-254-0000A	125V DC DSL BATT 3A	U3 DG	565	DG A	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9155		15	3-BATB-254-0000B	125V DC DSL BATT 3B	U3 DG	565	DG B	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9156		14	3-BDGG-254-0003A	125V DC DSL BATT BD 3A	U3 DG	565	DG A	569	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9157		14	3-BDGG-254-0003B	125V DC DSL BATT BD 3B	U3 DG	565	DG B	569	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9158		16	3-CHGB-254-0000AA	125V DC DSL 3A BATT CHGR A	U3 DG	565	DG A	571	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9159		16	3-CHGB-254-0000BA	125V DC DSL 3B BATT CHGR A	U3 DG	565	DG B	571	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/FRB	
9168		ROB	2-PX-64-67B	POWER SUPPLY (PNL 2-9-19 ; SUPPORTS 2-PI-64-67B)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9169		ROB	2-PX-71-60-1	ECCS ATU CAB 2-9-81 POWER SUPPLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9170		ROB	2-PX-71-60-1A	ECCS ATU CAB 2-9-81 POWER SUPPLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9171		ROB	2-PX-71-60-2	ECCS ATU CAB 2-9-82 POWER SUPPLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9172		ROB	2-PX-71-60-2A	ECCS ATU CAB 2-9-82 POWER SUPPLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9173		ROB	2-PX-64-159A	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9174		ROB	2-PX-64-160A	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9175		ROB	2-PXMC-23-114	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9176		ROB	2-PXMC-23-115	POWER SUPPLY (PNL 2-9-19)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9177		14	2-JBOX-253-7192	DISC SW BOX (I&C BUS A)	U2 RB	621	SD BD C	625	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9178		14	2-JBOX-253-7194	DISC SW BOX (I&C BUS A)	U2 CB	593	BATT BD 2	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9179		14	2-JBOX-253-7195	DISC SW BOX (I&C BUS B)	U2 RB	593	SD BD D	599	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9180		14	2-JBOX-253-7197	DISC SW BOX (I&C BUS B)	U2 CB	593	BATT BD 2	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
9181		14	2-JBOX-268-5990	MG SET 2DN CONTROL STATION (2-HS-268-0002DN)	U2 RB	621	U/R13	626	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9182		14	2-JBOX-268-5992	MG SET 2EN CONTROL STATION (2-HS-268-0002EN)	U2 RB	639	U/R14	643	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9183		20	2-PNLA-009-0093	CONTROL PANEL 9-93	U2 CB	593	U2 AIR	598	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9184		18	2-LPNL-925-005A	LOCAL PANEL 25-5A	U2 RB	593	S/R10	593	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9185		18	2-LPNL-925-005B	LOCAL PANEL 25-5B	U2 RB	593	S/R10	593	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9186		18	2-LPNL-925-005D	LOCAL PANEL 25-5D	U2 RB	593	S/R10	593	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9187		18	2-LPNL-925-006A	LOCAL PANEL 25-6A	U2 RB	593	P/R12	593	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9188		18	2-LPNL-925-006D	LOCAL PANEL 25-6D	U2 RB	593	P/R12	593	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9189		18	2-LPNL-925-0059	LOCAL PANEL 25-59	U2 RB	519	T/R8	519	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9190		18	2-LPNL-925-0062	LOCAL PANEL 25-62	U2 RB	519	T/R14	519	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9191		ROB	2-PX-74-56	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9192		ROB	2-PX-74-70	POWER SUPPLY (2-9-19)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9193		14	2-JBOX-256-9722	DIV I ECCS ATU INV FUSE BOX	U2 RB	593	Q/R14	600	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9194		04	1-XFA-231-TS1A	4KV/480V TRANSFORMER TS1A	U1 RB	621	T/R1	621	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
9195		18	2-HS-74-7B	LOCAL HS STATION	U2 RB	541	T/R9	541	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9196		14	2-JBOX-74-2255	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	T/R9	541	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9197		18	2-HS-74-57B	LOCAL HS STATION	U2 RB	519	TORUS	555	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9198		14	2-JBOX-74-2309	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	R/R8	555	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9199		18	2-HS-74-59B	LOCAL HS STATION	U2 RB	519	TORUS	555	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9201		18	2-HS-74-52B	LOCAL HS STATION	U2 RB	565	S/R10	585	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9202		14	2-JBOX-74-2134	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	T/R10	585	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9203		18	2-HS-74-53B	LOCAL HS STATION	U2 RB	565	T/R10	585	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9204		18	2-HS-74-60B	LOCAL HS STATION	U2 RB	565	S/R10	585	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9205		14	2-JBOX-74-2146	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	S/R10	572	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9207		18	2-HS-74-30B	LOCAL HS STATION	U2 RB	541	T/R13	541	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9208		14	2-JBOX-74-2296	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	T/R13	543	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9209		18	2-HS-74-71B	LOCAL HS STATION	U2 RB	519	TORUS	555	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9210		14	2-JBOX-74-2310	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	R/R14	555	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9212		18	2-HS-74-66B	LOCAL HS STATION	U2 RB	565	T/R11	585	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9213		14	2-JBOX-74-2132	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	T/R11	585	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9214		18	2-HS-74-67B	LOCAL HS STATION	U2 RB	565	T/R11	585	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9215		14	2-JBOX-75-1223	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593	P/R11	607	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9216		14	2-JBOX-74-2938	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593	S/R12	593	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9219		14	2-JBOX-70-2111	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	P/R13	558	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9220		18	2-HS-75-9B	LOCAL HS STATION	U2 RB	541	N/R9	545	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9221		14	2-JBOX-75-2237	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	N/R9	561	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9222		18	2-HS-75-25B	LOCAL HS STATION	U2 RB	593	P/R11	607	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9223		14	2-JBOX-75-1222	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593	P/R11	607	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9224		18	2-HS-75-37B	LOCAL HS STATION	U2 RB	519	N/R13	524	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9225		14	2-JBOX-75-2246	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	519	N/R13	524	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9226		18	2-HS-75-53B	LOCAL HS STATION	U2 RB	593	P/R11	607	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9227		18	2-HS-23-34B	LOCAL HS STATION	U2 RB	565	U/R9	565	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9228		14	2-JBOX-23-2115	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	U/R9	573	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
9229		18	2-HS-23-40B	LOCAL HS STATION	U2 RB	565	U/R9	565	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9230		18	2-HS-23-46B	LOCAL HS STATION	U2 RB	565	U/R13	571	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9231		14	2-JBOX-23-2116	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	U/R13	571	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/JRD	
9232		18	2-HS-23-52B	LOCAL HS STATION	U2 RB	565	U/R13	571	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9235		18	2-HS-74-0005B	LOCAL HS STATION - RHR PUMP 2A	U2 RB	519	U/R8	519	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9236		18	2-HS-74-0028B	LOCAL HS STATION - RHR PUMP 2B	U2 RB	519	U/R13	519	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9237		18	2-HS-74-0016B	LOCAL HS STATION - RHR PUMP 2C	U2 RB	519	U/R9	519	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9238		18	2-HS-74-0039B	LOCAL HS STATION - RHR PUMP 2D	U2 RB	519	U/R13	519	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9239		18	2-HS-75-0005B	LOCAL HS STATION - CS PUMP 2A	U2 RB	519	N/R8	522	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9240		18	2-HS-75-0033B	LOCAL HS STATION - CS PUMP 2B	U2 RB	519	N/R14	522	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
9241		18	2-HS-75-0014B	LOCAL HS STATION - CS PUMP 2C	U2 RB	519	N/R9	522	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9242		18	2-HS-75-0042B	LOCAL HS STATION - CS PUMP 2D	U2 RB	519	N/R14	522	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9243		18	0-HS-23-5B	LOCAL HS STATION - RHRSW PUMP A2	INTAKE	565	A	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9244		18	0-HS-23-85B	LOCAL HS STATION - RHRSW PUMP A3	INTAKE	565	A	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9245		18	0-HS-23-19B	LOCAL HS STATION - RHRSW PUMP B2	INTAKE	565	B	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9246		18	0-HS-23-88B	LOCAL HS STATION - RHRSW PUMP B3	INTAKE	565	B	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9247		18	0-HS-23-12B	LOCAL HS STATION - RHRSW PUMP C2	INTAKE	565	C	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9248		18	0-HS-23-91B	LOCAL HS STATION - RHRSW PUMP C3	INTAKE	565	C	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9249		18	0-HS-23-27B	LOCAL HS STATION - RHRSW PUMP D2	INTAKE	565	D	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9250		18	0-HS-23-94B	LOCAL HS STATION - RHRSW PUMP D3	INTAKE	565	D	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9251		20	2-JBOX-268-5951	MG SET 2DN CONTROL BOX	U2 RB	621	U/R13	625	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9252		20	2-JBOX-268-5953	MG SET 2EN CONTROL BOX	U2 RB	639	U/R14	644	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9253		14	NONE	LPCI MG SET 2DN VOLTAGE REGULATOR BOX	U2 RB	621	480V BD 2A	625	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/JRD	
9254		14	NONE	LPCI MG SET 2EN VOLTAGE REGULATOR BOX	U2 RB	621	480V BD 2A	625	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
9255		14	0-JBOX-30-0840	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM A	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9256		18	0-HS-30-64	LOCAL HS STATION - DG A EXH FAN A	U1/2 DG	583	ELEC BD A	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9257		14	0-JBOX-30-1817	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM A	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9258		18	0-HS-30-65	LOCAL HS STATION - DG A EXH FAN B	U1/2 DG	583	ELEC BD A	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9259		14	0-JBOX-30-1825	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM B	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9260		18	0-HS-30-66	LOCAL HS STATION - DG B EXH FAN A	U1/2 DG	583	ELEC BD A	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9261		14	0-JBOX-30-1826	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM B	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9262		18	0-HS-30-67	LOCAL HS STATION - DG B EXH FAN B	U1/2 DG	583	ELEC BD A	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9263		14	0-JBOX-30-1828	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM C	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9264		18	0-HS-30-69	LOCAL HS STATION - DG C EXH FAN B	U1/2 DG	583	ELEC BD B	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9265		14	0-JBOX-30-1827	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM C	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9266		18	0-HS-30-68	LOCAL HS STATION - DG C EXH FAN A	U1/2 DG	583	ELEC BD B	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9267		14	0-JBOX-30-1830	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM D	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9268		18	0-HS-30-71	LOCAL HS STATION - DG D EXH FAN B	U1/2 DG	583	ELEC BD B	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9269		14	0-JBOX-30-1829	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM D	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9270		18	0-HS-30-70	LOCAL HS STATION - DG D EXH FAN A	U1/2 DG	583	ELEC BD B	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9271		14	3-JBOX-30-4239	JUNCTION BOX (TERM BLOCK)	U3 DG	583	FAN RM 3A	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9272		18	3-HS-30-230	LOCAL HS STATION - DG 3A EXH FAN A	U3 DG	583	ELEC BD 3EA	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9273		14	3-JBOX-30-4241	JUNCTION BOX (TERM BLOCK)	U3 DG	583	FAN RM 3B	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9274		18	3-HS-30-232	LOCAL HS STATION - DG 3B EXH FAN A	U3 DG	583	ELEC BD 3EA	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9275		ROB	2-PX-64-159B	POWER SUPPLY (PNL 9-19)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9276		ROB	2-PX-64-160B	POWER SUPPLY (PNL 9-19)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9277		ROB	2-PX-64-50	POWER SUPPLY (PNL 25-32)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9278		ROB	2-PX-64-161	POWER SUPPLY (PNL 9-87)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9279		ROB	2-PX-64-162	POWER SUPPLY (PNL 9-88)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
9280		18	2-LPNL-925-0001	PANEL 25-0001	U2 RB	519	NW CORNER	519	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9281		18	2-LPNL-925-0060	PANEL 25-60	U2 RB	519	NE CORNER	519	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
9282		04	1-XFA-231-TS1B	4KV/480V TRANSFORMER TS1B	U1 RB	621	T/R1	621	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
9283		13	2-MGEN-268-0002DA	LPCI MG SET 2DA	U2 RB	639	U/R14	639	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9284		14	NONE	MG SET 2DA VOLTAGE REGULATOR BOX	U2 RB	621	480V SD 2	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9285		14	2-JBOX-268-5991	MG SET 2DA CONTROL STATION (2-HS-268-0002DA)	U2 RB	639	U/R14	644	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9286		20	2-JBOX-268-5952	MG SET 2DA CONTROL BOX (RELAYS)	U2 RB	639	U/R14	644	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9287		13	2-MGEN-268-0002EA	LPCI MG SET 2EA	U2 RB	621	U/R14	621	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9288		14	NONE	MG SET 2EA VOLTAGE REGULATOR BOX	U2 RB	621	480V BD 2A	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9289		14	2-JBOX-268-5993	MG SET 2EA CONTROL STATION (2-HS-268-0002EA)	U2 RB	621	U/R14	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9290		20	2-JBOX-268-5954	MG SET 2EA CONTROL BOX (RELAYS)	U2 RB	621	U/R14	625	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9291		20	0-ECAB-067-0925	EECW PUMP DISCHARGE STRAINER A CONTROL PANEL	INTAKE	565	A	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9292		20	0-ECAB-067-0926	EECW PUMP DISCHARGE STRAINER B CONTROL PANEL	INTAKE	565	B	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9293		20	0-ECAB-067-0927	EECW PUMP DISCHARGE STRAINER C CONTROL PANEL	INTAKE	565	C	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9294		20	0-ECAB-067-0928	EECW PUMP DISCHARGE STRAINER D CONTROL PANEL	INTAKE	565	D	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9295		20	2-ECAB-099-0002A1	RPS CIRCUIT PROTECTOR CABINET 2A1	U2 RB	593	BATT BD 2	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9296		20	2-ECAB-099-0002A2	RPS CIRCUIT PROTECTOR CABINET 2A2	U2 RB	593	BATT BD 2	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9297		20	2-ECAB-099-0002B1	RPS CIRCUIT PROTECTOR CABINET 2B1	U2 RB	593	BATT BD 2	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9298		20	2-ECAB-099-0002B2	RPS CIRCUIT PROTECTOR CABINET 2B2	U2 RB	593	BATT BD 2	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9299		20	2-ECAB-099-0002C1	RPS CIRCUIT PROTECTOR CABINET 2C1	U2 RB	593	BATT BD 2	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9300		20	2-ECAB-099-0002C2	RPS CIRCUIT PROTECTOR CABINET 2C2	U2 RB	593	BATT BD 2	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9301		20	1-PNLA-009-0054	PANEL 1-9-54	U1 CB	617	U1 MCR	617	NO	ABS	RRS	YES	YES	YES	NO	NO	FRB/KHG	
9302		20	1-PNLA-009-0055	PANEL 1-9-55	U1 CB	617	U1 MCR	617	NO	ABS	RRS	YES	YES	YES	NO	NO	FRB/KHG	
9303		20	0-LPNL-925-0246A	PANEL 25-246A (CAD N2 SUPPLY PNL A)	YARD	565	YARD	565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/ACR	
9304		20	0-LPNL-925-0246B	PANEL 25-246B (CAD N2 SUPPLY PNL B)	YARD	565	YARD	565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/ACR	
9305		18	2-LPNL-925-247A	LOCAL PANEL 2-25-247A (CAD DRYWELL & SUPP. CHAM. V.)	U2 RB	621	Q/R11	626	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/KHG	
9306		01	2-BDBB-265-0002B	480V RB VENT BD 2B	U2 RB	565	U/R11	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
9307		20	2-PNLA-009-0036A	PANEL 2-9-36A	U2 CB	593	U2 AIR	593	YES	BS	GRS	YES	NO	YES	NO	NO	FRB/KHG	
9308		18	2-LPNL-925-0247B	LOCAL PANEL 2-25-247B (CAD N2 SUPPLY PANEL B)	U2 RB	621	Q/R12	626	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/KHG	
9309		20	1-PNLA-009-0020	PANEL 1-9-20	U1 CB	617	U1 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/KHG	
9310		20	2-PNLA-009-0020	PANEL 2-9-20	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	NO	YES	YES	NO	FRB/KHG	
9311		20	NONE	CO2 RELAY PNL FOR 39-10	U1/2 DG	565	DG D	569	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/ACR	
9312		20	NONE	CO2 RELAY PNL FOR 39-7	U1/2 DG	565	DG A	569	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/ACR	
9313		20	NONE	CO2 RELAY PNL FOR 39-8	U1/2 DG	565	DG B	569	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/ACR	
9314		20	NONE	CO2 RELAY PNL FOR 39-9	U1/2 DG	565	DG C	569	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/ACR	
9315		20	1-LPNL-925-0032	LOCAL PANEL 1-25-32	U1 RB	621	Q/R2	621	NO	ABS	RRS	YES	NO	YES	NO	NO	FRB/KHG	
9316		18	1-LPNL-925-0223	LOCAL PANEL 1-25-233	U1 RB	593	Q/R2	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
9317		20	2-PNLA-009-0008	PANEL 2-9-8	U2 CB	617	U2 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/KHG	
9318		20	1-PNLA-009-0003	PANEL 1-9-3	U1 CB	617	U1 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/KHG	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
9319		18	2-LPNL-925-0223	LOCAL PANEL 2-25-223	U2 RB	593	Q/R12	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
9320		18	2-LPNL-925-0007A	LOCAL PANEL 2-25-7A	U2 RB	541	SW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
9321		18	2-LPNL-925-0007B	LOCAL PANEL 2-25-7B	U2 RB	541	SW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
9322		18	0-HS-67-48B	HANDSWITCH FOR 0-FCV-67-48 (4058)	INTAKE	565	D	565	YES	BS	GRS	NO	NO	NO	YES	NO	JRD/ACR	
9323		18	0-HS-67-49B	HANDSWITCH FOR 0-FCV-67-49 (4015)	INTAKE	565	C	569	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/ACR	
9324		18	2-HS-73-81B	HANDSWITCH FOR 2-FCV-73-81 (3043)	U2 RB	519	TORUS	561	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9325		18	1-HS-23-34B	HANDSWITCH FOR 1-FCV-23-034 (8004)	U1 RB	565	R2/U	565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9326		18	1-HS-23-40B	HANDSWITCH FOR 1-FCV-23-040 (8010)	U1 RB	565	R2/U	565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9327		14	1-HS-23-46B	HANDSWITCH FOR 1-FCV-23-046 (8016)	U1 RB	565	R5/T	580	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9328		14	1-HS-23-52B	HANDSWITCH FOR 1-FCV-23-052 (8022)	U1 RB	565	R5/T	580	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9329		14	1-HS-23-57B	HANDSWITCH FOR 1-FCV-23-57 (8025)	U1 RB	565	R6/S	569	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9330		14	2-HS-74-100B	HANDSWITCH FOR 2-FCV-74-100 (1010)	U2 RB	565	R8/T	577	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9331		14	2-HS-74-99B	HANDSWITCH FOR 2-FCV-74-99 (1041)	U2 RB	519	SE CORNER	523	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9332		18	2-HS-64-68	HANDSWITCH FOR 2-CLR-67-917 (4006)	U2 RB	519	SW CORNER	541	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9333		18	2-HS-64-69	HANDSWITCH FOR 2-CLR-67-918 (4049)	U2 RB	519	SE CORNER	541	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9334		18	2-HS-64-70	HANDSWITCH FOR 2-CLR-67-921 (4008)	U2 RB	519	SW CORNER	541	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9335		18	2-HS-64-71	HANDSWITCH FOR 2-CLR-67-922 (4051)	U2 RB	519	SE CORNER	541	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9336		14	2-HS-64-72	HANDSWITCH FOR 2-CLR-67-919 (4007)	U2 RB	519	NW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9337		14	2-HS-64-73	HANDSWITCH FOR 2-CLR-67-920 (4050)	U2 RB	519	NE CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9338		14	2-HS-69-2B	HANDSWITCH FOR 2-FCV-69-2 (3034)	U2 RB	593	R10/S	597	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9340		20	2-HS-71-2B	HANDSWITCH FOR 2-FCV-71-2 (3038)	U2 RB	593	R/R14	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9342		18	2-HS-73-3B	HANDSWITCH FOR 2-FCV-73-3 (3042)	U2 RB	519	TORUS	561	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9343		14	2-HS-74-12B	HANDSWITCH FOR 2-FCV-74-12 (1011)	U2 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9344		14	2-HS-74-13B	HANDSWITCH FOR 2-FCV-74-13 (1012)	U2 RB	519	SE CORNER	544	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9345		14	2-HS-74-1B	HAND SWITCH FOR 2-FCV-74-1 (1001)	U2 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9346		14	2-HS-74-24B	HANDSWITCH FOR 2-FCV-74-24 (1029)	U2 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9347		18	2-HS-74-25B	HANDSWITCH FOR 2-FCV-74-25 (1030)	U2 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9348		14	2-HS-74-2B	HANDSWITCH FOR 2-FCV-74-2 (1002)	U2 RB	519	SW CORNER	544	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9349		14	2-HS-74-35B	HANDSWITCH FOR 2-FCV-74-35 (1039)	U2 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9350		18	2-HS-74-36B	HANDSWITCH FOR 2-FCV-74-36 (1040)	U2 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9351		18	2-HS-74-73B	HANDSWITCH FOR 2-FCV-74-73 (1049)	U2 RB	519	TORUS	561	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9352		14	2-HS-74-96B	HANDSWITCH FOR 2-FCV-74-96 (1003)	U2 RB	519	SW CORNER	523	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9353		14	2-HS-74-97B	HANDSWITCH FOR 2-FCV-74-97 (1013)	U2 RB	519	SW CORNER	523	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9354		14	2-HS-74-98B	HANDSWITCH FOR 2-FCV-74-98 (1031)	U2 RB	519	SE CORNER	523	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9355		18	2-HS-75-11B	HANDSWITCH FOR 2-FCV-75-11 (5006)	U2 RB	519	NW CORNER	524	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9356		14	2-HS-75-22B	HANDSWITCH FOR 2-FCV-75-22 (5010)	U2 RB	519	NW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9357		14	2-HS-75-23B	HANDSWITCH FOR 2-FCV-75-23 (5012)	U2 RB	593	P/R10	608	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9358		18	2-HS-75-2B	HANDSWITCH FOR 2-FCV-75-2 (5001)	U2 RB	519	NW CORNER	524	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9359		18	2-HS-75-30B	HANDSWITCH FOR 2-FCV-75-30 (5015)	U2 RB	519	NE CORNER	524	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
9360		18	2-HS-75-39B	HANDSWITCH FOR 2-FCV-75-39 (5020)	U2 RB	519	NE CORNER	524	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9361		14	2-HS-75-50B	HANDSWITCH FOR 2-FCV-75-50 (5024)	U2 RB	519	NE CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9362		14	2-HS-75-51B	HANDSWITCH FOR 2-FCV-75-51 (5026)	U2 RB	593	P/R11	608	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9363		14	2-HS-78-61B	HANDSWITCH FOR 2-FCV-78-61 (1026)	U2 RB	621	R10/S	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9364		18	2-PS-67-50	PRESSURE SWITCH FOR 2-FCV-67-50 (4017)	U2 RB	593	P/R13	599	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
9365		18	2-PS-67-51	PRESSURE SWITCH FOR 2-FCV-67-51 (4060)	U2 RB	565	R13/T	580	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9366		18	2-TS-64-68	TEMPERATURE SWITCH FOR 2-CLR-67-917 (4006)	U2 RB	519	SW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9367		18	2-TS-64-69	TEMPERATURE SWITCH FOR 2-CLR-67-918 (4049)	U2 RB	519	SE CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9368		18	2-TS-64-70	TEMPERATURE SWITCH FOR 2-CLR-67-921 (4008)	U2 RB	519	SW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9369		18	2-TS-64-71	TEMPERATURE SWITCH FOR 2-CLR-67-922 (4051)	U2 RB	519	SE CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9370		18	2-TS-64-72	TEMPERATURE SWITCH FOR 2-CLR-67-919 (4007)	U2 RB	519	NW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9371		18	2-TS-64-73	TEMPERATURE SWITCH FOR 2-CLR-67-920 (4050)	U2 RB	519	NE CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9372		18	2-TS-1-17A	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	589	YES	ABS	RRS	YES	YES	YES	YES	YES	JOD/JRD	
9373		18	2-TS-1-17B	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	589	YES	ABS	RRS	YES	YES	YES	YES	YES	JOD/JRD	
9374		18	2-TS-1-17C	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	589	YES	ABS	RRS	YES	YES	YES	YES	YES	JOD/JRD	
9375		18	2-TS-1-17D	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	589	YES	ABS	RRS	YES	YES	YES	YES	YES	JOD/JRD	
9376		18	2-TS-1-29A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	580	YES	ABS	AGS	YES	YES	YES	YES	YES	JOD/JRD	
9377		18	2-TS-1-29B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	580	YES	ABS	AGS	YES	YES	YES	YES	YES	JOD/JRD	
9378		18	2-TS-1-29C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	580	YES	ABS	AGS	YES	YES	YES	YES	YES	JOD/JRD	
9379		18	2-TS-1-29D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	580	YES	ABS	AGS	YES	YES	YES	YES	YES	JOD/JRD	
9380		18	2-TS-1-40A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	600	NO	ABS	AGS	YES	YES	YES	YES	YES	JOD/JRD	
9381		18	2-TS-1-40B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	600	NO	ABS	AGS	YES	YES	YES	YES	YES	JOD/JRD	
9382		18	2-TS-1-40C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	600	NO	ABS	AGS	YES	YES	YES	YES	YES	JOD/JRD	
9383		18	2-TS-1-40D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	600	NO	ABS	AGS	YES	YES	YES	YES	YES	JOD/JRD	
9384		18	2-TS-1-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	623	NO	ABS	AGS	YES	YES	YES	YES	YES	JOD/JRD	
9385		18	2-TS-1-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	623	NO	ABS	AGS	YES	YES	YES	YES	YES	JOD/JRD	
9386		18	2-TS-1-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	623	NO	ABS	AGS	YES	YES	YES	YES	YES	JOD/JRD	
9387		18	2-TS-1-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	623	NO	ABS	AGS	YES	YES	YES	YES	YES	JOD/JRD	
9388		14	2-HS-23-57B	HANDSWITCH FOR 2-FCV-23-57 (8026)	U2 RB	565	R13/T	580	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/ACR	
9389		14	2-HS-74-101B	HANDSWITCH FOR 2-FCV-74-101 (1038)	U2 RB	565	R13/T	580	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/ACR	
9390		18	3-PS-67-50	PRESSURE SWITCH FOR 3-FCV-67-50 (4018)	U3 RB	593	P/R20	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9391		20	1-PNLA-009-0008	PANEL 1-9-8	U1 CB	617	U1 MCR	617	NO	ABS	RRS	YES	YES	YES	NO	NO	FRB/KHG	
9392		18	3-PS-67-51	PRESSURE SWITCH FOR 3-FCV-67-51 (4061)	U3 RB	565	R20/T	569	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
9393		ROB	2-AMP-092-0007/41A	IRM CH. "A" VOLTAGE PREAMPLIFIER 7-34A	RB	565	S/R10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9394		ROB	2-AMP-092-0007/41B	IRM CH. "B" VOLTAGE PREAMPLIFIER 7-34B	RB	565	S/R10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9395		14	2-LPNL-925-0027	PANEL 2-25-27 IRM PREAMP. RPS I	RB	565	S/R10	570	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/JRD	
9396		ROB	2-AMP-092-0007/41C	IRM CH. "C" VOLTAGE PREAMPLIFIER 7-34C	RB	577	Q/R12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9397		ROB	2-AMP-092-0007/41D	IRM CH. "D" VOLTAGE PREAMPLIFIER 7-34D	RB	577	Q/R12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9398		14	2-LPNL-925-0061	PANEL 2-25-61 IRM PREAMP. RPS II	RB	577	Q/R12	582	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/JRD	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
9399		ROB	2-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U2 MCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9400		ROB	2-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U2 MCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9401		ROB	2-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	CB	617	U2 MCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9402		ROB	2-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	CB	617	U2 MCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
9403		20	2-PNLA-009-012	PANEL 2-9-12	CB	617	U2 MCR	617	NO	ABS	RRS	YES	NO	YES	YES	NO	JOD/JRD	
9404		15	2-BATD-283-000A2	24V NEUTRON MONITORING BATTERY, U2 CHANNEL A	CB	593	BAT RM 2	593	YES	BS	GRS	YES	NO	YES	YES	NO	JOD/JRD	
9405		15	2-BATD-283-000B2	24V NEUTRON MONITORING BATTERY, U2 CHANNEL B	CB	593	BAT RM 2	593	YES	BS	GRS	YES	NO	YES	YES	NO	JOD/JRD	
9406		16	2-CHGD-283-A1-2	24V NEUTRON BATTERY CHARGERS A1-2	CB	593	BAT BD RM 2	598	NO	ABS	RRS	YES	NO	NO	YES	NO	JOD/JRD	
9407		16	2-CHGD-283-A2-2	24V NEUTRON BATTERY CHARGERS A2-2	CB	593	BAT BD RM 2	598	NO	ABS	RRS	YES	NO	NO	YES	NO	JOD/JRD	
9408		16	2-CHGD-283-B1-2	24V NEUTRON BATTERY CHARGERS B1-2	CB	593	BAT BD RM 2	598	NO	ABS	RRS	YES	NO	NO	YES	NO	JOD/JRD	
9409		16	2-CHGD-283-B2-2	24V NEUTRON BATTERY CHARGERS B2-2	CB	593	BAT BD RM 2	598	NO	ABS	RRS	YES	NO	NO	YES	NO	JOD/JRD	
30001		00	3-HCU-85,1-185	CRD\HYDRAULIC CONTROL UNIT	U3 RB	565	R16&20/P-S	565	YES	DOC	RRS	YES	N/A	YES	YES	YES	BCB/RDA	
30002		07	3-FCV-85-82A	CRD\WEST SDV VENT VALVE	U3 RB	565	R16/S	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
30003		07	3-FCV-85-82	CRD\WEST SDV VENT VALVE	U3 RB	565	R16/S	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
30004		07	3-FCV-85-37C	CRD\WEST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	566	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
30005		07	3-FCV-85-37D	CRD\WEST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	566	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
30006		07	3-FCV-85-83A	CRD\EAST SDV VENT VALVE	U3 RB	565	R20/S	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
30007		07	3-FCV-85-83	CRD\EAST SDV VENT VALVE	U3 RB	565	R20/S	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
30008		07	3-FCV-85-37E	CRD\EAST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	566	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
30009		07	3-FCV-85-37F	CRD\EAST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	566	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
30010		21	3-TNK-85-901	CRD\WEST SCRAM INSTRUMENT VOLUME	U3 RB	565	P/R16	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	JRD/BCB	
30011		21	3-TNK-85-902	CRD\EAST SCRAM INSTRUMENT VOLUME	U3 RB	565	P/R20	585	YES	DOC	RRS	YES	N/A	N/A	YES	YES	JRD/BCB	
30012		08B	3-FSV-85-37A	CRD\SCRAM DUMP VALVE	U3 RB	565	R19/N	570	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
30013		08B	3-FSV-85-37B	CRD\SCRAM DUMP VALVE	U3 RB	565	R19/N	570	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
30014		08B	3-FSV-85-35A	CRD\BACKUP SCRAM VALVE	U3 RB	565	R19/N	570	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
30015		08B	3-FSV-85-35B	CRD\BACKUP SCRAM VALVE	U3 RB	565	R19/N	570	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
30016		20	3-HS-99-5A/S3A	RPS\REACTOR MANUAL SCRAM CHANNEL A3	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/BCB	
30017		20	3-HS-99-5A/S3B	RPS\REACTOR MANUAL SCRAM CHANNEL B3	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/BCB	
30018		20	3-HS-99-5A-S1	RPS\REACTOR MODE SWITCH	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/BCB	
31001		08A	3-FCV-74-1	RHR/PUMP 3A SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31002		08A	3-FCV-74-2	RHR/PUMP 3A SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31003		08A	3-FCV-74-96	RHR/UNIT 3 TO UNIT 2 RHR X-TIE ISOLATION VALVE	U3 RB	519	SW CORNER	535	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31004		06	3-PMP-74-5	RHR/PUMP 3A	U3 RB	519	SW CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	RDA/BCB	
31006		08A	3-FCV-74-7	RHR/PUMP 3A&3C MINIMUM FLOW VALVE	U3 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31009		21	3-HEX-74-900A	RHR/HEAT EXCHANGER 3A	U3 RB	565	SW HX	587	YES	N/A	N/A	N/A	N/A	NO	YES	NO	JRD/JOD	
31010		08A	3-FCV-74-100	RHR/U3 TO U2 RHR DISCHARGE X-TIE ISOLATION VALVE	U3 RB	565	R14/T	570	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31011		08A	3-FCV-74-12	RHR/PUMP 3C SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31012		08A	3-FCV-74-13	RHR/PUMP 3C SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31013		08A	3-FCV-74-97	RHR/UNIT 3 TO UNIT 2 RHR X-TIE ISOLATION VALVE	U3 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
31014		06	3-PMP-74-16	RHR/PUMP 3C	U3 RB	519	SW CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	RDA/BCB	
31017		21	3-HEX-74-900C	RHR/HEAT EXCHANGER 3C	U3 RB	565	SW HX	587	YES	N/A	N/A	N/A	N/A	NO	YES	NO	JRD/JOD	
31018		ROB	3-FI-74-50	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
31018	B	ROB	3-FT-74-50	RHR LOOP I FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31018	C	ROB	3-FS-74-50	RHR LOOP I FLOW SWITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31018	D	ROB	3-FM-74-50	RHR LOOP I FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31018	E	ROB	3-BKR-402	RHR LOOP I FLOW INDICATION BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31018	F	ROB	3-BKR-211	RHR LOOP I FLOW INDICATION BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31019		ROB	3-FI-74-56	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
31019	B	ROB	3-FT-74-56	RR LOOP I FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31019	C	ROB	3-FM-74-56	RHR LOOP I FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31020		08A	3-FCV-74-57	RHR/LOOP I TORUS CONTAINMENT COOLING/SPRAY VALVE	U3 RB	519	TORUS	555	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31021		08A	3-FCV-74-59	RHR/LOOP I SUPRESSION POOL COOLING VALVE	U3 RB	519	TORUS	555	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31023		08A	3-FCV-74-52	RHR/LOOP I OUTBOARD INJECTION VALVE	U3 RB	565	T/R18	573	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31024		08A	3-FCV-74-53	RHR/LOOP I INBOARD INJECTION VALVE	U3 RB	565	T/R18	573	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31026		08A	3-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U3 RB	621	R17/S	622	NO	ABS	RRS	YES	YES	N/A	YES	YES	JRD/BCB	
31027		08A	3-FCV-74-60	RHR/LOOP I OUTBOARD DRYWELL SPRAY VALVE	U3 RB	565	R16/S	577	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31029		08A	3-FCV-74-24	RHR/PUMP 3B SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31030		08A	3-FCV-74-25	RHR/PUMP 3B SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31031		06	3-PMP-74-28	RHR/PUMP 3B	U3 RB	519	SE CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	RDA/BCB	
31033		08A	3-FCV-74-30	RHR/PUMP 3B&3D MINIMUM FLOW VALVE	U3 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31036		21	3-HEX-74-900B	RHR/HEAT EXCHANGER 3B	U3 RB	565	SE HX	587	YES	N/A	N/A	N/A	N/A	NO	YES	NO	JRD/JOD	
31037		08A	3-FCV-74-35	RHR/PUMP 3D SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31038		08A	3-FCV-74-36	RHR/PUMP 3D SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31039		06	3-PMP-74-39	RHR/PUMP 3D	U3 RB	519	SE CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	RDA/BCB	
31042		21	3-HEX-74-900D	RHR/HEAT EXCHANGER 3D	U3 RB	565	SE HX	587	YES	N/A	N/A	N/A	N/A	NO	YES	NO	JRD/JOD	
31043		ROB	3-FI-74-64	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
31043	B	ROB	3-FT-74-64	RHR LOOP II FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31043	C	ROB	3-FS-74-64	RHR LOOP II FLOW SWITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31043	D	ROB	3-FM-74-64	RHR LOOP II FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31043	E	ROB	3-FR-74-64	RHR LOOP II FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31043	F	ROB	3-BKR-402	RHR LOOP II FLOW INDICATION BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31043	G	ROB	3-BKR-322	RHR LOOP II FLOW INDICATION BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31044		ROB	3-FI-74-70	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
31044	B	ROB	3-FT-74-70	RHR LOOP II FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31044	C	ROB	3-FM-74-70	RHR LOOP II FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
31045		08A	3-FCV-74-71	RHR/LOOP II TORUS CONTAINMENT COOLING/SPRAY VALVE	U3 RB	519	TORUS	555	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31046		08A	3-FCV-74-73	RHR/LOOP II SUPRESSION POOL COOLING VALVE	U3 RB	519	TORUS	555	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31048		08A	3-FCV-74-66	RHR/LOOP II OUTBOARD INJECTION VALVE	U3 RB	565	T/R18	573	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
31049		08A	3-FCV-74-67	RHR/LOOP II INBOARD INJECTION VALVE	U3 RB	565	T/R18	577	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
31051		08A	3-FCV-74-74	RHR/LOOP II OUTBOARD DRYWELL SPRAY VALVE	U3 RB	593	R19/S	598	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
32000		07	3-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
32003		07	3-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
32006		07	3-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
32009		07	3-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
32012		07	3-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	NO	NO	BCB/RDA	
32015		07	3-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
32018		07	3-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
32021		07	3-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
32024		07	3-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
32027		07	3-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
32030		07	3-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
32033		07	3-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
32036		07	3-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	585	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
33001		07	3-FCV-1-14	MSIV "A" INBOARD ISOLATION VALVE	U3 DW	563	DW	570	YES	BS	GRS	YES	NO	N/A	YES	NO	BCB/RDA	
33002		07	3-FCV-1-15	MSIV "A" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	573	YES	BS	GRS	YES	NO	N/A	YES	NO	BCB/RDA	
33003		07	3-FCV-1-26	MSIV "B" INBOARD ISOLATION VALVE	U3 DW	563	DW	570	YES	BS	GRS	YES	NO	N/A	YES	NO	BCB/RDA	
33004		07	3-FCV-1-27	MSIV "B" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	573	YES	BS	GRS	YES	NO	N/A	YES	NO	BCB/RDA	
33005		07	3-FCV-1-37	MSIV "C" INBOARD ISOLATION VALVE	U3 DW	563	DW	570	YES	BS	GRS	YES	NO	N/A	YES	NO	BCB/RDA	
33006		07	3-FCV-1-38	MSIV "C" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	573	YES	BS	GRS	YES	NO	N/A	YES	NO	BCB/RDA	
33007		07	3-FCV-1-51	MSIV "D" INBOARD ISOLATION VALVE	U3 DW	563	DW	570	YES	BS	GRS	YES	NO	N/A	YES	NO	BCB/RDA	
33008		07	3-FCV-1-52	MSIV "D" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	573	YES	BS	GRS	YES	NO	N/A	YES	NO	BCB/RDA	
33009		08A	3-FCV-1-55	MAIN STEAM LINE DRAIN ISOLATION VALVE	U3 DW	563	DW	565	YES	DOC	RRS	YES	N/A	N/A	YES	YES	BCB/RDA	
33032		08A	3-FCV-69-1	RWCU INBOARD ISOLATION VALVE	U3 DW	584	DW	586	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/FRB	
33033		08A	3-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U3 RB	593	R17/S	604	NO	ABS	RRS	YES	YES	N/A	YES	YES	JRD/BCB	
33037		08A	3-FCV-71-2	RCIC INBOARD ISOLATION VALVE	U3 DW	584	DW	582	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
33038		08A	3-FCV-71-3	RCIC OUTBOARD ISOLATION VALVE	U3 RB	565	MSIV VAULT	585	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
33040		08A	3-FCV-73-2	HPCI STEAM SUPPLY ISOLATION VALVE	U3 DW	563	DW	563	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
33041		08A	3-FCV-73-3	HPCI STEAM SUPPLY ISOLATION VALVE	U3 RB	519	TORUS	555	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
33042		08A	3-FCV-73-81	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	U3 RB	519	TORUS	560	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
33044		07	3-FCV-75-57	PSC PUMP SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	524	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
33045		07	3-FCV-75-58	PSC PUMP SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	524	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
33051		ROB	3-LI-3-58A	RPV LEVEL INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
33051	A	ROB	3-LT-3-58B	RPV LEVEL TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
33052		ROB	3-LI-3-58B	RPV LEVEL INSTRUMENT	U3 CB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
33052	A	ROB	3-LT-3-58D	RPV LEVEL TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
33053		ROB	3-PI-3-74A	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
33053	A	ROB	3-PT-3-74A	RPV PRESSURE TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
33054		ROB	3-PI-3-74B	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
33054	A	ROB	3-PT-3-74B	RPV LEVEL TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
33055		ROB	3-XR-64-159	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
33055	A	18	3-LT-64-159B	TORUS LEVEL TRANSMITTER	U3 RB	519	TORUS	523	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	2
33055	B	ROB	3-PT-64-160B	DRYWELL PRESSURE TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
33055	C	ROB	3-BKR-323	TORUS LEVEL INDICATON BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
33056		ROB	3-LI-64-159A	TORUS LEVEL INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
33056	A	18	3-LT-64-159A	TORUS LEVEL TRANSMITTER	U3 RB	519	TORUS	523	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	2
33056	B	ROB	3-BKR-223	TORUS LEVEL INDICATION BREAKER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
33057		ROB	3-TI-64-161	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
33057	A	19	3-TE-64-161A	TORUS TEMOERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33057	B	19	3-TE-64-161B	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33057	C	19	3-TE-64-161C	TORUS TEMPERATURE ELELMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33057	D	19	3-TE-64-161D	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33057	E	19	3-TE-64-161E	TORUS TEMPERATURE ELELMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33057	F	19	3-TE-64-161F	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33057	G	19	3-TE-64-161G	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33057	H	19	3-TE-64-161H	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33058		ROB	3-TI-64-162	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
33058	A	19	3-TE-64-162A	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33058	B	19	3-TE-64-162B	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33058	C	19	3-TE-64-162C	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33058	D	19	3-TE-64-162D	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33058	E	19	3-TE-64-162E	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33058	F	19	3-TE-64-162F	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33058	G	19	3-TE-64-162G	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33058	H	19	3-TE-64-162H	TORUS TEMPERATURE ELEMENT	U3 RB	519	TORUS	528	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	2
33065		ROB	3-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U3 MCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1, 6
33066		ROB	3-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U3 MCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1, 6
34001		10	3-CLR-67-917	EECW/RHR PUMP 3A ROOM COOLER	U3 RB	519	SW CORNER	560	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
34002		10	3-CLR-67-919	EECW/CS PUMP 3A ROOM COOLER	U3 RB	519	NW CORNER	560	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
34003		10	3-CLR-67-921	EECW/RHR PUMP 3C ROOM COOLER	U3 RB	519	SW CORNER	560	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
34004		21	3-HEX-67-915	EECW/RHR SEAL HX 3A	U3 RB	519	SW CORNER	522	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
34013		10	3-CLR-67-918	EECW/RHR PUMP 3B ROOM COOLER	U3 RB	519	SE CORNER	560	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
34014		10	3-CLR-67-920	EECW/CS PUMP 3B ROOM COOLER	U3 RB	519	NE CORNER	560	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
34015		10	3-CLR-67-922	EECW/RHR PUMP 3D ROOM COOLER	U3 RB	519	SE CORNER	560	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
34016		21	3-HEX-67-923	EECW/RHR SEAL HX 3B	U3 RB	519	SE CORNER	522	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
34025		21	3-HEX-67-916	EECW/RHR SEAL HX 3C	U3 RB	519	SW CORNER	522	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
34026		21	3-HEX-67-924	EECW/RHR SEAL HX 3D	U3 RB	519	SE CORNER	522	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
35001		08A	3-FCV-75-2	CS/PUMP 3A SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	521	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
35002		06	3-PMP-75-5	CS/PUMP 3A	U3 RB	519	NW CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	JRD/BCB	
35005		08A	3-FCV-75-9	CS/PUMPS 3A & 3C MINI-FLOW VALVE	U3 RB	519	NW CORNER	540	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
35006		08A	3-FCV-75-11	CS/PUMP 3C SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	521	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
35007		06	3-PMP-75-14	CS/PUMP 3C	U3 RB	519	NW CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	JRD/BCB	
35010		08A	3-FCV-75-22	CS/PUMPS 3A & 3C TEST ISOLATION VALVE	U3 RB	519	NW CORNER	543	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
35011		ROB	3-FI-75-21	CS/PUMPS 3A & 3C FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
35011	A	ROB	3-FM-75-21	CS PUMPS 3A & 3C FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
35011	B	ROB	3-PX-75-21	CS PUMPS 3A & 3C FLOW INDICATION POWER SUPPLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
35011	C	ROB	3-FT-75-21	CS PUMPS 3A & 3C FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
35012		08A	3-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U3 RB	593	P/R18	608	NO	ABS	RRS	YES	YES	N/A	YES	YES	JRD/BCB	
35013		08A	3-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U3 RB	593	P/R18	608	NO	ABS	RRS	YES	YES	N/A	YES	YES	JRD/BCB	
35015		08A	3-FCV-75-30	CS/PUMP 3B SUCTION ISOLATION VALVE	U3 RB	519	NE CORNER	521	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
35016		06	3-PMP-75-33	CS/PUMP 3B	U3 RB	519	NE CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	JRD/BCB	
35019		08A	3-FCV-75-37	CS/PUMPS 3B & 3D MINI-FLOW VALVE	U3 RB	519	NE CORNER	540	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
35020		08A	3-FCV-75-39	CS/PUMP 3D SUCTION ISOLATION VALVE	U3 RB	519	NE CORNER	522	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
35021		06	3-PMP-75-42	CS/PUMP 3D	U3 RB	519	NE CORNER	519	YES	BS	GRS	YES	YES	NO	YES	NO	JRD/BCB	
35024		08A	3-FCV-75-50	CS/PUMPS 3B & 3D TEST ISOLATION VALVE	U3 RB	519	NE CORNER	543	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
35025		ROB	3-FI-75-49	CS/PUMPS 3B & 3D FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
35025	A	ROB	3-FM-75-49	CS PUMPS 3B & 3D FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
35025	B	ROB	3-PX-75-49	CS PUMPS 3B & 3D FLOW INDICATION POWER SUPPLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
35025	C	ROB	3-FT-75-49	CS PUMPS 3B & 3D FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
35026		08A	3-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U3 RB	593	P/R18	608	NO	ABS	RRS	YES	YES	N/A	YES	YES	BCB/JRD	
35027		08A	3-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U3 RB	593	P/R18	608	NO	ABS	RRS	YES	YES	N/A	YES	YES	BCB/JRD	
36001		08B	3-FSV-84-8A	CAD/CAD TO DW (3-FCV-64-18) SOLENOID VALVE	U3 RB	565	R19/T	574	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
36002		08B	3-FSV-84-8B	CAD/CAD TO DW (3-FCV-64-19) SOLENOID VALVE	U3 RB	565	R17/S	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
36003		07	3-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R17/U	570	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
36004		08B	3-FSV-84-48	CAD/CAD SYSTEM "A" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R17/S	581	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
36009		21	3-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U3 DW	584	DW	585	YES	BS	GRS	YES	N/A	YES	YES	YES	BCB/JRD	
36010		08B	3-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
36012		21	3-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U3 DW	584	DW	585	YES	BS	GRS	YES	N/A	YES	YES	YES	BCB/RDA	
36013		08B	3-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
36015		21	3-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U3 DW	584	DW	585	YES	BS	GRS	YES	N/A	YES	YES	YES	BCB/RDA	
36016		08B	3-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
36017		08B	3-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
36018		08B	3-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
36019		08B	3-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
36020		21	3-ACC-32-6104	CA/ACCUMULATOR FOR PSV-1-18	U3 DW	584	DW	585	YES	BS	GRS	YES	N/A	YES	YES	YES	BCB/RDA	
36021		08B	3-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
36023		08B	3-FSV-84-8C	CAD/CAD TO DW (3-FCV-84-19) SOLENOID VALVE	U3 RB	565	R17/S	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
36024		08B	3-FSV-84-8D	CAD/CAD TO DW (3-FCV-84-18) SOLENOID VALVE	U3 RB	565	R19/T	577	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
36025		07	3-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R18/U	569	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
36026		08B	3-FSV-84-49	CAD/CAD SYSTEM "B" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R19/Q	583	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
36029		21	3-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U3 DW	584	DW	585	YES	BS	GRS	YES	N/A	YES	YES	YES	BCB/RDA	
36030		08B	3-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
36032		21	3-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U3 DW	584	DW	585	YES	BS	GRS	YES	N/A	YES	YES	YES	BCB/RDA	
36033		08B	3-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
36035		21	3-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U3 DW	584	DW	585	YES	BS	GRS	YES	N/A	YES	YES	YES	BCB/RDA	
36036		08B	3-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
36037		21	3-ACC-32-6110	CA/ACCUMULATOR FOR PSV-1-41	U3 DW	584	DW	585	YES	BS	GRS	YES	N/A	YES	YES	YES	BCB/RDA	
36038		08B	3-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
36040		08B	3-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
36041		08B	3-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180	U3 DW	584	DW	590	YES	BS	GRS	YES	YES	N/A	YES	YES	BCB/RDA	
37001		17	3-GEN-82-3C	UNIT 3 DIESEL GENERATOR "C"	U3 DG	565	DG C	565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37002		21	3-TNK-18-63/1	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565	DG C	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37003		21	3-TNK-18-63/2	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565	DG C	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37004		21	3-TNK-18-63/3	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565	DG C	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37005		21	3-TNK-86-650C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37006		21	3-TNK-86-651C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37007		21	3-TNK-86-652C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37008		21	3-TNK-86-653C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37009		21	3-TNK-86-654C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37010		21	3-TNK-86-655C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37011		21	3-TNK-86-656C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37012		21	3-TNK-86-657C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37013		21	3-TNK-86-658C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37014		21	3-TNK-86-659C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37015		09	3-FAN-30-234	DG ROOM 3C EXHAUST FAN "A"	U3 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37016		09	3-FAN-30-235	DG ROOM 3C EXHAUST FAN "B"	U3 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37017		10	3-FCO-30-234A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3C"	U3 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37018		10	3-FCO-30-234B	INLET DAMPER FOR FAN "A" IN DG ROOM "3C"	U3 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37019		10	3-FCO-30-234C	INLET DAMPER FOR FAN "A" IN DG ROOM "3C"	U3 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37020		10	3-FCO-30-235A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3C"	U3 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37021		10	3-FCO-30-235B	INLET DAMPER FOR FAN "B" IN DG ROOM "3C"	U3 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37022		10	3-FCO-30-235C	INLET DAMPER FOR FAN "B" IN DG ROOM "3C"	U3 DG	583	DG C	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37023		17	3-GEN-82-3D	UNIT 3 DIESEL GENERATOR "D"	U3 DG	565	DG D	565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37024		21	3-TNK-18-64/1	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565	DG D	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37025		21	3-TNK-18-64/2	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565	DG D	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
37026		21	3-TNK-18-64/3	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565	DG D	556	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37027		21	3-TNK-86-650D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37028		21	3-TNK-86-651D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37029		21	3-TNK-86-652D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37030		21	3-TNK-86-653D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37031		21	3-TNK-86-654D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37032		21	3-TNK-86-655D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37033		21	3-TNK-86-656D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37034		21	3-TNK-86-657D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37035		21	3-TNK-86-658D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37036		21	3-TNK-86-659D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	583	YES	BS	GRS	YES	N/A	YES	YES	YES	JRD/BCB	
37037		09	3-FAN-30-236	DG ROOM 3D EXHAUST FAN "A"	U3 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37038		09	3-FAN-30-237	DG ROOM 3D EXHAUST FAN "B"	U3 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37039		10	3-FCO-30-236A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3D"	U3 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37040		10	3-FCO-30-236B	INLET DAMPER FOR FAN "A" IN DG ROOM "3D"	U3 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37041		10	3-FCO-30-236C	INLET DAMPER FOR FAN "A" IN DG ROOM "3D"	U3 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37042		10	3-FCO-30-237A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3D"	U3 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37043		10	3-FCO-30-237B	INLET DAMPER FOR FAN "B" IN DG ROOM "3D"	U3 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37044		10	3-FCO-30-237C	INLET DAMPER FOR FAN "B" IN DG ROOM "3D"	U3 DG	583	DG D	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37045		09	3-FAN-30-231	DG ROOM 3A EXHAUST FAN "B"	U3 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37046		10	3-FCO-30-231A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3A"	U3 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37047		10	3-FCO-30-231B	INLET DAMPER FOR FAN "B" IN DG ROOM "3A"	U3 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37048		10	3-FCO-30-231C	INLET DAMPER FOR FAN "B" IN DG ROOM "3A"	U3 DG	583	DG A	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37049		09	3-FAN-30-233	DG ROOM 3B EXHAUST FAN "B"	U3 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37050		10	3-FCO-30-233A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3B"	U3 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37051		10	3-FCO-30-233B	INLET DAMPER FOR FAN "B" IN DG ROOM "3B"	U3 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
37052		10	3-FCO-30-233C	INLET DAMPER FOR FAN "B" IN DG ROOM "3B"	U3 DG	583	DG B	583	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
38002		08A	3-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U3 RB	565	R17/T	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
38004		08A	3-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U3 RB	565	R17/T	580	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
38006		08A	3-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U3 RB	565	R19/U	568	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
38008		08A	3-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U3 RB	565	R19/U	568	YES	BS	GRS	YES	YES	N/A	YES	YES	JRD/BCB	
38009		ROB	3-FI-23-36	RHRSW HX A FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
38009	B	ROB	3-FT-23-36	RHRSW HX A FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
38009	C	ROB	3-FM-23-36	RHRSW HX A FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
38009	D	ROB	3-FS-90-133B	RHRSW HX A FLOW SWITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
38010		ROB	3-FI-23-42	RHRSW HX C FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
38010	B	ROB	3-FT-23-42	RHRSW HX C FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
38010	C	ROB	3-FM-23-42	RHRSW HX C FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
38010	D	ROB	3-FS-90-133C	RHRSW HX C FLOW SWITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
38011		ROB	3-FI-23-48	RHRSW HX B FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
38011	B	ROB	3-FT-23-48	RHRSW HX B FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
38011	C	ROB	3-FM-23-48	RHRSW HX B FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
38011	D	ROB	3-FS-90-134B	RHRSW HX B FLOW SWITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
38012		ROB	3-FI-23-54	RHRSW HX D FLOW INDICATOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
38012	B	ROB	3-FT-23-54	RHRSW HX D FLOW TRANSMITTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
38012	C	ROB	3-FM-23-54	RHRSW HX D FLOW DEVICE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
38012	D	ROB	3-FS-90-134C	RHRSW HX D FLOW SWITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,2
39001		03	3-BDAA-211-0003EC	4KV SHUTDOWN BOARD 3EC	U3 DG	583	4KV SD BD	583	YES	BS	GRS	YES	YES	NO	YES	NO	FRB/JOD	
39002		15	3-BATB-254-0000C	DIESEL 3C 125V BATTERY	U3 DG	565	DG C	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39003		14	3-BDGG-254-0003C	DIESEL 3C 125V BATTERY BOARD	U3 DG	565	DG C	569	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39004		16	3-CHGB-254-0000CB	DIESEL 3C BATTERY CHARGER B	U3 DG	565	DG C	571	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39005		01	3-BDBB-219-0003EB	480V DIESEL AUX BOARD 3EB	U3 DG	583	480V AUX BD	583	YES	ABS	RRS	NO	YES	YES	YES	NO	FRB/JOD	
39006		04	3-XFA-231-TS3B	4KV/480V TRANSFORMER TS3B	U3 RB	621	S/R21	621	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
39007		02	3-BDBB-231-0003B	480V SD BOARD 3B	U3 RB	621	SD BD F	621	NO	ABS	RRS	YES	YES	NO	YES	NO	FRB/JRD	
39008		01	3-BDBB-268-0003A	480V RMOV BOARD 3A	U3 RB	621	SD BD E	621	NO	ABS	RRS	NO	YES	NO	NO	NO	FRB/JOD	
39009		01	3-BDBB-268-0003B	480V RMOV BOARD 3B	U3 RB	593	SD BD F	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39010		14	3-JBOX-268-5994	MG SET 3DN CONTROL STATION (3-HS-268-0003DN)	U3 RB	621	U/R18	626	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39011		14	3-JBOX-268-5996	MG SET 3EN CONTROL STATION (3-HS-268-0003EN)	U3 RB	621	S/R21	625	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39012		20	3-JBOX-268-5955	MG SET 3DN CONTROL BOX (RELAYS) - SEALED BOX	U3 RB	621	U/R18	625	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39013		14	NONE	MG SET 3DN VOLTAGE REGULATOR BOX	U3 RB	621	S/R20	625	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39014		20	3-JBOX-268-5957	MG SET 3EN CONTROL BOX (RELAYS) - SEALED BOX	U3 RB	621	S/R21	625	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39015		13	3-MGEN-268-0003DN	LPCI MG SET 3DN	U3 RB	621	U/R18	621	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39016		01	3-BDBB-268-0003D	480V RMOV BOARD 3D	U3 RB	593	U/R17	593	YES	BS	GRS	YES	YES	YES	NO	NO	FRB/JOD	
39017		13	3-MGEN-268-0003EN	LPCI MG SET 3EN	U3 RB	621	U/R21	621	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39018		01	3-BDBB-268-0003E	480V RMOV BOARD 3E	U3 RB	621	S/R20	621	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39019		14	NONE	MG SET 3EN VOLTAGE REGULATOR BOX	U3 RB	621	S/R20	625	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39020		03	3-BDAA-211-0003ED	4KV SHUTDOWN BOARD 3ED	U3 DG	565	HALLWAY	565	YES	BS	GRS	YES	YES	NO	YES	NO	FRB/JOD	
39021		15	3-BATB-254-0000D	DIESEL 3D 125V BATTERY	U3 DG	565	DG D	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39022		14	3-BDGG-254-0003D	DIESEL 3D 125V BATTERY BOARD	U3 DG	565	DG D	569	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39023		16	3-CHGB-254-0000DB	DIESEL 3D BATTERY CHARGER B	U3 DG	565	DG D	571	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39030		01	3-BDBB-281-0003A	250V DC RMOV BOARD 3A	U3 RB	621	SD BD E	621	NO	ABS	RRS	NO	YES	NO	YES	NO	FRB/JOD	
39031		01	3-BDBB-281-0003B	250V DC RMOV BOARD 3B	U3 RB	593	SD BD F	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39033		01	3-BDBB-281-0003C	250V DC RMOV BOARD 3C	U3 RB	565	P/R15	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39039		14	3-JBOX-253-7163	I&C BUS 3A DISC SWITCH	U3 RB	593	SD BD E	597	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39040		04	3-XFA-253-0003A1	I&C BUS A 480/208-120V TRANSFORMER	U3 RB	621	SD BD E	621	NO	GERS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39041		04	3-XFA-253-0003A2	I&C BUS 3A REGULATING TRANSFORMER	U3 RB	621	SD BD E	627	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
39042		14	3-JBOX-253-7159	I&C BUS 3A BREAKER BOX	U3 RB	621	SD BD E	625	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39043		14	3-JBOX-253-8866	I&C BUS 3A DISC SWITCH	U3 RB	621	SD BD E	625	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
39044		14	3-JBOX-253-7158	I&C BUS 3A DISC SWITCH	U3 RB	621	SD BD E	625	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39045		20	3-PNLA-009-0009	I&C BUS 3A (CAB 2 OF PNL 3-9-9) ((SEE 39119))	U3 CB	617	U3 MCR	617	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
39046		ROB	3-PX-64-160B	POWER SUPPLY (PNL 3-9-19: 3-LI-64-159B,160B)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39047		ROB	3-PXMC-23-114	POWER SUPPLY (PNL 3-9-18: FI-23-36,42 : FI-74-50)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39048		ROB	3-PXMC-23-115 A&B	POWER SUPPLY (PNL 3-9-19: FI-23-48,54; FI-74-64)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39049		04	3-XFA-253-0003B1	I&C BUS 3B 480/208-120V TRANSFORMER	U3 RB	593	SD BD F	593	YES	GERS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39050		04	3-XFA-253-0003B2	I&C BUS B REGULATING TRANSFORMER	U3 RB	593	SD BD F	596	NO	DOC	RRS	YES	N/A	YES	YES	YES	FRB/JOD	
39051		14	3-JBOX-253-7162	I&C BUS 3B BREAKER BOX	U3 RB	593	SD BD F	599	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39052		14	3-JBOX-253-7161	I&C BUS 3B DISC SWITCH	U3 RB	593	SD BD F	599	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39053		14	3-JBOX-253-8868	I&C BUS 3B DISC SWITCHES	U3 RB	593	SD BD F	598	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39054		20	3-PNLA-009-0009	I&C BUS 3B (CAB 3 OF PNL 3-9-9) ((SEE 39119))	U3 CB	617	U3 MCR	617	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
39055		ROB	3-PX-64-159B	POWER SUPPLY (PNL 3-9-19)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39056		14	3-JBOX-30-4243	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3C	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39057		18	3-HS-30-234	LOCAL HS STATION - DG 3C EXH FAN A	U3 DG	583	BD 3EB	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39058		14	3-JBOX-30-4244	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3C	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39059		18	3-HS-30-235	LOCAL HS STATION - DG 3C EXH FAN B	U3 DG	583	BD 3EB	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39060		14	3-JBOX-30-4245	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3D	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39061		18	3-HS-30-236	LOCAL HS STATION - DG 3D EXH FAN A	U3 DG	583	BD 3EB	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39062		14	3-JBOX-30-4246	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3D	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39063		18	3-HS-30-237	LOCAL HS STATION - DG 3D EXH FAN B	U3 DG	583	BD 3EB	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39064		14	3-JBOX-30-4240	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3A	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39065		18	3-HS-30-231	LOCAL HS STATION - DG 3A EXH FAN B	U3 DG	583	BD 3EA	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39066		14	3-JBOX-30-4242	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3B	586	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39067		18	3-HS 30-233	LOCAL HS STATION - DG 3B EXH FAN B	U3 DG	583	BD 3EA	588	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39068		14	3-JBOX-253-7160	I&C BUS 3B DISC SWITCH	U3 RB	593	SD BD F	597	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39070		16	3-INVT-256-0001	DIV I ECCS ATU INVERTER	U3 RB	593	SD BD F	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39071		ROB	3-PX-71-60-1	ECCS ATU CAB 3-9-81 POWER SUPPLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39072		ROB	3-PX-71-60-1A	ECCS ATU CAB 3-9-81 POWER SUPPLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39073		ROB	3-PX-64-50	POWER SUPPLY (PNL 3-25-31: XR-64-50 [DEV BA TERM 11/12)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39074		ROB	3-PX-74-56	POWER SUPPLY (PNL 3-9-18: FI-74-56)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39075		16	3-INVT-256-0002	DIV II ECCS ATU INVERTER	U3 RB	621	SD BD E	621	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39076		ROB	3-PX-71-60-2	ECCS ATU CAB 3-9-82 POWER SUPPLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39077		ROB	3-PX-71-60-2A	ECCS ATU CAB 3-9-82 POWER SUPPLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39078		ROB	3-PX-74-70	POWER SUPPLY (PNL 3-9-19: FI-74-70)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39079		ROB	3-PX-64-159A	POWER SUPPLY (3-9-18)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39080		ROB	3-PX-64-160A	POWER SUPPLY (3-9-18)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39081		ROB	3-PX-64-67B	POWER SUPPLY (3-9-19)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39082		ROB	3-PX-64-161	POWER SUPPLY (PNL 9-87)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39083		ROB	3-PX-64-162	POWER SUPPLY (PNL 9-88)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
39099		20	3-PNLA-009-0042	MSRV (OUTBOARD) DIV I PNL	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39100		14	3-ECAB-231-003A	250V DC CONT PWR TRANSFER SW - 480V SD BD 3A	U3 RB	593	SD BD F	598	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39101		14	3-ECAB-231-003B	250V DC CONT PWR TRANSFER SW - 480V SD BD 3B	U3 RB	593	SD BD F	598	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39105		20	3-LPNL-925-654A	DIV I LOAD SHED LOGIC PANEL - DCN W21284	U3 RB	621	SD BD E	626	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39106		20	3-LPNL-925-654B	DIV II LOAD SHED LOGIC PANEL - DCN W21284	U3 RB	593	SD BD F	598	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39107		20	3-LPNL-925-656A	480V RMOV BD 3A LOAD SHED PANEL - DCN W21284	U3 RB	621	SD BD E	627	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39108		20	3-LPNL-925-656B	480V RMOV BD 3B LOAD SHED PANEL - DCN W21284	U3 RB	593	SD BD F	599	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39110		20	3-LPNL-925-0658	MSRV TRANSFER CONTROL PANEL (DCN W21814)	U3 RB	593	SD BD F	596	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39115		20	3-PNLA-009-0003	REACTOR SD & CONT. COOLING PNL	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	NO	YES	YES	NO	FRB/JOD	
39116		20	3-PNLA-009-0004	CLEANUP & RECIRC PNL	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	NO	YES	NO	NO	FRB/JOD	
39117		20	3-PNLA-009-0005	REACTOR CONTROL PNL	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	NO	YES	YES	NO	FRB/JOD	
39118		20	3-PNLA-009-0006	FW & COND. PNL	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39119		20	3-PNLA-009-0009	PNL 9-9 (I&C CONT PWR, CAB 2&3)	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	NO	NO	FRB/JOD	
39120		20	3-PNLA-009-0015	RPS CH A (DIV I)	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39121		20	3-PNLA-009-0016	RPS CH A, B, C, D	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39122		20	3-PNLA-009-0017	RPS CH B (DIV II)	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39123		20	3-PNLA-009-0018	FW & RECIRC PNL	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39124		20	3-PNLA-009-0019	PROCESS INSTR PNL	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39125		20	3-PNLA-009-0021	TEMP RECORDING PNL	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39126		20	3-PNLA-009-0028	CRD SELECT RELAY AUX PNL	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39127		20	3-PNLA-009-0030	AUTO BLOWNDOWN AUX PNL	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39128		20	3-PNLA-009-0032	RHR, CS, & HPCI (CH A) PNL	U3 RB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39129		20	3-PNLA-009-0033	RHR, CS, & HPCI (CH B) PNL	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39130		20	3-PNLA-009-0039	HPCI RELAY AUX PNL	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39132		20	3-PNLA-009-0043	MSIV (OUTBOARD) DIV II PNL	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39133		20	3-PNLA-009-0054	CONTAINMENT ATM. DILUTION PNL	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39134		20	3-PNLA-009-0055	CONTAINMENT ATM. DILUTION PNL	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39135		20	3-PNLA-009-0081	DIV I ECCS ATU CABINET	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39136		20	3-PNLA-009-0082	DIV II ECCS ATU CABINET	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39137		20	3-PNLA-009-0083	RPS ATU CAB	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39138		20	3-PNLA-009-0084	RPS ATU CAB	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39139		20	3-PNLA-009-0085	RPS ATU CAB	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39140		20	3-PNLA-009-0086	RPS ATU CAB	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39141		20	3-PNLA-009-0087	DIV I TORUS TEMP MONITORING	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39142		20	3-PNLA-009-0088	DIV II TORUS TEMP MONITORING	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39145		20	3-PNLA-009-0093	NEW PNL (INSTALLED BY DCN W19433)	U3 CB	593	U3 AIR	597	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/JOD	
39146		18	3-HS-74-7B	LOCAL HS STATION	U3 RB	519	T/R16	519	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39147		14	3-JBOX-74-3503	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	T/R16	<530	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39148		18	3-HS-74-57B	LOCAL HS STATION	U3 RB	519	TORUS	555	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
39149		14	3-JBOX-74-3391	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	R/R16	555	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39150		18	3-HS-74-59B	LOCAL HS STATION	U3 RB	519	TORUS	555	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39152		14	3-JBOX-74-3391	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	R/R16	560	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39153		18	3-HS-74-52B	LOCAL HS STATION	U3 RB	565	T/R17	585	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39154		14	3-JBOX-74-2135	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	580	T/R17	585	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39155		18	3-HS-74-53B	LOCAL HS STATION	U3 RB	565	T/R17	585	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39156		18	3-HS-74-60B	LOCAL HS STATION	U3 RB	565	S/R17	569	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39157		14	3-JBOX-74-3543	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	S/R17	573	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39160		18	3-HS-74-30B	LOCAL HS STATION	U3 RB	541	T/R20	545	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39161		14	3-JBOX-74-3535	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	T/R20	543	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39162		18	3-HS-74-71B	LOCAL HS STATION	U3 RB	519	TORUS	555	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39163		14	3-JBOX-74-3840	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	S/R20	555	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39165		18	3-HS-74-66B	LOCAL HS STATION	U3 RB	519	TORUS	555	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39166		14	3-JBOX-74-2133	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	T/R18	585	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39167		18	3-HS-74-67B	LOCAL HS STATION	U3 RB	565	T/R18	585	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39169		14	3-JBOX-74-2839	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	593	S/R19	598	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39172		14	3-JBOX-70-3398	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	P/R20	559	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39173		18	3-HS-75-9B	LOCAL HS STATION	U3 RB	519	N/R16	523	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39174		14	3-JBOX-75-3390	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	N/R16	560	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39175		18	3-HS-75-25B	LOCAL HS STATION	U3 RB	565	P/R18	585	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39176		14	3-JBOX-75-3333	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	593	P/R18	598	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39177		18	3-HS-75-37B	LOCAL HS STATION	U3 RB	519	N/R20	519	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39178		14	3-JBOX-75-3448	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	N/R20	535	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39179		18	3-HS-75-53B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	593	P/R18	607	NO	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39180		14	3-JBOX-75-3345	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	593	P/R18	610	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/BCB	
39181		18	3-HS-23-34B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	565	T/R17	580	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/JRD	
39182		14	3-JBOX-23-4190	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	U/R20	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39183		18	3-HS-23-40B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	565	T/R17	580	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39184		18	3-HS-23-46B	LOCAL HS STATION	U3 RB	565	U/R20	670	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39185		14	3-JBOX-23-4189	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	U/R20	570	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39186		18	3-HS-23-52B	LOCAL HS STATION	U3 RB	565	U/R20	570	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39187		18	3-HS-74-0005B	LOCAL HS STATION - RHR PUMP 3A	U3 RB	519	U/R16	519	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39188		18	3-HS-74-0028B	LOCAL HS STATION - RHR PUMP 3B	U3 RB	519	S/R20	519	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39189		18	3-HS-74-0016B	LOCAL HS STATION - RHR PUMP 3C	U3 RB	519	T/R16	519	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39190		18	3-HS-74-0039B	LOCAL HS STATION - RHR PUMP 3D	U3 RB	519	U/R20	519	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39191		18	3-HS-75-0005B	LOCAL HS STATION - CS PUMP 3A	U3 RB	519	N/R16	519	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39192		18	3-HS-75-0033B	LOCAL HS STATION - CS PUMP 3B	U3 RB	519	N/R20	522	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39193		18	3-HS-75-0014B	LOCAL HS STATION - CS PUMP 3C	U3 RB	519	N/R16	519	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	
39194		18	3-HS-75-0042B	LOCAL HS STATION - CS PUMP 3D	U3 RB	519	N/R20	522	YES	ABS	RRS	YES	YES	YES	YES	YES	BCB/RDA	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
39195		18	3-LPNL-925-005A	LOCAL PANEL 25-5A	U3 RB	593	S/R17	593	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39196		18	3-LPNL-925-005B	LOCAL PANEL 25-5B	U3 RB	593	S/R17	593	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39197		18	3-LPNL-925-005D	LOCAL PANEL 25-5D	U3 RB	593	S/R17	593	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39198		18	3-LPNL-925-006A	LOCAL PANEL 25-6A	U3 RB	593	Q/R19	593	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39199		18	3-LPNL-925-006D	LOCAL PANEL 25-6D	U3 RB	593	Q/R19	593	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39200		18	3-LPNL-925-0059	LOCAL PANEL 25-59	U3 RB	519	T/R15	519	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39201		18	3-LPNL-925-0062	LOCAL PANEL 25-62	U3 RB	519	T/R15	519	YES	BS	GRS	YES	YES	YES	YES	YES	BCB/RDA	
39202		20	3-PNLA-082-00003C	DG 3C ELECTRICAL CONTROL CABINET	U3 DG	565	DG C	565	YES	BS	GRS	YES	YES	NO	NO	NO	FRB/JOD	
39203		20	3-PNLA-082-00003D	DG 3D ELECTRICAL CONTROL CABINET	U3 DG	565	DG D	565	YES	BS	GRS	YES	YES	NO	NO	NO	FRB/JOD	
39204		20	3-PNLA-925-0031	LOCAL PANEL 25-31	U3 RB	621	Q/R20	621	NO	ABS	RRS	YES	YES	NO	YES	NO	FRB/JOD	
39205		20	3-PNLA-925-0032	LOCAL PANEL 25-32	U3 RB	621	SD BD E	621	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/JOD	
39206		18	3-LPNL-925-0001	LOCAL PANEL 25-1	U3 RB	519	N/R15	522	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39207		18	3-LPNL-925-0060	LOCAL PANEL 25-60	U3 RB	519	N/R21	522	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/BCB	
39208		13	3-MGEN-268-0003DA	LPCI MG SET 3DA	U3 RB	621	T/R20	621	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39209		14	NONE	MG SET 3DA VOLTAGE REGULATOR BOX	U3 RB	621	480V BD 3B	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39210		14	3-JBOX-268-5995	MG SET 3DA CONTROL STATION (3-HS-268-0003DA)	U3 RB	621	S/R20	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39211		20	3-JBOX-268-5956	MG SET 3DA CONTROL BOX (RELAYS)	U3 RB	621	S/R20	625	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39212		13	3-MGEN-268-0003EA	LPCI MG SET 3EA	U3 RB	621	T/R19	621	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39213		14	NONE	MG SET 3EA VOLTAGE REGULATOR BOX	U3 RB	621	480V BD 3A	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39214		14	3-JBOX-268-5997	MG SET 3EA CONTROL STATION (3-HS-268-0003EA)	U3 RB	621	S/R20	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39215		20	3-JBOX-268-5958	MG SET 3EA CONTROL BOX (RELAYS)	U3 RB	621	S/R20	625	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39216		20	3-LPNL-925-655A	DIV I LOAD SHED LOGIC PANEL	U3 RB	621	480V BD 3A	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39217		20	3-LPNL-925-655B	DIV II LOAD SHED LOGIC PANEL	U3 RB	621	480V BD 3B	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39218		20	3-LPNL-925-657A	DIV I LOAD SHED LOGIC PANEL	U3 DG	583	HALLWAY	589	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39219		20	3-LPNL-925-657B	DIV II LOAD SHED LOGIC PANEL	U3 DG	583	HALLWAY	589	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39220		20	3-PROT-099-0003A1	RPS CIRCUIT PROTECTOR CABINET 3A1	U3 RB	593	BATT BD 3	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39221		20	3-PROT-099-0003A2	RPS CIRCUIT PROTECTOR CABINET 3A2	U3 RB	593	BATT BD 3	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39222		20	3-PROT-099-0003B1	RPS CIRCUIT PROTECTOR CABINET 3B1	U3 RB	593	BATT BD 3	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39223		20	3-PROT-099-0003B2	RPS CIRCUIT PROTECTOR CABINET 3B2	U3 RB	593	BATT BD 3	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39224		20	3-PROT-099-0003C1	RPS CIRCUIT PROTECTOR CABINET 3C1	U3 RB	593	BATT BD 3	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39225		20	3-PROT-099-0003C2	RPS CIRCUIT PROTECTOR CABINET 3C2	U3 RB	593	BATT BD 3	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39226		18	3-LPNL-925-247A	LOCAL PANEL 3-25-247A (CAD DRYWELL & SUPP. CHAMB. V.)	U3 RB	621	Q/R18	626	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/KHG	
39227		01	3-BDBB-265-0003B	480V RB VENT BD 3B	U3 RB	565	U/R19	565	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
39228		20	3-PNLA-009-0036A	PANEL 3-9-36A	U3 CB	593	U3 AIR	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
39229		18	3-LPNL-925-0247B	LOCAL PANEL 3-25-247B (CAD N2 SUPPLY PANEL B)	U3 RB	621	Q/R19	626	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/KHG	
39230		20	3-PNLA-009-0020	PANEL 3-9-20	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/KHG	
39231		20	NONE	CO2 RELAY PNL FOR 3-39-38	U3 DG	565	DG A	569	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
39232		20	NONE	CO2 RELAY PNL FOR 3-39-39	U3 DG	565	DG B	569	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
39233		20	NONE	CO2 RELAY PNL FOR 3-39-40	U3 DG	565	DG C	569	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
39234		20	NONE	CO2 RELAY PNL FOR 3-39-41	U3 DG	565	DG D	569	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
39235		18	3-LPNL-925-0007A	LOCAL PANEL 3-25-7A	U3 RB	541	SW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
39236		18	3-LPNL-925-0007B	LOCAL PANEL 3-25-7A	U3 RB	541	SW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
39237		18	3-LPNL-925-0223	LOCAL PANEL 3-25-223	U3 RB	593	Q/R19	593	YES	BS	GRS	YES	YES	YES	YES	YES	FRB/KHG	
39238		20	3-PNLA-009-0008	PANEL 3-9-8	U3 CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	FRB/KHG	
39239		18	3-HS-64-68	HANDSWITCH FOR 3-CLR-67-917 (34001)	U3 RB	519	SW CORNER	541	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39240		18	3-HS-64-69	HANDSWITCH FOR 3-CLR-67-918 (34013)	U3 RB	519	SE CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39241		18	3-HS-64-70	HANDSWITCH FOR 3-CLR-67-921 (34003)	U3 RB	519	SW CORNER	541	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39242		18	3-HS-64-71	HANDSWITCH FOR 3-CLR-67-922 (34015)	U3 RB	519	SE CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39243		14	3-HS-69-2B	HANDSWITCH FOR 3-FCV-69-2 (33033)	U3 RB	593	R17/S	597	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39245		20	3-HS-71-2B	HANDSWITCH FOR 3-FCV-71-2 (33037)	U3 RB	593	R/R14	593	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39247		18	3-HS-73-3B	HANDSWITCH FOR 3-FCV-73-3 (33041)	U3 RB	519	TORUS	560	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39248		18	3-HS-73-81B	HANDSWITCH FOR 3-FCV-73-81 (33042)	U3 RB	519	TORUS	561	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39249		14	3-HS-74-100B	HANDSWITCH FOR 3-FCV-74-100 (31010)	U3 RB	565	SW CORNER	570	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39250		14	3-HS-74-12B	HANDSWITCH FOR 3-FCV-74-12 (31011)	U3 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39251		14	3-HS-74-13B	HANDSWITCH FOR 3-FCV-74-13 (31012)	U3 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39252		14	3-HS-74-1B	HANDSWITCH FOR 3-FCV-74-1 (31001)	U3 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39253		14	3-HS-74-24B	HANDSWITCH FOR 3-FCV-74-24 (31029)	U3 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39254		14	3-HS-74-25B	HANDSWITCH FOR 3-FCV-74-25 (31030)	U3 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39255		14	3-HS-74-2B	HANDSWITCH FOR 3-FCV-74-2 (31002)	U3 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39256		14	3-HS-74-35B	HANDSWITCH FOR 3-FCV-74-35 (31037)	U3 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39257		14	3-HS-74-36B	HANDSWITCH FOR 3-FCV-74-36 (31038)	U3 RB	519	SE CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39258		18	3-HS-74-73B	HANDSWITCH FOR 3-FCV-74-73 (31046)	U3 RB	519	TORUS	561	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39259		14	3-HS-74-97B	HANDSWITCH FOR 3-FCV-74-97 (31013)	U3 RB	519	SW CORNER	<565	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39260		18	3-HS-75-11B	HANDSWITCH FOR 3-FCV-75-11 (35006)	U3 RB	519	NW CORNER	524	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39261		14	3-HS-75-22B	HANDSWITCH FOR 3-FCV-75-22 (35010)	U3 RB	519	NW CORNER	546	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39262		18	3-HS-75-23B	HANDSWITCH FOR 3-FCV-75-23 (35012)	U3 RB	593	P/R18	608	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39263		18	3-HS-75-2B	HANDSWITCH FOR 3-FCV-75-2 (35001)	U3 RB	519	NW CORNER	524	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39264		18	3-HS-75-30B	HANDSWITCH FOR 3-FCV-75-30 (35015)	U3 RB	519	NE CORNER	524	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39265		18	3-HS-75-39B	HANDSWITCH FOR 3-FCV-75-39 (35020)	U3 RB	519	NE CORNER	524	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39266		14	3-HS-75-50B	HANDSWITCH FOR 3-FCV-75-50 (35024)	U3 RB	519	NE CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39267		18	3-HS-75-51B	HANDSWITCH FOR 3-FCV-75-51 (35026)	U3 RB	593	P/R18	608	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39268		14	3-HS-78-61B	HANDSWITCH FOR 3-FCV-78-61 (31026)	U3 RB	621	R17/S	626	NO	ABS	RRS	YES	YES	YES	YES	YES	JRD/JOD	
39269		14	3-HS-64-72	HANDSWITCH FOR 3-CLR-67-919 (34002)	U3 RB	519	NW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39270		14	3-HS-64-73	HANDSWITCH FOR 3-CLR-67-920 (34014)	U3 RB	519	NE CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39271		18	3-TS-64-68	TEMPERATURE SWITCH FOR 3-CLR-67-917 (34001)	U3 RB	519	SW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39272		18	3-TS-64-69	TEMPERATURE SWITCH FOR 3-CLR-67-918 (34013)	U3 RB	519	SE CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39273		18	3-TS-64-70	TEMPERATURE SWITCH FOR 3-CLR-67-921 (34003)	U3 RB	519	SW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39274		18	3-TS-64-71	TEMPERATURE SWITCH FOR 3-CLR-67-922 (34015)	U3 RB	519	SE CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
39275		18	3-TS-1-17A	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	589	YES	ABS	RRS	YES	YES	YES	YES	YES	N/A	5
39276		18	3-TS-1-17B	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	589	YES	ABS	RRS	YES	YES	YES	YES	YES	N/A	5
39277		18	3-TS-1-17C	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	589	YES	ABS	RRS	YES	YES	YES	YES	YES	N/A	5
39278		18	3-TS-1-17D	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	589	YES	ABS	RRS	YES	YES	YES	YES	YES	N/A	5
39279		18	3-TS-1-29A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	580	YES	ABS	AGS	YES	YES	YES	YES	YES	N/A	5
39280		18	3-TS-1-29B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	580	YES	ABS	AGS	YES	YES	YES	YES	YES	N/A	5
39281		18	3-TS-1-29C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	580	YES	ABS	AGS	YES	YES	YES	YES	YES	N/A	5
39282		18	3-TS-1-29D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	580	YES	ABS	AGS	YES	YES	YES	YES	YES	N/A	5
39283		18	3-TS-1-40A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	600	NO	ABS	AGS	YES	YES	YES	YES	YES	N/A	5
39284		18	3-TS-1-40B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	600	NO	ABS	AGS	YES	YES	YES	YES	YES	N/A	5
39285		18	3-TS-1-40C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	600	NO	ABS	AGS	YES	YES	YES	YES	YES	N/A	5
39286		18	3-TS-1-40D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	600	NO	ABS	AGS	YES	YES	YES	YES	YES	N/A	5
39287		18	3-TS-1-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	623	NO	ABS	AGS	YES	YES	YES	YES	YES	N/A	5
39288		18	3-TS-1-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	623	NO	ABS	AGS	YES	YES	YES	YES	YES	N/A	5
39289		18	3-TS-1-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	623	NO	ABS	AGS	YES	YES	YES	YES	YES	N/A	5
39290		18	3-TS-1-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	623	NO	ABS	AGS	YES	YES	YES	YES	YES	N/A	5
39291		18	3-TS-64-72	TEMPERATURE SWITCH FOR 3-CLR-67-919 (34002)	U3 RB	519	NW CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39292		18	3-TS-64-73	TEMPERATURE SWITCH FOR 3-CLR-67-920 (34014)	U3 RB	519	NE CORNER	545	YES	BS	GRS	YES	YES	YES	YES	YES	JRD/JOD	
39293		14	3-HS-74-96B	HAND SWITCH FOR 3-FCV-74-96 (SSEL # 31003)	RB	519	SW CORNER	524	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/JRD	
39294		ROB	3-AMP-092-0007/41A	IRM CH. "A" VOLTAGE PREAMPLIFIER 7-34A	RB	565	S/R17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39295		ROB	3-AMP-092-0007/41B	IRM CH. "B" VOLTAGE PREAMPLIFIER 7-34B	RB	565	S/R17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39296		14	3-LPNL-925-0027	PANEL 3-25-27 IRM PREAMP. RPS I	RB	565	S/R17	570	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/JRD	
39297		ROB	3-AMP-092-0007/41C	IRM CH. "C" VOLTAGE PREAMPLIFIER 7-34C	RB	577	Q/R19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39298		ROB	3-AMP-092-0007/41D	IRM CH. "D" VOLTAGE PREAMPLIFIER 7-34D	RB	577	Q/R19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39299		14	3-LPNL-925-0061	PANEL 3-25-61 IRM PREAMP. RPS II	RB	577	Q/R19	582	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/JRD	
39300		ROB	3-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U3 MCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39301		ROB	3-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U3 MCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39302		ROB	3-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	CB	617	U3 MCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39303		ROB	3-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	CB	617	U3 MCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
39304		20	3-PNLA-009-012	PANEL 3-9-12	CB	617	U3 MCR	617	NO	ABS	RRS	YES	YES	YES	YES	YES	JOD/JRD	
39305		15	3-BATD-283-000A3	24V NEUTRON MONITORING BATTERY, U3 CHANNEL A	CB	593	BAT RM 3	593	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/JRD	
39306		15	3-BATD-283-000B3	24V NEUTRON MONITORING BATTERY, U3 CHANNEL B	CB	593	BAT RM 3	593	YES	BS	GRS	YES	YES	YES	YES	YES	JOD/JRD	
39307		16	3-CHGD-283-A1-3	24V NEUTRON BATTERY CHARGERS A1-3	CB	593	BAT BD RM 3	598	YES	BS	GRS	YES	NO	NO	YES	NO	JOD/JRD	
39308		16	3-CHGD-283-A2-3	24V NEUTRON BATTERY CHARGERS A2-3	CB	593	BAT BD RM 3	598	YES	BS	GRS	YES	NO	NO	YES	NO	JOD/JRD	
39309		16	3-CHGD-283-B1-3	24V NEUTRON BATTERY CHARGERS B1-3	CB	593	BAT BD RM 3	598	YES	BS	GRS	YES	NO	NO	YES	NO	JOD/JRD	
39310		16	3-CHGD-283-B2-3	24V NEUTRON BATTERY CHARGERS B2-3	CB	593	BAT BD RM 3	598	YES	BS	GRS	YES	NO	NO	YES	NO	JOD/JRD	
9160		04	0-XFA-082-000AA	DG-A NEUTRAL GRN XFMR	DGB 1/2	565	DGRMA	565'-6"	YES	DOC	RRS	YES	NO	NO	NO	NO	JOD/FRB	
9161		04	0-XFA-082-000BA	DG-B NEUTRAL GRN XFMR	DGB 1/2	565	DGRMB	565'-6"	YES	DOC	RRS	YES	NO	NO	NO	NO	JOD/FRB	
9162		04	0-XFA-082-000CA	DG-C NEUTRAL GRN XFMR	DGB 1/2	565	DGRMC	565'-6"	YES	DOC	RRS	YES	NO	NO	NO	NO	JOD/FRB	

SSEL NO.	SUB COMP.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BLDG	ELEV.	LOCATION	BASE ELEV	BELOW <40?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTE
9163		04	0-XFA-082-000DA	DG-D NEUTRAL GRN XFMR	DGB 1/2	565	DGRMD	565'-6"	YES	DOC	RRS	YES	NO	NO	NO	NO	JOD/FRB	
9164		04	3-XFA-082-0003AA	DG-3A NEUTRAL GRN XFMR	DGB 3	565	DGRM3A	565'-6"	YES	DOC	RRS	YES	NO	NO	NO	NO	JOD/FRB	
9165		04	3-XFA-082-0003BA	DG-3B NEUTRAL GRN XFMR	DGB 3	565	DGRM3B	565'-6"	YES	DOC	RRS	YES	NO	NO	NO	NO	JOD/FRB	
9166		04	3-XFA-082-0003CA	DG-3C NEUTRAL GRN XFMR	DGB 3	565	DGRM3C	565'-6"	YES	DOC	RRS	YES	NO	NO	NO	NO	JOD/FRB	
9167		04	3-XFA-082-0003DA	DG-3D NEUTRAL GRN XFMR	DGB 3	565	DGRM3D	565'-6"	YES	DOC	RRS	YES	NO	NO	NO	NO	JOD/FRB	

NOTES:

1. The "ROB" equipment class designation indicates that the component has been seismically verified using the "rule of the box" referred to in the GIP. That is, the component has been evaluated with and as an integral part of the equipment which houses the component or to which it is attached. See the SEWS package for the SSEL item for pertinent references to the evaluation.

2. Components with a letter sub-component designation in the "SUB" column are critical components in the instrumentation loop which support the monitoring component listed on the SSEL. Although not specifically listed on the SSEL, these components have seismically verified using the "rule of the box" (indicated by the "ROB" equipment class designation), individually seismically verified as documented on SEWS forms (indicated by a GIP equipment class designation), or were determined to be "rugged" components which do not require seismic verification under the requirements of the GIP (indicated by the "R" equipment class designation). Note that the "rugged" instrumentation loop components are not included in this listing but may be found in Table 5-3 of this report. See the SEWS package for the listed SSEL component for pertinent references to the evaluations.

3. Components classified as "rugged," as indicated by the "R" equipment class designation, which are listed on the composite SSEL, are not included in this listing as seismic verification is not required under the requirements of the GIP.

4. Not used.

5. Items were inaccessible at the time of the walkdown. Seismic adequacy of these items was based on the evaluation of similar items found in Unit 2.

6. Duplicate entry for the same equipment.

APPENDIX E

OTHER EQUIPMENT NOT SPECIFICALLY ADRESSED BY THE GIP

APPENDIX E

OTHER EQUIPMENT NOT SPECIFICALLY ADDRESSED BY THE GIP

SSEL NO.	EQUIP CLASS	EQUIPMENT I.D.	DESCRIPTION	METHOD OF EVALUATION
1	00	2-HCU-85,1-185	CRD/HYDRAULIC CONTROL UNIT	• UNIT QUALIFIED BY GE • ANCHORAGE EVALUATED
6004	00	0-VPR-84-639	CAD/N2 TANK "A" VAPORIZER	ADEQUATE BY ENGINEERING JUDGEMENT
6005	00	0-HTR-84-5	CAD/N2 TANK "A" ELECTRIC HEATER	INHERENTLY RUGGED AND RIGIDLY MOUNTED
6028	00	0-VPR-84-640	CAD/N2 TANK "B" VAPORIZER	ADEQUATE BY ENGINEERING JUDGEMENT
6029	00	0-HTR-84-16	CAD/N2 TANK "B" ELECTRIC HEATER	INHERENTLY RUGGED AND RIGIDLY MOUNTED
30001	00	3-HCU-85,1-185	CRD/HYDRAULIC CONTROL UNIT	• UNIT QUALIFIED BY GE • ANCHORAGE EVALUATED

APPENDIX F-1

INSTANCES WHERE SPECIAL EXCEPTION TO ENVELOPING OF SEISMIC DEMAND SPECTRUM IS USED

APPENDIX F-1

INSTANCES WHERE SPECIAL EXCEPTION TO ENVELOPING OF SEISMIC DEMAND SPECTRUM IS USED

For the following equipment, the Capacity Spectrum envelops the Demand Spectrum at and above the conservatively estimated lowest natural frequency of the equipment :

SSEL NUMBER	EQUIPMENT CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
9028	01	2-BDBB-268-0002E	480V RMOV BD 2E	U2 RB	621
39018	01	3-BDBB-268-0003E	480V RMOV BOARD 3E	U3 RB	621
9018	02	1-BDBB-231-0001A	480V SHDN BD 1A	U1 RB	621
9019	02	1-BDBB-231-0001B	480V SHDN BD 1B	U1 RB	621
9020	02	2-BDBB-231-0002A	480V SHDN BD 2A	U2 RB	621
9021	02	2-BDBB-231-0002B	480V SHDN BD 2B	U2 RB	621
9022	02	3-BDBB-231-0003A	480V SHDN BD 3A	U3 RB	621
39007	02	3-BDBB-231-0003B	480V SD BOARD 3B	U3 RB	621
9012	03	0-BDAA-211-0000A	4KV SHDN BD A	U1 RB	621
9014	03	0-BDAA-211-0000C	4KV SHDN BD C	U2 RB	621
9006	04	2-XFA-253-0002A1	480V-120/208V XFMR FOR I&C BUS 2A	U2 RB	621
9194	04	1-XFA-231-TS1A	4KV/480V TRANSFORMER TS1A	U1 RB	621
9282	04	1-XFA-231-TS1B	4KV/480V TRANSFORMER TS1B	U1 RB	621
39040	04	3-XFA-253-0003A1	I&C BUS A 480/208-120V TRANSFORMER	U3 RB	621
4016	07	1-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U1 RB	593

SSEL NUMBER	EQUIPMENT CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
4017	07	2-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U2 RB	593
1026	08A	2-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U2 RB	621
1054	08A	2-FCV-74-74	RHR/LOOP II OUTBOARD DRYWELL SPRAY VALVE	U2 RB	593
3034	08A	2-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U2 RB	593
5012	08A	2-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U2 RB	593
5013	08A	2-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U2 RB	593
5026	08A	2-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U2 RB	593
5027	08A	2-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U2 RB	593
31026	08A	3-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U3 RB	621
33033	08A	3-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U3 RB	593
35012	08A	3-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U3 RB	593
35013	08A	3-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U3 RB	593
35026	08A	3-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U3 RB	593
35027	08A	3-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U3 RB	593
9140	13	2-MGEN-268-0002DN	LPCI M-G SET 2DN	U2 RB	621
9141	13	2-MGEN-268-0002EN	LPCI M-G SET 2EN	U2 RB	639
9283	13	2-MGEN-268-0002DA	LPCI MG SET 2DA	U2 RB	639
9287	13	2-MGEN-268-0002EA	LPCI MG SET 2EA	U2 RB	621
39015	13	3-MGEN-268-0003DN	LPCI MG SET 3DN	U3 RB	621
39017	13	3-MGEN-268-0003EN	LPCI MG SET 3EN	U3 RB	621
39208	13	3-MGEN-268-0003DA	LPCI MG SET 3DA	U3 RB	621
39212	13	3-MGEN-268-0003EA	LPCI MG SET 3EA	U3 RB	621
9010	14	2-JBOX-253-7193	I&C BUS BREAKER BOX BUS 2A	U2 RB	621
9011	14	2-JBOX-253-7196	I&C BUS BREAKER BOX BUS 2B	U2 RB	593
9177	14	2-JBOX-253-7192	DISC SW BOX (I&C BUS A)	U2 RB	621
9179	14	2-JBOX-253-7195	DISC SW BOX (I&C BUS B)	U2 RB	593

SSEL NUMBER	EQUIPMENT CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
9181	14	2-JBOX-268-5990	MG SET 2DN CONTROL STATION (2-HS-268-0002DN)	U2 RB	621
9182	14	2-JBOX-268-5992	MG SET 2EN CONTROL STATION (2-HS-268-0002EN)	U2 RB	639
9193	14	2-JBOX-256-9722	DIV I ECCS ATU INV FUSE BOX	U2 RB	593
9215	14	2-JBOX-75-1223	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593
9216	14	2-JBOX-74-2938	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593
9223	14	2-JBOX-75-1222	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593
9253	14	NONE	LPCI MG SET 2DN VOLTAGE REGULATOR BOX	U2 RB	621
9254	14	NONE	LPCI MG SET 2EN VOLTAGE REGULATOR BOX	U2 RB	621
9284	14	NONE	MG SET 2DA VOLTAGE REGULATOR BOX	U2 RB	621
9285	14	2-JBOX-268-5991	MG SET 2DA CONTROL STATION (2-HS-268-0002DA)	U2 RB	639
9288	14	NONE	MG SET 2EA VOLTAGE REGULATOR BOX	U2 RB	621
9289	14	2-JBOX-268-5993	MG SET 2EA CONTROL STATION (2-HS-268-0002EA)	U2 RB	621
9338	14	2-HS-69-2B	HANDSWITCH FOR 2-FCV-69-2 (3034)	U2 RB	593
9357	14	2-HS-75-23B	HANDSWITCH FOR 2-FCV-75-23 (5012)	U2 RB	593
9362	14	2-HS-75-51B	HANDSWITCH FOR 2-FCV-75-51 (5026)	U2 RB	593
9363	14	2-HS-78-61B	HANDSWITCH FOR 2-FCV-78-61 (1026)	U2 RB	621
39010	14	3-JBOX-268-5994	MG SET 3DN CONTROL STATION (3-HS-268-0003DN)	U3 RB	621
39011	14	3-JBOX-268-5996	MG SET 3EN CONTROL STATION (3-HS-268-0003EN)	U3 RB	621
39013	14	NONE	MG SET 3DN VOLTAGE REGULATOR BOX	U3 RB	621
39019	14	NONE	MG SET 3EN VOLTAGE REGULATOR BOX	U3 RB	621
39042	14	3-JBOX-253-7159	I&C BUS 3A BREAKER BOX	U3 RB	621
39043	14	3-JBOX-253-8866	I&C BUS 3A DISC SWITCH	U3 RB	621
39044	14	3-JBOX-253-7158	I&C BUS 3A DISC SWITCH	U3 RB	621
39180	14	3-JBOX-75-3345	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	593
39209	14	NONE	MG SET 3DA VOLTAGE REGULATOR BOX	U3 RB	621
39210	14	3-JBOX-268-5995	MG SET 3DA CONTROL STATION (3-HS-268-0003DA)	U3 RB	621
39213	14	NONE	MG SET 3EA VOLTAGE REGULATOR BOX	U3 RB	621

SSEL NUMBER	EQUIPMENT CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
39214	14	3-JBOX-268-5997	MG SET 3EA CONTROL STATION (3-HS-268-0003EA)	U3 RB	621
39268	14	3-HS-78-61B	HANDSWITCH FOR 3-FCV-78-61 (31026)	U3 RB	621
9115	16	2-INV-256-0002	DIVISION II ECCS ATU INVERTER	U2 RB	621
9406	16	2-CHGD-283-A1-2	24V NEUTRON BATTERY CHARGERS A1-2	CB	593
9407	16	2-CHGD-283-A2-2	24V NEUTRON BATTERY CHARGERS A2-2	CB	593
9408	16	2-CHGD-283-B1-2	24V NEUTRON BATTERY CHARGERS B1-2	CB	593
9409	16	2-CHGD-283-B2-2	24V NEUTRON BATTERY CHARGERS B2-2	CB	593
39075	16	3-INVT-256-0002	DIV II ECCS ATU INVERTER	U3 RB	621
9184	18	2-LPNL-925-005A	LOCAL PANEL 25-5A	U2 RB	593
9185	18	2-LPNL-925-005B	LOCAL PANEL 25-5B	U2 RB	593
9187	18	2-LPNL-925-006A	LOCAL PANEL 25-6A	U2 RB	593
9222	18	2-HS-75-25B	LOCAL HS STATION	U2 RB	593
9226	18	2-HS-75-53B	LOCAL HS STATION	U2 RB	593
9305	18	2-LPNL-925-247A	LOCAL PANEL 2-25-247A (CAD DRYWELL & SUPP. CHAM. V.)	U2 RB	621
9308	18	2-LPNL-925-0247B	LOCAL PANEL 2-25-247B (CAD N2 SUPPLY PANEL B)	U2 RB	621
9364	18	2-PS-67-50	PRESSURE SWITCH FOR 2-FCV-67-50 (4017)	U2 RB	593
9380	18	2-TS-1-40A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586
9381	18	2-TS-1-40B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586
9382	18	2-TS-1-40C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586
9383	18	2-TS-1-40D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586
9384	18	2-TS-1-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586
9385	18	2-TS-1-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586
9386	18	2-TS-1-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586
9387	18	2-TS-1-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586
39179	18	3-HS-75-53B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	593
39226	18	3-LPNL-925-247A	LOCAL PANEL 3-25-247A (CAD DRYWELL & SUPP. CHAMB. V.)	U3 RB	621

SSEL NUMBER	EQUIPMENT CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
39229	18	3-LPNL-925-0247B	LOCAL PANEL 3-25-247B (CAD N2 SUPPLY PANEL B)	U3 RB	621
39262	18	3-HS-75-23B	HANDSWITCH FOR 3-FCV-75-23 (35012)	U3 RB	593
39267	18	3-HS-75-51B	HANDSWITCH FOR 3-FCV-75-51 (35026)	U3 RB	593
16	20	2-HS-99-5A/S3A	RPS\REACTOR MANUAL SCRAM CHANNEL A3	U2 CB	617
17	20	2-HS-99-5A/S3B	RPS\REACTOR MANUAL SCRAM CHANNEL B3	U2 CB	617
18	20	2-HS-99-5A-S1	RPS\REACTOR MODE SWITCH	U2 CB	617
9040	20	2-PNLA-009-0003A	PANEL 9-3A	U2 CB	617
9041	20	2-PNLA-009-0003B	PANEL 9-3B	U2 CB	617
9042	20	2-PNLA-009-0004	PANEL 9-4	U2 CB	617
9043	20	2-PNLA-009-0005	PANEL 9-5	U2 CB	617
9044	20	2-PNLA-009-0006	PANEL 9-6	U2 CB	617
9045	20	2-PNLA-009-0009	PANEL 9-9	U2 CB	617
9050	20	2-PNLA-009-0021	PANEL 9-21	U2 CB	617
9051	20	0-PNLA-009-0023/7	PANEL 0-9-23-7	U2 CB	617
9052	20	0-PNLA-009-0023/8	PANEL 0-9-23-8	U2 CB	617
9053	20	3-PNLA-009-0023A	PANEL 3-9-23A	U3 CB	617
9054	20	3-PNLA-009-0023B	PANEL 3-9-23B	U3 CB	617
9055	20	3-PNLA-009-0023C	PANEL 3-9-23C	U3 CB	617
9056	20	3-PNLA-009-0023D	PANEL 3-9-23D	U3 CB	617
9064	20	2-PNLA-009-0054	PANEL 9-54	U2 CB	617
9065	20	2-PNLA-009-0055	PANEL 9-55	U2 CB	617
9074	20	2-LPNL-925-0031	PANEL 25-31	U2 RB	621
9075	20	2-LPNL-925-0032	PANEL 25-32	U2 RB	621
9080	20	0-LPNL-925-0042A1	PANEL 25-42A1	U2 RB	621
9081	20	0-LPNL-925-0042A2	PANEL 25-42A2	U2 RB	621
9082	20	0-LPNL-925-0042B1	PANEL 25-42B1	U2 RB	621

SSEL NUMBER	EQUIPMENT CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
9083	20	0-LPNL-925-0042B2	PANEL 25-42B2	U2 RB	621
9088	20	2-LPNL-925-044A/11	PANEL 25-44A11	U2 RB	621
9089	20	2-LPNL-925-044A/12	PANEL 25-44A12	U2 RB	621
9090	20	2-LPNL-925-044B/11	PANEL 25-44B11	U2 RB	621
9091	20	2-LPNL-925-044B/12	PANEL 25-44B12	U2 RB	621
9092	20	0-LPNL-925-0045A	PANEL 25-45A	U1 RB	621
9093	20	0-LPNL-925-0045B	PANEL 25-45B	U1 RB	593
9094	20	0-LPNL-925-0045C	PANEL 25-45C	U2 RB	621
9095	20	0-LPNL-925-0045D	PANEL 25-45D	U2 RB	593
9183	20	2-PNLA-009-0093	CONTROL PANEL 9-93	U2 CB	593
9251	20	2-JBOX-268-5951	MG SET 2DN CONTROL BOX	U2 RB	621
9252	20	2-JBOX-268-5953	MG SET 2EN CONTROL BOX	U2 RB	639
9286	20	2-JBOX-268-5922	MG SET 2DA CONTROL BOX (RELAYS)	U2 RB	639
9290	20	2-JBOX-268-5954	MG SET 2EA CONTROL BOX (RELAYS)	U2 RB	621
9301	20	1-PNLA-009-0054	PANEL 1-9-54	U1 CB	617
9302	20	1-PNLA-009-0055	PANEL 1-9-55	U1 CB	617
9309	20	1-PNLA-009-0020	PANEL 1-9-20	U1 CB	617
9310	20	2-PNLA-009-0020	PANEL 2-9-20	U2 CB	617
9315	20	1-LPNL-925-0032	LOCAL PANEL 1-25-32	U1 RB	621
9317	20	2-PNLA-009-0008	PANEL 2-9-8	U2 CB	617
9318	20	1-PNLA-009-0003	PANEL 1-9-3	U1 CB	617
9391	20	1-PNLA-009-0008	PANEL 1-9-8	U1 CB	617
9403	20	2-PNLA-009-012	PANEL 2-9-12	CB	617
30016	20	3-HS-99-5A/S3A	RPS\REACTOR MANUAL SCRAM CHANNEL A3	U3 CB	617
30017	20	3-HS-99-5A/S3B	RPS\REACTOR MANUAL SCRAM CHANNEL B3	U3 CB	617
30018	20	3-HS-99-5A-S1	RPS\REACTOR MODE SWITCH	U3 CB	617
39012	20	3-JBOX-268-5955	MG SET 3DN CONTROL BOX (RELAYS) - SEALED BOX	U3 RB	621

SSEL NUMBER	EQUIPMENT CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
39014	20	3-JBOX-268-5957	MG SET 3EN CONTROL BOX (RELAYS) - SEALED BOX	U3 RB	621
39105	20	3-LPNL-925-654A	DIV I LOAD SHED LOGIC PANEL - DCN W21284	U3 RB	621
39107	20	3-LPNL-925-656A	480V RMOV BD 3A LOAD SHED PANEL - DCN W21284	U3 RB	621
39115	20	3-PNLA-009-0003	REACTOR SD & CONT. COOLING PNL	U3 CB	617
39116	20	3-PNLA-009-0004	CLEANUP & RECIRC PNL	U3 CB	617
39117	20	3-PNLA-009-0005	REACTOR CONTROL PNL	U3 CB	617
39118	20	3-PNLA-009-0006	FW & COND. PNL	U3 CB	617
39119	20	3-PNLA-009-0009	PNL 9-9 (I&C CONT PWR, CAB 2&3)	U3 CB	617
39125	20	3-PNLA-009-0021	TEMP RECORDING PNL	U3 CB	617
39133	20	3-PNLA-009-0054	CONTAINMENT ATM. DILUTION PNL	U3 CB	617
39134	20	3-PNLA-009-0055	CONTAINMENT ATM. DILUTION PNL	U3 CB	617
39204	20	3-PNLA-925-0031	LOCAL PANEL 25-31	U3 RB	621
39205	20	3-PNLA-925-0032	LOCAL PANEL 25-32	U3 RB	621
39211	20	3-JBOX-268-5956	MG SET 3DA CONTROL BOX (RELAYS)	U3 RB	621
39215	20	3-JBOX-268-5958	MG SET 3EA CONTROL BOX (RELAYS)	U3 RB	621
39216	20	3-LPNL-925-655A	DIV I LOAD SHED LOGIC PANEL	U3 RB	621
39217	20	3-LPNL-925-655B	DIV II LOAD SHED LOGIC PANEL	U3 RB	621
39230	20	3-PNLA-009-0020	PANEL 3-9-20	U3 CB	617
39238	20	3-PNLA-009-0008	PANEL 3-9-8	U3 CB	617
39304	20	3-PNLA-009-012	PANEL 3-9-12	CB	617

APPENDIX F-2

INSTANCES OF MEETING THE INTENT BUT NOT THE LETTER OF THE CAVEAT

APPENDIX F-2

INSTANCES OF MEETING THE INTENT BUT NOT THE LETTER OF THE CAVEAT

SSEL NO.	EQUIPMENT CLASS	EQUIPMENT I.D.	DESCRIPTION	ELEV.	GIP INTENT [1]
9023	01	1-BDBB-268-0001A	480V RMOV BD 1A	621	BS10
6008	07	2-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 2 DRYWELL CONTROL AIR	565	BS4
6032	07	2-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 2 DRYWELL CONTROL AIR	565	BS4
12	08B	2-FSV-85-37A	CRD\SCRAM DUMP VALVE	565	BS4
13	08B	2-FSV-85-37B	CRD\SCRAM DUMP VALVE	565	BS4
14	08B	2-FSV-85-35A	CRD\BACKUP SCRAM VALVE	565	BS4
15	08B	2-FSV-85-35B	CRD\BACKUP SCRAM VALVE	565	BS4
30012	08B	3-FSV-85-37A	CRD\SCRAM DUMP VALVE	565	BS4
30013	08B	3-FSV-85-37B	CRD\SCRAM DUMP VALVE	565	BS4
30014	08B	3-FSV-85-35A	CRD\BACKUP SCRAM VALVE	565	BS4
30015	08B	3-FSV-85-35B	CRD\BACKUP SCRAM VALVE	565	BS4
9119	15	0-BATA-248-0000A	250V BATTERY SB-A	621	GR4
9122	15	0-BATA-248-0000B	250V BATTERY SB-B	621	GR4
9125	15	0-BATA-248-0000C	250V BATTERY SB-C	621	GR4
9128	15	0-BATA-248-0000D	250V BATTERY SB-D	621	GR4

[1] Intent codes in the above Table are explained below. The caveat number refers to the specific caveat number on the respective SEWS for the equipment class sited.

BS4 : Bounding Spectrum Caveat 4 (Pipe Size) : The valves are mounted on piping/tubing less than 1" diameter. The valves are very small, light weight and adequately supported. The intent of the caveat is met.

BS10 : Bounding Spectrum Caveat 10 (Anchorage) : Gap greater than 1/4" under the base plate accepted since the base plate is anchored to the floor by welded Nelson studs which provide a positive load path and eliminate any equipment rattling at base due to overturning moments.

GR4 : GERS Caveat 4 (Rack Type) : Rack type is not the two-step or single-tiered rack. These racks multi-tiered and are made of heavy tube steel with top bracing, as represented in the seismic experience data base. The lateral load resisting mechanism provided by these racks is adequate and meets the intent of theis caveat.

APPENDIX G

SUMMARY OF OUTLIERS AND RESOLUTION METHODS: MECHANICAL AND ELECTRICAL EQUIPMENT

APPENDIX G

SUMMARY OF OUTLIERS AND RESOLUTION METHODS:

MECHANICAL AND ELECTRICAL EQUIPMENT

SSEL NO	EQUIP CLASS	EQUIPMENT I.D.	DESCRIPTION	OUTLIER CONDITION	RESOLUTION
9023	01	1-BDBB-268-0001A	480V RMOV BD 1A	• Seismic Capacity < Demand • Anchorage - Pull-out Capacity < Demand	• OK for Capacity vs. demand (Ref. Calc. 50147-C-006) • Modification Required for Anchorage
9025	01	2-BDBB-268-0002A	480V RMOV BD 2A	• Seismic Capacity < Demand • Anchorage - Pull-out Capacity < Demand	• OK for Capacity vs. demand (Ref. Calc. 50147-C-006) • Modification Required for Anchorage
9031	01	0-BDBB-219-0000A	480V DSL AUX BD A	• Seismic Capacity < Demand	• OK for Capacity vs. demand (Ref. Calc. 50147-C-006)
9032	01	0-BDBB-219-0000B	480V DSL AUX BD B	• Seismic Capacity < Demand	• OK for Capacity vs. demand (Ref. Calc. 50147-C-006)
9033	01	3-BDBB-219-003EA	480V DSL AUX BD 3EA	• Seismic Capacity < Demand	• OK for Capacity vs. demand (Ref. Calc. 50147-C-006)
9034	01	2-BDBB-281-0002A	250V RMOV BD 2A	• Seismic Capacity < Demand • Anchorage - Pull-out Capacity < Demand	• OK for Capacity vs. demand (Ref. Calc. 50147-C-006) • Modification Required for Anchorage
9036	01	2-BDBB-281-0002C	250V RMOV BD 2C	• Interaction / Relay Chatter - (N2 Bottles)	• Issue Work Request (WR)
39005	01	3-BDBB-219-003EB	480V DIESEL AUX BOARD 3EB	• Seismic Capacity < Demand	• OK for Capacity vs. demand (Ref. Calc. 50147-C-006)
39008	01	3-BDBB-268-0003A	480V RMOV BOARD 3A	• Seismic Capacity < Demand • Anchorage - Pull-out Capacity < Demand • Interaction / Relay Chatter - (Misc. House Keeping Items)	• OK for Capacity vs. demand (Ref. Calc. 50147-C-006) • Modification Required for Anchorage • Issue WR for House Keeping Items
[illegible]	01	3-BDBB-268-0003D	480V RMOV BOARD 3D	• Interaction / Relay Chatter - (W/ long Flexible Cable Tray Run)	• Modification Required

SSEL NO	EQUIP CLASS	EQUIPMENT I.D.	DESCRIPTION	OUTLIER CONDITION	RESOLUTION
39030	01	3-BDBB-281-0003A	250V DC RMOV BOARD 3A	• Seismic Capacity < Demand • Anchorage - Pull-out Capacity < Demand	• OK for Capacity vs. demand (Ref. Calc. 50147-c-006) • Modification Required for Anchorage
9018	02	1-BDBB-231-0001A	480V SHDN BD 1A	• Anchorage - Inadequate Shear Resistance Due to Presense of Slotted Holes • Interaction / Relay Chatter - (Lifting Device Atop the Equipment)	• Modification Required for Anchorage • Issue WR for the Lifting Device
9019	02	1-BDBB-231-0001B	480V SHDN BD 1B	• Anchorage - Inadequate Shear Resistance Due to Presense of Slotted Holes • Interaction / Relay Chatter - (Lifting Device Atop the Equipment)	• Modification Required for Anchorage • Issue WR for the Lifting Device
9020	02	2-BDBB-231-0002A	480V SHDN BD 2A	• Interaction / Relay Chatter - (Lifting Device Atop the Equipment)	• Issue WR for the Lifting Device
9021	02	2-BDBB-231-0002B	480V SHDN BD 2B	• Interaction / Relay Chatter - (Lifting Device Atop the Equipment)	• Issue WR for the Lifting Device
9022	02	3-BDBB-231-0003A	480V SHDN BD 3A	• Anchorage - Inadequate Shear Resistance Due to Presense of Slotted Holes	• Modification Required for Anchorage
39007	02	3-BDBB-231-0003B	480V SD BOARD 3B	• Anchorage - Inadequate Shear Resistance Due to Presense of Slotted Holes	• Modification Required for Anchorage
9012	03	0-BDAA-211-0000A	4KV SHDN BD A	• Interaction / Relay Chatter - (Loose Racking Wrench on the Door)	• Issue WR
9013	03	0-BDAA-211-0000B	4KV SHDN BD B	• Interaction / Relay Chatter - (Loose Racking Wrench on the Door)	• Issue WR
9014	03	0-BDAA-211-0000C	4KV SHDN BD C	• Interaction / Relay Chatter - (Loose Racking Wrench on the Door)	• Issue WR
9015	03	0-BDAA-211-0000D	4KV SHDN BD D	• Interaction / Relay Chatter - (Loose Racking Wrench on the Door)	• Issue WR
9016	03	3-BDAA-211-003EA	4KV SHDN BD 3EA	• Anchorage - Inadequate Shear Resistance Due to Presense of Slotted Holes	• Modification Required for Anchorage
9017	03	3-BDAA-211-003EB	4KV SHDN BD 3EB	• Anchorage - Inadequate Shear Resistance Due to Presense of Slotted Holes	• Modification Required for Anchorage
39001	03	3-BDAA-211-003EC	4KV SHUTDOWN BOARD 3EC	• Anchorage - Inadequate Shear Resistance Due to Presense of Slotted Holes	• Modification Required for Anchorage
39020	03	3-BDAA-211-003ED	4KV SHUTDOWN BOARD 3ED	• Anchorage - Inadequate Shear Resistance Due to Presense of Slotted Holes	• Modification Required for Anchorage
9160	04	0-XFA-082-000AA	DG-A NEUTRAL GRN XFMR	• Anchorage - XFMR Mounted on Rubber Vibration Isolators • Interaction - Load path of Resistor Box Above the XMFR Is Through Rubber Vibration Isolators and Brittle Ceramics	• Modification Required

SSEL NO	EQUIP CLASS	EQUIPMENT I.D.	DESCRIPTION	OUTLIER CONDITION	RESOLUTION
9161	04	0-XFA-082-000BA	DG-B NEUTRAL GRN XFMR	• Anchorage - XFMR Mounted on Rubber Vibration Isolators • Interaction - Load path of Resistor Box Above the XMFR is Through Rubber Vibration Isolators and Brittle Ceramics	• Modification Required
9162	04	0-XFA-082-000CA	DG-C NEUTRAL GRN XFMR	• Anchorage - XFMR Mounted on Rubber Vibration Isolators • Interaction - Load path of Resistor Box Above the XMFR is Through Rubber Vibration Isolators and Brittle Ceramics	• Modification Required
9163	04	0-XFA-082-000DA	DG-D NEUTRAL GRN XFMR	• Anchorage - XFMR Mounted on Rubber Vibration Isolators • Interaction - Load path of Resistor Box Above the XMFR is Through Rubber Vibration Isolators and Brittle Ceramics	• Modification Required
9164	04	3-XFA-082-0003AA	DG-3A NEUTRAL GRN XFMR	• Anchorage - XFMR Mounted on Rubber Vibration Isolators, Also the Housing Cabinet Not Anchored • Interaction - Load path of Resistor Box Above the XMFR is Through Rubber Vibration Isolators and Brittle Ceramics	• Modification Required
9165	04	3-XFA-082-0003BA	DG-3B NEUTRAL GRN XFMR	• Anchorage - XFMR Mounted on Rubber Vibration Isolators, Also the Housing Cabinet Not Anchored • Interaction - Load path of Resistor Box Above the XMFR is Through Rubber Vibration Isolators and Brittle Ceramics	• Modification Required
9166	04	3-XFA-082-0003CA	DG-3C NEUTRAL GRN XFMR	• Anchorage - XFMR Mounted on Rubber Vibration Isolators, Also the Housing Cabinet Not Anchored • Interaction - Load path of Resistor Box Above the XMFR is Through Rubber Vibration Isolator s and Brittle Ceramics	• Modification Required
9167	04	3-XFA-082-0003DA	DG-3D NEUTRAL GRN XFMR	• Anchorage - XFMR Mounted on Rubber Vibration Isolators, Also the Housing Cabinet Not Anchored • Interaction - Load path of Resistor Box Above the XMFR is Through Rubber Vibration Isolators and Brittle Ceramics	• Modification Required
1004	06	2-PMP-74-5	RHR/PUMP 2A	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
1014	06	2-PMP-74-16	RHR/PUMP 2C	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
1032	06	2-PMP-74-28	RHR/PUMP 2B	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
1042	06	2-PMP-74-39	RHR/PUMP 2D	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
4001	06	0-PMP-23-85	RHRSW PUMP A3	• Verify Anchorage	• OK-AS-IS (Ref. Calc. 50147-C-005)
4011	06	0-PMP-23-91	RHRSW PUMP C3	• Verify Anchorage	• OK-AS-IS (Ref. Calc. 50147-C-005)
4044	06	0-PMP-23-88	RHRSW PUMP B3	• Verify Anchorage	• OK-AS-IS (Ref. Calc. 50147-C-005)

SSEL NO	EQUIP CLASS	EQUIPMENT I.D.	DESCRIPTION	OUTLIER CONDITION	RESOLUTION
4054	06	0-PMP-23-94	RHRSW PUMP D3	• Verify Anchorage	• OK-AS-IS (Ref. Calc. 50147-C-005)
5002	06	2-PMP-75-5	CS/PUMP 2A	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
5007	06	2-PMP-75-14	CS/PUMP 2C	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
5016	06	2-PMP-75-33	CS/PUMP 2B	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
5021	06	2-PMP-75-42	CS/PUMP 2D	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
8001	06	0-PMP-23-005	RHRSW PUMP A2	• Verify Anchorage	• OK-AS-IS (Ref. Calc. 50147-C-005)
8007	06	0-PMP-23-012	RHRSW PUMP C2	• Verify Anchorage	• OK-AS-IS (Ref. Calc. 50147-C-005)
8013	06	0-PMP-23- 19	RHRSW PUMP B2	• Verify Anchorage	• OK-AS-IS (Ref. Calc. 50147-C-005)
8019	06	0-PMP-23-027	RHRSW PUMP D2	• Verify Anchorage	• OK-AS-IS (Ref. Calc. 50147-C-005)
31004	06	3-PMP-74-5	RHR/PUMP 3A	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
31014	06	3-PMP-74-16	RHR/PUMP 3C	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
31031	06	3-PMP-74-28	RHR/PUMP 3B	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
31039	06	3-PMP-74-39	RHR/PUMP 3D	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
35002	06	3-PMP-75-5	CS/PUMP 3A	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
35007	06	3-PMP-75-14	CS/PUMP 3C	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
35016	06	3-PMP-75-33	CS/PUMP 3B	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
35021	06	3-PMP-75-42	CS/PUMP 3D	• Anchorage - Nozzle Loads Not Included in The Original Anchorage Calculation	• OK-AS-IS (Ref. Calc. 50147-C-003)
3001	07	2-FCV-1-14	MSIV "A" INBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)

SSEL NO	EQUIP CLASS	EQUIPMENT I.D.	DESCRIPTION	OUTLIER CONDITION	RESOLUTION
3002	07	2-FCV-1-15	MSIV "A" OUTBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
3003	07	2-FCV-1-26	MSIV "B" INBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
3004	07	2-FCV-1-27	MSIV "B" OUTBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
3005	07	2-FCV-1-37	MSIV "C" INBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
3006	07	2-FCV-1-38	MSIV "C" OUTBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
3007	07	2-FCV-1-51	MSIV "D" INBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
3008	07	2-FCV-1-52	MSIV "D" OUTBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
32012	07	3-PCV-1-22	MS SAFETY RELIEF VALVE	• Interaction (with Jib Crane)	• DCN W-16661 Issued
33001	07	3-FCV-1-14	MSIV "A" INBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
33002	07	3-FCV-1-15	MSIV "A" OUTBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
33003	07	3-FCV-1-26	MSIV "B" INBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
33004	07	3-FCV-1-27	MSIV "B" OUTBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
33005	07	3-FCV-1-37	MSIV "C" INBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
33006	07	3-FCV-1-38	MSIV "C" OUTBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
33007	07	3-FCV-1-51	MSIV "D" INBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
33008	07	3-FCV-1-52	MSIV "D" OUTBOARD ISO VALVE	• Not Specifically in the Seismic Experience Data Base, also Operator Height & weight > GIP Limit	• OK-AS-IS (Ref. Calc. 50147-C-002)
9404	15	2-BATD-283-000A2	24V NEUTRON MONITORING BATTERY UNIT 2, CHANNEL A	• Caveat - Batteries More Than 10 Years Old	• Replace Batteries
9405	15	2-BATD-283-000B2	24V NEUTRON MONITORING BATTERY UNIT 2, CHANNEL B	• Caveat - Batteries More Than 10 Years Old	• Replace Batteries

SSEL NO	EQUIP CLASS	EQUIPMENT I.D.	DESCRIPTION	OUTLIER CONDITION	RESOLUTION
9135	16	0-CHGA-248-0002A	250V BATTERY CHARGER 2A	• Caveat - Not Bolted to Adjacent Charger 0-CHGA-248-0002B	• Modification Required if Charger contains Essential Relays
9406	16	2-CHGD-283-A1-2	24V NEUTRON MONITORING BATTERY CHARGER A1-2	• Anchorage - Unknown Details to Blockwall	• Verify Anchorage Details or Replace with Through Bolts in Blockwall
9407	16	2-CHGD-283-A2-2	24V NEUTRON MONITORING BATTERY CHARGER A2-2	• Anchorage - Unknown Details to Blockwall	• Verify Anchorage Details or Replace with Through Bolts in Blockwall
9408	16	2-CHGD-283-B1-2	24V NEUTRON MONITORING BATTERY CHARGER B1-2	• Anchorage - Unknown Details to Blockwall	• Verify Anchorage Details or Replace with Through Bolts in Blockwall
9409	16	2-CHGD-283-B2-2	24V NEUTRON MONITORING BATTERY CHARGER B2-2	• Anchorage - Unknown Details to Blockwall	• Verify Anchorage Details or Replace with Through Bolts in Blockwall
39307	16	3-CHGD-283-A1-3	24V NEUTRON MONITORING BATTERY CHARGER A1-3	• Anchorage - Unknown Details to Blockwall	• Verify Anchorage Details or Replace with Through Bolts in Blockwall
39308	16	3-CHGD-283-A2-3	24V NEUTRON MONITORING BATTERY CHARGER A2-3	• Anchorage - Unknown Details to Blockwall	• Verify Anchorage Details or Replace with Through Bolts in Blockwall
39309	16	3-CHGD-283-B1-3	24V NEUTRON MONITORING BATTERY CHARGER B1-3	• Anchorage - Unknown Details to Blockwall	• Verify Anchorage Details or Replace with Through Bolts in Blockwall
39310	16	3-CHGD-283-B2-3	24V NEUTRON MONITORING BATTERY CHARGER B2-3	• Anchorage - Unknown Details to Blockwall	• Verify Anchorage Details or Replace with Through Bolts in Blockwall
9322	18	0-HS-67-48B	HANDSWITCH FOR 0-FCV-67-48	• Anchorage - Flexible/Unstable Anchorage System	• Modification Required for Anchorage
9040	20	2-PNLA-009-0003A	PANEL 9-3A	• Caveat - Unsupported Heavy Cables Inside Panel • Interaction / Relay Chatter - (Misc. House Keeping Items)	• Issue WR
9045	20	2-PNLA-009-0009	PANEL 9-9	• Interaction / Relay Chatter - (Loose / Missing Door Latch)	• Issue WR
9050	20	2-PNLA-009-0021	PANEL 9-21	• Interaction / Relay Chatter - (Loose / Missing Door Latch)	• Issue WR
9052	20	0-PNLA-009-0023/8	PANEL 0-9-23-8	• Caveat - Not Bolted to Adjacent Panel 2-9-22 Apply also to Panels 9-21 and 9-23-7 Since They Are all Bolted Together	• Issue WR

SSEL NO	EQUIP CLASS	EQUIPMENT I.D.	DESCRIPTION	OUTLIER CONDITION	RESOLUTION
9064	20	2-PNLA-009-0054	PANEL 9-54	• Interaction / Relay Chatter - (Pin at Door Hinge Missing)	• Issue WR or Show Panel Does Not Contain Essential Relays
9065	20	2-PNLA-009-0055	PANEL 9-55	• Interaction / Relay Chatter - (Pin at Door Hinge Missing)	• Issue WR or Show Panel Does Not Contain Essential Relays
9096	20	0-LPNL-925-0046A	PANEL 25-46A	• Caveat - Not Bolted to Adjacent Panel 25-47A	• Issue WR
9097	20	0-LPNL-925-0046B	PANEL 25-46B	• Caveat - Not Bolted to Adjacent Panel 25-47B	• Issue WR
9098	20	0-LPNL-925-0046C	PANEL 25-46C	• Caveat - Not Bolted to Adjacent Panel 25-47C	• Issue WR
9099	20	0-LPNL-925-0046D	PANEL 25-46D	• Caveat - Not Bolted to Adjacent Panel 25-47D	• Issue WR
9110	20	0-PNLA-082-0000C	DG C ELECT CONTROL CABINET	• Caveat - Door Loose	• Issue WR
9111	20	0-PNLA-082-0000D	DG D ELECT CONTROL CABINET	• Caveat - Door Loose	• Issue WR
9112	20	3-PNLA-082-0003A	DG 3A ELECT CONTROL CABINET	• Interaction/Relay Chatter - (Unanchored Cabinet Nearby) • Anchorage - Inadequate Welds	• Anchor nearby Cabinet • Modification Required for Anchorage
9113	20	3-PNLA-082-0003B	DG 3B ELECT CONTROL CABINET	• Interaction/Relay Chatter - (Unanchored Cabinet Nearby) • Anchorage - Inadequate Welds	• Anchor nearby Cabinet • Modification Required for Anchorage
9301	20	1-PNLA-009-0054	PANEL 1-9-54	• Interaction/Relay Chatter - (Missing Door Pin)	• Issue WR
9302	20	1-PNLA-009-0055	PANEL 1-9-55	• Interaction/Relay Chatter - (Missing Door Pin)	• Issue WR
9307	20	2-PNLA-009-0036A	PANEL 2-9-36A	• Interaction/Relay Chatter - (Missing Door Pin) • Interaction/Relay Chatter - (Mounting Plate Missing Connection Screws)	• Issue WR
9310	20	2-PNLA-009-0020	PANEL 2-9-20	• Interaction/Relay Chatter - (Loose Latch)	• Issue WR
9315	20	1-LPNL-925-0032	PANEL 1-25-32	• Interaction/Relay Chatter - (Loose Latch) • Interaction/Relay Chatter - (Unanchored Equipment Nearby)	• Issue WR
9391	20	1-PNLA-009-008	PANEL 1-9-8	• Interaction/Relay Chatter - (Missing Door Pin)	• Issue WR
9403	20	2-PNLA-009-012	PANEL 2-9-12	• Caveat - Loose Door Latches	• Issue WR
39115	20	3-PNLA-009-003	PANEL 3-9-3	• Caveat - Not Properly Bolted to Adjacent Panel 3-9-2 (Panels Are Bolted Only at the Bottom)	• Issue WR
39116	20	3-PNLA-009-0004	CLEANUP & RECIRC PNL	• Interaction / Relay Chatter - (Misc. House Keeping Items) • Caveat - Broken or Loose Door Latches	• Issue WR
39117	20	3-PNLA-009-0005	REACTOR CONTROL PNL	• Caveat - Broken or Loose Door Latches	• Issue WR
39119	20	3-PNLA-009-0009	PNL 3-9-9 (I&C CONT PWR, CAB 2&3)	• Interaction / Relay Chatter - (Loose / Missing Door Latch & Misc. House Keeping Items)	• Issue WR

SSEL NO	EQUIP CLASS	EQUIPMENT I.D.	DESCRIPTION	OUTLIER CONDITION	RESOLUTION
39202	20	3-PNLA-082-0003C	DG 3C ELECT CONTROL CABINET	• Interaction/Relay Chatter - (Unanchored Cabinet Nearby) • Anchorage - Inadequate Welds	• Anchor nearby Cabinet • Modification Required for Anchorage
39203	20	3-PNLA-082-0003D	DG 3D ELECT CONTROL CABINET	• Interaction/Relay Chatter - (Unanchored Cabinet Nearby) • Anchorage - Inadequate Welds	• Anchor nearby Cabinet • Modification Required for Anchorage
39204	20	3-PNLA-925-0031	LOCAL PANEL 3-25-31	• Anchorage - Inadequate Welds	• Modification Required for Anchorage

APPENDIX H-1

TANKS AND HEAT EXCHANGERS NOT SPECIFICALLY ADRESSED BY THE GIP

APPENDIX H-1

TANKS AND HEAT EXCHANGERS NOT SPECIFICALLY ADRESSED BY THE GIP

The following tanks and heat exchangers are not specifically covered by the GIP. However, their capacities were judged to be greater than the seismic demand.

SSEL NO.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
10	21	2-TNK-85-901	CRD\WEST SCRAM INSTRUMENT VOLUME	U2 RB	565
11	21	2-TNK-85-902	CRD\EAST SCRAM INSTRUMENT VOLUME	U2 RB	565
4009	21	2-HEX-67-915	EECW/RHR SEAL HX 2A	U2 RB	519
4040	21	2-HEX-67-916	EECW/RHR SEAL HX 2C	U2 RB	519
4052	21	2-HEX-67-923	EECW/RHR SEAL HX 2B	U2 RB	519
4082	21	2-HEX-67-924	EECW/RHR SEAL HX 2D	U2 RB	519
6013	21	2-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U2 DW	563D
6016	21	2-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U2 DW	563D
6019	21	2-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U2 DW	563D
6037	21	2-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U2 DW	563D
6040	21	2-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U2 DW	563D
6043	21	2-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U2 DW	563D
7002	21	0-TNK-18-45/1	DG "A" 7 DAY FUEL OIL TANK	DG-0	565
7003	21	0-TNK-18-45/2	DG "A" 7 DAY FUEL OIL TANK	DG-0	565
7004	21	0-TNK-18-45/3	DG "A" 7 DAY FUEL OIL TANK	DG-0	565
7005	21	0-TNK-86-650A	DG A LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7006	21	0-TNK-86-651A	DG A LEFT BANK STARTING AIR RECIEVERS	DG-0	565

SSEL NO.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
7007	21	0-TNK-86-652A	DG A LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7008	21	0-TNK-86-653A	DG A LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7009	21	0-TNK-86-654A	DG A LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7010	21	0-TNK-86-655A	DG A RIGHT BANK STARTING AIR RECIEVERS	DG-0	565
7011	21	0-TNK-86-656A	DG A RIGHT BANK STARTING AIR RECIEVERS	DG-0	565
7012	21	0-TNK-86-657A	DG A RIGHT BANK STARTING AIR RECIEVERS	DG-0	565
7013	21	0-TNK-86-658A	DG A RIGHT BANK STARTING AIR RECIEVERS	DG-0	565
7014	21	0-TNK-86-659A	DG A RIGHT BANK STARTING AIR RECIEVERS	DG-0	565
7024	21	0-TNK-18-46/1	DG "B" 7 DAY FUEL OIL TANK	DG-0	565
7025	21	0-TNK-18-46/2	DG "B" 7 DAY FUEL OIL TANK	DG-0	565
7026	21	0-TNK-18-46/3	DG "B" 7 DAY FUEL OIL TANK	DG-0	565
7027	21	0-TNK-86-650B	DG "B" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7028	21	0-TNK-86-651B	DG "B" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7029	21	0-TNK-86-652B	DG "B" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7030	21	0-TNK-86-653B	DG "B" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7031	21	0-TNK-86-654B	DG "B" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7032	21	0-TNK-86-655B	DG "B" RIGHT BANK STARTING AIR RECEIVER	DG-0	565
7033	21	0-TNK-86-656B	DG "B" RIGHT BANK STARTING AIR RECEIVER	DG-0	565
7034	21	0-TNK-86-657B	DG "B" RIGHT BANK STARTING AIR RECEIVER	DG-0	565
7035	21	0-TNK-86-658B	DG "B" RIGHT BANK STARTING AIR RECEIVER	DG-0	565
7036	21	0-TNK-86-659B	DG "B" RIGHT BANK STARTING AIR RECEIVER	DG-0	565
7046	21	0-TNK-18-47/1	DG "C" 7 DAY FUEL OIL TANK	DG-0	565
7047	21	0-TNK-18-47/2	DG "C" 7 DAY FUEL OIL TANK	DG-0	565
7048	21	0-TNK-18-47/3	DG "C" 7 DAY FUEL OIL TANK	DG-0	565

SSEL NO.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
7049	21	0-TNK-86-650C	DG "C" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7050	21	0-TNK-86-651C	DG "C" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7051	21	0-TNK-86-652C	DG "C" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7052	21	0-TNK-86-653C	DG "C" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7053	21	0-TNK-86-654C	DG "C" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7054	21	0-TNK-86-655C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	DG-0	565
7055	21	0-TNK-86-656C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	DG-0	565
7056	21	0-TNK-86-657C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	DG-0	565
7057	21	0-TNK-86-658C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	DG-0	565
7058	21	0-TNK-86-659C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	DG-0	565
7068	21	0-TNK-18-48/1	DG "D" 7 DAY FUEL OIL TANK	DG-0	565
7069	21	0-TNK-18-48/2	DG "D" 7 DAY FUEL OIL TANK	DG-0	565
7070	21	0-TNK-18-48/3	DG "D" 7 DAY FUEL OIL TANK	DG-0	565
7071	21	0-TNK-86-650D	DG "D" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7072	21	0-TNK-86-651D	DG "D" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7073	21	0-TNK-86-652D	DG "D" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7074	21	0-TNK-86-653D	DG "D" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7075	21	0-TNK-86-654D	DG "D" LEFT BANK STARTING AIR RECIEVERS	DG-0	565
7076	21	0-TNK-86-655D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	DG-0	565
7077	21	0-TNK-86-656D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	DG-0	565
7078	21	0-TNK-86-657D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	DG-0	565
7079	21	0-TNK-86-658D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	DG-0	565
7080	21	0-TNK-86-659D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	DG-0	565
7090	21	3-TNK-18-61/1	DG "3A" 7 DAY FUEL OIL TANK	DG-3	565

SSEL NO.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
7091	21	3-TNK-18-61/2	DG "3A" 7 DAY FUEL OIL TANK	DG-3	565
7092	21	3-TNK-18-61/3	DG "3A" 7 DAY FUEL OIL TANK	DG-3	565
7093	21	3-TNK-86-650A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	DG-3	565
7094	21	3-TNK-86-651A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	DG-3	565
7095	21	3-TNK-86-652A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	DG-3	565
7096	21	3-TNK-86-653A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	DG-3	565
7097	21	3-TNK-86-654A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	DG-3	565
7098	21	3-TNK-86-655A	DG "3A" LEFT BANK STARTING AIR RECEIVER	DG-3	565
7099	21	3-TNK-86-656A	DG "3A" LEFT BANK STARTING AIR RECEIVER	DG-3	565
7100	21	3-TNK-86-657A	DG "3A" LEFT BANK STARTING AIR RECEIVER	DG-3	565
7101	21	3-TNK-86-658A	DG "3A" LEFT BANK STARTING AIR RECEIVER	DG-3	565
7102	21	3-TNK-86-659A	DG "3A" LEFT BANK STARTING AIR RECEIVER	DG-3	565
7108	21	3-TNK-18-62/1	DG "3B" 7 DAY FUEL OIL TANK	DG-3	565
7109	21	3-TNK-18-62/2	DG "3B" 7 DAY FUEL OIL TANK	DG-3	565
7110	21	3-TNK-18-62/3	DG "3B" 7 DAY FUEL OIL TANK	DG-3	565
7111	21	3-TNK-86-650B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	DG-3	565
7112	21	3-TNK-86-651B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	DG-3	565
7113	21	3-TNK-86-652B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	DG-3	565
7114	21	3-TNK-86-653B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	DG-3	565
7115	21	3-TNK-86-654B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	DG-3	565
7116	21	3-TNK-86-655B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	DG-3	565
7117	21	3-TNK-86-656B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	DG-3	565
7118	21	3-TNK-86-657B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	DG-3	565
7119	21	3-TNK-86-658B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	DG-3	565

SSEL NO.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
7120	21	3-TNK-86-659B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	DG-3	565
30010	21	3-TNK-85-901	CRD\WEST SCRAM INSTRUMENT VOLUME	U3 RB	565
30011	21	3-TNK-85-902	CRD\EAST SCRAM INSTRUMENT VOLUME	U3 RB	565
34004	21	3-HEX-67-915	EECW/RHR SEAL HX 3A	U3 RB	519
34016	21	3-HEX-67-923	EECW/RHR SEAL HX 3B	U3 RB	519
34025	21	3-HEX-67-916	EECW/RHR SEAL HX 3C	U3 RB	519
34026	21	3-HEX-67-924	EECW/RHR SEAL HX 3D	U3 RB	519
36009	21	3-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U3 DW	584D
36012	21	3-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U3 DW	584D
36015	21	3-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U3 DW	584D
36020	21	3-ACC-32-6104	CA/ACCUMULATOR FOR PSV-1-18	U3 DW	584D
36029	21	3-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U3 DW	584D
36032	21	3-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U3 DW	584D
36035	21	3-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U3 DW	584D
36037	21	3-ACC-32-6110	CA/ACCUMULATOR FOR PSV-1-41	U3 DW	584D
37002	21	3-TNK-18-63/1	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565
37003	21	3-TNK-18-63/2	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565
37004	21	3-TNK-18-63/3	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565
37005	21	3-TNK-86-650C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565
37006	21	3-TNK-86-651C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565
37007	21	3-TNK-86-652C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565
37008	21	3-TNK-86-653C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565
37009	21	3-TNK-86-654C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565
37010	21	3-TNK-86-655C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565

SSEL NO.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.
37011	21	3-TNK-86-656C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565
37012	21	3-TNK-86-657C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565
37013	21	3-TNK-86-658C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565
37014	21	3-TNK-86-659C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565
37024	21	3-TNK-18-64/1	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565
37025	21	3-TNK-18-64/2	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565
37026	21	3-TNK-18-64/3	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565
37027	21	3-TNK-86-650D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565
37028	21	3-TNK-86-651D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565
37029	21	3-TNK-86-652D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565
37030	21	3-TNK-86-653D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565
37031	21	3-TNK-86-654D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565
37032	21	3-TNK-86-655D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565
37033	21	3-TNK-86-656D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565
37034	21	3-TNK-86-657D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565
37035	21	3-TNK-86-658D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565
37036	21	3-TNK-86-659D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565

APPENDIX H-2

SUMMARY OF OUTLIERS AND RESOLUTION METHODS : TANKS AND HEAT EXCHANGERS

APPENDIX H-2

SUMMARY OF OUTLIERS AND RESOLUTION METHODS :

TANKS AND HEAT EXCHANGERS

SSEL NO.	EQUIP CLASS	EQUIPMENT I.D.	DESCRIPTION	OUTLIER CONDITION	RESOLUTION
1009	21	2-HEX-74-900A	RHR/HEAT EXCHANGER 2A	• Verify Anchorage including nozzle loads, also vertical heat exchangers are not specifically covered by the GIP	• OK-AS-IS (Ref. Calc. 50147-C-004)
1017	21	2-HEX-74-900C	RHR/HEAT EXCHANGER 2C	• Verify Anchorage including nozzle loads, also vertical heat exchangers are not specifically covered by the GIP	• OK-AS-IS (Ref. Calc. 50147-C-004)
1037	21	2-HEX-74-900B	RHR/HEAT EXCHANGER 2B	• Verify Anchorage including nozzle loads, also vertical heat exchangers are not specifically covered by the GIP	• OK-AS-IS (Ref. Calc. 50147-C-004)
1045	21	2-HEX-74-900D	RHR/HEAT EXCHANGER 2D	• Verify Anchorage including nozzle loads, also vertical heat exchangers are not specifically covered by the GIP	• OK-AS-IS (Ref. Calc. 50147-C-004)
31009	21	3-HEX-74-900A	RHR/HEAT EXCHANGER 3A	• Verify Anchorage including nozzle loads, also vertical heat exchangers are not specifically covered by the GIP	• OK-AS-IS (Ref. Calc. 50147-C-004)
31017	21	3-HEX-74-900C	RHR/HEAT EXCHANGER 3C	• Verify Anchorage including nozzle loads, also vertical heat exchangers are not specifically covered by the GIP	• OK-AS-IS (Ref. Calc. 50147-C-004)
31036	21	3-HEX-74-900B	RHR/HEAT EXCHANGER 3B	• Verify Anchorage including nozzle loads, also vertical heat exchangers are not specifically covered by the GIP	• OK-AS-IS (Ref. Calc. 50147-C-004)
31042	21	3-HEX-74-900D	RHR/HEAT EXCHANGER 3D	• Verify Anchorage including nozzle loads, also vertical heat exchangers are not specifically covered by the GIP	• OK-AS-IS (Ref. Calc. 50147-C-004)

APPENDIX I-1

CABLE TRAY AND CONDUIT RACEWAY LIMITED ANALYTICAL REVIEWS

APPENDIX I-1

CABLE TRAY AND CONDUIT RACEWAY LIMITED ANALYTICAL REVIEWS

Area / Bldg. Location	Sample No.	Description of Bounding Configuration	Limiting Attributes
18, Unit 2 Reactor Bldg. El. 593'	18-04	A rod-hung support carries 14 cable trays, 2- 3"-dia fire protection pipes, 1- 2"-dia conduit and 2- 3/4"-dia conduit.	Heavily loaded support with concentrated loads and large cable tray spans.
43 Units 1 & 2 Diesel Generator Bldg. El. 565.5'	43-01	A rod hanger support with 3-3/8" dia rods carries a total of 18-3/4" dia; 6-1" dia; 10-1 1/2" dia and 11-2" dia conduit in four tiers.	Heavily loaded support.
21, Unit 3 Reactor Bldg. El. 565'	21-06	A conduit support carrying 3 conduit and bolted to the bottom of E1.593' slab has a free edge distance requirement violation for its 1/2" dia SSD anchor.	Support has irregular configuration, long cantilever span, edge distance violation to anchors, and low capacity of anchors.
21, Unit 3 Reactor Bldg. El. 565'	21-25	A rod-hung cable tray support with 6 trays and 3 conduit.	Heavily loaded support and concentrated loads.
23, Unit 3 Reactor Bldg. El. 621'	23-02	A cantilever Unistrut support with 2- 1/4" anchor base plate supporting eight conduit.	This was chosen due to heavily loaded support and a relatively large cantilever for the Unistrut along with questionable anchors. This support was *modified under DCN # W22555, but the* sample was not expanded as this appeared to be a unique support and did not represent the typical configuration.

Area / Bldg. Location	Sample No.	Description of Bounding Configuration	Limiting Attributes
32, Unit 2 Control Bay, El. 606'	32-07	A cable tray support with vertical TS member supported between floor and steel beam supports four 18"-wide horizontal trays and six 12"-wide vertical trays.	Heavily loaded support with concentrated loads.
34, Unit 3 Control Bay, El. 593'	34-01	A 3"-dia conduit is supported by a Unistrut channel cantilevered about 30 inches off a steel beam.	Heavily loaded support and a long cantilever span.
35, Unit 3 Control Bay, El. 606'	35-05	A cable tray support carries five rows of trays. Vertical member spans between floor and Control Bay steel beam.	Heavily loaded support.
35 Unit 3 Control Bay, El. 606'	35-06	A Cable tray support carries 14 trays in seven rows. The vertical members are TS 3 x 3 x 1/4 and run from floor to structural steel beams on top.	Heavily loaded support.
45, Unit 3 Diesel Generator Bldg.	45-01	A trapeze support with 16 conduit has a shell of one anchor protruding by about 3/4".	Heavily loaded support and low strength of anchors.
49, Common Cable Tunnel	49-04	Four rows of cable trays are supported by a cantilever bracket. The bracket is attached to a vertical angle member 3 x 2 x 3/8, which is welded to plates bolted to concrete with anchors. Cable tray spans are about 7'.	Heavy loads supported by weak members and low capacity of anchors.

APPENDIX I-2

SUMMARY OF OUTLIERS AND RESOLUTION METHODS: CABLE TRAY AND CONDUIT RACEWAY

APPENDIX I-2

SUMMARY OF OUTLIERS AND RESOLUTION METHODS: CABLE TRAY AND CONDUIT RACEWAY

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
17, Unit 2 Reactor Bldg. El. 565'	17-01	(a) Overspan for cable tray mark # EY-ESI & LG-ESI. (b) Cables are hanging loose at some places on cable tray LG-ESI.	(a) Acceptable as-is per calc. # CD-Q2999-940343. (b) Put cables back in tray if possible and secure them to cable tray with ties per WR # C030587.
	17-02	A gang support of 20-2"-dia and 3-1"-dia conduit has a horizontal span of 12'-10" & a span of 21'-6" along the length of conduit.	Support is acceptable per calc. # CD-Q2999-940343.
18, Unit 2 Reactor Bldg. El. 593'	18-01	Cables running from cable tray mark # SAM-II to cable tray mark # SAI-II are hanging loose.	The cables should be tied together in the middle and to each cable tray per WR # C030587.
	18-02	A 2"-dia conduit has overspan condition.	Overspan is acceptable per calc. # CD-Q2999-940343.
	18-03	A gang support supporting 45 conduit has SSD shell on the east side protruding out.	Support is acceptable per calc. # CD-Q2999-940343.
19, Unit 2 Reactor Bldg. El. 621'	19-01	A gang support # 48B2800-959 has a missing clamp on one 1"-dia steel conduit.	Replace the missing clamp per WR # C030587.
	19-02	A cable tray support has edge distance violations on its anchor bolts on north and south sides.	Support is acceptable per calc. # CD-Q2999-940343.
	19-03	A cable tray support has edge distance violation on anchor bolts.	Support is acceptable per calc. # CD-Q2999-940343.

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
26, Unit 2 Drywell	26-01	There is a missing clamp on support for 1"-dia aluminum conduit # 2ES-2951-II.	Replace the missing clamp at approx. El. 574' per WR # C165042.
38, Unit 2 Torus	38-01	A 1-1/2"-dia steel conduit has overspan condition.	Provide a new support at AZ 78°- 45' as shown in calc. # CD-Q2999-940343.
	38-02	Vertical load of some of the conduit is being supported by friction type beam clamps.	Supports are acceptable per calc. # CD-Q2999-940343 based on test results.
44, Units 1 & 2 Diesel Generator Bldg.	44-01	Concrete shell anchors are protruding on three out of four supports.	Supports are acceptable per calc. # CD-Q2999-940343.
	44-02	A 3/4"-dia conduit has overspan condition.	Support is acceptable per calc. # CD-Q2999-940343.
9, Unit Common NE Corner Room	9-01	Clamp is missing and Unistrut is loose for 1"-dia conduit attached to wall along line R21.	Reinstall the clamp and tighten the Unistrut per WR # C314988.
21, Unit 3 Reactor Bldg. El. 565'	21-01	A 1-1/2 "-dia rod-hung fire protection line is too close to brace of a conduit on the west side and a lighting conduit fixture on the east side.	Brace for the conduit is judged to be rigid and no damage to either the brace or the pipe is expected. The lighting conduit is nonsafety related. The support is acceptable as-is.
	21-02	A conduit support with 12- 3/4"-dia conduit has SSD anchor shells protruding beyond the concrete surface by about 1/2". This situation occurs at 5 to 7 places on supports of similar configuration in the area.	Supports accepted as-is as the actual conduit span is only about 5 feet, compared to an allowable span of 10 feet.
	21-03	A 3/4"-dia conduit supported directly to concrete ceiling with finger clamps has a span of about 13 feet against the allowable span of 10 feet. Similar conditions exist at some other places also.	Overspan is acceptable per calc. # CD-Q0000-931227.

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
21, Unit 3 Reactor Bldg. El. 565' (Cont.)	21-04	Conduit support anchorage has a spacing violation and a questionable weld.	Modify the weld as shown on drawing # 3-48B3800-3937, DCN # W22555 and as justified in calc. # CD-Q0000-931227.
	21-05	A cable tray support supporting two cable trays by 3/4"-dia rods has less than full thread engagement on one of the four bolts.	Trays are only 20% full. The support is adequate even with three bolts. Also, support is acceptable by comparison to Bounding Sample # 21-25 analyzed in calc. # CD-Q0000-931227.
	21-06	A conduit support carrying three conduits and bolted to the bottom of 593 slab has a free edge distance requirement violation for its 1/2"-dia SSD anchor.	Acceptable as-is per calc. # CD-Q0000-931227.
	21-07	Clamp is missing for the 1-1/2"-dia conduit.	Reinstall the clamp per WR # C314988.
	21-08	A 3/4"-dia and 1"-dia conduit have a maximum span of 15 feet against allowable span of 10' and 12', respectively.	Provide an additional support as shown on DCN # W22555.
	21-09	Conduit is broken at the connector point.	Replace or repair the conduit per WR # C314988.
	21-10	One of the vertical rods for conduit support has come out of the shell at ceiling.	Replace the rod per WR # C314988.
	21-11	Cables are in contact with sharp edge of cable tray (KKN) connector plate.	Smooth out the sharp edge or otherwise protect the cables per WR # C314988.
	21-12	A 3/4"-dia conduit has a cantilever span of 7'.	Acceptable as-is per calc. # CD-Q0000-931227
	21-13	A 3/4"-dia conduit has a cantilever span of 6'.	Acceptable as-is per calc. # CD-Q0000-931227.

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
21, Unit 3 Reactor Bldg. El. 565' (Cont.)	**21-14**	There is a missing clamp for 1"-dia conduit.	Provide the missing clamp per WR # C314988.
	21-15	A 1"-dia conduit has an unsupported span of 18'.	Provide an additional support per DCN # W22555.
	21-16	A 1-1/2"-dia conduit has a cantilever span of 6' with considerable deflection at the end.	Acceptable as-is. The cable exiting the conduit will not be damaged by the deflection at the end of the conduit.
	21-17	(a) A 3"-dia conduit has an unsupported span of 25'. (b) P1100 series clamp is too close to the edge of the Unistrut channel.	(a) Support span is acceptable as-is per calc. # CD-Q0000-931227. (b) Provide an end plate to restrain the clamp per DCN # 22555.
	21-18	Beam clamp support is oriented such that the vertical load is carried by friction between the clamp and the beam.	Acceptable as-is. The conduit span is acceptable ignoring the beam clamp.
	21-19	A P1100 series clamp is loose.	Reinstall the clamp per WR # C314988.
	21-20	One rod on a cable tray support has been cut and is hanging loose.	Support is acceptable as-is per calc. # CD-Q2999-940343. Cut rod to be removed per WR # C110814.
	21-22	A conduit located just below the ceiling is broken.	Replace/reattach the conduit per WR # C069712.
	21-23	(a) One leg of a P1100 series clamp is too close to edge of Unistrut channel. (b) Same conduit is supported at another location by a friction type clamp.	(a) Provide an end plate to restrain the clamp per DCN # W22555. (b) Acceptable as-is. The span of the conduit ignoring the friction clamp is within the allowable span limit.

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
21, Unit 3 Reactor Bldg. El. 565' (Cont.)	21-24	Bolt for P1100 series clamp has only one thread engagement in the nut.	Retighten the bolt per WR # C314988.
	21-26	A 1-1/2"-dia conduit has an overspan.	Support is acceptable as-is per calc. # CD-Q0000-931227.
	21-27	A 1"-dia conduit has a missing clamp.	The conduit span ignoring the missing clamp is acceptable.
	21-28	A clamp on a 3"-dia conduit is missing.	Acceptable as-is judging by the span and that the conduit is in a congested area and cannot slide anywhere.
22, Unit 3 Reactor Bldg. El. 593'	22-01	A SSD shell is too close to an abandoned hole.	Grout the abandoned hole per WR # C314988.
	22-02	A 1"-dia conduit is not properly tied at penetration point.	Secure the conduit at penetration point per WR # C314988.
	22-03	Insufficient anchor embedment on base plate attached to ceiling for conduit support.	Acceptable as-is per calc. # CD-Q0000-931227.
	22-04	Seismic interaction concern between cable tray and instrumentation panel.	Acceptable as-is based on further evaluation.
	22-05	Seismic interaction concern between cable tray and cabinet.	Correct the condition per DCN # W21819.
	22-07	Cables are hanging loose by the side of the cable tray.	Secure cables to cable tray per WR # C314988.

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
22, Unit 3 Reactor Bldg. El. 593' (Cont.)	22-08	Cable tray span is about 14 feet.	Trays are only about 30% full. Overspan is acceptable.
	22-09	Cable tray span is about 14 feet.	Trays are only about 25% full. Overspan is acceptable.
	22-10	Cables hanging loose from a vertical tray.	Secure the cables per WR # C314988.
	22-11	(a) A 3/4"-dia conduit is supported by a friction type clamp. (b) A 2"-dia abandoned conduit has a cantilever span of 10 feet.	(a) Replace a friction type clamp with a regular P2558 series clamp. (b) Remove the cantilever span of the conduit per DCN # W22555.
	22-12	Bolt connecting horizontal Unistrut to south knee brace is loose.	Tighten the bolt per WR # C314988.
	22-13	A 5/8"-dia anchor for the rod trapeze is too close to embedded plate.	Acceptable as-is by comparison to Outlier # 21-20.
	22-14	One out of five 3/4"-dia conduit has a missing clamp.	Provide a missing clamp per WR # C314988.
	22-15	A 3/4"-dia aluminum conduit has a missing clamp. The span without the missing clamp is about 17'.	Provide the missing clamp per WR # C110814.
	22-16	A 3"-dia conduit is supported by a rod hanger support. Snap-off portion of east shell type anchor appears not to have been removed.	Acceptable as-is. Snap-off portion has no structural impact.
23, Unit 3 Reactor Bldg. El. 621'	23-01	A conduit support supporting 19 conduit has expansion anchor shells protruding from the concrete surface.	Acceptable as-is by comparison to Bounding Sample # 45-01.

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
23, Unit 3 Reactor Bldg. El. 621' (Cont.)	23-03	Seismic interaction between cable tray and piping.	Acceptable as-is. No significant impact on either is expected.
	23-04	A 1"-dia conduit has a span of about 18'.	Provide an additional support per DCN # W22555.
	23-05	A 1"-dia conduit has a span of about 18'.	Provide an additional support per DCN # W22555.
	23-06	Nuts are missing from P 1100 clamp for all eight conduit.	Provide nuts on clamps per WR # C314988.
	23-07	Expansion anchor shells are protruding from concrete surface.	Acceptable as-is by comparison to Bounding Sample # 45-01.
	23-08	A bottom part of the finger type clamp and bolt are missing from the conduit support.	Replace the missing parts per WR # C314988.
	23-09	(a) A stiff cable tray support in a series of flexible supports. (b) One nut on the rod is loose.	(a) Accept as-is per calc. # CD-Q0000-931227. (b) Retighten the nut per WR # C314988.
24, Unit 3, Reactor Bldg. El. 639'	24-02	A 1-1/2"-dia conduit is touching a 1/2"-dia pipe.	Acceptable as-is. Interaction point is very close to conduit support point and pipe support point.
27, Unit 3 Drywell	27-01	A 1-1/2"-dia conduit has a missing clamp.	Provide a missing clamp per WR # C165048.
	27-02	The P1100 series clamp on a 2"-dia conduit is too close to edge of the Unistrut channel.	Provide an end plate as shown on DCN # W17424.
	27-03	A 2"-dia flex conduit is disconnected at its junction with rigid conduit.	Reconnect the flex conduit to rigid conduit per WR # C165048.

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
27, Unit 3 Drywell (Cont.)	27-04	Cables are hanging loose from cable tray.	Put cables back in tray and secure them with ties per WR # C165048.
	27-05	A 3/4"-dia conduit has span of 13'.	Overspan is acceptable per calc. # CD-Q0000-931227.
	27-06	A 3/4"-dia conduit # 3R1905 is loose and rotates freely.	Retighten the conduit per WR # C165048.
	27-07	A 1"-dia conduit has a missing clamp.	Provide a missing clamp per WR # C165048.
	27-08	A 1"-dia conduit has a cantilever span of 8'-6" and a 1/2" flex at the end.	Provide an additional support per DCN # W17424.
	27-09	A 3/4"-dia conduit has a missing clamp.	Provide a missing clamp per WR # C165048.
	27-10	Two 3"-dia flex conduit run all along the wall of Drywell. The max. allowable length is 6'.	These are abandoned conduits. Remove them per DCN # W33940.
	27-11	A lateral restraint for cable tray mark # HV-ESI does not have a restraining bolt.	Provide a 1/4"-dia restraining bolt per WR # C165048.
	27-12	A connection between the vertically inclined and horizontal segments of cable tray mark # HV-ESI is broken.	Reconnect the two segments of the tray per WR # C165048.
	27-13	End cover for cable tray mark # RZ-ESI is hanging loose at its west end.	Reinstall the end cover per WR # C165048.
	27-14	A 1-1/2"-dia conduit has one bolt on a two-bolt clamp missing. The conduit is also touching a 1/2" pipe attached to a valve.	Replace the bolt on the clamp to get at least 1/2" clearance over the pipe per WR # C165048.

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
27, Unit 3 Drywell (Cont.)	27-15	(a) There is a missing clamp on 2-1"-dia and 1-3"-dia conduit at 17'-6" above grating level. (b) There is a missing clamp on 2-1"-dia and 1-3/4"-dia conduit at about 13'-3" above grating level.	Provide missing clamps on conduit above the grating level per WR # C165048.
	27-16	A 1-1/2"-dia aluminum conduit coming down from junction box # JB 1249 is hanging loose at the free end.	This is an abandoned conduit. Remove the conduit per WR # C165048.
	27-17	A 3/4"-dia conduit appears unsupported at both ends. The conduit contains one cable that goes in the tray.	This is an abandoned conduit. Remove the conduit per WR # C165048.
	27-18	A 3/4"-dia steel conduit with a total span of about 30'-0" is supported only at one place with a friction clamp at about 13' from one end. One end of conduit is tied with a rope. The other end is free.	This is an abandoned conduit. Remove the conduit per WR # C165048.
29, Unit 1 Control Bay El. 606'	29-01	Four cables bundled together free air about 19' between cable trays. These cables are supported by a cable partially removed from cable tray SAC.	Secure the bundle of four cables to tray SAC or TV per WR # C314988.
	29-02	A 2"-dia conduit has a span of 16'-4" and 23'-4", which exceeds the GIP allowable of 16'-0".	(a) A span of 16'-4" is acceptable per calc. # CD-Q0000-931227. (b) Further investigation revealed that 23'-4" span has 2-spacers (tie down) and one dead load support in between limiting the deflection of the conduit. Support is acceptable as-is.

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
29, Unit 1 Control Bay El. 606' (Cont.)	29-03	(a) A conduit support has unidentified bolts. (b) One conduit support has only one bolt. The conduit are attached to a Unistrut connected to decking by two bolts.	(a) Based on observation in the general area, bolts are assumed to be SSD type and the support is acceptable per calc. # CD-Q0000-931227. (b) Conduit span is within the limit even after ignoring the support with one bolt. Accept support as-is.
	29-04	One anchor bolt on each leg of junction box support is missing.	Reinstall the missing anchor bolts per WR # C314988.
	29-05	Attachment of the tray clip to the support for the tray mark # SB is loose.	Reinstall the tray clip per WR # C314988.
	29-06	The thread engagement for the anchor bolts on the floor-mounted base plate is less than full.	This is acceptable as-is due to low interaction ratio and comparison to Bounding Sample # 35-05.
	29-07	Tray mark # TU has no nut for the clip bolt. The threads have been cut flush with the tray support.	Reinstall the clip bolt per WR # C314988.
	29-08	Cable tray cover is displaced.	Reinstall the cable tray cover per WR # C314988.
31, Unit 2 Control Bay, El. 593'	31-01	One leg of a P1100 series clamp for 1-1/2"-dia conduit is flush with the end of a Unistrut channel.	Provide an end plate per DCN # W22555.
	31-02	One leg of a P1100 series clamp is too close to the edge of a Unistrut channel.	Acceptable as-is. Conduit span ignoring this clamp is within the allowable limit.
	31-03	Cable trays do not have any side rails, and cables are overflowing.	Acceptable as-is. Detailed investigation revealed that there are no class I cables in this room.

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
32, Unit 2 Control Bay, El. 606'	**32-01**	One of the four anchor bolts is missing from the base plate of a cable tray support.	Reinstall the missing bolt per WR # C314988.
	32-02	The nut on one of the two anchor bolts of a base plate for a cable tray support is loose.	Retighten the nut per WR # C314988.
	32-03	The bolt head on one of the two anchor bolts of a base plate for a conduit support rotated half a turn.	Retighten the bolt per WR # C314988.
	32-04	The bolt head on one of the two anchor bolts of a base plate for a cable tray support rotated half a turn.	Retighten the bolt per WR # C314988.
	32-05	The bolt head on one of the four anchor bolts of a base plate for a cable tray support rotated more than half a turn and does not touch the base plate.	Retighten the bolt per WR # C314988.
	32-06	One bolt on a P2558 series clamp for 1"-dia conduit is missing. The other bolt is loose.	Reinstall the missing bolt and retighten the loose bolt per WR # C314988.
	32-08	Support # 2-48B2800-214 has northwest anchor bolt loose.	Retorque the bolt per WR # C314988.
	32-09	Support for 2"-dia aluminum conduit is not anchored to the floor. P2558 clamp is loose.	Reinstall the support properly per WR # C314988.
	32-10	One of the four 5/8"-dia SSDs is missing for support # 2-48B2800-1872.	Reinstall the missing anchor per WR # C314988.

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
35, Unit 3 Control Bay, El. 606'	35-01	A 1"-dia conduit has an overspan condition.	Acceptable as-is per calc. # CD-Q3999-890678 and calc. # CD-Q0000-931227.
	35-02	A 1"-dia conduit has unsupported span of 14'-9" compared to an allowable span of 12'-0".	Overspan is acceptable per calc. # CD-Q0000-931227.
	35-03	One leg of a P1115 clamp is only 1/8" from the edge of the Unistrut channel. The clamp might slip out.	Acceptable as-is.The conduit span ignoring the clamp is within allowable limit.
	35-04	A Unistrut carrying 2-3/4"-dia conduit has one of the two anchor bolts missing.	Reinstall the missing anchor bolt per WR # C314988.
	35-07	A clamp on 3/4"-dia conduit is very loose. The next support east to it has a clamp missing.	Reinstall clamps at both supports per WR # C314988.
	35-08	A support for 1"-dia conduit has a loose clamp. The next support adjacent to it also has a loose clamp.	Reinstall the clamps properly per WR # C314988.
39, Unit 3 Torus	39-01	A 1-1/2"-dia conduit has a span of 17'-10" compared to an allowable span of 14'-0".	Overspan is acceptable per calc. # CD-Q0000-931227.
	39-02	A 1-1/2"-dia conduit is too close to spring can of a hanger.	Detailed investigation concluded that the seismic interaction is not a credible concern.
	39-03	A 2"-dia conduit has a clearance of about 1/2" with support angle of instrumentation line. Also lug of a pipe is too close to the conduit.	Detailed investigation concluded that the seismic interaction is not a credible concern.
46, Common, Standby Gas Treatment Bldg.	46-01	Finger clamp is missing for 1"-dia conduit.	Replace the missing clamp per WR # C314988.

Area/Bldg. Location	Outlier No.	Description of Outlier	Resolution
48, Common Intake Pump House	48-01	A cable tray support has a span of 12 feet.	Acceptable as-is per calc. # CD-Q0000-931227.
49, Common Cable Tunnel	49-01	Clips at the side of tray are loose from trays CC & CD.	Reinstall the clips per WR # C314988.
	49-02	A cable tray support has a span of 14'-3" compared to an allowable span of 10'.	Acceptable as-is per calc. # CD-Q0000-931227.
	49-03	Most of the supports in part of the tunnel are under water and corroded.	Paint the lower portion of all supports per WR # C314988. Structurally, the present condition of supports is acceptable as-is by comparison to Bounding Sample # 49-04.
50, Units 1 thru 3 Reactor Bldg. El. 664'	50-01	A 3/4"-dia conduit has a missing clamp.	Provide the missing clamp per WR # C314988.
	50-02	One leg of a P1100 series clamp is too close to the edge of a Unistrut channel.	Acceptable as-is. The conduit span ignoring the clamp is within allowable limit.
	50-03	The clamp on a 3/4"-dia conduit is missing.	Remove the Unistrut and install a new Unistrut and clamp per WR # C314988.
	50-04	The clamp on a 3/4"-dia conduit is missing.	Acceptable as-is.The conduit span ignoring the clamp is within allowable limit.

APPENDIX J

THIRD-PARTY AUDIT REPORTS

JAMES J. JOHNSON

PROFESSIONAL HISTORY

EQE International, San Francisco, California, Executive Vice President, Division President (Engineering Consultants Division), 1986-present

NTS/Structural Mechanics Associates, San Ramon, California, Vice President, 1984-1986

Structural Mechanics Associates, San Ramon, California, Vice President, Project Manager, 1980-1984

Lawrence Livermore National Laboratory, Livermore, California, Project Manager, 1978-1980

General Atomic Company, San Diego, California, Branch Manager, Staff Engineer, Senior Engineer, 1972-1978

PROFESSIONAL EXPERIENCE

Dr. Johnson has more than 22 years of project management and civil/nuclear engineering experience. Dr. Johnson has participated in the development, implementation, and teaching of seismic risk and seismic margin assessment methodologies. He has participated in seismic PRAs of over 20 nuclear power plants. His participation encompasses many aspects including hazard definition, seismic response and uncertainty determination, detailed walkdowns, and fragility assessment. A major element of seismic PRAs and seismic margin assessments is best estimate response analyses. Dr. Johnson participated in the development of best estimate or median-centered response procedures and has participated in its application to over 60 nuclear facilities. Dr. Johnson was responsible for several portions of the U.S. Nuclear Regulatory Commission (NRC) Seismic Safety Margins Research Program (SSMRP) -- soil-structure interaction, major structure response, subsystem response, and the seismic analysis calculational procedures (SMACS).

Dr. Johnson has presented numerous seminars and training courses on seismic PRA and seismic margin methodologies. Most recently, Dr. Johnson participated in the U.S. NRC-sponsored Eastern European Regulatory Training in Hungary and Slovakia (February 1995). He also participated in a presentation sponsored by the China State Education Commission in cooperation with Tsinghua University and China National Regulatory Bureau of Nuclear Safety on seismic issues of nuclear power plant design and analysis which was presented in Beijing, China (May 1994); and the International Atomic Energy Agency's Regional Training Course on re-evaluation of seismic safety of existing nuclear power plants in Paks, Hungary (May 1993).

Dr. Johnson has played a significant role in the development of general and plant-specific seismic evaluation procedures. This project participation has ranged from the SQUG Generic Implementation Procedure (GIP) to plant-specific procedures for the Savannah River Site. Procedures include criteria for assessing equipment and component functionality and structural integrity, seismic systems interaction, anchorage, and other issues.

PROFESSIONAL EXPERIENCE (Continued)

Dr. Johnson has extensive theoretical and practical experience in the soil-structure interaction (SSI) analysis of major facilities and has written a comprehensive assessment of the state-of-the-art of SSI. Most recently, Dr. Johnson was a lecturer for the NATO Advanced Study Institute on Developments in Dynamic Soil-structure Interaction. Dr. Johnson was principal investigator for EQE on the SSI modeling, predictive analysis, and resolution of measured and predicted response for the combined EPRI/NRC Lotung, Taiwan scale model project. He has performed SSI analyses of a wide variety of surface and embedded structures using simplified to sophisticated substructure methods and linear and nonlinear finite element techniques. Nonlinear analyses included geometric effects (sliding and separation) and soil material behavior. He has made extensive use of comparative analyses and parametric studies to benchmark techniques and soil and structure configurations. He has extensive experience applying SASSI and CLASSI to SSI analysis of major facilities. Dr. Johnson was a consultant to the U.S. Nuclear Regulatory Commission (NRC) concerning revisions to the Standard Review Plan for seismic analysis and design.

In addition, Dr. Johnson was project manager for the U.S. NRC Structural Damping Research Program.

Dr. Johnson has developed, verified, maintained, and extensively applied several large computer programs to perform stress and seismic analysis. Among these are: MODSAP, a general purpose finite element program with special capability in the dynamic analysis of structures with localized nonlinearities; and SMACS, a probabilistic response analysis program for soil, structures, equipment, and piping systems.

Dr. Johnson was responsible for the analysis and design of components subjected to extreme internally and externally generated loading conditions. This work includes seismic qualification of control room equipment and motor control centers, fuel handling components, core and core support structures, heat exchanger shell and tubes subjected to tube burst loadings, and shipping casks of irradiated fuel and equipment subjected to impact loading.

Dr. Johnson has taught Earthquake Engineering of Major Facilities at the University of California, Berkeley. This course covered all phases of the earthquake engineering process, including seismic hazard definition; seismic analysis and design of structures, equipment and tanks; and seismic risk analysis. Dr. Johnson coordinated and taught portions of the SQUG training course that covered the seismic evaluation of equipment, cable trays and conduit, piping, anchorage, and seismic systems interaction. He has completed the SQUG SCE training and add-on seismic IPEEE training courses.

EDUCATION

UNIVERSITY OF ILLINOIS: Ph.D. Civil Engineering, 1972
UNIVERSITY OF ILLINOIS: M.S. Civil Engineering, 1969
UNIVERSITY OF MINNESOTA: B.C.E. Civil Engineering, 1967

REGISTRATION

California: Civil Engineer

SECURITY CLEARANCE

Department of Energy: Q-Clearance

AFFILIATIONS

American Society of Civil Engineers, Member
Nuclear Structural and Materials Committee
Dynamic Analysis Committee
Committee on Nuclear Standards, Seismic Analysis of Safety Class Structures
Earthquake Engineering Research Institute
Phi Kappa Phi Honor Society
Sigma Xi

PUBLICATIONS AND REPORTS

Dr. Johnson has contributed to over 80 technical reports and journal articles. The following is a selection of documents for which he is a principal contributor.

Seismic Margin Studies and Risk Analyses

With O. R. Maslenikov and R. D. Campbell. 1995. "Comparison of Design and Probabilistic Analyses of Nuclear Power Plants." To Be Presented at the 13th International Conference on Structural Mechanics in Reactor Technology, SMiRT 13, Porto Alegre, Brazil, August 13-18, 1995.

With A. P. Asfura and M. J. Jordanov. 1995. "Dynamic Analysis of Three 1000 MW WWER Reactors in Eastern Europe." To Be Presented at the 13th International Conference on Structural Mechanics in Reactor Technology, SMiRT 13, Porto Alegre, Brazil, August 13-18, 1995.

With R. D. Campbell, "Overview of Seismic Reevaluation Methodologies," SMiRT 12, Conference Seminar 16, Vienna, Austria, August 1993.

With P. S. Hashimoto and R. D. Campbell. 1993. "Seismic Analysis and Structure Capacity Evaluation of the Belene Nuclear Power Plant." Presented at the SMiRT 12 Conference sponsored by the International Atomic Energy Agency, Vienna, Austria, 1993.

"Seismically Induced Common Cause Failures in PSA of Nuclear Power Plants," August 1991, with M. K. Ravindra, Transactions of 11th SMiRT Conference, Tokyo, Japan, Volume M, pp 85-90.

"A Methodology for Assessment of Nuclear Power Plant Seismic Margin (Rev. 1)." August 1991. Electric Power Research Institute. EPRI NP-6041-SL, Rev. 1.

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With M. K. Ravindra. June 1991. "Treatment of Seismically Induced Common Cause Failures in Nuclear Power Plant PSA." In *Proceedings of Sixth International Conference on Applications of Statistics and Probability in Civil Engineering.* Mexico City, Mexico.

With D. P. Moore et al. 1990. "Seismic Margin Assessment of Edwin I. Hatch Nuclear Plant Unit 1." Electric Power Research Institute.

With M. P. Bohn et al. April 1990. "Analysis of Core Damage Frequency Due to External Events at the DOE N-Reactor." SAND89-1147. Sandia National Laboratories. Albuquerque, New Mexico.

With M. P. Bohn. December 1990. "Analysis of Core Damage Frequency: Peach Bottom, Unit 2 External Events." NUREG/CR-4550, SAND86-2084, Vol. 4, Rev. 1, Part 3. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a Combustion Engineering 2-Loop Pressurized Water Reactor -- Case Study (St. Lucie)." August 1987. NUREG/CR-4710, SAND86-1797. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a Westinghouse 3-Loop Pressurized Water Reactor -- Case Study (Turkey Point)." March 1987. NUREG/CR-4762, SAND86-2377. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a General Electric BWR4/Mark 1 -- Case Study (Cooper)." July 1987. NUREG/CR-4767, SAND86-2419. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a General Electric BWR3/Mark 1 -- Case Study (Quad Cities)." March 1987. NUREG/CR-4448, SAND85-2373. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a Babcock and Wilcox Pressurized Water Reactor -- Case Study (ANO-1)." March 1987. NUREG/CR-4713, SAND86-1832. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a Westinghouse 2-Loop Pressurized Water Reactor -- Case Study (Point Beach). March 1987. NUREG/CR-4458, SAND86-2496. Sandia National Laboratories. Albuquerque, New Mexico.

With M. P. Bohn. December 1990. "Analysis of Core Damage Frequency: Surry Power Station, Unit 1 External Events." NUREG/CR-4550, SAND86-2084, Vol. 3, Rev. 1, Part 3. Sandia National Laboratories. Albuquerque, New Mexico.

With A. P. Asfura et al. March 1990. "Pilot Study of Reactor/Containment Building: Oskarshamn 2 and Barsebeck 1 and 2, Probabilistic Response and Capacity." Rev. 1. Prepared for Sydkraft and OKG Aktiebolag, Sweden. San Francisco, CA: EQE Engineering.

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With L. C. Shieh et al. August 1985. "Simplified Seismic Probabilistic Risk Assessment: Procedures and Limitations." NUREG/CR-4331. UCID-20468. Lawrence Livermore National Laboratory.

With B. J. Benda. 1986. "Seismic Fragility Analysis: Methodology and Application." Prepared for Earthquake Engineering Technology. San Ramon, CA.

With R. D. Campbell et al. 1985. "LaSalle Seismic Probabilistic Risk Assessment: Responses and Fragilities." Report SMA 12211.21. Prepared for Lawrence Livermore National Laboratory. San Ramon, CA: Structural Mechanics Associates.

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With M. P. Bohn et al. 1984. "Application of the SSMRP Methodology to the Seismic Risk at the Zion Nuclear Power Plant." UCRL-53483; NUREG/CR-3429. Livermore, CA: Lawrence Livermore National Laboratory.

With M. P. Bohn et al. August 22-26, 1983. "Application of the SSMRP Methodology to the Seismic Probabilistic Risk Analysis at the Zion Nuclear Power Plant." In *Proceedings Seventh SMiRT Conference.* Chicago, Illinois.

With P. D. Smith et al. 1981. "SSMRP Phase I Final Report: Overview." UCRL-53021, vol. 1; NUREG/CR-2015, vol. 1. Livermore, CA: Lawrence Livermore National Laboratory.

With O. R. Maslenikov et al. 1982. "SSMRP Phase I Final Report: Soil Structure Interaction (Project III)." UCRL-53021, vol 4; NUREG/CR-2015, vol. 4. Livermore, CA: Lawrence Livermore National Laboratory.

With B. J. Benda and T. Y. Lo. 1981. "SSMRP Phase I Final Report: Major Structure Response (Project IV)." UCRL-53021, vol. 5; NUREG/CR-2015, vol. 5. Livermore, CA: Lawrence Livermore National Laboratory.

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Calculational Margin

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With O. R. Maslenikov et al. March 1989. "Analysis of Large-Scale Containment Model in Lotung, Taiwan: Forced Vibration and Earthquake Response Analysis and Comparison." In *Proceedings: EPRI/NRC/TPC Workshop on Seismic Soil-Structure Interaction Analysis Techniques Using Data From Lotung, Taiwan.* NP-6154, Vol. 1, Paper 13. Electric Power Research Institute.

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With R. P. Kennedy. 1985. "Summary of Observations on Control Point Location and Spatial Variation of Free-Field Ground Motion." Report SMA 46001.02. Prepared for United Engineers and Constructors. San Ramon, CA: Structural Mechanics Associates.

With J. C. Chen. August 19-23, 1985. "Influence of the Local Site Condition on Seismic Response of a PWR-Containment Building." In *Proceedings Eighth SMiRT Conference.* Brussels, Belgium.

With O. R. Maslenikov and E. C. Schewe. August 19-23, 1985. "SSI Response of a Typical Shear Wall Structure." In *Proceedings Eighth SMiRT Conference.* Brussels, Belgium.

With B. J. Benda et al. 1985. "The Effects of Basemat Uplift on the Seismic Response of Structures and Interbuilding Piping Systems." Report SMA 12211.44.01. Prepared for Lawrence Livermore National Laboratory. San Ramon, CA: Structural Mechanics Associates.

With O. R. Maslenikov and B. J. Benda. 1984. "SSI Sensitivity Studies and Model Improvements for the U.S. NRC Seismic Safety Margins Research Program." UCID 20212; NUREG/CR-4018. Livermore, CA: Lawrence Livermore National Laboratory.

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With E. C. Schewe and O. R. Maslenikov. 1984. "SSI Response of a Typical Shear Wall Structure." 2 vols. UCID-20122. Livermore, CA: Lawrence Livermore National Laboratory.

With J. C. Chen et al. 1984. "Uncertainty in Soil-Structure Interaction Analysis of a Nuclear Power Plant Due to Different Analytical Techniques." In *Proceedings of the Eighth World Conference on Earthquake Engineering.*

With J. C. Chen and D. L. Bernreuter. August 22-26, 1983. "The Effect of Local Soil Conditions on Site Amplification." Paper presented at the Seventh SMiRT Conference, Chicago, Illinois.

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With R. C. Chun et al. August 17-21, 1981. "Uncertainty in Soil-Structure Interaction Analysis of a Nuclear Power Plant: a Comparison of Linear and Nonlinear Analysis Methods." In *Proceedings Sixth SMiRT Conference.* Paris, France.

With D. A. Wesley and I. T. Almajan. August 15-19, 1977. "The Effects of Soil-Structure Interaction Modeling Techniques on In-Structure Response Spectra." In *Proceedings Fourth SMiRT Conference.* San Francisco, CA.

Seismic Evaluations

With R. P. Kennedy. October 17-21, 1977. "Earthquake Response of Nuclear Power Facilities." Paper presented at the ASCE Fall Convention and Exhibit, San Francisco, California.

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With O. R. Maslenikov et al. 1991. "Seismic Analysis of the Vertical Tube Storage System Monorail Support Frame in Building 105-K at the Savannah River Plant Using Upgraded Seismic Input Motions, Volume 1: Soil-Structure Interaction Analysis of Building 105-K, Volume 2: Response Spectrum Analysis of the VTS Monorail Support Frame." Prepared for Westinghouse Savannah River Company. San Francisco, CA: EQE International.

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With P. S. Hashimoto et al. March 1988. "N-Reactor River Pump House and Gantry Crane (181-N) Seismic and Tornado Analysis." Prepared for Westinghouse Hanford Company. Newport Beach, CA: EQE Engineering.

With G. S. Hardy et al. August 1988. "Technical Basis, Procedures, and Guidelines for Seismic Characterization of SRP Reactors." Savannah River Report RTR 2582. Costa Mesa, CA: EQE Engineering. Revised to "Procedure for the Seismic Evaluation of SRS Reactor Systems Using Experience Data." October 1989. WSRC-RP-89-1163, Procedure SEP-6.

With L. J. Bragagnolo and S. J. Eder. February 1991. "Seismic Evaluation of the Energy Management System." Prepared for Pacific Gas & Electric Company. San Francisco, CA: EQE Engineering

With G. S. Hardy et al. October 1989. "Seismic Evaluation of Safety Systems at the Savannah River Reactor." In *Proceedings of the Second DOE Natural Phenomena Hazards Mitigation Conference.* Knoxville, Tennessee.

With B. J. Benda and M. J. Mraz. 1985. "Specification of Seismic Qualification Environment for Equipment." Paper presented to DOE Natural Phenomena Hazards Mitigation Conference, Las Vegas, Nevada.

With O. R. Maslenikov et al. August 19-23, 1985. "Seismic Analysis of the MFTF Facility." In *Proceedings Eighth SMiRT Conference.* Brussels, Belgium.

With O. R. Maslenikov and M. J. Mraz. 1984. "Seismic Analyses of the Mirror Fusion Test Facility Building 431." Report SMA 12210.03. Prepared for Lawrence Livermore National Laboratory. San Ramon, CA: Structural Mechanics Associates.

With O. R. Maslenikov and L. W. Tiong. 1984. "Seismic Analysis of the Mirror Fusion Test Facility: Soil Structure Interaction Analyses of the Vault." Report SMA 12210.02. Prepared for Lawrence Livermore National Laboratory. San Ramon, CA: Structural Mechanics Associates.

With O. R. Maslenikov and L. W. Tiong. 1984. "Seismic Analysis of the Mirror Fusion Test Facility: Soil Structure Interaction Analyses of the Vessel." Report SMA 12210.01. Prepared for Lawrence Livermore National Laboratory. San Ramon, CA: Structural Mechanics Associates.

With W. Schlafer III and D. Tow. August 13-17, 1979. "Seismic Response Comparisons for an Embedded High Temperature Gas-Cooled Reactor (HTGR) on a High Seismic Site." In *Proceedings Fifth SMiRT Conference.* Berlin, Germany.

"Preliminary Seismic Analysis of the GCFR Core and Core Support Structure." June 22-23, 1978. Paper presented at the Third SAP User's Conference, University of Southern California, Los Angeles, California.

PUBLICATIONS AND REPORTS (Continued)

Other

With R. O. Hamburger and J. P. Conoscente. August 1992. "Dynamic Analysis of Impacting Structural Systems." Presented at the Fourth World Conference on Earthquake Engineering, Madrid, Spain.

With L.K. Steele, P.S. Hashimoto, and J.F. Costello, "Review of Regulatory Guide 1.61 Structure Damping Criteria, "Transactions of the 11th Conference on Structural Mechanics in Reactor Technology, Volume K, August 1991.

With P.S. Hashimoto, J.F. Costello, And O.R. Maslenikov, "A Reassessment of Structural Damping Values", presented at the Third Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment and Piping, Orlando, Florida, December, 1990.

With J.P. Conoscente, P.S. Hashimoto, O.R. Maslenikov. 1990. "U.S. NRC Structural Damping Research Program". Presented at the 18th Water Reactor Safety Information Meeting, October 1990; and at the Third Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment, and Piping, Orlando, Florida, December 1990.

With B. J. Benda et al. 1988. "SSC Dipole Magnet System: Stress Analysis for Seismic and Transportation Loading." Prepared for the University Research Association. San Ramon, CA: EQE Engineering.

With S. P. Harris et al. October 1989. "Seismic and Cask Drop Excitation Evaluation of the Tower Shielding Reactor." In *Proceedings of the Second DOE Natural Phenomena Hazards Mitigation Conference.* Knoxville, Tennessee.

With O. R. Maslenikov et al. 1984. *SMACS: a System of Computer Programs for Probabilistic Seismic Analysis of Structures and Subsystems.* 2 vols. Report SMA 12211.31.01/12211.31.02. Prepared for Lawrence Livermore National Laboratory. San Ramon, CA: Structural Mechanics Associates.

With R. D. Campbell and L. W. Tiong. 1984. "Neutral Beam Pivot Point Bellows Fatigue Evaluation per ASME Code." Report SMA 18503.01. Prepared for Lawrence Berkeley Laboratory. San Ramon, CA: Structural Mechanics Associates.

With R. D. Campbell and L. W. Tiong. 1984. "Re-design of the Neutral Beam Pivot Point Bellows: Validation of Stress Analysis." Report SMA 18502.01. Prepared for Lawrence Berkeley Laboratory. San Ramon, CA: Structural Mechanics Associates.

With B. J. Benda and P. D. Smith. 1981. "Variability in Dynamic Characteristics and Seismic Response Due to the Mathematical Modeling of Nuclear Power Plant Structures." UCRL-85713. Preprint submitted to *Nuclear Engineering and Design.* Livermore, CA: Lawrence Livermore National Laboratory.

With C.M. Charman. August 17-21, 1981. "An Isoparametric Shell of Revolution Finite Element for Harmonic Loadings of Any Order." In *Proceedings Sixth SMiRT Conference.* Paris, France.

PUBLICATIONS AND REPORTS (Continued)

With B. J. Benda. August 17-21, 1981. "Uncertainty in Mathematical Models of a Typical Nuclear Power Plant Structure." In *Proceedings Sixth SMiRT Conference.* Paris, France.

"SOILST: a Computer Program for Soil-Structure Interaction Analysis." 1979. GA-A15067 UC-77. San Diego, CA: General Atomic Company.

"MODSAP: a Modified Version of the Structural Analysis Program SAPIV for the Static and Dynamic Response of Linear and Localized Nonlinear Structures." GA-A-14006. San Diego, CA: General Atomic Company.

"MODSAP: a Modified Version of the Program SAPIV for the Static and Dynamic Response of Linear and Localized Nonlinear Structures." June 22-23, 1977. Paper presented at the Second SAP User's Conference, University of Southern California, Los Angeles, California.

GREGORY S. HARDY

PROFESSIONAL HISTORY

EQE International, Inc., Irvine, California, Vice President and Regional Manager, 1985-present
Structural Mechanics Associates, Inc., Newport Beach, California, Technical Manager, 1980-1985
Engineering Decision Analysis Company, Inc., Irvine, California, Senior Engineer, 1979-1980
Ford Aerospace and Communications Corporation, Newport Beach, California, Staff Engineer, 1977-1979
TRW Systems, Inc., San Bernardino, California, Staff Engineer, 1975

PROFESSIONAL EXPERIENCE

Mr. Hardy has over 18 years experience in the design, analysis and testing of chemical, nuclear and aerospace structures and components. His responsibilities have included probabilistic risk assessments, earthquake experience data-based studies, stress analysis, finite element analysis, seismic margin studies, mass property studies, and shock and vibration environmental testing for hardware qualification.

Seismic Evaluation

Mr. Hardy has been sponsored by the Electric Power Research Institute, the Department of Energy and the Seismic Qualification Utility Group to perform post-earthquake investigations of numerous oil refineries, pumping stations, power plants and industrial facilities. He was a key investigator of earthquake damage effects to equipment following the 1994 Northridge Earthquake and the 1989 Loma Prieta Earthquake. He has performed seismic evaluations on a variety of existing facilities including Shell Oil (piping and tank yards), TRW (aerospace facilities) San Diego Gas and Electric Co. (compress or stations and gas pumping facilities), Southern California Electric Corporation (San Onofre Nuclear Power Plants and SCE substations) as well as for numerous nuclear and conventional power plants.

Mr. Hardy participated in the USNRC sponsored Seismic Safety Margin Research Program (SSMRP). In the SSMRP, he developed criteria for assessing the uncertainties in dynamic response and developed fragility descriptions for equipment as a part of the pilot plant study at Zion.

Mr. Hardy participated in a program to perform a seismic audit of the Lawrence Livermore National Laboratory Plutonium Facility (Building 332). He was responsible for the seismic safety verification of the critical plutonium containment barriers, including glove boxes, ventilation piping, fans and filters.

Mr. Hardy has played a principal role in the probabilistic quantification of indirectly-induced Double Ended Guillotine Break (DEGB) of BWR nuclear plants. The Brunswick nuclear generating station was utilized as a pilot plant as part of the NRC sponsored Load Combination Program. He has developed ultimate capacities of major equipment supports under seismic loads and subsequently evaluated the probability of DEGB.

Mr. Hardy has been involved with the deterministic seismic margin study conducted on the Midland Nuclear Power Plant Category 1 equipment and piping. Adequate seismic margins were shown to exist based on the new response spectra loads developed for the study.

PROFESSIONAL EXPERIENCE (CONTINUED)

Mr. Hardy has directed and/or participated in the capacity evaluations of mechanical and electrical components on over 25 Probabilistic Risk Assessments (PRAs) for nuclear power plants. He has played a major role in both the development of the methodology and in the completion of the equipment fragility studies. These PRA studies have considered the nonlinear behavior of the component, actual damping, mode combination, analysis/test methods, response of the structure and the equipment capacity. The uncertainty and randomness in each of the above quantities are accounted for on a probabilistic basis.

Mr. Hardy has contributed to the development of the earthquake experience data base generated for the Seismic Qualification Utilities Group (SQUG). This seismic experience data is being utilized by the nuclear industry to resolve the seismic issues associated with the NRC's Unresolved Safety Issue A-46. He was responsible for directing the effort to assess the structural and the systems effects of electromechanical relays during past earthquakes.

Analysis and Testing

Mr. Hardy has extensive experience with the dynamic analysis of numerous nuclear power plant mechanical and electrical equipment components. Response spectrum analyses have been performed on piping, valves, tanks, heat exchangers, pumps, compressors, switchgear, motor control centers, neutron detectors and diesel generators. He has performed thermal time history analyses using ANSYS on a sodium pressure sensor for the Clinch River Breeder Reactor. He has also performed pressure profile time history analyses of a missile rocker motor case and a relief valve. He has performed finite element analyses using the SAP, NUPIPE, NASTRAN, and STARDYNE.

Mr. Hardy has analyzed the effects of uneven ground settlement on a large, flat-bottomed borated water storage tank at the Midland Nuclear Plant. The analysis utilized laboratory tested material properties of the supporting structures and nonlinear finite element models. He has also conducted nonlinear analyses for the Shell Oil Company of pipeline lowering and fault movement, using the PIPLIN finite element code.

Mr. Hardy was responsible for design of a torsional pendulum moment of inertia measurement system for measuring rocker motors, warheads, guidance sections and other Sidewinder missile components. He designed a static loader frame structure for testing of aerodynamic loadings on the missile airframe.

In the area of environmental testing, Mr. Hardy was responsible for generation of environmental criteria for the AIM-9J and Chaparral Sidewinder missiles. He participated in shock and vibration testing of missile components and conducted static loads test on missile airframes to simulate aerodynamic loading. He conducted burst pressure tests on small pressure vessels and has consulted on a seismic testing program of a helical tube bundle from a nuclear power plant steam generator.

EDUCATION

UNIVERSITY OF CALIFORNIA, Los Angeles: M.S. Mechanics and Structural Engineering, 1976
UNIVERSITY OF REDLANDS, Redlands, California: B.S. Mechanical Engineering, 1975

REGISTRATION

Mechanical Engineer: California

AFFILIATIONS

American Society of Mechanical Engineers
American Nuclear Society

PUBLICATIONS

"Electric Power System Equipment Performance During the Northridge Earthquake." Presented at the *Disaster Preparedness Conference III*, St. Louis, MO., April, 1994

"USI A-46 Outlier Resolution Methodology". Paper presented at the 1993 *ASME Pressure Vessels and Piping Conference*, Denver, CO., July, 1993

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EQE
ENGINEERING
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EQE Correspondence
No. 50147.01-O-001

September 9, 1994

Mr. R.D. Cutsinger
TENNESSEE VALLEY AUTHORITY
Browns Ferry Nuclear Plant, EDB 1F-BFN
P.O. Box 2000
Decatur, AL 35609

Subject: *TVA Contract No. TV-91124V, TAO No. 0001-370208*
Initial Peer Review on the Implementation of
USI-A46 & Seismic IPEEE Programs at
Browns Ferry Nuclear Plant (BFN)

Dear Rick:

Enclosed is the report summarizing EQE peer review comments and recommendations associated with the subject task. This initial peer review focused mainly on the completed in-plant walkdowns, analytical evaluations and documentation package for Unit 3 and Common raceway system reviews. Other procedural/programmatic issues related to the implementation of USI A-46 and seismic IPEEE programs were also reviewed and discussed.

If you have any questions, please feel free to contact me or Jim Johnson at (415)989-2000.

Sincerely,

John O. Dizon

John O. Dizon
Project Manager
EQE Engineering Consultants
San Francisco, CA

Attachment

cc: J.R. Glass (TVA)
J.J. Johnson (EQE)
S.J. Eder (EQE)

50147/rpt01

REPORT OF THE INITIAL PEER REVIEW
BFN USI A-46/IPEEE SEISMIC ASSESSMENT

Date: August 23 to 26, 1994

Location: Browns Ferry Nuclear Plant (BFN)
Athens, Alabama

Peer Reviewers: Dr. James J. Johnson, EQE
Mr. John O. Dizon, EQE

PURPOSE

The purpose of this report is to summarize the results of the initial Peer Review on the portions of the seismic assessments performed by Seismic Capability Engineers (SCEs) for the resolution and implementation of USI A-46 and seismic IPEEE programs at BFN.

The initial Peer Review is intended to cover the technical approach, procedures, personnel qualifications, pre-walkdown planning and preparations including data gathering, and preliminary findings. The objective of this initial Peer Review is to provide guidance and recommendations, consistent with the SQUG/GIP implementation, to BFN SCEs based on the review of work performed to date. Additional Peer Review is strongly recommended halfway through the program. A final review will be performed at or near the completion of the program and will concentrate on findings and the final report of the walkdown.

SCOPE OF REVIEW

The scope of review includes those portions of the seismic assessments performed by the SCEs for the resolution and implementation of USI A-46 and seismic IPEEE programs at BFN, as well as other related procedural/ programmatic issues. The main focus is on the completed in-plant walkdowns, analytical evaluations and documentation package for Unit 3 and Common raceway reviews.

SUMMARY

A detailed review of the Unit 3 and Common raceway evaluation program was performed. The Peer Review included reviews of the technical approach and completed analyses and documentation, followed by in-plant walkdown evaluations to spot-check findings and judgements made to date by the Seismic Review Teams (SRTs). Other technical issues related to the resolution and implementation of USI A-46 and seismic IPEEE programs were also reviewed and discussed. The main areas covered, conclusions reached and recommendations are summarized below.

1. **Unit 3 Raceway Evaluations** - In-plant walkdown evaluations of the raceway systems at Unit 3 and Common Areas have been completed. Walkdown documentation, bounding support analyses and outlier resolutions were contained in TVA Calculation no. CD-Q0000-931227, Rev. 0. A total of 97 outliers were identified by the SRTs. Of these outliers, 11 resulted in design modifications and/or new support installations while 44 required minor maintenance type fixes such as replacing missing or tightening loose clamps, replacing broken parts, etc. The remaining outliers were resolved by further analytical evaluations consistent with the SQUG/GIP outlier resolution guidelines.

   In addition, an in-plant walkdown was performed on Unit 3 and Common raceway systems to verify the seismic ruggedness of these systems in general, as well as to spot-check findings and judgements made by the various SRTs. The areas covered during this walkdown were as follows:

   - Units 2 and 3 Cable Spreading Room, El. 606'
   - Unit 3 Mechanical Equipment Room, El. 606'
   - Electrical Equipment Room (Door 473), El. 593'
   - Genral Areas in the Control Bay, El. 593', El. 606' and El. 617'

2. **Procedural/Programmatic Issues** - Specific procedural and programmatic issues discussed during this visit include the following:

   - Definition of "effective grade" and application of "40-foot" rule for BFN buildings.
   - Determination of seismic demand for equipment in all BFN buildings, including comparison of seismic ground motion spectra with the SQUG Bounding Spectrum, comparison of in-structure response spectra with the SQUG Reference Spectrum, applicable soil amplification factors and categorization of BFN in-structure response spectra as realistic, median-centered spectra.

- Critical relay evaluation, equipment selection, equipment seismic walkdowns, and disposition of findings.
- Licensing and restart deferred issues, such as flexible conduit.
- Types of concrete anchorages used at BFN and the concrete strengths used for anchorage evaluations.
- Methodology for evaluating masonry (block) walls associated with IE 80-11 program, for use in addressing seismic interaction concerns.
- Qualifications of Seismic Capability Engineers (SCEs).

In conjunction with the determination of seismic demand, a soil amplification study was conducted for the Diesel Generator Building (DGB). Site analyses were performed using the *SHAKE* program to determine the ground surface (free-field) response and the response at the DGB foundation level due to BFN site-specific (Housner) design basis earthquake input as rock outcrop motion. A 76 foot soil column was used to model the free-field, while a 35 foot column consisting of 3' of indigenous soil and 32' of crushed stone was used to model the soil profile underneath the DGB foundation. Soil degradation was a variable parameter considered in obtaining the high strain soil properties used in these analyses.

CONCLUSIONS

The main conclusions of the raceway review are as follows:

1. Overall implementation of the SQUG/GIP raceway evaluation program is judged to be good.
2. Documentation package is very thorough. This demonstrates conscientious and careful evaluations by the SRT members. However, certain aspects of the evaluations tend to be overly cautious. For example, insignificant proximity interactions were documented as outliers and subsequently resolved by engineering judgements.
3. The technical approach for bounding analyses and outlier resolution is judged to be appropriate but conservative in general. Peak spectral accelerations were used when performing equivalent static hand calculations. In some cases, analyses were performed using a finite element structural analysis program in lieu of simple hand calculations utilizing the SQUG/GIP limited analytical review guidelines for typical raceway supports.

Futhermore, based on the discussions of the various procedural/programmatic issues, the following conclusions can be made:

1. Implementation and coordination efforts at BFN are progressing in the right direction, given the current status of the program.

2. Preliminary estimate on the "effective grade" level for Unit 2 is at about 540' elevation. The "effective grade" level for Units 1 and 3 may be higher.

3. The preliminary results of the above soil amplification study indicate that the horizontal soil amplification factor of 1.6, as provided in the BFN FSAR, is not overly conservative for both free-field and DGB applications.

RECOMMENDATIONS

The following recommendations are provided as a result of this initial review:

1. For upcoming raceway evaluations, it is recommended that the SRTs utilize the Plant Area Summary Sheet, as recommended in the SQUG/GIP (Exhibit 8-1), for documenting field notes as well as in-plant evaluations where considerable engineering judgements were made. This may minimize the use of the Outlier Seismic Verification Sheet (OSVS), thus reducing the number of outliers.

2. For the resolution of outliers pertaining to overspan, it is recommended that the SRTs utilize the simplified methods as provided in the SQUG/GIP, i.e., use 50% of the NEMA rated capacity to check against the load on the overspan tray, or use 3.0 times conduit dead load as the collapse load for evaluating conduit overspan. Where spectral acceleration input is opted, avoid using the peak value by simply calculating the fundamental frequency of the conduit. This may reduce the number of new support installations.

3. For consistent USI A-46/IPEEE applications, it is recommended that the SRTs should document the definition of "effective grade" and the determination of seismic demand for equipment in all BFN buildings in the form of a calculation package. This includes comparison of seismic ground motion spectra with the SQUG Bounding Spectrum, comparison of in-structure response spectra with the SQUG Reference Spectrum, with applicable soil amplification factors. Displacement and Zero Period Acceleration (ZPA) values at various elevations of the buildings should also be included.

4. Similarly, documentation should also be established to address generic issues such as capacity of certain anchor types, concrete strengths and provision for using higher values, block walls identified under IE 80-11 program, etc.

5. To be consistent with NRC letter dated March 19, 1993, it is recommended that the SRTs use the 5% damped in-structure response spectra for calculations of seismic demand for quantitative analyses. For anchorage evaluations, a 1.25 factor is required to account for the uncertainties inherent in median-centered type of response spectra.

6. A relay walkdown procedure should be developed to identify SCE interfaces and responsibilities in the relay evaluation. These include assisting in estimating and approving in-cabinet amplifications and natural frequencies, which are needed for the evaluation of relay capacity.

7. To account for soil amplification at various BFN buildings, it is recommended that the soil amplification factors as provided in the FSAR be used. Exceptions should be reviewed on a case-by-case basis.

VECTRA

March 31, 1995
0006-00919-OC-001

Mr. J. R. Glass
Principle Civil Engineer
Browns Ferry Nuclear Plant
Tennessee Valley Authority
Post Office Box 2000
Decatur, AL 35609-2000

SUBJECT: Peer Review of Safe Shutdown Equipment List (SSEL) for USI A-46 and IPEEE

Dear Mr. Glass,

Please find attached a summary of VECTRA's review of the subject BFNPP SSEL for Unit 2 that was performed in your offices between March 22 and 24.

Based upon this review, the TVA SSEL for Browns Ferry Unit 2 meets the guidance provided in both the SQUG GIP and EPRI NP-6041, and is consistent with the approach currently being used by other nuclear facilities. As identified in the recommendations section of the attached, there are a couple of items that should be addressed by TVA in preparation of the final USI A-46 and IPEEE report.

Should you have any additional questions, or wish to discuss any item in further detail, please do not hesitate to contact me in our Framingham MA office at (508) 370-3330.

Very truly yours,

Steve Reichle

Steve Reichle
Project/Service Area Manager

VECTRA Technologies, Inc. 600 Worcester Road Framingham, MA 01701-5360 Tel: (508) 370-3266 Fax: (508) 370-3223

PURPOSE

The purpose of this project was to perform an independent (peer) review the BFNPP Unit 2 (BFN2) SSEL that was prepared as part of TVA's response to USI A-46 and IPEEE. The review focused on the following issues to ensure conformance of the BFN2 SSEL and supporting documentation with both the SQUG GIP and EPRI NP-6041 guidance:

- Safe shutdown path(s) and systems have been selected for each safe shutdown function. A summary description has been prepared to document the basis for systems selected.
- Assumptions used in identifying the safe shutdown paths have been documented.
- Identification of front-line safe shutdown equipment and required support equipment on the BFN2 SSEL.
- The correct evaluation type(s) (seismic and/or relay) have been identified for each SSEL component.
- Color coded flow diagrams have been developed to show each of the safe shutdown funstions.
- Operations Department has reviewed the SSEL and concurs with the paths and components selected, and they are covered by existing procedures.

WHAT WAS REVIEWED

VECTRA met with Messrs. R. H. Wright and J. D. McCamy upon arrival at BFN2 and was provided with a current copy of the BFN2 SSEL (TVA Doc. No. QIR LMEBFN94094, dated 10/21/94) along with the original set of color coded flow diagrams used in the development of the SSEL. TVA also provided VECTRA with a copy of the Electrical SSEL that was completed, but not yet incorporated into QIR LMEBFN94044. The only other documentation that was available was a memorandum sent from the Nuclear Engineering (NE) Group to Operations on November 2, 1992, and a separate project memo that documented the change of equipment classifications for motor operated dampers from 8A to 10.

The 11/2/92 memorandum to Operations (J. A. Scalice) identified the scope of the A-46 and IPEEE work and presented an outline of the plant systems that would be used in performing each of the four safe shutdown functions. The memo also informed

Operations of NE's intent to develop a SSEL that Operations could use to mitigate a seismic event with the existing Emergency Operating Instruction (EOI) flow charts. It was also noted that the existing plant procedure (0-AOI-100-5, "Earthquake Abnormal Operating Instructions") that would be used following an earthquake, may require a revision. Mr. McCamy informed VECTRA durinf this review that Operations never formally responded to his memorandum, but that he intended to follow up on this issue.

Although TVA has not yet formally documented all the processes that are needed to finalize the SSEL, sufficient documentation was available to assess the status of the SSEL for BFN2. The following TVA engineers provided additional information and input during the review process:

Mr. J. D. McCamy	Mechanical Supervisor
Mr. R. H. Wright	Electrical Supervisor
Mr. J. R. Sampson	Electrical Engineer
Mr. W. L. Aldredge	Electrical Engineer

Using the above referenced documents, the review focused on determining if TVA had developed a plan that considered all of the systems and equipment that might be called upon during or following a seismic event to ensure a safe shutdown of the BFN2. The review also focused on compliance with industry guidance (SQUG GIP, EPRI NP-6041 and NUREG-1407)

In addition to the SSEL, VECTRA also reviewed preliminary relay review data prepared by TVA. Although TVA had not fully initiated the relay review effort, the Electrical Group had completed a trial review on a handful of components, and presented a number of questions to VECTRA for interpretation. VECTRA plans to re-visit BFN2 after work has officially started and sufficient data has been generated to review.

FINDINGS

The SSEL appears to have included all systems and most of the components that would be required to ensure a safe shutdown of the BFN2 plant in the event of a safe shutdown earthquake (SSE) for A-46, or Seismic Margin Earthquake (SME) for IPEEE. Attachment A to this report contains a listing of specific VECTRA comments that should be considered while finalizing the SSEL.

Instrumentation for monitoring containment conditions, has been excluded from the SSEL. However, based on current information provided by SQUG on their electronic bulletin board, the need to include instrumentation for monitoring containment performance has not been determined.

Personnel that developed the SSEL met the qualification requirements of the SQUG GIP and EPRI NP-6041. In addition to meeting degree requirements, the systems engineer is also SRO qualified which aided in the process of developing the SSEL.

COMMENTS ON TRIAL RELAY EVALUATIONS

The following VECTRA comments were made during a review of the trial relay reviews performed by the BFN2 Electrical Group, and were discussed with TVA during the review. In addition to these comments, VECTRA has provided a response to questions on the relay review process presented to VECTRA during the review process (see Attachment B).

1. During the process of identifying associated relays for safe shutdown component, relay reviewer should also identify motive and control power supplies for each component. This will allow the electrical engineer to highlight an electrical one-line to show all electrical components and validate the Electrical SSEL.

2. Develop a relay tabulation sheet for each component. It is not recommended the evaluations be performed at a system level.

3. Place all relay data into aa electronic database that is independent of the SSEL. Additional data that should be included in this database, above that shown on the EPRI tabulation sheet, includes:

   - Relay location by: Panel No., Building and Elevation (3 fields)
   - Motive power
   - Control power
   - Manufacturer and type
   - Model number
   - Relay coil normally energized (Yes/No)
   - Contact NO/NC (in de-energized state)
   - Duplicate relay identifier

4. List all relays associated with that component. Attempt to screen relays as they are added to tabulation sheet.

5. Ensure that relays in auxiliary circuits are identified and evaluated.

6. Motor starters (contactors) should not necessarily be classified as "not vulnerable" (NV) on the relay tabulation sheets. The motor starters and thermal overloads should be screened from the list of essential relays by using the MCC/GERS if the motor control center meets the caveats provided in the SQUG GIP.

7. Time delay relays (i.e. Agastats) should be considered susceptible to relay chatter. However, the possibility of a time delay relay's timing being affected as a result of a seismic event is not addressed by either the SQUG GIP methodology or EPRI NP-6041 for IPEEE. Since the SQUG methodology is based on industry experience, if testing or experience had shown this to be a concern it would have been addressed. The relay reviewers should attempt not read to many issues into the scope of these projects.

8. During the course of performing the relay review, the review team should be on the lookout and aware of potential adverse plant conditions that might develop as a result of relay chatter. However, the relay reviewers should not attempt to read more into the guidance documents than what is written. Events and situations proposed by TVA such as electrical faults created by the earthquake, concurrent with partial relay chatter as a result of the seismic event, are outside the scope of the SQUG GIP.

9. Every effort should be made during the relay review to ensure that valves stay in their required positions, or only move to the required position when necessary. If too many valves are allowed to move as a result of relay chatter, the Operators may called upon to perform an unacceptable number of actions to restore system alignment.

VECTRA believes that if the above techniques are factored into the TVA relay review effort the process will be more efficient. It would also eliminate the lengthy analysis text that is was generated during the trial reviews. With all associated relays listed against each safe shutdown component, and provided with an appropriate screening code, supplemented with standardized and specific notes, the results of the review effort can be easily followed by anyone else in the future.

RECOMMENDATIONS

Action Items

The following items were identified and discussed with TVA during the review process. It is recommended that TVA close out these items prior to completing the seismic walkdowns and submittal of the final USI A-46/IPEEE Report to the NRC.

1. The Shutdown Cooling mode of RHR has not been selected for either USI A-46 or IPEEE. However, the RHR Shutdown Cooling suction valves FCV-74-47 and 48 should be included on the SSEL for the following reasons:

   - It is understood that power has been removed from one or both of these valves. These high/low pressure interface valve could spuriously open as a result of relay chatter resulting in a potential LOCA.

   - Although neither the A-46 or IPEEE programs require the plant to go to cold shutdown, the intent is that the plant will be ready to transition to cold shutdown at the end of the 72 hour period. With this in mind; it is recommended that the subject valves be reviewed seismically so that there will be some assurance that they can be opened subsequent to the earthquake.

2. It is recommended that the process used to develop the list safe shutdown components for USI A-46 and IPEEE be documented. If there are no additional assumptions other than those contained in the SQUG GIP and EPRI NP-6041 that document should explain that. This document could also be used to:

   - Explain the SSEL codes and reference the SSEL document number.
   - Describe why certain HVAC systems are excluded.

3. Systems required to support each of the shutdown functions have not been specifically identified. A matrix could be used to show which systems are required to support each safe shutdown function, as well identify those that perform more than one role (i.e. CRD/scram discharge volume, and RHR/LPCI and Shutdown Cooling). The matrix can also be used to identify how each support system is related to front-line systems.

4. For IPEEE the exclusion for NSSS components does not exists as it does under the SQUG methodology. Therefore NSSS items such as the control rod drives, reactor internals, reactor recirculation pumps should be included. VECTRA understands that while these components will be evaluated as part of the IPEEE process TVA

does not plan to place them on the SSEL. This position this should be documented in either the SSEL report, or the TVA report to the NRC.

5. The BFN2 position on HVAC for the various plant areas needs to be documented for the final report. The SQUG GIP (Section 3.3.6) in identifying the types of support systems and equipment for safe shutdown functions specifically calls out HVAC as one such system. Unless a specific analysis or calculation can be presented to support the need to exclude such systems, they should be included on the SSEL.

   Currently the BFN2 A-46/IPEEE SSEL only identifies the following ventilation systems as being needed:

   - Diesel Generator Room Exhaust Fans
   - RHR Pump Room Cooling Units
   - CS Pump Room Cooling Units

   Other areas such as electrical switchgear rooms and the Control Room should be addressed.

6. The relay review for BFN2 should be started, and completed, as soon as possible to ensure that all associated relays are identified and that the essentially reviews are completed before the seismic evaluations progress much further. The current methodology being used to identify essential relays might miss some relays, and may result in unessary seismic evaluations of other relays. Without having completed the relay review process, TVA may not have taken full advantage of the screening methods available to reduce the population of essential relays.

Documentation

During the review of the BFN2 SSEL, a number of the issues that were considered by TVA in developing their SSELs for Unit 2 were conveyed to VECTRA verbally (i.e. high pressure injections systems for inventory control would not be included in the SSEL). Although the processes used are acceptable, it is recommended that they be documented as soon as possible so that all of the details are captured (see Action Item #2 above).

Documentation should identify method and approach used, as well as a description of the procedures used, to identify systems and components for the seismic walkdowns and relay reviews. It should also identify any key assumptions made during the project (i.e. high pressure systems were not selected because of their low availability). The report should include a concise description of the documentation used to generate the SSEL (procedures, flow diagrams, FSAR, etc.).

In addition to documenting the SSEL methodology the Operations Department review of the SSEL and the systems selection should be formally documented. The GIP requirement for their review is to verify that, using plant procedures the Operators will be lead to the safe shutdown paths selected. VECTRA understands that TVA plans to validate the SSEL by using the BFN simulator. VECTRA recommendes that this be discussed in the projects final report to the NRC.

General Comments

1. Check valves: The SQUG GIP (Section 3.3.5) allows for the exclusion of certain "potentially active components such as in line check valves from the need to perform a seismic review as long as they do not have external actuators. This is because they are inherently seismically rugged and not vulnerable to damage during a seismic event.

   Those check valves that are considered active components could remain on the SSEL. If they remain they should be identified as seismically, or inherently, rugged by placing an "R" in the "Equipment Class" field and leaving the "Sort" field blank.

2. When a pneumatically operated valve (FCV) is on the SSEL along with it's controlling solenoid valve (FSV), it is recommended that the FSV be listed as a support component to the FCV. The relay review for this combination should be tracked against the FSV.

   In addition, if the FSV is attached to the FCV, no seismic review of the FSV would be required since in would fall within the "rule-of-the-box" and be evaluated with the FCV.

3. Flow elements: These devices should be considered seismically rugged with no need to be included on SSEL.

   If flow indication is required, the specific indicator should be included on the SSEL and identified as requiring a seismic and relay review. Support components would then be the transmitter and the panel on which the indicator is mounted on. The transmitter would the also be listed as a SSEL component with the rack on which it is mounted identified as a support component.

   If more than one SSEL transmitter turns out to be located on that rack, then the individual transmitters could be replaced with a single SSEL entry to identify the rack. A note would then be used to identify the instruments on the rack of interest.

4. Use the "Required Support Component" field to identify the power supply required (i.e. 250V BD-2A, etc.) to operate the component. This will allow users and reviewers to identify why specific electrical components are on the Electrical SSEL.

Control Rod Drive SSEL

1. Lines #0001-0009: The directional control, scram and check valves (597 and 616) along with the scram accumulator could all be listed as a single component (HCU) on the SSEL. Seismic reviews of HCUs are normally handled as unit.

2. A relay review of the HCUs and the scram pilot valves should not be necessary if the assumption is made that there are no single failure vulnerabilities within the CRD or RPS that would preclude all but a single stuck rod from inserting.

3. Lines #0018 and 0019: The CRD Instrument Volumes should be considered as piping which is not required to be reviewed under USI A-46.

4. No relay review would be required of the individual SDV vent and drain valves since the SOVs (FSV-85-37A/B) that control these valves are already on the SSEL and identified as requiring a relay review. This relationship could be tracked by listing the scram dump valves as required components against the vent and drain valves.

5. Control air and power should not be a required support systems for any of the CRD System components since they should all fail in the desired position.

6. The control switches (reactor mode and scram push-button) taken from the RPS schematics should not be included on the SSEL. If they were to be tracked they would be identified during the relay review process and identified as not being vulnerable to chatter since they are mechanically actuated devices.

Residual Heat Removal SSEL

1. Note 5 makes reference to functions "I" and "H" referring to inventory and decay heat removal control functions. The SSEL does not show or provide a description of the codes. The matrix previously for inclusion in an SSEL report discussed should help clarify the dual role RHR plays.

2. Line #1001, description should be "Pump 2A".

3. RHR pumps desired state should be "STBY/RUN", currently identified as "RUN". This will key the relay reviewers to look at both conditions to ensure that there are no relays that would cause the pump to spuriously start when it is not required.

4. Room coolers are identified as support components for the RHR pumps. The fans associated with these coolers are required, and are included on the EECW SSEL.

5. Lines #1003, 1012A, 1027A and 1035A: Could the breakers for these valves be "racked out" or locked open to preclude the need to perform relay review of their control circuit?

6. Line #1005. The "Normal" and "Desired" state is not consistent with the other minimum flow line check valves.

7. Line #1007. In-lieu of performing a relay review of RCIC valve FCV-71-34, why not replace it with check valve CKV-71-547 if flow diversion is the only concern?

   What about flow diversion to Aux. Boiler System shown on Flow Diagram 2-47E813-3 that also ties into the RHR line to the Suppression Pool?

8. RHR heat exchangers, use of Note #2 is not clear.

9. Lines #1010 and 1033A. Could the breakers for these valves be "racked out" or locked open to preclude the need to perform relay review of their control circuit?

10. The color coded flow diagrams for RHR show a number of FTs and FSs circled but they do not appear on the RHR SSEL?

11. Lines #1017 and 1040: The "Desired" position for these valves should be "CL/OP" since the valves would remain closed if RHR is in the LPCI mode of operation.

12. Lines #1018, 1019, 1041 and 1042: The "Desired" position of these valves will be dependent upon the mode of operation the RHR system is in, Suppression Pool Cooling or Spray. Therefore, the "Desired" position should be shown as "CL/OP".

13. Lines #1021, 1022, 1044 and 1045: Desired position should be "CL/OP" since LPCI may not be initially used, and it may be desired to keep the valves closed.

14. Line #1024 and 1046: Should Note #3 be used for these valves since the valves will be required to isolate the drywell spray line when RHR is in the LPCI mode of operation under A-46.

15. Line #1031. In-lieu of performing a relay review of HPCI valve FCV-73-30, why not replace it with check valve CKV-73-559 if flow diversion is a concern?

Main Steam Relief Valves SSEL

1. Would the accumulators for PSV-1-5, -19 -22, -30, -31 and -34 be of sufficient size and capacity to facilitate de-pressurizing the reactor to initiate LPCI? If they are, would it still be necessary to include all of the CAD System? CAD could have some seismically vulnerable components.

2. Recommend deleting the relay review for the relief valves and identify the solenoid valves (PSVs) as support components. The solenoid valves are currently listed under the CAD System and identified as requiring a relay review.

3. Flow diagram 2-47E817-1, Reactor Water Recirculation Vents and Drains, shows two reactor head vent valves (numbers can not be identified) that are not highlighted nor appear to be included on the SSEL. This would be a potential path for loss of inventory or pressure control.

Containment Isolation SSEL

1. The MSIVs and the drain line isolation valves also function under inventory and pressure control using the SQUG GIP guidelines. These valves and the MS relief valves could be listed under a Main Steam SSEL.

2. Since main steam line drain valves FCV-1-55 and -56 are normally closed, only on of the valves needs to be included on the SSEL. A relay review of one passive valve would ensure that containment isolation and inventory control functions are maintained. No single failure needs to be considered here.

3. Recommend adding the MSIV SOVs as support components for the MSIVs, and assign the relay review requirement to the components.

4. Recommend that the panel where the indicator or recorder is installed be identified in the "Location" or "Supporting Component" field. This would identify the basis for including the panel on the Electrical SSEL.

5. The transmitters for the various indicators found on the SSEL should be listed as a "Req'd Supporting Component".

6. Lines #3011 thru 3014, 3036 and 3038: These check valves will not require a seismic review (See comment under RHR).

7. Testable check valves are an exclusion to the rule on check valves not requiring a seismic review. Since these valves have external actuators a seismic review is required to ensure that there are no interaction issues that might cause the valve to be forced open.

   Therefore, RCIC valve FCV-71-40, and HPCI valve FCV-73-45 should be returned to the SSEL.

9. Line #3015: The accumulator that may be needed to close FCV-32-63 should be listed as a required support component. This will ensure that the Seismic Review Team look at the accum. and it's associated piping to ensure that there are no seismic issues that need to be addressed.

Emergency Equipment Cooling Water (EECW) SSEL

1. Lines #4003, 40013. 4046 and 4056: These strainers could be eliminated from the SSEL if it can be shown that they are not required for the 72 hour period, or that spurious operation of the strainers during the strong motion period of the earthquake.

2. Lines #4004, 4014, 4047 and 4057: Strainer drain valves opening during the event may not divert a sufficient amount of water to require a seismic or relay review.

3. Since the diesel generator coolers are not specifically listed on the DG SSEL (see note 3) it is assumed that they are part of the diesel generator line item as "rule-of-the-box".

4. Are the Unit 1 CS and RHR room coolers on the Unit 1 SSEL? Required to ensure that they do not present a potential flow diversion problem.

5. Have the 6 inch EECW line that connect to Raw Water System (Dwg. 1-47E844-2) been evaluated for potential flow diversion?

   Have the 8 inch EECW line that connect to Raw Water System (Dwg. 1-47E844-2) been evaluated for potential flow diversion?

   Other lines and equipment on highlighted flow diagrams not highlighted. Equipment in these lines may need to be evaluated to assess the impact of flow diversions on EECW.

6. Lines #4009, 4040, 4052 and 4082: RHR seal water heat exchangers could possibly be seismically evaluated with the RHR pumps under the "rule-of-the-box".

7. Lines #4015 and 4058: EECW valves connecting the RHRSW pumps with RHRSW system could be excluded from the SSEL. With the RHRSW system being evaluated , spurious operation of the valves should not affect safe shutdown. If the valves opened they could be manually re-closed to terminate any flow diversion.

8. Lines #4041, 4042. 4083 and 4084: Amperage indication (pump running?) could be eliminated. Verification of the system operating could be that supported systems (DGs, rooms coolers, etc.) are operating as required.

Core Spray SSEL

1. The "Desired" operating state for the Core Spray pumps is identified as "ON". If there may be a concern from an electrical load standpoint for the 4KV busses. The relay reviews should be notified that spurious operation (starting) of the pumps during the earthquake may not be acceptable. This can be done by identifing the "Desired" state as "OFF/ON" on the SSEL.

Containment Atmosphere Dilution SSEL

1. See comment #1 under Main Steam Relief Valves SSEL above.

2. Lines #6002 and 6026: The relay review identified for this component can be deleted since the SOV that controls the valve is on the SSEL and identified as requiring a relay review. The FSV should be identified as support component, and "Power Req'd" should be "No".

3. Lines #6010, 6011, 6034 and 6035: Check valve that can be classified as inherently rugged, but exempted from containment isolation due to their size (< 1 inch).

4. The solenoid valves for the MS relief valves could be considered as "rule-of-the-box" if mounted on the relief valve. This would eliminate the need for a specific seismic review of the PSV.

Diesel Generators SSEL

1. The Unit 3 Diesel Generators are on the SSEL, are they required to support a Unit 2 safe shutdown?

RHR Service Water (RHRSW) SSEL

1. As was identified on the CS pumps, the Desired Operating State for the RHRSW pumps is identified as "ON". If there is any concern from an electrical load standpoint for the 4KV busses, the relay reviews should be notified that spurious operation (starting) of the pumps during the earthquake may not be acceptable.

2. Can one RHRSW pump supply all three RHR heat exchangers? The Unit 2 SSEL indicates that the outlet valves from the Unit 1 and 3 heat exchangers are passive and will remain closed. Is this true? If not seismic reviews will be required of all outlet valves.

3. Transmitters for flow indicators should be listed as "Required Support Components", and the transmitters listed on the SSEL so that they can be seismically evaluated.

Electrical SSEL

1. Backfeed transformers TS1E, TS2E, TS3E and TDE are currently included on the SSEL. If these transformers are not required, and are normally isolated by open breakers following a loss of offsite power, they could be excluded from the SSEL.

2. Electrical busses and MCCs required for safe shutdown should fall out from the front-line and support systems equipment selection process. Busses on SSEL do not appear to be consistent between units.

3. Diesel Generator grounding resistor: Porcelain insulators would be subject to seismic damage. Would a short of this resistor result in a trip of the diesel or it's output breaker?

Instrumentation

1 Instrumentation included on SSEL should be consistent with Category 1 equipment seismically qualified under the Regulatory Guideline 1.97 program will resolve the USI A-46 requirements for that equipment.

(1) Yes. See Action Item #5 in the body of the letter.

(2) Yes. Resetting the battery chargers following a seismic event would be an acceptable method of eliminating the need to perform a relay review of the components. However, the station procedures should support this approach by ensuring steps or a notice is placed in the appropriate document to alert the Operators to the potential loss of the chargers.

(3) The separation criteria drawings would be an acceptable alternative to highlighting electrical single line diagrams. The primary purpose foe performing this exercise is to ensure that all electrical equipment that may be required to make a path available has been considered and included on the SSEL.

(4) No. To some extent circuit continuity has not been an issue in responding to either A-46 or IPEEE. However, the raceway review which included conduits should have considered electrical junction boxes, and like raceways, these items are not included on the SSEL.

RESPONSE TO VECTRA'S PEER REVIEW
OF THE BFNPP UNIT 2 USI A-46 AND IPEEE SSEL

The HVAC Systems for the Control Building and the Reactor Building Shutdown Board Rooms are not included in the Safe Shutdown Equipment List because:

The Control Building HVAC system is composed of the following subsystems:

1. Chilled water: For Unit 1/2, this system consists of two 100% capacity chillers, associated pumps, and air handlers. This system serves the Unit 1/2 Control Bays, adjacent Unit 1/2 rooms on elevation 617', the relay room also located on 617', and areas containing Unit 1/2 safety related electrical equipment located on elevation 593'. For Unit 3, this system consists of two 100% chillers, air handlers, and associated pumps. The Unit 3 system is completely redundant in both equipment and piping. In addition, a cross-tie arrangement exists to supply chilled water to the "B" relay room air handler if required.

2. As noted above, 100% redundant air handlers are provided for the areas in the building containing temperature sensitive safety related equipment.

3. Outside air is provided for make-up and to cool the remaining areas of the building. Outside air used for cooling of safety related equipment is composed of 100% redundant fans.

4. Emergency Condensing Unit: Located in the Unit 1/2 elevation 606' equipment room, serves the Unit 1/2 conditioned spaces. This unit is provided for conditions when the chilled water piping system is inoperable. The chilled water piping for Unit 1/2 is a single loop system and loss of it would prevent chilled water from reaching the air handlers. In this unlikely event, the emergency condensing unit can provide an alternate source of cooling for the conditioned areas of the Unit 1/2 Control Building. The various air handlers have direct expansion cooling coils installed that are connected to the emergency condensing unit. The air handling unit fans distribute the cooled air to the areas served.

5. Calculation ND-Q0999-930029 determined the minimum manual actions required for maintaining acceptable room temperatures for operation of Units 1, 2, and 3 with a temporary loss of HVAC. These manual actions vary with each room and in some instances, the time frame can be relaxed. For example:

Room/Area	Manual Action
Electric Board Room 1C (593-R1B)	Turn off lights within 6 hrs. and open door within 30 hrs.
Electric Board Room 2C (621.25-R2A)	Turn off lights and open door within 2 hrs.

Other manual actions include open access panels, blank off return grille, and re-open intake damper. Tables 5.1 through 5.6 also indicate that some existing manual actions can be deleted; however, performance of these manual actions within the identified time frame will result in maintaining acceptable room temperatures.

6. During a postulated Station Blackout Event, all AC power is lost and the plant must rely solely on DC powered systems for plant recovery. As such, all heating, ventilation, and air conditioning systems are rendered inoperable. Therefore, Calculation MD-N2031-920011 (Reference 4) determined the temperature profiles for various rooms in the Control Building and Reactor Building following this event. Some high temperatures can be expected; for example, temperature exceeding 144°F in room 593-C22A. Although some high temperatures can be expected, Electrical Calculation ED-Q2999-920046 (Reference 5) and Mechanical Calculation MD-N2999-890014 (Reference 6) provide reasonable assurance of the operability of Station Blackout response equipment in dominate areas of concern. Calculation ED-Q2999-920046 concluded all Class 1E electrical equipment is operable for a Station Blackout Event. In addition, the calculated 4 hr. Station Blackout temperatures are below the 4 hr. duration Station Blackout Operability temperatures for the ten categories of equipment generically excluded by NUMARC 87-00 R1 Appendix G (Attachment B of Reference 5). That is, 144°F is less than 160°F which is the lowest temperature allowed by NUMARC. Therefore, reasonable assurance exists for the operability of the equipment required to cope with the Station Blackout event.

The Control Rooms are continuously occupied and any failure of cooling to these spaces would be noted fairly quickly. Operating Instruction OI-31 Section 8.13 provides instructions for coping with a loss of cooling to the various areas which contain sensitive equipment. Based on the equipment redundancy provided in the various sub-systems and the Operating Instructions provided as well as minimum manual actions, the HVAC systems need not be included in the Safe Shutdown Equipment List.

References:

1. Operating Instruction OI-31
2. Drawing 0-47E866-4 Flow Diagram
3. TVA Calculation ND-Q0999-930029, "Appendix R Manual Actions for Temporary Loss of HVAC."
4. TVA Calculation MD-N2013-920011, "Loss of Control Bay Cooling During Station Blackout."
5. TVA Calculation MD-N2999-890014, "Operability of Station Blackout Response Equipment for BFN."
6. TVA Calculation ED-Q2999-920046, "Assessment of Class 1E Electrical Equipment Operability in Dominant Areas Under Station Blackout (SBO) Conditions."

February 9, 1996

50147.14-0-001

Mr. John R. Glass
TENNESSEE VALLEY AUTHORITY
Browns Ferry Nuclear Plant, EDB 1F-BFN
Browns Ferry Road
Athens, AL 35611

Subject: ***Peer Review Report for the Browns Ferry Units 2 and 3 USI A-46 and Seismic IPEEE Programs***

Dear John:

Attached is the peer review report for the Browns Ferry USI A-46 and Seismic IPEEE programs.

This report summarizes the results of the review that Rick Cutsinger and I performed during January. Overall the programs were conducted in a thorough and professional manner. No deficiencies or gross errors were discovered during the review. However, Rick and I have made several suggestions that could strengthen specific areas of the programs. Please feel free to call either Rick or I to discuss any questions you may have with the attached peer review.

Sincerely,
EQE International, Inc.

Greg Hardy

Greg S. Hardy
Senior Vice President

cc: John Dizon (EQE)
Rick Cutsinger (TVA)

Attachment: *Peer Review Report*

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BROWNS FERRY PEER REVIEW

1. EXECUTIVE SUMMARY

The Tennessee Valley Authority is in the process of resolving their unresolved safety issue A-46 and seismic IPEEE programs at their Browns Ferry Units 2 and 3 nuclear power plants. They are utilizing the SQUG Generic Implementation Procedure (GIP) as the basis for their resolution of USI A-46. The seismic IPEEE issue was addressed using deterministic (EPRI) margin methods. The GIP and NUREG 1407 contain requirements to perform independent peer reviews of the entire A-46 and seismic IPEEE review processes. This report documents the peer review for Browns Ferry Units 2 and 3. This peer review was performed by Greg Hardy of EQE International and Rick Cutsinger of TVA during a January 9-11 trip to the Browns Ferry site.

Mr. Hardy has over 20 years of experience in the field of dynamics, structural mechanics and stress analysis. He has been the independent peer reviewer for several nuclear plants both for their USI A-46 resolution as well as their seismic IPEEE resolution. He has been a key participant in the development of the SQUG methodology over the past 10 years. This participation includes the following:

- Co-author of the SQUG Generic Implementation Procedure
- Trainer for SQUG Training Course
- Reviewer for EPRI Margins Course
- Co-author of EQE "20 Classes of Equipment" document
- Contributor to NUREG 1407 for IPEEE
- Principal author of NUREG/CR-5499, Guidance on Relay Chatter Effects

Mr. Cutsinger has over 15 years of experience in the design and qualification of nuclear power plant structures, equipment, piping and other suspended system supports. He also spent 18 months at the Institute of Nuclear Power Operations performing evaluations of the civil design and qualification of 12 nuclear power plants. He is currently the Chief Civil Engineer for TVA and is also a member of the

Browns Ferry Nuclear Safety Review Board. He recently authored an EPRI innovator utilizing the use of seismic experience data to qualify HVAC support anchorages.

The overall A-46 resolution program by TVA is judged to be proceeding in accordance with the GIP. There were no gross errors or deficiencies discovered in the sampling review conducted on this peer review. Several areas were identified where the Peer Reviewers recommended additional actions to strengthen or confirm the Seismic Review Team (SRT) conclusions. Since this was an "in-progress" peer review, several key areas were not completed at the time of the review and, thus, could not be included within this report.

2. PURPOSE OF PEER REVIEW

The independent peer review of a plant-specific USI A-46 and seismic IPEEE implementation is intended to provide a senior level review of the overall program. The review is not intended to be a quality assurance type review. The State-of-the-art seismic review methodologies include peer reviews to provide a higher level of assurance that the judgments implicit to these methodologies (GIP and NP6041) are being properly applied and to look for gross errors. The peer review is typically conducted on a sampling basis wherein a "vertical slice" of the major elements of the A-46 and seismic IPEEE programs are selected for review.

3. SCOPE OF PEER REVIEW

The scope of this peer review encompassed the seismic assessment portions of the USI A-46 program performed by the Seismic Capability Engineers (SCE). Attachment A has a detailed agenda for this peer review. The following areas were included within the agenda for the peer review:

- Qualifications of Seismic Review Team
- Plant Walkdown Reviews
- Project Documentation (SEWS, OSVS, SVDS)
- Seismic Response Utilization
- Identification of Outliers
- Identification of Bad Actor Relays

- Overall Conduct of the A-46 Program
- Observations of SCE personnel performing in-plant evaluations were conducted in October 1995 by Mr. Cutsinger

As specified within the SQUG/EPRI methodology documents, the peer review of the SSEL and the relay SSEL are addressed by virtue of the required plant operations department review and concurrence. In addition, an initial peer review had already been conducted for Browns Ferry by a contractor in March of 1995. Thus, the relay and equipment SSEL portions have not been specifically included within this peer review. However, the systems engineer responsible for generating these lists was interviewed as part of this peer review to ensure proper communication and teamwork was established between the systems engineers and the SCE's. The systems engineers were integral SRT members at Browns Ferry and properly performed their role of helping to define the components and boundaries of these lists to the SCE's. In addition, specific discussions were conducted to ensure issues such as containment performance, fire protection inadvertent interaction and operator action were addressed when selecting the SSEL.

The following portions of the A-46 and seismic IPEEE programs could not be totally reviewed at the time of this peer review since they were still in progress.

- Outlier Resolution
- Final Reports
- HCLPF Results

4. PROGRAM STATUS

At the time of the peer review, the SSEL had been developed and initial reviews have been conducted by the operations department. In addition, the walkdown, load path and anchorage evaluation phases of the project were essentially completed. The essential relay list was still in the process of being completed and relay capacity to demand comparisons were in progress. Outlier resolution was also in progress and the final reports had yet to be written.

At the time of the peer review, the program had identified 1015 components in the seismic SSEL. There have been 153 outliers identified on the project to date.

5. RESULTS OF THE PEER REVIEW

As documented in the attached agenda, the peer review concentrated on a sampling review of key areas identified by the NRC in Generic Letter 88-20 Supplement 5. Additional critical areas were identified by the reviewers based on their experience with earthquake experience, test data and PRA results. The specific results from the review are documented in the subsections below.

5.1 Qualifications of Seismic Review Team Members

The peer reviewers checked the qualifications of the seismic review team members to verify that their experience and training met the requirements within the GIP. Short resumes together with a table listing all the SRT members and their level of training and experience were made available to the peer reviewers. The SRT members are judged to meet the qualifications within the GIP.

5.2 Walkdown Results

The peer reviewers selected 13 components to walkdown in the plant. These 13 components were selected after reviewing the list of outliers, reviewing selected SEWS forms and consulting with the seismic review team members. Table 1 contains the listing of these 13 components together with the observations on the walkdown and recommended action items. The observations of SCE personnel performing in-plant evaluations concluded that: Personnel performing the in-plant evaluation applied a questioning attitude with respect to the component being evaluated as well as discussing whether there were any other seismic concerns. The engineering judgment used during this in-plant evaluation appeared reasonable and prudent. In general, the SCE teams did a commendable job in their reviews and evaluations.

5.3 Response Spectra

The NRC accepted the Browns Ferry floor response spectra as "median centered" in their response to the USI A-46 submittal. This NRC review and statement forms the basis for our judgments that the design spectra are acceptable and appropriate for the USI A-46 program.

The seismic margin program utilized a scaled set of spectra generated by ratioing the design spectra up to a 0.3g ZPA level. Structural damping was assumed to be 7% for all three buildings (Reactor, Diesel and Service Water). The peer review team feel that these spectra need to be reassessed and possibly revised to reflect the following:

1) Damping should be established based on the state of stress in the structure at the applicable earthquake level (see NUREG 6041). It can be higher, lower or equal to the 7% used depending on this state of stress.

2) The scaling of spectra to reflect different structural damping levels is based on the difference in response at the main structural frequencies (i.e. where the majority of the mass is participating). Thus, the square root of the ratio of the damping values is appropriate to scale different equipment damping ratios but not the structural damping ratio.

5.4 Open Issues

These open issues are items which were discussed with the project team during the site visit and which the project team was going to do some additional investigation.

- Cardox system in diesel rooms - project team to review whether this system should be added to the SSEL

- Resolution of relays - the relay review had not been conducted at the time of the peer review

- Demonstration that equipment >8 Hz (including subassembly frequencies) since bounding spectrum used in capacity to demand screening

CONCLUSIONS AND RECOMMENDATIONS

1. All activities evaluated by this peer reviewer were performed in accordance with the GIP. No gross errors or deficiencies were discovered in this peer review. The seismic review teams are knowledgeable and meet the requirements for the review.

2. A few SEWS forms and associated calculations (as noted in the table) should be modified to reflect the comments and suggestions contained within this review.

3. The scaling of the design basis spectra to achieve 0.3g seismic margin spectra needs to be reassessed using appropriate scaling methods.

ATTACHMENT A
AGENDA
BROWNS FERRY PEER REVIEW: USI A-46 AND SEISMIC IPEEE

I. Review Project Status and History

II. Review Initial Browns Ferry Peer Review Comments and Results

III. Review Draft Reports (if available)

- SSEL, Walkdown, Relay and Seismic Summary Reports (A-46)
- IPEEE report

IV. Review NRC "In Progress" Audit Results

V. Review Documentation

- SEWS, Anchorage Calculations, Outlier Resolutions (A-46)
- HCLPF Calculations (IPEEE)

VI. In Plant Review of Sample of Equipment (vertical slice)

VII. NRC Items from Generic Letter 88-20 Supplement 5

- Bad Actors Relay
- Masonry Block Walls
- Flat Bottom Tanks
- Inadequate Anchorage / Bracing
- Seismic Interactions
- Building Impact / Pounding

VIII. High Profile Items from Seismic IPEEE Review

- NSSS Components
- Seismic/Fire Interactions
- Containment Systems
- Structures

IX. Additional Potential Critical Elements from Past Experience

- Emergency Batteries
- 4160/480 V Transformers
- Diesel Start System Elements
- Control Room Ceiling

Table 1

THIRD PARTY WALKDOWN RESULTS

SSEL Component	Third Party Audit Walkdown	Third Party Audit Comments	Suggested Actions
1. DG A Electrical Control Cabinet (PNLA-082-0000A)	Yes	SCE's used bounding spectrum as the basis of the seismic capacity. Auditors unable to judge the assumption that all subassembly frequencies were greater than 8 Hz due to cabinet being locked. Frequency calculation for internal plate used unconservative assumption of fixed boundary conditions for a stitch weld. Probably compensated by other conservative assumptions in this frequency calculation. All other aspects of the SCE's review judged appropriate.	Revisit the plate frequency calculation.
2. 480 Volt DSL Aux BDA (MCC)	Yes	Concur with judgments of the SCE's. This MCC is an outlier due to frequency < 8 Hz.	None
3. Diesel Air Receiver Tank	Yes	Tank load path in the longitudinal direction is taken by friction and/or load into threaded attached piping nozzle.	SEWS form should address longitudinal load path issue.
4. Diesel Fuel Oil Storage Tank	Yes	Concur with judgments of the SCE's.	None
5. Diesel Generator	Yes	Overall opinion is that the diesel skid assembly is rugged and can withstand the envisioned seismic loads. Several comments were noted by the reviewers which would strengthen the documentation. 1. Question 7 under Anchorage and Question 2 under interactions should by "Yes" and not "NA".	Revise SEWS as appropriate.

Table 1 (Continued)

THIRD PARTY WALKDOWN RESULTS

SSEL Component	Third Party Audit Walkdown	Third Party Audit Comments	Suggested Actions
5. Diesel Generator (Cont.)		2. Most large diesels have natural frequencies in the 15-20 Hz range. The SEWS had documented a judgment by the SCE's of the diesel being "rigid" and used the spectra ZPA for calculating uplift. This should be reviewed and updated, but is not expected to change the conclusion. 3. Since bounding spectrum used for capacity, > 8 Hz frequency must exist for all appropriate subcomponents.	
6. Diesel Batteries (125 Volt DSL Battery A)	Yes	Concur with judgments of SCE's. Battery Racks are floor and wall mounted, thus frequencies > 8 Hz.	None
7. Diesel Battery Chargers	Yes	Concur with judgments of SCE's. NOTE: The reviewers are unsure why these chargers are required to be on the SSEL.	None
8. Diesel Distribution Panel	Yes	Concur with judgments of SCE's.	None
9. DG Neutral Grounding Transformer	Yes	The reviewers had 3 comments relative to this transformer: 1. The explanation as to the intent of the caveat being met for the 8 Hz caveat needs to be revisited. The core/coil clearance issue is related to, but clearly separate from, the capacity/demand caveat. Using GERS for this component (if appropriate) may resolve this issue. 2. The large resistor mounted above the transformer is supported on insulators. Clear direction as to the consequences of this insulator failure needs to be solicited.	Address frequency caveat and review consequences of insulator failure.

Table 1 (Continued)

THIRD PARTY WALKDOWN RESULTS

SSEL Component	Third Party Audit Walkdown	Third Party Audit Comments	Suggested Actions
9. DG Neutral Grounding Transformer (Cont.)		3. Agree that isolators beneath the transformer need to be evaluated (basis of outlier).	
10. 250 Volt Main Batteries	Yes	Concur with judgments of SCE's. Would strengthen documentation to stipulate battery weight and frequency together with the reference for these values on the SEWS.	None Required
11. 480 Volt MCC (RMOV Board 3D)	Yes	1. This component is really a combination of switchgear and MCC's. 2. The frequency was judged by SCE's to be > 8 Hz, yet the EPRI guidelines suggest that it takes a lineup of 6 or more sections to have > 8 Hz frequency (side to side). 3. 2" - 3" grout pad with significant cracking was observed. This condition could lead to bolt bending concerns if adequate load path does not exist.	1. Document basis for frequency estimate. 2. Review grout pad load path to ensure bolt bending not an issue. 3. Ensure all appropriate switchgear caveats have been met since MCC SEWS was used.
12. RHR Service Water Pumps A2	No	Component not walked down. Outlier due to cantilever length.	Complete outlier calculation.
13. RHR Heat Exchanger 2A	Yes	Concur with judgments of SCE's.	None

Engineering

Risk ■ Safety ■ Design

EQE Correspondence
No. 50147.13-O-003

February 23, 1996

Mr. John R. Glass
TENNESSEE VALLEY AUTHORITY
Browns Ferry Nuclear Plant, EDB 1F-BFN
Browns Ferry Road
Athens, AL 35611

Subject: *Responses to USI-A46/IPEEE Third Party Audit Comments Browns Ferry Nuclear Plant (BFN)*

Dear Mr. Glass:

Attached are the SRT responses to comments resulted from the third party audit performed by Mr. Rick Cutsinger and Mr. Greg Hardy on January 9 -11, 1996. A copy of this document is also transmitted to each of the peer reviewers above for their information.

If you have any questions, please feel free to contact me at (415)989-2000.

Sincerely,

John O. Dizon

John O. Dizon
Project Manager
EQE International
San Francisco, CA

Attachment

cc: J. Valente (TVA)
R.D. Cutsinger (TVA)
G.S. Hardy (EQE)

50147/ltr03

44 Montgomery Street, Suite 3200 ■ San Francisco, CA 94104 USA ■ Telephone (415) 989-2000 ■ FAX (415) 433-5107

RESPONSES TO BFN PEER REVIEW COMMENTS
(Section 5 of Attachment to EQE 50147.14-O-001)

5.1 Qualifications of Seismic Review Team Members

Each Seismic Review Team (SRT) consisted of a minimum of two Seismic Capability Engineers (SCEs), one of which is a registered Professional Engineer. The SCEs consisted of highly qualified staff from both TVA and EQE organizations. The engineers who participated in the screening evaluation walkdown are listed below, together with their backgound, experience and training requirements. Resumes of selected SCEs will be included in Appendix A of the USI A-46 Seismic Evaluation Report.

Name	Org.	Yrs Exp	Seismic	PE	SQUG Course	IPE Add-on
Richard D. Augustine	EQE	15	x	x	x	
Paul D. Baughman	EQE	26	x	x	x	x
Jerry W. Beason	TVA	26	x		x	x
Farzin R. Beigi	EQE	13	x		x	
Jakub J. Betka	TVA	15	x	x	x	
Brantley C. Buerger	EQE	14	x	x	x	
James R. Disser	EQE	15	x		x	
John O. Dizon	EQE	18	x	x	x	x
Eric J. Frevold	TVA	14	x		x	x
Partha S. Ghosal	TVA	17	x	x	x	x
Krystyn H. Gromek	TVA	23	x	x	x	x
Syed S. Haider	TVA	20	x		x	x
Russell O. Jansen	TVA	12	x	x	x	x
Steven A. Locke	TVA	14	x	x	x	x
Jon E. McCord	TVA	23	x	x	x	
Cesar O. Pascua	TVA	17	x	x	x	x
Braulio M. Pedroso, Jr.	TVA	9	x		x	
Anand C. Relwani	TVA	15	x	x	x	x
Claude N. Simms	TVA	21	x		x	x
Angel G. Tambora	TVA	6	x		x	x
Thurman G. Thaxton, Jr.	TVA	23	x	x	x	x
William T. White	TVA	20	x	x	x	

Technical supports on systems related issues, including mechanical and electrical SSELs, I&Cs, and relays, were provided by the following TVA and EQE personnel.

Name	Org	Yrs Exp	Systems	Relays	PB	SQUG Course	IPE Add-on
John D. McCamy	TVA	15	x			x	
David L. Moore	EQE	15	x	x		x	
Malcolm L. Pyatt	TVA	10		x		x	
Marc D. Quilici	EQE	15	x	x		x	
Thomas R. Roche	EQE	12		x	x	x	x

5.2 Walkdown Results

For those SSEL components in which "Suggested Actions" were listed in Table 1 of the Attachment to EQE 50147.14-O-001 (Third Party Walkdown Results), the SRT's responses and justifications are contained in the attached Table A.

5.3 IPEEE Response Spectra

- Structural damping based on the state of stress in the structures

  The use of 7% structural damping for IPEEE evaluations was further investigated. Based on the review of selected TVA design calcs., some of the RB reinforced concrete walls were estimated to have stresses above 50% yield or near yield. It should be noted that the RB is founded on rock and the design basis analysis was based on a fixed base lumped mass model. On the other hand, although the DGB is founded on soil, the effects of soil structure interaction including radiation damping were not explicitly accounted for in the existing analysis. Rather, the effects of soil-structure interaction were conservatively accounted for through the application of soil amplification factors of 1.6 and 1.1 in the horizontal and vertical directions, respectively. Therefore, the use of 7% structural damping for the higher IPEEE seismic demand (0.3g), as opposed to 5% structural damping used for design basis evaluations (0.2g), may not be all that unconservative. IPS will assume the same structural damping value for IPEEE as in DBE analysis (5% damping).

- Method of scaling spectra to reflect different structural damping values

  The more appropriate method of scaling spectra to account for different structural damping values, as suggested by the third party auditors, will be used.

  TVA CALC. NO. CD-Q0000-940339 WILL BE REVISED TO ADDRESS THE ABOVE COMMENTS.

5.4 Open Issues

- Cardox system in diesel rooms

The seismic adequacy of the cardox systems in the DG buildings have been addressed in the Conditions Adverse to Quality Report (CAQR) BFT870344. The seismic adequacy of the associated mechanical and electrical equipment, and the storage tank anchorage are documented in TVA calc. no. CD-Q0039-884911 and CD-Q0039-885127, respectively. In addition, the Chemetron Fire System for Unit 3 DGB was shake table tested and the test results are contained in the Wyle Test Report 45145-1, dated 2/81. Similar system for Unit 1/2 DGB was qualified based on similarity.

Furthermore, relay cabinets (8 total) associated with the cardox systems for the diesel rooms in Unit 1/2 and Unit 3 DGBs were recently added into the electrical SSEL for A-46 evaluations.

- Resolution of relays

Relay evaluations are still on-going at the moment. The relay evaluation is currently scheduled to be completed by 3/8/96.

- Demonstration that SSEL equipment (including subassembly) has F > 8 hz.

During the screening walkdown and evaluation of an SSEL equipment, the SRT diligently attempted to estimate the lowest fundamental frequency of such SSEL item including its subcomponents by the one of the following methods:

1. Engineering judgement based on configuration and construction;
2. Calculations;
3. Reference to EPRI Report TR-102180 - Guidelines for Estimation or Verification of Equipment Natural Frequency;
4. Existing documentation, including analyses or test reports.

The frequency estimation has to be performed in broad scale due to the unrealistically high in-structure response spectra for BFN. However, any equipment frequency estimated by the SRT is well documented in the respective SEWS, as evidenced from a number of SEWS selected for review by the third party auditors. In some cases, calculations were performed to benchmark the estimated frequency to some known frequency obtained from testing or analysis.

TABLE A

SRT's Responses and Justifications to Peer Review Suggested Actions

SSEL NO.	COMPONENT I.D.	SUGGESTED ACTION BY THE THIRD PARTY	SRT's RESPONSES and JUSTIFICATIONS
9108 (Item 1)	PNLA-082-0000A DG A Electrical Control Cabinet	• Revisit the plate frequency calculation performed in the SEWS for this panel	• Note No. 7 on the SEWS for this panel states that the lowest natural frequency of this panel per seismic simulation test report no. 42531-1, by Wyle Labs in 6/73, is determined to be 8.5 hz. The frequency estimation calculation performed in the SEWS by the SRT considers the plate, where all internal components of the panel are mounted on, to have fixed edge boundary condition. This assumption was based on the fact that the plate is welded to the stiff internal framings by 3" of 1/8" fillet welds at about every 12" (conservative). This assumption can be substantiated by the fact that the calculation does not take into account the stiffening effect that is provided to the plate by the welded mounting brackets behind the plate. As such, this conservatism was judged to offset the rather unconservative assumption of the fixed boundary condition. The true boundary condition of the plate edges lies somewhere between the fixed and pinned. If pinned end condition is used the resulting frequency would be 5.7 hz. The average of the fixed end and pinned end frequency is 8.3 hz. Nevertheless, since the evaluation relies upon the results from the test report (f_n=8.5 hz), the frequency estimation performed in the SEWS by the SRT only provides another benchmark and more or less confirms the test results.
7005 (Item 3)	0-TNK-86-650A Diesel Air Receiver Tank	• SEWS form should address longitudinal load path issue	• The tanks are configured such that they are restrained in the longitudinal direction by the socket-welded nipples of the tank against the support frames in one direction, and by the attached piping supported to the wall in the other direction. Piping flexibilities were judged to be adequate by the SRT.
7001 (Item 5)	0-GEN-82-A Diesel Generator A	• Comments on the answers to SEWS questions • Use of ZPA values to determine any uplift • Ensure subcomponents have frequency > 8 hz.	• SEWS has been modified to incorporate the reviewers' comments for consistency. • DG base anchorage consists of series of 1-1/4" dia. C-I-P bolts (7 on each side, 14 total) each with a pullout capacity of about 42 k. SRT concurred with the reviewers' comments that the conclusion remains same even if the spectral accelerations at 15 to 20 hz. were used instead of the ZPA values. • All subcomponents of the DG are judged to have frequency > 8 hz. by SRT.

TABLE A (Cont'd)

SRT's Responses and Justifications to Peer Review Suggested Actions

SSEL NO.	COMPONENT I.D.	SUGGESTED ACTION BY THE THIRD PARTY	SRT's RESPONSES and JUSTIFICATIONS
39016 (Item 11)	3-BDBB-268-0003D 480V RMOV Bd 3D	• Document basis for frequency estimate	• The frequency is estimated to be greater than 8 hz. This judgment is supported by the fact that Note 7 on the SEWS for this equipment states that the base of each unit consists of L1-1/2X 1-1/2X1/4 angles and the internal framing consists of L1-1/2X1-1/2X1/8 angles and that the side panels are continuous (there is no cutout in the sheet metal between the adjacent bays). The anchoring of this equipment is achieved by 3/8" dia. machine bolts that go through the base framing angles and connect to the sill channel. The panel construction along with the stiff anchoring system is similar to the configuration shown on Figure 3-4 (Detail A-A) of the referenced document :"Guidelines for Estimation or Verification of Equipment Natural Frequency", by EPRI. The base Detail A-A in the referenced document, which is for a free-standing MCC, was shown to have a test frequency of 7.5 to 8.5 hz.
		• Review grout pad load path to ensure bolt bending not an issue	• Bolt Bending - As stated in Note 3 on the SEWS for this equipment, the weak link in the load path is judged to be the 3/8" dia. machine bolts and the 3/4" dia. redhead expansion anchors. The bolt bending, however not stated, was judged not to be a concern. Note 6 on the SEWS mentions that this equipment is mounted on a 1-1/2" tapered grout pad. The third party auditors' comments indicated 2" to 3" of grout pad. Based on the third party auditors' inquiry into the bolt bending issue for this particular equipment, a calculation was performed to determine the stress interaction ratio corresponding to bolt bending. This calculation followed the recommended procedure in the referenced document: "Recommended Approaches For Resolving Anchorage Outliers", by EPRI. The resulting interaction ratio (using a 2-1/2" grout pad) was shown to be 0.32. The interaction ratio calculated on the SEWS for the anchorage is 0.66. Therefore, the bolt bending is not a concern, and the highest stressed component of the anchorage system for this equipment was properly selected on the SEWS and evaluated.
		• Ensure all appropriate switchgear caveats have been met since MCC SEWS was used	• Coverage of the Switchgear Caveats : The only additional caveat on the SEWS for LVSG's as compared to the MCC caveats is to ensure the side-to-side restraint of the drawout circuit breakers. This caveat is covered in the Note 9 of the SEWS for this equipment.

TABLE A (Cont'd)

SRT's Responses and Justifications to Peer Review Suggested Actions

SSEL NO.	COMPONENT I.D.	SUGGESTED ACTION BY THE THIRD PARTY	SRT's RESPONSES and JUSTIFICATIONS
9160 (Item 9)	0-XFA-082-000AA DG-A Neutral Ground XFMR	• Address frequency caveat and review consequences of insulator failure	• All DG neutral ground XFMRs (8 total) will be deleted from the SSEL since they are not required for the DGs to operate. Based on the review of the electrical circuit diagrams, the XFMR is there solely to detect faulted condition for personal safety protection rather than functionality of the DG.
8001 (Item 12)	0-PMP-23-005 RHRSW Pump A2	• Complete outlier calculation	• Outlier resolution for the RHRSW pump anchorage has been completed and is documented in EQE Calc. No. 50147-C-005. Pump anchorage has an interaction ratio of < 1.0 for USI A-46, and a HCLPF of > 0.3 g for seismic IPEEE evaluations.

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ENCLOSURE 2

TENNESSEEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNITS 2 AND 3

GENERIC LETTER 87-02, SUPPLEMENT 1,
VERIFICATION OF SEISMIC ADEQUACY OF MECHANICAL AND ELECTRICAL EQUIPMENT IN OPERATING REACTORS, UNRESOLVED SAFETY ISSUE (USI) A-46

RELAY EVALUATION REPORT

(SEE ATTACHED)

R92 960625 950

RELAY EVALUATION REPORT FOR USI A-46 AND IPEEE

BROWNS FERRY NUCLEAR PLANT

UNITS 2 AND 3

Revision 0
25 June 1996

Prepared for:

TENNESSEE VALLEY AUTHORITY

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RELAY EVALUATION REPORT FOR USI A-46 AND IPEEE

BROWNS FERRY NUCLEAR PLANT

UNITS 2 AND 3

Revision 0
25 June 1996

Prepared for:

TENNESSEE VALLEY AUTHORITY

RELAY EVALUATION REPORT FOR USI A-46 AND IPEEE

BROWNS FERRY NUCLEAR PLANT

UNITS 2 AND 3

Revision 0
25 June 1996

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TENNESSEE VALLEY AUTHORITY
EQE Project Number: 50147

EQE

APPROVAL COVER SHEET

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Browns Ferry Nuclear Plant, Units 2 and 3

REPORT NUMBER: 50147-R-003

CLIENT: Tennessee Valley Authority

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REV. NO.	DATE	PREPARED	REVIEWED	APPROVED
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Relay Evaluation Report
for
USI A-46 & IPEEE

Browns Ferry Nuclear Plant Units 2 & 3

TVA CONCURRENCE for Revision 0

Electrical Engineering	Prepared by:		Date:	6-25-96
	Reviewed by:		Date:	6-25-96
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0	25 June 1996	Original Issue

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APPENDICES

1.0 INTRODUCTION

1.1 PURPOSE

This report documents the relay seismic functionality evaluation for the USI A-46 and IPEEE programs for the Browns Ferry Nuclear Plant of the Tennessee Valley Authority (TVA). This work was performed by TVA and EQE International in order to address NRC Generic Letter 87-02 entitled Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46 (Reference 1), and the NRC GL 88-20, Supplement 4, Individual Plant Examination of External Events (IPEEE) (Reference 2) for Browns Ferry Units 2 and 3.

This review of relays associated with safe shutdown equipment is required as part of the resolution of NRC USI A-46, Seismic Qualification of Equipment in Operating Plants, as well as fulfill the information request of the IPEEE. The purpose of the relay functionality review is to verify that safe shutdown systems would not be prevented from performing their safe shutdown functions because of relay (contact) chatter during the period of strong ground motion associated with a Design Basis Earthquake (DBE). For the IPEEE, as a focused-scope plant Browns Ferry was requested to perform a review only of the "low ruggedness relays" associated with IPEEE equipment and circuits. Since the USI A-46 requirements are more stringent than the focused scope low ruggedness review, it was decided to combine the two evaluations and review all of the IPEEE relays, not just the low ruggedness relays. For the remainder of this report, the evaluation will be referred to as the A-46 relay evaluation. However, it should be understood that this report includes the IPEEE associated relays as well. In particular, those relays associated with the containment performance features of Browns Ferry were included in this assessment.

1.2 BACKGROUND

In December 1980, the Nuclear Regulatory Commission (NRC) staff identified an unresolved safety issue, USI A-46, Seismic Qualification of Equipment in Operating Plants, related to the seismic adequacy of mechanical and electrical equipment in older nuclear plants. In response to their concern, a number of nuclear plant owners formed the Seismic Qualification Utility Group (SQUG) to investigate the issues and develop a cost effective approach for its resolution. Initial investigations indicated that the application of current seismic qualification standards (i.e., testing equipment on shake tables) to the older plants would not be practical since many equipment types and models are no longer available and the use of installed equipment for testing is, in general, not possible. After further consideration of the problem and alternative resolution approaches, SQUG undertook a pilot program to determine if actual experience in fossil power plants and other industrial facilities which have undergone significant earthquakes could be used as a basis for evaluating the seismic adequacy of similar equipment in nuclear plants.

The results of the SQUG pilot program showed the feasibility of using earthquake experience data as a means of assessing the seismic ruggedness of a large cross section of standard power plant equipment used in nuclear plants (Reference 3). The SQUG effort also demonstrated that, with a few exceptions, nuclear plant equipment is generally similar to that installed in conventional plants and, when properly anchored, has inherent seismic ruggedness and a demonstrated capability to withstand substantial seismic motion without structural damage or loss of functionality. The pilot program results were subsequently confirmed by additional data collection and analysis.

After substantial technical research by both the SQUG and the NRC, the NRC staff published, on February 19, 1987, a detailed approach for resolving the issue in Generic Letter 87-02 (Reference 1). Implementation guidance for generic and plant specific resolutions of USI A-46 was provided in an enclosure to the Generic Letter, entitled Seismic Adequacy Verification Procedure. The Generic Letter Procedure sets forth an approach for verifying seismic adequacy of equipment using earthquake experience data supplemented by test results and analyses, as necessary. Licensees subject to USI A-46 were encouraged to participate in a generic program to accomplish seismic verification of equipment. As a result, SQUG developed the Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment (Reference 4).

The GIP provides the detailed technical approach, generic procedures, and documentation guidance which USI A-46 licensees should use to verify the seismic adequacy of mechanical and electrical safe shutdown equipment. In this regard, the GIP also contains all of the activities necessary for the resolution of USI A-46. A Safety Evaluation Report on Revision 2 of the GIP was prepared by the NRC and is documented in Reference 5. In its response to Supplement 1 of Generic Letter 87-02 and a response to a Request for Additional Information, TVA committed to the NRC that the SQUG methodology would be used to resolve USI A-46 for the Browns Ferry plant (see References 6 and 7). The NRC evaluation and acceptance of this approach for the Browns Ferry plant are documented in Reference 8.

1.3 USI A-46 RELAY EVALUATION

For most equipment functionally required for safe shutdown in nuclear plants, demonstration of seismic adequacy under USI A-46 will be accomplished by verifying that the equipment is comparable to that in the conventional plants which have successfully withstood significant earthquakes and by assuring that the equipment is properly anchored. In the case of electrical relays, this approach is not sufficient. First, the types of relays used in power plants are diverse and not easily grouped into generic equipment classes. Second, there have been instances of relay malfunction in earthquakes and in seismic shake table tests at acceleration levels which may be near nuclear plant design levels. For these reasons, the Electric Power Research Institute (EPRI) established a project to develop a methodology for evaluating relay seismic functionality in operating nuclear power plants. The project developed EPRI Reports NP-7148-SL (Reference 9) and NP-7147-SL (Reference 10), which provide the methodology, procedures, and data for evaluating relay seismic functionality.

Section II.6 of the GIP provides an overview of the USI A-46 relay review criteria and methodology. Section II.9 of the GIP defines the information which should be included in the relay evaluation report. The content of the GIP concerning relay evaluations is based on the detailed criteria, methodology and procedure documented in EPRI Report NP-7148-SL (Reference 9). Accordingly, the review of the relays associated with the USI A-46 safe shutdown equipment for the Browns Ferry Plant was performed and documented in accordance with the requirements of the GIP, the NRC SSER on the GIP, and EPRI Report NP-7148-SL.

1.4 REPORT ORGANIZATION

Section 2 of this report contains a summary of the USI A-46 and IPEEE relay review for the Browns Ferry Plant. Section 3 describes the overall technical approach and assumptions used in the review. A summary of the safe shutdown functions and the safe shutdown systems, and the relay list development is contained in Section 4. Section 5 documents the relay seismic capacity/demand screening, and relay chatter evaluation results. The references used to support the evaluation documented by this report are listed in Section 6.

Appendix A contains the list of essential relays for Unit 2 and those essential relays common to Units 2 and 3, including the relay SSEL identification number, relay identification number, description, the manufacturer, the model number, and cabinet where the relay is mounted. App. A also contains the results of the seismic capacity/demand comparison for each relay, and the resolution status.

Appendix B contains the same information for Unit 3.

Appendix C contains the list of process switches for both units evaluated for capacity and system consequences.

Appendix D contains the in-cabinet amplification factors and resulting seismic demand accelerations for each cabinet and panel with essential relays.

Appendix E contains selected relay chatter evaluations for the circuits.

Appendices F and G contain the summary relay chatter evaluations for all of the Unit 2 and Unit 3 circuits.

Appendix H contains the resumes of the relay reviewers.

2.0 RESULTS AND PLANNED ACTIONS

This report documents the seismic functionality review of relays affecting USI A-46 and IPEEE safe shutdown components for the Browns Ferry Plant. The review was performed in accordance with the methodology and procedures established for plant specific resolution of USI A-46; specifically, the Generic Implementation Procedure (GIP), the NRC safety evaluation report on the GIP, and EPRI Report NP-7148-SL. This section of the report provides a summary of the results of the review, and is organized as follows:

- Technical Approach For Screening Relays
- Screening Procedure
- Evaluation Summary
- Significant Or Programmatic Deviations
- Relay Outliers
- Unresolved Outliers
- Proposed Schedule For Completion Activities

2.1 TECHNICAL APPROACH FOR SCREENING RELAYS

As was indicated earlier, the screening evaluation of Safe Shutdown Equipment List relays comprises a portion of the necessary requirements for resolution of Nuclear Regulatory Commission (NRC) Unresolved Safety Issue USI A-46, Seismic Qualification of Equipment in Operating Plants. Methodology for completion of the A-46 review is contained in the Seismic Qualification Utility Group (SQUG) Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment with supplementary requirements provided by the Supplemental Safety Evaluation Report No. 2 (SSER No. 2) issued by the NRC.

In addition, the NRC has directed that an Individual Plant Examination of External Events (IPEEE) study be conducted. Part of the IPEEE review also includes a relay evaluation with Browns Ferry having been designated as a Focused Scope plant. This classification requires relays outside the scope of A-46, but within the scope of IPEEE to be screened for low ruggedness relays. Any low ruggedness IPEEE relays must be evaluated for chatter acceptability. All IPEEE required relays were evaluated in the same manner as the A-46, not only the low ruggedness relays.

The A-46 relay capacity /demand screening evaluation was implemented as set forth in Section 6.4 of the GIP.

Since relays are subcomponents mounted on or within electrical panels, the adequacy of the panel structure and anchorage was addressed by a separate evaluation of the panel as an SSEL equipment component. This relay evaluation assumes that all panel configurations, anchorage, and interaction issues are resolved for the panel as separate SSEL equipment components.

It should also be noted that the direct mounting of relays to the panel is addressed during the walkdown evaluation of the panel. Any missing mounting hardware or loose relay mounting conditions are noted on the panel SEWS. These have been addressed by issuing maintenance requests for any mounting conditions noted during walkdown. This evaluation assumes that all relays are properly mounted in accordance with the manufacturer's recommendations or in accordance with plant specifications.

2.2 SCREENING PROCEDURE

The overall screening procedure for the Relay Functionality Review is described in Section 6.0 of the GIP. An abbreviated description is provided here for information. The screening methodology is based on the following steps:

1. A minimum set of plant systems and items of equipment which should function properly to maintain the plant in a safe condition during and immediately after an earthquake was identified. These items comprise the Browns Ferry equipment SSELs. The equipment SSELs were developed by TVA staff, and are discussed in more detail in the Browns Ferry A-46 Seismic Evaluation Report (Reference 11). Based on the equipment SSELs, a separate database of electrical circuits, contacts, and associated relays was prepared by TVA. A relay list was generated from this database for evaluation, and includes those relays whose

malfunction could affect electrically controlled or powered safe shutdown equipment. In this context, the term relay is used to include contactors and process switches (level, temperature, flow, etc.) as well as relays. The relay lists for Units 2 and 3 are contained in App. A and B, respectively. The switch lists for both units are listed in App. C.

In addition, a contact list was generated which includes all contacts in the control and power circuits for equipment on the SSELs. The contact list identifies the circuit in which the contacts are included, the relay identifier, and the initial state of the contacts.

2. In parallel with the evaluation of relay capacity and chatter acceptability, the relays and associated panels and cabinets were walked down by the EQE seismic capability engineers. The purposes of the relay walkdowns were:

- Obtain information needed to determine cabinet types which house essential relays and to determine the in-cabinet amplification, where needed, for the seismic capacity screening
- Verify the seismic adequacy of the cabinets or enclosures which support the essential relays
- Check mountings of essential relays (on a sampling basis)
- Check the essential relays to verify their types and locations, including checks for vulnerable relays (on a sampling basis)

These walkdowns are documented in the relay screening calculation appendix (Reference 12).

3. All identified relays were then checked against a list of unacceptable relays known to be trip sensitive as a result of minor impact, which are termed low ruggedness relays. Each relay identified as low ruggedness was evaluated for the consequences of relay malfunction (see Step 7).

4. The seismic adequacy of the relays and contacts which directly control the operation of switchgear comprises a special case. The requirements for determination of seismic adequacy for these relays is discussed in more detail in Section 6.4.2 of the GIP. Relays and contacts

identified as controlling switchgear only, which were not low ruggedness, and did not involve actuating a lockout relay, were screened as acceptable during the system consequence review (termed Screen Level 0). These screened contacts, and associated relays, are specifically identified in the contact database.

5. The relay Generic Equipment Response Spectra (GERS) and test data were compared to Browns Ferry specific seismic demand levels to assess the seismic adequacy of the essential relays. Those relays for which capacity exceeds demand are acceptable and were screened out.

The evaluation utilized Levels 1, 2, and 3 out of the four potential screening levels noted in the GIP. The concept of the screening methods is that any of the levels presented in the GIP can be used to demonstrate the seismic adequacy of any particular relay. In brief, Screening Level 1 is used for high capacity relays, and there are several caveats which must be met. Screening Level 2 uses the in-structure response spectrum, a factor of safety based on the type of response spectrum used, and an in-cabinet amplification factor to determine seismic demand. Capacity is based on GERS or relay-specific test data. Screening Level 3 is similar to Level 2, but uses the calculated in-cabinet response spectrum instead of the amplification factor.

For A-46 screening, capacity shall exceed demand, or the capacity to demand ratio (capacity/demand) shall exceed (>) 1.0.

6. The relays and contacts which could not be shown as seismically adequate by the capacity/demand ratio screening of steps 4 and 5 above were identified for system consequence review. Initially, this set of contacts and relays included all process switches. However, these switches were later determined to have adequate seismic capacity, or be chatter acceptable.

7. The set of relays and contacts identified in Steps 3 (low ruggedness relays) and 6 were evaluated for the consequences of malfunction (contact chatter) of these relays on system performance to determine if proper function of the relays is essential to safe shutdown or would cause other unacceptable conditions. The procedures and techniques given in EPRI NP-7148

(Reference 8) were used for this consequence evaluation. Relays and contacts for which chatter did not affect system performance were classified as "chatter acceptable." Relays for which chatter would affect system performance, but for which operator actions would mitigate the relay chatter impact were classified as "operator action" acceptable. Those relays which were neither chatter acceptable nor operator action acceptable were termed "unacceptable," and were listed as outliers. In some cases, the individual contact pairs, or the relay was later determined to be seismically adequate, and this was included in the systems consequence assessment results.

8. A relay can be identified as an outlier at any time during the screening process. Relays that cannot be shown by capacity/demand ratio or system screening to be chatter or inadvertent actuation acceptable are designated as outliers. Note that cabinets with unresolved anchorage or interaction issues are assumed to be corrected in order for the relay capacity/demand screening to be valid. However, the cabinet must also be demonstrated to have adequate capacity for the relays it contains in order for this screening criterion to be applied.

2.3 EVALUATION SUMMARY

This section provides a summary of the results for each of the above procedural steps.

Identification of A-46 and IPEEE Relays (Step 1)

Based on the equipment SSEL, the set of relays (including process switches) whose function is essential to the safe shutdown of the plant was identified. The identification procedures followed the GIP for the A-46 relays, and was expanded to include the additional IPEEE containment performance equipment relays, in accordance with NUREG-1407 (Reference 2) and EPRI NP-6041-SL, Rev. 1 (Reference 13). A total of 3107 relays and 188 process switches were identified. The following table provides a breakdown of relays and switches:

	A-46/IPEEE Relays/Switches
Relays with Capacity Data-Browns Ferry Unit 2	1420
Relays with Capacity Data-Browns Ferry Unit 3	1303
Switches-Units 2 and 3	188
Relays without Capacity Data-Units 2 and 3	384

The differences in numbers of relays between the units is primarily due to shared equipment being assigned to Unit 2. These relays and process switches were organized into the Browns Ferry Unit 2 and 3 essential relay lists given in Appendices A, B, and C. The contact database associated with these relays includes 12,600 contact pairs.

Relay Walkdown Verification (Step 2)

The relay walkdown was performed by the qualified seismic capability engineers (SCE) from TVA and EQE during the equipment walkdowns. A sampling of relay manufacturer, make, model number, and location was performed to assure that the relay list information was acceptably accurate. Also, the Browns Ferry relay replacement process provides for like replacement, or for replacement after an evaluation of seismic qualification equivalency.

When cabinets and panels containing relays were opened, the SCEs also observed and evaluated the mounting of relays to ensure that their attachments were rugged. No attempt was made to differentiate between essential and nonessential relays with respect to mounting adequacy. The seismic adequacy of the panel or cabinet itself, and its anchorage was addressed by the separate evaluation of the panel/cabinet as an SSEL equipment component. However, a checklist was developed to ensure that all of the SQUG caveats for the cabinets and panels were documented, and the correct amplification factor was utilized for the relay capacity/demand evaluation.

The result of the relay walkdown was that the relay mountings were seismically adequate, and the relay list information was correct to the extent sampled.

Relay Capacity/Demand Screening (Steps 3-6)

After the completion of the walkdown and physical determination phase of the relay evaluation, the seismic adequacy of the essential relays was then assessed by EQE using GERS and other test data. The Relay Evaluation (EQE Calculation 50147-C-010 for Units 2 and 3, Reference 12) documents the procedures and results of the A-46 relay evaluation using the capacity/demand screening steps detailed in the SQUG GIP.

Several screening levels were employed at the relay level. Level 1 screening is associated with high capacity relays, the use of response spectra comparison, the location of relays within the plant, and the identification of no known low ruggedness relays. Level 2 capacity screening is based on the use of in-cabinet amplification factors, appropriate factors of safety, and the use of GERS or relay-specific seismic test data. Level 3 capacity screening is similar to Level 2, but uses calculated in-cabinet response spectra rather than amplification factors. Relays for IPEEE were treated in the same manner as the A-46 relays. If all contact pairs have seismic capacity greater than demand, then that relay was screened at this step in the analysis.

Note that Level 0 screening, which is for relays which control switchgear only, was performed during the systems consequence chatter evaluations on a contact basis, and not during the initial relay capacity/demand screening. Also, relays often have some contact pairs that are seismically adequate, and some contact pairs that do not have adequate seismic capacity. These relays with one or more contact pairs whose seismic capacity is below the demand can not be screened during the relay capacity/demand screening. However, during the systems consequence evaluation, those individual contact pairs with adequate seismic capacity could be screened based on seismic capacity.

Based on the available capacity information, 2723 relays were able to be evaluated. The result of the seismic capacity/demand screen are:

SEISMIC CAPACITY/DEMAND SCREEN RESULTS

	Unit 2 A-46/IPEEE	Unit 3 A-46/IPEEE
RELAYS SCREENED OUT:		
Screens 1, 2, and 3 (capacity/demand)	721	863
SWITCHES SCREENED OUT:	188(both units)	
RELAYS FOR SYSTEM CONSEQUENCE REVIEW:		
System Consequence Review-Relays	699	440

Therefore, 1584 of the A-46/IPEEE relays had high capacity, and were screened from further review. All of the process switches were screened, based either on high seismic capacity, or a system consequence chatter acceptability review.

Those relays not passing the capacity screening criteria, and the 384 relays which did not have capacity data, were listed for further evaluation in the form of the system consequence review.

System Consequence Review (Step 7)

The objective of the system consequence review was to determine if safe shutdown systems and functions are adversely impacted if the contacts of a relay or switch chatter during the period of strong ground motion. The procedures given in EPRI NP-7148 for relay chatter evaluation were used to systematically evaluate each contact of the relays not previously screened out. Detailed reviews of the electrical schematics and control diagrams were used to determine the contact state, function, and chatter impacts. Examples of contacts which could be identified as acceptable based on the EPRI procedure are:

- Contacts whose chatter would only affect instrumentation and annunciation (see the EPRI procedure for the underlying rationale)
- Contacts whose chatter would only cause equipment to fulfill its safety function (for example, a contact which opens a valve, and the desired position is "open")

- Contacts whose chatter impacts could be mitigated by proceduralized operator action (this evaluation considered timing factors, indications, location, procedures, and training)

Also note that there were several relays for which the only contacts which could have potentially adverse impacts were seismically rugged (for example, the contacts which had adverse impacts were energized and normally open). These contacts were then identified as seismically rugged contacts, and acceptable on that basis.

The contacts were individually evaluated, and the impacts were summarized in terms of the associated control circuits. There were 547 control circuits whose contacts were evaluated, and if any of the contacts in a circuit were evaluated to be unacceptable (outlier), then the circuit was classified as chatter unacceptable. If no contacts were evaluated as chatter unacceptable, then the circuit was evaluated to be either Operator Action Acceptable (if an operator action was required for any contact pair), or Chatter Acceptable (if no operator action was required). In addition, for many of the circuits it was determined that all of the essential contacts were seismically rugged.

The results of the system consequence evaluation are given in appendices F and G, and are summarized in the following table:

CIRCUIT SYSTEM CONSEQUENCE EVALUATION RESULTS

	Unit 2 A-46/IPEEE	**Unit 3 A-46/IPEEE**
CIRCUITS SCREENED OUT:		
Chatter Acceptable (CA-Y)	166	89
Operator Action Acceptable (OA-Y)	11	5
All Circuit Contacts Seismically Rugged (N/A)	116	76
TOTAL SCREENED OUT	293	170
CIRCUITS NOT SCREENED:		
Potential Outliers (UA)	55	29
TOTAL CIRCUITS	348	199

The abbreviations in parentheses (e.g., CA-Y, OA-Y, N/A, and UA) are used in Appendices F and G to indicate the circuit evaluation result. Examples of selected circuit chatter evaluation sheets are provided in Appendix E.

Therefore, most of the relays, contacts, and switches undergoing system consequence evaluation were either chatter acceptable, or could be easily mitigated by operator action. While there are 16 circuits that are classified operator action acceptable, there are actually only 2 operator actions that would be needed to mitigate the chatter impact, and at least 20 minutes is available for these actions. These operator actions are discussed in section 5.2.2. The remaining 84 circuits were classified as potential A-46 outliers, and designated for resolution. They are discussed in section 2.5 below.

2.4 SIGNIFICANT OR PROGRAMMATIC DEVIATIONS

TVA is required to describe any deviations from the Generic Implementation Procedures per Part I, section 1.3, as described above. The Seismic Review Teams were able to completely utilize the guidelines as presented in the Generic Implementation Procedures to evaluate the mounting and configuration of the relays. They did not identify any significant or programmatic deviations from the GIP. Therefore, all evaluations and judgments concluded by the Seismic Review Teams were based on approved methodology.

2.5 RELAY OUTLIERS

TVA has identified 84 circuits with relays and associated contacts that do not meet the criteria of the Generic Implementation Procedures as described above.

At the conclusion of the system consequence evaluation there were 84 circuits with one or more contact pairs which were classified as potential outliers. Of these circuits, 35 were then evaluated using additional seismic qualification data gathered from updated sources, and determined to have acceptable seismic capacity. These 35 circuits were determined to be acceptable, and are now classified as Resolved Outliers. The remaining 49 circuits are still considered potential outliers.

RESOLUTION OF POTENTIAL CIRCUIT OUTLIERS

	Unit 2 A-46/IPEEE	Unit 3 A-46/IPEEE
Resolved Outlier Circuit (UA-Y(R))	28	7
Unresolved Outlier Circuit (UA-Y)	27	22

These circuits are included in Appendices F and G, with the above abbreviations in parentheses (e.g., UA-Y or UA-Y(R)). Many of the unresolved outliers are classed as outliers because the upper supports for their cabinets are not adequate for the relays and switches. While the cabinets themselves are acceptable from a structural and anchorage viewpoint, the seismic demand for the relays is greater than the capacity due to the cabinet amplification. It is expected that additional effort will be required in order for the relays and associated circuits to be acceptable. In the meantime, they are classified as potential outliers for resolution.

As discussed previously, most of the circuits and associated relays were screened either by the seismic capacity versus seismic demand methodology, or by system consequence reviews that evaluated the function of the contact pairs in the circuits, and the impact to the associated equipment. The remaining 49 circuits are listed as A-46 unresolved outliers.

2.6 UNRESOLVED OUTLIERS

TVA is required to list relay outliers that they do not plan to modify in order to meet the GIP screening guidelines. In addition, TVA must provide an explanation of the safety implications of not resolving those outliers.

TVA has committed to resolve all of the relay outliers identified above in a timely manner. Therefore, no relays will remain as unresolved outliers and it is unnecessary to generate a list or provide an explanation of the safety implications of not resolving them.

2.7 PROPOSED SCHEDULE FOR COMPLETION ACTIVITIES

TVA must identify the proposed schedule for completion, resolution, replacements, and future modifications of those relay outliers which will be resolved.

Based on the current plan, TVA will issue all Design Change Notice (DCN) packages associated with the USI A-46 program resolution for BFN Units 2 and 3 before the end of Fiscal Year 1996 (September 1996). Implementation of the design modifications will take place during the Cycle 7 Refueling Outage for Unit 3 and during the Cycle 9 Refueling Outage for Unit 2.

3.0 TECHNICAL APPROACH

The relay evaluation methodology used at the Browns Ferry Plant consists of a step-by-step procedure to screen and evaluate relays. It is based on the procedures in the GIP and in EPRI NP-7148. Based on the equipment SSEL, circuits and associated relays which must remain functional during and immediately after an earthquake were first identified. Seismic capacity data was then compared against the seismic demand to assess the seismic adequacy of these relays. The seismic ruggedness data is based on the Generic Equipment Ruggedness Spectra (GERS) and test data prepared for the relays. If relays were unable to be screened based on adequate capacity, then their circuits and contacts were evaluated for their system consequence assuming that they chattered during the earthquake strong ground motion. Based on a systematic circuit evaluation of the impacts of contact chatter, the circuits were classified as either chatter acceptable or operator action acceptable. If chatter and operator action were unacceptable, then the circuit is classified as an outlier.

This section discusses each of the above steps in more detail, and is organized as follows:

- Criteria and Governing Assumptions
- Identification of Essential Functions and Safe Shutdown Equipment
- Development of the Relay List
- Capacity/Demand Screening Evaluation
- System Consequence Chatter Evaluation
- Relay Walkdown

3.1 CRITERIA AND GOVERNING ASSUMPTIONS

For resolution of USI A-46 it is not necessary to verify the seismic adequacy of all plant equipment defined as Seismic Class 1 in NRC Regulatory Guide 1.29. Instead, only those systems, subsystems, and components required to bring the plant to a safe shutdown condition and to maintain it in that condition for 72 hours are included in the scope of USI A-46. As a result, the scope of the seismic verification review is limited to equipment which provides functions necessary for achieving and maintaining safe shutdown. Other important assumptions which define systems and equipment which are considered essential under USI A-46 are defined in NUREG-1211 and include:

- the seismic event does not cause a loss of coolant accident (LOCA) and a LOCA will not be postulated to occur simultaneously with or during the seismic event
- offsite power may be lost during or following a seismic event
- random, single active failures are assumed for systems counted on to achieve and maintain hot, safe shutdown

However, the relay evaluation also is used to meet the request for the IPEEE for severe accidents. In particular, the relay evaluation includes functions and systems that can mitigate a small LOCA equivalent to about 1" diameter, as well as maintain containment performance during a severe accident.

In addition, other specific criteria and assumptions involved in the evaluation of relays along with the detailed relay evaluation procedure used in the Browns Ferry Plant are provided in EPRI NP-7147 and 7148.

3.2 IDENTIFICATION OF ESSENTIAL FUNCTIONS AND SYSTEMS

Four functions were considered for achieving and maintaining a safe shutdown condition following a design basis earthquake. These functions are as follows:

- Reactivity control
- Reactor coolant pressure control
- Reactor coolant inventory control
- Decay heat removal

The systems best suited to perform these safe shutdown functions at the Browns Ferry Plant are identified in the A-46 Seismic Evaluation Report, Section 4 (Reference 11). The supporting systems that are necessary to operate the safe shutdown equipment are identified as well. A Safe Shutdown Equipment List (SSEL) was made for each system identified for safe shutdown.

These SSELs were then combined into a Mechanical SSEL for each unit and a combined Electrical SSEL for both units. The basis for the SSEL selection are discussed further in the A-46 report.

In addition, equipment required for the containment performance safety function, such as containment isolation valves, is included in order to satisfy GL 88-20, supplement 4, regarding the Individual Plant Examination of External Events (IPEEE).

3.3 DEVELOPMENT OF THE RELAY LIST AND ASSOCIATED CIRCUITS

The development of the listing of relays and switches required to function to assure safe shutdown of the Browns Ferry Plant was generated through a functional review of Browns Ferry circuits which are associated with the equipment on the SSELs. Initially, a general systems review for all front-line and support systems involved in the safe shutdown of the Browns Ferry Plant was prepared by the TVA Mechanical and Electrical Engineering groups. The senior staff members had attended the SQUG training regarding prescribed methodology for determination of components and relays associated with plant safe shutdown. Individual relays and contacts associated with these systems were then identified through a comprehensive review of the circuit drawings for the equipment on the SSEL. A database of these circuits, contacts, and relays was developed.

During the preparation of the circuit database, the TVA Electrical Engineering staff performed functional and drawing reviews for the devices to ensure completeness of the database. Additional information was also incorporated into the list as follows:

- Location of relay (cabinet or panel)
- Manufacturer and model number
- Relay status (normally energized or de-energized)
- Contact status (normally open or closed)

Similar information was provided for process switches contacts identified on the SSEL by review of the electrical control drawings for all systems/components required in the Mechanical and Electrical SSELs.

During the development of the relay list, relays which were involved solely in annunciation and provided no control function, and which would therefore have no impact on plant shutdown were eliminated where easily identified. When devices could not be confidently eliminated, they were retained on the list. The relay list contains 1420 relays for Unit 2, and 1303 relays for Unit 3.

The Browns Ferry Unit 2 and Unit 3 relay lists are maintained in a relay information database. Portions of that database are included as Appendices A and B to this relay evaluation report. Each relay list is presented in tabular form with the following summary information:

1. Relay List Item Number
2. Cabinet
3. Relay Manufacturer
4. Relay Model Number
5. Capacity Basis (e.g., GERS)
6. Caveats
7. Demand Basis
8. Capacity > Demand

Additional information is available in the relay database, such as building and floor, coil status (energized, de-energized), and contact status (open, closed).

Appendix C provides similar information for the process switches at Browns Ferry.

3.4 CAPACITY/DEMAND SCREENING METHODOLOGY

The A-46 relay capacity to demand screening evaluations were implemented as set forth in Section 6.4 of the GIP (Reference 4) and EPRI NP-7148 (Reference 9). The evaluations, documented in an engineering calculation (Reference 12), are summarized in this section.

The assessment of relay seismic adequacy is performed by comparing the relay seismic capacity to the seismic demand imposed upon the relay. Browns Ferry relay seismic capacity is summarized in Section 3.4.1 and seismic demand in Section 3.4.2. Seismic capacity compared to demand in Section 3.4.3. Results are summarized in Section 3.4.4.

3.4.1 Relay Seismic Capacity

Three methods were used to establish the seismic capacity of Browns Ferry relays: generic seismic test data, earthquake experience data and relay specific seismic test data. These three methods are summarized below.

1 <u>Generic Seismic Test Data</u>

Available seismic test data on a variety of types of relays have been either gathered or generated; then evaluated, consolidated, and established as Generic Equipment Ruggedness Spectra (GERS) for relays (Reference 10). Relay GERS define seismic acceleration levels below which relays can be expected to function without chatter or other damage.

Reference 10 is augmented by Addendum 1, Addendum 2, and Seismic Qualification Reporting and Testing Standardization (SQURTS) test data (Reference14).

GERS data forms the seismic capacity basis for most Browns Ferry relays.

2 <u>Earthquake Experience Data</u>

Data have been obtained on relay performance, specific failures, relay vulnerabilities, and other information from actual earthquake experience in power plants and other facilities which have undergone significant earthquakes. This data has been used to identify relay types which are known to be susceptible to damage or chatter during moderate shaking, and to identify items that are considered seismically rugged and need not be evaluated for relay chatter.

3 <u>Relay-Specific Test Data</u>

Plant-specific and relay-specific seismic test data, where available, were also used. Reference 15 documents the review of test data for establishing seismic capacity for Browns Ferry relays.

3.4.2 Relay Seismic Demand

Seismic demand at the relay mounting location is estimated based on methods and criteria outlined in the GIP. The following four methods were used for comparing the seismic capacity of relays to the seismic demand imposed upon them:

- Screening Level 1 - High Capacity Relays
- Screening Level 2 - Use of In-Cabinet Amplification Factors
- Screening Level 3 - Use of In-Cabinet Response Spectra
- Screening Level 4 - Use of Current Qualification Methods

Application of these screens to Browns Ferry Relays is summarized in the following sections, followed by a summary for each relay host cabinet.

1 Level 1 Screen

The Level 1 Screen is designed to screen high capacity relays located in conventional motor control centers (MCC) and switchgear. MCC relays with a capacity >5g and switchgear relays with a capacity >8g were screened if the following conditions were met:

- The free-field SSE ground response spectrum is enveloped by the Bounding Spectrum. Enveloping is demonstrated in Reference 16.
- The equipment or cabinet containing the relay is mounted within about 40 feet above grade.
- The relay is not one of the low-ruggedness types. Low ruggedness relays are listed in Reference 9, Appendix E.

2 Level 2 Screen

The second screening level for comparing relay seismic capacity to demand is based on; (1) using an in-structure response spectrum at the base of the cabinet containing the relay, (2) multiplying the peak of this spectrum by both an appropriate factor of safety and by an in-cabinet amplification factor, and (3) comparing this seismic demand to the relay capacity.

IN-STRUCTURE RESPONSE

Table 6-1 of the GIP (Reference 4) list types of in-structure response spectra and the corresponding Factors of Safety to be used for A-46 relay seismic capacity evaluations:

Type Of In-Structure Response Spectrum	Factor Of Safety
1.5 * SSE horizontal, ground response spectrum (for equipment which is mounted below about 40 feet above the effective grade and has a natural frequency greater than about 8 Hz.)	1.5
Realistic, median-centered, horizontal in-structure response spectrum for the SSE	1.5
Conservative, design, horizontal in-structure response spectrum for the SSE	1.0

The Browns Ferry ground response spectrum for A-46 evaluation is defined in Reference 16. Browns Ferry in-structure response spectra for A-46 evaluation are defined in Reference 17. The Browns Ferry in-structure response spectra have been labeled as median-centered. Therefore the 1.5 Factor of Safety is applied.

AMPLIFICATION FACTORS FOR A-46:

Amplification factors are used to determine in-cabinet demand for the Level 2 screen. The GIP provides a listing and full discussion of factors that can be used for various types of cabinets. Plant and cabinet specific amplification factors were generated for selected Browns Ferry cabinets based on qualification data (Reference 15). Amplification factors are listed below:

Equipment Type	Amplification Factor	Basis
MCC type cabinets	3.0	GIP
Conventional control panel or benchboard	4.5	GIP
Low Voltage Switchgear	2.6	Reference 17
Medium Voltage Switchgear	2.0	Reference 17
Large unsupported panel	7.0	GIP

Cabinet specific amplification factors based on test data are used for selected cabinets based on Reference 17.

3 Level 3 Screen

For the third screening level, the method of comparing relay seismic capacity to demand is the same as the Level 2 Screen except that instead of using an in-cabinet amplification factor to determine the seismic demand on the relay, an in-cabinet response spectrum is used. In-cabinet response can be determined using the EPRI GENRS software (Reference 18) or current analytical or test methods.

The Level 3 Screen was used for selected Browns Ferry control panels located at Elevation 621' of the Reactor Building.

In-cabinet demand for Browns Ferry A-46 relay host cabinets is provided in Reference 12, Table 4-1.

3.4.3 Seismic Capacity Compared to Demand

Relay seismic capacity is compared to seismic demand for the 2723 relays identified on the relay SSEL which have capacity data. Appendices A and B list relay results of the relay capacity to demand screens. These appendices include key information on relay capacity and in-cabinet demand, as well as the results of the capacity to demand comparison.

The columns of the Appendices A and B are described below:

Item No.	Item Numbers were assigned for reference purposes since the relays do not have a unique identification number. Item numbers are not sequential since the relay list started with about 6,000 relays before non SSEL relays were eliminated during preparation of the list.
Cabinet	Relay host equipment identification number.
Make	Relay manufacturer.
Type	Relay model number.
Capacity Basis	Basis for determining the relay seismic. Relay basis entries are defined below:

GERS: Seismic capacity is based on the EPRI relay Generic Equipment Ruggedness Spectra (Reference D)

ADD1: Seismic capacity is based on Addendum 1 to the EPRI relay GERS (Reference 10).

ADD2: Seismic capacity is based on Addendum 2 to the EPRI relay GERS (Reference 10).

SQUIRTS: Seismic capacity is based on data compiled by the EPRI Seismic Qualification Reporting and Testing Standardization (SQUIRTS) organization (Reference 14).

OLR: The device is a thermal overload relay. The bi-metallic mechanical switch is considered to be inherently rugged.

TVA Calc: The panel and/or relay are acceptable based on TVA calculation CD-Q 0999-960024 (Reference 17).

GERS Level, Non-Operate, NO	Seismic capacity of the relay in the Non-Operate (coil not energized) normally open contact status.
GERS Level, Non-Operate, NC	Seismic capacity of the relay in the Non-Operate (coil not energized) normally closed contact status.
GERS Level, Operate, NC	Seismic capacity of the relay in the Operate (coil energized) normally open contact status.
GERS Level, Operate, NC	Seismic capacity of the relay in the Operate (coil energized) normally closed contact status.
Caveats	Caveats that must be satisfied to use the stated GERS level.
Demand Basis	Basis for determining in-cabinet demand.

Ground: 1.5 * SSE horizontal, ground response spectrum (for equipment which is mounted below about 40 feet above the effective grade and has a natural frequency greater than about 8 Hz.).

Floor: Realistic, median-centered, horizontal in-structure response spectrum for the SSE.

Level 1: The relays are evaluated using the GIP Level 1 capacity screen.

TVA Calc: The panel and/or relay are acceptable based on TVA calculation CD-Q 0999-960024 (Reference 17).

Equipment Class	GIP Equipment Class.
In Cabinet Demand, Peak	Estimated maximum seismic demand between 4 and 16 Hz. within the cabinet.
In Cabinet Demand, ZPA	Estimated ZPA seismic demand at the relay location within the cabinet.
Capacity > Demand, 4 to 16 Hz., Minimum Capacity	Comparison of the relay capacity to demand between 4 and 16 Hz. for the lowest capacity contact and coil status. Yes: Yes is entered if the relay capacity exceeds in-cabinet demand for all applicable coil and contact status. These relays are screened for peak in-cabinet demand. No: No is entered if the relay capacity is less than in-cabinet demand for the lowest capacity coil and contact status.

Capacity > Demand, 4 to 16 Hz., Maximum Capacity

Comparison of the relay capacity to demand between 4 and 16 Hz. for the highest contact and coil status.

Yes: Yes is entered if the relay capacity exceeds in-cabinet demand for the coil and contact status with the highest seismic capacity. These relays are screened for peak in-cabinet demand **only** for specific coil and contact status. Circuit drawings must be reviewed to verify the status.

No: No is entered if the relay capacity is less than in-cabinet demand for the lowest capacity coil and contact status. These relays are not screened.

Relays that did not pass the seismic capacity to demand screens were then evaluated via systems consequence reviews.

3.4.4 Relay Seismic Capacity To Demand Summary

The A-46 relay capacity to demand screening evaluation was implemented as set forth in Section 6.4 of the GIP (Reference 4) and EPRI NP-7148 (Reference 9).

Relay capacity evaluation results were tabulated for use by TVA in conjunction with relay system consequence reviews.

A total of 3107 relays were provided by TVA for evaluation in the form of a relay SSEL. Capacity data was available for 2723 of the SSEL relays. The evaluation demonstrates the following:

- 1584 of the relays pass at the minimum capacity coil and contact status. These relays are screened pending a review of listed caveats.

- 2537 of the relays pass at the highest capacity coil and contact status. These relays are screened for specific coil and contact status pending review of listed caveats.

Results are provided in Appendices A and B for each of the 2723 relays.

3.5 SYSTEM CONSEQUENCE CHATTER EVALUATION

The relays, contacts, and their associated circuits which were not screened out by the capacity/demand comparison were evaluated for their potential impacts on safe shutdown functions. A simplified failure modes and effects analysis was used to examine the consequences of contact malfunction. The ground rules and methods are given in EPRI NP-7148-SL. The following items provide a brief synopsis:

- Relays (not determined to be seismically adequate) are assumed to malfunction; e.g. chatter, only during the short period of strong ground motion (approximately 30 seconds) during an earthquake.

- With the exception of two of the low ruggedness relays, relays are not damaged as a result of an earthquake and will be functional after the period of strong shaking.

- Although it is assumed that relays will be functional after the period of strong motion, it is necessary to verify that relay malfunction during strong shaking does not result in an unacceptable seal-in, lockout, or system disabling action. In such cases, operator actions to reset or restore such circuits to their original condition are acceptable provided there is sufficient time, access, indications, and procedures for such actions to be taken.

- In performing the evaluation, the potential chatter of relay contacts was assumed to be the worst-case combination of individual contact pair chattering.

- Specific relays and their associated circuits will be considered non-essential for shutdown after an earthquake, and thus screened from further analysis, if:

- The function provided by the system and associated relays is not needed during the period of strong shaking and relay malfunction will not make essential functions unavailable when needed after strong shaking. Operator action can be taken to restore the function, but an operator action evaluation must be performed for these cases.

- Relay malfunction does not prevent the desired function (e.g., reactor trip) from occurring. This is typically the case with "fail-safe" circuit designs.

- Relay malfunction does not cause a spurious, unacceptable event (e.g., unacceptable loss of reactor coolant inventory).

- Contact chatter would only affect instrumentation and annunciation (see the EPRI procedure for the underlying rationale).

This step screened from further consideration those contacts, or complete circuits of relays, whose malfunction would not prevent system/component functioning or cause other unacceptable conditions. Checks were also made for individual contact pairs which did pass the seismic capacity/demand comparison. That is, the initial capacity/demand screening assumed that the contact pair status (open or closed) was in the worst seismic capacity (GERS) configuration, which is conservative. During the system consequence evaluation, the actual open/closed status could be evaluated for each contact pair, and some contact pairs with high capacity configuration could be screened out. The GE HGA and HFA relays are particular examples, with relatively high capacity in the contact pair open configuration.

Also some contacts were screened from further evaluation where operator actions to restore/reset systems are acceptable; i.e., adequate indication, time, access, procedures, and an acceptably small number of systems identified. Those circuits which could not be so screened were designated outliers. Section 5.2 discusses the system/circuit analyses, and the examples of detailed evaluation sheets are in Appendix E. Appendices F and G provide a summary of the individual circuit evaluations for Units 2 and 3, respectively.

3.6 RELAY WALKDOWN

The Generic Implementation Procedure (GIP) for resolution of Unresolved Safety Issue (USI) A-46 requires, in part, a plant walkdown of relays and their enclosures. The purpose of this walkdown is to:

1. Obtain, as necessary, information needed to determine cabinet types and cabinet-specific cabinet amplification factors for seismic capacity screening
2. Verify the seismic adequacy of cabinets or enclosures which contain essential relays
3. Spot check mounting of essential relays to determine if they are in accordance with manufacturer s recommendations
4. Confirm relay types and locations are consistent with documentation sources used to establish relay types and locations during the relay circuit relays

Under the USI A-46 program, relay mountings are assumed to be in accordance with manufacturer recommendations and plant documentation of relay types and locations are assumed to be accurate. The objective of the spot checks made during the relay walkdown was to confirm on a sample basis these assumptions. Other plant walkdowns, performed by the seismic capability engineers, collected the information needed for cabinet evaluations used in seismic screening of relays and to verify the seismic adequacy of the cabinets and enclosures which support essential relays.

4.0 SAFE SHUTDOWN EQUIPMENT

This section provides a brief overview of the safe shutdown functions and equipment selected for the A-46 evaluation. More detail is provided in the Browns Ferry A-46 Seismic Evaluation Report (Reference 11).

4.1 SAFE SHUTDOWN FUNCTIONS

Resolution of USI A-46 requires verification of the seismic adequacy of the equipment necessary to achieve and maintain a safe shutdown condition for the Browns Ferry Plant during the first 72 hours following a Design Basis Earthquake (DBE). The safe shutdown equipment selection is based on the rules and requirements of Section 3, "Identification of Safe Shutdown Equipment," and the guidelines of Appendix A, "Procedure for Identification of Safe Shutdown Equipment" of the GIP (Reference 4). Additional equipment, beyond that specified by the GIP, is also identified as equipment which may be used as limited options to the equipment required for resolution of USI A-46.

Some of the more significant criteria and assumptions used in selecting the safe shutdown systems, as outlined in the GIP, are as follows:

- Safe shutdown is defined as bringing the plant to, and maintaining it in a hot shutdown condition. The equipment and systems required should be capable of performing these functions for 72 hours following an SSE.

- The equipment and systems used to achieve and maintain safe shutdown conditions should be capable of being powered by emergency onsite power.

- Redundancy should be provided for each safe shutdown function such that out-of-service equipment or a single active failure of any item of equipment does not preclude the fulfillment of the safe shutdown function.

- With the exception of loss of offsite power, no accidents or extraordinary events are postulated to occur concurrently with or sequentially to the safe shutdown earthquake.

- The safe shutdown systems chosen should be consistent with the normal, abnormal, and emergency operating procedures which are used to bring the plant to a safe shutdown condition.

- Operator action is permitted as a means of achieving and maintaining a safe shutdown condition.

The four basic functions necessary to achieve and maintain safe shutdown are:

- Reactivity Control
- Reactor Coolant System Pressure Control
- Reactor Coolant System Inventory Control
- Decay Heat Removal

Briefly, the systems selected for performing the four safe shutdown functions are as follows:

4.1.1 Reactivity Control

The first plant challenge in response to a seismic event is to control reactivity, thus reducing core power to decay heat levels. This function is accomplished by a reactor scram and the rapid insertion of the control rods into the core. The scram function will be provided by the Reactor Protection System (RPS) upon execution of a manual reactor trip by the operators. A primary and an alternate path of components are defined to provide the reactor trip function and subsequent insertion of the control rods. The paths are independent from each other except for the hydraulic control units (HCUs) and the control rod drives (CRDs) which are included in both paths. The control rods provide adequate shutdown margin to allow for the control rod of the highest worth to fail to insert. The inherent redundancy of this system therefore provides protection against a single active failure.

The function of reactivity control is achieved by interaction between the Reactor Protection System (RPS) and the Control Rod Drive Hydraulic Control (CRD) System. The RPS contains the actuation circuitry, alarms, active equipment, and passive equipment required to trip the reactor and the CRD system provides the equipment and passive mechanical means to insert the control rods. The combination of these two systems will provide for reactivity control.

Browns Ferry has a standby liquid control system (SLCS) as a backup to the control rods for reactivity control. However, SLCS was not considered a viable alternative for reactivity control for the purpose of this evaluation because of the time and operator actions for initiation.

4.1.2 Reactor Coolant Pressure Control

Following a seismic event, if plant conditions cause or require a plant trip, the main steam isolation valves may close, increasing the Reactor Coolant System (RCS) pressure to the point that RCS pressure relief is required. The plant response to control RCS pressure is the lifting of the safety relief valves (SRVs) at their respective setpoints. Thereafter, the SRVs are manually operated by the control room operators to lower reactor pressure and allow low pressure injection for vessel makeup. The redundancy against a single active failure is provided by the primary and alternate path designation of the multiple SRV capabilities and the redundancy of their pneumatic control source. Additionally, a number of the SRVs are provided with pneumatic accumulators for the storage of control pressure to facilitate a number of operations upon total loss of their pneumatic source.

The system is comprised of thirteen valves which are dependent on a pneumatic source for their motive force. Success is defined by the proper functioning of at least four SRVs to control and reduce pressure. Although an alternate means to reduce reactor pressure is included in the EOIs for emergency depressurization, this alternate path was not selected because of the redundancy of the SRVs and their support systems. This automatic depressurization system (ADS) is also inhibited by the control room operators in accordance with Emergency Operating Instructions (EOIs), so no credit for ADS is taken in this evaluation.

4.1.3 Reactor Coolant Inventory Control

The inventory of the RCS is controlled by injecting water into the RCS and by minimizing the loss of water from the various openings in the system. High pressure makeup is typically provided by the High Pressure Injection System (HPCI) for the Browns Ferry plant. However, industry experience has indicated that the system is only moderately reliable and for primary path shutdown at BFNP, high pressure makeup is not necessary to achieve a safe shutdown condition. The SRVs are used for reactor coolant inventory control in addition to reactor coolant pressure control.

RCS Inventory Supply

- Core Spray (CS) - (RCS pressure < 450 psig)

  The primary shutdown path for providing makeup to the RCS is provided by one loop of the CS system (in conjunction with manual depressurization to < 450 psig). For resolution of USI A-46, loop 1 is chosen as the primary path with loop 2 as the secondary path. Each loop of CS pumps takes suction from the pressure suppression pool and injects into the RCS.

- Residual Heat Removal - (RCS Pressure < 450 psig)

  Additional alternate shutdown paths for providing makeup to the RCS are provided by each loop of the RHR system (in conjunction with manual depressurization to < 450 psig). For resolution of USI A-46, either loop will provide makeup via the LPCI mode, taking suction from the pressure suppression pool and injecting into the RCS via a reactor recirculation loop.

RCS Inventory Discharge

The discharge from the RCS is controlled by minimizing the potential loss of inventory through various paths. Loss of inventory is minimized to that necessary in utilization of the SRVs for depressurization to enable the low pressure ECCS systems to be placed into service.

4.1.4 Decay Heat Removal

The final function required to meet safe shutdown is decay heat removal. Since safe shutdown for Browns Ferry is defined as hot shutdown the primary means of decay heat removal following a seismic event is achieved by placing one loop of the RHR system into operation in the suppression pool cooling mode. One RHR pump and heat exchanger combination will be operated taking suction from the suppression pool where decay heat is being deposited and transferring sensible heat to the Residual Heat Removal Service Water (RHRSW) system before recirculation of the primary water back to the suppression pool. For resolution of USI A-46, Loop 1 is chosen as the primary path, although either loop could be used. The redundancy against a single active failure is provided by the multiple loops of the RHR system.

4.2 SYSTEMS ASSOCIATED WITH THE SAFE SHUTDOWN FUNCTIONS

4.2.1 Front-line Systems

The following systems are associated with the performance of the four safe shutdown functions identified above:

1. Reactor Protection System (RPS)
2. Control Rod Drive/Hydraulic Control Unit system (CRD/HCU)
3. Safety/Relief Valve system (SRV)
4. Core Spray system (CS)
5. Residual Heat Removal system (RHR)
6. Safe Shutdown Equipment Instrumentation and Control

4.2.2 Support Systems

The following systems are associated with the support of the four safe shutdown functions identified above:

1. Residual Heat Removal Service Water system (RHRSW)
2. AC Power System (including diesel generator system)
3. DC Power System
4. Emergency Equipment Cooling Water (EECW)
5. HVAC for RHR rooms, CS rooms, DG rooms
6. Containment Atmosphere Dilution

The SSEL was developed by two individuals who have held SRO licenses at Browns Ferry. An Operations SRO also reviewed the SSEL to confirm that the safe shutdown options selected for the SSEL were compatible with approved normal, abnormal, and emergency operating procedures and associated operator training. The operations review insured the required systems and equipment to safely shutdown the plant during a seismic event were included in the SSEL. Additionally, instrumentation needed to monitor plant operation and required systems was verified.

4.3 RELAY REVIEW SAFE SHUTDOWN EQUIPMENT LIST

Section II.3 and Appendix A of the GIP describe in detail the overall method for identifying the mechanical and electrical equipment required to address USI A-46 safe shutdown criteria. The Mechanical and Electrical Safe Shutdown Equipment Lists (SSELs) contain the plant equipment necessary to achieve and maintain safe shutdown under the USI A-46 governing assumptions and ground rules for identifying equipment. Not all of the equipment items included on the SSEL are affected by relays or other contact devices. As a result, only a subset of the SSEL components require a USI A-46 relay functionality review.

The SSEL equipment items requiring a relay review are those items which are electrically powered or controlled and:

1. Must operate or change state to accomplish a safe shutdown function (active equipment)
2. Do not need to operate to accomplish safe shutdown (passive equipment) but whose inadvertent operation due to relay chatter could adversely affect the accomplishment of safe shutdown

The essential relay list is contained in Appendices A, B, and C for Unit 2, Unit 3, and process switches respectively. Section 3.3 provides details associated with the identification of essential relays.

5.0 RESULTS OF RELAY SCREENING AND EVALUATION

This section documents the relay capacity/demand screening and system consequence chatter evaluations for each of the SSEL relays and process switches, and the associated circuits and contact pairs, listed in Appendices A, B, and C of this report.

5.1 RELAY SEISMIC CAPACITY/DEMAND COMPARISON RESULTS

As noted earlier in this report, there were 1420 A-46/IPEEE relays for Unit 2, 1303 A-46/IPEEE relays for Unit 3, and 188 process switches for both units that had capacity data and were identified for evaluation and screening. For the relay evaluation, a total of 721 Unit 2 relays and 863 Unit 3 relays passed the capacity screening Levels 1, 2, or 3. The result of the seismic capacity/demand screen are:

SEISMIC CAPACITY/DEMAND SCREEN RESULTS

	Unit 2 A-46\IPEEE	Unit 3 A-46\IPEEE
RELAYS SCREENED OUT:		
Screens 1,2, & 3 (capacity/demand)	721	863
SWITCHES SCREENED OUT:	188(both units)	
RELAYS FOR SYSTEM CONSEQUENCE REVIEW:		
System Consequence Review-Relays	699	440

Results for each individual relay, including relay capacity and seismic demand, are shown in Appendices A and B. Most of the 188 process switches listed in App. C were screened using the capacity/demand evaluation, although some were screened based on system consequence chatter evaluations.

The totals show that there were 699 Unit 2 relays, and 440 Unit 3 relays with capacity information that could not be screened by capacity/demand screening methods. In addition, there were 384 relays without capacity information. These relays were submitted for relay system consequence review.

5.2 SYSTEM CONSEQUENCE CHATTER EVALUATION

This section reports on those circuits including relays that did not pass the initial screening criteria and required further evaluation by system consequence review. The methods were discussed in section 3.5, and the overall evaluation results are given below:

CIRCUIT SYSTEM CONSEQUENCE EVALUATION RESULTS

	Unit 2 A-46/IPEEE	Unit 3 A-46/IPEEE
CIRCUITS SCREENED OUT:		
Chatter Acceptable (CA-Y)	166	89
Operator Action Acceptable (OA-Y)	11	5
All Circuit Contacts Seismically Rugged (N/A)	116	76
TOTAL SCREENED OUT	293	170
CIRCUITS NOT SCREENED:		
Potential Outliers (UA)	55	29
TOTAL CIRCUITS	348	199

The abbreviations in parentheses (e.g., CA-Y, OA-Y, N/A, and UA) are used in Appendices F and G to indicate the circuit evaluation result. Examples of the chatter evaluation sheets are provided in Appendix E.

5.2.1 Chatter Acceptable Relays and Circuits

Most of the contacts were found to be "chatter acceptable" due to the circuit design or automatic actuation signals which would correct any initial malfunction. In general, the system consequence review looked for relay chatter which would cause a change of configuration for a component that was not desired, or which would block a configuration change which was desired. In many cases, equipment is not actuated or needed for many minutes or hours after the earthquake. For example, the RHR pumps are not required to provide decay heat removal for hours after the reactor trip, although they will likely be put into service during the first hour. Some of the associated relays could send a trip signal to the pumps during the earthquake, but the pumps would likely not be running at that time. Therefore the trip signal has no impact on the system or its safe shutdown function. These contacts are thus evaluated as chatter acceptable. If there is a lockout actuated by the contact chatter, then operator actions would be assessed, as discussed in the following section.

Conversely, the pump could potentially receive a spurious start signal from contact chatter. As long as the pump is not damaged due to deadheading, such contact chatter is acceptable since there is no negative system consequence of pump start. The ECCS pumps in the A-46 SSEL are all provided with minimum flow paths so that deadheading will not occur. Other pumps, such as the emergency equipment cooling water pumps, are designed to be able to withstand periods of deadheading if spurious valve closure were to occur. Issues such as these were evaluated during the contact chatter review.

Many of the contact pairs were found to only provide indication or annunciation, and would not pose a potential problem to actual system function. These contacts are thus acceptable.

Another large group of contacts that were determined to be chatter acceptable are associated with the control rods. Many of the normal control rod positioning relays are bypassed in the event of a reactor trip, and are therefore chatter acceptable in a trip situation. Each of these contacts were also examined to determine if chatter could result in unwanted impacts if a trip had not occurred. Some had non-essential functions, and were not evaluated further. Others could cause rod movement. However, any excessive rod movement would result in a reactor trip, which is an acceptable condition. Therefore, a generic rationale was used for all of these contacts for which reactor shutdown would not be bypassed or prevented, and their individual function was not further examined.

5.2.2 Operator Action Acceptable Contacts and Circuits

Nine of the circuits were designated "Operator Action Acceptable." These circuits have contacts that could cause initial malfunction of equipment included in the safe shutdown functions, but could also be easily mitigated by operator actions. These operator actions are discussed below. The circuits, and associated relays and contacts are considered "operator action" acceptable.

The first circuits designated "operator action acceptable" are associated with the diesel generators. In particular, the lock out relay and exciter field breaker may need to be reset before the diesels may be restarted. Operator action at the local diesel generator control panels may be required in such instances. The operators will have obvious indication of the station blackout situation, there is at least 20 minutes before the diesel generators would be needed, and the procedures for manual reset and start are emphasized in training. Because of the importance of the diesel generators, their restart will be given the highest priority.

The other circuits which are designated "operator action acceptable" are associated with 480V RMOV boards D and E. These boards may be disabled until their feeder breakers from motor generators DN and EN are manually closed by operator action at the shutdown boards. Again, the operators would have indication in the control room that the boards are not energized. At least 20 minutes is available for operator action, and the procedure for closing the breakers is easily performed. Thus, operator actions can be used to mitigate any chatter consequences for these circuits.

5.2.3 Resolved Outlier Circuits

After the system consequence evaluation, 84 circuits remained with potential impacts from relay chatter. These circuits were classified "outliers," and additional efforts were started to provide resolution. In particular, additional relay capacity information was collected for some of these outlier circuits. Based on these additional analyses, 35 of the outlier circuits were determined to be acceptable based on the new capacity information. These circuits are classified "Resolved Outliers." They are designated UA-Y(R) in Appendices F and G.

5.2.4 Unresolved Outlier Circuits

The final set of 49 circuits have the potential to cause a malfunction of equipment listed for a shutdown safety function. They are listed as A-46 outliers, and their resolution is discussed in Section 2.5.

6.0 REFERENCES

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   US NRC NUREG-1407, Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities, June 1991.
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6. Letter from TVA to NRC describing approach for resolution of A-46. Letter from O. J. Zeringue (TVA) to NRC, September 21, 1992.
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9. EPRI NP-7148-SL; Procedure for Evaluating Nuclear Power Plant Relay Seismic Functionality; Electric Power Research Institute; December 1990.
10. EPRI NP-7147-SL; Seismic Ruggedness of Relays; Electric Power Research Institute; August 1991, and Addendums.
11. Browns Ferry Nuclear Plant, USI A-46 Seismic Evaluation Report, TVA, March 1996.
12. EQE Calculation 50147-C-010, Rev. 0, Browns Ferry Units 2 and 3 A-46/IPEEE Relay Capacity to Demand Screening Evaluation, June, 1996.

13. EPRI NP-6041-SL, Rev. 1, A Methodology for Assessment of Nuclear Power Plant Seismic Margin (Revision 1), August 1991.

14. Merz, Kelly, "SQURTS-to-GERS Conversion," SQUG Newsletter, Volume 3, Issue 3, October, 1995. H. TVA Calculation No. CD-Q 0999-960024, "A-46 Relay Evaluations," Rev. 0.

15. TVA Calculation No. CD-Q 0999-960024, "A-46 Relay Evaluations," Rev. 0.

16. EQE Calculation 50147-C-001, "Browns Ferry Nuclear Plant -A46/IPEEE Seismic Capacity vs. Demand - APP. A."

17. TVA Calculation CD-Q0000-940339, "Calculation of Basic Parameters for A46 and Individual Plant Examination of External Events (IPEEE) Seismic Program."

18. EPRI NP-7146-SL, "Guidelines for Development of In-Cabinet Amplified Response Spectra for Electrical Benchboards and Panels", Electric Power Research Institute, Palo Alto, CA, prepared by Stevenson & Associates, Inc., December 1990.

APPENDIX A

ESSENTIAL RELAY LIST

AND

CAPACITY/DEMAND SCREENING RESULTS

BROWNS FERRY UNIT 2

Item No.	CABINET	Relay Capacity: Make	Relay Capacity: Relay Type	GERS Level: Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
18	0-BDAA-211-0000A	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor		7.0	22.6	NO	NO
76	0-BDAA-211-0000A/12	GE	IAV54E1A	GERS	N/A	8	N/A	10		Floor	3	2.0	6.5	YES	YES
77	0-BDAA-211-0000A/12	GE	IAV54E1A	GERS	N/A	8	N/A	10		Floor	3	2.0	6.5	YES	YES
78	0-BDAA-211-0000A/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
79	0-BDAA-211-0000A/12	GE	IAV54E1A	GERS	N/A	8	N/A	10		Floor	3	2.0	6.5	YES	YES
80	0-BDAA-211-0000A/12	GE	IAV54E1A	GERS	N/A	8	N/A	10		Floor	3	2.0	6.5	YES	YES
81	0-BDAA-211-0000A/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
82	0-BDAA-211-0000A/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
83	0-BDAA-211-0000A/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
85	0-BDAA-211-0000A/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
86	0-BDAA-211-0000A/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
87	0-BDAA-211-0000A/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
88	0-BDAA-211-0000A/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
89	0-BDAA-211-0000A/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
90	0-BDAA-211-0000A/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
91	0-BDAA-211-0000A/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
92	0-BDAA-211-0000A/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
120	0-BDAA-211-0000A/17	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Floor	3	2.0	6.5	NO	YES
121	0-BDAA-211-0000A/17	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
122	0-BDAA-211-0000A/17	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
123	0-BDAA-211-0000A/17	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
124	0-BDAA-211-0000A/17	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
130	0-BDAA-211-0000A/19	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Floor	3	2.0	6.5	NO	YES
131	0-BDAA-211-0000A/19	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
132	0-BDAA-211-0000A/19	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
133	0-BDAA-211-0000A/19	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
134	0-BDAA-211-0000A/19	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
11	0-BDAA-211-0000A/2	Westinghouse	CV-7-1875524	GERS	14.2	14.2	14.2	14.2	Notes 5 & 25	Floor	3	2.0	6.5	YES	YES
13	0-BDAA-211-0000A/2	Westinghouse	CV-7-1875524	GERS	14.2	14.2	14.2	14.2	Notes 5 & 25	Floor	3	2.0	6.5	YES	YES
19	0-BDAA-211-0000A/2	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
147	0-BDAA-211-0000A/21	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Floor	3	2.0	6.5	NO	YES
148	0-BDAA-211-0000A/21	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
149	0-BDAA-211-0000A/21	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
150	0-BDAA-211-0000A/22	GE	HGA11J51	GERS	8.8	0	4.4	10	Note 3	Floor	3	2.0	6.5	NO	YES
151	0-BDAA-211-0000A/22	GE	HGA11J51	GERS	8.8	0	4.4	10	Note 3	Floor	3	2.0	6.5	NO	YES
152	0-BDAA-211-0000A/22	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
168	0-BDAA-211-0000A/23	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
169	0-BDAA-211-0000A/23	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
170	0-BDAA-211-0000A/23	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
171	0-BDAA-211-0000A/23	ITE	ITE-27N-211TO175	GERS	15	15	15	15		Floor	3	2.0	6.5	YES	YES
172	0-BDAA-211-0000A/23	ITE	ITE-27N-211TO175	GERS	15	15	15	15		Floor	3	2.0	6.5	YES	YES
173	0-BDAA-211-0000A/23	ITE	ITE-27N-211TO175	GERS	15	15	15	15		Floor	3	2.0	6.5	YES	YES
174	0-BDAA-211-0000A/23	ITE	ITE-59H-211CO175	GERS	15	15	15	15		Floor	3	2.0	6.5	YES	YES
175	0-BDAA-211-0000A/23	ITE	ITE-59H-211CO175	GERS	15	15	15	15		Floor	3	2.0	6.5	YES	YES
176	0-BDAA-211-0000A/23	ITE	ITE-59H-211CO175	GERS	15	15	15	15		Floor	3	2.0	6.5	YES	YES
177	0-BDAA-211-0000A/23	GE	HEA61B215	SQURTS	14	14	14	14		Floor	3	2.0	6.5	YES	YES
179	0-BDAA-211-0000A/23	Agastat	E7012PB001	GERS	12.5	12.5	12.5	12.5	Note 1	Floor	3	2.0	6.5	YES	YES
180	0-BDAA-211-0000A/24	GE	IAC53A3A	GERS	7	N/A	10	N/A		Floor	3	2.0	6.5	YES	YES
181	0-BDAA-211-0000A/24	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES

Item No.	CABINET	Make	Relay Type	Relay Capacity: Capacity Basis	GERS Level: Non-Operate NO	GERS Level: Non-Operate NC	GERS Level: Operate NO	GERS Level: Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
182	0-BDAA-211-0000A/24	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
183	0-BDAA-211-0000A/24	GE	HEA61B215	SQURTS	14	14	14	14		Floor	3	2.0	6.5	YES	YES
184	0-BDAA-211-0000A/24	GE	HGA11J70	GERS	10	0	10	10	Notes 3 & 10	Floor	3	2.0	6.5	NO	YES
185	0-BDAA-211-0000A/24	GE	HGA11J70	GERS	10	0	10	10	Notes 3 & 10	Floor	3	2.0	6.5	NO	YES
20	0-BDAA-211-0000A/3	GE	HEA61B215	SQURTS	14	14	14	14		Floor	3	2.0	6.5	YES	YES
21	0-BDAA-211-0000A/3	GE	IAC53A3A	GERS	7	N/A	10	N/A		Floor	3	2.0	6.5	YES	YES
22	0-BDAA-211-0000A/3	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
23	0-BDAA-211-0000A/3	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
27	0-BDAA-211-0000A/4	GE	HGA11J51	GERS	8.8	0	4.4	10	Note 3	Floor	3	2.0	6.5	NO	YES
28	0-BDAA-211-0000A/4	GE	HGA11J51	GERS	8.8	0	4.4	10	Note 3	Floor	3	2.0	6.5	NO	YES
29	0-BDAA-211-0000A/4	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
30	0-BDAA-211-0000A/5	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Floor	3	2.0	6.5	NO	YES
31	0-BDAA-211-0000A/5	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
32	0-BDAA-211-0000A/5	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
38	0-BDAA-211-0000A/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
39	0-BDAA-211-0000A/7	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
40	0-BDAA-211-0000A/7	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Floor	3	2.0	6.5	NO	YES
41	0-BDAA-211-0000A/7	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
42	0-BDAA-211-0000A/7	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
346	0-BDAA-211-0000B	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
266	0-BDAA-211-0000B/12	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
267	0-BDAA-211-0000B/12	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
268	0-BDAA-211-0000B/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
269	0-BDAA-211-0000B/12	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
270	0-BDAA-211-0000B/12	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
271	0-BDAA-211-0000B/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
272	0-BDAA-211-0000B/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
273	0-BDAA-211-0000B/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
275	0-BDAA-211-0000B/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
276	0-BDAA-211-0000B/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
277	0-BDAA-211-0000B/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
278	0-BDAA-211-0000B/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
279	0-BDAA-211-0000B/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
280	0-BDAA-211-0000B/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
281	0-BDAA-211-0000B/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
282	0-BDAA-211-0000B/12	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
291	0-BDAA-211-0000B/14	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
292	0-BDAA-211-0000B/14	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
293	0-BDAA-211-0000B/14	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
295	0-BDAA-211-0000B/15	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
296	0-BDAA-211-0000B/15	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
297	0-BDAA-211-0000B/15	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
298	0-BDAA-211-0000B/15	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
299	0-BDAA-211-0000B/15	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
305	0-BDAA-211-0000B/17	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
306	0-BDAA-211-0000B/17	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
307	0-BDAA-211-0000B/17	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
308	0-BDAA-211-0000B/17	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
309	0-BDAA-211-0000B/17	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES

Item No.	CABINET	Make	Relay Type	Relay Capacity: Capacity Basis	GERS Level Non-Operate NO	GERS Level Non-Operate NC	GERS Level Operate NO	GERS Level Operate NC	Caveats	Demand Basis	Equip. Class	Amplified Demand: PANEL AMPLIF FACTOR	Amplified Demand: In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Capacity > Demand (4 to 16 Hz.): Maximum Capacity
328	0-BDAA-211-0000B/19	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
329	0-BDAA-211-0000B/19	GE	HGA11J51	GERS	8.8	0	4.4	10	Note 3	Ground	3	2.0	2.3	NO	YES
187	0-BDAA-211-0000B/2	GE	IAC53A3A	GERS	7	N/A	10	N/A		Ground	3	2.0	2.3	YES	YES
188	0-BDAA-211-0000B/2	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
189	0-BDAA-211-0000B/2	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
190	0-BDAA-211-0000B/2	GE	HEA61B215X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
6415	0-BDAA-211-0000B/2		HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
331	0-BDAA-211-0000B/20	GE	IAC53A3A	GERS	7	N/A	10	N/A		Ground	3	2.0	2.3	YES	YES
332	0-BDAA-211-0000B/20	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
333	0-BDAA-211-0000B/20	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
334	0-BDAA-211-0000B/20	GE	HEA6IB215	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
335	0-BDAA-211-0000B/20	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
336	0-BDAA-211-0000B/21	Westinghouse	CV-7-1875524A	GERS	14.2	14.2	14.2	14.2	Notes 5 & 25	Ground	3	2.0	2.3	YES	YES
338	0-BDAA-211-0000B/21	Westinghouse	CV-7-1875524A	GERS	14.2	14.2	14.2	14.2	Notes 5 & 25	Ground	3	2.0	2.3	YES	YES
340	0-BDAA-211-0000B/21	ITE	ITE59H-211CO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
341	0-BDAA-211-0000B/21	ITE	ITE27N-211TO173	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
342	0-BDAA-211-0000B/21	ITE	ITE27N-211TO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
343	0-BDAA-211-0000B/21	ITE	ITE27N-211TO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
344	0-BDAA-211-0000B/21	ITE	ITE59H-211CO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
345	0-BDAA-211-0000B/21	ITE	ITE59H-211CO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
347	0-BDAA-211-0000B/21	Agastat	E7012PB001	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
348	0-BDAA-211-0000B/21	GE	HGA11J70	GERS	10	0	10	10	Notes 3 & 10	Ground	3	2.0	2.3	NO	YES
349	0-BDAA-211-0000B/21	GE	HGA11J7O	GERS	10	0	10	10	Notes 3 & 10	Ground	3	2.0	2.3	NO	YES
193	0-BDAA-211-0000B/3	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
194	0-BDAA-211-0000B/3	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
198	0-BDAA-211-0000B/3	GE	HEA61B215	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
200	0-BDAA-211-0000B/3	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
201	0-BDAA-211-0000B/4	GE	HGA11J51	GERS	8.8	0	4.4	10	Note 3	Ground	3	2.0	2.3	NO	YES
202	0-BDAA-211-0000B/4	GE	HGA11J51	GERS	8.8	0	4.4	10	Note 3	Ground	3	2.0	2.3	NO	YES
205	0-BDAA-211-0000B/4	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
220	0-BDAA-211-0000B/5	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
221	0-BDAA-211-0000B/5	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
222	0-BDAA-211-0000B/5	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
228	0-BDAA-211-0000B/7	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
229	0-BDAA-211-0000B/7	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
230	0-BDAA-211-0000B/7	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
231	0-BDAA-211-0000B/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
232	0-BDAA-211-0000B/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
536	0-BDAA-211-0000C	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor		7.0	22.6	NO	NO
435	0-BDAA-211-0000C/11	GE	IAV54E1A	GERS	N/A	8	N/A	10		Floor	3	2.0	6.5	YES	YES
436	0-BDAA-211-0000C/11	GE	IAV54E1A	GERS	N/A	8	N/A	10		Floor	3	2.0	6.5	YES	YES
437	0-BDAA-211-0000C/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
438	0-BDAA-211-0000C/11	GE	IAV54E1A	GERS	N/A	8	N/A	10		Floor	3	2.0	6.5	YES	YES
439	0-BDAA-211-0000C/11	GE	IAV54E1A	GERS	N/A	8	N/A	10		Floor	3	2.0	6.5	YES	YES
440	0-BDAA-211-0000C/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
441	0-BDAA-211-0000C/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
442	0-BDAA-211-0000C/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
444	0-BDAA-211-0000C/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
445	0-BDAA-211-0000C/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES

Item No.	CABINET	Relay Capacity: Make	Relay Capacity: Relay Type	Relay Capacity: Capacity Basis	GERS Level: Non-Operate NO	GERS Level: Non-Operate NC	GERS Level: Operate NO	GERS Level: Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	Amplified Demand: PANEL AMPLIF FACTOR	Amplified Demand: In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Capacity > Demand (4 to 16 Hz.): Maximum Capacity
446	0-BDAA-211-0000C/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
447	0-BDAA-211-0000C/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
448	0-BDAA-211-0000C/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
449	0-BDAA-211-0000C/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
450	0-BDAA-211-0000C/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
451	0-BDAA-211-0000C/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
476	0-BDAA-211-0000C/16	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Floor	3	2.0	6.5	NO	YES
477	0-BDAA-211-0000C/16	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
478	0-BDAA-211-0000C/16	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
479	0-BDAA-211-0000C/16	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
480	0-BDAA-211-0000C/16	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
496	0-BDAA-211-0000C/18	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Floor	3	2.0	6.5	NO	YES
497	0-BDAA-211-0000C/18	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
498	0-BDAA-211-0000C/18	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
499	0-BDAA-211-0000C/18	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
500	0-BDAA-211-0000C/18	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
360	0-BDAA-211-0000C/2	GE	IAC53A3A	GERS	7	N/A	10	N/A		Floor	3	2.0	6.5	YES	YES
361	0-BDAA-211-0000C/2	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
362	0-BDAA-211-0000C/2	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
363	0-BDAA-211-0000C/2	GE	HEA61B215	SQURTS	14	14	14	14		Floor	3	2.0	6.5	YES	YES
513	0-BDAA-211-0000C/20	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Floor	3	2.0	6.5	NO	YES
514	0-BDAA-211-0000C/20	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
515	0-BDAA-211-0000C/20	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
517	0-BDAA-211-0000C/21	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
519	0-BDAA-211-0000C/21	GE	HGA11JS1	GERS	8.8	0	4.4	10	Notes 3	Floor	3	2.0	6.5	NO	YES
520	0-BDAA-211-0000C/22	GE	IAC53A3A	GERS	7	N/A	10	N/A		Floor	3	2.0	6.5	YES	YES
521	0-BDAA-211-0000C/22	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
522	0-BDAA-211-0000C/22	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
523	0-BDAA-211-0000C/22	GE	HEA61B215	SQURTS	14	14	14	14		Floor	3	2.0	6.5	YES	YES
524	0-BDAA-211-0000C/22	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
525	0-BDAA-211-0000C/23	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
526	0-BDAA-211-0000C/23	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
527	0-BDAA-211-0000C/23	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
530	0-BDAA-211-0000C/23	Westinghouse	CV-7 1875524A	GERS	14.2	14.2	14.2	14.2	Notes 5 & 25	Floor	3	2.0	6.5	YES	YES
532	0-BDAA-211-0000C/23	GE	HEA61C218	SQURTS	14	14	14	14		Floor	3	2.0	6.5	YES	YES
545	0-BDAA-211-0000C/25	Westinghouse	CV-7 1875524A	GERS	14.2	14.2	14.2	14.2	Notes 5 & 25	Floor	3	2.0	6.5	YES	YES
547	0-BDAA-211-0000C/25	ITE	ITE59H-211CO175	GERS	15	15	15	15		Floor	3	2.0	6.5	YES	YES
548	0-BDAA-211-0000C/25	ITE	ITE27N-211T0175	GERS	15	15	15	15		Floor	3	2.0	6.5	YES	YES
549	0-BDAA-211-0000C/25	ITE	ITE27N-211T0175	GERS	15	15	15	15		Floor	3	2.0	6.5	YES	YES
550	0-BDAA-211-0000C/25	ITE	ITE27N-211T0175	GERS	15	15	15	15		Floor	3	2.0	6.5	YES	YES
551	0-BDAA-211-0000C/25	ITE	ITE59H-211C0175	GERS	15	15	15	15		Floor	3	2.0	6.5	YES	YES
552	0-BDAA-211-0000C/25	ITE	ITE59H-211C0175	GERS	15	15	15	15		Floor	3	2.0	6.5	YES	YES
366	0-BDAA-211-0000C/3	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
367	0-BDAA-211-0000C/3	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
368	0-BDAA-211-0000C/3	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
372	0-BDAA-211-0000C/3	GE	HEA61B215	SQURTS	14	14	14	14		Floor	3	2.0	6.5	YES	YES
373	0-BDAA-211-0000C/3	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
377	0-BDAA-211-0000C/4	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
402	0-BDAA-211-0000C/7	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Floor	3	2.0	6.5	NO	YES

Appendix A: Essential Relay List And Capacity Screening Results - Browns Ferry Unit 2

Item No.	CABINET	Make	Relay Type	Relay Capacity: GERS Level: Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
403	0-BDAA-211-0000C/7	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
404	0-BDAA-211-0000C/7	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
405	0-BDAA-211-0000C/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
406	0-BDAA-211-0000C/7	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
419	0-BDAA-211-0000C/9	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Floor	3	2.0	6.5	NO	YES
420	0-BDAA-211-0000C/9	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
421	0-BDAA-211-0000C/9	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Floor	3	2.0	6.5	NO	NO
422	0-BDAA-211-0000C/9	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
423	0-BDAA-211-0000C/9	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	3	2.0	6.5	NO	YES
592	0-BDAA-211-0000D	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
632	0-BDAA-211-0000D/10	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
633	0-BDAA-211-0000D/10	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
634	0-BDAA-211-0000D/10	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
635	0-BDAA-211-0000D/10	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
636	0-BDAA-211-0000D/10	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
637	0-BDAA-211-0000D/10	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
645	0-BDAA-211-0000D/11	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
646	0-BDAA-211-0000D/11	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
647	0-BDAA-211-0000D/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
648	0-BDAA-211-0000D/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
649	0-BDAA-211-0000D/11	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
650	0-BDAA-211-0000D/11	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
651	0-BDAA-211-0000D/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
652	0-BDAA-211-0000D/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
654	0-BDAA-211-0000D/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
655	0-BDAA-211-0000D/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
656	0-BDAA-211-0000D/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
657	0-BDAA-211-0000D/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
658	0-BDAA-211-0000D/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
659	0-BDAA-211-0000D/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
660	0-BDAA-211-0000D/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
661	0-BDAA-211-0000D/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
668	0-BDAA-211-0000D/13	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
669	0-BDAA-211-0000D/13	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
670	0-BDAA-211-0000D/13	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
671	0-BDAA-211-0000D/13	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
672	0-BDAA-211-0000D/13	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
679	0-BDAA-211-0000D/15	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
680	0-BDAA-211-0000D/15	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
681	0-BDAA-211-0000D/15	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
682	0-BDAA-211-0000D/15	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
683	0-BDAA-211-0000D/15	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
689	0-BDAA-211-0000D/17	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
690	0-BDAA-211-0000D/17	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
691	0-BDAA-211-0000D/17	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
692	0-BDAA-211-0000D/17	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
693	0-BDAA-211-0000D/17	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
699	0-BDAA-211-0000D/19	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
700	0-BDAA-211-0000D/19	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES

Item No.	CABINET	Relay Capacity: Make	Relay Type	Capacity Basis	GERS Level: Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
701	0-BDAA-211-0000D/19	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
573	0-BDAA-211-0000D/2	Westinghouse	CV-7-1875524A	GERS	14.2	14.2	14.2	14.2	Notes 5 & 25	Ground	3	2.0	2.3	YES	YES
702	0-BDAA-211-0000D/20	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
703	0-BDAA-211-0000D/20	GE	HGA11J51	GERS	8.8	0	4.4	10	Note 3	Ground	3	2.0	2.3	NO	YES
704	0-BDAA-211-0000D/20	GE	HGA11J51	GERS	8.8	0	4.4	10	Note 3	Ground	3	2.0	2.3	NO	YES
723	0-BDAA-211-0000D/21	GE	HEA61B215	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
725	0-BDAA-211-0000D/21	ITE	ITE-27N211T0175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
726	0-BDAA-211-0000D/21	ITE	ITE59H-211C0175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
727	0-BDAA-211-0000D/21	ITE	ITE59H-211C0175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
728	0-BDAA-211-0000D/21	ITE	ITE59H-211C0175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
729	0-BDAA-211-0000D/21	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
730	0-BDAA-211-0000D/21	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
731	0-BDAA-211-0000D/21	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
732	0-BDAA-211-0000D/21	ITE	ITE-27N-211T0175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
733	0-BDAA-211-0000D/21	ITE	ITE-27N-211T0175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
734	0-BDAA-211-0000D/22	GE	IAC53A3A	GERS	7	N/A	10	N/A		Ground	3	2.0	2.3	YES	YES
735	0-BDAA-211-0000D/22	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
736	0-BDAA-211-0000D/22	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
737	0-BDAA-211-0000D/22	GE	HEA61B215	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
738	0-BDAA-211-0000D/22	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
593	0-BDAA-211-0000D/4	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
594	0-BDAA-211-0000D/4	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
595	0-BDAA-211-0000D/4	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
596	0-BDAA-211-0000D/4	Westinghouse	CV-7-1875524A	GERS	14.2	14.2	14.2	14.2	Notes 5 & 25	Ground	3	2.0	2.3	YES	YES
600	0-BDAA-211-0000D/4	GE	HEA61C218	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
602	0-BDAA-211-0000D/5	GE	IAC53A3A	GERS	7	N/A	10	N/A		Ground	3	2.0	2.3	YES	YES
603	0-BDAA-211-0000D/5	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
604	0-BDAA-211-0000D/5	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
605	0-BDAA-211-0000D/5	GE	HEA61B215	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
606	0-BDAA-211-0000D/5	GE	HFA51A41HTF	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
610	0-BDAA-211-0000D/6	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
611	0-BDAA-211-0000D/6	GE	HGA11J51	GERS	8.8	0	4.4	10	Note 3	Ground	3	2.0	2.3	NO	YES
612	0-BDAA-211-0000D/6	GE	HGA11J51	GERS	8.8	0	4.4	10	Note 3	Ground	3	2.0	2.3	NO	YES
618	0-BDAA-211-0000D/8	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
619	0-BDAA-211-0000D/8	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
620	0-BDAA-211-0000D/8	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
621	0-BDAA-211-0000D/8	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
622	0-BDAA-211-0000D/8	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
6128	0-BDBB-219-0000A/12C	GE	CR106CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6130	0-BDBB-219-0000A/12C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1819	0-BDBB-219-0000A/3D	Agastat	7022AE	GERS	6	6	10	10	Notes 1 & 2	Level 1	1	N/A	5.0	YES	YES
6129	0-BDBB-219-0000A/3D	GE	CR106CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6133	0-BDBB-219-0000A/3D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1820	0-BDBB-219-0000A/4D	Agastat	7022AE	GERS	6	6	10	10	Notes 1 & 2	Level 1	1	N/A	5.0	YES	YES
6125	0-BDBB-219-0000A/4D	GE	CR106C0	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6131	0-BDBB-219-0000A/4D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1830	0-BDBB-219-0000A/6A	GE	HFA151A8H	GERS	7.5	3	15	15	Notes 3 & 9	Level 1	1	N/A	5.0	NO	YES
1831	0-BDBB-219-0000A/6A	GE	IAV53L2A	GERS	6	15	15	0		Level 1	1	N/A	5.0	NO	YES
1833	0-BDBB-219-0000A/8B	Agastat	7022AE1813953	GERS	6	6	10	10	Notes 1 & 2	Level 1	1	N/A	5.0	YES	YES

Item No.	CABINET	Make	Relay Type	Relay Capacity: GERS Level: Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
6126	0-BDBB-219-0000A/8B	GE	CR106C0	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6134	0-BDBB-219-0000A/8B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1834	0-BDBB-219-0000A/9B	Agastat	7022AE00286090607	GERS	6	6	10	10	Notes 1 & 2	Level 1	1	N/A	5.0	YES	YES
6127	0-BDBB-219-0000A/9B	GE	CR106C0	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6132	0-BDBB-219-0000A/9B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
6139	0-BDBB-219-0000B/12C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6140	0-BDBB-219-0000B/12C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1854	0-BDBB-219-0000B/3D	Agastat	7022AE4535926	GERS	6	6	10	10	Notes 1 & 2	Level 1	1	N/A	5.0	YES	YES
6135	0-BDBB-219-0000B/3D	GE	CR105CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6142	0-BDBB-219-0000B/3D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1855	0-BDBB-219-0000B/4D	Agastat	2422AE3630089	GERS	6	6	10	10	Notes 1 & 2	Level 1	1	N/A	5.0	YES	YES
6138	0-BDBB-219-0000B/4D	GE	CR105CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6141	0-BDBB-219-0000B/4D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1865	0-BDBB-219-0000B/6A	GE	HFA151A8H	GERS	7.5	3	15	15	Notes 3 & 9	Level 1	1	N/A	5.0	NO	YES
1866	0-BDBB-219-0000B/6A	GE	IAV53L2A	GERS	6	15	15	0		Level 1	1	N/A	5.0	NO	YES
1870	0-BDBB-219-0000B/8B	Agastat	7022AE-4535929	GERS	6	6	10	10	Notes 1 & 2	Level 1	1	N/A	5.0	YES	YES
6137	0-BDBB-219-0000B/8B	GE	CR105CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6143	0-BDBB-219-0000B/8B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1871	0-BDBB-219-0000B/9B	Agastat	7022AE542244	GERS	6	6	10	10	Notes 1 & 2	Level 1	1	N/A	5.0	YES	YES
6136	0-BDBB-219-0000B/9B	GE	CR105CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6144	0-BDBB-219-0000B/9B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
2059	0-CHGA-248-0000A			TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2060	0-CHGA-248-0000A	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2061	0-CHGA-248-0000A	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2062	0-CHGA-248-0000A	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2063	0-CHGA-248-0000B	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2064	0-CHGA-248-0000B	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2065	0-CHGA-248-0000B	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2066	0-CHGA-248-0000B	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2067	0-CHGA-248-0000C	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2068	0-CHGA-248-0000C	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2069	0-CHGA-248-0000C	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2070	0-CHGA-248-0000C	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2071	0-CHGA-248-0000D	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2072	0-CHGA-248-0000D	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2073	0-CHGA-248-0000D	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2074	0-CHGA-248-0000D	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6542	0-CHGA-248-0001		CR106G002	GERS	4.5	4.5	4.5	4,5	Contactor/Motor Starte	Ground		7.0	7.9	NO	NO
6545	0-CHGA-248-0002A		CR106G002	GERS	4.5	4.5	4.5	4,5	Contactor/Motor Starte	Floor		7.0	22.6	NO	NO
6548	0-CHGA-248-0002A		CR106G002	GERS	4.5	4.5	4.5	4,5	Contactor/Motor Starte	Floor		7.0	22.6	NO	NO
2050	0-CHGA-248-0003	GE	12HMA11B22	GERS	10	5	10	10		Ground		7.0	7.9	NO	YES
2051	0-CHGA-248-0003	GE	12HMA11B22	GERS	10	5	10	10		Ground		7.0	7.9	NO	YES
2052	0-CHGA-248-0003	GE	12HMA11B22	GERS	10	5	10	10		Ground		7.0	7.9	NO	YES
2054	0-CHGA-248-0003	GE	12HMA11B22	GERS	10	5	10	10		Ground		7.0	7.9	NO	YES
5179	0-LPNL-925-0045A	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5180	0-LPNL-925-0045A	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5182	0-LPNL-925-0045A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5183	0-LPNL-925-0045A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5186	0-LPNL-925-0045A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES

Item No.	CABINET	Relay Capacity: Make	Relay Type	GERS Level: Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF. FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
5189	0-LPNL-925-0045A	Agastat	ETR14D	ADD2	9	3.8	10	10		Floor	20	1.0	3.2	YES	YES
5190	0-LPNL-925-0045A	Agastat	ETR14D	ADD2	9	3.8	10	10		Floor	20	1.0	3.2	YES	YES
5191	0-LPNL-925-0045A	Agastat	ETR14D	ADD2	9	3.8	10	10		Floor	20	1.0	3.2	YES	YES
5194	0-LPNL-925-0045A	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5195	0-LPNL-925-0045A	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5196	0-LPNL-925-0045A	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5197	0-LPNL-925-0045A	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5198	0-LPNL-925-0045A	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5199	0-LPNL-925-0045A	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5200	0-LPNL-925-0045A	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5201	0-LPNL-925-0045A	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5209	0-LPNL-925-0045B	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5210	0-LPNL-925-0045B	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5212	0-LPNL-925-0045B	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5213	0-LPNL-925-0045B	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5216	0-LPNL-925-0045B	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5219	0-LPNL-925-0045B	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5220	0-LPNL-925-0045B	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5221	0-LPNL-925-0045B	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5222	0-LPNL-925-0045B	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5224	0-LPNL-925-0045B	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5225	0-LPNL-925-0045B	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5232	0-LPNL-925-0045B	Agastat	ETR14D3CN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
5233	0-LPNL-925-0045B	Agastat	ETR14D3DN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
5241	0-LPNL-925-0045C	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5242	0-LPNL-925-0045C	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5248	0-LPNL-925-0045C	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5249	0-LPNL-925-0045C	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5252	0-LPNL-925-0045C	GE	HFA51A41B	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5255	0-LPNL-925-0045C	Agastat	ETR14D3BN003	ADD2	9	3.8	10	10		Floor	20	1.0	3.2	YES	YES
5256	0-LPNL-925-0045C	Agastat	ETR14D3CN003	ADD2	9	3.8	10	10		Floor	20	1.0	3.2	YES	YES
5257	0-LPNL-925-0045C	Agastat	ETR14D3DN003	ADD2	9	3.8	10	10		Floor	20	1.0	3.2	YES	YES
5258	0-LPNL-925-0045C	Agastat	2414SG	GERS	10	10	10	10	Note 1	Floor	20	1.0	3.2	YES	YES
5260	0-LPNL-925-0045C	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5261	0-LPNL-925-0045C	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5262	0-LPNL-925-0045C	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5263	0-LPNL-925-0045C	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5264	0-LPNL-925-0045C	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5265	0-LPNL-925-0045C	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5266	0-LPNL-925-0045C	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	1.0	3.2	NO	YES
5278	0-LPNL-925-0045D	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5279	0-LPNL-925-0045D	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5285	0-LPNL-925-0045D	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5286	0-LPNL-925-0045D	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5289	0-LPNL-925-0045D	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5292	0-LPNL-925-0045D	Agastat	ETR14D3CN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
5293	0-LPNL-925-0045D	Agastat	ETR14D3DN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
5296	0-LPNL-925-0045D	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5297	0-LPNL-925-0045D	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES

Item No.	CABINET	Make	Relay Type	Relay Capacity: Capacity Basis	GERS Level Non-Operate NO	GERS Level Non-Operate NC	GERS Level Operate NO	GERS Level Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.) Minimum Capacity	Maximum Capacity
5298	0-LPNL-925-0045D	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5299	0-LPNL-925-0045D	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5301	0-LPNL-925-0045D	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5302	0-LPNL-925-0045D	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5309	0-LPNL-925-0046A	Agastat	7012PB0018032	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
5310	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5311	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5312	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5313	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5314	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5315	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5316	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5317	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5318	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5319	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5320	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5321	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5323	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5324	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5325	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5327	0-LPNL-925-0046A	GE	HFA54B187F	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5328	0-LPNL-925-0046A	GE	HFA54B187F	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5329	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5330	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5332	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5333	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5334	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5335	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5336	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5337	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
5338	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5339	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5340	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5341	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5342	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5343	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5344	0-LPNL-925-0046A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5345	0-LPNL-925-0046A	Agastat	7012PC 2762155	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
5346	0-LPNL-925-0046A	Agastat	E7022PA0012032098	GERS	6	6	10	10	Notes 1 & 2	Ground	20	1.0	1.1	YES	YES
5347	0-LPNL-925-0046A	Agastat	E7012PA0018032097	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
6578	0-LPNL-925-0046A		HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
5348	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5349	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5350	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5351	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5352	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5353	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5354	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5355	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES

		Relay Capacity									Amplified Demand			Capacity > Demand (4 to 16 Hz.)	
				GERS Level								PANEL	In-cabinet		
Item			Relay	Capacity	Non-Operate		Operate			Demand	Equip.	AMPLIF	Demand	Minimum	Maximum
No.	CABINET	Make	Type	Basis	NO	NC	NO	NC	Caveats	Basis	Class	FACTOR	PEAK	Capacity	Capacity
5356	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5357	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5358	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5360	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5361	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5362	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5364	0-LPNL-925-0046B	GE	HFA54B187F	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5365	0-LPNL-925-0046B	GE	HFA54B187F	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5366	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5367	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5369	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5370	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5371	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5372	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5373	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5374	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
5375	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5376	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5377	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5378	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5379	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5380	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5381	0-LPNL-925-0046B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5384	0-LPNL-925-0046B	Agastat	7012PB001 80320969	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
5385	0-LPNL-925-0046B	Agastat	7012PA001 8032098	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
5386	0-LPNL-925-0046B	Agastat	7012PB001 8032097	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
5387	0-LPNL-925-0046B	Agastat	7012PC 2942407	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
6579	0-LPNL-925-0046B		HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
5388	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5389	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5390	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5391	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5392	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5393	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5394	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5395	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5396	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5397	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5398	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5399	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5401	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5402	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5403	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5405	0-LPNL-925-0046C	GE	HFA51A187F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5406	0-LPNL-925-0046C	GE	HFA51A187F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5407	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5408	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5410	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5411	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES

Item No.	CABINET	Relay Capacity								Demand Basis	Amplified Demand			Capacity > Demand (4 to 16 Hz.)	
		Make	Relay Type	GERS Level							Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Minimum Capacity	Maximum Capacity
				Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats						
5412	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5413	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5414	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5415	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
5416	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5417	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5418	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5419	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5420	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5421	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5422	0-LPNL-925-0046C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5425	0-LPNL-925-0046C	Agastat	7012PB001 8032096	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
5426	0-LPNL-925-0046C	Agastat	7022PA001 8032098	GERS	6	6	10	10	Notes 1 & 2	Ground	20	1.0	1.1	YES	YES
5427	0-LPNL-925-0046C	Agastat	7012PB001 8032097	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
5428	0-LPNL-925-0046C	Agastat	7012PC 78433541	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
6580	0-LPNL-925-0046C		HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
5429	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5430	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5431	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5432	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5433	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5434	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5435	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5436	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5437	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5438	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5439	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5441	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5442	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5443	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5445	0-LPNL-925-0046D	GE	HFA54B187F	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5446	0-LPNL-925-0046D	GE	HFA54B187F	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5447	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5448	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5450	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5451	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5452	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5453	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5454	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5455	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
5456	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5457	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5458	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5459	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5460	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5461	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5462	0-LPNL-925-0046D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5465	0-LPNL-925-0046D	Agastat	7012PB002 8349008	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
5466	0-LPNL-925-0046D	Agastat	7022PA001 8032098	GERS	6	6	10	10	Notes 1 & 2	Ground	20	1.0	1.1	YES	YES

Item No.	CABINET	Relay Capacity: Make	Relay Capacity: Relay Type	GERS Level: Capacity Basis	Non-Operate: NO	Non-Operate: NC	Operate: NO	Operate: NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	Amplified Demand: PANEL AMPLIF FACTOR	Amplified Demand: In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Capacity > Demand (4 to 16 Hz.): Maximum Capacity
5467	0-LPNL-925-0046D	Agastat	7012PB001 8032097	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
5468	0-LPNL-925-0046D	Agastat	7012PC 46413491	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
6581	0-LPNL-925-0046D		HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
5469	0-LPNL-925-0047A	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5470	0-LPNL-925-0047A	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5471	0-LPNL-925-0047A	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5472	0-LPNL-925-0047A	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5473	0-LPNL-925-0047A	GE	IJCV51B32A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5474	0-LPNL-925-0047A	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5475	0-LPNL-925-0047A	GE	IAV51K1A	SQURTS	3.4	3.4	3.4	3.4		Ground	20	1.0	1.1	YES	YES
5476	0-LPNL-925-0047A	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5478	0-LPNL-925-0047A	GE	HEA61C238	SQURTS	14	14	14	14		Ground	20	1.0	1.1	YES	YES
5481	0-LPNL-925-0047A	GE	GGP53B1A	GERS	5	N/A	15	N/A	Note 7	Ground	20	1.0	1.1	YES	YES
5483	0-LPNL-925-0047A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5484	0-LPNL-925-0047A	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5490	0-LPNL-925-0047B	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5491	0-LPNL-925-0047B	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5492	0-LPNL-925-0047B	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5493	0-LPNL-925-0047B	GE	IJCV51823A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5494	0-LPNL-925-0047B	GE	IJCV51823A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5495	0-LPNL-925-0047B	GE	IJCV51823A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5496	0-LPNL-925-0047B	GE	IAV51KVA	SQURTS	3.4	3.4	3.4	3.4		Ground	20	1.0	1.1	YES	YES
5497	0-LPNL-925-0047B	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5499	0-LPNL-925-0047B		HEA61C238	SQURTS	14	14	14	14		Ground	20	1.0	1.1	YES	YES
5502	0-LPNL-925-0047B	GE	GGP53B1A	GERS	5	N/A	15	N/A	Note 7	Ground	20	1.0	1.1	YES	YES
5504	0-LPNL-925-0047B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5505	0-LPNL-925-0047B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5511	0-LPNL-925-0047C	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5512	0-LPNL-925-0047C	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5513	0-LPNL-925-0047C	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5514	0-LPNL-925-0047C	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5515	0-LPNL-925-0047C	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5516	0-LPNL-925-0047C	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5517	0-LPNL-925-0047C	GE	IAV51K1A	SQURTS	3.4	3.4	3.4	3.4		Ground	20	1.0	1.1	YES	YES
5518	0-LPNL-925-0047C	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5520	0-LPNL-925-0047C		HEA61C238	SQURTS	14	14	14	14		Ground	20	1.0	1.1	YES	YES
5523	0-LPNL-925-0047C	GE	GGP53B1A	GERS	5	N/A	15	N/A	Note 7	Ground	20	1.0	1.1	YES	YES
5525	0-LPNL-925-0047C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5526	0-LPNL-925-0047C	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5532	0-LPNL-925-0047D	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5533	0-LPNL-925-0047D	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5534	0-LPNL-925-0047D	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5535	0-LPNL-925-0047D	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5536	0-LPNL-925-0047D	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5537	0-LPNL-925-0047D	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5538	0-LPNL-925-0047D	GE	IAV51K1A	SQURTS	3.4	3.4	3.4	3.4		Ground	20	1.0	1.1	YES	YES
5539	0-LPNL-925-0047D	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5541	0-LPNL-925-0047D		HEA61C238	SQURTS	14	14	14	14		Ground	20	1.0	1.1	YES	YES
5544	0-LPNL-925-0047D	GE	GGP53B1A	GERS	5	N/A	15	N/A	Note 7	Ground	20	1.0	1.1	YES	YES

Item No.	CABINET	Relay Capacity								Demand Basis	Amplified Demand			Capacity > Demand (4 to 16 Hz.)	
		Make	Relay Type	Capacity Basis	GERS Level Non-Operate NO	GERS Level Non-Operate NC	GERS Level Operate NO	GERS Level Operate NC	Caveats		Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Minimum Capacity	Maximum Capacity
5546	0-LPNL-925-0047D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5547	0-LPNL-925-0047D	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
2668	0-PNLA-009-0023/7	GE	HEA61C218X2	SQURTS	14	14	14	14		Ground		7.0	7.9	YES	YES
2669	0-PNLA-009-0023/7	GE	HEA61C218X2	SQURTS	14	14	14	14		Ground		7.0	7.9	YES	YES
2670	0-PNLA-009-0023/7	GE	HEA61C218X2	SQURTS	14	14	14	14		Ground		7.0	7.9	YES	YES
2671	0-PNLA-009-0023/8	GE	HEA61C218X2	SQURTS	14	14	14	14		Ground		7.0	7.9	YES	YES
2672	0-PNLA-009-0023/8	GE	HEA61C218X2	SQURTS	14	14	14	14		Ground		7.0	7.9	YES	YES
5691	0-PNLA-082-0000A	_	S2826 CLASS 7001	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5693	0-PNLA-082-0000A	GE	CR105K000BLA	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5694	0-PNLA-082-0000A	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
5695	0-PNLA-082-0000A	GM	EMD8253246	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
5696	0-PNLA-082-0000A	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5697	0-PNLA-082-0000A	GM	EMD8253246	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5698	0-PNLA-082-0000A	GM	EMD8253246	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5699	0-PNLA-082-0000A	_	EQ2423	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5700	0-PNLA-082-0000A	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5701	0-PNLA-082-0000A	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5702	0-PNLA-082-0000A	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5704	0-PNLA-082-0000A	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5706	0-PNLA-082-0000A	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5707	0-PNLA-082-0000A	_	EQ1933	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5708	0-PNLA-082-0000A	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5709	0-PNLA-082-0000A	GM	EMD8253246	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5710	0-PNLA-082-0000A	_	EQ1933 EMD8253246	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5711	0-PNLA-082-0000A	_	EQ2423-G1	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5712	0-PNLA-082-0000A	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5713	0-PNLA-082-0000A	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5714	0-PNLA-082-0000A	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5716	0-PNLA-082-0000A	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5718	0-PNLA-082-0000A	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5719	0-PNLA-082-0000A	_	EQ1966	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5720	0-PNLA-082-0000A	_	EQ1333	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5721	0-PNLA-082-0000A	GM	12-88336 8299025	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5722	0-PNLA-082-0000A	Sq D	CLASS 7001	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5723	0-PNLA-082-0000A	Agastat	2422PGE 0613075	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5724	0-PNLA-082-0000A	_	8370794	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5725	0-PNLA-082-0000A	Agastat	7012PH 81131167	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5726	0-PNLA-082-0000A	Sq D	FSD-022-S5 CLASS 8	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5727	0-PNLA-082-0000A	GE	CR105K000BLA	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5728	0-PNLA-082-0000A	_	AV1600876H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5729	0-PNLA-082-0000A	Westinghouse	292B402A1	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6557	0-PNLA-082-0000A		GM 12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
6568	0-PNLA-082-0000A		SYNCHRO-STRAT ES	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
5730	0-PNLA-082-0000B	Sq D	PO-6	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5732	0-PNLA-082-0000B	GE	CR105K	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5733	0-PNLA-082-0000B	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5734	0-PNLA-082-0000B		711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
5735	0-PNLA-082-0000B	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5736	0-PNLA-082-0000B	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES

Item No.	CABINET	Relay Capacity Make	Relay Type	Capacity Basis	GERS Level Non-Operate NO	NC	Operate NO	NC	Caveats	Demand Basis	Amplified Demand Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.) Minimum Capacity	Maximum Capacity
5737	0-PNLA-082-0000B	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5738	0-PNLA-082-0000B	_	EQ2423	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5739	0-PNLA-082-0000B	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5740	0-PNLA-082-0000B	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5741	0-PNLA-082-0000B	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5743	0-PNLA-082-0000B	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5745	0-PNLA-082-0000B	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5746	0-PNLA-082-0000B	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5747	0-PNLA-082-0000B	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5748	0-PNLA-082-0000B	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5749	0-PNLA-082-0000B	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5750	0-PNLA-082-0000B	_	EQ2423	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5751	0-PNLA-082-0000B	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5752	0-PNLA-082-0000B	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5753	0-PNLA-082-0000B	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5755	0-PNLA-082-0000B	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5757	0-PNLA-082-0000B	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5758	0-PNLA-082-0000B	_	EQ1965	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5759	0-PNLA-082-0000B	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5760	0-PNLA-082-0000B	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5761	0-PNLA-082-0000B	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5762	0-PNLA-082-0000B	Agastat	2422PGE	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5764	0-PNLA-082-0000B	_	36530082	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5765	0-PNLA-082-0000B	Agastat	2412PGE	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5766	0-PNLA-082-0000B	Sq D	FSD022	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5767	0-PNLA-082-0000B	GE	CR105K	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6554	0-PNLA-082-0000B		SV	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
6565	0-PNLA-082-0000B		AV-1600876H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
6569	0-PNLA-082-0000B		SYNCHRO-STRAT ES	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
5768	0-PNLA-082-0000C	Sq D	PO652	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5770	0-PNLA-082-0000C	GE	CR105K	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5771	0-PNLA-082-0000C	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5772	0-PNLA-082-0000C		711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
5773	0-PNLA-082-0000C	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5774	0-PNLA-082-0000C	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5775	0-PNLA-082-0000C	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5776	0-PNLA-082-0000C	_	EQ2423	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5777	0-PNLA-082-0000C	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5778	0-PNLA-082-0000C	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5779	0-PNLA-082-0000C	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5781	0-PNLA-082-0000C	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5783	0-PNLA-082-0000C	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5784	0-PNLA-082-0000C	_	620643	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5785	0-PNLA-082-0000C	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5786	0-PNLA-082-0000C	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5787	0-PNLA-082-0000C	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5788	0-PNLA-082-0000C	_	EQ2423	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5789	0-PNLA-082-0000C	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5790	0-PNLA-082-0000C	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES

Item No.	CABINET	Make	Relay Type	Relay Capacity: Capacity Basis	GERS Level: Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
5791	0-PNLA-082-0000C	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5793	0-PNLA-082-0000C	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5795	0-PNLA-082-0000C	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5796	0-PNLA-082-0000C	_	EQ1965	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5797	0-PNLA-082-0000C	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5798	0-PNLA-082-0000C	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5799	0-PNLA-082-0000C	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5800	0-PNLA-082-0000C	Agastat	7022PHC	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5801	0-PNLA-082-0000C	_	36530082	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5802	0-PNLA-082-0000C	Agastat	7012PH	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5803	0-PNLA-082-0000C	Sq D	FSD022	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5804	0-PNLA-082-0000C	GE	CR105K	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6558	0-PNLA-082-0000C		SV	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
6566	0-PNLA-082-0000C		AV-1600876H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
6570	0-PNLA-082-0000C		SYNCHRO-STRAT ES	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
5805	0-PNLA-082-0000D	Sq D	PO652	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5807	0-PNLA-082-0000D	GE	CR105K	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5808	0-PNLA-082-0000D	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5809	0-PNLA-082-0000D	_	EQ1933	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5810	0-PNLA-082-0000D	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5811	0-PNLA-082-0000D	_	EQ1935	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5812	0-PNLA-082-0000D	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5813	0-PNLA-082-0000D	_	2423-G1	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5814	0-PNLA-082-0000D	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5815	0-PNLA-082-0000D	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5816	0-PNLA-082-0000D	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5818	0-PNLA-082-0000D	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5820	0-PNLA-082-0000D	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5821	0-PNLA-082-0000D	_	EQ1933	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5822	0-PNLA-082-0000D	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5823	0-PNLA-082-0000D	_	EQ1933	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5824	0-PNLA-082-0000D	_	EQ1935	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5825	0-PNLA-082-0000D	_	EQ2423	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5826	0-PNLA-082-0000D	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5827	0-PNLA-082-0000D	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5828	0-PNLA-082-0000D	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5830	0-PNLA-082-0000D	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5832	0-PNLA-082-0000D	_	711789	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5833	0-PNLA-082-0000D	_	EQ1965	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5834	0-PNLA-082-0000D	_	EQ1933	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5835	0-PNLA-082-0000D	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5836	0-PNLA-082-0000D	Sq D	PO652	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5837	0-PNLA-082-0000D	Agastat	2422PGE	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5838	0-PNLA-082-0000D	_	36530082	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5839	0-PNLA-082-0000D	Agastat	2412PGE	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5840	0-PNLA-082-0000D	_	ESDO22	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5841	0-PNLA-082-0000D	GE	CR105K	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6559	0-PNLA-082-0000D		SV	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
6567	0-PNLA-082-0000D		AV-1600876H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES

Item No.	CABINET	Make	Relay Type	Relay Capacity: Capacity Basis	GERS Level: Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
6571	0-PNLA-082-0000D		SYNCHRO-STRAT ES	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
1445	1-BDBB-231-0001A/1A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
6425	1-BDBB-231-0001A/1A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6426	1-BDBB-231-0001A/1A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6427	1-BDBB-231-0001A/1A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6428	1-BDBB-231-0001A/1A		HEA61A213	SQURTS	14	14	14	14		Floor		7.0	22.6	NO	NO
1446	1-BDBB-231-0001A/1B	Agastat	7022-79301202	GERS	6	6	10	10	Notes 1 & 2	Floor	2	2.6	8.4	NO	YES
1453	1-BDBB-231-0001A/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1454	1-BDBB-231-0001A/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
6429	1-BDBB-231-0001A/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6430	1-BDBB-231-0001A/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6431	1-BDBB-231-0001A/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
1459	1-BDBB-231-0001B/1A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
6437	1-BDBB-231-0001B/1A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6438	1-BDBB-231-0001B/1A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6442	1-BDBB-231-0001B/1A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
1465	1-BDBB-231-0001B/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1466	1-BDBB-231-0001B/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1470	1-BDBB-231-0001B/8A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1473	1-BDBB-231-0001B/8A	GE	HEA61A213	SQURTS	14	14	14	14		Floor	2	2.6	8.4	YES	YES
6439	1-BDBB-231-0001B/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6440	1-BDBB-231-0001B/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6441	1-BDBB-231-0001B/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
1458	1-BDBB-231-001A	GE	HEA61A213	SQURTS	14	14	14	14		Floor		7.0	22.6	NO	NO
6146	1-BDBB-268-0001A/4D	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6147	1-BDBB-268-0001A/4D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6145	1-BDBB-268-0001A/5D	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6148	1-BDBB-268-0001A/5D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6152	1-BDBB-268-0001B/14C2	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6153	1-BDBB-268-0001B/14C2	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6150	1-BDBB-268-0001B/15C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6154	1-BDBB-268-0001B/15C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
1636	1-BDBB-268-0001B/16A	GE	IAV53L2A	GERS	6	15	15	0		Ground	1	3.0	3.4	NO	YES
6149	1-BDBB-268-0001B/17C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6155	1-BDBB-268-0001B/17C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6151	1-BDBB-268-0001B/19A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6156	1-BDBB-268-0001B/19A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6483	1-BDBB-268-0001B/19E		CR109CO	GERS	4.5	4.5	4.5	4.5	Contactor/Motor Starte	Ground		7.0	7.9	NO	NO
6484	1-BDBB-268-0001B/19E		CR109CO	GERS	4.5	4.5	4.5	4.5	Contactor/Motor Starte	Ground		7.0	7.9	NO	NO
6485	1-BDBB-268-0001B/19E		CR124	OLR	N/A	N/A	N/A	N/A		Ground		7.0	7.9	YES	YES
6540	1-LPNL-925-0044A-11		HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
6541	1-LPNL-925-0044A-11		HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
6501	1-PNLA-009-0032		HGA11A51F	GERS	10	0	10	10	Note 3	Ground		7.0	7.9	NO	YES
6502	1-PNLA-009-0032		HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
1482	2-BDBB-231-0002A	Agastat	7022SE-79301208	GERS	6	6	10	10	Notes 1 & 2	Floor		7.0	22.6	NO	NO
1483	2-BDBB-231-0002A	Agastat	7022SE-79301207	GERS	6	6	10	10	Notes 1 & 2	Floor		7.0	22.6	NO	NO
1474	2-BDBB-231-0002A/1A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1475	2-BDBB-231-0002A/1A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1476	2-BDBB-231-0002A/1A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES

Item No.	CABINET	Relay Capacity Make	Relay Type	GERS Level Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.) Minimum Capacity	Maximum Capacity
1477	2-BDBB-231-0002A/1A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1480	2-BDBB-231-0002A/1A	GE	HEA61A213	SQURTS	14	14	14	14		Floor	2	2.6	8.4	YES	YES
1492	2-BDBB-231-0002A/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1493	2-BDBB-231-0002A/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1498	2-BDBB-231-0002A/8A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1503	2-BDBB-231-0002A/8A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1504	2-BDBB-231-0002A/8A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1505	2-BDBB-231-0002A/8A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1508	2-BDBB-231-0002A/8A	GE	HEA61A213	SQURTS	14	14	14	14		Floor	2	2.6	8.4	YES	YES
1518	2-BDBB-231-0002B/1A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1519	2-BDBB-231-0002B/1A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1520	2-BDBB-231-0002B/1A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1523	2-BDBB-231-0002B/1A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1524	2-BDBB-231-0002B/1A	GE	HEA61A213	SQURTS	14	14	14	14		Floor	2	2.6	8.4	YES	YES
1528	2-BDBB-231-0002B/1B	Agastat	7022-79301205	GERS	6	6	10	10	Notes 1 & 2	Floor	2	2.6	8.4	NO	YES
1529	2-BDBB-231-0002B/1B	Agastat	7022-79301201	GERS	6	6	10	10	Notes 1 & 2	Floor	2	2.6	8.4	NO	YES
1535	2-BDBB-231-0002B/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1539	2-BDBB-231-0002B/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1540	2-BDBB-231-0002B/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1547	2-BDBB-231-0002B/8A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1548	2-BDBB-231-0002B/8A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1549	2-BDBB-231-0002B/8A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1552	2-BDBB-231-0002B/8A	GE	HEA61A213	SQURTS	14	14	14	14		Floor	2	2.6	8.4	YES	YES
6531	2-BDBB-231-0002B/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6532	2-BDBB-231-0002B/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6533	2-BDBB-231-0002B/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6534	2-BDBB-231-0002B/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6173	2-BDBB-268-0002A/11B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6195	2-BDBB-268-0002A/11B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6179	2-BDBB-268-0002A/11C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6191	2-BDBB-268-0002A/11C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6180	2-BDBB-268-0002A/11E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6196	2-BDBB-268-0002A/11E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6178	2-BDBB-268-0002A/12B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6194	2-BDBB-268-0002A/12B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6181	2-BDBB-268-0002A/12E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6193	2-BDBB-268-0002A/12E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6170	2-BDBB-268-0002A/13B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6201	2-BDBB-268-0002A/13B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6163	2-BDBB-268-0002A/13C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6200	2-BDBB-268-0002A/13C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6157	2-BDBB-268-0002A/14A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6160	2-BDBB-268-0002A/14A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6166	2-BDBB-268-0002A/14B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6202	2-BDBB-268-0002A/14B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6167	2-BDBB-268-0002A/14E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6203	2-BDBB-268-0002A/14E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
1661	2-BDBB-268-0002A/15A	GE	IAV53L2A	GERS	6	15	15	0		Floor	1	3.0	9.7	NO	YES
1662	2-BDBB-268-0002A/15A	GE	HFA151A8H	GERS	7.5	3	15	15	Notes 3 & 9	Floor	1	3.0	9.7	NO	YES

Item No.	CABINET	Make	Relay Type	Relay Capacity: GERS Level: Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
6169	2-BDBB-268-0002A/16A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6198	2-BDBB-268-0002A/16A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6168	2-BDBB-268-0002A/16E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6204	2-BDBB-268-0002A/16E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6164	2-BDBB-268-0002A/17C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6197	2-BDBB-268-0002A/17C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6174	2-BDBB-268-0002A/17E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6199	2-BDBB-268-0002A/17E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6171	2-BDBB-268-0002A/18C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6185	2-BDBB-268-0002A/18C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6161	2-BDBB-268-0002A/18E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6189	2-BDBB-268-0002A/18E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6165	2-BDBB-268-0002A/19C5	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6188	2-BDBB-268-0002A/19C5	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
1647	2-BDBB-268-0002A/2B	GE	CR2810A14T	GERS	6	4	10	10		Floor	1	3.0	9.7	NO	YES
1648	2-BDBB-268-0002A/2B	GE	CR2810A14T	GERS	6	4	10	10		Floor	1	3.0	9.7	NO	YES
6183	2-BDBB-268-0002A/2B	GE	CR109EO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6190	2-BDBB-268-0002A/2B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6158	2-BDBB-268-0002A/4A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6172	2-BDBB-268-0002A/4A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6162	2-BDBB-268-0002A/4C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6187	2-BDBB-268-0002A/4C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6177	2-BDBB-268-0002A/5C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6184	2-BDBB-268-0002A/5C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6159	2-BDBB-268-0002A/6A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6182	2-BDBB-268-0002A/6A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6176	2-BDBB-268-0002A/6C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6186	2-BDBB-268-0002A/6C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6175	2-BDBB-268-0002A/7C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6192	2-BDBB-268-0002A/7C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6228	2-BDBB-268-0002B/10E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6252	2-BDBB-268-0002B/10E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6224	2-BDBB-268-0002B/11E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6254	2-BDBB-268-0002B/11E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6206	2-BDBB-268-0002B/12B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6231	2-BDBB-268-0002B/12B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6233	2-BDBB-268-0002B/13C2	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6255	2-BDBB-268-0002B/13C2	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6226	2-BDBB-268-0002B/13E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6256	2-BDBB-268-0002B/13E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6223	2-BDBB-268-0002B/14D	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6253	2-BDBB-268-0002B/14D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6221	2-BDBB-268-0002B/14E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6251	2-BDBB-268-0002B/14E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6210	2-BDBB-268-0002B/15D	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6250	2-BDBB-268-0002B/15D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6208	2-BDBB-268-0002B/15E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6259	2-BDBB-268-0002B/15E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
1677	2-BDBB-268-0002B/16A	GE	IAV53L2A	GERS	6	15	15	0		Ground	1	3.0	3.4	NO	YES

Item No.	CABINET	Make	Relay Type	Relay Capacity: GERS Level: Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
1678	2-BDBB-268-0002B/16A	GE	HFA151A8H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	1	3.0	3.4	NO	YES
6209	2-BDBB-268-0002B/17D	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6263	2-BDBB-268-0002B/17D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6417	2-BDBB-268-0002B/18		CR109CO	GERS	4.5	4.5	4.5	4.5	Contactor/Motor Starte	Ground		7.0	7.9	NO	NO
6418	2-BDBB-268-0002B/18D		CR124	OLR	N/A	N/A	N/A	N/A		Ground		7.0	7.9	YES	YES
6214	2-BDBB-268-0002B/19A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6262	2-BDBB-268-0002B/19A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6213	2-BDBB-268-0002B/19C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6265	2-BDBB-268-0002B/19C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6217	2-BDBB-268-0002B/1C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6264	2-BDBB-268-0002B/1C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6218	2-BDBB-268-0002B/1E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6266	2-BDBB-268-0002B/1E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
1670	2-BDBB-268-0002B/3A	GE	CR2810A14AT	GERS	6	4	10	10		Ground	1	3.0	3.4	YES	YES
1671	2-BDBB-268-0002B/3A	GE	CR2810A14AT	GERS	6	4	10	10		Ground	1	3.0	3.4	YES	YES
6235	2-BDBB-268-0002B/3A	GE	CR109EO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6257	2-BDBB-268-0002B/3A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6220	2-BDBB-268-0002B/3E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6258	2-BDBB-268-0002B/3E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6222	2-BDBB-268-0002B/4D	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6248	2-BDBB-268-0002B/4D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6219	2-BDBB-268-0002B/4E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6239	2-BDBB-268-0002B/4E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6216	2-BDBB-268-0002B/5E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6246	2-BDBB-268-0002B/5E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6211	2-BDBB-268-0002B/6A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6247	2-BDBB-268-0002B/6A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6212	2-BDBB-268-0002B/6C2	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6242	2-BDBB-268-0002B/6C2	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6234	2-BDBB-268-0002B/6E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6240	2-BDBB-268-0002B/6E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6207	2-BDBB-268-0002B/7B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6227	2-BDBB-268-0002B/7B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6229	2-BDBB-268-0002B/7C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6244	2-BDBB-268-0002B/7C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6225	2-BDBB-268-0002B/7E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6241	2-BDBB-268-0002B/7E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6205	2-BDBB-268-0002B/8B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6232	2-BDBB-268-0002B/8B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6230	2-BDBB-268-0002B/8E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6249	2-BDBB-268-0002B/8E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
1688	2-BDBB-268-0002D/2C	GE	CR2810A14AC	GERS	6	4	10	10		Ground	1	3.0	3.4	YES	YES
1689	2-BDBB-268-0002D/2C	GE	CR2810A14AC	GERS	6	4	10	10		Ground	1	3.0	3.4	YES	YES
6237	2-BDBB-268-0002D/2C	GE	CR209EO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6261	2-BDBB-268-0002D/2C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
1693	2-BDBB-268-0002D/4A	GE	IAV53L2A	GERS	6	15	15	0		Ground	1	3.0	3.4	NO	YES
1694	2-BDBB-268-0002D/4A	Agastat	7022BD003-R9043233	GERS	6	6	10	10	Notes 1 & 2	Ground	1	3.0	3.4	YES	YES
1695	2-BDBB-268-0002D/4A	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	1	3.0	3.4	NO	YES
1696	2-BDBB-268-0002D/5E	Agastat	7012AC90151467	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	1	3.0	3.4	YES	YES

Item No.	CABINET	Relay Capacity: Make	Relay Capacity: Relay Type	Relay Capacity: Capacity Basis	GERS Level: Non-Operate NO	GERS Level: Non-Operate NC	GERS Level: Operate NO	GERS Level: Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	Amplified Demand: PANEL AMPLIF FACTOR	Amplified Demand: In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Capacity > Demand (4 to 16 Hz.): Maximum Capacity
6215	2-BDBB-268-0002D/5E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6245	2-BDBB-268-0002D/5E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
1700	2-BDBB-268-0002E/2C	GE	CR2810	GERS	6	4	10	10		Floor	1	3.0	9.7	NO	YES
1701	2-BDBB-268-0002E/2C	GE	CR2810	GERS	6	4	10	10		Floor	1	3.0	9.7	NO	YES
6238	2-BDBB-268-0002E/2C	GE	CR209EO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6260	2-BDBB-268-0002E/2C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
1704	2-BDBB-268-0002E/4E	Agastat	7012AC-81120647	GERS	12.5	12.5	12.5	12.5	Note 1	Floor	1	3.0	9.7	YES	YES
6236	2-BDBB-268-0002E/4E	GE	CR209CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6243	2-BDBB-268-0002E/4E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
1707	2-BDBB-268-0002E/5A	Agastat	7022CC-84495308	GERS	6	6	10	10	Notes 1 & 2	Floor	1	3.0	9.7	NO	YES
1708	2-BDBB-268-0002E/5A	GE	HFA151A8H	GERS	7.5	3	15	15	Notes 3 & 9	Floor	1	3.0	9.7	NO	YES
1915	2-BDBB-281-0002A	Agastat	7022SC	GERS	6	6	10	10	Notes 1 & 2	Floor		7.0	22.6	NO	NO
1933	2-BDBB-281-0002A/11D2	GE	IC2820A200	GERS	4.5	4.5	4.5	4.5	Contactor/Motor Starte	Floor	1	3.0	9.7	NO	NO
6267	2-BDBB-281-0002A/11D2	GE	IC2800-1607	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6268	2-BDBB-281-0002A/11D2	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6419	2-BDBB-281-0002A/9D		CR124	OLR	N/A	N/A	N/A	N/A		Floor		7.0	22.6	YES	YES
6420	2-BDBB-281-0002A/9D		IC2800	GERS	4.5	4.5	4.5	4.5	Contactor/Motor Starte	Floor		7.0	22.6	NO	NO
1940	2-BDBB-281-0002B/3D	GE	IC2820A100	GERS	4.5	4.5	4.5	4.5	Contactor/Motor Starte	Ground	1	3.0	3.4	YES	YES
1941	2-BDBB-281-0002B/3D	GE	IC2820A100	GERS	4.5	4.5	4.5	4.5	Contactor/Motor Starte	Ground	1	3.0	3.4	YES	YES
6269	2-BDBB-281-0002B/3D	GE	IC2800-1607	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6271	2-BDBB-281-0002B/3D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6270	2-BDBB-281-0002B/5B	GE	IC2800-1607	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6272	2-BDBB-281-0002B/5B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6273	2-BDBB-281-0002C/7D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	3.2	YES	YES
6274	2-BDBB-281-0002C/7D	GE	IC2800-1607	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	3.2	YES	YES
6026	2-ECAB-099-0002A1	_	VOA-0234 12ITO175	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6027	2-ECAB-099-0002A1	_	VOA-0234 BOTO120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6028	2-ECAB-099-0002A1	_	SP-0133	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6029	2-ECAB-099-0002A1	Agastat	7022AC 89403017	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6030	2-ECAB-099-0002A1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6031	2-ECAB-099-0002A1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6032	2-ECAB-099-0002A1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6033	2-ECAB-099-0002A1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6042	2-ECAB-099-0002A2	_	VOA-IT01750235	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6043	2-ECAB-099-0002A2	_	VOA-0234 BOTO120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6044	2-ECAB-099-0002A2	_	SP-0133	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6045	2-ECAB-099-0002A2	Agastat	7022AC894005	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6046	2-ECAB-099-0002A2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6047	2-ECAB-099-0002A2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6048	2-ECAB-099-0002A2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6049	2-ECAB-099-0002A2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6058	2-ECAB-099-0002B1	_	VOA-0235 ITO17	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6059	2-ECAB-099-0002B1	_	VOA-0234 BOTO120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6060	2-ECAB-099-0002B1	_	SP-0133	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6061	2-ECAB-099-0002B1	Agastat	7022AC 89403030	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6062	2-ECAB-099-0002B1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6063	2-ECAB-099-0002B1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6064	2-ECAB-099-0002B1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6065	2-ECAB-099-0002B1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES

Item No.	CABINET	Make	Relay Type	Relay Capacity: Capacity Basis	GERS Level: Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
6074	2-ECAB-099-0002B2	_	VOA-0235 IYO175	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6075	2-ECAB-099-0002B2	_	VOA-0234 BOTO120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6076	2-ECAB-099-0002B2	_	SP 0133	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6077	2-ECAB-099-0002B2	Agastat	7022AC 89403024	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6078	2-ECAB-099-0002B2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6079	2-ECAB-099-0002B2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6080	2-ECAB-099-0002B2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6081	2-ECAB-099-0002B2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6090	2-ECAB-099-0002C1	_	VOA-0235 ITO175	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6091	2-ECAB-099-0002C1	_	VOA-0234 BOTO12	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6092	2-ECAB-099-0002C1	_	SP-0133	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6093	2-ECAB-099-0002C1	Agastat	7022AC 89403011	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6094	2-ECAB-099-0002C1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6095	2-ECAB-099-0002C1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6096	2-ECAB-099-0002C1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6097	2-ECAB-099-0002C1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6106	2-ECAB-099-0002C2	_	VOA-0235 ITO175	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6107	2-ECAB-099-0002C2	_	VOA-0234 BOYO120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6108	2-ECAB-099-0002C2	_	SP-0133	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6109	2-ECAB-099-0002C2	Agastat	7022AC 89403012	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6110	2-ECAB-099-0002C2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6111	2-ECAB-099-0002C2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6112	2-ECAB-099-0002C2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6113	2-ECAB-099-0002C2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5995	2-INV-256-0001	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
5996	2-INV-256-0001	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
5997	2-INV-256-0001	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
5998	2-INV-256-0001	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
5999	2-INV-256-0001	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6000	2-INV-256-0001	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6001	2-INV-256-0001	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6002	2-INV-256-0001	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6011	2-INV-256-0002	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6012	2-INV-256-0002	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6013	2-INV-256-0002	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6014	2-INV-256-0002	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6015	2-INV-256-0002	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6016	2-INV-256-0002	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6017	2-INV-256-0002	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6018	2-INV-256-0002	OMRON	MY4-UA-AC120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
4921	2-LPNL-925-0031	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	GENRS	5.0	NO	YES
4922	2-LPNL-925-0031	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	GENRS	5.0	NO	YES
4932	2-LPNL-925-0031	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Floor	20	GENRS	5.0	NO	YES
4998	2-LPNL-925-0032	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Floor	20	GENRS	5.0	NO	YES
5000	2-LPNL-925-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	GENRS	5.0	NO	YES
5002	2-LPNL-925-0032	P&B	MDR	GERS	10	9	10	10		Floor	20	GENRS	5.0	YES	YES
5003	2-LPNL-925-0032	P&B	MDR	GERS	10	9	10	10		Floor	20	GENRS	5.0	YES	YES
6497	2-LPNL-925-0032		HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Floor		7.0	22.6	NO	NO
6498	2-LPNL-925-0032		HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Floor		7.0	22.6	NO	NO

Item No.	CABINET	Make	Relay Type	Relay Capacity: GERS Level: Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
6499	2-LPNL-925-0032		HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Floor		7.0	22.6	NO	NO
5131	2-LPNL-925-0044A-11	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
5156	2-LPNL-925-0044B-11	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
2188	2-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2189	2-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2190	2-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2192	2-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2246	2-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2247	2-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2248	2-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2249	2-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2253	2-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2377	2-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2378	2-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2379	2-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2380	2-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2381	2-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2383	2-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2440	2-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2441	2-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2442	2-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2443	2-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2445	2-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
2447	2-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
3554	2-PNLA-009-0030	Agastat	7012SE	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	4.5	5.1	YES	YES
3555	2-PNLA-009-0030	Agastat	E7012SH C2003002	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	4.5	5.1	YES	YES
3556	2-PNLA-009-0030	Agastat	E7012SH C2003002	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	4.5	5.1	YES	YES
3557	2-PNLA-009-0030	Agastat	E7012SH C2003002	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	4.5	5.1	YES	YES
3558	2-PNLA-009-0030	Agastat	E7012SH C2003002	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	4.5	5.1	YES	YES
3559	2-PNLA-009-0030	Agastat	7012SE004	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	4.5	5.1	YES	YES
3560	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3561	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3562	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3563	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3564	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3565	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3566	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3567	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3568	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3569	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3570	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3571	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3572	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3573	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3574	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3575	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3576	2-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
3581	2-PNLA-009-0030	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	4.5	5.1	NO	YES
3589	2-PNLA-009-0030	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	4.5	5.1	NO	YES

Item No.	CABINET	Relay Capacity: Make	Relay Capacity: Relay Type	GERS Level: Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
3590	2-PNLA-009-0030	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	4.5	5.1	NO	YES
3591	2-PNLA-009-0030	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	4.5	5.1	NO	YES
3627	2-PNLA-009-0032	Agastat	ETR14D 9401	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3628	2-PNLA-009-0032	Agastat	7012SD 78413015	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3629	2-PNLA-009-0032	Agastat	7012SD 78413039	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3630	2-PNLA-009-0032	Agastat	ETR14D 94010779	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3633	2-PNLA-009-0032	Agastat	ETR14D 94010013	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3634	2-PNLA-009-0032	Agastat	7012SA 78413048	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3635	2-PNLA-009-0032	Agastat	ETR14D 3AN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3636	2-PNLA-009-0032	Agastat	ETR14D 94010110	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3637	2-PNLA-009-0032	Agastat	7012SA 78413082	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3638	2-PNLA-009-0032	Agastat	7012SA 78413060	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3639	2-PNLA-009-0032	Agastat	7012SA 78413050	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3640	2-PNLA-009-0032	Agastat	7012SE 78413009	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3641	2-PNLA-009-0032	Agastat	7012SA 78413053	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3642	2-PNLA-009-0032	Agastat	7012SE 78413005	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3643	2-PNLA-009-0032	Agastat	ETR14D3AN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3647	2-PNLA-009-0032	Agastat	7012SA	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3648	2-PNLA-009-0032	Agastat	7012SA 78413076	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3649	2-PNLA-009-0032	Agastat	7012SA 78413080	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3650	2-PNLA-009-0032	Agastat	7012SA 78421248	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3651	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3652	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3653	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3654	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3655	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3657	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3658	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3659	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3660	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3661	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3662	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3663	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3664	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3665	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3666	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3667	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3668	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3669	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3670	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3671	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3672	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3673	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3674	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3675	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3677	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3678	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3679	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3680	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES

Item No.	CABINET	Relay Capacity								Demand Basis	Amplified Demand			Capacity > Demand (4 to 16 Hz.)	
		Make	Relay Type	GERS Level							Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Minimum Capacity	Maximum Capacity
				Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats						
3681	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3682	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3683	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3684	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3685	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3686	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3687	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3688	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3689	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3693	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3694	2-PNLA-009-0032	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
3695	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3696	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3697	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3698	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3699	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3700	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3701	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3702	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3704	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3705	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3706	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3710	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3711	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3712	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3714	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3715	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3716	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3719	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3720	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3721	2-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3722	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3723	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3724	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3725	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3726	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3727	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3728	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3729	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3730	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3732	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3733	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3735	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3736	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3737	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3738	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3741	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3742	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3743	2-PNLA-009-0032	GE	137C61 HGA111A1F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES

Item No.	CABINET	Relay Capacity								Demand Basis	Amplified Demand			Capacity > Demand (4 to 16 Hz.)	
		Make	Relay Type	GERS Level					Caveats		Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Minimum Capacity	Maximum Capacity
				Capacity Basis	Non-Operate		Operate								
					NO	NC	NO	NC							
3744	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3746	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3747	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3748	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3749	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3750	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3753	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3756	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3757	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3758	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3759	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3760	2-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3893	2-PNLA-009-0033	Agastat	7012SD00285327079	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3894	2-PNLA-009-0033	Agastat	ETR14D	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3895	2-PNLA-009-0033	Agastat	7012SD 78413035	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3896	2-PNLA-009-0033	Agastat	ETR14D	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3899	2-PNLA-009-0033	Agastat	7012SA 78413056	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3900	2-PNLA-009-0033	Agastat	ETR14D 4030N003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3901	2-PNLA-009-0033	Agastat	ETR14D	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3902	2-PNLA-009-0033	Agastat	ETR14D 4030N003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3903	2-PNLA-009-0033	Agastat	7012SA 78413073	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3904	2-PNLA-009-0033	Agastat	7012SA 78413063	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3905	2-PNLA-009-0033	Agastat	7012SA 78413076	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3906	2-PNLA-009-0033	Agastat	7012SE 78413004	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3907	2-PNLA-009-0033	Agastat	7012SA 78413075	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3908	2-PNLA-009-0033	Agastat	7012SE 79061735	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
3909	2-PNLA-009-0033	Agastat	ETR14D 403NN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3913	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3914	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3915	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3916	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3917	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3919	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3920	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3921	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3922	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3923	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3924	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3925	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3926	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3927	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3928	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3929	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3930	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3931	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3932	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3933	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3934	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3935	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES

Item No.	CABINET	Make	Relay Type	Relay Capacity: Capacity Basis	GERS Level Non-Operate NO	GERS Level Non-Operate NC	GERS Level Operate NO	GERS Level Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.) Minimum Capacity	Maximum Capacity
3936	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3937	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3939	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3940	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3941	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3942	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3943	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3944	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3946	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3947	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3948	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3949	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3950	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3951	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3955	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3956	2-PNLA-009-0033	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
3957	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3958	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3959	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3960	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3961	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3962	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3963	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3965	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3968	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3969	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3970	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3971	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3973	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3974	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3975	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3976	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3977	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3978	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3979	2-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3981	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3982	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3983	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3984	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3985	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3986	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3987	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3989	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3990	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3991	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3992	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3993	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3994	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3995	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES

Item No.	CABINET	Relay Capacity: Make	Relay Type	GERS Level: Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
3998	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3999	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4000	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4001	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4004	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4005	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4006	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4007	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4008	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4009	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4010	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4011	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4012	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4013	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4014	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4016	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4017	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4018	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4019	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4022	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4023	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4024	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4025	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4026	2-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
6423	2-PNLA-009-0033		HFA51A41	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
6424	2-PNLA-009-0033		HGA11A51F	GERS	10	0	10	10	Note 3	Ground		7.0	7.9	NO	YES
6525	2-PNLA-009-0033		HGA11A51F	GERS	10	0	10	10	Note 3	Ground		7.0	7.9	NO	YES
4172	2-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4173	2-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4178	2-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4179	2-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4180	2-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4186	2-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4188	2-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4201	2-PNLA-009-0039	Agastat	ETR14D3BN003	ADD2	9	3.8	10	10		Ground	20	4.5	5.1	NO	YES
4253	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4258	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4261	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4264	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4266	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4267	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4268	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4270	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground		7.0	7.9	YES	YES
4271	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground		7.0	7.9	YES	YES
4274	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4279	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4280	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4285	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4287	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES

Item No.	CABINET	Relay Capacity: Make	Relay Type	GERS Level: Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
4288	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4289	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4292	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4293	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4294	2-PNLA-009-0042	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4299	2-PNLA-009-0042	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4300	2-PNLA-009-0042	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4301	2-PNLA-009-0042	GE	HFA151A9H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
4354	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4355	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4357	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4358	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4359	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4366	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground		7.0	7.9	YES	YES
4368	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4369	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4370	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4372	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4373	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground		7.0	7.9	YES	YES
4374	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground		7.0	7.9	YES	YES
4380	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4382	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4384	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4387	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4388	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4390	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4391	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4392	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4393	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4394	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4395	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4396	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4397	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4398	2-PNLA-009-0043	GE	CR120A D400ZAA	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4400	2-PNLA-009-0043	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4401	2-PNLA-009-0043	GE	HFA151A9H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
4402	2-PNLA-009-0043	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4458	2-PNLA-009-0054	GE	CR120B	GERS	3	3	5	5		Floor	20	GENRS	5.0	NO	YES
4459	2-PNLA-009-0054	GE	CR120B	GERS	3	3	5	5		Floor	20	GENRS	5.0	NO	YES
4490	2-PNLA-009-0055	GE	CR120A 04002AA	GERS	10	9	10	10		Floor	20	GENRS	5.0	YES	YES
4492	2-PNLA-009-0055	GE	CR120A 04002AA	GERS	10	9	10	10		Floor	20	GENRS	5.0	YES	YES
4528	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4529	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4530	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4531	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4532	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4533	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4534	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4536	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES

Item No.	CABINET	Make	Relay Type	Relay Capacity: Capacity Basis	GERS Level: Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
4537	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4538	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4542	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4543	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4545	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4550	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4552	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4554	2-PNLA-009-0081	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4609	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4610	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4611	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4612	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4613	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4614	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4615	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4617	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4618	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4619	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4623	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4624	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4626	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4631	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4633	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4635	2-PNLA-009-0082	Agastat	ETR14B ANCZ00400	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4690	2-PNLA-009-0083	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4692	2-PNLA-009-0083	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4694	2-PNLA-009-0083	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4696	2-PNLA-009-0083	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4698	2-PNLA-009-0083	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4712	2-PNLA-009-0083	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4747	2-PNLA-009-0084	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4749	2-PNLA-009-0084	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4751	2-PNLA-009-0084	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4753	2-PNLA-009-0084	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4755	2-PNLA-009-0084	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4769	2-PNLA-009-0084	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4804	2-PNLA-009-0085	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4806	2-PNLA-009-0085	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4808	2-PNLA-009-0085	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4810	2-PNLA-009-0085	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4812	2-PNLA-009-0085	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4826	2-PNLA-009-0085	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4861	2-PNLA-009-0086	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4863	2-PNLA-009-0086	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4865	2-PNLA-009-0086	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4867	2-PNLA-009-0086	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4869	2-PNLA-009-0086	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4883	2-PNLA-009-0086	Agastat	ETR14B	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES

APPENDIX B

ESSENTIAL RELAY LIST

AND

CAPACITY/DEMAND SCREENING RESULTS

BROWNS FERRY UNIT 3

Item No.	CABINET	Relay Capacity: Make	Relay Capacity: Relay Type	GERS Level: Capacity Basis	Non-Operate NO	Non-Operate NC	Operate NO	Operate NC	Caveats	Demand Basis	Amplified Demand: Equip. Class	PANEL AMPLIF FACTOR	In-cabinet Demand PEAK	Capacity > Demand (4 to 16 Hz.): Minimum Capacity	Maximum Capacity
745	3-BDAA-211-0003EA		IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
741	3-BDAA-211-0003EA/1	GE	HEA61C219X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
742	3-BDAA-211-0003EA/1	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
743	3-BDAA-211-0003EA/1	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
744	3-BDAA-211-0003EA/1	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
746	3-BDAA-211-0003EA/1	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
906	3-BDAA-211-0003EA/10	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
907	3-BDAA-211-0003EA/10	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
908	3-BDAA-211-0003EA/10	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
915	3-BDAA-211-0003EA/12	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
916	3-BDAA-211-0003EA/12	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
917	3-BDAA-211-0003EA/12	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
918	3-BDAA-211-0003EA/12	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
919	3-BDAA-211-0003EA/12	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
749	3-BDAA-211-0003EA/2	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
753	3-BDAA-211-0003EA/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
754	3-BDAA-211-0003EA/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
755	3-BDAA-211-0003EA/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
756	3-BDAA-211-0003EA/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
757	3-BDAA-211-0003EA/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
759	3-BDAA-211-0003EA/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
760	3-BDAA-211-0003EA/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
762	3-BDAA-211-0003EA/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
763	3-BDAA-211-0003EA/2	Agastat	ATCETR14038N003	ADD2	9	3.8	10	10		Ground	3	2.0	2.3	YES	YES
764	3-BDAA-211-0003EA/2	Agastat	ATCETR14038N003	ADD2	9	3.8	10	10		Ground	3	2.0	2.3	YES	YES
765	3-BDAA-211-0003EA/2	Agastat	ATCETR14038N003	ADD2	9	3.8	10	10		Ground	3	2.0	2.3	YES	YES
767	3-BDAA-211-0003EA/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
768	3-BDAA-211-0003EA/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
769	3-BDAA-211-0003EA/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
772	3-BDAA-211-0003EA/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
773	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
774	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
775	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
776	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
777	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
778	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
779	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
780	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
781	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
782	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
783	3-BDAA-211-0003EA/2	GE	HFA151A2F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
784	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
785	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
786	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
787	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
788	3-BDAA-211-0003EA/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
789	3-BDAA-211-0003EA/2	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
794	3-BDAA-211-0003EA/3	ITE	ITE-27N211TO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
795	3-BDAA-211-0003EA/3	ITE	ITE-27N211TO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES

796	3-BDAA-211-0003EA/3	ITE	ITE-27N211TO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
797	3-BDAA-211-0003EA/3	ITE	ITE-59H211CO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
798	3-BDAA-211-0003EA/3	ITE	ITE-59H211CO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
799	3-BDAA-211-0003EA/3	ITE	ITE-59H211CO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
800	3-BDAA-211-0003EA/3	Agastat	E7012PB001	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
801	3-BDAA-211-0003EA/3	Agastat	E7012PB002	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
802	3-BDAA-211-0003EA/3	Agastat	E7022PA0012	GERS	6	6	10	10	Notes 1 & 2	Ground	3	2.0	2.3	YES	YES
804	3-BDAA-211-0003EA/3	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
805	3-BDAA-211-0003EA/3	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
806	3-BDAA-211-0003EA/3	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
807	3-BDAA-211-0003EA/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
808	3-BDAA-211-0003EA/3	GE	HFA151A24	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
809	3-BDAA-211-0003EA/3	GE	HFA54B187H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
811	3-BDAA-211-0003EA/3	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
812	3-BDAA-211-0003EA/3	GE	HFA54B187H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
813	3-BDAA-211-0003EA/3	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
814	3-BDAA-211-0003EA/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
815	3-BDAA-211-0003EA/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
816	3-BDAA-211-0003EA/3	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
817	3-BDAA-211-0003EA/3	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
820	3-BDAA-211-0003EA/3	Agastat	7012PC	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
822	3-BDAA-211-0003EA/4	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
823	3-BDAA-211-0003EA/4	GE	IAC53A3A	GERS	7	N/A	10	N/A		Ground	3	2.0	2.3	YES	YES
824	3-BDAA-211-0003EA/4	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
825	3-BDAA-211-0003EA/4	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
826	3-BDAA-211-0003EA/4	GE	HEA61C218X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
827	3-BDAA-211-0003EA/4	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
830	3-BDAA-211-0003EA/5	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
831	3-BDAA-211-0003EA/5	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
832	3-BDAA-211-0003EA/5	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
833	3-BDAA-211-0003EA/5	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
834	3-BDAA-211-0003EA/5	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
835	3-BDAA-211-0003EA/5	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
842	3-BDAA-211-0003EA/6	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
843	3-BDAA-211-0003EA/6	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
844	3-BDAA-211-0003EA/6	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
850	3-BDAA-211-0003EA/7	GE	IAC53A3A	GERS	7	N/A	10	N/A		Ground	3	2.0	2.3	YES	YES
851	3-BDAA-211-0003EA/7	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
852	3-BDAA-211-0003EA/7	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
853	3-BDAA-211-0003EA/7	GE	HEA61C218X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
854	3-BDAA-211-0003EA/7	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
857	3-BDAA-211-0003EA/8	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
858	3-BDAA-211-0003EA/8	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
859	3-BDAA-211-0003EA/8	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
861	3-BDAA-211-0003EA/8	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
862	3-BDAA-211-0003EA/8	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
864	3-BDAA-211-0003EA/8	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
866	3-BDAA-211-0003EA/8	Westinghouse	CV-7 1875524A	GERS	14.2	14.2	14.2	14.2	Notes 5 & 25	Ground	3	2.0	2.3	YES	YES
869	3-BDAA-211-0003EA/8	GE	HFA151A41F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
871	3-BDAA-211-0003EA/8	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
872	3-BDAA-211-0003EA/8	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
873	3-BDAA-211-0003EA/8	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
874	3-BDAA-211-0003EA/8	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
875	3-BDAA-211-0003EA/8	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES

876	3-BDAA-211-0003EA/8	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
879	3-BDAA-211-0003EA/8	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
880	3-BDAA-211-0003EA/8	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
882	3-BDAA-211-0003EA/8	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
883	3-BDAA-211-0003EA/8	GE	HEA61C220X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
889	3-BDAA-211-0003EA/9	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
890	3-BDAA-211-0003EA/9	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
900	3-BDAA-211-0003EA/9	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1096	3-BDAA-211-0003EB	GE	IAC53A3A	GERS	7	NA	10	NA	Note 7	Ground		7.0	7.9	NO	YES
1097	3-BDAA-211-0003EB		IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1098	3-BDAA-211-0003EB		IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
997	3-BDAA-211-0003EB/10	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
998	3-BDAA-211-0003EB/10	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
999	3-BDAA-211-0003EB/10	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1000	3-BDAA-211-0003EB/10	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1001	3-BDAA-211-0003EB/10	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1002	3-BDAA-211-0003EB/10	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1009	3-BDAA-211-0003EB/11	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1010	3-BDAA-211-0003EB/11	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1031	3-BDAA-211-0003EB/12	ITE	ITE-27N211TO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1032	3-BDAA-211-0003EB/12	ITE	ITE-27N211TO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1033	3-BDAA-211-0003EB/12	ITE	ITE-27N211TO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1034	3-BDAA-211-0003EB/12	ITE	ITE59H211CO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1035	3-BDAA-211-0003EB/12	ITE	ITE59H211CO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1036	3-BDAA-211-0003EB/12	ITE	ITE59H211CO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1037	3-BDAA-211-0003EB/12	Agastat	E7012PB001	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
1038	3-BDAA-211-0003EB/12	Agastat	E7012PB001	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
1039	3-BDAA-211-0003EB/12	Agastat	E7022PA001	GERS	6	6	10	10	Notes 1 & 2	Ground	3	2.0	2.3	YES	YES
1041	3-BDAA-211-0003EB/12	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1042	3-BDAA-211-0003EB/12	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1043	3-BDAA-211-0003EB/12	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1044	3-BDAA-211-0003EB/12	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1045	3-BDAA-211-0003EB/12	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1046	3-BDAA-211-0003EB/12	GE	HFA54B187H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1048	3-BDAA-211-0003EB/12	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1049	3-BDAA-211-0003EB/12	GE	HFA54B187H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1050	3-BDAA-211-0003EB/12	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1051	3-BDAA-211-0003EB/12	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1052	3-BDAA-211-0003EB/12	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1053	3-BDAA-211-0003EB/12	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1054	3-BDAA-211-0003EB/12	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1056	3-BDAA-211-0003EB/12	Agastat	7012PC78062029	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
1058	3-BDAA-211-0003EB/13	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1061	3-BDAA-211-0003EB/13	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1062	3-BDAA-211-0003EB/13	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1063	3-BDAA-211-0003EB/13	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1064	3-BDAA-211-0003EB/13	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1065	3-BDAA-211-0003EB/13	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1066	3-BDAA-211-0003EB/13	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1068	3-BDAA-211-0003EB/13	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1069	3-BDAA-211-0003EB/13	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1070	3-BDAA-211-0003EB/13	Agastat	ATC-ETR14DN003	ADD2	9	3.8	10	10		Ground	3	2.0	2.3	YES	YES
1071	3-BDAA-211-0003EB/13	Agastat	ATC-ETR14DN003	ADD2	9	3.8	10	10		Ground	3	2.0	2.3	YES	YES
1073	3-BDAA-211-0003EB/13	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES

1074	3-BDAA-211-0003EB/13	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1075	3-BDAA-211-0003EB/13	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1078	3-BDAA-211-0003EB/13	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1079	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1080	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1081	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1082	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1083	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1084	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1085	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1086	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1087	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1088	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1089	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1090	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1091	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1092	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1093	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1094	3-BDAA-211-0003EB/13	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1099	3-BDAA-211-0003EB/14	GE	HEA61C218X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
1100	3-BDAA-211-0003EB/14	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
938	3-BDAA-211-0003EB/4	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
939	3-BDAA-211-0003EB/4	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
940	3-BDAA-211-0003EB/4	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
941	3-BDAA-211-0003EB/4	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
942	3-BDAA-211-0003EB/4	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
943	3-BDAA-211-0003EB/5	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
944	3-BDAA-211-0003EB/5	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
945	3-BDAA-211-0003EB/5	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
946	3-BDAA-211-0003EB/5	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
947	3-BDAA-211-0003EB/5	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
948	3-BDAA-211-0003EB/6	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
949	3-BDAA-211-0003EB/6	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
950	3-BDAA-211-0003EB/6	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
951	3-BDAA-211-0003EB/6	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
952	3-BDAA-211-0003EB/6	GE	HEA61C219X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
953	3-BDAA-211-0003EB/6	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
956	3-BDAA-211-0003EB/7	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
957	3-BDAA-211-0003EB/7	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
958	3-BDAA-211-0003EB/7	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
959	3-BDAA-211-0003EB/7	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
960	3-BDAA-211-0003EB/7	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
962	3-BDAA-211-0003EB/7	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
963	3-BDAA-211-0003EB/7	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
964	3-BDAA-211-0003EB/7	Westinghouse	CV-7-1875524A	GERS	14.2	14.2	14.2	14.2	Notes 5 & 25	Ground	3	2.0	2.3	YES	YES
966	3-BDAA-211-0003EB/7	GE	HEA61C218	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
968	3-BDAA-211-0003EB/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
969	3-BDAA-211-0003EB/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
970	3-BDAA-211-0003EB/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
971	3-BDAA-211-0003EB/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
972	3-BDAA-211-0003EB/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
973	3-BDAA-211-0003EB/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
974	3-BDAA-211-0003EB/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
977	3-BDAA-211-0003EB/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES

978	3-BDAA-211-0003EB/7	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
980	3-BDAA-211-0003EB/7	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
986	3-BDAA-211-0003EB/8	GE	IAC53A3A	GERS	7	N/A	10	N/A		Ground	3	2.0	2.3	YES	YES
987	3-BDAA-211-0003EB/8	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
988	3-BDAA-211-0003EB/8	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
989	3-BDAA-211-0003EB/8	GE	HEA61C218	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
991	3-BDAA-211-0003EB/8	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
994	3-BDAA-211-0003EB/9	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
995	3-BDAA-211-0003EB/9	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
996	3-BDAA-211-0003EB/9	GE	IAC51B113A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1246	3-BDAA-211-0003EC	GE	IAV54E1A	GERS	NA	8	NA	10	Note 7	Ground		7.0	7.9	YES	YES
1275	3-BDAA-211-0003EC	GE	IAC53A3A	GERS	7	NA	10	NA	Note 7	Ground		7.0	7.9	NO	YES
1276	3-BDAA-211-0003EC		IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1277	3-BDAA-211-0003EC		IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
6576	3-BDAA-211-0003EC		HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
1225	3-BDAA-211-0003EC/10	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1226	3-BDAA-211-0003EC/10	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1243	3-BDAA-211-0003EC/11	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1244	3-BDAA-211-0003EC/11	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1245	3-BDAA-211-0003EC/11	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1247	3-BDAA-211-0003EC/11	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
1248	3-BDAA-211-0003EC/11	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
1250	3-BDAA-211-0003EC/11	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
1251	3-BDAA-211-0003EC/11	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
1252	3-BDAA-211-0003EC/11	Westinghouse	CV-71875524A	GERS	14.2	14.2	14.2	14.2	Notes 5 & 25	Ground	3	2.0	2.3	YES	YES
1254	3-BDAA-211-0003EC/11	GE	HEA61C219X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
1256	3-BDAA-211-0003EC/11	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1258	3-BDAA-211-0003EC/11	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1259	3-BDAA-211-0003EC/11	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1260	3-BDAA-211-0003EC/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1261	3-BDAA-211-0003EC/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1262	3-BDAA-211-0003EC/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1263	3-BDAA-211-0003EC/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1266	3-BDAA-211-0003EC/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1267	3-BDAA-211-0003EC/11	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1269	3-BDAA-211-0003EC/11	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1278	3-BDAA-211-0003EC/12	GE	HEA61C218X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
1279	3-BDAA-211-0003EC/12	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1282	3-BDAA-211-0003EC/13	GE	PJC11A1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
1283	3-BDAA-211-0003EC/13	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1284	3-BDAA-211-0003EC/13	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1285	3-BDAA-211-0003EC/13	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1286	3-BDAA-211-0003EC/13	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1108	3-BDAA-211-0003EC/2	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
1109	3-BDAA-211-0003EC/2	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1110	3-BDAA-211-0003EC/2	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1111	3-BDAA-211-0003EC/2	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1112	3-BDAA-211-0003EC/2	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1113	3-BDAA-211-0003EC/3	GE	IAC53A3A	GERS	7	N/A	10	N/A		Ground	3	2.0	2.3	YES	YES
1114	3-BDAA-211-0003EC/3	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1115	3-BDAA-211-0003EC/3	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1116	3-BDAA-211-0003EC/3	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1118	3-BDAA-211-0003EC/3	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1121	3-BDAA-211-0003EC/4	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES

1125	3-BDAA-211-0003EC/4	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1126	3-BDAA-211-0003EC/4	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1127	3-BDAA-211-0003EC/4	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1128	3-BDAA-211-0003EC/4	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1129	3-BDAA-211-0003EC/4	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1131	3-BDAA-211-0003EC/4	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1132	3-BDAA-211-0003EC/4	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1134	3-BDAA-211-0003EC/4	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1136	3-BDAA-211-0003EC/4	Agastat	ETR14D3DN003	ADD2	9	3.8	10	10		Ground	3	2.0	2.3	YES	YES
1137	3-BDAA-211-0003EC/4	Agastat	ETR14D3CN003	ADD2	9	3.8	10	10		Ground	3	2.0	2.3	YES	YES
1139	3-BDAA-211-0003EC/4	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1140	3-BDAA-211-0003EC/4	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1141	3-BDAA-211-0003EC/4	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1144	3-BDAA-211-0003EC/4	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1145	3-BDAA-211-0003EC/4	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1146	3-BDAA-211-0003EC/4	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1147	3-BDAA-211-0003EC/4	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1148	3-BDAA-211-0003EC/4	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1149	3-BDAA-211-0003EC/4	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1150	3-BDAA-211-0003EC/4	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1151	3-BDAA-211-0003EC/4	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1152	3-BDAA-211-0003EC/4	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1153	3-BDAA-211-0003EC/4	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1154	3-BDAA-211-0003EC/4	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1155	3-BDAA-211-0003EC/4	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1156	3-BDAA-211-0003EC/4	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1157	3-BDAA-211-0003EC/4	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1158	3-BDAA-211-0003EC/4	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1159	3-BDAA-211-0003EC/4	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1160	3-BDAA-211-0003EC/4	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1161	3-BDAA-211-0003EC/4	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1166	3-BDAA-211-0003EC/5	ITE	ITE-27N211TO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1167	3-BDAA-211-0003EC/5	ITE	ITE-27N211TO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1168	3-BDAA-211-0003EC/5	ITE	ITE-27N211TO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1169	3-BDAA-211-0003EC/5	ITE	ITE-59H211CO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1170	3-BDAA-211-0003EC/5	ITE	ITE-59H211CO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1171	3-BDAA-211-0003EC/5	ITE	ITE-59H211CO175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1172	3-BDAA-211-0003EC/5	Agastat	E7012PB002	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
1173	3-BDAA-211-0003EC/5	Agastat	E7012PB002	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
1174	3-BDAA-211-0003EC/5	Agastat	E7022PA001	GERS	6	6	10	10	Notes 1 & 2	Ground	3	2.0	2.3	YES	YES
1176	3-BDAA-211-0003EC/5	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1177	3-BDAA-211-0003EC/5	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1178	3-BDAA-211-0003EC/5	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1179	3-BDAA-211-0003EC/5	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1180	3-BDAA-211-0003EC/5	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1181	3-BDAA-211-0003EC/5	GE	HFA54B187H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1183	3-BDAA-211-0003EC/5	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1184	3-BDAA-211-0003EC/5	GE	HFA54B187H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1185	3-BDAA-211-0003EC/5	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1186	3-BDAA-211-0003EC/5	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1187	3-BDAA-211-0003EC/5	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1188	3-BDAA-211-0003EC/5	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1192	3-BDAA-211-0003EC/5	Agastat	7012PC78060394	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
1194	3-BDAA-211-0003EC/6	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES

1195	3-BDAA-211-0003EC/6	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1196	3-BDAA-211-0003EC/6	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1197	3-BDAA-211-0003EC/6	GE	HEA61C220X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
1198	3-BDAA-211-0003EC/6	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1199	3-BDAA-211-0003EC/6	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1202	3-BDAA-211-0003EC/7	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
1203	3-BDAA-211-0003EC/7	GE	IAC51B808A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1204	3-BDAA-211-0003EC/7	GE	IAC51B808A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1205	3-BDAA-211-0003EC/8	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
1206	3-BDAA-211-0003EC/8	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1207	3-BDAA-211-0003EC/8	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1208	3-BDAA-211-0003EC/8	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1209	3-BDAA-211-0003EC/8	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1210	3-BDAA-211-0003EC/8	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1383	3-BDAA-211-0003ED	GE	PJC11AV1A	GERS	5	NA	7.5	NA	Note 7	Ground		7.0	7.9	NO	NO
6503	3-BDAA-211-0003ED		HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
6530	3-BDAA-211-0003ED		HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground		7.0	7.9	NO	YES
6577	3-BDAA-211-0003ED		HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
1287	3-BDAA-211-0003ED/1	GE	IAC53A3A	GERS	7	N/A	10	N/A		Ground	3	2.0	2.3	YES	YES
1288	3-BDAA-211-0003ED/1	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1289	3-BDAA-211-0003ED/1	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1290	3-BDAA-211-0003ED/1	GE	HEA61C218X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
1291	3-BDAA-211-0003ED/1	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1420	3-BDAA-211-0003ED/10	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1421	3-BDAA-211-0003ED/10	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1437	3-BDAA-211-0003ED/11	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
1438	3-BDAA-211-0003ED/11	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1439	3-BDAA-211-0003ED/11	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1440	3-BDAA-211-0003ED/11	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1441	3-BDAA-211-0003ED/11	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1295	3-BDAA-211-0003ED/2	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1299	3-BDAA-211-0003ED/2	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1300	3-BDAA-211-0003ED/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1301	3-BDAA-211-0003ED/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1303	3-BDAA-211-0003ED/2	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1304	3-BDAA-211-0003ED/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1305	3-BDAA-211-0003ED/2	Agastat	ETR14D3DN003	ADD2	9	3.8	10	10		Ground	3	2.0	2.3	YES	YES
1306	3-BDAA-211-0003ED/2	Agastat	ETR14D3CN003	ADD2	9	3.8	10	10		Ground	3	2.0	2.3	YES	YES
1307	3-BDAA-211-0003ED/2	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1308	3-BDAA-211-0003ED/2	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1309	3-BDAA-211-0003ED/2	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1310	3-BDAA-211-0003ED/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1311	3-BDAA-211-0003ED/2	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1312	3-BDAA-211-0003ED/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1313	3-BDAA-211-0003ED/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1314	3-BDAA-211-0003ED/2	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1315	3-BDAA-211-0003ED/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1316	3-BDAA-211-0003ED/2	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1317	3-BDAA-211-0003ED/2	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1318	3-BDAA-211-0003ED/2	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1319	3-BDAA-211-0003ED/2	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1320	3-BDAA-211-0003ED/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1321	3-BDAA-211-0003ED/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1322	3-BDAA-211-0003ED/2	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES

1323	3-BDAA-211-0003ED/2	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1324	3-BDAA-211-0003ED/2	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1325	3-BDAA-211-0003ED/2	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1329	3-BDAA-211-0003ED/3	ITE	ITE-27N211T0175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1330	3-BDAA-211-0003ED/3	ITE	ITE-27N211T0175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1331	3-BDAA-211-0003ED/3	ITE	ITE-27N211T0175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1332	3-BDAA-211-0003ED/3	ITE	ITE-59H211C0175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1333	3-BDAA-211-0003ED/3	ITE	ITE-59H211C0175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1334	3-BDAA-211-0003ED/3	ITE	ITE-59H211C0175	GERS	15	15	15	15		Ground	3	2.0	2.3	YES	YES
1335	3-BDAA-211-0003ED/3	Agastat	E7012PB002	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
1336	3-BDAA-211-0003ED/3	Agastat	E7012PB002	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
1337	3-BDAA-211-0003ED/3	Agastat	E7022PA001	GERS	6	6	10	10	Notes 1 & 2	Ground	3	2.0	2.3	YES	YES
1339	3-BDAA-211-0003ED/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1340	3-BDAA-211-0003ED/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1341	3-BDAA-211-0003ED/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1342	3-BDAA-211-0003ED/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1343	3-BDAA-211-0003ED/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1344	3-BDAA-211-0003ED/3	GE	HFA54B187H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1346	3-BDAA-211-0003ED/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1347	3-BDAA-211-0003ED/3	GE	HFA54B187H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1348	3-BDAA-211-0003ED/3	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1349	3-BDAA-211-0003ED/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1350	3-BDAA-211-0003ED/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1351	3-BDAA-211-0003ED/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1352	3-BDAA-211-0003ED/3	GE	HFA51A42H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1354	3-BDAA-211-0003ED/3	Agastat	E7012-78060395	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	3	2.0	2.3	YES	YES
1356	3-BDAA-211-0003ED/4	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1357	3-BDAA-211-0003ED/4	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1358	3-BDAA-211-0003ED/4	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1359	3-BDAA-211-0003ED/4	GE	IAC57A2A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1360	3-BDAA-211-0003ED/4	GE	HEA61C220X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
1361	3-BDAA-211-0003ED/4	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1364	3-BDAA-211-0003ED/5	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
1365	3-BDAA-211-0003ED/5	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1366	3-BDAA-211-0003ED/5	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1367	3-BDAA-211-0003ED/5	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1368	3-BDAA-211-0003ED/5	GE	HFA151A2H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1369	3-BDAA-211-0003ED/6	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
1370	3-BDAA-211-0003ED/6	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1371	3-BDAA-211-0003ED/6	GE	IAC66K8A	ADD2	5	N/A	2	N/A		Ground	3	2.0	2.3	NO	YES
1372	3-BDAA-211-0003ED/6	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1373	3-BDAA-211-0003ED/6	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1380	3-BDAA-211-0003ED/7	GE	PJC11AV1A	GERS	5	N/A	7.5	N/A		Ground	3	2.0	2.3	YES	YES
1384	3-BDAA-211-0003ED/8	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1385	3-BDAA-211-0003ED/8	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1386	3-BDAA-211-0003ED/8	GE	HEA61C218X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
1389	3-BDAA-211-0003ED/8	GE	HFA151A1H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1390	3-BDAA-211-0003ED/9	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1391	3-BDAA-211-0003ED/9	GE	IAC51N14A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
1392	3-BDAA-211-0003ED/9	GE	IAC51B14A							Ground	3	2.0	2.3	NO	NO
1393	3-BDAA-211-0003ED/9	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
1394	3-BDAA-211-0003ED/9	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
1396	3-BDAA-211-0003ED/9	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES
1397	3-BDAA-211-0003ED/9	GE	IAV54E1A	GERS	N/A	8	N/A	10		Ground	3	2.0	2.3	YES	YES

1398	3-BDAA-211-0003ED/9	Westinghouse	CV-7-1875524A	GERS	14.2	14.2	14.2	14.2	Notes 5 & 25	Ground	3	2.0	2.3	YES	YES
1400	3-BDAA-211-0003ED/9	GE	HEA61C219X2	SQURTS	14	14	14	14		Ground	3	2.0	2.3	YES	YES
1402	3-BDAA-211-0003ED/9	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1403	3-BDAA-211-0003ED/9	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1404	3-BDAA-211-0003ED/9	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1405	3-BDAA-211-0003ED/9	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1406	3-BDAA-211-0003ED/9	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1407	3-BDAA-211-0003ED/9	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1408	3-BDAA-211-0003ED/9	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1411	3-BDAA-211-0003ED/9	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1412	3-BDAA-211-0003ED/9	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	3	2.0	2.3	YES	YES
1414	3-BDAA-211-0003ED/9	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	3	2.0	2.3	NO	YES
1885	3-BDBB-219-0003EA/1A	GE	HFA151A8H	GERS	7.5	3	15	15	Notes 3 & 9	Level 1	1	N/A	5.0	NO	YES
1887	3-BDBB-219-0003EA/5E	Agastat	7024AE004	GERS	7	7	10	10	Notes 1 & 4	Level 1	1	N/A	5.0	YES	YES
1888	3-BDBB-219-0003EA/5E	GE	CR2810A14AC	GERS	6	4	10	10		Level 1	1	N/A	5.0	NO	YES
6278	3-BDBB-219-0003EA/5E	GE	CR106CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6279	3-BDBB-219-0003EA/5E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1889	3-BDBB-219-0003EA/6A	Agastat	7024AE	GERS	7	7	10	10	Notes 1 & 4	Level 1	1	N/A	5.0	YES	YES
1890	3-BDBB-219-0003EA/6A	GE	CR2810A15AC	GERS	6	4	10	10		Level 1	1	N/A	5.0	NO	YES
6275	3-BDBB-219-0003EA/6A	GE	CR106CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6280	3-BDBB-219-0003EA/6A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1891	3-BDBB-219-0003EA/6C	Agastat	7024AE	GERS	7	7	10	10	Notes 1 & 4	Level 1	1	N/A	5.0	YES	YES
6276	3-BDBB-219-0003EA/6C	GE	CR106CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6281	3-BDBB-219-0003EA/6C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1893	3-BDBB-219-0003EA/6E	Agastat	E7024AE002	GERS	7	7	10	10	Notes 1 & 4	Level 1	1	N/A	5.0	YES	YES
6277	3-BDBB-219-0003EA/6E	GE	CR106CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6282	3-BDBB-219-0003EA/6E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1899	3-BDBB-219-0003EB/1A	GE	HFA151A8H	GERS	7.5	3	15	15	Notes 3 & 9	Level 1	1	N/A	5.0	NO	YES
1902	3-BDBB-219-0003EB/5E	Agastat	7024AE SERIAL F	GERS	7	7	10	10	Notes 1 & 4	Level 1	1	N/A	5.0	YES	YES
1903	3-BDBB-219-0003EB/5E	GE	CR2810A14AC	GERS	6	4	10	10		Level 1	1	N/A	5.0	NO	YES
6283	3-BDBB-219-0003EB/5E	GE	CR106CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6290	3-BDBB-219-0003EB/5E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1904	3-BDBB-219-0003EB/6A	Agastat	7024AE 3340501	GERS	7	7	10	10	Notes 1 & 4	Level 1	1	N/A	5.0	YES	YES
1905	3-BDBB-219-0003EB/6A	GE	CR2810A14AC	GERS	6	4	10	10		Level 1	1	N/A	5.0	NO	YES
6284	3-BDBB-219-0003EB/6A	GE	CR106CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6287	3-BDBB-219-0003EB/6A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1906	3-BDBB-219-0003EB/6C	Agastat	7024AE 3340497	GERS	7	7	10	10	Notes 1 & 4	Level 1	1	N/A	5.0	YES	YES
1907	3-BDBB-219-0003EB/6C	GE	CR2810A13AC	GERS	6	4	10	10		Level 1	1	N/A	5.0	NO	YES
6285	3-BDBB-219-0003EB/6C	GE	CR106CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6288	3-BDBB-219-0003EB/6C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1908	3-BDBB-219-0003EB/6E	Agastat	7024AE SERIAL F	GERS	7	7	10	10	Notes 1 & 4	Level 1	1	N/A	5.0	YES	YES
1909	3-BDBB-219-0003EB/6E	GE	CR2810A14AC	GERS	6	4	10	10		Level 1	1	N/A	5.0	NO	YES
6286	3-BDBB-219-0003EB/6E	GE	CR106CO	GERS	4.5	4.5	4.5	4.5		Level 1	1	N/A	5.0	NO	NO
6289	3-BDBB-219-0003EB/6E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Level 1	1	N/A	5.0	YES	YES
1567	3-BDBB-231-0003A/1A	GE	HEA61A213	SQURTS	14	14	14	14		Floor	2	2.6	8.4	YES	YES
1568	3-BDBB-231-0003A/1A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1569	3-BDBB-231-0003A/1A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1570	3-BDBB-231-0003A/1A	GE	IAC53A101A	GERS	7	N/A	10	N/A		Floor	2	2.6	8.4	NO	YES
1571	3-BDBB-231-0003A/1A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1577	3-BDBB-231-0003A/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1578	3-BDBB-231-0003A/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1583	3-BDBB-231-0003A/8A	GE	HEA61A213	SQURTS	14	14	14	14		Floor	2	2.6	8.4	YES	YES
1584	3-BDBB-231-0003A/8A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1585	3-BDBB-231-0003B/1A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO

1586	3-BDBB-231-0003B/1A	GE	HEA61A213	SQURTS	14	14	14	14		Floor	2	2.6	8.4	YES	YES
6460	3-BDBB-231-0003B/1A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6461	3-BDBB-231-0003B/1A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6462	3-BDBB-231-0003B/1A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
1593	3-BDBB-231-0003B/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1594	3-BDBB-231-0003B/4A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1595	3-BDBB-231-0003B/8A	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	2	2.6	8.4	NO	NO
1597	3-BDBB-231-0003B/8A	GE	HEA61A213	SQURTS	14	14	14	14		Floor	2	2.6	8.4	YES	YES
6463	3-BDBB-231-0003B/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6464	3-BDBB-231-0003B/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6465	3-BDBB-231-0003B/8A		IAC53A101A	GERS	7	N/A	10	N/A		Floor		7.0	22.6	NO	NO
6329	3-BDBB-268-0003A/11B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6307	3-BDBB-268-0003A/11B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6313	3-BDBB-268-0003A/11C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6330	3-BDBB-268-0003A/11C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6314	3-BDBB-268-0003A/11E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6328	3-BDBB-268-0003A/11E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6312	3-BDBB-268-0003A/12B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6332	3-BDBB-268-0003A/12B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6304	3-BDBB-268-0003A/12C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6327	3-BDBB-268-0003A/12C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6296	3-BDBB-268-0003A/12E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6334	3-BDBB-268-0003A/12E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6297	3-BDBB-268-0003A/13B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6338	3-BDBB-268-0003A/13B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6298	3-BDBB-268-0003A/13C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6335	3-BDBB-268-0003A/13C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6291	3-BDBB-268-0003A/14A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6299	3-BDBB-268-0003A/14A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6301	3-BDBB-268-0003A/14B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6336	3-BDBB-268-0003A/14B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6303	3-BDBB-268-0003A/14E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6337	3-BDBB-268-0003A/14E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
1726	3-BDBB-268-0003A/15A	GE	IAV53L2A	GERS	6	15	15	0	Note 7	Floor	1	3.0	9.7	NO	YES
1727	3-BDBB-268-0003A/15A	GE	HFA151A8H	GERS	7.5	3	15	15	Notes 3 & 9	Floor	1	3.0	9.7	NO	YES
6295	3-BDBB-268-0003A/16A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6331	3-BDBB-268-0003A/16A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6300	3-BDBB-268-0003A/16E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6333	3-BDBB-268-0003A/16E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6305	3-BDBB-268-0003A/17C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6326	3-BDBB-268-0003A/17C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6315	3-BDBB-268-0003A/17E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6322	3-BDBB-268-0003A/17E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6302	3-BDBB-268-0003A/18C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6318	3-BDBB-268-0003A/18C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6294	3-BDBB-268-0003A/18E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6319	3-BDBB-268-0003A/18E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
1713	3-BDBB-268-0003A/2B	GE	CR109E000BHA	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
1714	3-BDBB-268-0003A/2B	GE	CR109E000BHA	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6317	3-BDBB-268-0003A/2B	GE	CR109EO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6323	3-BDBB-268-0003A/2B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6292	3-BDBB-268-0003A/4A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6306	3-BDBB-268-0003A/4A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO

6316	3-BDBB-268-0003A/4C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6324	3-BDBB-268-0003A/4C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6311	3-BDBB-268-0003A/5C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6320	3-BDBB-268-0003A/5C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6293	3-BDBB-268-0003A/6A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6310	3-BDBB-268-0003A/6A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6309	3-BDBB-268-0003A/6C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6321	3-BDBB-268-0003A/6C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6308	3-BDBB-268-0003A/7C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6325	3-BDBB-268-0003A/7C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6362	3-BDBB-268-0003B/10A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6383	3-BDBB-268-0003B/10A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6369	3-BDBB-268-0003B/10C	GE	CR209CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6384	3-BDBB-268-0003B/10C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6555	3-BDBB-268-0003B/10E		CR109C0	GERS	4.5	4.5	4.5	4.5	Contactor/Motor Starte	Ground		7.0	7.9	NO	NO
6564	3-BDBB-268-0003B/10E		CR124	OLR	N/A	N/A	N/A	N/A		Ground		7.0	7.9	YES	YES
6364	3-BDBB-268-0003B/11E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6385	3-BDBB-268-0003B/11E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6340	3-BDBB-268-0003B/12B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6367	3-BDBB-268-0003B/12B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6366	3-BDBB-268-0003B/13D	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6386	3-BDBB-268-0003B/13D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6347	3-BDBB-268-0003B/13E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6382	3-BDBB-268-0003B/13E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6355	3-BDBB-268-0003B/15D	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6388	3-BDBB-268-0003B/15D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6342	3-BDBB-268-0003B/15E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6381	3-BDBB-268-0003B/15E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
1744	3-BDBB-268-0003B/16A	GE	IAV53L2A	GERS	6	15	15	0		Ground	1	3.0	3.4	NO	YES
1745	3-BDBB-268-0003B/16A	GE	HFA151A8H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	1	3.0	3.4	NO	YES
6343	3-BDBB-268-0003B/17E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6390	3-BDBB-268-0003B/17E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6346	3-BDBB-268-0003B/18D	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6396	3-BDBB-268-0003B/18D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6348	3-BDBB-268-0003B/19A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6391	3-BDBB-268-0003B/19A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6350	3-BDBB-268-0003B/19C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6392	3-BDBB-268-0003B/19C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6351	3-BDBB-268-0003B/19E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6393	3-BDBB-268-0003B/19E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6352	3-BDBB-268-0003B/1C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6394	3-BDBB-268-0003B/1C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6353	3-BDBB-268-0003B/1E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6395	3-BDBB-268-0003B/1E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
1734	3-BDBB-268-0003B/2A	GE	HGA178A8994-G2	GERS	5	0	5	4	Notes 3 & 11	Ground	1	3.0	3.4	NO	YES
1735	3-BDBB-268-0003B/2A	GE	HGA178A8994-G2	GERS	5	0	5	4	Notes 3 & 11	Ground	1	3.0	3.4	NO	YES
6368	3-BDBB-268-0003B/3A	GE	CR109EO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6387	3-BDBB-268-0003B/3A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6365	3-BDBB-268-0003B/3E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6389	3-BDBB-268-0003B/3E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6356	3-BDBB-268-0003B/4D	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6373	3-BDBB-268-0003B/4D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6354	3-BDBB-268-0003B/4E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6372	3-BDBB-268-0003B/4E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES

6370	3-BDBB-268-0003B/5C2	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6375	3-BDBB-268-0003B/5C2	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6349	3-BDBB-268-0003B/5E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6374	3-BDBB-268-0003B/5E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6344	3-BDBB-268-0003B/6A	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6371	3-BDBB-268-0003B/6A	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6345	3-BDBB-268-0003B/6C2	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6376	3-BDBB-268-0003B/6C2	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6363	3-BDBB-268-0003B/6E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6379	3-BDBB-268-0003B/6E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6341	3-BDBB-268-0003B/7B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6357	3-BDBB-268-0003B/7B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6358	3-BDBB-268-0003B/7C	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6377	3-BDBB-268-0003B/7C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6361	3-BDBB-268-0003B/7E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6378	3-BDBB-268-0003B/7E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6339	3-BDBB-268-0003B/8B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6360	3-BDBB-268-0003B/8B	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6359	3-BDBB-268-0003B/8E	GE	CR109CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6380	3-BDBB-268-0003B/8E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
1756	3-BDBB-268-0003D	Agastat	7012AC	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	1	3.0	3.4	YES	YES
6398	3-BDBB-268-0003D/2C	GE	CR209EO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6400	3-BDBB-268-0003D/2C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6397	3-BDBB-268-0003D/4E	GE	CR209CO	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6399	3-BDBB-268-0003D/4E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
1762	3-BDBB-268-0003E	Agastat	7012AC	GERS	12.5	12.5	12.5	12.5	Note 1	Floor	1	3.0	9.7	YES	YES
6402	3-BDBB-268-0003E/2C	GE	CR209EO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6403	3-BDBB-268-0003E/2C	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6401	3-BDBB-268-0003E/4E	GE	CR209CO	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6404	3-BDBB-268-0003E/4E	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6405	3-BDBB-281-0003A/11D2	GE	IC2800-1607	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6408	3-BDBB-281-0003A/11D2	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6406	3-BDBB-281-0003A/9D	GE	IC2800-1607	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	9.7	NO	NO
6407	3-BDBB-281-0003A/9D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	9.7	YES	YES
6409	3-BDBB-281-0003B/3D	GE	IC2800-1607	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6411	3-BDBB-281-0003B/3D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6410	3-BDBB-281-0003B/5B	GE	IC2800-1607	GERS	4.5	4.5	4.5	4.5		Ground	1	3.0	3.4	YES	YES
6412	3-BDBB-281-0003B/5B	GE	CR124	OLR	N/A	N/A	N/A	N/A		Ground	1	3.0	3.4	YES	YES
6413	3-BDBB-281-0003C/7D	GE	IC2800-1607	GERS	4.5	4.5	4.5	4.5		Floor	1	3.0	3.2	YES	YES
6414	3-BDBB-281-0003C/7D	GE	CR124	OLR	N/A	N/A	N/A	N/A		Floor	1	3.0	3.2	YES	YES
2075	3-CHGA-248-0003EB	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2076	3-CHGA-248-0003EB	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2077	3-CHGA-248-0003EB	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2078	3-CHGA-248-0003EB	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2079	3-CHGA-248-0003EB	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
2080	3-CHGA-248-0003EB	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	14	N/A	N/A	YES	YES
2081	3-CHGA-248-0003EB	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	14	N/A	N/A	YES	YES
6003	3-INV-256-0001	OMRON	MY4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6004	3-INV-256-0001	OMRON	MY4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6005	3-INV-256-0001	OMRON	MY4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6006	3-INV-256-0001	OMRON	MY4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6007	3-INV-256-0001	OMRON	MY4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6008	3-INV-256-0001	OMRON	MY4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6009	3-INV-256-0001	OMRON	MY4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES

6010	3-INV-256-0001	OMRON	MY4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6019	3-INV-256-0002	OMRON	MY 4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6020	3-INV-256-0002	OMRON	MY 4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6021	3-INV-256-0002	OMRON	MY 4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6022	3-INV-256-0002	OMRON	MY 4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6023	3-INV-256-0002	OMRON	MY 4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6024	3-INV-256-0002	OMRON	MY 4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
6025	3-INV-256-0002	OMRON	MY 4	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	16	N/A	N/A	YES	YES
4963	3-LPNL-925-0031	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	GENRS	5.0	NO	YES
4964	3-LPNL-925-0031	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	GENRS	5.0	NO	YES
4974	3-LPNL-925-0031	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Floor	20	GENRS	5.0	NO	YES
5011	3-LPNL-925-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	GENRS	5.0	NO	YES
5012	3-LPNL-925-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Floor	20	GENRS	5.0	NO	YES
5027	3-LPNL-925-0032	Westinghouse	AR440AR STYLE766	GERS	10	7.5	10	10		Floor	20	GENRS	5.0	YES	YES
5028	3-LPNL-925-0032	Westinghouse	AR440AR STYLE766	GERS	10	7.5	10	10		Floor	20	GENRS	5.0	YES	YES
5030	3-LPNL-925-0032	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Floor	20	GENRS	5.0	NO	YES
5031	3-LPNL-925-0032	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Floor	20	GENRS	5.0	NO	YES
5032	3-LPNL-925-0032	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Floor	20	GENRS	5.0	NO	YES
5553	3-LPNL-925-0047A	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5554	3-LPNL-925-0047A	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5555	3-LPNL-925-0047A	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5556	3-LPNL-925-0047A	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5557	3-LPNL-925-0047A	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5558	3-LPNL-925-0047A	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5559	3-LPNL-925-0047A	GE	IAV51K1A	SQURTS	3.4	3.4	3.4	3.4		Ground	20	1.0	1.1	YES	YES
5560	3-LPNL-925-0047A	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5562	3-LPNL-925-0047A	GE	HEA61C238X2	SQURTS	14	14	14	14		Ground	20	1.0	1.1	YES	YES
5565	3-LPNL-925-0047A	GE	GGP53B1A	GERS	5	N/A	15	N/A	Note 7	Ground	20	1.0	1.1	YES	YES
5567	3-LPNL-925-0047A	GE	HFA151A2F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
5568	3-LPNL-925-0047A	GE	HFA151A2F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
5574	3-LPNL-925-0047B	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5575	3-LPNL-925-0047B	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5576	3-LPNL-925-0047B	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5577	3-LPNL-925-0047B	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5578	3-LPNL-925-0047B	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5579	3-LPNL-925-0047B	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5580	3-LPNL-925-0047B	GE	IAV51K1A	SQURTS	3.4	3.4	3.4	3.4		Ground	20	1.0	1.1	YES	YES .
5581	3-LPNL-925-0047B	GE	IAC51A101A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5583	3-LPNL-925-0047B	GE	HEA61C238X2	SQURTS	14	14	14	14		Ground	20	1.0	1.1	YES	YES
5586	3-LPNL-925-0047B	GE	GGP53B1A	GERS	5	N/A	15	N/A	Note 7	Ground	20	1.0	1.1	YES	YES
5588	3-LPNL-925-0047B	GE	HFA151A2F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
5589	3-LPNL-925-0047B	GE	HFA51A42F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
5595	3-LPNL-925-0047C	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5596	3-LPNL-925-0047C	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5597	3-LPNL-925-0047C	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5598	3-LPNL-925-0047C	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5599	3-LPNL-925-0047C	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5600	3-LPNL-925-0047C	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5601	3-LPNL-925-0047C	GE	IAV51KIA	SQURTS	3.4	3.4	3.4	3.4		Ground	20	1.0	1.1	YES	YES
5602	3-LPNL-925-0047C	GE	IAC51A1A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5604	3-LPNL-925-0047C	_	HEA61C238	SQURTS	14	14	14	14		Ground	20	1.0	1.1	YES	YES
5607	3-LPNL-925-0047C	GE	GGP53B1A	GERS	5	N/A	15	N/A	Note 7	Ground	20	1.0	1.1	YES	YES
5609	3-LPNL-925-0047C	GE	HFA151A2F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
5610	3-LPNL-925-0047C	GE	HFA151A2F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES

5616	3-LPNL-925-0047D	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5617	3-LPNL-925-0047D	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5618	3-LPNL-925-0047D	GE	IJD52A11A	GERS	8.8	N/A	15	N/A	Notes 7,17,40	Ground	20	1.0	1.1	YES	YES
5619	3-LPNL-925-0047D	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5620	3-LPNL-925-0047D		HEA61C238	SQURTS	14	14	14	14		Ground	20	1.0	1.1	YES	YES
5621	3-LPNL-925-0047D	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5622	3-LPNL-925-0047D	GE	IJCV51B23A	ADD2	8	N/A	10	N/A	Note 35	Ground	20	1.0	1.1	YES	YES
5623	3-LPNL-925-0047D	GE	IAV51K1A	SQURTS	3.4	3.4	3.4	3.4		Ground	20	1.0	1.1	YES	YES
5624	3-LPNL-925-0047D	GE	IAC51A1A	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	3	N/A	N/A	YES	YES
5628	3-LPNL-925-0047D	GE	GGP53B1A	GERS	5	N/A	15	N/A	Note 7	Ground	20	1.0	1.1	YES	YES
5630	3-LPNL-925-0047D	GE	HFA151A2F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
5631	3-LPNL-925-0047D	GE	HFA151A2F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
5637	3-LPNL-925-654A	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5638	3-LPNL-925-654A	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5639	3-LPNL-925-654A	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5640	3-LPNL-925-654A	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5641	3-LPNL-925-654A	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5642	3-LPNL-925-654A	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5643	3-LPNL-925-654A	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5644	3-LPNL-925-654A	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5648	3-LPNL-925-654A	Agastat	E7024SE004	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5649	3-LPNL-925-654A	Agastat	E7024SE004	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5650	3-LPNL-925-654A	Agastat	ETR14D3A003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5651	3-LPNL-925-654A	Agastat	ETR14D3E003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5652	3-LPNL-925-654A	Agastat	ETR14D3E003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5653	3-LPNL-925-654B	ABB	RXMA-2 9302	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5654	3-LPNL-925-654B	ABB	RXMA-2 9311	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5655	3-LPNL-925-654B	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5656	3-LPNL-925-654B	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5658	3-LPNL-925-654B	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5662	3-LPNL-925-654B	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5663	3-LPNL-925-654B	ABB	RXMA-1 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5666	3-LPNL-925-654B	ABB	RXMA-1	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5667	3-LPNL-925-654B	Agastat	E7024SE004	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5668	3-LPNL-925-654B	Agastat	E7024SE004	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5669	3-LPNL-925-654B	Agastat	ETR14D 3A003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5670	3-LPNL-925-654B	Agastat	ETR14D 3.00E+03	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5671	3-LPNL-925-654B	Agastat	ETR14D 3.00E+03	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5674	3-LPNL-925-654B	ABB	RXMA-1	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5679	3-LPNL-925-655B	ABB	RXMA-2 9315	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5680	3-LPNL-925-655B	ABB	RXMA-2 9324	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
2288	3-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
2289	3-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
2290	3-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
2291	3-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
2292	3-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
2294	3-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
2347	3-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
2348	3-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
2349	3-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
2350	3-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
2352	3-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
2354	3-PNLA-009-0015	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
2469	3-PNLA-009-0017	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES

2470	3-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES	
2471	3-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES	
2472	3-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES	
2473	3-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES	
2475	3-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES	
2529	3-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES	
2530	3-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES	
2531	3-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES	
2532	3-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES	
2534	3-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES	
2536	3-PNLA-009-0017	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES	
6550	3-PNLA-009-0023A		HEA61C217	SQURTS	14	14	14	14		Ground		7.0	7.9	YES	YES	
6551	3-PNLA-009-0023B		HEA61C217	SQURTS	14	14	14	14		Ground		7.0	7.9	YES	YES	
6552	3-PNLA-009-0023C		HEA61C217	SQURTS	14	14	14	14		Ground		7.0	7.9	YES	YES	
6553	3-PNLA-009-0023D		HEA61C217	SQURTS	14	14	14	14		Ground		7.0	7.9	YES	YES	
3596	3-PNLA-009-0030	Agastat	7012SE004	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	4.5	5.1	YES	YES	
3597	3-PNLA-009-0030	Agastat	7012SH003	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	4.5	5.1	YES	YES	
3598	3-PNLA-009-0030	Agastat	7012SH004	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	4.5	5.1	YES	YES	
3599	3-PNLA-009-0030	Agastat	7012SH003	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	4.5	5.1	YES	YES	
3600	3-PNLA-009-0030	Agastat	7012SH003	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	4.5	5.1	YES	YES	
3601	3-PNLA-009-0030	Agastat	7012SE004	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	4.5	5.1	YES	YES	
3602	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3603	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3604	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3605	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3606	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3607	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3608	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3609	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3610	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3611	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3612	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3613	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3614	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3615	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3616	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3617	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3618	3-PNLA-009-0030	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES	
3619	3-PNLA-009-0030	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	4.5	5.1	NO	YES	
3621	3-PNLA-009-0030	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	4.5	5.1	NO	YES	
3622	3-PNLA-009-0030	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	4.5	5.1	NO	YES	
3623	3-PNLA-009-0030	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	4.5	5.1	NO	YES	
3761	3-PNLA-009-0032	Agastat	7012SD	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES	
3762	3-PNLA-009-0032	Agastat	ETR14D 3ANOO3	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES	
3763	3-PNLA-009-0032	Agastat	7012SD	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES	
3764	3-PNLA-009-0032	Agastat	ETR14D 3DN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES	
3766	3-PNLA-009-0032	Agastat	7012SA	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES	
3767	3-PNLA-009-0032	Agastat	ETR14D 3DN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES	
3768	3-PNLA-009-0032	Agastat	ETR14D 3DN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES	
3769	3-PNLA-009-0032	Agastat	ETR14D 3AN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES	
3770	3-PNLA-009-0032	Agastat	ETR14D 3DN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES	
3771	3-PNLA-009-0032	Agastat	7012SA	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES	
3772	3-PNLA-009-0032	Agastat	7012SA	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES	
3774	3-PNLA-009-0032	Agastat	ETR14D 3AN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES	

3775	3-PNLA-009-0032	Agastat	ETR14D 3NN03	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
3779	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3780	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3781	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3782	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3783	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3785	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3786	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3787	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3788	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3789	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3790	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3791	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3792	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3793	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3794	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3795	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3796	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3797	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3798	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3799	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3800	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3801	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3802	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3803	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
3804	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
3805	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3806	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
3807	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3808	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3810	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3811	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3812	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3813	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3814	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3815	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3819	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3820	3-PNLA-009-0032	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
3822	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
3823	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3824	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3825	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3826	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3827	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3828	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3830	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3831	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3832	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3835	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
3836	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3837	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3838	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3839	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3841	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES

3842	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3843	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3846	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3847	3-PNLA-009-0032	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
3849	3-PNLA-009-0032	GE	HGA111A1F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3850	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3851	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3852	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3854	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3855	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3857	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3858	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3860	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3861	3-PNLA-009-0032	GE	HGA111A1F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3862	3-PNLA-009-0032	GE	HGA111A1F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3863	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3866	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3867	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3868	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3869	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3872	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3873	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3874	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3875	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3876	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3877	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3878	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3879	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3880	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3881	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3882	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3885	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3888	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3889	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3890	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3891	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
3892	3-PNLA-009-0032	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
6500	3-PNLA-009-0032		HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground		7.0	7.9	NO	YES
6504	3-PNLA-009-0032		HGA11A51F	GERS	10	0	10	10	Note 3	Ground		7.0	7.9	NO	YES
6556	3-PNLA-009-0032		HGA11A51F	GERS	10	0	10	10		Ground		7.0	7.9	NO	YES
4027	3-PNLA-009-0033	Agastat	7012SD	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
4028	3-PNLA-009-0033	Agastat	ETR14D 3DN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
4029	3-PNLA-009-0033	Agastat	7012SD	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
4030	3-PNLA-009-0033	Agastat	ETR14D EDN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
4032	3-PNLA-009-0033	Agastat	ETR14D 3DN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
4033	3-PNLA-009-0033	Agastat	ETR14D	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
4034	3-PNLA-009-0033	Agastat	7012SA	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
4035	3-PNLA-009-0033	Agastat	ETR14D 3DN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
4036	3-PNLA-009-0033	Agastat	ETR14D 3DN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
4037	3-PNLA-009-0033	Agastat	7012SA	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
4038	3-PNLA-009-0033	Agastat	7012SA	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
4040	3-PNLA-009-0033	Agastat	7012SA	GERS	12.5	12.5	12.5	12.5	Note 1	Ground	20	1.0	1.1	YES	YES
4041	3-PNLA-009-0033	Agastat	ETR14D 3DN003	ADD2	9	3.8	10	10		Ground	20	1.0	1.1	YES	YES
4045	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES

4046	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4047	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4048	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4049	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4051	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4052	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4053	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4054	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4055	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4056	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4057	3-PNLA-009-0033	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
4058	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4059	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4060	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4061	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4062	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4063	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4064	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4065	3-PNLA-009-0033	GE	HGA111A1F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4066	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4067	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4068	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4069	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4071	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
4073	3-PNLA-009-0033	GE	HFA151A1F	GERS	7.5	3	15	15	Notes 3 & 9	Ground		7.0	7.9	NO	YES
4074	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4075	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4077	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4078	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4079	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4080	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4081	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4082	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4087	3-PNLA-009-0033	GE	HFA151A9F	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	1.0	1.1	YES	YES
4088	3-PNLA-009-0033	GE	HGA111A1F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4089	3-PNLA-009-0033	GE	HGA111A1F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4090	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
4091	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4092	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4093	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4094	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4095	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4096	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4098	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4099	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4100	3-PNLA-009-0033	GE	HGA111A1F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4103	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground		7.0	7.9	NO	NO
4104	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4105	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4106	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4107	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4109	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4110	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4111	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES

4112	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4113	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4114	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4115	3-PNLA-009-0033	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	1.0	1.1	NO	YES
4117	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4118	3-PNLA-009-0033	GE	HGA111A1F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4119	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4120	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4121	3-PNLA-009-0033	GE	HGA111A1F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4122	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4123	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4125	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4126	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4127	3-PNLA-009-0033	GE	HGA111A1F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4128	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4129	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4130	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4131	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4134	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4135	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4136	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4137	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4140	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4141	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4142	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4143	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4144	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4145	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4146	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4147	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4148	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4149	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4150	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4153	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4154	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4155	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4158	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4159	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4160	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4161	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4162	3-PNLA-009-0033	GE	HGA11A51F	GERS	8.8	0	4.4	10	Note 3	Ground	20	1.0	1.1	NO	YES
4215	3-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4216	3-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4221	3-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4222	3-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4223	3-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4229	3-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4236	3-PNLA-009-0039	GE	HFA51A41F	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4245	3-PNLA-009-0039	Agastat	ETR14D	ADD2	9	3.8	10	10		Ground	20	4.5	5.1	NO	YES
4305	3-PNLA-009-0042	GE	CR120A	GERS	10	9	10	10		Ground		7.0	7.9	YES	YES
4306	3-PNLA-009-0042	GE	CR120A	GERS	10	9	10	10		Ground		7.0	7.9	YES	YES
4309	3-PNLA-009-0042	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4314	3-PNLA-009-0042	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4315	3-PNLA-009-0042	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES

4321	3-PNLA-009-0042	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4323	3-PNLA-009-0042	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4324	3-PNLA-009-0042	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4325	3-PNLA-009-0042	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4328	3-PNLA-009-0042	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4329	3-PNLA-009-0042	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4330	3-PNLA-009-0042	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4335	3-PNLA-009-0042	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4336	3-PNLA-009-0042	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4337	3-PNLA-009-0042	GE	HFA151A9H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
4339	3-PNLA-009-0042	GE	CR120A04002	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4344	3-PNLA-009-0042	GE	CR120A04002	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4347	3-PNLA-009-0042	GE	CR120A04002	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4351	3-PNLA-009-0042	GE	CR120A04002	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4352	3-PNLA-009-0042	GE	CR120A04002	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4353	3-PNLA-009-0042	GE	CR120A04002	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4406	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground		7.0	7.9	YES	YES
4407	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4408	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground		7.0	7.9	YES	YES
4414	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4416	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4418	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4421	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4422	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4424	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4425	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4426	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4427	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4428	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4429	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4430	3-PNLA-009-0043	GE	CR120A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4431	3-PNLA-009-0043	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4432	3-PNLA-009-0043	GE	HFA151A9H	GERS	7.5	3	15	15	Notes 3 & 9	Ground	20	4.5	5.1	NO	YES
4434	3-PNLA-009-0043	GE	HFA51A41H	GERS	6	1	7	7	Notes 3, 6 & 9	Ground	20	4.5	5.1	NO	YES
4437	3-PNLA-009-0043	GE	CR120AD4002A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4441	3-PNLA-009-0043	GE	CR120AD4002A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4442	3-PNLA-009-0043	GE	CR120AD4002A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES.
4445	3-PNLA-009-0043	GE	CR120AD4002A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4448	3-PNLA-009-0043	GE	CR120AD4002A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4450	3-PNLA-009-0043	GE	CR120AD4002A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4451	3-PNLA-009-0043	GE	CR120AD4002A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4452	3-PNLA-009-0043	GE	CR120AD4002A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4454	3-PNLA-009-0043	GE	CR120AD4002A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
4455	3-PNLA-009-0043	GE	CR120AD4002A	GERS	10	9	10	10		Ground	20	4.5	5.1	YES	YES
6416	3-PNLA-009-0043		CR120A	GERS	10	9	10	10		Ground		7.0	7.9	YES	YES
4510	3-PNLA-009-0055	GE	CR120A06002A	GERS	10	9	10	10		Floor	20	GENRS	5.0	YES	YES
4512	3-PNLA-009-0055	GE	CR120A06002A	GERS	10	9	10	10		Floor	20	GENRS	5.0	YES	YES
4569	3-PNLA-009-0081	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4570	3-PNLA-009-0081	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4571	3-PNLA-009-0081	Agastat	ETR14B3AN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4572	3-PNLA-009-0081	Agastat	ETR14B3AN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4573	3-PNLA-009-0081	Agastat	ETR14B3AN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4574	3-PNLA-009-0081	Agastat	ETR14B3AN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4575	3-PNLA-009-0081	Agastat	ETR14B3AN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES

4577	3-PNLA-009-0081	Agastat	ETR14B3AN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4578	3-PNLA-009-0081	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4579	3-PNLA-009-0081	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4583	3-PNLA-009-0081	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4584	3-PNLA-009-0081	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4586	3-PNLA-009-0081	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4591	3-PNLA-009-0081	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4593	3-PNLA-009-0081	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4595	3-PNLA-009-0081	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4650	3-PNLA-009-0082	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4651	3-PNLA-009-0082	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4652	3-PNLA-009-0082	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4653	3-PNLA-009-0082	Agastat	ETR14B3AN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4654	3-PNLA-009-0082	Agastat	ETR14B3AN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4655	3-PNLA-009-0082	Agastat	ETR14B3AN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4656	3-PNLA-009-0082	Agastat	ETR14B3AN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4658	3-PNLA-009-0082	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4659	3-PNLA-009-0082	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4660	3-PNLA-009-0082	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4664	3-PNLA-009-0082	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4665	3-PNLA-009-0082	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4667	3-PNLA-009-0082	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4672	3-PNLA-009-0082	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4674	3-PNLA-009-0082	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4676	3-PNLA-009-0082	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4718	3-PNLA-009-0083	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4720	3-PNLA-009-0083	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4722	3-PNLA-009-0083	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4724	3-PNLA-009-0083	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4726	3-PNLA-009-0083	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4740	3-PNLA-009-0083	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4775	3-PNLA-009-0084	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4777	3-PNLA-009-0084	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4779	3-PNLA-009-0084	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4781	3-PNLA-009-0084	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4783	3-PNLA-009-0084	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4797	3-PNLA-009-0084	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4832	3-PNLA-009-0085	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4834	3-PNLA-009-0085	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4836	3-PNLA-009-0085	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4838	3-PNLA-009-0085	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4840	3-PNLA-009-0085	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4854	3-PNLA-009-0085	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4889	3-PNLA-009-0086	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4891	3-PNLA-009-0086	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4893	3-PNLA-009-0086	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4895	3-PNLA-009-0086	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4897	3-PNLA-009-0086	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
4911	3-PNLA-009-0086	Agastat	EGPBN003	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5842	3-PNLA-082-00003A	Sq D	PO6DC1199 CLASS	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5844	3-PNLA-082-00003A	GE	CR105KOOOBLA	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5845	3-PNLA-082-00003A	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5846	3-PNLA-082-00003A	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5847	3-PNLA-082-00003A	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES

5849	3-PNLA-082-00003A	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5850	3-PNLA-082-00003A		EQ1933	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5851	3-PNLA-082-00003A	Sq D	CO-21D	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5852	3-PNLA-082-00003A		721364	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5853	3-PNLA-082-00003A		103831	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5854	3-PNLA-082-00003A	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5855	3-PNLA-082-00003A	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5857	3-PNLA-082-00003A	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5859	3-PNLA-082-00003A	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5861	3-PNLA-082-00003A	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5862	3-PNLA-082-00003A	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5863	3-PNLA-082-00003A	Sq D	CO-21D	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5864	3-PNLA-082-00003A	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5865	3-PNLA-082-00003A	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5866	3-PNLA-082-00003A	Sq D	XUDO-1200 CLASS 8	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5867	3-PNLA-082-00003A	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5869	3-PNLA-082-00003A	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5870	3-PNLA-082-00003A	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5871	3-PNLA-082-00003A		EQ1965	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5872	3-PNLA-082-00003A	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5873	3-PNLA-082-00003A	P&B	MDR173-1 XUDO 120	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5874	3-PNLA-082-00003A	Agastat	7022PHF	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5875	3-PNLA-082-00003A		36530082	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5876	3-PNLA-082-00003A			TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5877	3-PNLA-082-00003A	Agastat	7012PHE	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6572	3-PNLA-082-00003A		SYNCHRO-STRAT ES	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
5879	3-PNLA-082-00003B	Sq D	PO4DC CLASS 7001	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5881	3-PNLA-082-00003B	GE	CR105K000BLA	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5882	3-PNLA-082-00003B	Sq D	XUDO-1200 CLASS 8	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5883	3-PNLA-082-00003B	Sq D	XUDO-1200 CLASS 8	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5884	3-PNLA-082-00003B	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5886	3-PNLA-082-00003B	GM	12-8336 8299025	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5887	3-PNLA-082-00003B	Sq D	CO-2E 31018-346-5	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5888	3-PNLA-082-00003B	Sq D	C021D	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5889	3-PNLA-082-00003B	Sq D	CO-2E EQ193564	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5890	3-PNLA-082-00003B	Sq D	CO-2E 31018-346-5	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5891	3-PNLA-082-00003B	Sq D	XUDO1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5892	3-PNLA-082-00003B	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5894	3-PNLA-082-00003B	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5895	3-PNLA-082-00003B	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5896	3-PNLA-082-00003B	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5898	3-PNLA-082-00003B	GM	12-8336 8299025	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5899	3-PNLA-082-00003B		EQ1933	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5900	3-PNLA-082-00003B	Sq D	GO-1D CLASS 9050	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5901	3-PNLA-082-00003B	Sq D	CO-2E EQ1935	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5902	3-PNLA-082-00003B		EQ1935	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5903	3-PNLA-082-00003B	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5904	3-PNLA-082-00003B	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5906	3-PNLA-082-00003B	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5907	3-PNLA-082-00003B	Sq D	CO-2E CLASS 9050	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5908	3-PNLA-082-00003B		EQ1965-G13	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5909	3-PNLA-082-00003B	Sq D	CO-2E CLASS 9050	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5910	3-PNLA-082-00003B	Sq D	CLASS 7001	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5911	3-PNLA-082-00003B	Agastat	7022PHC696	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES

5912	3-PNLA-082-00003B	_	36530082-01	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5913	3-PNLA-082-00003B	Sq D	FPO-22	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5914	3-PNLA-082-00003B	Agastat	7012PHC696	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5916	3-PNLA-082-00003B	Westinghouse	SV2928402A10	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5917	3-PNLA-082-00003B	_	AV1600876H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5918	3-PNLA-082-00003B	GE	CR105K000BLA	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6573	3-PNLA-082-00003B		SYNCHRO-STRAT ES	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
5920	3-PNLA-082-00003C	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5922	3-PNLA-082-00003C	GE	CR105K	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5923	3-PNLA-082-00003C	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5924	3-PNLA-082-00003C	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5925	3-PNLA-082-00003C	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5927	3-PNLA-082-00003C	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5928	3-PNLA-082-00003C		_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5929	3-PNLA-082-00003C	Sq D	CO21D	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5930	3-PNLA-082-00003C	_	EQ19	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5931	3-PNLA-082-00003C	_	EQ1935	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5932	3-PNLA-082-00003C	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5933	3-PNLA-082-00003C	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5935	3-PNLA-082-00003C	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5936	3-PNLA-082-00003C	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5937	3-PNLA-082-00003C	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5939	3-PNLA-082-00003C	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5940	3-PNLA-082-00003C	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5941	3-PNLA-082-00003C	Sq D	CO21D	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5942	3-PNLA-082-00003C	Sq D	C0-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5943	3-PNLA-082-00003C	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5944	3-PNLA-082-00003C	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5945	3-PNLA-082-00003C	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5947	3-PNLA-082-00003C	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5948	3-PNLA-082-00003C	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5949	3-PNLA-082-00003C	_	EQ1965	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5950	3-PNLA-082-00003C	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5951	3-PNLA-082-00003C	Sq D	PO6DC	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5952	3-PNLA-082-00003C	Agastat	7022	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5953	3-PNLA-082-00003C	_	36530082	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5954	3-PNLA-082-00003C	Sq D	FDO22	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5955	3-PNLA-082-00003C	Agastat	7012PH	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6574	3-PNLA-082-00003C		SYNCHRO-STRAT ES	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
6582	3-PNLA-082-00003C		AV-1600876H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
5957	3-PNLA-082-00003D	Sq D	PO6DC	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5959	3-PNLA-082-00003D	GE	CR105K	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5960	3-PNLA-082-00003D	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5961	3-PNLA-082-00003D	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5962	3-PNLA-082-00003D	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
5964	3-PNLA-082-00003D	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5965	3-PNLA-082-00003D	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5966	3-PNLA-082-00003D	Sq D	CO21D	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5967	3-PNLA-082-00003D	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5968	3-PNLA-082-00003D	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5969	3-PNLA-082-00003D	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5970	3-PNLA-082-00003D	Sq D	XUD0-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5972	3-PNLA-082-00003D	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5973	3-PNLA-082-00003D	Sq D	XUDO-1200	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES

5974	3-PNLA-082-00003D	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
5976	3-PNLA-082-00003D	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5977	3-PNLA-082-00003D	_	_	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5978	3-PNLA-082-00003D	Sq D	C0-2D	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5979	3-PNLA-082-00003D	Sq D	C0-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5980	3-PNLA-082-00003D	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5981	3-PNLA-082-00003D	Sq D	XUDO-80	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5984	3-PNLA-082-00003D	GM	12-8336	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5985	3-PNLA-082-00003D	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5986	3-PNLA-082-00003D	_	EQ1965	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5987	3-PNLA-082-00003D	Sq D	CO-2E	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5988	3-PNLA-082-00003D	_	DO6DC	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5989	3-PNLA-082-00003D	Agastat	7022PHE	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5990	3-PNLA-082-00003D	_	36530082	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5991	3-PNLA-082-00003D	Sq D	FDO-22	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
5992	3-PNLA-082-00003D	Agastat	7012PHC	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6575	3-PNLA-082-00003D		SYNCHRO-STRAT ES	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
6583	3-PNLA-082-00003D		AV-1600876H	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc		N/A	N/A	YES	YES
6584	3-PNLA-082-00003D		XUDO-1200	GERS	8	6	10	10	Note 14	Ground		7.0	7.9	NO	YES
6034	3-PROT-099-0003A1	_	UOA 0267	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6035	3-PROT-099-0003A1	_	UOA 0265	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6036	3-PROT-099-0003A1	_	SP1033	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6037	3-PROT-099-0003A1	Agastat	7022AC	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6038	3-PROT-099-0003A1	Agastat	GPI-OR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6039	3-PROT-099-0003A1	Agastat	GPI-OR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6040	3-PROT-099-0003A1	Agastat	GPI-OR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6041	3-PROT-099-0003A1	Agastat	GPI-OR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6066	3-PROT-099-0003B1	_	UOA-0267	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6067	3-PROT-099-0003B1	_	UOA-0266	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6068	3-PROT-099-0003B1	_	SP-0133	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6069	3-PROT-099-0003B1	Agastat	7022AC	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6070	3-PROT-099-0003B1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A	Note r	TVA Calc	20	N/A	N/A	YES	YES
6071	3-PROT-099-0003B1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A	Note r	TVA Calc	20	N/A	N/A	YES	YES
6072	3-PROT-099-0003B1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A	Note r	TVA Calc	20	N/A	N/A	YES	YES
6073	3-PROT-099-0003B1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6082	3-PROT-099-0003B2		UOA-0267	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6083	3-PROT-099-0003B2	_	UOA-0266	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6084	3-PROT-099-0003B2	_	SP-0133	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6085	3-PROT-099-0003B2	Agastat	7022AC	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6086	3-PROT-099-0003B2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6087	3-PROT-099-0003B2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6088	3-PROT-099-0003B2	_	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6089	3-PROT-099-0003B2	_	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6098	3-PROT-099-0003C1	_	UOA-0267	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6099	3-PROT-099-0003C1	_	UOA-0266	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6100	3-PROT-099-0003C1	_	SP-0133	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6101	3-PROT-099-0003C1	Agastat	7022AC	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6102	3-PROT-099-0003C1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6103	3-PROT-099-0003C1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6104	3-PROT-099-0003C1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6105	3-PROT-099-0003C1	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6114	3-PROT-099-0003C2	_	UOA-0267	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6115	3-PROT-099-0003C2	_	UOA-0266	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6116	3-PROT-099-0003C2	_	SP-0133	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES

6117	3-PROT-099-0003C2	Agastat	7022AC	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6118	3-PROT-099-0003C2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6119	3-PROT-099-0003C2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6120	3-PROT-099-0003C2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6121	3-PROT-099-0003C2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6050	3-PROT-099-3A2	_	UOA 0267	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6051	3-PROT-099-3A2	_	UOA 0266	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6052	3-PROT-099-3A2	_	SP 0133	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6053	3-PROT-099-3A2	Agastat	7022AC	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6054	3-PROT-099-3A2	Agastat	GPI- QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6055	3-PROT-099-3A2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6056	3-PROT-099-3A2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES
6057	3-PROT-099-3A2	Agastat	GPI-QR	TVA Calc	N/A	N/A	N/A	N/A		TVA Calc	20	N/A	N/A	YES	YES

APPENDIX C

PROCESS SWITCH LIST
FOR
SYSTEMS CONSEQUENCE EVALUATION

UNITS 2 AND 3

BROWNS FERRY

APPENDIX C: PROCESS SWITCH LIST FOR CONSEQUENCE EVALUATION

UNIT	DEVICE	LOCATION	SAT	MANUFACTURE/MAKE/MODEL	50.49 Y/N	COMMENTS/NOTES
2	PS-84-21	0-PNLA-925-0247A	IP	SOR/12N6-B4-NX	Y	BINDER BFN0EQ-IPS-001, PS1
3	PS-84-21	3-LPNL-925-0247A	IP	SOR/12N6-B4-NX	Y	BINDER BFN0EQ-IPS-001, PS1
2	PS-84-22	LOCAL	IP	SOR/12N6-B4-NX	Y	BINDER BFN0EQ-IPS-001, PS1
3	PS-84-22	LOCAL	IP	SOR/12N6-B4-NX	Y	BINDER BFN0EQ-IPS-001, PS1
2	TS-1-17A	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-17A	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-17B	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-17B	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-17C	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-17C	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-17D	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-17D	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-29A	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-29A	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-29B	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-29B	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-29C	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-29C	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-29D	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-29D	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-40A	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-40A	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-40B	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-40B	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-40C	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-40C	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-40D	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-40D	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-54A	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-54A	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-54B	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-54B	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
2	TS-1-54C	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-54C	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1

APPENDIX C: PROCESS SWITCH LIST FOR CONSEQUENCE EVALUATION

UNIT	DEVICE	LOCATION	SAT	MANUFACTURE/MAKE/MODEL	50.49 Y/N	COMMENTS/NOTES
2	TS-1-54D	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
3	TS-1-54D	LOCAL	IP	FENWAL/17002-40	Y	BINDER BFN0EQ-ITS-001, PS1
0	0-FS-30-60B	[IN DUCT]	IP	FCI/FR72-4-1	N	NOTE PS2
0	0-FS-30-61B	[IN DUCT]	IP	FCI/FR72-4-1	N	NOTE PS2
0	0-FS-30-62A	[IN DUCT]	IP	FCI/FR72-4-1	N	NOTE PS2
0	0-FS-30-62B	[IN DUCT]	IP	FCI/FR72-4-1	N	NOTE PS2
0	0-FS-30-63A	[IN DUCT]	IP	FCI/FR72-4-1	N	NOTE PS2
0	0-FS-30-63B	[IN DUCT]	IP	FCI/FR72-4-1	N	NOTE PS2
0	0-FS-30-60A	[IN DUCT]	IP	FCI/FR72-4-1	N	NOTE PS2,
0	0-FS-30-61A	[IN DUCT]	IP	FCI/FR72-4-1	N	NOTE PS2,
0	0-FS-67-1	0-LPNL-925-0029A	IP	FCI/FR72-4-1	N	NOTE PS3
0	0-FS-67-11	0-LPNL-925-0029A	IP	FCI/FR72-4-1	N	NOTE PS3
0	0-FS-67-5	0-LPNL-925-0029A	IP	FCI/FR72-4-1	N	NOTE PS3
0	0-FS-67-8	0-LPNL-925-0029A	IP	FCI/FR72-4-1	N	NOTE PS3
0	0-PDIS-67-1	0-LPNL-925-0029A	IP	ITT BARTON/288A	N	NOTE PS3
0	0-PDIS-67-11	0-LPNL-925-0029A	IP	ITT BARTON/288A	N	NOTE PS3
0	0-PDIS-67-5	0-LPNL-925-0029A	IP	ITT BARTON/288A	N	NOTE PS3
0	0-PDIS-67-8	0-LPNL-925-0029A	IP	ITT BARTON/288A	N	NOTE PS3
3	3-FS-30-230	[IN DUCT]	IP	FCI/FR72	N	NOTE PS4
3	3-FS-30-231	[IN DUCT]	IP	FCI/FR72	N	NOTE PS4
3	3-FS-30-232	[IN DUCT]	IP	FCI/FR72	N	NOTE PS4
3	3-FS-30-233	[IN DUCT]	IP	FCI/FR72	N	NOTE PS4
3	3-FS-30-234	[IN DUCT]	IP	FCI/FR72	N	NOTE PS4
3	3-FS-30-235	[IN DUCT]	IP	FCI/FR72	N	NOTE PS4
3	3-FS-30-236	[IN DUCT]	IP	FCI/FR72	N	NOTE PS4
3	3-FS-30-237	[IN DUCT]	IP	FCI/FR72	N	NOTE PS4
2	10-120B	2-LPNL-925-0062	IP	SOR/5N6-B3-NX	N	2-PS-74-19A, BINDER BFN0EQ-IPS-001, PS1
3	10-120B	3-LPNL-925-0062	IP	SOR/5N6-B3-NX	N	3-PS-74-19A, BINDER BFN0EQ-IPS-001, PS1
2	10-120D	2-LPNL-925-0062	IP	SOR/5N6-B3-NX	N	2-PS-74-42A, BINDER BFN0EQ-IPS-001, PS1
3	10-120D	3-LPNL-925-0062	IP	SOR/5N6-B3-NX	N	3-PS-74-42A, BINDER BFN0EQ-IPS-001, PS1
2	10-123B	2-LPNL-925-0062	IP	SOR/5N6-B3-NX	Y	2-PS-74-31B, BINDER BFN0EQ-IPS-001, PS1
3	10-123B	3-LPNL-925-0062	IP	SOR/5N6-B3-NX	Y	3-PS-74-31B, BINDER BFN0EQ-IPS-001, PS1
2	10-123D	2-LPNL-925-0062	IP	SOR/5N6-B3-NX	Y	2-PS-74-42B, BINDER BFN0EQ-IPS-001, PS1
3	10-123D	3-LPNL-925-0062	IP	SOR/5N6-B3-NX	Y	3-PS-74-42B, BINDER BFN0EQ-IPS-001, PS1

APPENDIX C: PROCESS SWITCH LIST FOR CONSEQUENCE EVALUATION

UNIT	DEVICE	LOCATION	SAT	MANUFACTURE/MAKE/MODEL	50.49 Y/N	COMMENTS/NOTES
2	10-124B	2-LPNL-925-0062	IP	SOR/103AS-B212-NX-JJTTX6	Y	2-FS-74-64, BINDER BFN0EQ-IFS-002, PS1, PS1
3	10-124B	3-LPNL-925-0062	IP	SOR/103AS-B212-NX-JJTTX6	Y	3-FS-74-64, BINDER BFN0EQ-IFS-002, PS1, PS1
2	FS-74-50	2-LPNL-925-0059	IP	SOR/103AS-B212-NX-JJTTX6	Y	BINDER BFN0EQ-IFS-002, PS1
3	FS-74-50	3-LPNL-925-0059	IP	SOR/103AS-B212-NX-JJTTX6	Y	BINDER BFN0EQ-IFS-002, PS1
2	FS-74-64	2-LPNL-925-0062	IP	SOR/103AS-B212-NX-JJTTX6	Y	10-124B, BINDER BFN0EQ-IFS-002, PS1
3	FS-74-64	3-LPNL-925-0062	IP	SOR/103AS-B212-NX-JJTTX6	Y	10-124B, BINDER BFN0EQ-IFS-002, PS1
2	FS-75-21	2-LPNL-925-0001	IP	SOR/103AS-B202-NX	Y	BINDER BFN0EQ-IFS-002, PS1
3	FS-75-21	3-LPNL-925-0001	IP	SOR/103AS-B202-NX	Y	BINDER BFN0EQ-IFS-002, PS1
2	FS-75-49	2-LPNL-925-0060	IP	SOR/103AS-B202-NX	Y	BINDER BFN0EQ-IFS-002, PS1
3	FS-75-49	3-LPNL-925-0060	IP	SOR/103AS-B202-NX	Y	BINDER BFN0EQ-IFS-002, PS1
2	PS-10-120A	2-LPNL-925-0059	IP	SOR/5N6-B3-NX	Y	PS-74-8A, BINDER BFNOEQ-IPS-001, PS1
3	PS-10-120A	3-LPNL-925-0059	IP	SOR/5N6-B3-NX	Y	PS-74-8A, BINDER BFNOEQ-IPS-001, PS1
2	PS-10-120C	2-LPNL-925-0059	IP	SOR/5N6-B3-NX	Y	PS-74-31A, BINDER BFNOEQ-IPS-001, PS1
3	PS-10-120C	3-LPNL-925-0059	IP	SOR/5N6-B3-NX	Y	PS-74-31A, BINDER BFNOEQ-IPS-001, PS1
2	PS-10-123A	2-LPNL-925-0059	IP	SOR/5N6-B3-NX	Y	PS-74-8B, BINDER BFNOEQ-IPS-001, PS1
3	PS-10-123A	3-LPNL-925-0059	IP	SOR/5N6-B3-NX	Y	PS-74-8B, BINDER BFNOEQ-IPS-001, PS1
2	PS-10-123C	2-LPNL-925-0059	IP	SOR/5N6-B3-NX	Y	PS-74-19B, BINDER BFNOEQ-IPS-001, PS1
3	PS-10-123C	3-LPNL-925-0059	IP	SOR/5N6-B3-NX	Y	PS-74-19B, BINDER BFNOEQ-IPS-001, PS1
1	PS-24-133C	[1-LPNL-925-0223]	CA	SOR/4SC-BB5-M4-C1AX	N	NOTE PS5
2	PS-24-133C	[2-LPNL-925-0223]	CA	SOR/4SC-BB5-M4-C1AX	N	NOTE PS5
3	PS-24-133C	[3-LPNL-925-0223]	CA	SOR/4SC-BB5-M4-C1AX	N	NOTE PS5
1	PS-24-133D	[1-LPNL-925-0223]	CA	SOR/4SC-BB5-M4-C1AX	N	NOTE PS5
2	PS-24-133D	[2-LPNL-925-0223]	CA	SOR/4SC-BB5-M4-C1AX	N	NOTE PS5
3	PS-24-133D	[3-LPNL-925-0223]	CA	SOR/4SC-BB5-M4-C1AX	N	NOTE PS5
2	PS-67-50	[LOCAL]	IP	SOR/6N6-B3-NX-CIA	Y	BINDER BFN0EQ-IPS-001, PS1
3	PS-67-50	[LOCAL]	IP	SOR/6N6-B3-NX-CIA	Y	BINDER BFN0EQ-IPS-001, PS1
2	PS-67-51	[LOCAL]	IP	SOR/6N6-B3-NX-CIA	Y	BINDER BFN0EQ-IPS-001, PS1
3	PS-67-51	[LOCAL]	IP	SOR/6N6-B3-NX-CIA	Y	BINDER BFN0EQ-IPS-001, PS1
2	PS-68-93	[2-LPNL-925-0007]	IP	SOR/6N6-B5-NX-CIAJJTTX12	N	NOTE PS6
3	PS-68-93	[3-LPNL-925-0007A]	IP	SOR/6N6-B5-NX-CIAJJTTX12	N	NOTE PS6
2	PS-68-94	[2-LPNL-925-0007]	IP	SOR/6N6-B5-NX-CIAJJTTX12	N	NOTE PS6
3	PS-68-94	[3-LPNL-925-0007B]	IP	SOR/6N6-B5-NX-CIAJJTTX12	N	NOTE PS6
0	PS-75-16	2-LPNL-925-0001	IP	SOR/5N6-B3-NX-CIAJJTTX12	Y	BINDER BFN0EQ-IPS-001, PS1, PS13
0	PS-75-16	3-LPNL-925-0001	IP	SOR/5N6-B3-NX-CIAJJTTX12	Y	BINDER BFN0EQ-IPS-001, PS1, PS13

APPENDIX C: PROCESS SWITCH LIST FOR CONSEQUENCE EVALUATION

UNIT	DEVICE	LOCATION	SAT	MANUFACTURE/MAKE/MODEL	50.49 Y/N	COMMENTS/NOTES
0	PS-75-35	2-LPNL-925-0060	IP	SOR/5N6-B3-NX-CIAJJTTX12	Y	BINDER BFN0EQ-IPS-001, PS1, PS13
0	PS-75-35	3-LPNL-925-0060	IP	SOR/5N6-B3-NX-CIAJJTTX12	Y	BINDER BFN0EQ-IPS-001, PS1, PS13
0	PS-75-44	2-LPNL-925-0060	IP	SOR/5N6-B3-NX-CIAJJTTX12	Y	BINDER BFN0EQ-IPS-001, PS1, PS13
0	PS-75-44	3-LPNL-925-0060	IP	SOR/5N6-B3-NX-CIAJJTTX12	Y	BINDER BFN0EQ-IPS-001, PS1, PS13
0	PS-75-7	2-LPNL-925-0001	IP	SOR/5N6-B3-NX-CIAJJTTX12	Y	BINDER BFN0EQ-IPS-001, PS1, PS13
0	PS-75-7	3-LPNL-925-0001	IP	SOR/5N6-B3-NX-CIAJJTTX12	Y	BINDER BFN0EQ-IPS-001, PS1, PS13
2	TS-64-68	[LOCALLY MOUNTED	IP	SOR/201TA-B125-JJTTX6	Y	BINDER BFN0EQ-ITS-002
3	TS-64-68	[LOCALLY MOUNTED	IP	SOR/201TA-B125-JJTTX6	Y	BINDER BFN0EQ-ITS-002
2	TS-64-69	[LOCALLY MOUNTED	IP	SOR/201TA-B125-JJTTX6	Y	BINDER BFN0EQ-ITS-002
3	TS-64-69	[LOCALLY MOUNTED	IP	SOR/201TA-B125-JJTTX6	Y	BINDER BFN0EQ-ITS-002
2	TS-64-70	[LOCALLY MOUNTED	IP	SOR/201TA-B125-JJTTX6	Y	BINDER BFN0EQ-ITS-002
3	TS-64-70	[LOCALLY MOUNTED	IP	SOR/201TA-B125-JJTTX6	Y	BINDER BFN0EQ-ITS-002
2	TS-64-71	[LOCALLY MOUNTED	IP	SOR/201TA-B125-JJTTX6	Y	BINDER BFN0EQ-ITS-002
3	TS-64-71	[LOCALLY MOUNTED	IP	SOR/201TA-B125-JJTTX6	Y	BINDER BFN0EQ-ITS-002
2	TS-64-72	[LOCALLY MOUNTED	IP	SOR/201TA-B125-JJTTX6	Y	BINDER BFN0EQ-ITS-002
2	TS-64-73	[LOCALLY MOUNTED	IP	SOR/201TA-B125-JJTTX6	Y	BINDER BFN0EQ-ITS-002
2	0-PS-24-134A	LOCAL PNL	CA	SOR/4SC-KK45-M4-C1AX	N	NOTE PS7
2	0-PS-24-134B	LOCAL PNL	CA	SOR/4SC-KK45-M4-C1AX	N	NOTE PS7
2	0-PS-82-29A MB1	_	RTB	SQUARE D/CLASS 9025 TYPE AG	N	NOTE PS8
2	0-PS-82-29B MB1	_	RTB	SQUARE D/CLASS 9025 TYPE AG	N	NOTE PS8
2	0-PS-82-29C		RTB	SQUARE D/CLASS 9025 TYPE AG	N	NOTE PS8, PS14
2	0-PS-82-29D MD1	_	RTB	SQUARE D/CLASS 9025 TYPE AG	N	NOTE PS8
2	0-PS-82-30A		RTB	SQUARE D/CLASS 9025 TYPE AG	N	NOTE PS8, PS14
2	0-PS-82-30B		RTB	SQUARE D/CLASS 9025 TYPE AG	N	NOTE PS8, PS14
2	0-PS-82-30C		RTB	SQUARE D/CLASS 9025 TYPE AG	N	NOTE PS8, PS14
2	0-PS-82-30D		RTB	SQUARE D/CLASS 9025 TYPE AG	N	NOTE PS8, PS14
2	0-PS-82-31A MB3	_	CA	SQUARE D/CLASS 9025 TYPE AG	N	NOTE PS9
2	0-PS-82-31B MB3	_	CA	SQUARE D/CLASS 9025 TYPE AG	N	NOTE PS9
2	0-PS-82-31C MB3	_	CA	SQUARE D/CLASS 9025 TYPE AG	N	NOTE PS9
2	0-PS-82-31D MB3	_	CA	SQUARE D/CLASS 9025 TYPE AG	N	NOTE PS9
2	1-PS-24-133A	LOCAL PNL	CA	SOR/4SC-B5-M4-C1AX	N	NOTE PS7
2	1-PS-24-133B	LOCAL PNL	CA	SOR/4SC-B5-M4-C1AX	N	NOTE PS7
2	2-PS-24-133A	LOCAL PNL	CA	SOR/4SC-B5-M4-C1AX	N	NOTE PS7
2	2-PS-24-133B	LOCAL PNL	CA	SOR/4SC-B5-M4-C1AX	N	NOTE PS7

APPENDIX C: PROCESS SWITCH LIST FOR CONSEQUENCE EVALUATION

UNIT	DEVICE	LOCATION	SAT	MANUFACTURE/MAKE/MODEL	50.49 Y/N	COMMENTS/NOTES
2	3-PS-24-133A	LOCAL PNL	CA	SOR/4SC-B5-M4-C1AX	N	NOTE PS7
2	3-PS-24-133B	LOCAL PNL	CA	SOR/4SC-B5-M4-C1AX	N	NOTE PS7
2	LS-18-55A	[0-LPNL-925-0099A]	CA	MELETRON/2222-17SS9	N	NOTE PS10
2	LS-18-55B	0-LPNL-925-0099B	CA	MAGNETROL/A103XAS15R	N	NOTE PS10
2	LS-18-55C	0-LPNL-925-0099C	CA	MAGNETROL/A103XAS15R	N	NOTE PS10
2	LS-18-55D	0-LPNL-925-0099D	CA	MAGNETROL/A103XAS15R	N	NOTE PS10
2	LS-18-57A (H)	[0-LPNL-925-0099A]	CA	MAGNETROL/A103XAS15R	N	NOTE PS10
2	LS-18-57A (L)	[0-LPNL-925-0099A]	CA	MAGNETROL/A-153-X-TDM	N	NOTE PS10
2	LS-18-57B	_	CA	MAGNETROL/A-153-X-TDM	N	NOTE PS10
2	LS-18-57B (H)	0-LPNL-925-0099B	CA	MAGNETROL/A-153-X-TDM	N	NOTE PS10
2	LS-18-57C (H)	0-LPNL-925-0099C	CA	MAGNETROL/A-153-X-TDM	N	NOTE PS10
2	LS-18-57C (L)	_	CA	MAGNETROL/A-153-X-TDM	N	NOTE PS10
2	LS-18-57D	_	CA	MAGNETROL/A-153-X-TDM	N	NOTE PS10
2	LS-18-57D (H)	0-LPNL-925-0099D	CA	MAGNETROL/A-153-X-TDM	N	NOTE PS10
3	MB1 (PS) PS-82	_				NOTE PS15
3	MB3 (PS) PS-82	_				NOTE PS15
3	PS-82-11A		RTB	SQUARE D/CLS 9025 TYPE AGW	N	NOTE PS8
3	PS-82-11B		RTB	SQUARE D/CLS 9025 TYPE AGW	N	NOTE PS8
3	PS-82-11C		RTB	SQUARE D/CLS 9025 TYPE AGW	N	NOTE PS8
3	PS-82-11D		RTB	SQUARE D/CLS 9025 TYPE AGW	N	NOTE PS8
3	PS-82-12A		RTB	SQUARE D/CLS 9025 TYPE AGW	N	NOTE PS8
3	PS-82-12B		RTB	SQUARE D/CLS 9025 TYPE AGW	N	NOTE PS8
3	PS-82-12C		RTB	SQUARE D/CLS 9025 TYPE AGW	N	NOTE PS8
3	PS-82-12D		RTB	SQUARE D/CLS 9025 TYPE AGW	N	NOTE PS8
3	PS-82-13A		CA	SQUARE D/CLS 9025 TYPE AGW	N	NOTE PS9
3	PS-82-13B		CA	SQUARE D/CLS 9025 TYPE AGW	N	NOTE PS9
3	PS-82-13C		CA	SQUARE D/CLS 9025 TYPE AGW	N	NOTE PS9
3	PS-82-13D		CA	SQUARE D/CLS 9025 TYPE AGW	N	NOTE PS9
3	LS-18-70A FTS (N)	_	CA	MELETRON/2222-17SS9	N	NOTE PS10
3	LS-18-70AA FTS (H	_	CA	MELETRON/2222-17SS9	N	NOTE PS10
3	LS-18-70B FTS (N)	_	CA	MELETRON/2222-17SS9	N	NOTE PS10
3	LS-18-70BA FTS (H	_	CA	MELETRON/2222-17SS9	N	NOTE PS10
3	LS-18-70C FTS (H)	_	CA	MELETRON/2222-17SS9	N	NOTE PS10
3	LS-18-70C FTS (N)	_	CA	MELETRON/2222-17SS9	N	NOTE PS10

APPENDIX C: PROCESS SWITCH LIST FOR CONSEQUENCE EVALUATION

UNIT	DEVICE	LOCATION	SAT	MANUFACTURE/MAKE/MODEL	50.49 Y/N	COMMENTS/NOTES
3	LS-18-70D FTS (H)	_	CA	MELETRON/2222-17SS9	N	NOTE PS10
3	LS-18-70D FTS (N)	_	CA	MELETRON/2222-17SS9	N	NOTE PS10
3	LS-18-72A FTS (L)	_	CA	MAGNETROL/A153-X-TDM	N	NOTE PS10
3	LS-18-72B FTS (L)	_	CA	MAGNETROL/A153-X-TDM	N	NOTE PS10
3	LS-18-72C FTS (L)	_	CA	MAGNETROL/A153-X-TDM	N	NOTE PS10
3	LS-18-72D FTS (L)	_	CA	MAGNETROL/A153-X-TDM	N	NOTE PS10
2	LS-73-57A		IP	MAGNETROL/	Y	BINDER BFN0EQ-ILS-001, PS1
2	LS-73-57B		IP	..... 291-X-EP/VPX-S1MD4DC	Y	BINDER BFN0EQ-ILS-001, PS1
2	LS-73-56A		IP	MAGNETROL/	Y	BINDER BFN0EQ-ILS-001, PS1
2	LS-73-56B		IP	..... 291-X-EP/VPX-S1MD4DC	Y	BINDER BFN0EQ-ILS-001, PS1
3	LS-73-57A		IP	MAGNETROL/	Y	BINDER BFN0EQ-ILS-001, PS1
3	LS-73-57B		IP	..... 291-X-EP/VPX-S1MD4DC	Y	BINDER BFN0EQ-ILS-001, PS1
3	LS-73-56A		IP	MAGNETROL/	Y	BINDER BFN0EQ-ILS-001, PS1
3	LS-73-56B		IP	..... 291-X-EP/VPX-S1MD4DC	Y	BINDER BFN0EQ-ILS-001, PS1
2	PS-75-35		IP	SOR/5N6-B3-NX-CIAJJTTX12	Y	BINDER BFN0EQ-IPS-001, PS1
2	PS-75-44		IP	SOR/5N6-B3-NX-CIAJJTTX12	Y	BINDER BFN0EQ-IPS-001, PS1
3	PS-75-35		IP	SOR/5N6-B3-NX-CIAJJTTX12	Y	BINDER BFN0EQ-IPS-001, PS1
3	PS-75-44		IP	SOR/5N6-B3-NX-CIAJJTTX12	Y	BINDER BFN0EQ-IPS-001, PS1

 PREP'D: D. C. DYAR DATE:_______ CHK'D: S. W. MOORE DATE: _________

NOTES FOR PROCESS SWITCH LIST FOR CONSEQUENCE EVALUATION- A46

PS1 SEISMIC QUALIFICATION IS INCLUDED IN THE EQ BINDER.

PS2 SEISMIC QUALIFICATION IS DEMONSTRATED BY A CERTIFICATE OF COMPLIANCE INCLUDED IN THE INSPECTION (RIMS # B34890209501).

PS3 SEISMIC QUALIFICATION OF 0-FS-67-1, 5, 8, & 11 IS DEMONSTRATED BY THE ORIGINAL BILL OF MATERIAL WHICH REQUIRED SEISMIC TESTING PER DESIGN CRITERIA BFN-50-C-7105. (DCA-H4447-013, 37BM205-38-01). 0-PDIS-67-1, 5, 8, & 11 WERE REPLACED BY DCN T27898 WITH SEISMICALLY QUALIFIED (CLASS IE) INSTRUMENTS.

PS4 THESE SWITCHES WERE REPLACED BY DCN HO135 WITH SEISMICALLY QUALIFIED FCI FLOWSWITCHES. (RIMS # B22880718914).

PS5 THESE SWITCHES ARE NOT SEISMIC CLASS I AND THEREFORE MAY BE ASSUMED TO CHATTER BUT THIS WILL NOT IMPACT THE SAFETY FUNCTION (DEENERGIZING FSV-67-50, 51) BECAUSE QUALIFIED PRESSURE SWITCH (PS-67-50,51) CONTACTS ARE IN SERIES WITH THE CONTACTS AND WILL ASSURE THE FSVs WILL BE DEENERGIZED ON LOW EECW PRESSURE.

PS6 THESE PRESSURE SWITCHES HAVE BEEN REPLACED WITH SOR MODELS THAT ARE SEISMICALLY QUALIFIED BY DCN W7778 (UNIT 2) AND W21919(UNIT 3).

PS7 THESE SWITCHES ARE NOT SEISMIC CLASS I AND THEREFORE MAY BE ASSUMED TO CHATTER BUT THIS WILL NOT IMPACT THE SAFETY FUNCTION (STARTING THE RHRSW PUMPS) BECAUSE THEY ARE NORMALLY OPEN AND CONTACT CLOSURE ENERGIZES PSR1A, PSR2A, PSR1B OR PSR2B CLOSING THEIR NORMALLY OPEN CONTACTS PROVIDING A POSITIVE SIGNAL TO START THE RHRSW PUMPS.

PS8 THESE PRESSURE SWITCHES ARE IN SERIES WITH THE MVST2 (MAGNETIC VALVE STARTING) VALVE WHICH CONTROLS THE STARTING AIR FOR THE DIESEL GENERATORS. THEY ARE NORMALLY CLOSED AND DESIGNED FOR THE CONTACTS TO OPEN AT 30 PSI (CONFIRMS DG STARTED) TO DEENERGIZE THE VALVE. THESE ARE PART OF THE ORIGINAL EQUIPMENT SUPPLIED WITH THE DIESEL GENERATORS AND THEIR SEISMIC QUALIFICATION IS BEING ADDRESSED IN THE RELAY EVALUATIONS.

PS9 CHATTER IS ACCEPTABLE FOR THESE CONTACTS BECAUSE THEY ONLY PROVIDE INDICATION.

PS10 THESE LEVEL SWITCHES CONTROL THE FUEL TRANSFER PUMP MOTORS TO TRANSFER FUEL OIL FROM THE SEVEN DAY TANK TO THE DAY TANK FOR THE DIESEL GENERATOR. CHATTER IS ACCEPTABLE BECAUSE THERE ARE NO SEALINS IN THE CIRCUIT AND ANY STARTING OR STOPPING OF THE PUMPS WOULD ONLY LAST THE DURATION OF THE CHATTER.

PREPARED: D. C. DYAR DATE: ________
CHECKED: ________ DATE: ________
PRINTED AT 06/21/96 3:51 PM

NOTES FOR PROCESS SWITCH LIST FOR CONSEQUENCE EVALUATION- A46

PS12 10-124B(UNIT 2) & 10-124B(UNIT 3) ARE THE SAME AS FS-74-64 WHICH ARE LISTED IN THE LIST ELSEWHERE, THESE NEED TO BE CHANGED TO CORRECT UNID.

PS13 THESE WERE LISTED AS UNIT "0" BUT ARE ACTUALLY UNITS 2 & 3.

PS14 THESE UNIDS WERE NOT ON THE LIST BUT NEED TO BE FOR COMPLETENESS.

PS15 UNIT 3 MB1 AND MB3 NEED TO BE DELETED AND REPLACED WITH PS-82-11A-D, PS-82-12A-D AND PS-82-13A-D.

PREPARED: D. C. DYAR ______________ DATE: ______________
CHECKED: ______________ DATE: ______________
PRINTED AT 06/21/96 3:51 PM

APPENDIX D

IN-CABINET AMPLIFICATION AND ACCELERATION RESULTS

BROWNS FERRY

BD/PNL	BUILDING	ELEV.	Floor Spectra N/S & E/W		Cabinet Base Demand				EQUIP CLASS	PANEL AMPLIF FACTOR	IN CABINET Demand	
			PEAK	ZPA	Basis	Bump Factor	N/S & E/W PEAK	N/S & E/W ZPA			PEAK	ZPA
0-BDAA-211-0000A	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	3	2	6.45	1.14
0-BDAA-211-0000B	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	3	2	2.25	0.90
0-BDAA-211-0000C	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	3	2	6.45	1.14
0-BDAA-211-0000D	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	3	2	2.25	0.90
0-BDBB-219-0000A	DG	583	2.13	0.46	Level 1	N/A	N/A	N/A	1	N/A	5.00	N/A
0-BDBB-219-0000B	DG	583	2.13	0.46	Level 1	N/A	N/A	N/A	1	N/A	5.00	N/A
0-CHGA-248-0000A	RB	621	2.15	0.38	TVA Calc	N/A	N/A	N/A	16	N/A	N/A	N/A
0-CHGA-248-0000B	RB	621	2.15	0.38	TVA Calc	N/A	N/A	N/A	16	N/A	N/A	N/A
0-CHGA-248-0000C	RB	621	2.15	0.38	TVA Calc	N/A	N/A	N/A	16	N/A	N/A	N/A
0-CHGA-248-0000D	RB	621	2.15	0.38	TVA Calc	N/A	N/A	N/A	16	N/A	N/A	N/A
0-CHGA-248-0001	0	0	0	0	Ground	1.5	1.13	0.45	0	7	7.88	3.15
0-CHGA-248-0003EB	DG	583	2.13	0.46	TVA Calc	N/A	N/A	N/A	16	N/A	N/A	N/A
0-LPNL-925-0045A	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	1	3.23	0.57
0-LPNL-925-0045B	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	1	1.13	0.45
0-LPNL-925-0045C	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	1	3.23	0.57
0-LPNL-925-0045D	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	1	1.13	0.45
0-LPNL-925-0046A	DG	565	1.58	0.39	Ground	1.5	1.13	0.45	20	1	1.13	0.45
0-LPNL-925-0046B	DG	565	1.58	0.39	Ground	1.5	1.13	0.45	20	1	1.13	0.45
0-LPNL-925-0046C	DG	565	1.58	0.39	Ground	1.5	1.13	0.45	20	1	1.13	0.45
0-LPNL-925-0046D	DG	565	1.58	0.39	Ground	1.5	1.13	0.45	20	1	1.13	0.45
0-LPNL-925-0047A	DG	565	1.58	0.39	Ground	1.5	1.13	0.45	20	1	1.13	0.45
0-LPNL-925-0047B	DG	565	1.58	0.39	Ground	1.5	1.13	0.45	20	1	1.13	0.45
0-LPNL-925-0047C	DG	565	1.58	0.39	Ground	1.5	1.13	0.45	20	1	1.13	0.45
0-LPNL-925-0047D	DG	565	1.58	0.39	Ground	1.5	1.13	0.45	20	1	1.13	0.45
0-PNLA-009-0028	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
0-PNLA-082-0000A	DG	565	1.58	0.39	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
0-PNLA-082-0000B	DG	565	1.58	0.39	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
0-PNLA-082-0000C	DG	565	1.58	0.39	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
0-PNLA-082-0000D	DG	565	1.58	0.39	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
1-BDBB-231-0001A	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	2	2.6	8.39	1.48
1-BDBB-231-0001B	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	2	2.6	8.39	1.48
1-BDBB-268-0001A	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	1	3	9.68	1.71
1-BDBB-268-0001B	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	1	3	3.38	1.35
1-LPNL-925-0044A	0	0	0	0	Ground	1.5	1.13	0.45	0	7	7.88	3.15

			Floor Spectra N/S & E/W		Cabinet Base Demand					PANEL	IN CABINET Demand	
BD/PNL	BUILDING	ELEV.	PEAK	ZPA	Basis	Bump Factor	N/S & E/W PEAK	N/S & E/W ZPA	EQUIP CLASS	AMPLIF FACTOR	PEAK	ZPA
1-PNLA-009-0032	0	0	0	0	Ground	1.5	1.13	0.45	0	7	7.88	3.15
2-BDBB-231-0002A	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	2	2.6	8.39	1.48
2-BDBB-231-0002B	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	2	2.6	8.39	1.48
2-BDBB-268-0002A	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	1	3	9.68	1.71
2-BDBB-268-0002B	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	1	3	3.38	1.35
2-BDBB-268-0002D	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	1	3	3.38	1.35
2-BDBB-268-0002E	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	1	3	9.68	1.71
2-BDBB-281-0002A	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	1	3	9.68	1.71
2-BDBB-281-0002B	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	1	3	3.38	1.35
2-BDBB-281-0002C	RB	565	0.72	0.24	Floor	1.5	1.08	0.36	1	3	3.24	1.08
2-ECAB-099-0002A1	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
2-ECAB-099-0002A2	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
2-ECAB-099-0002B1	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
2-ECAB-099-0002B2	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
2-ECAB-099-0002C1	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
2-ECAB-099-0002C2	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
2-INV-256-0001	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	16	N/A	N/A	N/A
2-INV-256-0002	RB	621	2.15	0.38	TVA Calc	N/A	N/A	N/A	16	N/A	N/A	N/A
2-LPNL-925-0031	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	GENRS	4.95	3.60
2-LPNL-925-0032	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	GENRS	4.95	3.60
2-JBOX-268-5952	RB	639	2.48	0.44	Floor	1.5	3.72	0.66	20	4.5	16.74	2.97
2-JBOX-268-5951	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	4.5	14.51	2.57
2-JBOX-268-5954	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	4.5	14.51	2.57
2-JBOX-268-5953	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	4.5	14.51	2.57
2-PNLA-009-0015	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
2-PNLA-009-0017	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
2-PNLA-009-0018	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
2-PNLA-009-0030	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
2-PNLA-009-0032	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	1	1.13	0.45
2-PNLA-009-0033	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	1	1.13	0.45
2-PNLA-009-0039	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
2-PNLA-009-0042	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
2-PNLA-009-0043	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
2-PNLA-009-0054	RB	617	2.15	0.38	Floor	1.5	3.23	0.57	20	GENRS	4.95	3.60

BD/PNL	BUILDING	ELEV.	Floor Spectra N/S & E/W		Cabinet Base Demand				EQUIP CLASS	PANEL AMPLIF FACTOR	IN CABINET Demand	
			PEAK	ZPA	Basis	Bump Factor	N/S & E/W PEAK	N/S & E/W ZPA			PEAK	ZPA
2-PNLA-009-0055	RB	617	2.15	0.38	Floor	1.5	3.23	0.57	20	GENRS	4.95	3.60
2-PNLA-009-0081	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
2-PNLA-009-0082	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
2-PNLA-009-0083	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
2-PNLA-009-0084	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
2-PNLA-009-0085	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
2-PNLA-009-0086	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-BDAA-211-0003EA	DG	583	2.13	0.46	Ground	1.5	1.13	0.45	3	2	2.25	0.90
3-BDAA-211-0003EB	DG	561	1.58	0.39	Ground	1.5	1.13	0.45	3	2	2.25	0.90
3-BDAA-211-0003EC	DG	583	2.13	0.46	Ground	1.5	1.13	0.45	3	2	2.25	0.90
3-BDAA-211-0003ED	DG	561	1.58	0.39	Ground	1.5	1.13	0.45	3	2	2.25	0.90
3-BDBB-219-0003EA	DG	583	2.13	0.46	Level 1	N/A	N/A	N/A	1	N/A	5.00	N/A
3-BDBB-219-0003EB	DG	565	1.58	0.39	Level 1	N/A	N/A	N/A	1	N/A	5.00	N/A
3-BDBB-231-0003A	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	2	2.6	8.39	1.48
3-BDBB-231-0003B	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	2	2.6	8.39	1.48
3-BDBB-268-0003A	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	1	3	9.68	1.71
3-BDBB-268-0003B	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	1	3	3.38	1.35
3-BDBB-268-0003D	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	1	3	3.38	1.35
3-BDBB-268-0003E	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	1	3	9.68	1.71
3-BDBB-281-0003A	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	1	3	9.68	1.71
3-BDBB-281-0003B	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	1	3	3.38	1.35
3-BDBB-281-0003C	RB	565	0.72	0.24	Floor	1.5	1.08	0.36	1	3	3.24	1.08
3-CHGA-248-0003EB	DG	583	2.13	0.46	TVA Calc	N/A	N/A	N/A	16	N/A	N/A	N/A
3-INV-256-0001	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	16	N/A	N/A	N/A
3-INV-256-0002	RB	621	2.15	0.38	TVA Calc	N/A	N/A	N/A	16	N/A	N/A	N/A
3-LPNL-925-0031	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	GENRS	4.95	3.60
3-LPNL-925-0032	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	GENRS	4.95	3.60
3-LPNL-925-0047A	DG	565	1.58	0.39	Ground	1.5	1.13	0.45	20	1	1.13	0.45
3-LPNL-925-0047B	DG	565	1.58	0.39	Ground	1.5	1.13	0.45	20	1	1.13	0.45
3-LPNL-925-0047C	DG	565	1.58	0.39	Ground	1.5	1.13	0.45	20	1	1.13	0.45
3-LPNL-925-0047D	DG	565	1.58	0.39	Ground	1.5	1.13	0.45	20	1	1.13	0.45
3-LPNL-925-654A	RB	621	2.15	0.38	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-LPNL-925-654B	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-JBOX-268-5956	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	4.5	14.51	2.57

BD/PNL	BUILDING	ELEV.	Floor Spectra N/S & E/W		Cabinet Base Demand				EQUIP CLASS	PANEL AMPLIF FACTOR	IN CABINET Demand	
			PEAK	ZPA	Basis	Bump Factor	N/S & E/W PEAK	N/S & E/W ZPA			PEAK	ZPA
3-JBOX-268-5955	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	4.5	14.51	2.57
3-JBOX-268-5958	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	4.5	14.51	2.57
3-JBOX-268-5957	RB	621	2.15	0.38	Floor	1.5	3.23	0.57	20	4.5	14.51	2.57
3-PNLA-009-0015	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	1	1.13	0.45
3-PNLA-009-0017	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	1	1.13	0.45
3-PNLA-009-0018	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
3-PNLA-009-0023A	0	0	0	0	Ground	1.5	1.13	0.45	0	7	7.88	3.15
3-PNLA-009-0023B	0	0	0	0	Ground	1.5	1.13	0.45	0	7	7.88	3.15
3-PNLA-009-0023C	0	0	0	0	Ground	1.5	1.13	0.45	0	7	7.88	3.15
3-PNLA-009-0023D	0	0	0	0	Ground	1.5	1.13	0.45	0	7	7.88	3.15
3-PNLA-009-0028	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
3-PNLA-009-0030	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
3-PNLA-009-0032	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	1	1.13	0.45
3-PNLA-009-0033	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	1	1.13	0.45
3-PNLA-009-0039	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
3-PNLA-009-0042	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	3.15
3-PNLA-009-0043	RB	593	1.34	0.32	Ground	1.5	1.13	0.45	20	4.5	5.06	2.03
3-PNLA-009-0055	RB	617	2.15	0.38	Floor	1.5	3.23	0.57	20	GENRS	4.95	2.03
3-PNLA-009-0081	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PNLA-009-0082	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PNLA-009-0083	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PNLA-009-0084	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PNLA-009-0085	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PNLA-009-0086	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PNLA-082-00003A	DG	565	1.58	0.39	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PNLA-082-00003B	DG	565	1.58	0.39	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PNLA-082-00003C	DG	565	1.58	0.39	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PNLA-082-00003D	DG	565	1.58	0.39	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PROT-099-0003A1	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PROT-099-0003B1	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PROT-099-0003B2	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PROT-099-0003C1	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PROT-099-0003C2	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A
3-PROT-099-3A2	RB	593	1.34	0.32	TVA Calc	N/A	N/A	N/A	20	N/A	N/A	N/A

APPENDIX E

SELECTED SYSTEM CONSEQUENCE
CHATTER EVALUATION
WORKSHEETS

BROWNS FERRY

BROWNS FERRY UNIT 2 RELAY CHATTER EVALUATION

Circuit:	2-BDBB-231-0002A
SSEL Item No.:	M2-9020
Description:	480V SHDN BD 2A TRANSFER SCHEME NORMAL
Power Supply:	250V DC CONTR BUS
Initial State:	BREAKER CLOSED
Desired State(s): A)	BREAKER CLOSED
B)	BREAKER OPEN
C)	N/A
Drawing No(s):	2-45E779-1

Summary

Relay Chatter Acceptable (CA)	YES
Operator Recovery Required (OA)	NO
Relay Chatter Unacceptable (UA)	N/A

Reference for Individual Contact Chatter Evaluation — A4_JTK1C.WK3, ITEMS 361-383

"In-control room" operator action available (Y/N) N
Details:

"Ex-control room" operator action available (Y/N) N

Details: Refer to summary below.

Summary of Circuit Relay Chatter Evaluation

The subject breaker is normally closed. Chatter of contacts will not cause breaker to trip, thus the breaker will remain closed.

Other Points of Interest
(i) Inadvertent paralleling of board feeders is prevented by rugged breaker (52a and 52e) contacts.
(ii) n/a
(iii) n/a

Prepared By: Turner J. Howard Date: 6-3-96

Checked By: [signature] Date: 6/6/96

? of

BROWNS FERRY UNIT 3 RELAY CHATTER EVALUATION

Circuit:		3-BDBB-219-0003EA
SSEL Item No.:		M2-9033
Description:		480V DSL AUX BD 3EA TRANSFER SCHEME
Power Supply:		NORMAL/EMERGENCY FEEDER
Initial State:		NORMAL/BREAKER CLOSED
Desired State(s):	A)	NORMAL/BREAKER CLOSED
	B)	EMERGENCY/BREAKER OPEN
	C)	N/A
Drawing No(s):		3-45E771-7

Summary

Relay Chatter Acceptable (CA)	YES
Operator Recovery Required (OA)	NO
Relay Chatter Unacceptable (UA)	N/A

Reference for Individual Contact Chatter Evaluation A4_JTK1C.WK3, ITEMS 2484-2524

"In-control room" operator action available (Y/N) N
Details:

"Ex-control room" operator action available (Y/N) N

Details: See summary below.

Summary of Circuit Relay Chatter Evaluation

This circuit controls the transfer between the normal and emergency 480V supply, in this case contact chatter is acceptable as it will only cause spurious alarms. All other contacts are mechanically actuated by a manual operation of the breakers.

Other Points of Interest
(i) n/a
(ii) n/a
(iii) n/a

Prepared By: Terry J Howard Date: 6-8-96
Checked By: M Pyatt Date: 6-8-96

BROWNS FERRY UNIT 2 RELAY CHATTER EVALUATION

Circuit:		2-HCU-85-1-185
SSEL Item No.:		M2-0001
Description:		CRD HYDRAULIC CONTROL UNIT
Power Supply:		PANEL 9-9, BRKR 505 & 602, BATT BD 3 BRKR 903 & 953
Initial State:		SEE SUMMARY OF CIRCUIT RELAY EVALUATION
Desired State(s):	A)	SEE SUMMARY OF CIRCUIT RELAY EVALUATION
	B)	
	C)	
Drawing No(s):		2-730E321-6,11,13,14,15, 2-730E915-1, 13

Summary

Relay Chatter Acceptable (CA)	Y
Operator Recovery Required (OA)	NA
Relay Chatter Unacceptable (UA)	NA

Reference for Individual Contact Chatter Evaluation — A4_DCD1C.WK3, ITM 1-457

"In-control room" operator action available (Y/N) NA
Details:

"Ex-control room" operator action available (Y/N) NA
Details:

Summary of Circuit Relay Chatter Evaluation

A HYDRAULIC CONTROL UNIT CONSISTS OF FCV-85-40A, FCV-85-40B, FCV-85-40C, FCV-85-40D, FSV-85-39A AND FSV-85-39B WHICH MUST BE EVALUATED FOR RELAY CHATTER.

THE NORMAL STATE FOR FCV-85-40A, 40B, 40C, & 40D IS CLOSED AND THE DESIRED STATE IS CLOSED. THE NORMAL STATE FOR FSV-85-39A IS OPEN AND THE DESIRED STATE IS VENT(TO SCRAM).

CHATTER IS ACCEPTABLE FOR FSV-85-39A AND FSV-85-39B BECAUSE THE FUNCTION OF VALVES FCV-85-39A &FCV-85-39B IS TO IS TO VENT THE CONTROL AIR IN THE EVENT OF A SCRAM SIGNAL. VALVES FCV-85-39A AND FCV-85-39B ARE NORMALLY MAINTAINED CLOSED BY CONTROL AIR WHICH IS SUPPLIED THROUGH FSV-85-39A & FSV-85-39B. THESE SOLENOID VALVES ARE NORMALLY ENERGIZED AND THEIR POWER SUPPLIED THROUGH A SERIES OF CONTACTS OF THREE NORMALLY ENERGIZED RELAYS (FOUR GROUPS SPLIT BETWEEN 185 CONTROL RODS). THE SOLENOIDS VENT THE CONTROL AIR FROM THE FCVs UPON LOSS OF POWER. CHATTER IS ACCEPTABLE FOR THE CONTACTS OF THESE RELAYS (5A-K14A, B, C, D, E, F, G, H, & 5A-K15A, B, C, D) BECAUSE THEIR CIRCUITS CONTAIN CONTACTS FROM THE SCRAM CIRCUITRY THAT WOULD PRECLUDE SEAL INS AND THUS THE SOLENOIDS WILL DEENERGIZE RESULTING IN THE VENTING OF THE CONTROL AIR WHICH WILL RESULT IN A SCRAM WHICH IS THE DESIRED ACTION.

CONTINUED ON NEXT PAGE

Prepared By: D. C. Dyar DCD Date: 6/6/96

Checked By: S. W. Moore SWM Date: 6-6-96

CONTINUED FROM PREVIOUS PAGE

CHATTER IS ACCEPTABLE FOR THE CIRCUITS OF FCV-85-40A, FCV-85-40B, FCV-85-40C, & FCV-85-40D BEFORE A SCRAM BECAUSE ANY ROD MOVEMENT THAT RESULTS IN A UNSAFE ROD CONFIGURATIN WILL RESULT IN A SCRAM. THE SAFETY FUNCTION IS TO SCRAM IN THE EVENT OF A SEISMIC EVENT AND VALVES FSV-85-39A AND 39B WILL ASSURE A MANUAL SCRAM CAN OCCUR. CHATTER IS ACCEPTABLE FOR THE CIRCUITS OF FCV-85-40A, FCV-85-40B, FCV-85-40C, & FCV-85-40D AFTER A SCRAM BECAUSE THE RODS ARE DRIVEN IN BY A ACCUMULATOR AND ARE HELD IN POSTION BY THE REACTOR PRESSURE WHICH IS APPLIED TO THE UNDERSIDE OF THE DRIVE PISTON WHILE THE PRESSURE ON THE TOP SIDE OF THE PISTON IS VENTED TO THE SCRAM ACCUMULATOR. THUS THE SMALLER PRESSURE APPLIED BY THE INSERT AND WITHDRAW SOLENOIDS WILL NOT OVERCOME THE LARGER DIFFERENTIAL CAUSED BY THE SCRAM.

Other Points of Interest (i)
(ii)
(iii)

Prepared By: D. C. Dyar DCD Date: 6/6/96

Checked By: S. W. Moore SWM Date: 6-6-96

BROWNS FERRY UNIT 3 RELAY CHATTER EVALUATION

Circuit:		3-INV-256-0002
SSEL Item No.:		E-39075
Description:		DIVISION II ECCS ATU INVERTER
Power Supply:		250V DC RMOV BD 3B, COMPT 11A1
Initial State:		ENERGIZED
Desired State(s):	A)	ENERGIZED
	B)	
	C)	
Drawing No(s):		3-45W708-14

Summary

Relay Chatter Acceptable (CA)	NA
Operator Recovery Required (OA)	NA
Relay Chatter Unacceptable (UA)	NA

Reference for Individual Contact Chatter Evaluation A4-DCD1D-3495

"In-control room" operator action available	(Y/N)	NA
Details:		
"Ex-control room" operator action available	(Y/N)	NA
Details:		

Summary of Circuit Relay Chatter Evaluation

THE INVERTER WAS QUALIFIED TO IEEE-344-1975 THEREFORE CHATTER IS NOT A CONCERN.

Other Points of Interest (i)
(ii)
(iii)

Prepared By: D. C. Dyar D.C.D Date: 6/6/96

Checked By: M.L. PYATT MLP Date: 6/6/96

BROWNS FERRY UNIT 2 RELAY CHATTER EVALUATION

Circuit:	0-CHGB-254-0000AA
SSEL Item No.:	E2-9150
Description:	125V DSL GEN A BATT CHGR A
Power Supply:	480V DIESEL AUX BD A, PNL 3F
Initial State:	CHARGING
Desired State(s): A)	CHARGING
B)	N/A
C)	N/A
Drawing No(s):	0-45E771-4, 8422520

Summary

Relay Chatter Acceptable (CA)	Y
Operator Recovery Required (OA)	N
Relay Chatter Unacceptable (UA)	_

Reference for Individual Contact Chatter Evaluation: A4_JTK1C.WK3 (ITEM 2599)

"In-control room" operator action available	(Y/N)	N/A
Details:		
"Ex-control room" operator action available	(Y/N)	N/A
Details:		

Summary of Circuit Relay Chatter Evaluation

The 125V Diesel Generator Battery Chargers have an internal power failure relay (PF) provided to disconnect the automatic charge control from the battery during the loss of AC power. Disconnecting the automatic control eliminates any drain on the battery. The only effect chattering of this relay would have is to momentarily remove the automatic charge control from the circuit. This is acceptable since the battery will provide power during this period.

Other Points of Interest
(i)
(ii)
(iii)

Prepared By: Jeffrey J. Kepler Date: 3-20-96

Checked By: [signature] Date: 3/27/96

BROWNS FERRY UNIT 2 RELAY CHATTER EVALUATION

Circuit:	2-FCV-71-3
SSEL Item No.:	M2-3039
Description:	RCIC OUTBOARD ISOLATION VALVE
Power Supply:	250V DC RMOV BD 2B, COMPT 5B

Initial State:		OPEN
Desired State(s):	A)	CLOSED
	B)	
	C)	

Drawing No(s): 2-45E714-4

Summary

Relay Chatter Acceptable (CA)	Y
Operator Recovery Required (OA)	NA
Relay Chatter Unacceptable (UA)	NA

Reference for Individual Contact Chatter Evaluation: A4_JTK1C.WK3, ITM4847-4861

"In-control room" operator action available (Y/N) NA
Details:

"Ex-control room" operator action available (Y/N) NA
Details:

Summary of Circuit Relay Chatter Evaluation

THE RELAY CONTACTS IN THE OPEN COIL CIRCUIT WILL NOT CAUSE THE VALVE TO OPEN BECAUSE THEY ARE IN SERIES WITH A HANDSWITCH CONTACT THAT IS ONLY CLOSED BY MANUAL ACTION (PLACING IN OPEN POSITION). THE CONTACTS IN THE CLOSE CIRCUIT MAY CAUSE THE VALVE TO CLOSE IF THEY CHATTER BUT THIS IS THE DESIRED POSITION OF THE VALVE SO CHATTER WOULD BE ACCEPTABLE.

Other Points of Interest (i)
(ii)
(iii)

Prepared By: D. C. Dyar DCD Date: 6/6/96

Checked By: S. W. Moore SWM Date: 6-6-96

APPENDIX F

SYSTEM CONSEQUENCE
CHATTER EVALUATION
SUMMARY

BROWNS FERRY UNIT 2

Appendix F: System Consequence Chatter Evaluation Summary - Unit 2

Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
2-XFA-231-TS2A	E2-9001	480V TRANS TS2A	0-45E765-6	N/A	N/A	N/A	MLP1, ITEMS 435 - 438
2-XFA-231-TS2B	E2-9002	480V TRANS TS2B	0-45E765-6	N/A	N/A	N/A	MLP1, ITEMS 443 - 446
0-OXF-219-TDA	E2-9004	480V TRANS TDA	0-45E765-6	N/A	N/A	N/A	MLP1, ITEMS 447 - 450
0-OXF-219-TDB	E2-9005	480V TRANS TDB	0-45E765-6	N/A	N/A	N/A	MLP1, ITEMS 451 - 454
0-BDAA-211-0000A	E2-9012	DEGRADED VOLTAGE AUXILIARY RELAYS	0-45E765-8	Y	N	N	MLP1, ITEMS 738 - 749
0-BDAA-211-0000A	E2-9012	4KV SDB A BUS DIFFERENTIAL RELAYS	0-45E765-9	N/A	N/A	N/A	MLP1, ITEMS 758 & 759
0-BDAA-211-0000A	E2-9012	43SA RESET CIRCUIT	0-45E765-10	N	N	Y(R)	MLP1, ITEMS 762 - 771
0-BDAA-211-0000A	E2-9012	UNDERVOLTAGE AUXILIARY RELAYS	0-45E765-9	Y	N	N	MLP1, ITEMS 750 - 757
0-BDAA-211-0000A	E2-9012	4KV SDB A 250V XFR SWITCH A	0-45E765-8	Y	N	N	MLP1, ITEMS 733 - 737
0-BDAA-211-0000A/22	E2-9012	SDB A NORMAL DIESEL BREAKER 1818	0-45E724-1, 0-45E765-11	Y	N	N	MLP1, ITEMS 613 - 642
0-BDAA-211-0000A/24	E2-9012	4KV SDB A EMERGENCY FEEDER BREAKER 1716	0-45E724-1, 0-45E765-3	Y	N	N	MLP1, ITEMS 1 - 36
0-BDAA-211-0000A/3	E2-9012	4KV SDB A NORMAL FEEDER BREAKER 1614	0-45E724-1, 0-45E765-3	Y	N	N	MLP1, ITEMS 147 - 181
0-BDAA-211-0000A/4	E2-9012	4KV SDB A UNIT 3 TIE BREAKER 1824	0-45E724-1, 0-45E765-11	Y	N	N	MLP1, ITEMS 545 - 561.5
0-BDAA-211-0000B	E2-9013	4KV SDB B BUS DIFFERENTIAL RELAYS	0-45E765-9	N/A	N/A	N/A	MLP1, ITEMS 797 & 798
0-BDAA-211-0000B	E2-9013	UNDERVOLTAGE AUXILIARY RELAYS	0-45E765-9	Y	N	N	MLP1, ITEMS 789 - 796
0-BDAA-211-0000B	E2-9013	DEGRADED VOLTAGE AUXILIARY RELAYS	0-45E765-8	Y	N	N	MLP1, ITEMS 777 - 788
0-BDAA-211-0000B	E2-9013	43SB RESET CIRCUIT	0-45E765-10	Y	N	N	MLP1, ITEMS 801 - 810
0-BDAA-211-0000B	E2-9013	4KV SDB B 250V XFR SWITCH B	0-45E765-8	Y	N	N	MLP1, ITEMS 772 - 776
0-BDAA-211-0000B/19	E2-9013	4KV SDB B UNIT 3 TIE BREAKER 1828	0-45E724-2, 0-45E765-11	Y	N	N	MLP1, ITEMS 562 - 578.5
0-BDAA-211-0000B/2	E2-9013	4KV SDB B NORMAL FEEDER BREAKER 1616	0-45E724-2, 0-45E765-3	Y	N	N	MLP1, ITEMS 182 - 216
0-BDAA-211-0000B/20	E2-9013	4KV SDB B EMERGENCY FEEDER BREAKER 1714	0-45E724-2, 0-45E765-3	Y	N	N	MLP1, ITEMS 37 - 73
0-BDAA-211-0000B/4	E2-9013	SDB B NORMAL DIESEL BREAKER 1822	0-45E724-2, 0-45E765-11	Y	N	N	MLP1, ITEMS 643 - 672
0-BDAA-211-0000C	E2-9014	BUS 2 DIFFERENTIAL RELAYS	0-45E765-9	N/A	N/A	N/A	MLP1, ITEMS 839 & 840

Appendix F: System Consequence Chatter Evaluation Summary - Unit 2

Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
0-BDAA-211-0000C	E2-9014	4KV SDB C BUS DIFFERENTIAL RELAYS	0-45E765-9	N/A	N/A	N/A	MLP1, ITEMS 836 & 837
0-BDAA-211-0000C	E2-9014	DEGRADED VOLTAGE AUXILIARY RELAYS	0-45E765-8	Y	N	N	MLP1, ITEMS 816 - 827
0-BDAA-211-0000C	E2-9014	UNDERVOLTAGE AUXILIARY RELAYS	0-45E765-9	Y	N	N	MLP1, ITEMS 828 - 835 & 838
0-BDAA-211-0000C	E2-9014	43SC RESET CIRCUIT	0-45E765-10	N	N	Y(R)	MLP1, ITEMS 841 - 850
0-BDAA-211-0000C	E2-9014	4KV SDB C 250V XFR SWITCH C	0-45E765-8	Y	N	N	MLP1, ITEMS 811 - 815
0-BDAA-211-0000C/2	E2-9014	4KV SDB C EMERGENCY FEEDER BREAKER 1624	0-45E724-3, 0-45E765-3	Y	N	N	MLP1, ITEMS 74 - 110
0-BDAA-211-0000C/21	E2-9014	4KV SDB C UNIT 3 TIE BREAKER 1814	0-45E724-3, 0-45E765-11	Y	N	N	MLP1, ITEMS 579 - 595.5
0-BDAA-211-0000C/22	E2-9014	4KV SDB C NORMAL FEEDER BREAKER 1718	0-45E724-3, 0-45E765-3	Y	N	N	MLP1, ITEMS 217 - 251
0-BDAA-211-0000C/4	E2-9014	SDB C NORMAL DIESEL BREAKER 1812	0-45E724-3, 0-45E765-11	Y	N	N	MLP1, ITEMS 673 - 702
0-BDAA-211-0000D	E2-9015	DEGRADED VOLTAGE AUXILIARY RELAYS	0-45E765-8	Y	N	N	MLP1, ITEMS 856 - 867
0-BDAA-211-0000D	E2-9015	BUS 1 DIFFERENTIAL RELAYS	0-45E765-9	N/A	N/A	N/A	MLP1, ITEMS 879 & 880
0-BDAA-211-0000D	E2-9015	4KV SDB D BUS DIFFERENTIAL RELAYS	0-45E765-9	N/A	N/A	N/A	MLP1, ITEMS 876 & 877
0-BDAA-211-0000D	E2-9015	UNDERVOLTAGE AUXILIARY RELAYS	0-45E765-9	Y	N	N	MLP1, ITEMS 868 - 875 & 878
0-BDAA-211-0000D	E2-9015	43SD RESET CIRCUIT	0-45E765-10	Y	N	N	MLP1, ITEMS 881 - 890
0-BDAA-211-0000D	E2-9015	4KV SDB D 250V XFR SWITCH D	0-45E765-8	Y	N	N	MLP1, ITEMS 851 - 855
0-BDAA-211-0000D/20	E2-9015	SDB D NORMAL DIESEL BREAKER 1816	0-45E724-4, 0-45E765-11	Y	N	N	MLP1, ITEMS 703 - 732
0-BDAA-211-0000D/22	E2-9015	4KV SDB D NORMAL FEEDER BREAKER 1724	0-45E724-4, 0-45E765-3	Y	N	N	MLP1, ITEMS 252 - 286
0-BDAA-211-0000D/5	E2-9015	4KV SDB D EMERGENCY FEEDER BREAKER 1618	0-45E724-4, 0-45E765-3	Y	N	N	MLP1, ITEMS 111 - 146
0-BDAA-211-0000D/6	E2-9015	4KV SDB D UNIT 3 TIE BREAKER 1826	0-45E724-4, 0-45E765-11	Y	N	N	MLP1, ITEMS 596 - 612.5
3-BDAA-211-0003EA	E2-9016	4KV SDB 3EA BUS DIFFERENTIAL RELAYS	3-45E766-17	N/A	N/A	N/A	MLP3, ITEMS 413 -415
3-BDAA-211-0003EA	E2-9016	DEGRADED VOLTAGE AUXILIARY RELAYS	3-45E766-17	Y	N	N	MLP3, ITEMS 396 - 408

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Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
3-BDAA-211-0003EA	E2-9016	BD A TO BD 3EA TIE DIFFERENTIAL RELAYS	3-45E766-17	N/A	N/A	N/A	MLP3, ITEM 416
3-BDAA-211-0003EA	E2-9016	UNDERVOLTAGE AUXILIARY RELAYS	3-45E766-17	Y	N	N	MLP3, ITEMS 409 - 412
3-BDAA-211-0003EA/1	E2-9016	4KV SDB 3EA EMERGENCY FEEDER BREAKER 1844	3-45E724-6, 3-45E766-10	Y	N	N	MLP3, ITEMS 320 - 338.5
3-BDAA-211-0003EA/10	E2-9016	480V XFMR TS3A BREAKER	3-45E724-6, 3-45E766-22	N/A	N/A	N/A	MLP3, ITEM 647 - 651
3-BDAA-211-0003EA/4	E2-9016	4KV SDB 3EA ALTERNATE FEEDER BREAKER 1726	3-45E724-6, 3-45E766-9	Y	N	N	MLP3, ITEMS 39 - 73
3-BDAA-211-0003EA/7	E2-9016	4KV SDB 3EA NORMAL FEEDER BREAKER 1334	3-45E724-6, 3-45E766-9	Y	N	N	MLP3, ITEMS 179 - 213
3-BDAA-211-0003EA/9	E2-9016	DIESEL GENERATOR 3A BREAKER 1838	3-45E724-6, 3-45E766-10	Y	N	N	MLP3, ITEMS 532 - 559
3-BDAA-211-0003EB	E2-9017	DEGRADED VOLTAGE AUXILIARY RELAYS	3-45E766-18	Y	N	N	MLP3, ITEMS 419 - 431
3-BDAA-211-0003EB	E2-9017	43SEB RESET CIRCUIT	3-45E766-24	Y	N	N	MLP3, ITEMS 499 - 509
3-BDAA-211-0003EB	E2-9017	UNDERVOLTAGE AUXILIARY RELAYS	3-45E766-18	Y	N	N	MLP3, ITEMS 432 - 435
3-BDAA-211-0003EB	E2-9017	BD B TO BD 3EB TIE DIFFERENTIAL RELAYS	3-45E766-18	N/A	N/A	N/A	MLP3, ITEMS 439 - 441
3-BDAA-211-0003EB	E2-9017	43SEB RESET CIRCUIT	3-45E766-24	Y	N	N	MLP3, ITEMS 499 - 509
3-BDAA-211-0003EB	E2-9017	4KV SDB 3EB BUS DIFFERENTIAL RELAYS	3-45E766-18	N/A	N/A	N/A	MLP3, ITEMS 436 - 438
3-BDAA-211-0003EB/11	E2-9017	DIESEL GENERATOR 3B BREAKER 1842	3-45E724-7, 3-45E766-12	Y	N	N	MLP3, ITEMS 560 - 588
3-BDAA-211-0003EB/14	E2-9017	4KV SDB 3EB NORMAL FEEDER BREAKER 1336	3-45E724-7, 3-45E766-11	Y	N	N	MLP3, ITEMS 215 - 248
3-BDAA-211-0003EB/6	E2-9017	4KV SDB 3EB EMERGENCY FEEDER BREAKER 1848	3-45E724-7, 3-45E766-12	Y	N	N	MLP3, ITEM 339 - 356.7
3-BDAA-211-0003EB/8	E2-9017	4KV SDB 3EB ALTERNATE FEEDER BREAKER 1728	3-45E724-7, 3-45E766-11	Y	N	N	MLP3, ITEMS 74 - 108
3-BDBB-231-0003A	E2-9022	NORMAL FEEDER TO 480V RMOV BD 3D (MG SET 3DN)	3-45E779-32	N	Y	N	A4_JTK1C.WK3, ITEMS 862-875
3-BDBB-231-0003A	E2-9022	480V SHDN BD 3A TRANSFER SCHEME NORMAL	3-45E779-1	N	N	Y(R)	A4_JTK1C.WK3, ITEMS 716-738

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Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
3-BDBB-231-0003A	E2-9022	480V SHDN BD 3A TRANSFER SCHEME EMERGENCY	3-45E779-1	N	N	Y(R)	A4_JTK1C.WK3, ITEMS 740-764
3-BDBB-231-0003A	E2-9022	480V SHDN BD 3A UNDER VOLTAGE AUX RELAYS	3-45E779-1	Y	N	N	A4_JTK1C.WK3, ITEMS 765-788
3-BDBB-219-0003EA	E2-9033	480V DSL AUX BD 3EA TRANSFER SCHEME	3-45E771-7	Y	N	N	A4_JTK1C.WK3, ITEMS 2484-2524
2-BDBB-281-0002A	E2-9034	250V RMOV BD 2A (TRANSFER CONTROL)	2-45E714-7	Y	N	N	A4_JTK1C.WK3 (ITEMS 4546 - 4589)
2-BDBB-281-0002B	E2-9035	250V RMOV BD 2B (TRANSFER CONTROL)	2-45E714-7	Y	N	N	A4_JTK1C.WK3 (ITEMS 4590 - 4633)
2-BDBB-281-0002C	E2-9036	250V RMOV BD 2C (TRANSFER CONTROL)	2-45E714-7	Y	N	N	A4_JTK1C.WK3 (ITEMS 4634 - 4677)
2-INV-256-0001	E2-9114	DIVISION I ECCS ATU INVERTER	2-45W708-13	N/A	N/A	N/A	A4-DCD1D-3492
2-INV-256-0002	E2-9115	DIVISION II ECCS ATU INVERTER	2-45W708-13	N/A	N/A	N/A	A4-DCD1D-3493
0-CHGA-248-0000A	E2-9121	250V BATTERY CHARGER SB-A	31122-01/02, 0-45E709-1	N/A	N/A	N/A	A4_JTK1C.WK3 (ITEMS 2615 - 2628)
0-CHGA-248-0000B	E2-9123	250V BATTERY CHARGER SB-B	31122-01/02, 0-45E709-1	N/A	N/A	N/A	A4_JTK1C.WK3 (ITEMS 2629 - 2642)
0-CHGA-248-0000B	E2-9123	250V BATTERY CHARGER SB-B	31122-01/02, 0-45E709-1	N/A	N/A	N/A	A4_JTK1C.WK3 (ITEMS 2629 - 2642)
0-CHGA-248-0000C	E2-9127	250V BATTERY CHARGER SB-C	31122-01/02, 0-45E709-1	N/A	N/A	N/A	A4_JTK1C.WK3 (ITEMS 2643 - 2656)
0-CHGA-248-0000D	E2-9130	250V BATTERY CHARGER SB-D	31122-01/02, 0-45E709-1	N/A	N/A	N/A	A4_JTK1C.WK3 (ITEMS 2657 - 2670)
3-CHGA-248-0003EB	E2-9133	250V BATTERY CHARGER SB-3EB	31122-01/02, 3-45E709-2	N/A	N/A	N/A	A4_JTK1C.WK3 (ITEMS 2671 - 2684)
0-CHGA-248-0001	E2-9134	250V BATTERY CHARGER 1	0-0183B1104-A, 0-0183B1104-B, 1-45E779-5, 0-45E701-1	Y	N	N	A4_JTK1C.WK3 (ITEMS 2566 - 2576.91)
0-CHGA-248-0002A	E2-9135	250V BATTERY CHARGER 2A	0-0183B1104-A, 0-0183B1104-B, 2-45E779-5, 0-45E702-1	Y	N	N	A4_JTK1C.WK3 (ITEMS 2577 - 2587.91)
0-CHGA-248-0003	E2-9136	250V BATTERY CHARGER 3	0-0183B1104-A, 0-0183B1104-B, 3-45E779-5, 0-45E703-1	Y	N	N	A4_JTK1C.WK3 (ITEMS 2588 - 2598.92)
0-CHGB-254-0000AA	E2-9150	125V DSL GEN A BATT CHGR A	0-45E771-4, 8422520	Y	N	N	A4_JTK1C.WK3 (ITEM 2599)
0-CHGB-254-0000BA	E2-9151	125V DSL GEN B BATT CHGR A	0-45E771-4, 8422520	Y	N	N	A4_JTK1C.WK3 (ITEM 2600)

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Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
0-CHGB-254-0000CB	E2-9152	125V DSL GEN C BATT CHGR B	0-45E771-4, 8422520	Y	N	N	A4_JTK1C.WK3 (ITEM 2601)
0-CHGB-254-0000DB	E2-9153	125V DSL GEN D BATT CHGR B	0-45E771-4, 8422520	Y	N	N	A4_JTK1C.WK3 (ITEM 2602)
3-CHGB-254-0000AA	E2-9158	125V DSL GEN 3A BATT CHGR A	3-45E771-9, 3-8422520	Y	N	N	A4_JTK1C.WK3 (ITEM 2603)
3-CHGB-254-0000BA	E2-9159	125V DSL GEN 3B BATT CHGR A	3-45E771-9, 3-8422520	Y	N	N	A4_JTK1C.WK3 (ITEM 2606)
1-XFA-231-TS1A	E2-9194	480V TRANS TS1A	0-45E765-6	N/A	N/A	N/A	MLP1, ITEMS 431 - 434
1-XFA-231-TS1B	E2-9282	480V TRANS TS1B	0-45E765-6	N/A	N/A	N/A	MLP1, ITEMS 439 - 442
a) 2-ECAB-099-0002A1, 0002A2 b) 2-ECAB-099-0002B1, 0002B2 c) 2-ECAB-099-0002C1, 0002C2	E2-9295 to E2-9300	RPS CIRCUIT PROTECTOR	2-45E641-4,7,9	N/A	N/A	N/A	A4_JTK1C.WK3 (ITEMS 3974 - 4137)
2-HCU-85-1-185	M2-0001	CRD HYDRAULIC CONTROL UNIT	2-730E321-6,11,13,14,15, 2-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 1-457
2-FCV-85-82A	M2-0002	CRD/WEST SDV VENT VALVE	2-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 458-477
2-FCV-85-82	M2-0003	CRD/WEST SDV VENT VALVE	2-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 478-497
2-FCV-85-37C	M2-0004	CRD/WEST SDV DRAIN VALVE	2-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 538-557
2-FCV-85-37D	M2-0005	CRD/WEST SDV DRAIN VALVE	2-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 558-577
2-FCV-85-83A	M2-0006	CRD/EAST SDV VENT VALVE	2-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 498-517
2-FCV-85-83	M2-0007	CRD/EAST SDV VENT VALVE	2-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 518-537
2-FCV-85-37E	M2-0008	CRD/EAST SDV DRAIN VALVE	2-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 578-597
2-FCV-85-37F	M2-0009	CRD/EAST SDV DRAIN VALVE	2-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 598-617
2-FSV-85-37A	M2-0012	CRD/SCRAM DUMP VALVE	2-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 458-617
2-FSV-85-37B	M2-0013	CRD/SCRAM DUMP VALVE	2-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 458-617
2-FSV-85-35A	M2-0014	CRD/BACKUP SCRAM VALVE	2-730E915-1, 13, 14	Y	N	N	A4_DCD1C.WK3, ITM 458-617
2-FSV-85-35B	M2-0015	CRD/BACKUP SCRAM VALVE	2-730E915-1, 13, 14	Y	N	N	A4_DCD1C.WK3, ITM 458-617
2-HS-99-5A/S3A	M2-0016	RPS/REACTOR MANUAL SCRAM CHANNEL A3	2-730E915-11	Y	N	N	A4_DCD1C.WK3, ITM 620
2-HS-99-5A/S3B	M2-0017	RPS/REACTOR MANUAL SCRAM CHANNEL B3	2-730E915-12	Y	N	N	A4_DCD1C.WK3, ITM 621
2-HS-99-5A-S1	M2-0018	RPS/REACTOR MODE SWITCH	2-730E915-11,12	Y	N	N	A4_DCD1C.WK3, ITM 622
2-FCV-74-1	M2-1001	RHR Pump 2A Suction Valve from Suppression Pool	2-47E811-1,R040 2-45E779-47,R8	N	N	Y	A4-JTK1C 1227-1237
2-FCV-74-2	M2-1002	RHR Pump 2A Suction Valve from Shhutdown Cooling	2-47E811-1,R040 2-45E779-13,R15	N	N	Y	A4-JTK1C 1183-1193

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Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
2-FCV-74-96	M2-1003	RHR /U2 to U1 RHR X-Tie Isolation Valve	2-45E779-10,R29	N/A	N/A	N/A	A4-JTK1C 1424-1432
2-PMP-74-5	M2-1004	RHR Pump 2A	2-45E765-4R10	Y	N	N	A4-MLP1E
2-FCV-74-7	M2-1006	RHR Pump 2A &2C Minimum Flow Valve	2-45E779-9 R5	N/A	N/A	N/A	A4-JTK1C 1374-1394
2-FCV-74-100	M2-1010	RHR /U2toU1 RHR X-Tie Isolation Valve	1-45E779-10,R7	N/A	N/A	N/A	A4-JTK1C 1743-1751
2-FCV-74-12	M2-1011	RHR Pump 2C Suction Valve from Suppression Pool	2-47E811-1,R040 2-45E779-47,R8	N	N	Y	A4-JTK1C 1238-1248
2-FCV-74-13	M2-1012	RHR Pump 2C Suction Valve from Shutdown Cooling	2-47E811-1,R040 2-45E779-13,R15	N	N	Y	A4-JTK1C 1194-1204
2-FCV-74-97	M2-1013	RHR /U2 to U1 RHR X-Tie Isolation Valve	2-45E779-10,R29	N/A	N/A	N/A	A4-JTK1C 1415-1423
2-PMP-74-16	M2-1014	RHR Pump 2C	2-47E811-1 R40, 2-45E765 4 R10	Y	N	N	A4-MLP1E
2-FI-74-50	M2-1018	RHR Loop I Flow Indication	2-730E937-10,R16	N/A	N/A	N/A	N/A
2-FI-74-56	M2-1019	RHR Loop I Flow Indication	2-730E937-10,R16	N/A	N/A	N/A	N/A
2-FCV-74-57	M2-1020	RHR Loop I TorusContainmentCooling Spray Valve	2-47E811-1,R040 2-45E779-11,R11	N	N	Y	A4-JTK1C 1105-1120
2-FCV-74-59	M2-1021	RHR Loop I Suppression Pool Cooling Valve	2-45E779-23,R17	Y	N	N	A4-JTK1C 1359-1373
2-FCV-74-58	M2-1022	RHR Loop I Suppression Pool Spray Valve	2-47E811-1,R040 2-45E779-11,R11	N	N	Y	A4-JTK1C 1133-1144
2-FCV-74-52	M2-1023	RHR Loop I Outboard Injection Valve	2-47E811-1,R040 2-45E779-22,R13	N	N	Y(R)	A4-JTK1C 1249-1263
2-FCV-74-53	M2-1024	RHR Loop I Inboard Injection Valve	2-45E779-22,R13	Y	N	N	A4-JTK1C 1277-1297
2-FCV-78-61	M2-1026	FPC/Spent Fuel Pool Cooling X-tie to RHR	2-45E779-6,R22	N/A	N/A	N/A	A4-JTK1C 1765-1769
2-FCV-74-60	M2-1027	RHR LoopI Outboard Drywell SprayValve	2-47E811-1,R040 2-45E779-11,R11	N	N	Y	A4-JTK1C 1091-1104
2-FCV-74-61	M2-1028	RHR Loop I Inboard Drywell Spray Valve	2-47E811-1,R040 2-45E779-11,R11	N	N	Y	A4-JTK1C 1121-1132
2-FCV-74-24	M2-1029	RHR Pump 2B Suction Valve from Suppression Pool	2-47E811-1,R040 2-45E779-47,R8	N/A	N/A	N/A	A4-JTK1C 1317-1325

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Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
2-FCV-74-25	M2-1030	RHR Pump 2B Suction Valve from Shutdown Cooling	2-47E811-1,R040 2-45E779-13,R15	Y	N	N	A4-JTK1C 1205-1215
2-FCV-74-98	M2-1031	RHR /U2 to U3 RHR X-Tie Isolation Valve	2-45E779-10,R29	N/A	N/A	N/A	A4-JTK1C 1433-1439
2-PMP-74-28	M2-1032	RHR Pump 2B	2-47E811-1 R40, 2-45E765 4 R10	Y	N	N	A4-MLP1E
2-FCV-74-30	M2-1034	RHR Pump 2B &2D Minimum Flow Valve	2-45E779-9 R5	N	N	Y	A4-JTK1C 1395-1414
2-FCV-74-101	M2-1038	RHR /U2 to U3 RHR Discharge X-Tie Isolation Valve	3-45E779-10,R16	N/A	N/A	N/A	A4-JTK1C 1447-1455
3-FCV-74-36	M2-1038	RHR Pump 3D Suction Valve from Shutdown Cooling	3-45E779-13,R13	Y	N	N	A4-JTK1C 1925-1935
2-FCV-74-35	M2-1039	RHR Pump 2D Suction Valve from Suppression Pool	2-47E811-1,R040 2-45E779-47,R8	N/A	N/A	N/A	A4-JTK1C 1336-1334
2-FCV-74-36	M2-1040	RHR Pump 2D Suction Valve from Shutdown Cooling	2-47E811-1,R040 2-45E779-13,R15	Y	N	N	A4-JTK1C 1216-1226
2-FCV-74-99	M2-1041	RHR /U2 to U3 RHR X-Tie Isolation Valve	3-45E779-10,R16	N/A	N/A	N/A	A4-JTK1C 1440-1446
2-PMP-74-39	M2-1042	RHR Pump 2D	2-47E811-1 R40, 2-45E765 4 R10	Y	N	N	A4-MLP1E
2-FI-74-64	M2-1046	RHR Loop II Flow Indication	2-730E937-10,R16	N/A	N/A	N/A	N/A
2-FI-74-70	M2-1047	RHR Loop II Flow Indication	2-730E937-10,R16	N/A	N/A	N/A	N/A
2-FCV-74-71	M2-1048	RHR Loop II TorusContainmentCooling Spray Valve	2-47E811-1,R040 2-45E779-11,R11	Y	N	N	A4-JTK1C 1157-1170
2-FCV-74-73	M2-1049	RHR Loop II Suppression Pool Cooling Valve	2-45E779-23,R17	Y	N	N	A4-JTK1C 2057-2069
2-FCV-74-72	M2-1050	RHR Loop II Suppression Pool Spray Valve	2-47E811-1,R040 2-45E779-11,R11	Y	N	N	A4-JTK1C 1171-1182
2-FCV-74-66	M2-1061	RHR Loop II Outboard Injection Valve	2-45E779-22,R13	Y	N	N	A4-JTK1C 1264-1276
2-FCV-74-67	M2-1062	RHR Loop II Inboard Injection Valve	2-45E779-22,R13	N	N	Y(R)	A4-JTK1C 1298-1316
2-FCV-74-74	M2-1064	RHR Loop II Outboard Drywell Spray Valve	2-45E779-46,R3	Y	N	N	A4-JTK1C 1335-1345
2-FCV-74-75	M2-1065	RHR Loop II Inboard Drywell Spray Valve	2-47E811-1,R040 2-45E779-11,R11	Y	N	N	A4-JTK1C 1145-1156

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Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
2-FSV-43-50	M2-1066	PASS RHR liquid Isolation Valve	2-45E676-2,R14	Y	N	N	A4_JTK1C ITM 5007
2-PCV-1-4	M2-2000	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-12 730E929-3	N/A	N/A	N/A	A4_JTK1C ITM 2807-2808
2-PCV-1-5	M2-2003	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-12 730E929-3	Y	N	N	A4_JTK1C ITM 2787-2796
2-PCV-1-5	M2-2003	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-12 730E929-3	Y	N	N	A4_JTK1C ITM 2787-2796
2-MSRV/ADS LOGICA	M2-2003, 2009, 2012, 2021, 2024, 2027	MSRV initiating logic	2-730E929-2	N/A	N/A	N/A	A4_JTK1C ITM 2685-2729
2-MSRV/ADS LOGICB	M2-2003, 2009, 2012, 2021, 2024, 2027	MSRV initiating logic	2-730E929-2	N/A	N/A	N/A	A4_JTK1C ITM 2730-2779
2-PCV-1-18	M2-2006	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-1,2-730E929-3	N/A	N/A	N/A	A4_JTK1C ITM 2809-2810
2-PCV-1-19	M2-2009	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-12 730E929-3, 2-45E714-9	Y	N	N	A4_JTK1C ITM 2780-2786
2-PCV-1-22	M2-2012	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-12 730E929-3	Y	N	N	A4_JTK1C ITM 2797-2806
2-PCV-1-23	M2-2015	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-12 730E929-3	N/A	N/A	N/A	A4_JTK1C ITM 2811-2812
2-PCV-1-179	M2-2018	MSRV Safety Relief Valve	2-47E610-1-1 , 2-47E801-12-730E929-4, 2-45E714-9	N/A	N/A	N/A	A4_JTK1C ITM 2846
2-PCV-1-30	M2-2021	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-12 730E929-3	Y	N	N	A4_JTK1C ITM 2813-2824
2-PCV-1-31	M2-2024	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-12 730E929-4, 2-45E714-9DDCN 34319A, DDCN 29636	Y	N	N	A4_JTK1C ITM 2829-2835
2-PCV-1-34	M2-2027	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-12 730E929-4 2-45E714-9	Y	N	N	A4_JTK1C ITM 2836-2845

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Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
2-PCV-1-41	M2-2030	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-12 730E929-4, 2-45E714-9	N/A	N/A	N/A	A4_JTK1C ITM 2825-2826
2-PCV-1-42	M2-2033	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-12 730E929-4	N/A	N/A	N/A	A4_JTK1C ITM 2827-2828
3-PCV-1-42	M2-2033	MSRV Safety Relief Valve	3-730E929-4	N/A	N/A	N/A	A4_JTK1C ITM 2999-3000
2-PCV-1-180	M2-2036	MSRV Safety Relief Valve	2-47E610-1-1, 2-47E801-12 730E929-4	N/A	N/A	N/A	A4_JTK1C ITM 2847-2848
2-FCV-1-14	M2-3001	MSIV "A" INBOARD ISOLATION VALVE	2-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 1246-1361
2-FCV-1-15	M2-3002	MSIV "A" OUTBOARD ISOLATION VALVE	2-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 1710-1823
2-FCV-1-26	M2-3003	MSIV "B" INBOARD ISOLATION VALVE	2-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 1362-1477
2-FCV-1-27	M2-3004	MSIV "B" OUTBOARD ISOLATION VALVE	2-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 1824-1937
2-FCV-1-37	M2-3005	MSIV "C" INBOARD ISOLATION VALVE	2-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 1478-1593
2-FCV-1-38	M2-3006	MSIV "C" OUTBOARD ISOLATION VALVE	2-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 1938-2051
2-FCV-1-51	M2-3007	MSIV "D" INBOARD ISOLATION VALVE	2-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 1594-1709
2-FCV-1-52	M2-3008	MSIV "D" OUTBOARD ISOLATION VALVE	2-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 2052-2165
2-FCV-1-55	M2-3009	MAIN STEAM LINE DRAIN ISOLATION VALVE	2-45E779-12, 2-730E927-7, 8, 15	N	N	Y	A4_JTK1C.WK3, ITM 1578-1587, A4_DCD1C.WK3, ITM 1317-1338, &1282-1309
2-FCV-32-63	M2-3014	DRYWELL CONTROL AIR SUCTION VALVE	2-45E614-9	Y	N	N	A4_DCD1C.WK3, ITM 2166-2170 & 3516-3525
2-FCV-64-17	M2-3015	DRYWELL VENTILATION ISOLATION VALVE	2-730E927-17A, 6	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2171-2184
2-FCV-64-30	M2-3016	CONTAINMENT VENTILATION ISOLATION VALVE	2-730E927-17A, 6	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2185-2198
2-FCV-64-33	M2-3017	CONTAINMENT VENTILATION ISOLATION VALVE	2-730E927-17A, 6	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2199-2212
2-FCV-64-139	M2-3018	CONTAINMENT DW DP ISOLATION VALVE	2-45E777-21, 2-730E927-17A	Y	N	N	A4_DCD1C.WK3, ITM 2213-2219

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2-FCV-64-140	M2-3019	CONTAINMENT DW DP ISOLATION VALVE	2-45E777-21, 2-730E927-17A	Y	N	N	A4_DCD1C.WK3, ITM 2220-2226
2-FCV-64-28A	M2-3020	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	2-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2227
2-FCV-64-28B	M2-3021	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	2-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2228
2-FCV-64-28C	M2-3022	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	2-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2229
2-FCV-64-28D	M2-3023	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	2-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2230
2-FCV-64-28E	M2-3024	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	2-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2231
2-FCV-64-28F	M2-3025	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	2-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2232
2-FCV-64-28G	M2-3026	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	2-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2233
2-FCV-64-28H	M2-3027	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	2-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2234
2-FCV-64-28J	M2-3028	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	2-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2235
2-FCV-64-28K	M2-3029	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	2-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2236
2-FCV-64-28L	M2-3030	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	2-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2237

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2-FCV-64-28M	M2-3031	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	2-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2238
2-FCV-64-222	M2-3032	HARDENED WETWELL VENT	2-45E614-6	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2239-2240
2-FCV-69-1	M2-3033	RWCU Inboard Isolation Valve	2-47E474/R10, 2-45E779-47	N	N	Y	
2-FCV-69-1	M2-3033	RWCU Inboard Isolation Valve	2-47E610-69-1, 2-45E779-47	N	N	Y	A4_JTK1C ITM 1599-1606
2-FCV-69-2	M2-3034	RWCU Outboard Isolation Valve	2-47E610-69-1, 2-45E714-4	Y	N	N	A4_JTK1C ITM 4862-4875
2-FCV-70-47	M2-3036	RBCCW DRYWELL RETURN VALVE	2-45E779-8	N/A	N/A	N/A	A4-JTK1C.WK3, ITM 1734-1742
2-FCV-71-2	M2-3038	RCIC INBOARD ISOLATION VALVE	2-45E779-12	Y	N	N	A4_JTK1C.WK3, ITM1567-1577
2-FCV-71-3	M2-3039	RCIC OUTBOARD ISOLATION VALVE	2-45E714-4	Y	N	N	A4_JTK1C.WK3, ITM4847-4861
2-FCV-71-18	M2-3040	RCIC OUTBOARD SUCTION VALVE	2-45E714-5	N/A	N/A	N/A	A4_JTK1C.WK3, ITM 4876-4887
2-FCV-73-2	M2-3041	HPCI STEAM LINE SUPPLY ISOLATION VALVE	2-45E779-13	N	N	Y	A4_JTK1C.WK3, ITM 1588-1598
2-FCV-73-3	M2-3042	HPCI STEAM LINE SUPPLY ISOLATION VALVE	2-45E714-2	N	N	Y	A4_JTK1C.WK3, ITM 4810-4826
2-FCV-73-81	M2-3043	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	0-45E779-43	Y	N	N	A4_JTK1C.WK3, ITM 1752-1764
2-FCV-73-27	M2-3044	HPCI OUTBOARD SUCTION VALVE	2-45E714-2	N	N	Y	A4-JTK1C.WK3, ITM 4827-4844+++++
2-FCV-75-57	M2-3045	PSC PUMP SUCTION ISOLATION VALVE	0-730E930-18, 0-730E927-15	Y	N	N	A4_DCD1C.WK3, ITM 2241-2251
2-FCV-75-58	M2-3046	PSC PUMP SUCTION ISOLATION VALVE	0-730E930-18, 0-730E927-16	Y	N	N	A4_DCD1C.WK3, ITM 2252-2262
2-FCV-76-17	M2-3047	CONTAINMENT INERTING N2 MAKEUP VALVE	2-730E927-16	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2263-2276
2-FCV-76-24	M2-3048	CONTAINMENT INERTING N2 MAKEUP VALVE	2-730E927-17A	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2277-2280
2-FCV-77-2B	M2-3049	DRYWELL FLOOR DRAIN SUMP DISCHARGE	0-730E927-15	Y	N	N	A4_DCD1C.WK3, ITM 3496-3499

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Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
2-FCV-77-15B	M2-3050	DRYWELL FLOOR DRAIN SUMP DISCHARGE	0-730E927-15	Y	N	N	A4_DCD1C.WK3, ITM 3500-3503
2-FCV-84-19	M2-3051	CAD ISOLATION VALVE	0-45E684-1, 2-45E684-2	Y	N	N	A4_DCD1C.WK3, ITM 2281-2286
2-FCV-84-20	M2-3052	CAD ISOLATION VALVE	2-730E927-17A	Y	N	N	A4_DCD1C.WK3, ITM 2287-2297
2-LI-3-58A	M2-3053	RPV LEVEL INSTRUMENT	2-45E670-13	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2298
2-LI-3-58B	M2-3054	RPV LEVEL INSTRUMENT	2-45E670-19	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2299
2-PI-3-74A	M2-3055	RPV PRESSURE INSTRUMENT	2-45E670-13	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2300
2-PI-3-74B	M2-3056	RPV PRESSURE INSTRUMENT	2-45E670-19	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2301
2-XR-64-159	M2-3057	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	2-45E614-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2302-2304
2-LI-64-159A	M2-3058	TORUS LEVEL INSTRUMENT	2-45E614-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2305-2306
2-TI-64-161	M2-3059	TORUS TEMPERATURE INSTRUMENT	2-45E664-2	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2307-2313
2-TI-64-162	M2-3060	TORUS TEMPERATURE INSTRUMENT	2-45E664-2	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2314-2320
2-PI-64-67B	M2-3061	DRYWELL PRESSURE INSTRUMENT	2-730E933-2	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2321-2323
2-PI-64-160A	M2-3062	DRYWELL PRESSURE INSTRUMENT	2-45E614-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2324-2325
2-TI-64-52AB	M2-3063	DRYWELL TEMPERATURE INSTRUMENT	2-730E933-1	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2326-2332
2-XR-64-50	M2-3064	DRYWELL TEMPERATURE & PRESSURE INSTRUMENT	2-730E933-1	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 2333-2338
2-NM-92-7/41A	M2-3065	IRM "A"	0-45E702-3, 2-730E237-1,4	Y	N	N	A4_JTK1C.WK3 (ITEMS 5015 - 5016)
2-NM-92-7/41B	M2-3066	IRM 'B'	0-45E702-3 AND 2-730E237-1,5	Y	N	N	A4_JTK1C.WK3 (ITEMS 5017 - 5018)
0-PMP-23-85	M2-4001	RHRSW Pump A3	0-47E610-23-2, 3-45E766-23	Y	N	N	A4_MLP3 ITM 1-18A4_SWM1 ITM 1-18
0-STN-67-925	M2-4003	A EECW PUMP DISCHARGE STRAINER	1-47E610-67-1, 0-45E771-5	Y	N	N	A4_TJH1 ITM 1-6
0-FCV-67-1	M2-4004	EECW PUMP DISCHARGE STRAINER DRAIN VALVE	1-47E610-67-1, 0-45E771-5	N/A	N/A	N/A	A4_TJH1 ITM 7-14

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2-CLR-67-917	M2-4006	EECW/RHR PUMP 2A ROOM COOLER	2-47E610-67-2,2-45E779-16	Y	N	N	A4_JTK1 ITM 1770-1774
2-CLR-67-919	M2-4007	EECW/CS PUMP 2A ROOM COOLER	2-47E610-67-2, 0-45E779-16	Y	N	N	A4_JTK1 ITM 1790-1794
2-CLR-67-921	M2-4008	EECW/RHR PUMP 2C ROOM COOLER	2-47E610-67-2, 2-45E779-16	Y	N	N	A4_JTK1 ITM 1780-1784
0-PMP-23-91	M2-4011	RHRSW Pump C3	0-47E610-23-3, 3-45E766-23 r020	Y	N	N	A4_MLP3 ITM 20-38A4_SWM1 ITM 19-36
0-FCV-67-8	M2-4014	EECW PUMP DISCHARGE STRAINER DRAIN VALVE	0-47E610-67-2, 0-45E771-5	N/A	N/A	N/A	A4_TJH1 ITM 86-93
0-FCV-67-49	M2-4015	RHRSW PUMP C1 TO EECW SYSTEM CROSS CONNECT	0-47E610-67-2 , 0-45E771-3	N	N	Y(R)	A4_TJH1 ITM 29-65
1-FCV-67-50	M2-4016	EECW NORTH HEADER BACKUP TO RBCCW	1-47E610-67-1, 1-45E614-3	N/A	N/A	N/A	A4_JTK1 ITM 4888-4890
2-FCV-67-50	M2-4017	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	2-47E610-67-2 , 2-45E614-3	N/A	N/A	N/A	A4_JTK1 ITM 4894-4900
3-FCV-67-50	M2-4018	EECW NORTH HEADER BACKUP TO RBCCW	3-47E610-67-2, 3-45E614-3	N/A	N/A	N/A	A4_JTK1 ITM 4908-4914
0-FCV-67-53	M2-4019	EECW SYSTEM NORTH HEADER BACKUP TO THE AIR COMP	1-47E610-67-1 , 1-45E614-3	Y	N	N	A4_SWM1 ITM 94-104
0-EI-23-85/3	M2-4041	RHRSW PUMP A3 AMPERAGE INDICATION	0-47E610-23-2, 3-45E766-23	N/A	N/A	N/A	NO CONTACTS IN THIS CIRCUIT
3-EI-23-91/3	M2-4042	RHRSW PUMP C3 AMPERAGE INDICATION	0-47E610-23-3, 3-45E766-23	N/A	N/A	N/A	NO CONTACTS IN THIS CIRCUIT
0-PMP-23-88	M2-4044	RHRSW Pump B3	0-47E610-23-2, 0-45E765-5	Y	N	N	A4_MLP1 ITM 509-527A4_SWM1 ITM 37-54
0-STN-67-926	M2-4046	B EECW PUMP DISCHARGE STRAINER	1-47E610-67-1, 0-45E771-5	Y	N	N	A4_TJH1 ITM 66-71
0-FCV-67-5	M2-4047	EECW PUMP DISCHARGE STRAINER DRAIN VALVE	1-47E610-67-1, 0-45E771-5	N/A	N/A	N/A	A4_TJH1 ITM 72-79
2-CLR-67-918	M2-4049	EECW/RHR PUMP 2B ROOM COOLER	2-47E610-67-2,2-45E779-16	Y	N	N	A4_JTK1 ITM 1775-1779
2-CLR-67-920	M2-4050	EECW/CS PUMP 2B ROOM COOLER	2-47E610-67-2, 0-45E779-16	Y	N	N	A4_JTK1 ITM 1795-1799
2-CLR-67-922	M2-4051	EECW/RHR PUMP 2D ROOM COOLER	1-47E610-67-1, 0-45E779-16	Y	N	N	A4_JTK1 ITM 1785-1789

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Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
0-PMP-23-94	M2-4054	RHRSW Pump D3	0-47E610-23-3, 0-45E765-5	Y	N	N	A4_MLP1 ITM 528-544A4_SWM1 ITM 55-72
0-STN-67-928	M2-4056	D EECW PUMP DISCHARGE STRAINER	0-47E610-67-2, 0-45E771-5	Y	N	N	A4_TJH1 ITM 15-20
0-FCV-67-11	M2-4057	EECW PUMP DISCHARGE STRAINER DRAIN VALVE	0-47E610-67-2, 0-45E771-5	N/A	N/A	N/A	A4_TJH1 ITM 21-28
0-FCV-67-48	M2-4058	RHRSW PUMP D1 TO EECW SYSTEM CROSS CONNECT	0-47E610-67-2, 0-45E771-3	N	N	Y(R)	A4_TJH1 ITM 94-130
2-FSV-67-51	M2-4060	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	2-47E610-67-2 , 2-45E614-3	N/A	N/A	N/A	A4_JTK1 ITM 4901-4907
3-FSV-67-51	M2-4061	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	3-47E610-67-2, 3-45E614-3	N/A	N/A	N/A	A4_JTK1 ITM 4915-4921
0-EI-23-88/3	M2-4083	EECW PUMP 3B AMPERAGE INDICATION	0-47E610-23-2, 0-45E765-5	N/A	N/A	N/A	Evaluated in summary of circuit relay chatter evaluation
0-EI-23-94/3	M2-4084	EECW PUMP D3 AMPERAGE INDICATION	0-47E610-23-3, 0-45E765-5	N/A	N/A	N/A	Evaluated in summary of circuit relay chatter evaluation
0-STN-67-927	M2-44013	C EECW PUMP DISCHARGE STRAINER	0-47E610-67-2, 0-45E771-5	Y	N	N	A4_TJH1 ITM 80-85
2-FCV-75-2	M2-5001	Core Spray Pump 2A Suction Isolation Valve	2-47E814-1,R035 2-45E779-13,R15	N	N	Y	A4-JTK1C 1501-1508
2-PMP-75-5	M2-5002	Core Spray Pump 2A	2-47E814-1 R35, 2-45E765 7 R14	Y	N	N	A4-MLP1E
2-FCV-75-9	M2-5005	Core Spray Pumps 2A & 2C Mini-Flow Valve	2-47E814-1,R035 2-45E779-10,R29	N	N	Y	A4-JTK1C 1465-1472
2-FCV-75-11	M2-5006	Core Spray Pump 2C Suction Isolation Valve	2-47E814-1,R035 2-45E779-13,R15	N	N	Y	A4-JTK1C 1509-1516
2-PMP-75-14	M2-5007	Core Spray Pump 2C	2-47E814-1 R35, 2-45E765 7 R14	Y	N	N	A4-MLP1E
2-FCV-75-22	M2-5010	Core Spray Pumps 2A & 2C test Isolation Valve	2-47E814-1,R035 2-45E779-8,R15	N	N	Y	A4-JTK1C 1553-1559
2-FI-75-21	M2-5011	Core Spray Pumps 2A & 2C Flow Indication	2-730E930-12,R8	N/A	N/A	N/A	N/A
2-FCV-75-23	M2-5012	Core Spray Pumps 2A & 2C Outboard Injection Valve	2-47E814-1,R035 2-45E779-18,R21	N	N	Y	A4-JTK1C 1533-1542
2-FCV-75-25	M2-5013	Core Spray Pumps 2A & 2C Inboard Injection Valve	2-47E814-1,R035 2-45E779-10,R29	N	N	Y	A4-JTK1C 1481-1490

Appendix F: System Consequence Chatter Evaluation Summary - Unit 2

Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
2-FCV-75-30	M2-5015	Core Spray Pump 2B Suction Isolation Valve	2-47E814-1,R035 2-45E779-13,R15	N/A	N/A	N/A	A4-JTK1C 1517-1524
2-PMP-75-33	M2-5016	Core Spray Pump 2B	2-47E814-1 R35, 2-45E765 7 R14	Y	N	N	A4-MLP1E
2-FCV-75-37	M2-5019	Core Spray Pumps 2B & 2D Mini-Flow Valve	2-47E814-1,R035 2-45E779-10,R29	N/A	N/A	N/A	A4-JTK1C 1473-1480
2-FCV-75-39	M2-5020	Core Spray Pump 2B Suction Isolation Valve	2-47E814-1,R035 2-45E779-13,R15	N/A	N/A	N/A	A4-JTK1C 1525-1532
2-PMP-75-42	M2-5021	Core Spray Pump 2D	2-47E814-1 R35, 2-45E765 7 R14	Y	N	N	A4-MLP1E
2-FCV-75-50	M2-5024	Core Spray Pumps 2B & 2D Test Isolation Valve	2-47E814-1,R035 2-45E779-8,R15	Y	N	N	A4-JTK1C 1560-1566
2-FI-75-49	M2-5025	Core Spray Pumps 2B & 2D Flow Indication	2-730E930-12,R8	N/A	N/A	N/A	N/A
2-FCV-75-51	M2-5026	Core Spray Pumps 2B & 2D Outboard Injection Valve	2-47E814-1,R035 2-45E779-18,R21	Y	N	N	A4-JTK1C 1543-1552
2-FCV-75-53	M2-5027	Core Spray Pumps 2B & 2D Inboard Injection Valve	2-47E814-1,R035 2-45E779-10,R29	Y	N	N	A4-JTK1C 1491-1500
0-FCV-84-5/0-FSV-84-5	M2-6002/M2-6003	CAD/N2 TANK "A" ISOLATION VALVE/ISOLATION SOLENOID VLV	0-45E684-1, 1-45E684-2	Y	N	N	A4_DCD1C.WK3, ITM 3432-3436
0-HTR-84-5	M2-6005	CAD/N2 TANK "A" ELECTRIC HEATER	1-45E862-1	N/A	N/A	N/A	N/A
2-FSV-84-8A	M2-6006	CAD TO DRYWELL (2-FCV-84-18) SOLENOID VALVE	0-45E684-1,2-45E864-2	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3442
2-FSV-84-8B	M2-6007	CAD TO DRYWELL (2-FCV-84-19) SOLENOID VALVE	0-45E684-1,2-45E684-2	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3443
2-FSV-84-48	M2-6009	CAD SYSTEM "A" TO UNIT 2 DRYWELL CONTROL AIR	0-45E684-1,2-45E684-2	N/A	N/A	N/A	A4_DCD1C.WK3 ITM 3448
0-FCV-84-16/0-FSV-84-16	M2-6026/M2-6027	CAD/N2 TANK "B" ISOLATION VALVE/ISOLATION SOLENOID VLV	0-45E684-1, 1-45E684-2	Y	N	N	A4_DCD1C.WK3, ITM 3437-3441
0-HTR-84-16	M2-6029	CAD/N2 TANK "B" ELECTRIC HEATER	1-45E862-1	N/A	N/A	N/A	N/A
2-FSV-84-8C	M2-6030	CAD TO DRYWELL (2-FCV-84-198) SOLENOID VALVE	0-45E684-1, 2-45E864-2	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3444

Appendix F: System Consequence Chatter Evaluation Summary - Unit 2

Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
2-FSV-84-8D	M2-6031	CAD TO DRYWELL (2-FCV-84-18) SOLENOID VALVE	0-45E684-1,2-45E684-2	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3445
2-FSV-84-49	M2-6033	CAD SYSTEM "B" TO UNIT 2 DRYWELL CONTROL AIR	0-45E684-1,2-45E684-2	N/A	N/A	N/A	A4_DCD1C.WK3 ITM 3467
0-GEN-82-A	M2-7001	UNIT 1 & 2 DIESEL GENERATOR "A"	0-731E761-1, -2, -9, 0-731E718-1, 0-45E767-1, -3	N	Y	N	A4_TJH2F, Item Nos.1-274, 1072 1079
0-FAN-30-64	M2-7015, 7017 7019	DG ROOM A EXHAUST FAN A AND INLET/OUTLET DAMPERS	0-45E771-3	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 228-239)
0-FAN-30-65	M2-7016, 7020 7022	DG ROOM A EXHAUST FAN B AND INLET/OUTLET DAMPERS	0-45E771-3	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 300-311)
3-FAN-30-235	M2-7016, 7020 7022	DG ROOM 3C EXHAUST FAN B AND INLET/OUTLET DAMPERS	3-45E771-8	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 156-167)
0-GEN-82-B	M2-7023	UNIT 1 & 2 DIESEL GENERATOR "B"	0-731E761-3, -4, -9, 0-731E718-2, 0-45E767-1, -2, 3	N	Y	N	A4_TJH2F, Item Nos.275-538, 1080-1087
0-FAN-30-66	M2-7037,7039-7041	DG ROOM B EXHAUST FAN A AND INLET/OUTLET DAMPERS	0-45E771-3	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 240-251)
0-FAN-30-67	M2-7038, 7042 7044	DG ROOM B EXHAUST FAN B AND INLET/OUTLET DAMPERS	0-45E771-3	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 312-323)
0-GEN-82-C	M2-7045	UNIT 1 & 2 DIESEL GENERATOR "C"	0-731E761-5, -6, -9, 0-731E718-3, 0-45E767-1, -2, -3	N	Y	N	A4_TJH2F, Item Nos.539-809, 1088-1095
3-FAN-30-231	M2-7045-7048	DG ROOM 3A EXHAUST FAN B AND INLET/OUTLET DAMPERS	3-45E771-8	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 204-215)
3-FAN-30-233	M2-7049-7052	DG ROOM 3B EXHAUST FAN B AND INLET/OUTLET DAMPERS	3-45E771-8	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 216-227)
0-FAN-30-68	M2-7059, 7061 7063	DG ROOM C EXHAUST FAN A AND INLET/OUTLET DAMPERS	0-45E771-3	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 276-287)
0-FAN-30-69	M2-7060, 7064 7066	DG ROOM C EXHAUST FAN B AND INLET/OUTLET DAMPERS	0-45E771-3	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 252-263)
0-GEN-82-D	M2-7067	UNIT 1 & 2 DIESEL GENERATOR "D"	0-731E761-7, -8, -9, 0-731E718-4, 0-45E767-1, -2, -3	N	Y	N	A4_TJH2F, Item Nos.810-1071, 1096-1103
0-FAN-30-70	M2-7081, 7083 7085	DG ROOM D EXHAUST FAN A AND INLET/OUTLET DAMPERS	0-45E771-3	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 288-299)

Appendix F: System Consequence Chatter Evaluation Summary - Unit 2

Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
0-FAN-30-71	M2-7082, 7086 7088	DG ROOM D EXHAUST FAN B AND INLET/OUTLET DAMPERS	0-45E771-3	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 264-275)
3-GEN-82-3A	M2-7089	UNIT 3 DIESEL GENERATOR "A"	3-45E767-5, -6, -7, -8, 3-45E768-1, -2, -3	N	Y	N	A4_TJH3F, Item Nos.1-263
3-FAN-30-230	M2-7103-7106	DG ROOM 3A EXHAUST FAN A AND INLET/OUTLET DAMPERS	3-45E771-8	Y	N	N	A4_TJH1C.WK3 (ITEM 132-143)
3-GEN-82-3B	M2-7107	UNIT 3 DIESEL GENERATOR "B"	3-45E767-5, -6, -7, -8, 3-45E768-3, -4, -9	N	Y	N	A4_TJH3F, Item Nos.264-520
3-FAN-30-232	M2-7121-7124	DG ROOM 3B EXHAUST FAN A AND INLET/OUTLET DAMPERS	3-45E771-8	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 144-155)
0-PMP-23-5	M2-8001	RHRSW Pump A2	0-47E610-23-2, 0-45E765-5	Y	N	N	A4_MLP3 ITM 454-468A4_SWM1 ITM 82-84
1-FCV-23-34	M2-8004	RHR/RHRSW HX A OUTLET VALVE	1-47E610-23-1, 1-45E779-49	N	N	Y	A4_JTK1 ITM 1687-1695
2-FCV-23-34	M2-8005	RHR/RHRSW HX A OUTLET VALVE	2-47E610-23-1, 2-45E779-49	N	N	Y	A4_JTK1 ITM 1607-1617
3-FCV-23-34	M2-8006	RHR/RHRSW HX A OUTLET VALVE	3-47E610-23-1, 3-45E779-49	N	N	Y	A4_JTK1 ITM 1647-1657
0-PMP-23-12	M2-8007	RHRSW Pump C2	0-47E610-23-3, 0-45E765-5	Y	N	N	A4_MLP3 ITM 483-496A4_SWM1 ITM 88-90
0-PMP-23-27	M2-8007	RHRSW Pump D2	0-47E610-23-3, 0-45E765-5	Y	N	N	A4_MLP3 ITM 497-510A4_SWM1 ITM 91-93
1-FCV-23-40	M2-8010	RHR/RHRSW HX C OUTLET VALVE	1-47E610-23, 1-45E779-49	N	N	Y	A4_JTK1 ITM 1707-1715
3-FI-23-42	M2-8010	RHRSW HX C FLOW INDICATOR	3-47E610-23-1, 3-730E938-10	N/A	N/A	N/A	A4_DCD1C.WK3 ITM 3489
2-FCV-23-40	M2-8011	RHR/RHRSW HX C OUTLET VALVE	2-47E610-23-1, 2-45E779-49	N	N	Y	A4_JTK1 ITM 1627-1637
3-FI-23-48	M2-8011	RHRSW HX B FLOW INDICATOR	3-47E610-23-1, 3-730E938-10 r007	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3490
3-FCV-23-40	M2-8012	RHR/RHRSW HX C OUTLET VALVE	3-47E610-23-1, 3-45E779-49	N	N	Y	A4_JTK1 ITM 1667-1677
3-FI-23-54	M2-8012	RHRSW HX D FLOW INDICATOR	3-47E610-23-1, 3-730E928-10	N/A	N/A	N/A	A4_DCD1C.WK3 ITM 3491
0-PMP-23-19	M2-8013	RHRSW Pump B2	0-47E610-23-2, 0-45E765-5	Y	N	N	A4_MLP3 ITM 469-482A4_SWM1 ITM 85-87

Appendix F: System Consequence Chatter Evaluation Summary - Unit 2

Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
1-FCV-23-46	M2-8016	RHR/RHRSW HX B OUTLET VALVE	1-47E610-23-1, 1-45E779-49	Y	N	N	A4_JTK1 ITM 1696-1706
2-FCV-23-46	M2-8017	RHR/RHRSW HX B OUTLET VALVE	2-47E610-23-1, 2-45E779-49	Y	N	N	A4_JTK1 ITM 1618-1626
3-FCV-23-46	M2-8017	RHR/RHRSW HX B OUTLET VALVE	3-47E610-23-1, 3-45E779-49	Y	N	N	A4_JTK1 ITM 1658-1666
1-FCV-23-52	M2-8022	RHR/RHRSW HX D OUTLET VALVE	1-47E610-23-1, 1-45E779-49	Y	N	N	A4_JTK1 ITM 1716-1726
2-FCV-23-52	M2-8023	RHR/RHRSW HX D OUTLET VALVE	2-47E610-23-1, 2-45E779-49	Y	N	N	A4_JTK1 ITM 1638-1646
3-FCV-23-52	M2-8024	RHR/RHRSW HX D OUTLET VALVE	3-47E610-23-1, 3-45E779-49	Y	N	N	A4_JTK1 ITM 1678-1686
1-FCV-23-57	M2-8025	RHR/RHRSW CROSS CONNECT VALVE	1-47E610-23-1, 1-45E779-10	N/A	N/A	N/A	A4_JTK1 ITM 1727-1733
2-FCV-23-57	M2-8026	RHR/RHRSW CROSS CONNECT VALVE	2-47E610-23-1, 3-45E779-10	Y	N	N	A4_JTK1 ITM 1456-1464
2-FI-23-36	M2-8027	RHRSW HX A FLOW INDICATOR	2-47E610-23-1,2-730E937-10,11	N/A	N/A	N/A	A4_DCD1C.WK3 ITM 3484
2-FI-23-42	M2-8028	RHRSW HX C FLOW INDICATOR	2-47E610-23-1, 2-730E937-10,11	N/A	N/A	N/A	A4_DCD1C.WK3 ITM 3485
2-FI-23-48	M2-8029	RHRSW HX B FLOW INDICATOR	2-47E610-23-1, 2-730E937-10,11	N/A	N/A	N/A	A4_DCD1C.WK3 ITM 3486
2-FI-23-54	M2-8030	RHRSW HX D FLOW INDICATOR	2-47E610-23-1, 2-730E937-10,11	N/A	N/A	N/A	A4_DCD1C.WK3 ITM 3487
1-BDBB-231-0001A	M2-9018	480V SHDN BD 1A TRANSFER SCHEME NORMAL	1-45E779-1	N	N	Y(R)	A4_JTK1C.WK3, ITEMS 1-24
1-BDBB-231-0001A	M2-9018	480V SHDN BD 1A TRANSFER SCHEME EMERGENCY	1-45E779-1	N	N	Y(R)	A4_JTK1C.WK3, ITEMS 26-51
1-BDBB-231-0001A	M2-9018	480V SHDN BD 1A UNDER VOLTAGE AUX RELAYS	1-45E779-1	Y	N	N	A4_JTK1C.WK3, ITEMS 52-74
1-BDBB-231-0001B	M2-9019	480V SHDN BD 1B TRANSFER SCHEME NORMAL	1-45E779-1	N	N	Y(R)	A4_JTK1C.WK3, ITEMS 75-98
1-BDBB-231-0001B	M2-9019	480V SHDN BD 1B TRANSFER SCHEME EMERGENCY	1-45E779-1	N	N	Y(R)	A4_JTK1C.WK3, ITEMS 100-125
1-BDBB-231-0001B	M2-9019	480V SHDN BD 1B UNDER VOLTAGE AUX RELAYS	1-45E779-1	Y	N	N	A4_JTK1C.WK3, ITEMS 126-148

Appendix F: System Consequence Chatter Evaluation Summary - Unit 2

Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
2-BDBB-231-0002A	M2-9020	480V SHDN BD 2A UNDER VOLTAGE AUX RELAYS	2-45E779-1	Y	N	N	A4_JTK1C.WK3, ITEMS 410-433
2-BDBB-231-0002A	M2-9020	NORMAL FEEDER TO 480V RMOV BD 2D (MG SET 2DN)	2-45E779-28	N	Y	N	A4_JTK1C.WK3, ITEMS 507-519
2-BDBB-231-0002A	M2-9020	480V SHDN BD 2A TRANSFER SCHEME NORMAL	2-45E779-1	N	N	Y(R)	A4_JTK1C.WK3, ITEMS 361-383
2-BDBB-231-0002A	M2-9020	480V SHDN BD 2A TRANSFER SCHEME EMERGENCY	2-45E779-1	N	N	Y(R)	A4_JTK1C.WK3, ITEMS 385-409
2-BDBB-231-0002B	M2-9021	480V SHDN BD 2B TRANSFER SCHEME EMERGENCY	2-45E779-1	N	N	Y(R)	A4_JTK1C.WK3, ITEMS 458-482
2-BDBB-231-0002B	M2-9021	480V SHDN BD 2B UNDER VOLTAGE AUX RELAYS	2-45E779-1	Y	N	N	A4_JTK1C.WK3, ITEMS 483-506
2-BDBB-231-0002B	M2-9021	NORMAL FEEDER TO 480V RMOV BD 2E (MG SET 2EN)	2-45E779-30	N	Y	N	A4_JTK1C.WK3, ITEMS 533-545
2-BDBB-231-0002B	M2-9021	480V SHDN BD 2B TRANSFER SCHEME NORMAL	2-45E779-1	N	N	Y(R)	A4_JTK1C.WK3, ITEMS 434-456
1-BDBB-268-0001A	M2-9023	480V REACT MOV BD 1A TRANSFER SCHEME	1-45E779-6	Y	N	N	A4_JTK1C.WK3, ITEMS 205-234
1-BDBB-268-0001B	M2-9024	480V REACT MOV BD 1B TRANSFER SCHEME	1-45E779-6	Y	N	N	A4_JTK1C.WK3, ITEMS 235-264
2-BDBB-268-0002A	M2-9025	480V REACT MOV BD 2A TRANSFER SCHEME	2-45E779-6	Y	N	N	A4_JTK1C.WK3, ITEMS 560-589
2-BDBB-268-0002B	M2-9026	480V REACT MOV BD 2B TRANSFER SCHEME	2-45E779-6	Y	N	N	A4_JTK1C.WK3, ITEMS 590-619
2-BDBB-268-0002D	M2-9027	480V REACT MOV BD 2D TRANSFER SCHEME	2-45E779-17	N	Y	N	A4_JTK1C.WK3, ITEMS 652-683
2-BDBB-268-0002E	M2-9028	480V REACT MOV BD 2E TRANSFER SCHEME	0-D-N1632-01,-02	N	Y	N	A4_JTK1C.WK3, ITEMS 684-715
0-BDBB-219-0000A	M2-9031	480V DSL AUX BD A TRANSFER SCHEME	0-45E771-1	Y	N	N	A4_JTK1C.WK3, ITEMS 2392-2437
0-BDBB-219-0000B	M2-9032	480V DSL AUX BD B TRANSFER SCHEME	0-45E771-1	Y	N	N	A4_JTK1C.WK3, ITEMS 2438-2483

APPENDIX G

SYSTEM CONSEQUENCE
CHATTER EVALUATION
SUMMARY

BROWNS FERRY UNIT 3

Appendix G: System Consequence Chatter Evaluation Summary - Unit 3

Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
3-BDAA-211-0003EC	E3-39001	43SEC RESET CIRCUIT	3-45E766-24	Y	N	N	MLP3, ITEMS 510 - 520
3-BDAA-211-0003EC	E3-39001	UNDERVOLTAGE AUXILIARY RELAYS	3-45E766-19	Y	N	N	MLP3, ITEMS 455 - 458
3-BDAA-211-0003EC	E3-39001	4KV SDB 3EC BUS DIFFERENTIAL RELAYS	3-45E766-19	N/A	N/A	N/A	MLP3, ITEMS 459 - 461
3-BDAA-211-0003EC	E3-39001	BD C TO BD 3EC TIE DIFFERENTIAL RELAYS	3-45E766-19	N/A	N/A	N/A	MLP3, ITEMS 462 - 464
3-BDAA-211-0003EC	E3-39001	UNDERVOLTAGE AUXILIARY RELAYS	3-45E766-19	Y	N	N	MLP3, ITEMS 455 - 458
3-BDAA-211-0003EC	E3-39001	DEGRADED VOLTAGE AUXILIARY RELAYS	3-45E766-19	Y	N	N	MLP3, ITEMS 442 - 454
3-BDAA-211-0003EC/10	E3-39001	DIESEL GENERATOR 3C BREAKER 1832	3-45E724-8, 3-45E766-14	Y	N	N	MLP3, ITEM 589 - 617
3-BDAA-211-0003EC/12	E3-39001	4KV SDB 3EC NORMAL FEEDER BREAKER 1338	3-45E724-8, 3-45E766-13	Y	N	N	MLP3, ITEMS 250 - 283
3-BDAA-211-0003EC/3	E3-39001	4KV SDB 3EC ALTERNATE FEEDER BREAKER 1626	3-45E724-8, 3-45E766-13	Y	N	N	MLP3, ITEMS 109 - 143
3-BDAA-211-0003EC/6	E3-39001	4KV SDB 3EC EMERGENCY FEEDER BREAKER 1834	3-45E724-8, 3-45E766-14	Y	N	N	MLP3, ITEMS 358 - 375.5
3-BDAA-211-0003EC/7	E3-39001	480V XFMR TS3B BREAKER	3-45E724-8, 3-45E766-22	N/A	N/A	N/A	MLP3, ITEM 652 - 656
3-CHGB-254-0000CB	E3-39004	125V DSL GEN 3C BATT CHGR B	3-45E771-9, 3-8422520	Y	N	N	A4_JTK1C.WK3 (ITEM 2609)
3-BDBB-231-0003B	E3-39007	NORMAL FEEDER TO 480V RMOV BD 3E (MG SET 3EN)	3-45E779-34	N	Y	N	A4_JTK1C.WK3, ITEMS 890-903
3-BDBB-231-0003B	E3-39007	480V SHDN BD 3B TRANSFER SCHEME NORMAL	3-45E779-1	N	N	Y(R)	A4_JTK1C.WK3, ITEMS 789-811
3-BDBB-231-0003B	E3-39007	480V SHDN BD 3B TRANSFER SCHEME EMERGENCY	3-45E779-1	N	N	Y(R)	A4_JTK1C.WK3, ITEMS 813-837
3-BDBB-231-0003B	E3-39007	480V SHDN BD 3B UNDER VOLTAGE AUX RELAYS	3-45E779-1	Y	N	N	A4_JTK1C.WK3, ITEMS 838-861
3-BDBB-268-0003A	E3-39008	480V REACT MOV BD 3A TRANSFER SCHEME	3-45E779-6	Y	N	N	A4_JTK1C.WK3, ITEMS 918-947
3-BDBB-268-0003B	E3-39009	480V REACT MOV BD 3B TRANSFER SCHEME	3-45E779-6	Y	N	N	A4_JTK1C.WK3, ITEMS 948-977
3-BDBB-268-0003D	E3-39016	480V REACT MOV BD 3D TRANSFER SCHEME	3-45E779-17	N	Y	N	A4_JTK1C.WK3, ITEMS 1027-1058

Appendix G: System Consequence Chatter Evaluation Summary - Unit 3

Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
3-BDBB-268-0003E	E3-39018	480V REACT MOV BD 3E TRANSFER SCHEME	3-45E779-17	N	Y	N	A4_JTK1C.WK3, ITEMS 1059-1090
3-BDAA-211-0003ED	E3-39020	43SED RESET CIRCUIT	3-45E766-24	Y	N	N	MLP3, ITEMS 521 - 531
3-BDAA-211-0003ED	E3-39020	BD D TO BD 3ED TIE DIFFERENTIAL RELAYS	3-45E766-20	N/A	N/A	N/A	MLP3, ITEMS 485 - 487
3-BDAA-211-0003ED	E3-39020	DEGRADED VOLTAGE AUXILIARY RELAYS	3-45E766-20	Y	N	N	MLP3, ITEMS 465 - 477
3-BDAA-211-0003ED	E3-39020	4KV SDB 3ED BUS DIFFERENTIAL RELAYS	3-45E766-20	N/A	N/A	N/A	MLP3, ITEMS 482 - 484
3-BDAA-211-0003ED/1	E3-39020	4KV SDB 3ED ALTERNATE FEEDER BREAKER 1628	3-45E724-9, 3-45E766-15	Y	N	N	MLP3, ITEMS 144 - 178
3-BDAA-211-0003ED/10	E3-39020	DIESEL GENERATOR 3D BREAKER 1836	3-45E724-9, 3-45E766-16	Y	N	N	MLP3, ITEM 618 - 646
3-BDAA-211-0003ED/4	E3-39020	4KV SDB 3ED EMERGENCY FEEDER BREAKER 1846	3-45E724-9, 3-45E766-16	Y	N	N	MLP3, ITEMS 377 - 395.4
3-BDAA-211-0003ED/8	E3-39020	4KV SDB 3ED NORMAL FEEDER BREAKER 1342	3-45E724-9, 3-45E766-15	Y	N	N	MLP3, ITEMS 285 - 318
3-CHGB-254-0000DB	E3-39023	125V DSL GEN 3D BATT CHGR B	3-45E771-9, 3-8422520	Y	N	N	A4_JTK1C.WK3 (ITEM 2612)
3-BDBB-281-0003A	E3-39030	250V RMOV BD 3A (TRANSFER CONTROL)	3-45E714-7	Y	N	N	A4_JTK1C.WK3 (ITEMS 4678 - 4721)
3-BDBB-281-0003B	E3-39031	250V RMOV BD 3B (TRANSFER CONTROL)	3-45E714-7	Y	N	N	A4_JTK1C.WK3 (ITEMS 4722 - 4765)
3-BDBB-281-0003C	E3-39033	250V RMOV BD 3C (TRANSFER CONTROL)	3-45E714-7	Y	N	N	A4_JTK1C.WK3 (ITEMS 4766 - 4809)
3-INV-256-0001	E3-39070	DIVISION I ECCS ATU INVERTER	3-45W708-14	N/A	N/A	N/A	A4-DCD1D-3494
3-INV-256-0002	E3-39075	DIVISION II ECCS ATU INVERTER	3-45W708-14	N/A	N/A	N/A	A4-DCD1D-3495
3-LPNL-925-654A	E3-39105	480V LOAD SHED, DIV I	3-45E779-50, 3-45E749-5, 0-45E701-1, 0-45E702-1	N/A	N/A	N/A	A4_JTK1C.WK3 (ITEMS 4462-4500)
3-LPNL-925-654B	E3-39106	480V LOAD SHED, DIV II	3-45E779-51, 3-45E749-6, 0-45E703-1, 0-45E701-1	N/A	N/A	N/A	A4_JTK1C.WK3 (ITEMS 4501-4545)

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a)3-PROT-099-0002A1, 0002A2 b) 3-PROT-099-0002B1, 0002B2 c) 3-PROT-099-0002C1, 0002C2	E3-39220 to E3-39225	RPS CIRCUIT PROTECTOR	3-45E641-5,8,9	N/A	N/A	N/A	A4_JTK1C.WK3 (ITEMS 4138 - 4301)
3-HCU-85-1-185	M3-0001	CRD HYDRAULIC CONTROL UNIT	3-730E321-6,11,13,14,15, 3-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 623-1079
3-FCV-85-82A	M3-0002	CRD/WEST SDV VENT VALVE	3-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 1081-1100
3-FCV-85-82	M3-0003	CRD/WEST SDV VENT VALVE	3-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 1101-1120
3-FCV-85-37C	M3-0004	CRD/WEST SDV DRAIN VALVE	3-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 1161-1180
3-FCV-85-37D	M3-0005	CRD/WEST SDV DRAIN VALVE	3-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 1181-1200
3-FCV-85-83A	M3-0006	CRD/EAST SDV VENT VALVE	3-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 1121-1140
3-FCV-85-83	M3-0007	CRD/EAST SDV VENT VALVE	3-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 1141-1160
3-FCV-85-37E	M3-0008	CRD/EAST SDV DRAIN VALVE	3-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 1201-1220
3-FCV-85-37F	M3-0009	CRD/EAST SDV DRAIN VALVE	3-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 1221-1240
3-FSV-85-37A	M3-0012	CRD/SCRAM DUMP VALVE	3-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 1081-1240
3-FSV-85-37B	M3-0013	CRD/SCRAM DUMP VALVE	3-730E915-1, 13	Y	N	N	A4_DCD1C.WK3, ITM 1081-1240
3-FSV-85-35A	M3-0014	CRD/BACKUP SCRAM VALVE	3-730E915-1, 13, 14	Y	N	N	A4_DCD1C.WK3, ITM 1081-1240
3-FSV-85-35B	M3-0015	CRD/BACKUP SCRAM VALVE	3-730E915-1, 13, 14	Y	N	N	A4_DCD1C.WK3, ITM 1081-1240
3-HS-99-5A/S3A	M3-0016	RPS/REACTOR MANUAL SCRAM CHANNEL A3	3-730E915-11	Y	N	N	A4_DCD1C.WK3, ITM 1243
3-HS-99-5A/S3B	M3-0017	RPS/REACTOR MANUAL SCRAM CHANNEL B3	3-730E915-12	Y	N	N	A4_DCD1C.WK3, ITM 1244

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3-HS-99-5A-S1	M3-0018	RPS/REACTOR MODE SWITCH	3-730E915-11,12	Y	N	N	A4_DCD1C.WK3, ITM 1245
3-FCV-74-1	M3-1001	RHR Pump 3A Suction Valve from Suppression Pool	3-45E779-8,R17	N	N	Y	A4-JTK1C 1936-1946
3-FCV-74-2	M3-1002	RHR Pump 2A Suction Valve from Shutdown Cooling	3-45E779-13,R13	N	N	Y	A4-JTK1C 1892-1902
3-FCV-74-96	M3-1003	RHR /U3 to U2 RHR X-Tie Isolation Valve	2-45E779-10,R29	N/A	N/A	N/A	A4-JTK1C 2135-2143
3-PMP-74-5	M3-1004	RHR Pump 3A	3-45E766-21 R20	Y	N	N	A4-JTK 1C 4302-4324
3-FCV-74-7	M3-1006	RHR Pump 3A &3C Minimum Flow Valve	3-45E779-9 R10	N/A	N/A	N/A	A4-JTK1C 2085-2105
3-FCV-74-100	M3-1010	RHR /U3toU2 RHR Discharge X-Tie Isolation Valve	3-45E779-10,R16	N/A	N/A	N/A	A4-JTK1C 2335-2343
3-FCV-74-12	M3-1011	RHR Pump 3C Suction Valve from Suppression Pool	3-45E779-8,R17	N	N	Y	A4-JTK1C 1947-1957
3-FCV-74-13	M3-1012	RHR Pump 3C Suction Valve from Shutdown Cooling	3-45E779-13,R13	N	N	Y	A4-JTK1C 1903-1913
3-FCV-74-97	M3-1013	RHR /U3 to U2 RHR X-Tie Isolation Valve	3-45E779-10,R16	N/A	N/A	N/A	A4-JTK1C 2126-2134
3-PMP-74-16	M3-1014	RHR Pump 3C	3-45E766-21 R20	Y	N	N	A4-JTK1C 4348-4370
3-FI-74-50	M3-1018	RHR Loop I Flow Indication	3-730E938-10,R20	N/A	N/A	N/A	N/A
3-FI-74-56	M3-1019	RHR Loop I Flow Indication	3-730E938-10 R20	N/A	N/A	N/A	N/A
3-FCV-74-57	M3-1020	RHR Loop I Torus Containment Cooling Spray Valve	3-45E779-11,R15	N	N	Y	A4-JTK1C 1814-1829
3-FCV-74-59	M3-1021	RHR Loop I Suppression Pool Cooling Valve	3-45E779-23,R6	N	N	Y	A4-JTK1C 2070-2084
3-FCV-74-58	M3-1022	RHR Loop I Suppression Pool Spray Valve	3-45E779-11,R15	N	N	Y	A4-JTK1C 1842-1853
3-FCV-74-52	M3-1023	RHR Loop I Outboard Injection Valve	3-45E779-22,R14	N	N	Y(R)	A4-JTK1C 1958-1972
3-FCV-74-53	M3-1024	RHR Loop I Inboard Injection Valve	3-45E779-22,R14	N	N	Y	A4-JTK1C 1986-2007
3-FCV-78-61	M3-1026	FPC/Spent Fuel Pool Cooling X-tie to RHR	3-45E779-6,R9	N/A	N/A	N/A	A4-JTK1C 2357-2361
3-FCV-74-60	M3-1027	RHR Loop I Outboard Drywell Spray Valve	3-45E779-11,R15	N	N	Y	A4-JTK1C 1800-1813
3-FCV-74-61	M3-1028	RHR Loop I Inboard Drywell Spray Valve	3-45E779-11,R15	N	N	Y	A4-JTK1C 1830-1841

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3-FCV-74-24	M3-1029	RHR Pump 3B Suction Valve from Suppression Pool	3-45E779-8,R17	N/A	N/A	N/A	A4-JTK1C 2028-2036
3-FCV-74-25	M3-1030	RHR Pump 3B Suction Valve from Shutdown Cooling	3-45E779-13,R13	Y	N	N	A4-JTK1C 1914-1924
3-PMP-74-28	M3-1031	RHR Pump 2B	3-45E766-21 R20	Y	N	N	A4-JTK1C 4325-4347
3-FCV-74-30	M3-1033	RHR Pump 3B &3D Minimum Flow Valve	3-45E779-9 R10	N	N	Y	A4-JTK1C 2106-2125
3-FCV-74-35	M3-1037	RHR Pump 3D Suction Valve from Suppression Pool	3-45E779-8,R17	N/A	N/A	N/A	A4-JTK1C 2037-2045
3-PMP-74-39	M3-1039	RHR Pump 3D	3-45E766-21 R20	Y	N	N	A4-JTK1C4371-4393
3-FI-74-64	M3-1043	RHR Loop II Flow Indication	3-730E937-10,R20	N/A	N/A	N/A	N/A
3-FI-74-70	M3-1044	RHR Loop II Flow Indication	3-730E937-10,R20	N/A	N/A	N/A	N/A
3-FCV-74-71	M3-1045	RHR Loop II TorusContainment Cooling Spray Valve	2-45E779-11,R15	Y	N	N	A4-JTK1C 1866-1879
3-FCV-74-73	M3-1046	RHR Loop II Suppression Pool Cooling Valve	3-45E779-23,R6	Y	N	N	A4-JTK1C 2057-2069
3-FCV-74-72	M3-1047	RHR Loop II Suppression Pool Spray Valve	3-45E779-11,R15	Y	N	N	A4-JTK1C 1880-1891
3-FCV-74-66	M3-1048	RHR Loop II Outboard Injection Valve	3-45E779-22,R14	N	N	Y	A4-JTK1C 1973-1985
3-FCV-74-67	M3-1049	RHR Loop II Inboard Injection Valve	3-45E779-22,R14	N	N	Y(R)	A4-JTK1C 2008-2027
3-FCV-74-74	M3-1061	RHR Loop II Outboard Drywell Spray Valve	3-45E779-53,R2	N/A	N/A	N/A	A4-JTK1C 2046-2056
3-FCV-74-75	M3-1062	RHR Loop II Inboard Drywell Spray Valve	3-45E779-11,R15	Y	N	N	A4-JTK1C 1854-1865
3-PCV-1-4	M3-2000	MSRV Safety Relief Valve	3-730E929-3	N/A	N/A	N/A	A4_JTK1C ITM 2972-2973
3-PCV-1-5	M3-2003	MSRV Safety Relief Valve	3-730E929-3	Y	N	N	A4_JTK1C ITM 2952-2961
3-MSRV/ADS LOGICA	M3-2003, 2006, 2009, 2012, 2027, 2018	MSRV initiating logic	2-730E929-2	N/A	N/A	N/A	A4_JTK1C ITM 2849-2894
3-MSRV/ADS LOGICB	M3-2003, 2006, 2009, 2012, 2027, 2018	MSRV initiating logic	3-730E929-2	N/A	N/A	N/A	A4_JTK1C ITM 2895-2944
3-PCV-1-18	M3-2006	MSRV Safety Relief Valve	3-730E929-3	Y	N	N	A4_JTK1C ITM 2974-2981

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3-PCV-1-19	M3-2009	MSRV Safety Relief Valve	3-730E929-3	Y	N	N	A4_JTK1C ITM 2945-2951
3-PCV-1-22	M3-2012	MSRV Safety Relief Valve	3-730E929-3	Y	N	N	A4_JTK1C ITM 2962-2971
3-PCV-1-23	M3-2015	MSRV Safety Relief Valve	3-730E929-3	N/A	N/A	N/A	A4_JTK1C ITM 2982-2983
3-PCV-1-179	M3-2018	MSRV Safety Relief Valve	2-730E929-4	N/A	N/A	N/A	A4_JTK1C ITM 3013-3014
3-PCV-1-30	M3-2021	MSRV Safety Relief Valve	3-730E929-3	N/A	N/A	N/A	A4_JTK1C ITM 2984-2985
3-PCV-1-31	M3-2024	MSRV Safety Relief Valve	3-730E929-4	N/A	N/A	N/A	A4_JTK1C ITM 3001-3002
3-PCV-1-34	M3-2027	MSRV Safety Relief Valve	3-730E929-4	Y	N	N	A4_JTK1C ITM 3003-3012
3-PCV-1-41	M3-2030	MSRV Safety Relief Valve	3-730E929-4	Y	N	N	A4_JTK1C ITM 2986-2998
3-PCV-1-180	M3-2036	MSRV Safety Relief Valve	3-730E929-4	N/A	N/A	N/A	A4_JTK1C ITM 3015-3016
3-FCV-1-14	M3-3001	MSIV "A" INBOARD ISOLATION VALVE	3-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 2339-2454
3-FCV-1-15	M3-3002	MSIV "A" OUTBOARD ISOLATION VALVE	3-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 2803-2916
3-FCV-1-26	M3-3003	MSIV "B" INBOARD ISOLATION VALVE	3-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 2455-2570
3-FCV-1-27	M3-3004	MSIV "B" OUTBOARD ISOLATION VALVE	3-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 2917-3030
3-FCV-1-37	M3-3005	MSIV "C" INBOARD ISOLATION VALVE	3-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 2571-2686
3-FCV-1-38	M3-3006	MSIV "C" OUTBOARD ISOLATION VALVE	3-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 3031-3144
3-FCV-1-51	M3-3007	MSIV "D" INBOARD ISOLATION VALVE	3-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 2687-2802
3-FCV-1-52	M3-3008	MSIV "D" OUTBOARD ISOLATION VALVE	3-730E927-7, 8, 9, 10, & 11	Y	N	N	A4_DCD1C.WK3, ITM 3145-3258
3-FCV-1-55	M3-3009	MAIN STEAM LINE DRAIN ISOLATION VALVE	3-45E779-12, 3-730E927-7, 8, 15	N	N	Y	A4_JTK1C.WK3, ITM 2257-2266, A4_DCD1C.WK3, ITM 2375-2402, &2409-2431
3-FCV-32-63	M3-3014	DRYWELL CONTROL AIR SUCTION VALVE	3-45E614-9	Y	N	N	A4_DCD1C.WK3, ITM 3259-3263 & 3526-3535
3-FCV-64-17	M3-3015	DRYWELL VENTILATION ISOLATION VALVE	3-730E927-17, 6	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3264-3277
3-FCV-64-30	M3-3016	CONTAINMENT VENTILATION ISOLATION VALVE	3-730E927-17, 6	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3278-3291
3-FCV-64-33	M3-3017	CONTAINMENT VENTILATION ISOLATION VALVE	3-730E927-17, 6	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3292-3305

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3-FCV-64-139	M3-3018	CONTAINMENT DW DP ISOLATION VALVE	3-45E777-21, 3-730E927-17	Y	N	N	A4_DCD1C.WK3, ITM 3306-3312
3-FCV-64-140	M3-3019	CONTAINMENT DW DP ISOLATION VALVE	3-45E777-21, 3-730E927-17	Y	N	N	A4_DCD1C.WK3, ITM 3313-3319
3-FCV-64-28A	M3-3020	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	3-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3320
3-FCV-64-28B	M3-3021	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	3-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3321
3-FCV-64-28C	M3-3022	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	3-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3322
3-FCV-64-28D	M3-3023	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	3-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3323
3-FCV-64-28E	M3-3024	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	3-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3324
3-FCV-64-28F	M3-3025	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	3-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3325
3-FCV-64-28G	M3-3026	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	3-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3326
3-FCV-64-28H	M3-3027	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	3-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3327
3-FCV-64-28J	M3-3028	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	3-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3328
3-FCV-64-28K	M3-3029	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	3-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3329
3-FCV-64-28L	M3-3030	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	3-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3330

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3-FCV-64-28M	M3-3031	SUPRESSION CHANBER/DRYWELL VACUUM BREAKER	3-730E927-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3331
3-FCV-69-1	M3-3032	RWCU Inboard Isolation Valve	3-47E610-69-1, 3-45E779-8	Y	N	N	A4_JTK1C ITM 2278-2285
3-FCV-69-2	M3-3033	RWCU Outboard Isolation Valve	3-47E610-69-1 , 3-45E714-4	Y	N	N	A4_JTK1C ITM 4974-4987
3-FCV-70-47	M3-3035	RBCCW DRYWELL RETURN VALVE	3-45E779-8	N/A	N/A	N/A	A4-JTK1C.WK3, ITM 2326-2334
3-FCV-71-2	M3-3037	RCIC INBOARD ISOLATION VALVE	3-45E779-12	Y	N	N	A4_JTK1C.WK3, ITM2246-2256
3-FCV-71-3	M3-3038	RCIC OUTBOARD ISOLATION VALVE	3-45E714-4	Y	N	N	A4_JTK1C.WK3, ITM4959-4973
3-FCV-71-18	M3-3039	RCIC OUTBOARD SUCTION VALVE	3-45E714-5	N/A	N/A	N/A	A4_JTK1C.WK3, ITM 4988-4999
3-FCV-73-2	M3-3040	HPCI STEAM LINE SUPPLY ISOLATION VALVE	3-45E779-13	N	N	Y	A4_JTK1C.WK3, ITM 2267-2277
3-FCV-73-3	M3-3041	HPCI STEAM LINE SUPPLY ISOLATION VALVE	3-45E714-2	N	N	Y	A4_JTK1C.WK3, ITM 4922-4938
3-FCV-73-81	M3-3042	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	3-45E779-43	Y	N	N	A4_JTK1C.WK3, ITM 2344-2356
3-FCV-73-27	M3-3043	HPCI OUTBOARD SUCTION VALVE	3-45E714-2	N	N	Y	A4-JTK1C.WK3, ITM 4939-4956+++++
3-FCV-75-57	M3-3044	PSC PUMP SUCTION ISOLATION VALVE	0-730E930-28, 0-730E927-15	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3334-3344
3-FCV-75-58	M3-3045	PSC PUMP SUCTION ISOLATION VALVE	0-730E930-28, 0-730E927-16	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3345-3355
3-FCV-76-24	M3-3046	CONTAINMENT INERTING N2 MAKEUP VALVE	3-730E927-17	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3370-3373
3-FCV-77-2B	M3-3047	DRYWELL FLOOR DRAIN SUMP DISCHARGE	0-730E927-15	Y	N	N	A4_DCD1C.WK3, ITM 3504-3507
3-FCV-77-15B	M3-3048	DRYWELL FLOOR DRAIN SUMP DISCHARGE	0-730E927-15	Y	N	N	A4_DCD1C.WK3, ITM 3508-3511
3-FCV-84-19	M3-3049	CAD ISOLATION VALVE	0-45E684-1, 3-45E684-2	Y	N	N	A4_DCD1C.WK3, ITM 3374-3379
3-FCV-84-20	M3-3050	CAD ISOLATION VALVE	3-730E927-17	Y	N	N	A4_DCD1C.WK3, ITM 3380-3390

Appendix G: System Consequence Chatter Evaluation Summary - Unit 3

Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
3-LI-3-58A	M3-3051	RPV LEVEL INSTRUMENT	3-45E670-25	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3391
3-LI-3-58B	M3-3052	RPV LEVEL INSTRUMENT	3-45E670-31	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3392
3-PI-3-74A	M3-3053	RPV PRESSURE INSTRUMENT	3-45E670-30	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3393
3-PI-3-74B	M3-3054	RPV PRESSURE INSTRUMENT	3-45E670-36	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3394
3-XR-64-159	M3-3055	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	3-45E614-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3395-3397
3-LI-64-159A	M3-3056	TORUS LEVEL INSTRUMENT	3-45E614-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3398-3399
3-TI-64-161	M3-3057	TORUS TEMPERATURE INSTRUMENT	3-45E664-3	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3400-3406
3-TI-64-162	M3-3058	TORUS TEMPERATURE INSTRUMENT	3-45E664-3	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3407-3413
3-PI-64-67B	M3-3059	DRYWELL PRESSURE INSTRUMENT	3-730E933-2	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3414-3416
3-PI-64-160A	M3-3060	DRYWELL PRESSURE INSTRUMENT	3-45E614-20	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3417-3418
3-TI-64-52AB	M3-3061	DRYWELL TEMPERATURE INSTRUMENT	3-730E933-1	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3419-3425
3-XR-64-50	M3-3062	DRYWELL TEMPERATURE & PRESSURE INSTRUMENT	3-730E933-1	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3426-3431
3-FCV-76-17	M3-3063	CONTAINMENT INERTING N2 MAKEUP VALVE	3-730E927-16	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3356-3369
3-FCV-64-222	M3-3064	HARDENED WETWELL VENT	3-45E614-6	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3332-3333
3-NM-92-7/41A	M3-3065	IRM "A"	0-45E703-2 AND 3-730E237-1,4	Y	N	N	A4_JTK1C.WK3 (ITEMS 5019 - 5020)
3-NM-92-7/41B	M3-3066	IRM "B"	0-45E703-2 AND 3-730E237-1,5	Y	N	N	A4_JTK1C.WK3 (ITEMS 5021 - 5022)
3-BDBB-219-0003EB	M3-39005	480V DSL AUX BD 3EB TRANSFER SCHEME	3-45E771-7	Y	N	N	A4_JTK1C.WK3, ITEMS 2525-2565
3-CLR-67-917	M3-4001	EECW/RHR PUMP 3A ROOM COOLER	3-47E610-67-2, 3-45E779-16	Y	N	N	A4_JTK1 ITM 2362-2366
3-CLR-67-919	M3-4002	EECW/CS PUMP 3A ROOM COOLER	3-47E610-67-2, 3-45E779-16	Y	N	N	A4_JTK1 ITM 2382-2386
3-CLR-67-921	M3-4003	EECW/RHR PUMP 3C ROOM COOLER	3-47E610-67-2, 3-45E779-16	Y	N	N	A4_JTK1 ITM 2372-2376

Appendix G: System Consequence Chatter Evaluation Summary - Unit 3

Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
3-CLR-67-918	M3-4013	EECW/RHR PUMP 3B ROOM COOLER	3-47E610-67-2, 3-45E779-16	Y	N	N	A4_JTK1 ITM 2367-2371
3-CLR-67-920	M3-4014	EECW/CS PUMP 3B ROOM COOLER	3-47E610-67-2, 3-45E779-16	Y	N	N	A4_JTK1 ITM 2387-2391
3-CLR-67-922	M3-4015	EECW/RHR PUMP 3D ROOM COOLER	3-47E610-67-2, 3-45E779-16	Y	N	N	A4_JTK1 ITM 2377-2381
3-FCV-75-2	M3-5001	Core Spray Pump 3A Suction Isolation Valve	3-45E779-13,R13	N	N	Y	A4-JTK1C 2180-2187
3-PMP-75-5	M3-5002	Core Spray Pump 3A	3-45E766-23 R20	Y	N	N	A4-JTK 4394-4410
3-FCV-75-9	M3-5005	Core Spray Pumps 3A & 3C Mini-Flow Valve	3-45E779-10,R16	N	N	Y	A4-JTK1C 2144-2151
3-FCV-75-11	M3-5006	Core Spray Pump 3C Suction Isolation Valve	3-45E779-13,R13	N	N	Y	A4-JTK1C 2188-2195
2-PMP-75-14	M3-5007	Core Spray Pump 3C	3-45E766-23 R20	Y	N	N	A4-JTK4428-4444
3-FCV-75-22	M3-5010	Core Spray Pumps 3A & 3C test Isolation Valve	3-45E779-8,R17	N	N	Y	A4-JTK1C 2232-2238
3-FI-75-21	M3-5011	Core Spray Pumps 3A & 3C Flow Indication	0-730E930-29,R9	N/A	N/A	N/A	N/A
3-FCV-75-23	M3-5012	Core Spray Pumps 3A & 3C Outboard Injection Valve	3-45E779-18,R3	N	N	Y	A4-JTK1C 2212-2221
3-FCV-75-25	M3-5013	Core Spray Pumps 3A & 3C Inboard Injection Valve	3-45E779-10,R16	N	N	Y	A4-JTK1C 2160-2169
3-FCV-75-30	M3-5015	Core Spray Pump 3B Suction Isolation Valve	3-45E779-13,R13	N/A	N/A	N/A	A4-JTK1C 2196-2203
3-PMP-75-33	M3-5016	Core Spray Pump 3B	2-45E766-23 R20	Y	N	N	A4-JTK 4411-4427
3-FCV-75-37	M3-5019	Core Spray Pumps 3B & 3D Mini-Flow Valve	3-45E779-10,R16	N/A	N/A	N/A	A4-JTK1C 2152-2159
3-FCV-75-39	M3-5020	Core Spray Pump 3D Suction Isolation Valve	3-45E779-13,R13	N/A	N/A	N/A	A4-JTK1C 2204-2211
3-PMP-75-42	M3-5021	Core Spray Pump 3D	3-45E766-23 R20	Y	N	N	A4-JTK4445-4461
3-FCV-75-50	M3-5024	Core Spray Pumps 3B & 3D Test Isolation Valve	3-45E779-8,R17	Y	N	N	A4-JTK1C 2239-2245
3-FI-75-49	M3-5025	Core Spray Pumps 3B & 3D Flow Indication	0-730E930-29,R9	N/A	N/A	N/A	N/A
3-FCV-75-51	M3-5026	Core Spray Pumps 3B & 3D Outboard Injection Valve	3-45E779-18,R3	Y	N	N	A4-JTK1C 2222-2231

Appendix G: System Consequence Chatter Evaluation Summary - Unit 3

Circuit	SSEL No.	Circuit Description	Reference Drawing Number(s)	CA	OA	UA	Reference - Individual Contact Chatter Evaluation Data Base
3-FCV-75-53	M3-5027	Core Spray Pumps 3B & 3D Inboard Injection Valve	3-45E779-10,R16	Y	N	N	A4-JTK1C 2170-2179
3-FSV-84-8A	M3-6001	CAD TO DRYWELL (3-FCV-84-18) SOLENOID VALVE	0-45E684-1,3-45E684-2	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3460
3-FSV-84-8B	M3-6002	CAD TO DRYWELL (3-FCV-84-19) SOLENOID VALVE	0-45E684-1,3-45E684-2	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3461
3-FSV-84-48	M3-6004	CAD SYSTEM "A" TO UNIT 3 DRYWELL CONTROL AIR	0-45E684-1,3-45E684-2	N/A	N/A	N/A	A4_DCD1C.WK3 ITM 3466
3-FSV-84-8C	M3-6023	CAD TO DRYWELL (3-FCV-84-198) SOLENOID VALVE	0-45E684-1,3-45E684-2	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3462
3-FSV-84-8D	M3-6024	CAD TO DRYWELL (3-FCV-84-18) SOLENOID VALVE	0-45E684-1,3-45E684-2	N/A	N/A	N/A	A4_DCD1C.WK3, ITM 3463
3-FSV-84-49	M3-6026	CAD SYSTEM "B" TO UNIT 3 DRYWELL CONTROL AIR	0-45E684-1,3-45E684-2	N/A	N/A	N/A	A4_DCD1C.WK3 ITM 3467
3-GEN-82-3C	M3-7001	UNIT 3 DIESEL GENERATOR "C"	3-45E767-5, -6, -7, -8, 3-45E768-5, -6, -9	N	Y	N	A4_TJH3F, Item Nos.264-520
3-FAN-30-234	M3-7015, 7017 7019	DG ROOM 3C EXHAUST FAN A AND INLET/OUTLET DAMPERS	3-45E771-8	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 180-191)
3-GEN-82-3D	M3-7023	UNIT 3 DIESEL GENERATOR "D"	3-45E767-5, -6, -7, -8, 3-45E768-7, -8, -9	N	Y	N	A4_TJH3F, Item Nos. 785-1040
3-FAN-30-236	M3-7037, 7039 7041	DG ROOM 3D EXHAUST FAN A AND INLET/OUTLET DAMPERS	3-45E771-8	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 192-203)
3-FAN-30-237	M3-7038, 7042 7044	DG ROOM 3D EXHAUST FAN B AND INLET/OUTLET DAMPERS	3-45E771-8	N	N	Y(R)	A4_TJH1C.WK3 (ITEM 168-179)
3-FI-23-36	M3-8009	RHRSW HX A FLOW INDICATOR	3-47E610-23-1 , 3-730E938 10	N/A	N/A	N/A	A4_DCD1C.WK3 ITM 3488

APPENDIX H

RESUMES

RELAY REVIEWERS

Resume of MALCOLM L. PYATT

Address 2305 Chesley Avenue , Decatur Alabama
Telephone Home (205) 351-8383, Office (205) 729-7618

OBJECTIVE

Lead Relay Reviewer

EDUCATION

Florida Institute of Technology, Melbourne, Florida
BSEE, June 1970

PRINCIPAL EXPERIENCE

August 1970 to present - Electrical Engineer, Tennessee Valley Authority

Design switchyard protective relaying, controls, plant power distribution systems, auxiliaries, and instrumentation and controls for TVA Fossil, Hydro, Nuclear Plants. Prepare, verify and technically supervise preparation of design criteria and calculations for Browns Ferry Nuclear Plant electrical systems. Develop and evaluate electrical design procedures and methods for use at all TVA nuclear plants. Record generator dynamic performance data during restart test of Browns Ferry diesel generators and evaluated data to verify adequacy of transient response. Establish technical content for evaluation of diesel generator performance requirements by vendors. Author the BATCALC computer programs used at Browns Ferry to perform battery electrical sizing calculations and load voltage profile calculations.

Complete SQUG Relay Evaluation Training Course held April 3-4, 1995, by Jess Betlack, MPR Associates.

January 1967 to September 1969 - Engineering Aide/ Electrical Technician, The Boeing Company Cocoa, Beach Florida.

Develop design modifications for instruments and controls for pneumatically operated valves for Apollo Saturn V liquid oxygen/hydrogen fuel loading systems. Repair, modify, calibrate, test electronic power supplies, batteries. Terminate and test cable.

ENCLOSURE 3

TENNESSEEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNITS 2 AND 3

GL 88-20, SUPPLEMENT 4,
INDIVIDUAL PLANT EXAMINATION OF EXTERNAL EVENTS (IPEEE) FOR
SEVERE ACCIDENT VULNERABILITIES

SEISMIC EVALUATION REPORT

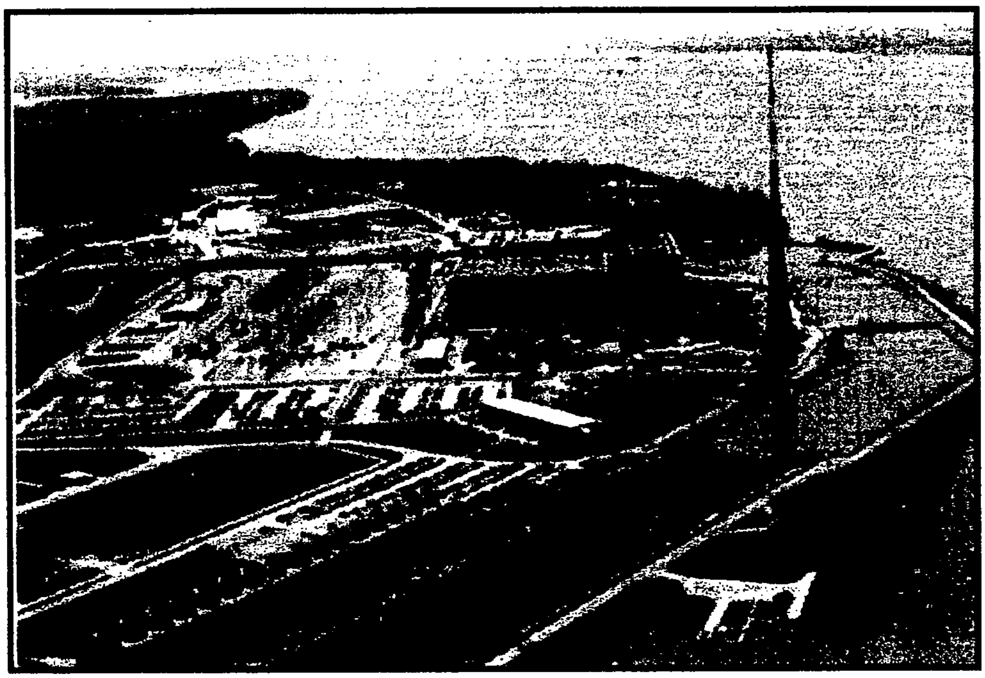
(SEE ATTACHED)

R(9 2 960624 851

SEISMIC IPEEE REPORT
BROWNS FERRY NUCLEAR PLANT

June 1996

Revision 0



Prepared for:

TENNESSEE VALLEY AUTHORITY

INTERNATIONAL

SEISMIC IPEEE REPORT
BROWNS FERRY NUCLEAR PLANT

June 1996

Revision 0

Prepared by:

EQE INTERNATIONAL, INC.

Prepared For:

TENNESSEE VALLEY AUTHORITY

EQE Report Number: 50147-R-002

APPROVAL COVER SHEET

TITLE: Seismic IPEEE Report for Browns Ferry Nuclear Plant

REPORT NUMBER: 50147-R-002

CLIENT: Tennessee Valley Authority

PROJECT NO.: 50147

REVISION: 0

EQE Prepared by: [signature] Date: 6-19-96

EQE Reviewed by: Fouzi Beig Date: 6/20/96

EQE Approved by: John O. Dizon Date: 6/20/96

TVA Reviewed by: JR Glass Date: 6/21/96

TVA Approved by: J. Valente Date: 21 June 96

TABLE OF REVISIONS

Revision No.	Date	Description of Revision
0	June 20, 1996	Original Issue

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APPENDICES

1. INTRODUCTION AND METHODOLOGY SELECTION

In the Commission policy statement on severe accidents in nuclear power plants issued in 1985, the Commission concluded, based on available information, that existing plants pose no undue risk to the public health and safety and that there is no present basis for immediate action on any regulatory requirements for these plants. However, the Commission recognized that systematic examinations are beneficial in identifying plant-specific vulnerabilities to severe accidents that could be fixed with low-cost improvements. In 1988 the Commission requested that each licensee conduct an individual plant examination (IPE) for internally initiated events including internal flooding. Many Probabilistic Risk Assessments (PRAs) performed in support of the IPEs indicated that, in some instances, the risk from external events could contribute significantly to core damage.

In July 1990, following public comments and a workshop, the Commission issued Supplement 4 to Generic Letter 88-20 (Reference 1) requesting that each licensee conduct an individual plant examination of external events (IPEEE). The general objectives of the IPEEE are similar to that of the IPE; that is, for each licensee (1) to develop an appreciation of severe accident behavior, (2) to understand the most likely severe accident sequences that could occur at its plant under full-power operating conditions, (3) to gain a qualitative understanding of the overall likelihood of core damage and fission product releases, and (4) if necessary, to reduce the overall likelihood of core damage and fission product releases by modifying, where appropriate, hardware and procedures that would help prevent or mitigate severe accidents.

The staff has concluded that five external events need to be included in the IPEEE: seismic events, internal fires, high winds, floods, and transportation and nearby facility accidents. This report addresses seismic events.

Acceptable methodologies for performing the seismic IPEEE are summarized in NUREG-1407 (Reference 2). This evaluation may be conducted by performing a seismic PRA or a Seismic Margins Assessment (SMA). The SMA methodology was designed to demonstrate sufficient margin over the Safe Shutdown Earthquake (SSE) to ensure plant safety and to find any "weak links" that might limit the plant shutdown capacity to safely withstand a seismic event larger than the SSE or lead to seismically induced core damage. The SMA may in turn be performed using the methodology developed by Lawrence Livermore National Laboratories (LLNL) or by the Electric Power Research Institute (EPRI). TVA has opted to perform a SMA using the EPRI methodology (Reference 3).

Browns Ferry was placed in the focused-scope category for margin assessment. The basic information used was the 1989 Lawrence Livermore National Laboratory seismic hazard estimates for nuclear power plant locations in the eastern United States (Reference 4) and the EPRI hazard study (Reference 6).

New seismic hazard data were published in October, 1993, which demonstrate that the seismic hazard at existing eastern United States nuclear power plants is much less than what the NRC staff originally believed (Reference 5). Supplement 5 to Generic Letter 88-20 (Reference 1) would permit Browns Ferry to change to a modified focused scope classification.

TVA elected to complete the Browns Ferry SMA following NUREG 1407 and EPRI NP-6041 as a focused-scope plant without schedule delays or major scope changes. The new information and extensive seismic evaluation performed for the recent vintage plant were, however, considered when determining the quantity of components selected for high-confidence-of-low-probability of failure (HCLPF) evaluation and the level of evaluation for issues such as soils, structures and NSSS components.

Detailed plant walkdowns are considered the most cost-effective and beneficial aspect of the SMA program. Combined USI A-46 and IPEEE walkdowns were performed in accordance with the Seismic Qualification Group (SQUG) Generic Implementation Procedure (GIP) (Reference 7), with enhancements based on EPRI NP-6041 (Reference 3).

2. REVIEW OF PLANT INFORMATION

Brief descriptions of the general plant description, ground response spectra, structures, equipment, and distribution systems for Browns Ferry Nuclear Plant (BFN) are presented below. Detailed information and description are contained in existing plant licensing documents, including the Final Safety Analysis Report (Reference 10).

2.1 GENERAL PLANT DESCRIPTION

The Browns Ferry site is located on the north shore of Wheeler Lake at river mile 294 in Limestone County in north Alabama. The site is approximately 10 miles southwest of Athens, Alabama, and 10 miles northwest of the center of Decatur, Alabama. The plant consists of three General Electric (GE) boiling water reactors with Mark I containments, each with an electrical output of about 1,100 megawatts. Commercial operation of each unit began on the following dates: Unit 1 on August 1, 1974, Unit 2 on March 1, 1975, and Unit 3 on March 1, 1977.

For the Browns Ferry project, TVA acts as its own engineer-constructor. GE designed, fabricated, and supplied the nuclear steam supply system (NSSS) and nuclear fuel for the plant, as well as the turbine-generators. GE also provided technical supervision for the installation and startup services of this equipment.

Detailed description of the BFN site hydrology, water quality and marine biology is contained in Section 2.4 of the FSAR (Reference 10). The geology and seismology of the general region as well as the plant site are discussed in detail in Section 2.5 of the FSAR (Reference 10).

2.2 GROUND RESPONSE SPECTRA

The BFN licensing-basis Design Basis Earthquake (DBE) ground motion acceleration response spectrum is defined in Sections 2.5.4 and 12.2 of the BFN Final Safety Analysis Report (Reference 10). Seismic requirements for Class I structures are defined in TVA General Design Criteria BFN-50-C-7102 (Reference 11). The horizontal peak ground acceleration (PGA) corresponds to DBE is 0.20g defined at the top of sound rock. Vertical ground motion is two-thirds of the horizontal ground motion as specified in the FSAR. The site DBE design ground spectrum is that of a Housner shaped spectrum anchored to 0.2g PGA.

2.3 STRUCTURES

The design of all structures and facilities (Class I & II) conformed to the applicable general codes or specifications such as Uniform Building Code (UBC); American Institute of Steel Construction (AISC) "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings"; American Concrete Institute (ACI) "Building Code Requirements for Reinforced Concrete" (ACI 318) and "Requirements for Reinforced Concrete Chimneys" (ACI 307); and American Welding Society (AWS) "Structural Welding Code - Steel" (AWS-D.1.1), among others.

Seismic requirements for Class I structures, features, and systems are contained in TVA General Design Criteria BFN-50-C-7102 (Reference 11). Basically, the design of Class I structures was based on the following criteria:

- Operational basis earthquake (OBE) considered a horizontal ground acceleration of 0.10g.
- Design basis earthquake (DBE) considered a horizontal ground acceleration of 0.20g.
- Vertical ground accelerations associated with the OBE and DBE were defined as 2/3 of the corresponding horizontal response spectra.

Class I structures, equipment and safety related piping were designed such that stress and deformation behavior of structures, piping, and equipment were maintained within the allowable limits when subjected to loads such as dead, live, pressure, and thermal, under normal operating conditions combined with the seismic effects resulting from the response to the OBE. These allowable limits are defined in appropriate design standards such as the ASME Boiler and Pressure Vessel Code; American National Standards Institute (ANSI) Code for Pressure Piping ANSI B31.1.0, Power Piping; ACI 318 Building Code Requirements for Reinforced Concrete; and AISC Specification for the Design, Fabrication and Erection of Structural Steel for Buildings. In addition, the stresses that resulted from normal loads and design basis loss-of-coolant accident loads combined with the response to the DBE were limited so that no loss of function occurred and the capability of making a safe and orderly plant shutdown was maintained.

Class II structures were designed in accordance with TVA General Design Criteria BFN-50-C-7100 (Reference 14). The combined stresses from normal and earthquake loadings were limited to those permitted by the design criteria and applicable industry standards and codes.

2.4 EQUIPMENT SUPPLIED BY THE NSSS VENDOR

General Electric (GE) designed, fabricated, and supplied the nuclear steam supply system (NSSS), turbine-generators, as well as the nuclear fuel for the plant. GE also provided technical supervision for the installation and startup services of this equipment. In general, the modules were designed to withstand and perform their functions during an OBE and a DBE. This qualification was ascertained by either analytical techniques, vibration testing techniques, or a combination of the two. A seismic specification covering the following procedure was made a part of the purchase order.

2.5 EQUIPMENT SUPPLIED BY OTHER THAN NSSS VENDOR

All the Class I instrumentation and electrical equipment were designed and tested or analyzed to ensure their capability to perform their required functions during and after the Design Basis Earthquake (DBE). This includes equipment made by General Electric (GE) as well as that purchased by GE. Suppliers of Class I equipment were required to verify the adequacy of their equipment by submitting test, analytical, or operating experience data. Typically, equipment supplied as part of the original design are in compliance with IEEE-344-71 requirements.

2.6 PIPING

Analytical and design methods used for seismic Class I piping, including buried piping are contained in TVA General Design Criteria BFN-50-C-7103 (Reference 12).

Qualification of seismic Class II piping is addressed in TVA General Design Criteria BFN-50-C-7306 (Reference 13).

2.7 DISTRIBUTION SYSTEMS

Seismic Class I conduit, cable tray, tubing, and HVAC duct systems and supports are designed and analyzed for applicable service conditions. The effects of multiple spans or multiple modes of response are accounted for by either dynamic analysis or static analysis with appropriate multi-modal amplification factors.

2.8 SEISMIC SPATIAL SYSTEM INTERACTIONS

Browns Ferry has a seismic categorization similar to Regulatory Guide 1.29, using the terminology of Class I and Class II. A comprehensive "II/I" seismic interaction verification program was implemented prior to the restart of Unit 2 and Unit 3 at BFN.

3. SYSTEM DESCRIPTION AND SUCCESS PATH SELECTION

A preliminary walkthrough was performed to identify any potential low seismic capacity components. The SQUG Generic Implementation Procedure (GIP, Reference 7) was utilized as guidance in choosing the items and identifying boundary conditions and assumptions.

The seismic safe shutdown equipment list (SSEL) identifies the equipment necessary to maintain operability of those frontline systems required to safely shut down the plant and maintain it in hot shutdown for 72 hours. The relevant plant functions are as follows:

- Reactivity control
- Reactor coolant system inventory control
- Reactor coolant system pressure control
- Decay heat removal

The above functions are assured through evaluation of the systems, structures, and components included in the following frontline systems:

- Reactor protection system (RPS)
- Control rod drive/hydraulic control unit (CRD/HCU) system
- Safety relief valve (SRV) system
- Core spray (CS) system
- Residual heat removal (RHR) system in low pressure core injection (LPCI) mode and suppression pool cooling (SPC) mode
- Primary containment isolation

The following support systems are required to ensure frontline system operation:

- AC power system, including the emergency diesel generators
- DC power system
- Residual heat removal service water (RHRSW) system
- Essential equipment cooling water (EECW) system
- Heating, ventilating, and air-conditioning (HVAC) systems for RHR and CS areas, emergency diesel generator rooms, and control room
- Containment atmospheric dilution system

Success path logic diagrams (SPLDs) were constructed based on an understanding of available plant equipment functions as well as the plant normal and emergency operating procedures. The SPLDs were reviewed and agreed upon by Browns Ferry Operations personnel. They were used as a basis for the identification of the equipment to be included on the SSEL. Equipment selected for inclusion on the SSEL was evaluated in a manner similar to that described in the SQUG/GIP (Reference 7). Guidance from EPRI NP-6041 (Reference 3) was also used in the evaluation as well as in preparing the format for the list of components.

The assessment of equipment necessary to maintain the identified functions is made under a set of boundary conditions. Offsite power is assumed to be lost, however, the potential is evaluated for adverse effects should the power were not lost or if it were to be restored. The success paths are capable of maintaining the plant in hot shutdown for a period of 72 hours. The success path development addresses seismically-induced transient events or a seismically-induced one-inch loss of coolant accident (LOCA). Non-seismic component or system availabilities are not addressed for multiple or redundant train systems, but are considered for single train systems.

In addition to the components of the systems discussed above, the structures housing the components included in the above systems are also reviewed. These include seismic Class I structures such as the Reactor Buildings, the Diesel Generator Buildings and the Intake Pumping Station. All seismic Class I structures are cast-in-place reinforced concrete structures. The floors are supported on beams and girders which are in turn supported on interior columns and/or exterior walls. Where interior shear walls are installed, the beams and girders are supported on the shear walls. All interior shielding walls and partitions, other than structural shear walls, are either reinforced concrete or concrete block and are not load bearing. The Reactor Buildings (RB) and the Intake Pumping Station (IPS) are founded on sound rock, while the Diesel Generator Buildings (DGB) are founded on 3 feet of compacted soil and 32 feet of crushed stone above the sound rock.

4. SEISMIC MARGIN EARTHQUAKE DEMAND

4.1 INTRODUCTION

In-structure response spectra (IRS) corresponding to the Review Level Earthquake (RLE) are required for the Seismic Margin Assessment (SMA). For Browns Ferry, the RLE is defined as an earthquake having a response spectrum that matches the median CR-0098 spectral shape (Reference 8) anchored to a peak ground acceleration of 0.30g.

The IRS for the Reactor Building (RB), Diesel Generator Building (DGB) and Intake Pumping Station (IPS) were obtained from the A-46 spectra using scaling procedures, following the recommendations given in Reference 3. The procedure used to generate the IRS is described briefly below. A more complete treatment of the subject can be found in Reference 9.

4.2 DESCRIPTION OF SCALING PROCEDURE

The dominant mode scaling procedure described in Reference 3 is used here since the input motion spectra for the A-46 and the SMA earthquakes have similar shapes over the relevant range of frequencies. This procedure uses a scale factor for the spectral amplitude change when the input motion is changed.

The factor for the spectral amplitude change in the response of the combined, soil-structure system is controlled by several parameters. It can be defined as the ratio between the spectral ordinates of the A-46 and the SMA acceleration input spectra at the predominant frequencies and damping ratios of the combined, soil-structure system. The scaling factor, R_{Sa}, is

$$R_{Sa} = \frac{Sa(f_{SMA}, \beta_{SMA})}{Sa(f_{A\text{-}46}, \beta_{A\text{-}46})}$$

where $Sa(f_{SMA}, \beta_{SMA})$ is the spectral ordinate of the input acceleration response spectrum for the SMA review level earthquake at the predominant frequency, f_{SMA}, and equivalent damping ratio, β_{SMA}, of the soil-structure system, and $Sa(f_{A\text{-}46}, \beta_{A\text{-}46})$ is the spectral ordinate of the input acceleration response spectra for the design basis earthquake at the predominant frequency, f_{A-46}, and equivalent damping ratio, β_{A-46}, of the soil-structure system.

The predominant frequency of the soil-structure system was estimated as the frequency corresponding to the peak spectral acceleration in the A-46 in-structure response spectra. The damping for the SMA RLE was taken as 7% for reinforced concrete structures at RB and DGB, and 5% for IPS. The level of damping was estimated as the sum of two parts: (1) damping of 5% for structures founded on rock such as RB and IPS, assuming the structure is not highly stressed at the RLE, and (2) 2% additional damping to reflect the material and radiation damping of the soil for soil-supported structures such as DGB. Note that a damping value of 7% was assumed for RB based on limited review of the stress level of the structure at the RLE.

The vertical input ground motion specified for seismic IPEEE is defined, according to Reference 8, as two-thirds of the horizontal motion. Since the vertical A-46 IRS is also defined as two-thirds of the horizontal spectra, the scale factors used to obtain the vertical SMA IRS are the same as for the horizontal case.

5. SEISMIC MARGIN ASSESSMENT SCREENING AND WALKDOWN

5.1 SEISMIC REVIEW TEAM

The Seismic Review Team (SRT) was assembled following guidance provided in Reference 3, drawing on the experience and expertise of EQE International, Inc. (EQE) and Tennessee Valley Authority (TVA) personnel.

Each walkdown team included a minimum of two Seismic Capability Engineers (SCEs) members who had completed the Seismic Qualification Utility Group (SQUG) Walkdown Screening and Seismic Evaluation training course. The following persons participated in the SRT walkdowns:

EQE	TVA
Richard D. Augustine	Partha S. Ghosal
Paul D. Baughman	Krystyn H. Gromek
Farzin R. Beigi	Steven A. Locke
Brantley C. Buerger	Cesar O. Pascua
James R. Disser	Arand C. Relwani
John O. Dizon	Angel G. Tambora
	Thurman G. Thaxton, Jr.

Among the team members there is strong experience in each of the areas listed below:

- Knowledge of the failure modes and performance of structures, tanks, piping, process and control equipment, and active electrical and mechanical components during strong earthquakes.
- Knowledge of nuclear design standards, seismic design practices, and equipment qualification practices for nuclear power plants.

- Ability to perform fragility evaluations including structural/mechanical analysis of essential elements of nuclear power plants.

- Knowledge of the plant system functions and normal and emergency operating procedures.

The resumes for each of the seismic walkdown team members are presented in Appendix A.

5.2 WALKDOWN PREPARATION AND PRE-SCREENING

The purpose of pre-screening was to ensure efficiency in the walkdowns and subsequent evaluations by completing the maximum amount of data entry in advance of the walkdown. This was accomplished by incorporating existing data onto the seismic IPEEE documentation forms prior to the walkdowns. Data that was reviewed consisted of the Final Safety Analysis Report, design criteria, stress reports, equipment qualification reports (testing and analysis), structures and equipment support drawings, equipment location drawings, anchorage calculations. and records from other related programs previously performed at Browns Ferry. An initial walkdown was performed by the SRT as part of the pre-screening task to review the SSEL and to group items according to the "Rule of the Box."

Pre-screening was performed with three purposes in mind:

- To identify critical failure modes to be specifically reviewed on the walkdown.

- Assemble qualification and installation data for use as a basis for screening in the margins review.

- To provide data to be utilized in HCLPF calculations.

A considerable amount of information was extracted from the existing documentation and was subsequently recorded on the Screening and Evaluation Work Sheets (SEWS) prior to commencing the detailed walkdowns. Information entered into SEWS during prescreening was intended to provide available data to the SRT to assist in equipment screening.

5.3 SCREENING CRITERIA

The Browns Ferry seismic IPEEE was completed following the EPRI seismic margins methodology recommended by NUREG-1407 (Reference 2) for a focused scope plant.

Civil structures, equipment and subsystems were screened following the methodology provided in EPRI NP-6041 (Reference 3) for a focused-scope plant. Screening criteria are provided in Tables 2-3 and 2-4 of Reference 3 for civil structures and equipment and subsystems, respectively. The criteria corresponding to 5 percent-damped peak spectral acceleration less than 0.8g were used for Browns Ferry based on the RLE. Tables 5-1 and 5-2 list a summary of the civil structures and equipment subject to the EPRI seismic margins evaluation. The guidelines are supplemented by Appendix A of the EPRI seismic margins methodology (Reference 3) which provides the basis for the seismic capacity screening guidelines. Walkdown data sheets from the SQUG GIP augmented to include additional review per EPRI NP-6041 were used during the SRT walkdowns.

5.4 SEISMIC MARGIN WALKDOWNS

The walkdowns were performed following the procedures of the SQUG GIP supplemented by EPRI NP-6041. The walkdowns concentrated on the strength and load path of the equipment as well as function and integrity. The review of equipment anchorage was a prime objective for the walkdown teams. The anchorage evaluation addressed both physical attributes of the anchorage installation and the capacity relative to other success path items as well as the postulated demand at the RLE.

Interaction reviews were performed to identify falling, impact, spray and flood issues that could affect success path items. No spray or flood issues were noted during the SRT walkdown. Housekeeping issues were also identified, e.g. unrestrained tool storage carts and storage cabinets. Tools, test equipment and other maintenance items used during the outage were generally not noted as housekeeping issues during the outage walkdown.

Suspended systems, such as conduit, cable trays and ductwork were evaluated on a sampling basis in the plant. A general survey was performed to obtain an overview of the suspended system construction throughout the plant. This included a review of the variety of system layouts, support configurations, and construction details. The inspection also included known concerns for suspended systems, such as taut electrical cables, sharp edges, overloaded cable trays and supports, and potential anchor point displacements. The ceiling above the control room was reviewed to verify if the light fixtures and ceiling grid were adequately supported, and to evaluate the potential for ceiling panels to fall.

Containment penetrations were reviewed on an area basis to identify anomalies that might affect containment performance. Concerns such as falling and differential building displacement were considered. Also reviewed were displacement concerns between the containment shell and internal structure. Containment isolation valves were added to the SSEL.

At the conclusion of the combined A-46/IPEEE walkdowns, a plant-wide IPEEE walkby was carried out by Paul Baughman and John Dizon to review the walkdown results.

Following the completion of the plant A-46/IPEEE walkdowns, SRT members convened to complete the IPEEE ranking and screening task. SRT members reviewed the SEWS and categorized components into the following resolution categories:

- Screened out by the SRT based on Table 2-4 of EPRI NP-6041 or A-46 evaluations with factor of safety greater than 2
- Screened out pending resolution of A-46 outliers
- Candidate for HCLPF evaluation identified during walkdown

As a result of this screening process, items were selected for HCLPF evaluation. A summary of this screen is presented in Table 6-1. These items are considered to represent the most vulnerable issues observed by the SRT that have not been identified for repair. Other items may have comparable seismic capacity but are considered bounded by the selected items. These items identified for HCLPF evaluation were grouped into the following nine (9) categories based on similarity of the equipment and identified controlling failure mode. HCLPF evaluations are summarized in Section 6.

Group 1:	Anchorage of Motor Control Centers
Group 2:	Anchorage of Low Voltage Switchgear
Group 3:	Anchorage of Transformers
Group 4:	Battery Rack Structural Capacity
Group 5:	Anchorage of Battery Chargers and Inverters
Group 6:	Anchorage of Instrumentation and Control Panels
Group 7:	Anchorage of RHR Pumps
Group 8:	Anchorage of RHRSW Pumps
Group 9:	Anchorage of RHR Heat Exchangers

5.5 STRUCTURES

Table 5-1 lists civil structures following the format of EPRI NP-6041, Table 2-3, along with screening results for the Browns Ferry plant. All Browns Ferry Class I structures are screened from further review based on Reference 3, Table 2.3 and Section 12 of the FSAR. A brief description of each of the buildings within seismic IPEEE success paths is provided in the following subsections.

5.5.1 Reactor Building

This plant uses a separate reactor building for each nuclear unit. The reactor building encloses its reactor and pressure suppression primary containment and provides secondary containment during power operation. The building also serves as the main containment during reactor refueling and maintenance operations when the primary containment is open. Browns Ferry does not have a separate control building; rather, the control room and associated electrical rooms are an integral part of the reactor building.

The reactor building is primarily of reinforced concrete shear wall and floor slab construction, with concrete beams and columns provided for vertical load support. The foundation bears on bedrock at approximately Elevation 519', with compacted soil backfill to Elevation 595' on the south side of the building. The light bulb-shaped drywell is also constructed from reinforced concrete that is cast integrally with the rest of the reactor building. The internal structures within the drywell include the reactor pedestal and sacrificial shield wall. Structural steel framing above the refueling floor at Elevation 664' supports the roof and the crane girder. Lateral load resistance is provided by moment frames in the N-S direction and braced frames in the E-W direction.

The dynamic seismic response of the reactor building in the original design analysis was determined using 2-D lumped mass stick models. Mass was lumped at the five floors, the roof, the suppression chamber support, and the crane rail. Structural stiffness was represented by equivalent beam properties between each of the masses. Dynamic seismic response of the drywell internals was determined by a lumped mass mathematical model coupling the internals to the building. Included in this model were the reactor pressure vessel, the reactor pedestal and the sacrificial shield wall, as well as the building.

5.5.2 Diesel Generator Buildings

The diesel generator building for Units 1 and 2 is located on the west side of the reactor building. It is isolated from other structures by a two-inch expansion joint. The diesel generator building is of reinforced concrete construction with concrete floor slabs. The foundation bears on three feet of compacted soil backfill. Beneath the soil backfill to bedrock is a crushed rock backfill. The structure is partially embedded, the south wall facing soil for its entire height.

Dynamic seismic response of the diesel generator building in the original design analysis was determined using 2-D lumped mass stick models including translational and rotational soil springs. Soil spring stiffnesses were obtained using finite element analyses of the foundation conditions. The soil-crushed rock backfill was assumed to amplify bedrock ground motions by a factor of 1.6.

The diesel generator building for Unit 3 is located on the east side of the reactor building. In other respects, it is similar to the diesel generator building for Units 1 and 2. The dynamic seismic response of the Unit 1/2 building was applied to the Unit 3 building.

5.5.3 RHR Service Water Intake Structure (Intake Pumping Station)

The residual heat removal service water intake structure is a single structure serving all three units. It is constructed from reinforced concrete walls and slabs. The structure is founded on bedrock with soil backfilled on three sides to Elevation 565'. Discontinuous subfloors occurs at Elevations 540', 542' and 550'. The structure is symmetrical in the transverse (N-S) direction with several walls resisting loads. In the longitudinal (E-W) direction, two walls on the north side resist seismic forces. The south wall is discontinuous below Elevation 537' to permit cooling water intake. The intake structure was designed for 0.2g design basis earthquake.

5.5.4 Reinforced Concrete Chimney

The reinforced concrete chimney stands 600 feet high and varies in diameter from 62 feet at the base to 6 feet at the top. Internal structures housed within the chimney bear on the same foundation and are seismically separated by expansion joints at the floor slab. The chimney is reinforced by vertical and hoop steel. The foundation is anchored by steel reinforcement grouted in holes drilled 23 feet into bedrock. Seismic shear and moment envelopes were developed in the original design analysis by subjecting a dynamic model of the chimney to the 1940 El Centro and seven other earthquake records. Seismic loads governed design of the chimney from 460 feet above the base to the top.

5.5.5 Turbine Building

The turbine building is located north of the reactor building. These structures are separated by a two-inch expansion joint. The turbine building was designed as a Class II structure. At and below the operating floor at Elevation 617', the turbine building is constructed of reinforced concrete moment frames, shear walls and floor slabs. The turbine-generators are supported by pedestals that are isolated from the floor slabs. Above the operating floor, structural steel framing is used. Resistance to lateral loads is provided by braced frames in the N-S direction and moment frames in the E-W direction. Horizontal roof bracing transfers in-plane roof forces to the vertical elements. The turbine building could suffer damage to the moment resisting frames under the review level earthquake; however, the SRT judged that total collapse sufficient to damage equipment or systems inside the reactor building was not credible.

5.6 SOILS EVALUATION

The structures housing safe shutdown components are either founded directly on rock or on crushed rock backfill over rock. Soil failure is deemed not a significant issue based on a review of the FSAR and is screened per Revision 5 of Generic Letter 88-20 (Reference 1).

5.7 NSSS REVIEW

Each nuclear unit includes a single cycle, forced circulation, boiling water reactor supplied by General Electric. The reactor and primary coolant system components were designed for 0.2g design basis earthquake. The NSSS system and supports are screened from further review per Revision 5 of Generic Letter 88-20 (Reference 1).

The control rod drive (CRD) mechanisms are cantilevered vertically from the bottom of the reactor shell. The CRD housing ends are supported by rod-hung restraints. The primary purpose of the restraints is to support the CRD housings vertically in the event of a CRD housing failure. The restraints and CRD housing ends are joined with a bolted clamp and plate mechanism which results in an interconnected gridwork, and also allows for disassembly in the event repair is required. This gridwork is captured laterally by a GE-designed restraint beam assembly, which is attached to the reactor pedestal interior. Based on the demonstration of lateral support for the CRD housing ends, this issue is screened from further review.

5.8 DISTRIBUTION SYSTEMS

The following sections address the distribution systems; cable tray and conduit, HVAC duct and piping.

5.8.1 Cable Tray and Conduit

Cable trays and conduit were reviewed on an area basis to identify any anomalies that could lead to failure. A few items were identified as potential outliers and will be dispositioned by analysis and/or modification as appropriate under the A-46 program. Cable trays and conduit are screened from further review based on Appendix A of Reference 3, and SRT walkdowns.

5.8.2 HVAC Duct

HVAC duct was reviewed on an area basis during SRT equipment and subsystem walkdowns to identify any anomalies that could lead to failure. No such anomalies were observed. HVAC duct are screened from further review based on Appendix A of Reference 3, and SRT walkdowns. Furthermore, a seismic qualification program for Class I HVAC ducts and supports was implemented prior to the restart of both Units 2 and 3 at BFN.

5.8.3 Piping

Piping system were reviewed on an area basis during SRT equipment and subsystem walkdowns. The SRT looked for any anomalies related to potential displacement induced failure modes. No such anomalies were observed.

Additionally, the SRT looked for potential failure modes of piping system appurtenances such as instrument tubing and associated instruments, vent valves and drain valves. Seismic interaction and seismic anchor motion were considered potential failure modes for small bore lines attached to larger piping systems. No anomalies noted that could lead to the loss of a pressure boundary of a success path list system were observed.

Containment penetrations were also reviewed on an area basis to identify any anomalies that may affect containment performance. Anomalies such as seismic interaction (falling) and differential building displacement were considered. No anomalies that could effect containment performance were observed.

Browns Ferry piping was screened from further review based on Appendix A of Reference 3, and SRT walkdowns.

5.9 OTHER COMPONENTS

5.9.1 Masonry Walls

Masonry walls were inspected and evaluated in response to IE Bulletin 80-11 during the 1980's. Details of construction were confirmed and the walls were evaluated. As a result of this evaluation, some masonry walls were modified by the addition of bracing.

Evaluations performed for the IE Bulletin 80-11 response formed the basis for the IPEEE review. These evaluations documented the as-built conditions including :

- Rebar details
- Anchorage to other structural members
- Attachment details
- Additional loading such as electrical system components
- Bracing details

All masonry walls near equipment on the SSEL were reviewed for IPEEE. All of the walls had been previously reviewed for IE Bulletin 80-11 program. Evaluations were performed in accordance with EPRI NP-6041. Wall HCLPF capacities were determined by modifying the IE Bulletin 80-11 calculations to reflect the scaled IPEEE seismic demand and to remove conservatisms as applicable.

Most of the walls were reinforced. All of except three had HCLPF capacities greater than 0.3g. The three others had HCLPFs of 0.27g. It was determined that the failure mode of these walls would be forming a plastic hinge at mid-height leading to a vertical collapse rather than lateral tipping. The distance between the walls and the nearby SSEL equipment was judged sufficient that there would be no impact. Therefore, these walls were screened out.

The unreinforced walls were very low (three courses high) walls set in spaces between the top of concrete walls and concrete slabs. The HCLPF capacities for these walls were well above 0.3g.

A biased sample of the most critical walls was generated for the IPEEE review by reviewing analyses performed under both the initial and subsequent programs.

Table 5-1
SUMMARY OF CIVIL STRUCTURES SEISMIC MARGIN EVALUATION
(Format Follows EPRI NP-6041, Table 2-3)

Type of Structure	IPEEE HCLPF Evaluation
Concrete containment	Screened based on EPRI NP-6041, Table 2-3
Containment internal structure	Screened based on EPRI NP-6041, Table 2-3. The structure was designed for greater than 0.1g.
Shear walls, footing and containment shield walls	Screened based on EPRI NP-6041, Table 2-3. The walls were designed for greater than 0.1g.
Diaphragms	Screened based on EPRI NP-6041, Table 2-3. Diaphragms were designed for greater than 0.1g.
Class I concrete frame structures	Screened based on EPRI NP-6041, Table 2-3. Concrete frame structures were designed for greater than 0.1g.
Masonry walls	Masonry walls are reviewed based on past upgrade programs.
Control room ceilings	Screened by SRT for A-46.
Impact between structures	Screened based on EPRI NP-6041, Table 2-3.
Class II structures with safety-related equipment or with potential to fail Class I structures	Screened based on no SSEL items located within Seismic Class II structures.
Dams, levees, dikes	Not required based on Supplement 5 to Generic Letter 88-20.
Soil failure modes	Not required based on Supplement 5 to Generic Letter 88-20.

Table 5-2

SUMMARY OF EQUIPMENT AND SUBSYSTEM SEISMIC MARGIN EVALUATION (Format Follows EPRI NP-6041, Table 2-4)

Equipment Type	Evaluation Required (Yes/No)	Explanation
NSSS Primary Coolant System (Piping and Vessels)	No	No suspected intergranular stress corrosion cracking. No review required for 0.3g sites.
NSSS Supports	No	Supports are designed for combined loading determined by dynamic SSE and pipe break analysis. No review required for 0.3g sites.
Reactor Internals	No	Generally designed for an envelope of various severe loading conditions similar to other NSSS Systems. Covered by IPE internal events.
Control Rod Drive Housings and Mechanisms	No	CRD Housing has lateral seismic support.
Category I Piping	Yes	Minimal level of walkdown of representative piping required.
Active Valves	No	Not required for 0.3g sites.
Passive Valves	No	Not required for 0.3g sites.
Heat Exchangers	Yes	Needs to consider only anchorage and support.
Atmospheric Storage Tanks	Yes	Needs to evaluate the tank anchorage.
Pressure Vessels	Yes	Needs to consider only anchorage and support.
Buried Tanks	Yes	Needs to evaluate piping connections.
Batteries and Racks	Yes	Visual inspection to verify if batteries mounted in braced racks designed for seismic loads, rigid spacers between batteries and end restraints exist, batteries tightly supported by side rails.

Table 5-2 (Cont.)

SUMMARY OF EQUIPMENT AND SUBSYSTEM SEISMIC MARGIN EVALUATION (Format Follows EPRI NP-6041, Table 2-4)

Equipment Type	Evaluation Required (Yes/No)	Explanation
Diesel Generators (Includes Engine- and Skid-mounted Equipment	Yes	Visual inspection of anchorages and attachment of peripheral equipment.
Horizontal Pumps	No	No evaluation required for $\leq$0.5g sites.
Vertical Pumps	No	No evaluation required for $\leq$0.3g sites.
Fans	Yes	Units supported on vibration isolators require evaluation.
Air Handlers	Yes	Units supported on vibration isolators require evaluation.
Chillers	Yes	Units supported on vibration isolators require evaluation.
Air Compressors	Yes	Units supported on vibration isolators require evaluation.
HVAC Ducting and Dampers	Yes	Walkdown of representative ducting system required.
Cable Trays	No	No evaluation required for $\leq$0.3g sites.
Electrical Conduit	No	No evaluation required for $\leq$0.5g sites.
Active Electrical Power: Distribution Panels, Cabinets, Switchgear, MCC	Yes	a) Walkdown should verify that the instruments are properly attached to cabinet. b) Relays, contactors, switches, and breakers must be evaluated for chatter and trip if functionality during strong shaking is required.
Passive Electrical Power: Distribution Panels, Cabinets	Yes	Walkdown should verify that the instruments are properly attached to cabinet.

Table 5-2 (Cont.)

SUMMARY OF EQUIPMENT AND SUBSYSTEM SEISMIC MARGIN EVALUATION (Format Follows EPRI NP-6041, Table 2-4)

Equipment Type	Evaluation Required (Yes/No)	Explanation
Transformers	Yes	a) Anchorage evaluation required. b) Liquid-filled transformers require evaluation of overpressure safety switches. For dry transformers, coils should be restrained within the cabinet.
Battery Chargers	Yes	Solid state units require anchorage checks. Others require evaluation.
Inverters	Yes	Solid state units require anchorage checks. Others require evaluation.
Instrumentation and Control Panels and Racks	Yes	a) Walkdown should verify that the instruments are properly attached to cabinet b) Relays, contactors, switches, and breakers must be evaluated for chatter and trip if functionality during strong shaking is required.
Temperature sensors	No	No evaluation required for acceleration < 0.8g, emphasis should be on attachments for accelerations between 0.8g - 1.2g.
Pressure and Level Sensors	No	No evaluation required for acceleration < 0.8g, emphasis should be on attachment for accelerations between 0.8g - 1.2g.

6. ASSESSMENT OF ELEMENTS NOT SCREENED OUT

Nine groups of equipment items were selected for HCLPF evaluation by the SRT. The items were grouped into twenty two HCLPF calculations based on similar characteristics. The selected equipment items are discussed below along with the results of the HCLPF evaluations. The evaluation results are summarized in Table 6-1.

6.1 MOTOR CONTROL CENTERS

Four bounding HCLPF calculations were performed on MCCs in order to adequately envelope the various configurations, elevations, etc., found at Browns Ferry without introducing undo conservatism. HCLPF capacities were calculated based on anchorage demand versus capacity. The evaluation determined a HCLPF anchorage capacity in excess of 0.3g for the MCCs.

6.2 LOW VOLTAGE SWITCHGEAR

One bounding HCLPF calculation was performed on low voltage switchgear. HCLPF capacity was calculated based on anchorage demand versus capacity. The evaluation determined a HCLPF anchorage capacity in excess of 0.3g for the low voltage switchgear.

6.3 TRANSFORMERS

Four bounding HCLPF calculations were performed on transformers. HCLPF capacities were calculated based on anchorage demand versus capacity. The evaluation determined a HCLPF anchorage capacity in excess of 0.3g for all low voltage switchgear except 0-OXF-219-TDA and 0-OXF-219-TDB which had HCLPF capacity of 0.26g.

6.4 STATION BATTERY RACKS

Four bounding HCLPF calculations were performed on battery racks. HCLPF capacities were calculated based on the capacities of the structural elements of the racks.

Anchorage of the racks did not control. The evaluation determined a HCLPF anchorage capacity 0.3g for battery racks.

6.5 BATTERY CHARGERS AND INVERTERS

One bounding HCLPF calculation was performed on battery chargers and inverters. HCLPF capacity was calculated based on anchorage demand versus capacity. The evaluation determined a HCLPF anchorage capacity in excess of 0.3g for battery chargers and inverters.

6.6 CONTROL AND INSTRUMENTATION PANELS

Five bounding HCLPF calculations were performed on control and instrumentation panels. HCLPF capacities were calculated based on anchorage demand versus capacity. The evaluation determined a HCLPF anchorage capacity in excess of 0.3g for all control and instrumentation panels.

6.7 RHR PUMPS

The RHR Pumps were selected for HCLPF anchorage evaluation due to significant piping loads. Evaluation resulted in a HCLPF capacity in excess of 0.3g.

6.8 RHRSW PUMPS

The RHRSW Pumps were selected for HCLPF anchorage evaluation due to significant piping loads. Evaluation resulted in a HCLPF capacity in excess of 0.3g.

6.9 RHR HEAT EXCHANGERS

The RHR Heat Exchangers were selected for HCLPF anchorage evaluation due to significant piping loads. Evaluation resulted in a HCLPF capacity in excess of 0.3g.

Table 6-1
HCLPF EVALUATION RESULTS

Group	Description	HCLPF
01 - Motor Control Centers	2 MCCs El. 565' RB 2/3 4 MCCs El. 583'-6" DGB 1/2/3 7 MCCs El. 593' RB 2/3 7 MCCs El. 621'-3" RB 2/3	> 0.3g > 0.3g > 0.3g > 0.3g
02 - Low Voltage Switchgear	2 LVSWGR El. 621'-3" RB 2	> 0.3g
03 - Transformers	2 4kV/480V XFMRs El. 583'-6" DGB 1/2 4 Regulating XFMRs El. 593' & 621'-3" RB 2/3 2 4kV/480V XFMRs El. 621'-3" RB 1 4 4kV/480V XFMRs El. 621'-3" RB 2/3	**0.26g** > 0.3g > 0.3g > 0.3g
04 - Battery Rack Structures	8 Battery Racks El. 565' DGB 1/2/3 1 Battery Rack El. 583"-6" DGB 3 3 Battery Racks El. 593' RB 1/2/3 4 Battery Racks El. 621"-3" RB 1/2	> 0.3g > 0.3g > 0.3g > 0.3g
05 - Battery Chargers and Inverters	5 Chargers El. 583"-6" DGB 3, El. 621'-3" RB 1/2	> 0.3g
06 - Control Panels	1 Panel El. 621'-3" RB 2 1 Panel El. 621'-3" RB 1 1 Panel El. 583"-6" DGB 1/2 1 Panel El. 593' RB 2 Control Bay 1 Panel El. 593' RB 2 Control Bay Aux. Inst. Room	> 0.3g > 0.3g > 0.3g > 0.3g > 0.3g
07 - RHR Pumps	8 Pumps RB 2/3	> 0.3g
08 - RHRSW Pumps	8 Pumps RHRSW Intake Structure	> 0.3g
09 - RHR Heat Exchanger	8 HXs RB 2/3	> 0.3g

7. RELAY EVALUATION

This section describes the relay evaluation process and results for the Browns Ferry units. Browns Ferry is identified as a focused scope plant for the 0.3g earthquake by NRC Generic Letter 88-20, Supplement 4. NUREG-1407 requests that focused scope plants which are also included as an USI A-46 plant should follow the USI A-46 procedures for the relay review of A-46 equipment. If low ruggedness relays are identified during the A-46 review, then an additional low ruggedness relay review should also be performed for IPEEE-only equipment. The A-46 criteria for relay functionality review are contained in GL 87-02, which endorses the review procedure established in the SQUG Generic Implementation Procedure (GIP). These procedures, with the following screening steps were followed for the Browns Ferry relay evaluation, and are discussed below:

- Identification of A-46 and IPEEE relays
- Relay walkdown verification
- Relay capacity/demand screening
- Relay system consequence review
- Results

7.1 IDENTIFICATION OF A-46 AND IPEEE RELAYS

The GIP states that the purpose of the relay functionality review is to determine if the plant safe shutdown systems could be adversely affected by relay malfunction in the event of an SSE, and to evaluate the seismic adequacy of those relays for which malfunction is unacceptable. IPEEE objectives are similar, but also include relays associated with containment performance. In this context, the term relay is used to include contactors and process switches (level, temperature, flow, etc.) as well as relays.

The GIP methodology for evaluation of the seismic functionality of relays is based on a successive screening process for those relays determined to be essential to safe shutdown functions. The identification of a minimum set of relays whose function is essential to the safe shutdown of the plant was prepared by TVA staff. The identification procedures followed the GIP for the A-46 relays, and was expanded to include the additional IPEEE containment performance equipment relays, in accordance with NUREG-1407 and EPRI NP-6041-SL, Rev. 1. The essential relays are listed in the Browns Ferry Relay Evaluation Report (Reference 16).

7.2 RELAY WALKDOWN VERIFICATION

The relay walkdown was performed by the qualified seismic capability engineers (SCE) from TVA and EQE during the equipment walkdowns. A sampling of relay manufacturer, make, model number, and location was performed to assure that the relay list information was acceptably accurate.

When cabinets and panels containing relays were opened, the SCEs also observed and evaluated the mounting of relays to ensure that their attachments were rugged. No attempt was made to differentiate between essential and nonessential relays with respect to mounting adequacy. The seismic adequacy of the panel or cabinet itself, and its anchorage was addressed by the separate evaluation of the panel/cabinet as an SSEL equipment component. However, a checklist was developed to ensure that all of the SQUG caveats for the cabinets and panels were documented, and the correct amplification factor utilized for the relay capacity/demand evaluation.

The result of the relay walkdown was that the relay mountings were seismically adequate, and the relay list information was correct to the extent sampled.

7.3 RELAY CAPACITY/DEMAND SCREENING

After the completion of the walkdown and physical determination phase of the relay evaluation, the seismic adequacy of the essential relays was then assessed using GERS and other test data. The A-46 Relay Evaluation Report documents the procedures and results of the A-46 relay evaluation using the capacity/demand screening steps detailed in the SQUG GIP.

Three screening levels were employed. Level 0 screening is for relays which control switchgear only, and which can be screened from the analysis if they are not in the low ruggedness group. Most of the relays that control switchgear had already been removed from the essential relay list as the essential relays were identified. Level 1 screening is associated with high capacity relays, the use of response spectra comparison, the location of relays within the plant, and the identification of no known low ruggedness relays. Level 2 capacity screening is based on the use of in-cabinet amplification factors, appropriate factors of safety, and the use of GERS or relay-specific seismic test data. Relays for IPEEE only were screened out of the evaluation if they were not on the low ruggedness list.

The results of the seismic capacity/demand screen are included in the Browns Ferry A-46/IPEEE Relay Evaluation Report (Reference 16).

Those relays and process switches not passing the capacity screening criteria were submitted for further evaluation in the form of relay chatter system consequence review.

7.4 RELAY SYSTEM CONSEQUENCE REVIEW

The objective of the relay system consequence review is to determine if safe shutdown systems and functions are adversely impacted if the contacts of a relay or switch chatter during the period of strong ground motion. The procedures given in EPRI NP-7148 for relay chatter evaluation were used to systematically evaluate each contact of the relays and switches not previously screened out. Detailed reviews of the electrical schematics and control diagrams were used to determine the contact function, and chatter impacts. Examples of contacts which could be identified as acceptable based on the EPRI procedure are:

- Contacts whose chatter would only affect instrumentation and annunciation (see the EPRI procedure for the underlying rationale)
- Contacts whose chatter would only cause equipment to fulfill its safety function (for example, a contact which opens a valve, and the valve desired position is "open")
- Contacts whose chatter impacts could be mitigated by proceduralized operator action (this evaluation considered timing factors, location, procedures, and training)

Also note that there were relays for which the only contacts which could have potentially adverse impacts were in an acceptable configuration for which they are seismically rugged (for example, energized and normally open). These were then included as chatter acceptable relays.

The results of the system consequence evaluation are included in the Browns Ferry A-46/IPEEE Relay Evaluation Report (Reference 16).

7.5 RESULTS

The results of the relay review are contained in the Browns Ferry A-46/IPEEE Relay Evaluation Report. Those relays which have not been screened either by the seismic capacity/demand screening or the system consequence chatter evaluation will be labeled as outliers in the A-46 program, with additional review or resolution to be performed.

8. SEISMIC INDUCED FIRE AND FLOOD EVALUATION

IPEEE fire and flood issues relative to units 2 & 3 of Browns Ferry Nuclear Plant were addressed during the combined USI A-46/IPEEE equipment inspections and subsequent evaluations. The concerns have been addressed as necessary in accordance with the guidelines established in NUREG-1407.

It is the conclusion of this review that the Browns Ferry plant is not at risk from fire or flood resulting from a seismic event. Combustible sources are controlled within critical areas of the plant such that there is no threat that a fire could eliminate the safe shutdown capability of the plant. The risk due to flooding which might occur due to the rupture of wet pipe for fire protection is mitigated by systems separation and backup systems.

8.1 FIRE PROTECTION SYSTEMS OVERVIEW

BFN fire protection systems consist of typically wet pipe preaction systems with fusible link spray heads. The exceptions to this are the diesel generator buildings and cable spreading rooms, which have CO_2 delivery systems. The actuation circuits for these systems provide only annunciation signals to the control room. Inadvertent relay actuation will not cause actuation of the fire protection sprinkler or CO_2 systems.

The plant is populated with smoke (ionization) detectors. Activation of the detector circuits provides annunciation signals, and will not cause activation of the fire protection systems. Spray interaction concerns had been previously addressed by the "II/I" program implemented prior to Units 2 and 3 restart.

8.2 USI A-46/IPEEE WALKDOWN SUMMARY

During SSEL equipment walkdowns obvious sources of combustion (such as lubricating oil reservoirs or grease) were subjectively evaluated as sources to fuel combustion. None were identified credible and significant. Additionally, specific area walkdowns were performed to emphasize investigation in areas containing known combustibles.

The equipment inspection process included review of adjacent systems, structures, or components for interaction. Fire suppression systems adjacent to the SSEL equipment were evaluated as possible equipment interaction sources. Physical interaction issues involving SSEL equipment inspections and fire protection piping systems were minor.

8.3 FLOOD EVALUATION

The probability of plant and/or equipment flooding associated with rupture of fire protection systems has been previously addressed by TVA.

9. CONTAINMENT INTEGRITY

The main objective of the containment analysis is to identify vulnerabilities that involve early failure of containment functions. This includes consideration of containment integrity, containment isolation, and other containment functions.

The guidance provided in NUREG-1407, Reference 2, states that "generally containment penetrations are seismically rugged; a rigorous fragility analysis is needed only at review levels greater than 0.30g, but a walkdown to evaluate for unusual conditions (e.g., spatial interactions, unique penetration configurations) is recommended." With regard to containment systems, the guidance provided is that "seismic failures of actuation and control systems are more likely to cause isolation system failures and should be included in the examination." The major concern deals with relay chatter, which is addressed in Section 7 of this report.

The Browns Ferry containment structure is screened for further seismic review based on NP-6041, Reference 3. In addition to the containment structure, NUREG-1407 suggests that certain considerations could require additional study. Hatches that employ inflated seals is one potential area for concern. Browns Ferry hatches do not use inflated seals.

Another concern is the post-accident operation of penetration cooling systems. Browns Ferry makes combined use of insulation and penetration cooling for hot piping penetrations. The penetration cooling subsystem is non-safety-related. The portion of the piping inside primary containment has been designed to Class I (L) standards in order to minimize possible damage to Class I equipment inside the drywell from pipe break and flooding. Analysis shows that under a condition of total loss of coolant, and under the most adverse conditions, the concrete temperature adjacent to any penetration does not exceed 350°F. This analysis is based upon heat conduction and does not take into account dissipation into surrounding structures or atmosphere. Penetration coolers were added as a result of good engineering practice and design; however, as seen from the above, they are not considered necessary to safe operation of the plant or to maintain containment integrity.

All other containment issues relate to the seismic relay review and walkdown results. The relay review is addressed in Section 7. The containment walkdowns consisted of inspecting and evaluating unusual conditions or configurations in the drywell and torus for each unit. The following is a representative listing of unusual conditions or configurations specifically searched for during the walkdown process:

- Spatial Interactions
- Unique Penetrations
- Piping hard spots
- Items or components bridging the seismic gap between the containment liner and interior structure

No unusual conditions or configurations were identified. As stated previously, the main objective of the containment analysis is to identify vulnerabilities that involve early failure of containment functions. The SRT reviews and walkdowns performed on the containment did not reveal any significant vulnerabilities. Therefore, the HCLPF for the containment is greater than 0.3g, based on SRT reviews, walkdowns, and Appendix A of NP-6041 (Reference 3).

10. PEER REVIEW SUMMARY

The Browns Ferry IPEEE peer review was performed by Mr. Gregory Hardy of EQE and Mr. Richard Cutsinger of TVA. The peer review covered both A-46 and seismic IPEEE. The peer reviewers did a general walkthrough of the plant and then did detailed walkdowns of selected equipment. The peer review report is summarized below. The entire report is contained in Appendix C. Peer reviewer resumes are also included in Appendix C.

The IPEEE program for Browns Ferry was found to have been conducted in a thorough and competent manner. The Peer reviewers found that the effort was performed in accordance with the guidance of EPRI NP-6041 and meets the stated objectives of NUREG-1407. The results and findings from the program appear to be reasonable and are consistent with expectations for a plant of this vintage. The plant structures and piping were found to be rugged owing to original design and upgrades that were performed in response to various IE Bulletins or self-initiated reassessment studies. A number of equipment and general housekeeping upgrades were noted during the walkthrough which have resulted in improved seismic ruggedness.

The peer reviewers had a comment regarding scaling of the plant in-structure response spectra to estimate the RLE demand. This comment has been appropriately addressed and resolved.

11. SUMMARY AND CONCLUSIONS

The Browns Ferry seismic IPEEE was completed in accordance with NUREG 1407 guidelines using the EPRI seismic margins methodology provided in EPRI NP-6041.

The most important aspect of the program was plant walkdowns. Detailed SRT walkdowns were performed in conjunction with A-46 walkdowns using the methodology, criteria, and SEWS provided in EPRI NP-6041 and the GIP.

The SRT identified issues related to maintenance, housekeeping, and seismic interaction that required work orders to satisfy SRT field issues. Items were also noted as requiring repairs or modifications. These items will be resolved as part of the A-46 program. The results of the BFN USI A-46 program are contained in the Browns Ferry USI A-46 Seismic Evaluation Report (Reference 15).

Several components were identified for subsequent HCLPF evaluation. Only two items had HCLPF capacity below 0.3g: 4kV/480V transformers 0-OXF-219-TDA and 0-OXF-219-TDB at Elevation 583'-6" of the diesel generator building for Units 1 and 2. These transformers will eventually be replaced as part of the long-term asbestos material removal program at BFN. The only other outliers identified for IPEEE only are shown in the following table. These conditions have since been resolved through design modifications.

SSEL No.	Equip. Class	Equipment ID	Description	Outlier Condition	Resolution
33047	07	3-FCV-77-2B	DW FLR DRAIN SUMP DISCHARGE	■ Caveat - Operator Height & weight > GIP Limit (Yoke Reinforcement Required)	■ DCN-17675 (F-38209A) Issued
33048	07	3-FCV-77-15B	DW EQUIP DRAIN SUMP DISCHARGE	■ Caveat - Operator Height & weight > GIP Limit (Yoke Reinforcement Required)	■ DCN-17675 (F-38209A) Issued

Relay evaluation for the Browns Ferry Nuclear Plant followed the methodology recommended in the GIP. The results are contained in the Browns Ferry USI A-46/IPEEE Relay Evaluation Report (Reference 16).

Those relays which have not been screened either by the seismic capacity/demand screening or the system consequence chatter evaluation will be labeled as outliers in the A-46 program, with additional review or resolution to be performed.

The seismic IPEEE evaluation concluded that the Browns Ferry plant HCLPF is at least 0.26g. Any unresolved outliers as a result of the USI A-46 program will be modified, thus, the resulted configurations will have HCLPF capacities much greater than 0.3g.

12. REFERENCES

1. USNRC, Generic Letter 88-20, Supplement No. 4, "Individual Plant Examination of External Events (IPEEE) for severe accident vulnerabilities," Final, April 1991.

2. USNRC, NUREG-1407, "Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities," final report, June 1991.

3. EPRI NP-6041, "A Methodology for Assessment of Nuclear Power Plant Seismic Margin", Revision 1, August 1991.

4. USNRC, NUREG/CR-5250, "Seismic Hazard Characterization of 69 Nuclear Power Plant Sites East of the Rocky Mountains," January 1989.

5. USNRC, NUREG-1488, "Revised Livermore Seismic Hazard Estimates for 69 Nuclear Power Plant Sites East of the Rocky Mountains," October 1993.

6. EPRI NP-6395-D, "Probabilistic Seismic Hazard Evaluation at Nuclear Plant Sites in the Central and Eastern United States: Resolution of the Charleston Issue," April 1989.

7. Seismic Qualification Utility Group (SQUG), "Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment," Revision 2A.

8. Newmark, N.M. and Hall, W.J. 1978, "Development of Criteria for Seismic Review of Selected Nuclear Power Plants," US Nuclear Regulatory Commission, NUREG/CR-0098.

9. TVA Calculation CD-Q0000-940339, "Calculation of Basic Parameters for A-46 and Individual Plant Examination of External Events (IPEEE) Seismic Program."

10. Tennessee Valley Authority. "Browns Ferry Nuclear Plant Final Safety Analysis Report."

11. Tennessee Valley Authority. General Design Criteria No. BFN-50-C-7102.

12. Tennessee Valley Authority. General Design Criteria No. BFN-50-C-7103.

13. Tennessee Valley Authority. General Design Criteria No. BFN-50-C-7306.

14. Tennessee Valley Authority. General Design Criteria No. BFN-50-C-7100.

15. Browns Ferry Nuclear Plant USI A-46, Seismic Evaluation Report, Revision 0.

16. Browns Ferry Nuclear Plant USI A-46/IPEEE, Relay Evaluation Report, Revision 0.

APPENDIX A

SEISMIC REVIEW TEAM QUALIFICATIONS

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team.

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Richard D. Augustine
Degree:	B. S. Civil Engineering - 1979
Institution:	Colorado State University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	January 13 - 19, 1993 San Francisco, CA
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
15 years (see attached resume)	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Paul D. Baughman
Degree:	M. S. Civil Engineering - 1978
Institution:	Northeastern University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 9 - 13, 1992 Dallas, TX
Course:	Seismic IPE Add-on Training Course
Date and Location:	November 2 - 4, 1992 Cromwell, CT
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
26 years (see attached resume)	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Jerry W. Beason
Degree:	B. S. Civil Engineering - 1967
Institution:	University of Tennessee
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 9 - 13, 1992 Dallas, TX
Course:	Seismic IPE Add-on Training Course
Date and Location:	June 8 - 10, 1993 New Orleans, LA
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
28 years engineering experience	
26 years nuclear experience	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Farzin R. Beigi
Degree:	B. S. Civil Engineering - 1981
Institution:	San Francisco State University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	May 1993 New Orleans, LA
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
13 years (see attached resume)	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Jakub J. Betka
Degree:	M. S. Civil Engineering - 1952
Institution:	Warsaw Polytechnic - Warsaw, Poland
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course for Raceways
Date and Location:	June 14 - 16, 1994 Browns Ferry Site
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
15 years	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Brantley C. Buerger
Degree:	B. S. Civil Engineering - 1981
Institution:	University of Virginia
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	January 1994 Southport, NC
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
14 years (see attached resume)	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	James R. Disser
Degree:	B. S. Civil Engineering - 1980
Institution:	University of Michigan
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	January 1994 Southport, NC
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
15 years (see attached resume)	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	John O. Dizon
Degree:	M. S. Structural Engineering - 1975 Engineer Degree - 1977
Institution:	Stanford University
	or:
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	January 13 - 19, 1993 San Francisco, CA
Course:	Seismic IPE Add-on Training Course
Date and Location:	October 13 - 15, 1992 Chicago, IL
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
18 years (see attached resume)	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Eric J. Frevold
Degree:	B. S. Mechanical Engineering - 1980
Institution:	University of Central Florida
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 1 - 5, 1993 Charlotte, NC
Course:	Seismic IPE Add-on Training Course
Date and Location:	December 6 - 8, 1993 Charlotte, NC
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
14 years	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Partha S. Ghosal
Degree:	M. S. Structural Engineering - 1982
Institution:	Illinois Institute of Technology
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	February 1 - 5, 1993 Denver, CO
Course:	Seismic IPE Add-on Training Course
Date and Location:	June 8 - 10, 1993 New Orleans, LA
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
24 years of experience in Structural Engineering	
17 years of experience in Earthquake Engineering applicable to nuclear plants	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team.

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Krystyn H. Gromek	
Degree:	M. S. Civil Engineering - 1977	B.S. Civil Engineering - 1971
Institution:	University of Tennessee	Michigan State University
	or:	
Equivalent:		
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:		
Course:	Walkdown Screening & Seismic Evaluation Training Course	
Date and Location:	February 1 - 5, 1993 Denver, CO	
Course:	Seismic IPE Add-on Training Course	
Date and Location:	June 8 - 10, 1993 New Orleans, LA	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:		
23 years of engineering experience		
14 years in Civil Design Group at BFN		
Licensed professional engineer: Yes ☑ No ☐		

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Syed S. Haider
Degree:	M. S. Civil Engineering - 1980
Institution:	Illinois Institute of Technology
	or:
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 9 - 13, 1992 Dallas, TX
Course:	Seismic IPE Add-on Training Course
Date and Location:	November, 1992 Dallas, TX
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
20 years of nuclear experience	
25 years of engineering experience	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Russell O. Jansen	
Degree:	B. S. Civil Engineering - 1974	M. S. Civil Engineering - 1983
Institution:	University of Maryland	University of Tennessee
	or:	
Equivalent:		
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:		
Course:	Walkdown Screening & Seismic Evaluation Training Course	
Date and Location:	February 28 - March 4, 1994 Denver, CO	
Course:	Seismic IPE Add-on Training Course	
Date and Location:	April 25 - 27, 1994 Denver, CO	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:		
12 years of seismic design experience at BFN		
Licensed professional engineer:	Yes ☑	No ☐

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Steven A. Locke
Degree:	B. S. Civil Engineering - 1980
Institution:	University of Tennessee
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	August 2 - 6, 1993 Boston, MA
Course:	Seismic IPE Add-on Training Course
Date and Location:	August 31 - September 2, 1993 Boston, MA
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
3 years in Nuclear Construction at Bellefonte	
11 years in Civil Design Group at Browns Ferry	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Jon E. McCord
Degree:	M. S. Mechanical Engineering - 1971
Institution:	University of Tennessee
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	February 28 - March 4, 1994 Denver, CO
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
23 years at TVA	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team.

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Cesar O. Pascua
Degree:	B. S. Civil Engineering - 1974
Institution:	FEATI University - Manila, Philippines
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	August 2 - 6, 1993 Boston, MA
Course:	Seismic IPE Add-on Training Course
Date and Location:	August 31 - September 2, 1993 Boston, MA
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
17 years of design engineering experience in piping, raceway, and HVAC supports	
for nuclear and fossil plants.	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Braulio M. Pedroso, Jr.
Degree:	B. S. Civil Engineering - 1968
Institution:	Central Philippine University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course for Raceways
Date and Location:	June 14 - 16, 1994 Browns Ferry Site
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
9 years	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Anand C. Relwani
Degree:	M. S. Civil Engineering - 1975
Institution:	Illinois Institute of Technology
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 9 - 13, 1992 Dallas, TX
Course:	Seismic IPE Add-on Training Course
Date and Location:	June 8 - 10, 1993 New Orleans, LA
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
15 years of nuclear experience	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Claude N. Simms
Degree:	B. S. Civil Engineering - 1968
Institution:	Tennessee Technological University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 1 - 5, 1993 Charlotte, NC
Course:	Seismic IPE Add-on Training Course
Date and Location:	December 6 - 8, 1993 Charlotte, NC
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
26 years of experience in structural engineering	
21 years of experience in nuclear plants	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Angel G. Tambora
Degree:	B. S. Mechanical Engineering - 1964
Institution:	Central Philippine University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 1 - 5, 1993 Charlotte, NC
Course:	Seismic IPE Add-on Training Course
Date and Location:	December 6 - 8, 1993 Charlotte, NC
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
More than 20 years of mechanical engineering experience	
6 years of experience at BFN	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Thurman G. Thaxton, Jr.
Degree:	B. S. Civil Engineering - 1966
Institution:	Tennessee Technological University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course
Date and Location:	November 1 - 5, 1993 Charlotte, NC
Course:	Seismic IPE Add-on Training Course
Date and Location:	December 6 - 8, 1993 Charlotte, NC
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
28 years of engineering experience	
23 years working on the design of nuclear plants	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SEISMIC CAPABILITY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	William T. White
Degree:	B. S. Civil Engineering - 1966
Institution:	University of Tennessee
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Walkdown Screening & Seismic Evaluation Training Course for Raceways
Date and Location:	June 14 - 16, 1994 Browns Ferry Site
Course:	
Date and Location:	
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
Over 20 years	
Licensed professional engineer: Yes ☑ No ☐	

RESUME

SYSTEMS ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	John D. McCamy
Degree:	B. S. Physics - 1994
Institution:	University of Alabama
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Equipment Selection and Relay Evaluation Training Course
Date and Location:	August 25 - 27, 1992 Washington, D.C.
Course:	
Date and Location:	
Number of years experience in engineering applicable to nuclear power plants and in systems or mechanical engineering:	
15 years of systems and operations experience in nuclear plants	
(see attached resume)	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SYSTEMS/RELAY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	David L. Moore	
Degree:	B. S. Physics - 1970	M. S. Structural Engineering - 1979
Institution:	University of Texas - Austin	University of Washington - Seattle
	or:	
Equivalent:		
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:		
Course:	Safe Shutdown Equipment Selection and Relay Screening and	
	Evaluation Training Course	
Date and Location:	February 1996	Stockholm, Sweden
Course:		
Date and Location:		
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural, mechanical, or electrical engineering:		
More than 16 years experience in analyzing electrical and mechanical systems at nuclear power plants. Participated/guided systems selection and/or relay evaluations for nine plants.		
(see attached resume)		
Licensed professional engineer:	Yes ☐	No ☑

RESUME

LEAD RELAY REVIEWER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Malcolm L. Pyatt
Degree:	B. S. Electrical Engineering
Institution:	Florida Institute of Technology
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Equipment Selection and Relay Evaluation Training Course
Date and Location:	April, 1995 Washington, D.C.
Course:	
Date and Location:	
Number of years experience in electrical engineering applicable to nuclear power plants:	
25 years of experience	
10 years of nuclear experience	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SYSTEMS/RELAY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Marc C. Quilici
Degree:	B. S. Engineering
Institution:	Idaho State University
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Equipment Selection and Relay Evaluation Training Course
Date and Location:	March 22 - 24, 1993 Rockville, Maryland
Course:	
Date and Location:	
Number of years experience in engineering applicable to nuclear power plants and in systems or mechanical engineering:	
16 years experience in systems engineering	
3 years experience in seismic relay evaluation and SSEL work	
Licensed professional engineer: Yes ☐ No ☑	

RESUME

SYSTEMS/RELAY ENGINEER

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant

Name:	Thomas R. Roche
Degree:	B. S. Engineering - 1982
Institution:	California Polytechnic State University, San Luis Obispo
or:	
Equivalent:	
Date and Location of SQUG-developed Training Courses on Seismic Adequacy Verification of Nuclear Power Plant Equipment:	
Course:	Equipment Selection and Relay Evaluation Training Course
Date and Location:	March 27 - 29, 1990 Bethesda, Maryland
Course:	Walkdown Screening and Seismic Evaluation Training Course
Date and Location:	January 13 - 19, 1993 Irvine, California
Course:	Seismic IPE Add-On Training Course
Date and Location:	December 1 - 3, 1992 Dallas, Texas
Number of years experience in earthquake engineering applicable to nuclear power plants and in structural or mechanical engineering:	
12 years (see attached resume)	
Licensed professional engineer: Yes ☑ No ☐	

RICHARD D. AUGUSTINE

PROFESSIONAL HISTORY

EQE Incorporated, Stratham, New Hampshire, Principal Engineer, 1987-present
Impell Corporation, New York, New York, Project Engineer, 1986-1987
Cygna Energy Services, Boston, Massachusetts, Structural Engineer, 1985-1986
Butler Service Group, Charlotte, North Carolina, Structural Engineer, 1984-1985
Pullman-Higgins, Seabrook, New Hampshire, Field Engineer, 1983-1984
Butler Service Group, Braintree, Massachusetts, Design Engineer, 1981-1982
Bechtel Power Corporation, San Francisco, California, Design Engineer, 1980-1981

PROFESSIONAL EXPERIENCE

Mr. Augustine has 15 years of professional engineering experience consisting of project management and civil / structural design. He has performed new building design and analysis in addition to retrofits of existing structures, equipment seismic qualification and anchorage modification design, piping analysis, finite element analysis, and tank and heat exchanger review. He has also investigated structural damage at numerous industrial facilities following earthquakes which have occurred in North and Central America.

Mr. Augustine has been involved in projects relating to the EQE seismic experience data base. This experience has been used to seismically qualify electrical and mechanical equipment and nuclear-plant cranes. He has used his extensive knowledge of nuclear piping in conjunction with data base experience to perform piping qualification tasks and develop performance criteria. In addition he has been involved in organizing and updating the seismic experience data base.

As a principal engineer for EQE, Mr. Augustine has participated in the following projects:

- USI A-46 Task Leader at Indian Point Unit 2.
- Performed IPEEE/A-46 walkdowns as a Seismic Capability Engineer at the Browns Ferry 2 and 3, TMI, Savannah River, Oyster Creek, Calvert Cliffs 1 and 2, and Keonee facilities.
- Seismic review of relays, raceways, control panels, piping, and equipment in the K, L, and P reactors at the DOE Savannah River Plant.
- Project engineer for the seismic evaluation of Tritium handling systems at the DOE Princeton Plasma Physics Laboratory.
- Project lead for the seismic verification of the diesel air start system at the Ginna Nuclear Plant.
- Addition to existing facility for Fleet Bank.
- Column and framing design for residential housing.
- Seismic II/I interaction review at Browns Ferry Unit 2 and Salem Unit 1.

Before joining EQE, Mr. Augustine participated in the following projects:

- At the Pilgrim Nuclear Power Station, he was involved in the seismic requalification of the main fuel pool hoist and trolley.
- Also at the Pilgrim Station, he designed a reinforced concrete shield-wall to be placed on the operating floor of the turbine building
- At the Seabrook Nuclear Station, he was involved in reconciliation of ASME Class 1, 2, and 3 piping and pipe supports
- In a prior assignment at Seabrook, Mr. Augustine was the responsible field engineer for the installation of piping and supports in the diesel generator building
- At the Brunswick Steam Electric Plant, he worked in the engineering support group during refueling and plant modification outages performing engineering evaluations and modifications as required.
- At the McGuire Nuclear Station, he designed the supporting structure framework for the mainsteam, feedwater, and pressurizer piping systems
- With Bechtel, he supervised the simplified stress piping analysis group for the Susquehanna Nuclear project

EDUCATION

Colorado State University: B.S. Civil Engineering, 1979

REGISTRATIONS

Civil Engineer: New Hampshire
Structural Engineer: New Hampshire

PAUL D. BAUGHMAN

PROFESSIONAL HISTORY

EQE International, Stratham, New Hampshire, Associate, 1987-present
Cygna Energy Services, Boston, Massachusetts, Vice President, 1980-1987
Yankee Atomic Electric Company, Westboro, Massachusetts, Senior Structural Engineer, 1976-1980
Stone & Webster Engineering Corp., Boston, Massachusetts, Mechanical/Structural Engineer, 1969-1976

SUMMARY

Mr. Baughman has over 24 years of professional engineering and project management experience in the power and industry fields. He has held a wide variety of positions encompassing structural and mechanical design, safety and risk evaluations, and nuclear licensing.

PROFESSIONAL EXPERIENCE

Mr. Baughman leads structural engineering and evaluation programs, safety and reliability assessments, earthquake verification programs, and risk evaluations. He was Project Manager for the seismic IPEEE/A-46 projects at Indian Point 2, Three Mile Island, Oyster Creek and Calvert Cliffs Nuclear Power Plants.

Other project assignments have included the seismic review of the Kozloduy Nuclear Power Plant in Bulgaria, the Palo Verde Equipment Qualification Enhancement Program, the D.C. Cook Small Bore Piping Confirmation Program, the Salem II/I Interaction Program, the Virginia Power STERI Procedures Project, the Indian Point 2 Control Room Seismic Verification Baseline Project, the Tokamak Fusion Test Reactor Tritium Handling Systems Review, and the Darlington Station II/I Piping Review.

He has performed mechanical equipment seismic evaluations for Boston Edison, Maine Yankee, Public Service of New Hampshire, Consolidated Edison, Gulf States Utilities, Rochester Gas and Electric, Southern Electric International, Virginia Power, Ontario Hydro, Public Service Electric and Gas, and GPU Nuclear; electrical equipment evaluations for Vermont Yankee, Boston Edison, Maine Yankee, GPU Nuclear, Philadelphia Electric, Virginia Power, Rochester Gas and Electric, and Consolidated Edison; and piping evaluations for Vermont Yankee, Tennessee Valley Authority, Ontario Hydro, Princeton Plasma Physics Laboratory, Westinghouse Savannah River, Rochester Gas and Electric, Public Service Electric and Gas, Puerto Rico Electric Power Authority, American Electric Power, Northeast Utilities, and Mesquite Lake Resource Recovery Center.

He has performed seismic verifications of cable tray, conduit, instrument tubing, and ductwork for Princeton Plasma Physics Laboratory, Tennessee Valley Authority, Public Service of New Hampshire, Consolidated Edison, GPU Nuclear, and Rochester Gas and Electric.

PROFESSIONAL EXPERIENCE (Continued)

He has prepared procedures for seismic technical evaluation of replacement items (STERI) for Maine Yankee, GPU Nuclear and Virginia Power, and presented training in STERI and Equipment Verification at Virginia Power, GPU Nuclear and Rochester Gas and Electric.

He has carried out numerous structural engineering and design activities for nuclear power plants, fossil power plants, cogen facilities and commercial projects. Clients have included City of Boston, Hanscomb Air Force Base, Quincy City Hospital, Brocton Veterans Administration Medical Center, Boston Edison, Consolidated Edison, Northeast Utilities and Puerto Rico Electric Power Authority.

At Cygna Energy Services, Mr. Baughman managed structural and mechanical activities for the eastern United States. He directed technical activities at more than 30 nuclear plants, including seismic evaluations of critical structures, piping, and equipment. Assignments included failure modes and effects analysis (FMEA) for high energy piping at Seabrook Station, probabilistic risk evaluations of the reactor containment at Seabrook Station, and FMEA of spent fuel cask handling systems at Yankee Rowe. He also provided licensing consultation services related to structural and mechanical issues for Yankee Rowe, Vermont Yankee, Maine Yankee, Pilgrim, Millstone Units 1 and 2, Seabrook, Three Mile Island Unit 1, Davis-Besse, and R. E. Ginna.

While at Yankee Atomic, Mr. Baughman was responsible for many structural and mechanical issues, including seismic upgrade of structures and equipment, spent fuel pool modifications at Yankee Rowe, and spent fuel storage expansions at Vermont Yankee, Pilgrim, and Maine Yankee. Spent fuel pool modifications at Yankee Rowe required FMEA of the 75-ton overhead crane and evaluation of smaller cranes used during construction or operation. Spent fuel storage expansions required FMEA of the spent fuel storage pools, fuel handling systems, and movement of heavy loads near stored fuel. Mr. Baughman also performed a structural safety evaluation of the polar crane in the reactor containment at Maine Yankee. He was a member of the Nuclear Safety Audit and Review Committee for Maine Yankee.

With Stone & Webster, Mr. Baughman carried out a variety of design assignments on nuclear plants under construction in the Mechanical Analysis and Structural Mechanics groups, including containment design, building seismic analysis, generation of floor response spectra, and equipment seismic qualification.

EDUCATION

NORTHEASTERN UNIVERSITY: M.B.A., 1984
NORTHEASTERN UNIVERSITY: M.S. Civil Engineering, 1978
NORTHEASTERN UNIVERSITY: B.S. Civil Engineering, 1972

AFFILIATIONS

American Society of Civil Engineers
American Concrete Institute
American Society of Mechanical Engineers

REGISTRATION

Structural Engineer: Massachusetts
Structural Engineer: New Hampshire
Civil Engineer: New Hampshire

SELECTED PUBLICATIONS

"Seismic Qualification and STERI Guidelines." August 1993. Prepared for Arizona Public Service.

"Level 1 Seismic Technical Evaluation of Commercial Grade Replacement Items, Surry Power Station, North Anna Power Station." July 1991. Prepared for Virginia Power.

"Level 2 Seismic Technical Evaluation of Commercial Grade Replacement Items, Surry Power Station, North Anna Power Station." July 1991. Prepared for Virginia Power.

"Planning Report, Comparison of Methods for Responding to Seismic IPEEE for Pilgrim Nuclear Power Station." December 1990. Prepared for Boston Edison Company.

"Experience Data Methodology for Seismic evaluation of Alternative Commercial Grade Replacement Items (Level 1) for Oyster Creek and TMI Unit 1." June 1990. Prepared for GPU Nuclear.

"Management Report, Scoping Review for Resolution of Unresolved Safety Issue A-46, R.E. Ginna Nuclear Power Station." January 1990. Prepared for Rochester Gas and Electric Corporation.

With M. Aggarwal. 1989. "Seismic Evaluation of Piping Using Experience Data." ASME Pressure Vessels and Piping Conference, July 1989.

"Seismic Verification of Control Room Design Changes for Indian Point Unit 2." June 1989. Prepared for Consolidated Edison Company.

With H. Johnson, G. Hardy, and N. Horstman. 1989. "Use of Seismic Experience Data for Replacement and New Equipment." Second Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment, and Piping with Emphasis on Resolution of Seismic Issues in Low-seismicity Regions, May 1989.

With M. Aggarwal, S. Harris, and R. Campbell. 1989. "Seismic Evaluation of Piping Using Experience Data." Second Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment, and Piping with Emphasis on Resolution of Seismic Issues in Low-seismicity Regions, May 1989.

"Procedure for Seismic II/I Interaction Hazards Evaluation for Pilgrim Nuclear Power Station." January 1989. Prepared for Boston Edison Company.

"Seismic Evaluation of Tritium Handling System, Tokamak Fusion Test Reactor, Princeton Plasma Physics Laboratory." December 1988. Prepared for Burns and Roe.

SELECTED PUBLICATIONS (Continued)

"Generic Criteria for Seismic Evaluation of Piping at Darlington Nuclear Generating Station." March 1988. Prepared for Ontario Hydro.

"Seismic Evaluation of Non-safety Piping at Darlington Nuclear Generating Station Using Earthquake Experience Data." December 1987. Presented to the Atomic Energy Control Board of Canada.

"Procedure for Overview Walkdown for Seismic Interaction Hazards, Salem Nuclear Generating Station." November 1987. Prepared for Public Service Electric and Gas.

FARZIN R. BEIGI

PROFESSIONAL HISTORY

EQE International, San Francisco, California, Principal Engineer, 1990-Present
TENERA L.P., Berkeley, California, Structural Engineer, 1982-1990

PROFESSIONAL EXPERIENCE

Mr. Beigi has over thirteen years of professional structural and civil engineering experience. As a principal engineer for EQE's Engineering Consultants Division, Mr. Beigi provides consulting engineering services for civil, structural, and structural mechanics engineering solutions primarily for seismic evaluation projects.

Most recently, Mr. Beigi has been involved in development of design verification criteria for seismic adequacy of HVAC duct systems at Salem Nuclear Power Plant. He has performed field verification of as-installed HVAC systems and provided engineering evaluations documenting seismic adequacy of these systems, which included dynamic analyses of selected worst-case bounding samples.

Mr. Beigi has performed non-linear analysis of bridge cranes at DOE's Paducah Gaseous Diffusion Plant utilizing Drain-2Dx non-linear structural program.

Mr. Beigi has generated simplified models of structures for facilities at Los Alamos National Lab and Cooper Nuclear Station for use in development of building response spectra considering the effects of soil-structure-interactions.

Mr. Beigi has participated as a seismic capability engineer for resolution of A-46 issues and Seismic Margin Assessment at the Browns Ferry Nuclear Power Plant (TVA), Oconee Nuclear Plant (Duke Power Co.), Duane Arnold Energy Center (Iowa Electric Company), Calvert Cliffs Nuclear Power Plant (Baltimore Gas and Electric), and Robinson Nuclear Power Plant (Carolina Power & Light). He has performed extensive fragility studies of the equipment and components in the switchyard at the Oconee power plant.

Mr. Beigi has developed standards for design of distributive systems to be utilized in the new generation of Light Water Reactor (LWR) power plants. These standards are based on the seismic experience data base, testing results, and analytical methods.

Mr. Beigi managed EQE's on-site office at the Tennessee Valley Authority Watts Bar Nuclear Power Plant. His responsibilities included staff supervision and technical oversight for closure of seismic systems interaction issues in support of the Watts Bar start-up schedule. Interaction issues that related to qualification for Category I systems and components included seismic and thermal proximity issues, structural failure and falling of non-seismic Category I plant features, flexibility of systems crossing between adjacent building structures, and seismic-induced spray and flooding concerns. Mr. Beigi utilized seismic experience data coupled with analytical methods to address these seismic issues.

PROFESSIONAL EXPERIENCE (Continued)

As a project engineer, Mr. Beigi conducted the seismic qualification of electrical raceway supports at the Watts Bar Plant. The qualification method involved in-plant walkdown screening evaluations and bounding analysis of critical case samples. The acceptance criteria for the bounding analyses utilized ductility-based criteria to ensure consistent design margins. Mr. Beigi also provided conceptual design modifications and assisted in the assessment of the constructability of these modifications. Mr. Beigi utilized similar methods for qualification of all non-seismic Category I HVAC ducts and supports at Watts Bar, and assisted criteria and procedures development for HVAC ducting, cable trays, conduit and supports at the TVA Bellefonte nuclear power plant.

Mr. Beigi also has extensive experience utilizing finite element computer codes in performing design and analysis of heavy industrial structures, systems, and components in accordance with AISC and ACI structural design codes. At the Texas Utility Comanche Peak Nuclear Power Plant, Mr. Beigi administered and scheduled individuals to execute design reviews of cable tray supports; evaluated generic design criteria for the design and construction of nuclear power plant systems and components and authored engineering evaluations documenting these reviews. He performed various construction inspections, walkdowns, and as-builting at nuclear power plants.

Also, Mr. Beigi's engineering experience includes: analysis of reinforced concrete slabs and walls due to impactive loads; design and analysis of conduit and cable tray supports for earthquake loading; determination of the adequacy of reinforced concrete slabs and walls due to omission of reinforcing bars or improper cutting of bars; dynamic analysis of heavy steel structures; and design of seismic supports for tanks and other equipment at industrial facilities.

EDUCATION

SAN FRANCISCO STATE UNIVERSITY, San Francisco, CA: B.S. Civil Engineering, 1982

REGISTRATION

Engineer-in-Training: California
Certified as Seismic Capability Engineer for SQUG Seismic Evaluation Walkdowns

BRANTLEY C. BUERGER

PROFESSIONAL HISTORY

EQE International, Stratham, New Hampshire, Project Engineer, 1993-present
ABB Impell Corporation, Syracuse, New York, Supervisor - Engineering Mechanics Division, 1991-1992; 1988-1990
Senc Technical Services, Southport, North Carolina, Engineer, 1990-1991
Mielczarek Construction, Deerfield, Illinois, Carpenter, 1988
Gilbert Commonwealth (Tennessee Valley Authority), Engineer, 1986-1988
Duke Power Company, Charlotte, North Carolina, Engineer, 1981-1986

EXPERIENCE SUMMARY

Mr. Buerger has over 13 years of professional engineering experience as a structural engineer in the nuclear utility industry. participating in a wide range of projects. Currently, he is a Project Engineer for EQE's Engineering Consultants Division.

Mr. Buerger's experience includes:

- Seismic IPEEE/A46 implementation and outlier resolution
- Seismic Margins Assessments and Fragilities Development
- Piping Analysis
- Structural Steel Analysis and Design
- Reinforced Concrete and Masonry Analysis and Design
- Finite Element Qualification
- Major Building Design
- General Civil Projects

As a Project Engineer for EQE's Engineering Consultants, Mr. Buerger has been responsible for:

- IPEEE/A46 inspections and subsequent resolution of outliers
- Seismic Margins Assessments and the development of Seismic Fragilities for piping and structures
- MSIV leakage inspections and outlier resolutions
- STERI evaluations for replacement parts

PROFESSIONAL EXPERIENCE (Continued)

As Supervisor for the Engineering Mechanics Division at ABB Impell, Mr. Buerger provided the following services:

- Design and analysis of block walls
- Structural design and dynamic qualification of I&C performance monitoring equipment on diesel generators
- Analysis/failure evaluation of bound intake water head gate; subsequent requalification of all intake/discharge gates/hoists/ rigging
- Reportability evaluations and occurrence reports
- Systems Turnover Program for reload/restart
- Design and analysis of lead shielding, heavy equipment anchorages, and building steel modifications
- Implementation of the client's modification program with supporting 10CFR50.59 evaluations
- Authored procedures, specifications, and technical reports

For Senc Technical Services, Mr. Buerger provided the following:

- Extensive use of ALGOR SUPERSAP finite element analysis program for qualification of plate/shell structures; performed benchmark of same
- Formal training on Class 1 plate/shell design and analysis per ASME code, and on finite element modeling/theory/methods
- Analysis, design, and short-term structural integrity reviews of pipe supports and miscellaneous steel to support calculation reconciliation effort

For Gilbert Commonwealth, Mr. Buerger performed various engineering tasks at Browns Ferry and Sequoyah Nuclear Plants. Work included the following:

- Qualification of miscellaneous steel components for seismic loadings; performed detailed failure evaluation and subsequent redesign of upper drywell floor steel; identified errors in GTSTRUDL NF17 code check method of computing torsional stresses
- Seismie qualification and design of electrical conduit supports; extensive use of AISI code

For Duke Power Company, Mr. Buerger provided services at McGuire and Oconee Nuclear Stations that included:

- Seismic design of major addition to the Reactor Building. Two hundred (200) tons of steel and connections; included 150 ton bridge crane. Mat slab over caisson foundation.

PROFESSIONAL EXPERIENCE (Continued)

- Lead responsible for scope, schedule, and cost development on several major projects ($2 to 3 million range)
- Civil lead on analysis of turbine-generator foundation vibration
- IEB 79-14 design and analysis of pipe supports and misc. steel

EDUCATION

UNIVERSITY OF VIRGINIA, Charlottesville, VA: B.S. Civil Engineering, 1981

PROFESSIONAL REGISTRATIONS

Professional Engineer: Vermont (18-0006271)
Professional Engineer: Illinois (062-044370)
Professional Engineer: North Carolina (13321)

JAMES R. DISSER

PROFESSIONAL HISTORY

EQE International, Stratham, New Hampshire, Project Engineer, 1993-present
Mitchell, Jobe & Company, Dallas, Texas, Senior Engineer, 1992-1993
TU Electric, Glen Rose, Texas, Senior Engineer, 1987-1992
Stone & Webster Engineering Corporation, Engineering Supervisor, 1980-1987

PROFESSIONAL EXPERIENCE

Mr. Disser has over 14 years of experience in civil and structural engineering, earthquake engineering, field engineering, construction and project management. His responsibilities have included seismic design and analysis of nuclear power piping, piping support systems, cable tray, conduit and HVAC support systems; seismic qualification of equipment; analysis of structures and development of design criteria, design procedures, test procedures and construction specifications. He has also been active in the implementation of several USI A-46 projects, a major material condition upgrade program, various MSIV leakage path seismic evaluation projects and seismic margins evaluations. Mr. Disser has supervised engineering design teams and successfully managed a variety of engineering and test projects. Selected project accomplishments include the following:

- *USI A-46 Seismic Verification Program and IPEEE Seismic Margins Assessment for TVA Browns Ferry Units 2 and 3.* Seismic verification of BWR safe shutdown equipment using the Seismic Qualification Utilities Group (SQUG) Generic Implementation Procedure (GIP) and EPRI NP-6041 methodology. Performed walkdowns, anchorage calculations, outlier evaluations and HCLPF calculations. Participated in Safe Shutdown Equipment List (SSEL) evaluation to ensure completeness and development of the A-46 and IPEEE response spectra.

- *MSIV Leakage Path Seismic Verification Program for TVA Browns Ferry Unit 3.* Performed walkdowns and evaluation of piping, active valves and equipment in the BWR Main Steam Isolatiotion Valve leakage path boundary to the condenser using earthquake experience data and seismic margins evaluation criteria. Participated in identification of system boundary valves/equipment and production of the walkdown report.

- *MSIV Leakage Path Seismic Verification Program for CP&L Brunswick Nuclear Plant Unit 1.* Performed walkdowns and evaluation of piping, active valves and equipment in the BWR Main Steam Isolatiotion Valve leakage path boundary to the condenser using earthquake experience data and seismic margins evaluation criteria. Also performed calculations for the evaluation of the anchorage for the main turbine stop and control valves, the bypass valve chest and the main condenser. Outlier evaluations, analysis of the main steam drain supports and development and design of modifications were also performed. Participated in production of the walkdown report.

- *USI A-46 Seismic Verification Program and IPEEE Seismic Margins Assessment for CP&L Brunswick Nuclear Plant Units 1 and 2.* Seismic verification of BWR safe shutdown equipment using the GIP and EPRI NP-6041. Performed walkdowns, anchorage calculations, outlier evaluations and HCLPF calculations.

PROFESSIONAL EXPERIENCE (Continued)

Also performed the A-46 conduit and cable tray walkdowns, and selected the worst case representative samples for the Limited Analytical Review. Participated in completing the SVDS, and the final evaluation of outliers in preparation for the NRC submittal.

- *MSIV Leakage Path Seismic Verification Program for WPPSS WNP Unit 2.* Performed walkdowns and evaluation of piping, piping supports, active valves and equipment in the BWR Main Steam Isolatiotion Valve leakage path boundary to the condenser using earthquake experience data and seismic margins evaluation criteria. Prepared walkdown and outlier documentation. Provided recommendations for evaluation or modification of outliers. Participated in production of the walkdown report.

- *USI A-46 Seismic Verification Program and IPEEE Seismic Margins Assessment for Duke Power Oconee Units 1, 2 and 3.* Seismic verification of selected PWR safe shutdown equipment. The equipment involved was a subset of the SSEL which for the most part could not be seismically verified strictly by database comparison. The project scope included development of A-46 and IPEEE seismic floor response spectra for the areas involved, walkdowns of the equipment previously identified as problems by the utility, research into existing documentation, performance of anchorage calculations and resolution of outliers. Performed the outlier evaluation and A-46 verification by calculation of the CCW vertical deepwell pumps, and the A-46 and IPEEE verification by calculation of the anchorage for the steam turbine driven feedwater pumps. HCLPF calculations were performed for the CCW pumps. Walkdowns were performed using the GIP and EPRI NP-6041 methodology.

- *USI A-46 Seismic Verification Program and IPEEE Seismic Margins Assessment for Toledo Edison Davis-Besse Nuclear Plant.* Seismic verification of PWR safe shutdown equipment using the GIP and EPRI NP-6041 methodology. Performed walkdowns and anchorage calculations considering A-46 and IPEEE seismic response for a large group of mechanical and electrical equipment including the 4.16 kv switchgear.

- *USI A-46 Seismic Verification Program and IPEEE Seismic Margins Assessment for GPU Oyster Creek Nuclear Generating Station.* Seismic verification of BWR safe shutdown equipment using the SQUG Generic Implementation Procedure and EPRI NP-6041 methodology. Performed walkdowns, anchorage calculations and outlier evaluations considering A-46 and IPEEE seismic response for a large group of electrical and mechanical equipment including the station's RHR Service Water Pumps. Lead Walkdown Engineer for the A-46 Cable Tray and Conduit walkdowns. Selected the worst case bounding samples and performed the calculations for the Raceway Limited Analytical Review.

- *USI A-46 Seismic Verification Program for CP&L Robinson Nuclear Plant.* Walkdown Engineer for the A-46 Cable Tray and Conduit Walkdown. Performed walkdowns, selected cases for the bounding sample and reviewed the calculations for the conduit and cable tray Limited Analytical Review. Also reviewed SSEL equipment anchorage calculations.

- *MSIV Leakage Path Seismic Verification Program for PP&L Susquehanna Unit 2.* Performed walkdowns and evaluation of piping, active valves and equipment

PROFESSIONAL EXPERIENCE (Continued)

in the BWR Main Steam Isolatiotion Valve leakage path boundary to the condenser using earthquake experience data and seismic margins evaluation criteria. Prepared walkdown and outlier documentation. Provided recommendations for evaluation or modification of outliers.

- *MSIV Leakage Path Seismic Verification Program for Iowa Electric Duane Arnold Energy Center.* Prepared and reviewed load path calculations for the main steam drain support system and anchorage calculations for the SJAEs and other equipment included in the MSIV steam leakage boundary in support of the effort to seismically qualify the drain path piping using seismic margins evaluation criteria.

- *Material Condition Upgrade Program at CP&L Brunswick Nuclear Plant Units 1 and 2.* Provided engineering resolutions to ensure short-term structural integrity (STSI) for a wide variety of plant equipment, including structural elements of the plant buildings, suspended systems, and mechanical and electrical equipment. STSI resolutions were provided using established plant short-term acceptance criteria; accepted USI A-46 methodology; and/or other sound, short-term engineering qualification methods. Performed in-plant walkdowns to identify potential material condition deficiencies; research of design documentation related to the identified concerns; evaluation of the structural condition, production, review, and design verification of supporting calculations; initiation and design of any modifications to support the STSI resolutions; and engineering support of construction or maintenance crews in the installation of the modifications. The project was also responsible for follow-up engineering to provide long-term qualification of the STSI resolutions within the Plant Design Basis. This included additional engineering work and/or plant modifications for long-term qualification of the equipment and commodities involved. The project's STSI and long-term resolutions qualified the equipment and commodities for operational, seismic, and postulated accident conditions as required by the Plant's current Design Basis. Also performed the STSI seismic qualification evaluation for the BNP vertical deepwell Service Water pumps and the long term seismic qualification for the replacement vertical deepwell Service Water Pumps.

- *Unit 2 Construction Completion Project for TU Electric Comanche Peak Steam Electric Station.* TU Electric Unit 2 Civil/Structural, Engineering Mechanics, and Suspended Support Systems Engineering Manager. Provided oversight and management of the A/E performing engineering services for CPSES Unit 2 for the civil, structural, engineering mechanics, seismic equipment qualification, protective coatings, HVAC supports, conduit and conduit supports, cable tray and cable tray supports, instrumentation tubing and supports, non-ASME piping and support, pipe rupture and commodity clearance disciplines. Also oversaw and managed the subcontractor performing the CPSES Unit 2 Seismic Category II/I Adequacy Evaluation. Reviewed and approved budgets; provided technical management of the architect/engineer and subcontractor; conducted detailed technical assessments of the contractors' products and programs; reviewed and approved design criteria and process procedures; and was responsible for interface with project management, construction, startup, Quality Assurance (QA)/Quality Control (QC), CPSES Unit 1, and the NRC.

- *TU Electric CPSES Unit 2 Reactor Containment Structural Integrity Test (SIT) Milestone Project.* Project Manager of the SIT. Responsible for all aspects of the

PROFESSIONAL EXPERIENCE (Continued)

Unit 2 SIT and directed all related activities performed by the Civil/Structural Engineer, Startup, and Construction. Developed the schedule and budget; revised the engineering specification; wrote and obtained approval of the test procedures; directed pre-test preparations, engineering and startup test activities and the restoration of the Containment building after completion of the test; reviewed and approved the SIT test report; and was responsible for coordination with personnel associated with the concurrently conducted Integrated Leakage Rate Test. Also performed the Volume Calculations for the Containment Integrated Leakage Rate Test.

- *TU Electric CPSES Unit 2 Construction Restart Estimating Project.* Member of the project group that developed the engineering baseline scope, man-hour estimate, and budget for the Unit 2 Completion Project that preceded restart of CPSES Unit 2 engineering activities in 1990. Responsibilities included Project Lead Engineer for development of the baseline scope for the ASME and non-ASME piping and supports analysis scope, the Unit 2 Seismic Category II/I Adequacy Evaluation; project member for preparation of the baseline scope for the civil/structural, engineering mechanics, mechanical systems, and NSSS Engineering scopes of work; preparation of the technical requirements and workscope sections of the contracts; and member of the committees charged with selection of the ASME Pipe Stress and Supports A/E and the Civil Structural A/E.

- *TU Electric CPSES Unit 2 in Unit 1 Seismic Evaluation Project.* TU Electric Project Manager for the seismic evaluation of incomplete Unit 2 construction in Unit 1 areas in support of the Unit 1 operating license. The project performed walkdowns of the Unit 2/Unit 1 common areas, documented seismically inadequate incomplete construction, performed engineering evaluations and recommended hardware resolutions to ensure seismic integrity or removal of inadequate partial installations.

- *TU Electric CPSES Seismic Evaluation of Non-Seismic and Seismic Category II Piping in Seismic Category I Areas Program.* Lead Engineer for the engineering group performing the seismic qualification of the piping and supports evaluated in this program. Performed detailed seismic analysis of piping systems selected as bounding samples during walkdowns performed in all seismic areas of the plant. The walkdown program and qualifying calculations were reviewed in detail by the NRC, which eventually accepted the program as justification for closure of one of the major issues that delayed the issuance of the CPSES operating license.

- *TU Electric CPSES Balance of Plant Piping Completion Project.* Performed analysis of non-seismic piping and designed their support systems in support of the construction completion of CPSES. Also performed analysis in support of modifications to structures, ASME piping and seismic suspended systems in TU Electric Operations custody.

- *Comanche Peak Review Team (CPRT) QA/QC Review of TU Electric Comanche Peak Steam Electric Station.* Engineer in the CPRT Mechanical Safety Significance Evaluation Group. Performed evaluations of deviation reports generated as a result of inspections for construction deviations from design requirements. The evaluations determined the safety significance of the deviations through research into design requirements in effect during the construction phase of Comanche Peak Unit 1. Analyzed the design and

PROFESSIONAL EXPERIENCE (Continued)

construction evolution of the deviating item and performed calculations, as required, to determine the effects of the deviation on the integrity of the item.

- *Duquesne Light Company Beaver Valley Nuclear Power Station Unit 2 Project.* Engineering Supervisor responsible for final qualification of pipe stress calculations in support of the BVPS-2 ASME III N-5 Certification Program. Responsibilities included preparation and independent review of the final stress calculations for ASME III Class 2 and 3 piping. Also performed analysis and calculation reviews for ASME buried piping.

  Site Engineering Supervisor responsible for special tasks related to pipe and duct supports including maintenance of the pipe and duct support installation specifications, resolution of construction problems, disposition of nonconformances, development and implementation of backfit construction and inspection programs, resolution of NRC Infractions and Open Items related to pipe supports, resolution of vendor problems, and supervision of all pipe support engineering activities of the Site Engineering Group. Also responsible for engineering evaluation of deviations documented in the Commodity Clearance Program.

  Engineering/Design Supervisor responsible for pipe support engineering and design activities in the home office for the BV-2 Project. Responsibilities included redesign of supports in support of construction, support of licensing activities related to pipe supports, engineering support of the site instrumentation tubing stress analysis and support group, design support of the stress reconciliation program, and general pipe support engineering support of the Site Engineering Group, Toronto and New York offices. Developed and implemented project design criteria for piping, tubing and supports.

  Site Engineering/Design Supervisor responsible for pipe, duct, and instrumentation tubing support engineering activities at the BV-2 site. Responsible for technical direction and supervision of all BV-2 site assigned Engineering Mechanics Division support engineers and all design personnel engaged in the instrumentation tubing stress analysis and support design effort. Also developed field construction procedures and installation specifications for supports, provided generic resolution of construction problems with support installations, and was responsible for interface with NRC personnel during site inspections.

- *Final Safety Analysis Report (FSAR) Development Project for Duquesne Light Company Beaver Valley Nuclear Power Station Unit 2.* Lead Engineer for a project group responsible for writing and developing the BV-2 FSAR sections related to Civil/Structural and Engineering Mechanics plant design. Also responsible for technical review of BV-2 resolutions to licensing issues (NRC infractions, open items, etc.).

- *Shoreham Nuclear Power Station Project for Long Island Lighting Company.* Performed ASME III Class 1 pipe stress analysis.

EDUCATION

University of Michigan: B.S. Civil Engineering, 1980

TRAINING

Seismic Qualification Utility Group Walkdown Screening and Seismic Evaluation Training , January, 1994

AFFILIATIONS

Past Utility Representative, ASME Section IX Subgroup for Repairs and Replacements
Past Alternate Member, NCIG-14, Seismic Evaluation and Design of Small Bore Piping Advisory Group

PUBLICATIONS

With T. Roche, C. Abou-Jaoude, and J. P. Conoscente. "Comparison Between Analytical and Test Results for Transformer Base Details." ASME Pressure Vessel and Piping Conference, Seismic Engineering, July 1993.

JOHN O. DIZON

PROFESSIONAL HISTORY

EQE International, San Francisco, California, Associate and Group Manager, 1986-present
Engineering Decision Analysis Company, Cupertino, California, Project Engineer, 1984-1986
General Electric Company, San Jose, California, Senior Engineer, 1984
URS/John A. Blume & Associates, San Francisco, California, Senior Engineer, 1982-1984; Associate Engineer, 1977-1980
Structural Systems Engineering, Inc., Lafayette, California, Senior Engineer, 1980-1982
Stanford University, John A. Blume Earthquake Engineering Center, Palo Alto, California, Teaching and Research Assistant, 1975-1977

PROFESSIONAL EXPERIENCE

Mr. Dizon has over 18 years of experience in the field of civil and structural engineering, earthquake engineering and project management. He has extensive knowledge in the areas of seismic analyses and design assessments of primary structures and piping systems, seismic qualification of mechanical and electrical systems and components, and technical development of seismic evaluation criteria and programs. As a Group Manager for EQE's San Francisco Engineering Operations, he has taken primary responsibility for the technical development of several seismic evaluation programs. These include acting as Group Manager for evaluating essential systems and components at the Savannah River Site; Project Manager for the USI A-46 and seismic IPEEE programs at Davis-Besse and Browns Ferry nuclear plants; developing alternate analysis criteria for Category I small bore piping at the Donald C. Cook plant; alternate design criteria for Category I(L) piping at Sequoyah and Bellefonte nuclear plants and alternate design and evaluation criteria for Category I HVAC duct systems and supports at Browns Ferry and Salem nuclear plants; and providing guidance to the seismic equipment qualification program for the Plutonium Handling Facility at Lawrence Livermore National Laboratory.

As Project Manager for the A-46/IPEEE programs at Browns Ferry and Davis-Beese plants, Mr. Dizon is responsible for the resolution of USI A-46 using the SQUG GIP methodology, and IPEEE using the EPRI seismic margins assessment methodology. He is also involved in the outlier resolution and equipment fragility evaluation for Duane Arnold and H.B. Robinson plants. Mr. Dizon served as Project Manager for the II/I spray program at Browns Ferry Nuclear Plant and has participated in the Integrated Interaction Program (IIP) at Watts Bar Nuclear Plant. As Group Manager for EQE at the Savannah River Site, Mr. Dizon was responsible for the seismic verification program of safety-related mechanical and electrical systems and components. His tasks included developing seismic evaluation criteria and procedures for restart and long-term seismic programs, consistent with the SQUG Generic Implementation Procedure for use in USI A-46 plants; managing the seismic walkdown and evaluation efforts; providing

PROFESSIONAL EXPERIENCE (Continued)

technical support in resolving seismic issues; and serving as an interface with the client. Mr. Dizon also acted as one of the instructors for the SQUG GIP training course given at the Savannah River Site and recently at the OKG plant in Sweden. Mr. Dizon has participated in the seismic evaluation of the High Flux Isotope Reactor at Oak Ridge National Laboratory. This project involved performing seismic analyses and upgrades for the primary coolant piping system and related equipment, and the reactor and control buildings. He was responsible for the raceway evaluation program for Browns Ferry Nuclear Plant, Cooper Nuclear Station, and H. B. Robinson 2, and participated in the seismic piping reevaluation programs for Sequoyah Nuclear Plant and Comanche Peak Nuclear Plant where he performed plant walkdowns and pipe stress analyses for piping systems.

At EDAC, Mr. Dizon was responsible for the development and verification of a pipe support optimization program (OPTPIPE). He was responsible for the snubber reduction pilot program for La Salle Unit 1. Other areas of his involvement consisted of finite element analyses of the MX-missile launch tube components and systems for thermal and pressure loads, equipment qualification of major mechanical and electrical components, and seismic evaluation of cooling towers for the Vermont Yankee plant.

With General Electric Company, Mr. Dizon was responsible for stress analysis and code conformation of main steam and recirculation piping systems for BWR power plants. He was also involved in the developmental phase of an in-house pipe support optimization program.

At URS/Blume & Associates, Mr. Dizon was responsible for the development and maintenance of in-house computer programs for both linear and nonlinear analyses of structural and piping systems. He was also involved in the seismic analysis and evaluation of the reactor, turbine and administration buildings for Nine Mile Point 2. He helped develop a soil-structure interaction computer program using a three-dimensional finite element technique to evaluate the dynamic response of structures due to arbitrary plane body and surface wave excitations. He performed a research study involving soil-structure interaction analysis using the finite element FLUSH program to investigate the dynamic response of typical containment structures due to underground blast excitations. He was also involved in the linear and nonlinear dynamic analyses, finite element modeling, and generation of floor response spectra for the containment and turbine buildings at the Diablo Canyon Nuclear Power Plant.

Mr. Dizon worked as a consultant to Bechtel Power Corporation with Structural Systems Engineering, Inc. He performed structural analyses and design assessments of the primary containment structure and the reactor/control buildings of Limerick Generating Station for various types of hydrodynamic loads. He was involved in the Limerick in-plant test procedures, data reduction and correlation study to determine the dynamic response, including soil-structure interaction of the reactor/control buildings during Mark II hydrodynamic load actuation in the primary containment.

At Stanford University, Mr. Dizon performed statistical analyses of earthquake accelerograms and various response parameters, as part of his research work under Professor Haresh Shah. He also conducted seismic risk analyses and formulated seismic design criteria for Nicaragua. In addition, he was involved in the dynamic testing of structural models and equipment.

EDUCATION

STANFORD UNIVERSITY, Palo Alto, California: Engineer Degree, 1977
STANFORD UNIVERSITY, Palo Alto, California: M.S. Structural Engineering, 1975
MAPUA INSTITUTE OF TECHNOLOGY, Manila, Philippines: B.S. Civil Engineering, 1973

AFFILIATIONS AND AWARDS

Earthquake Engineering Research Institute, Member
Philippine Board Examination for Civil Engineers, Fifth Place, 1973
Philippine Association of Civil Engineers, Certificate of Merit, 1974

REGISTRATION

California: Civil Engineer
Philippines: Civil Engineer

PUBLICATIONS

With F. R. Beigi. 1995. "Application of Seismic Experience Based Criteria for Safety Related HVAC Duct System Evaluation." Fifth DOE Natural Phenomena Hazards Mitigation Symposium, Denver, Colorado, November 13-14, 1995.

With S. J. Eder, J. F. Giova, and R. L. Koch. 1994. "Seismic Adequacy Verification of HVAC Duct Systems and Supports for an USI A-46 Nuclear Power Plant." Fifth Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment and Piping, Orlando, Florida, December 14-16, 1994.

With E. J. Frevold and P. D. Osborne. 1993. "Seismic Qualification of Safety-related HVAC Duct Systems and Supports." ASME Pressure Vessel and Piping Division Conference, Denver, Colorado, July 1993.

With S. J. Eder. 1991. "Advancement in Design Standards for Raceway Supports and Its Applicability to Piping Systems." ASME Pressure Vessel and Piping Division Conference, San Diego, California, June 1991.

With R. D. Campbell and L. W. Tiong. 1990. "Response Predictions for Piping Systems Which Have Experienced Strong Motion Earthquakes." ASME Pressure Vessel and Piping Conference, Nashville, Tennessee, June 17-21, 1990.

With S. P. Harris, R. S. Hashimoto, and R. L. Stover. 1989. "Seismic, High Wind, and Probabilistic Risk Assessments of the High Flux Isotope Reactor." Second DOE Natural Phenomena Hazards Mitigation Conference.

With D. Ray and A. Kabir. 1979. "A 3-D Seismic Analysis for Arbitrary Plane Body and Surface Wave Excitations." American Society of Civil Engineers Nuclear Specialty Conference, Boston, Massachusetts.

With D. Ray and A. Zebarjadian. 1978. "Dynamic Response of Surface and Embedded Disk Foundations for SH, SV, P and Rayleigh Wave Excitations." Sixth Indian Symposium on Earthquake Engineering, Roorkee, India.

PUBLICATIONS (Continued)

"A Statistical Analysis of Earthquake Acclerograms and Response Parameters." 1977. Thesis, Stanford University, Palo Alto, California,

With H. Shah, T. Zsutty, H. Krawinkler, and L. Padilla. 1977. "A Seismic Design Procedure for Nicaragua." Paper presented at the Sixth World Conference on Earthquake Engineering, New Delhi, India.

With H. Shah, T. Zsutty, H. Krawinkler, C. P. Mortgat, and A. Kiremidjian. 1976. "A Study of Seismic Risk for Nicaragua, Part II, Summary and Commentary." John A. Blume Earthquake Engineering Center, Report No. 12A and 12B. Stanford University, Palo Alto, California.

DAVID L. MOORE

PROFESSIONAL HISTORY

EQE International, Senior Consultant, 1995-Present
NUS, a Division of HALLIBURTON NUS Corporation, 1989-1994
EI International, Inc., 1981-1988
Oceanographic Institute of Washington, 1977-1981

PROFESSIONAL EXPERIENCE

As Senior Associate, has technical responsibilities for safety analysis and risk assessment projects. Responsibilities include management of risk assessment manpower and resources, direction of PRA methods and software development, and coordination with clients on technical/administrative items. Has developed particular expertise in issue prioritization, facility siting, seismic, fire, and external events analysis; relay chatter systems analysis; and in application of PRA techniques to plant licensing and severe accident issues, design and operation.

As Project Manager for the PSE&G external events risk assessment (IPEEE), is responsible for all tasks of the seismic and fire PRAs for the Salem (PWR) and Hope Creek (BWR) units. Seismic equipment lists are developed based on EPRI procedures and the internal events PRA, considering all potential success paths. The EPRI Seismic Margins Assessment procedures are used for the seismic walkdowns, with computerized checklists (SEWS) and databases. Seismic relay evaluations follow SQUG and Seismic Margins approaches to identify low ruggedness relays, and evaluate impacts of potential relay chatter. Fire walkdowns and analysis follow the FIVE and fire PRA methods developed by NUMARC. The evaluations examine both Level 1 (systems and core damage) and Level 2 (severe accident) issues. Project involves extensive technology transfer with utility staff, including formal training in all tasks, written procedures, seminars, integrated software, and hands-on training.

Task Leader for the Consolidated Edison seismic PRA for Indian Point 2, leader of the A-46 SSEL verification task, and consultant to relay chatter evaluation task. Project includes utilizing current IPE models to develop seismic PRA model, combined walkdowns for both A-46 and IPEEE requirements, and IPEEE and A-46 documentation to meet NRC requirements. Relay chatter evaluation included development of plant-specific screening techniques to optimize effort among chatter evaluation phases.

Consultant for the IPEEE program for Southern California Edison, including seismic PRA, FIVE/fire PRA, and evaluation of other external events. Responsibilities include planning the IPEEE project and interfaces with contractors and plant staff, development of procedures for tasks, guidance and training on all IPEEE tasks, review of work packages, assistance with documentation, and identification/resolution on problem issues. The Seismic Equipment List and Seismic Relay List were developed in accordance with plant-specific procedures, and walkdowns are being performed using the SQUG/Seismic Margins SEWS. Relay chatter evaluation, due to high potential accelerations, has enhanced procedures for systems assessments and operator action evaluations. The fire analysis is using FIVE as the overall guide, with plant-specific procedures for the conditional core damage frequency calculations using modified internal events models.

PROFESSIONAL EXPERIENCE (Continued)

Project Manager for the Callaway Seismic Margins Assessment using the EPRI approach, with overall responsibility for project guidance, schedule, and subcontractor coordination. Worked with plant staff to select success paths, and to develop SSEL. Performed seismic systems walkdown and assisted with seismic capacity walkdowns. Reviewed all technical documentation as well as assist with external correspondence and peer review comment resolution. Reviewed relay assessment and revised to address all NRC issues and concerns.

Consultant for the seismic hazard evaluation and potential impacts of the Independence coal-fired power plant in Arkansas. Reviewed previous study that indicated need for multi-million dollar retrofits, and provided comments on conservatisms in the seismic hazard evaluation, and in the damage estimates. Provided second opinion to plant risk managers on the prioritization of potential seismic modifications.

Senior Consultant for Level 2 severe accident issues for the Callaway PRA. Responsibilities include training, guidance, performance and review of all containment performance tasks. This includes Level 1/Level 2 interface analysis, containment capacity analysis, containment event tree analysis, severe accident deterministic analysis (MAAP), and source term binning analysis. Sensitivity studies were used to examine severe accident issues such as hydrogen generation and combustion, direct containment heating, steam explosions, equipment operability, in-vessel and debris bed cooling, containment bypass, and operator recovery actions.

As Project Manager for the Borssele Shutdown Risk Assessment for a Netherlands utility, responsible for development and application of new techniques for assessing safety of plant systems and operations during periods of shutdown and transitions. Project is phased to provide early screening of risk significant plant features, operator actions, and initiators, with second phase for detailed quantitative assessment. Project also includes incorporation of potential operator errors of commission during full power operations and emergencies.

Project Manager for the Borssele PSA for a Netherlands utility. The PSA was in response to regulatory requirement, and was performed to U.S. IPE and international IAEA standards. Directed all Level 1 tasks, and performed Level 2/Severe Accident tasks for Level 1/2 integration and containment event tree/source term category analysis. Also task leader and walkdown leader for external events analyses, including seismic, fire, and flooding, which were included in the scope. Seismic walkdown used EPRI seismic margins screening guidelines. Project results received very favorable reviews from IAEA IPERS review group, and is being used extensively by plant staff in plant modifications, tech spec enhancements, and procedural upgrades.

As Project Manager, developed and applied techniques for extending the concept of seismic high confidence of a low probability of failure (HCLPF) to plant damage states. Also evaluated impacts of nonseismic failures, system successes, and operator errors on seismic risk estimates. Project included evaluation of both PWR and BWR seismic margins analyses, and walkdowns of Hatch during EPRI trial seismic margins assessment. Draft NUREG is referenced as the acceptable methodology for IPEEE seismic margins assessments. Provided results and guidance during NRC/NUMARC meetings on seismic IPEEE.

PROFESSIONAL EXPERIENCE (Continued)

Served as Project Manager for systems analysis task of Seismic Margins Program. Program involved development and use of fault and event tree techniques to model trial plant (Maine Yankee) earthquake response; performance of two seismic walkdowns of plant; and application of a high-confidence-of-a-low-probability-of-failure (HCLPF) approach to evaluate seismic adequacy. An effective resolution to a licensing action was also evolved, and testimony was presented before ACRS.

As Program Manager, Task Leader, and Senior Quality Assurance Reviewer, provided overall management for Salem and Hope Creek level-1 PRAs. Developed QA Manual and implemented QA procedures for the PRA; directed analysis of seismic risk, which included systems analysis, determination of hazard characteristics, and fragility analysis; and directed development of module for cost-benefit evaluation of potential hardware and procedural modifications.

Served as Principal Investigator for several Industry Degraded Core Rulemaking (IDCOR) Program tasks, including reevaluation of current reactor risk based on IDCOR Program and MAAP code results, development of containment event trees, and calculation of risk reduction potential of changes in reactor design and operations for four plants based on current understanding of accident sequence phenomenology; seismic, fire, and flood contributions; containment failure phenomenology; and fission product transport. Also participated in numerous NRC Severe Accident Rulemaking meetings and proceedings.

Served as PRA Program Manager, and Task Leader for analysis of external events (e.g., earthquakes, fires, floods, hurricanes, aircraft impacts) for Brunswick PRA. Analysis included screening of external events to develop a plant risk profile, as well as more detailed analysis of risks of seismic events and internal fires and floods. Presented results to NRC's staff in support of Technical Specification relaxation and licensing design changes.

Performed vertical slice review of auxiliary feedwater system design, construction, and operation for Temelin (VVER 1000) plant. Review concentrated on interfaces between Russian NSSS design, AE design of balance of plant, and utility construction/operation. AFW selected as typical safety system, with interfaces to support systems such as power, actuation, and cooling, and to BOP systems such as main feedwater and main steam relief system. Evaluation included all U.S. NRC Standard Review Plan criteria, and current European design practice.

Served as Management Consultant for a PRA of Loviisa plant, a Finnish PWR with Soviet-supplied NSSS and ice condenser containment. Activities included event tree development, success criteria definition, integration of system fault tree analysis, data development, and technical consultation for PRA team analytical tasks.

Conducted numerous PRA courses for utilities (e.g., OPPD, NYPA, KCB, Union Electric, PSE&G, CP&L, and WPSC), EPRI, and NRC. Courses covered PRA fundamentals, probability and reliability concepts, event and fault tree techniques, accident sequence quantification, external events, seismic margins walkdowns, dependent failures, human reliability, accident process and containment response, consequence analysis, and application of PRA results to licensing, plant modification evaluation, and severe accident issues.

PROFESSIONAL EXPERIENCE (Continued)

Reviewed Petition for Variance for Calcined Solids Storage Facility at INEL for DOE. Evaluated techniques, assumptions, and results, and provided comments for incorporation.

For SNL and DOE, developed and applied a technique combining PRA with decision analysis methods to evaluate benefits of alternative designs of nuclear facilities. Task involved an evaluation of safety benefits of new policies and regulations for nuclear plants.

Performed safety analysis and licensing evaluation of reactor coolant system high-point vent designs for PWRs, and containment isolation systems of Westinghouse and Combustion Engineering commercial nuclear power plants. Work included determination of system success and acceptance criteria, development of review procedures, review of instrumentation and control features, evaluation of system design features and emergency operating procedures, and documentation of evaluation in Technical Evaluation Reports (TERs) to NRC branches.

Performed seismic walkdown and evaluation of GE Nuclear Fuels Facility for HAZOP study. Used EPRI seismic margins walkdown guidelines to assess and screen seismic capacity of structures and components. Potential vulnerabilities of facility were identified, and prioritized using HAZOP risk matrix incorporating health risks, facility operation risks, and frequency of occurrence.

For SNL, served as Project Manager for performance of a PRA of a PWR with an ice condenser containment as part of Severe Accident Rulemaking process. Tasks included methodology development, initiator selection, event and fault tree development, human reliability analysis, data base estimation, sequence quantification, uncertainty and sensitivity assessment, and plant damage state definition.

Surveyed use of PRA techniques for assessment of nuclear facility safety. Evaluated benefits and problems of past large-scale PRAs, examined state-of-the-art PRA procedures, and outlined current and future applications of PRA methods to reactor safety evaluation.

Modeled and assessed risks of fire, explosion, and oil spill for large petroleum import facilities and for LNG terminals; evaluated port and vessel characteristics for risk of collisions and groundings, hence casualties; and developed methods for incorporating subjective information on seismic risk in PRAs to facilitate design, construction, and siting decisions.

EDUCATION

University of Washington, M.S., Civil/Structural Engineering Department, 1979
University of Texas, B.S., Physics, 1970

PUBLICATIONS

Enhancing the NRC and EPRI Seismic Margin Review Methodologies to Analyze the Importance of Non-Seismic Failures, Human Errors, Opportunities for Recovery, and Large Radiological Releases (co-author), NUREG/CR-draft for publication.

PUBLICATIONS (Continued)

Review of External Event Hazards (co-author), prepared for GE Nuclear Fuels Facility, July 1992.

Probabilistic Safety Assessment for the Borssele NPP - for Power Conditions (co-author), PSAB-C-FR-1, 5 volumes and Appendices A-K, Consortium KCB-PSA, March 1992.

"Experience with the PSA-Borssele" (co-author), in International Symposium on the Use of Probabilistic Safety Assessment for Operational Safety, PSA '91, Vienna, Austria, 3-7 June 1991.

"Recent PRA Applications" (co-author), paper for Second Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment and Piping, Orlando, Florida, December 7-9, 1988.

Salem Units 1 and 2 Probabilistic Risk Assessment (co-author), prepared for Public Service Electric & Gas of New Jersey, October 1988.

Kewaunee Nuclear Power Plant Auxiliary Feedwater System Probabilistic Risk Assessment (co-author), prepared for Wisconsin Public Service Corporation, October 1987.

Brunswick Steam Electric Plant Probabilistic Risk Assessment (co-author), prepared for Carolina Power & Light, September 1987.

"Seismic Margin Reviews of Nuclear Power Plants: Identification of Important Functions and Systems" (co-author), *Reliability and System Safety* 20 (1988) 263-275, and also Transactions of the 9th International Conference on Structural Mechanics in Reactor Technology, Lausanne, Switzerland, 17-21 August 1987.

Seismic Margin Review of the Maine Yankee Atomic Power Station (co-author), NUREG/CR-4826, Volume 2, March 1987.

Extending a HCLPF-Based Seismic Margin Review to Analyze the Potential for Large Radiological Releases and the Importance of Human Factors and Non-Seismic Failures (co-author), Future Resources Associates, Berkeley, CA, March 1987.

Analysis of Core Damage Frequency From Internal Events: Sequoyah, Unit 1 (co-author), NUREG/CR-4550/Volume 5, February 1987.

Risk Reduction Potential (co-author), IDCOR Technical Report 21.1, June 1985.

"Risk Reduction Modifications" (co-author), *Proceedings, International Meeting on Light Water Reactor Severe Accident Evaluation*, Cambridge, Mass., August 28 - September 1, 1983.

Risk Significance Profile for ESF and Other Equipment (co-author), IDCOR Technical Report 6.1, November 1983.

Baseline Risk Profile for Current Generation Plants (co-author), IDCOR Technical Report 7.1, May 1983.

PUBLICATIONS (Continued)

Study to Assess the Potential Uses of Cost/Benefit Techniques (co-author), Sandia National Laboratories, ALO-1018, May 1983.

THOMAS R. ROCHE

PROFESSIONAL HISTORY

EQE International, Inc., Irvine, California, Technical Manager, 1987-present
Bechtel Western Power Corporation, Arizona Nuclear Power Project, Principal Startup Engineer, 1983-1987
Bechtel Western Power Corporation, Norwalk, California, Mechanical Engineer, 1982-1983

SUMMARY

Mr. Roche has over twelve years of experience in the design, engineering, startup and analysis of systems and equipment at power, industrial and Department of Energy facilities. His responsibilities have included evaluation and analysis of systems and equipment for seismic events, preoperational testing of nuclear power plant systems, system engineer for nuclear and non-nuclear power plant systems, equipment qualification and post earthquake investigations.

PROFESSIONAL EXPERIENCE

At EQE Mr. Roche is a Technical Manager and Group Manager in the Engineering Consultants Division. He is responsible for various seismic evaluation efforts for systems and equipment. The efforts involve development of criteria, analysis, field investigations and retrofit design. Systems and components evaluated include mechanical, electrical, instrumentation, control, raceway and piping systems.

Mr. Roche is responsible for seismic evaluation efforts related to Nuclear Regulatory Commission Unresolved Safety Issue A-46 and Individual Plant Examination of External Events (IPEEE) for nuclear facilities. He is the Project Manager for A-46 and seismic IPEEE programs for the Brunswick, H.B. Robinson, Shearon Harris and Comanche Peak power plants. In this capacity, he evaluates the performance of equipment, subsystems and relays for design basis as well as beyond design basis seismic events. He also participated in related programs for the Beznau, Limerick, San Onofre and Donald C. Cook nuclear power plants as well as the Department of Energy Advance Test Reactor and Savannah River Site.

Recently, Mr. Roche has focused on the performance of lifelines and industrial facilities during the 1994 Northridge earthquake. Investigations were performed to gain a better understanding of the performance of industrial facilities and electrical power systems in order to help mitigate the effects of future earthquakes. He was a Principal Investigator for post-earthquake reconnaissance efforts sponsored by the Electric Power Research Institute (EPRI), Lawrence Livermore National Laboratory (LLNL), and the National Earthquake Hazards Reduction Program (NEHRP). He was the industrial facilities Group Coordinator for Earthquake Engineering Research Institute (EERI) post-earthquake reconnaissance publications. He also contributed sections on industrial facilities and lifelines to reports published by the National Center for Earthquake Engineering Research (NCEER), and the California Seismic Safety Commission.

Mr. Roche has performed and supervised the startup of nuclear power plant systems and equipment, including mechanical, electrical, instrumentation and control systems. In this capacity, Mr. Roche successfully supervised the testing and commissioning of Palo Verde Nuclear Generating Station emergency cooling water and related systems.

PROFESSIONAL EXPERIENCE (Continued)

Mr. Roche evaluated the performance of non-seismically designed piping and condensers in past earthquakes in support of the Main Steam Isolation Valve Leakage Closure Committee of the boiling water reactor (BWR) Owners' Group. This study involved research and field investigations of secondary side systems and equipment during past earthquakes and comparison to nuclear power BWR plants. He analyzed the seismic capacity to seismic demand for large steam surface condensers for earthquake experience database power plants and representative BWR plants. He participated in Nuclear Regulatory Commission (NRC) presentations related to this issue.

Mr. Roche has contributed to the development of the earthquake experience data base generated for the Seismic Qualification Utilities Group (SQUG). He concentrates on the response of systems to earthquakes at power and industrial facilities. Systems are investigated for the effects of power interruption, relay actuations due to vibration, relay actuations due to system transients, spurious electrical and pneumatic signals, and control room alarms. He performed post-earthquake investigations following the 1987 Whittier Narrows, the 1987 Superstition Hills, the 1989 Loma Prieta, and the 1994 Northridge Earthquakes. This seismic experience data is being utilized by the nuclear industry to resolve the seismic issues associated with the NRC's Unresolved Safety Issue A-46.

Mr. Roche was the systems engineer for safety and non-safety systems at the Palo Verde Nuclear Generating Station. Systems included feedwater, steam, sulfuric acid, hypochlorite, cooling water and emergency core cooling. He resolved design and hardware problems encountered during construction, startup and operation of Palo Verde Units 1, 2 and 3. He provided revised designs, dispositions to nonconformances and resolved licensing issues.

Mr. Roche performed high energy line break analysis for San Onofre Nuclear Generating Station Unit 1. Analysis involved establishing guidelines, field verifications, calculations, system evaluation for safe shutdown and technical writing. Mr. Roche also administered contracts for replacement of emergency cooling water storage tanks for unit 1, conducted studies for upgrading San Onofre Units 2 and 3 water cooling supply to reactor coolant pumps and provided engineering for system modifications.

EDUCATION

CALIFORNIA POLYTECHNIC STATE UNIVERSITY, San Luis Obispo, B.S., 1982
UNIVERSITY OF CALIFORNIA, Irvine, "Management Practice for Engineers and Professionals," University Extension Program

REGISTRATION

Mechanical Engineer: California

RELATED TRAINING

Completed the Seismic Qualification Utility Group (SQUG) "Systems and Relay Evaluation Course"

Completed the Seismic Qualification Utility Group (SQUG) "Walkdown Screening and Seismic Evaluation Training Course"

Completed the EPRI "Add-on Seismic IPE Training Course"

JOHN D. McCAMY

PROFESSIONAL HISTORY

Tennessee Valley Authority, Tennessee, 1980-present: Safety Analysis Manager, Browns Ferry Nuclear Plant, 1994-present; NSSS Engineering Specialist, Browns Ferry Nuclear Plant, 1989-1994; Nuclear Evaluator, Chattanooga, 1987-1989; Project Manager, Sequoyah Nuclear Plant, 1985-1987; Lead Engineer, Sequoyah Nuclear Plant, 1982-1985; Quality Assurance Engineer, Chattanooga, 1980-1982

United States Navy, Officer, 1975-1980

SUMMARY

Mr. McCamy has over 20 years experience in the nuclear industry as an engineer and manager. Acted as a manager for several multi-million dollar projects (including Appendix R, Generic Letter 89-10 [MOVs], and IPE/IPEEE). He obtained STA certification at Sequoyah and SRO license at Browns Ferry Nuclear Plants.

PROFESSIONAL EXPERIENCE

Mr. McCamy manages the production effort of mechanical/nuclear design activities and makes recommendations on problem resolution associated with accident analyses. He provides oversight of design activities and manages activities necessary to ensure an effective and efficient safety analysis program. He provides emergency engineering support for continued plant operation. He provides technical expertise on plant systems, design bases, operational configurations and evaluations affecting nuclear safety, and interpretations of safety system functions to satisfy 10 CFR 50.49 and 50.59.

He has managed the successful completion of design aspects of the environmental qualification and GL 89-10 upgrades for Unit 3 MOVs, Appendix R project, IPE and IPEEE design studies at Browns Ferry Nuclear Plant. He completed SRO training and obtained an SRO license.

He served on a special management team which conducts reviews of activities and programs associated with the design, construction, operation, and support of TVA nuclear plants.

He was responsible for the successful completion of the Appendix R project at Sequoyah Nuclear Plant, including both design and modification; he also provided technical and engineering expertise for all primary and secondary systems, in addition to overall responsibility for the ASME Section XI program at the plant.

As a Quality Assurance Engineer, he reviewed plant activities and documentation to ensure compliance with NRC regulations, technical specifications, and industry codes and standards.

EDUCATION

UNIVERSITY OF ALABAMA: B.S. Physics, 1994

AFFILIATIONS

American Nuclear Society
American Physical Society
Commander, United States Naval Reserve

CERTIFICATION AND LICENSES

Shift Technical Advisor, Sequoyah Nuclear Plant, 1982
Senior Reactor Operator, Browns Ferry Nuclear Plant, 1991

APPENDIX B

COMPOSITE SSEL

APPENDIX B

COMPOSITE SSEL

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers) as defined by Ref 7). 6/21/96

Print or type name/Title	Signature	Date
J. D. McCamy / Safety Analysis Mgr.	[signature]	6/21/96
Signature attests to correct mechanical SSEL only		
R.H. Wright / Elec Engr	[signature]	6-21-96
Signature attests to correct Electrical SSEL only		
	N/A	
	N/A	
	N/A	
	N/A	

APPENDIX B

COMPOSITE SSEL

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
1	00	2-HCU-85,1-185	CRD\HYDRAULIC CONTROL UNIT	U2 RB	565	P-S/R9&13	AI	1,2
2	07	2-FCV-85-82A	CRD\WEST SDV VENT VALVE	U2 RB	565	R9/S	AI	1
3	07	2-FCV-85-82	CRD\WEST SDV VENT VALVE	U2 RB	565	S/R9	AI	2
4	07	2-FCV-85-37C	CRD\WEST SDV DRAIN VALVE	U2 RB	565	P/R9	AI	1
5	07	2-FCV-85-37D	CRD\WEST SDV DRAIN VALVE	U2 RB	565	P/R9	AI	2
6	07	2-FCV-85-83A	CRD\EAST SDV VENT VALVE	U2 RB	565	S/R13	AI	1
7	07	2-FCV-85-83	CRD\EAST SDV VENT VALVE	U2 RB	565	R13/S	AI	2
8	07	2-FCV-85-37E	CRD\EAST SDV DRAIN VALVE	U2 RB	565	P/R13	AI	1
9	07	2-FCV-85-37F	CRD\EAST SDV DRAIN VALVE	U2 RB	565	R13/P	AI	2
10	21	2-TNK-85-901	CRD\WEST SCRAM INSTRUMENT VOLUME	U2 RB	565	P/R9	AI	1,2
11	21	2-TNK-85-902	CRD\EAST SCRAM INSTRUMENT VOLUME	U2 RB	565	P/R13	AI	1,2
12	08B	2-FSV-85-37A	CRD\SCRAM DUMP VALVE	U2 RB	565	R12/N	AI	1
13	08B	2-FSV-85-37B	CRD\SCRAM DUMP VALVE	U2 RB	565	R12/N	AI	1
14	08B	2-FSV-85-35A	CRD\BACKUP SCRAM VALVE	U2 RB	565	R12/N	AI	2
15	08B	2-FSV-85-35B	CRD\BACKUP SCRAM VALVE	U2 RB	565	R12/N	AI	2
16	20	2-HS-99-5A/S3A	RPS\REACTOR MANUAL SCRAM CHANNEL A3	U2 CB	617	U2 MCR	AI	1
17	20	2-HS-99-5A/S3B	RPS\REACTOR MANUAL SCRAM CHANNEL B3	U2 CB	617	U2 MCR	AI	1
18	20	2-HS-99-5A-S1	RPS\REACTOR MODE SWITCH	U2 CB	617	U2 MCR	AI	2
1001	08A	2-FCV-74-1	RHR/PUMP 2A SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SW CORNER	AI	1
1002	08A	2-FCV-74-2	RHR/PUMP 2A SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SW CORNER	AI	1
1003	08A	2-FCV-74-96	RHR/UNIT 2 TO UNIT 1 RHR X-TIE ISOLATION VALVE	U2 RB	519	SW CORNER	AI	1
1004	06	2-PMP-74-5	RHR/PUMP 2A	U2 RB	519	SW CORNER	AI	1
1005	R	2-CKV-74-560A	RHR/PUMP 2A MINIMUM FLOW CHECK VALVE	U2 RB	519		AI	1
1006	08A	2-FCV-74-7	RHR/PUMP 2A&2C MINIMUM FLOW VALVE	U2 RB	519	SW CORNER	AI	1
1007	R	2-CKV-71-547	RCIC/RCIC MINIMUM FLOW CHECK VALVE	U2 RB			AI	1
1008	R	2-CKV-74-559A	RHR/PUMP 2A DISCHARGE CHECK VALVE	U2 RB	519		AI	1
1009	21	2-HEX-74-900A	RHR/HEAT EXCHANGER 2A	U2 RB	565	SW HX	AI	1
1010	08A	2-FCV-74-100	RHR/U2 TO U1 RHR DISCHARGE X-TIE ISOLATION VALVE	U2 RB	565	R8/T	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
1011	08A	2-FCV-74-12	RHR/PUMP 2C SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SW CORNER	AI	1A
1012	08A	2-FCV-74-13	RHR/PUMP 2C SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SE CORNER	AI	1A
1013	08A	2-FCV-74-97	RHR/UNIT 2 TO UNIT 1 RHR X-TIE ISOLATION VALVE	U2 RB	519	SW CORNER	AI	1A
1014	06	2-PMP-74-16	RHR/PUMP 2C	U2 RB	519	SW CORNER	AI	1A
1015	R	2-CKV-74-560C	RHR/PUMP 2C MINIMUM FLOW CHECK VALVE	U2 RB	519		AI	1A
1016	R	2-CKV-74-559C	RHR/PUMP 2C DISCHARGE CHECK VALVE	U2 RB	519		AI	1A
1017	21	2-HEX-74-900C	RHR/HEAT EXCHANGER 2C	U2 RB	565	SW HX	AI	1A
1018	18	2-FI-74-50	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	AI	1
1019	18	2-FI-74-56	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	AI	1
1020	08A	2-FCV-74-57	RHR/LOOP I TORUS CONTAINMENT COOLING/SPRAY VALVE	U2 RB	519	R9/S	AI	1
1021	08A	2-FCV-74-59	RHR/LOOP I SUPRESSION POOL COOLING VALVE	U2 RB	519	R9/S	AI	1
1022	08A	2-FCV-74-58	RHR/LOOP I SUPRESSION POOL SPRAY VALVE	U2 RB	519	R9/R	I	1
1023	08A	2-FCV-74-52	RHR/LOOP I OUTBOARD INJECTION VALVE	U2 RB	565	T/R11	AI	1
1024	08A	2-FCV-74-53	RHR/LOOP I INBOARD INJECTION VALVE	U2 RB	565	T/R11	AI	1
1025	R	2-FCV-74-54	RHR/LOOP I TESTABLE CHECK VALVE	U2 DW			AI	1
1026	08A	2-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U2 RB	621	R10/S	AI	1
1027	08A	2-FCV-74-60	RHR/LOOP I OUTBOARD DRYWELL SPRAY VALVE	U2 RB	565	R9/S	AI	1
1028	08A	2-FCV-74-61	RHR/LOOP I INBOARD DRYWELL SPRAY VALVE	U2 RB	565	R9/S	I	1
1029	08A	2-FCV-74-24	RHR/PUMP 2B SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SE CORNER	AI	2
1030	08A	2-FCV-74-25	RHR/PUMP 2B SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SE CORNER	AI	2
1031	08A	2-FCV-74-98	RHR/UNIT 2 TO UNIT 3 RHR X-TIE ISOLATION VALVE	U2 RB	519	SE CORNER	AI	2
1032	06	2-PMP-74-28	RHR/PUMP 2B	U2 RB	519	SE CORNER	AI	2
1033	R	2-CKV-74-560B	RHR/PUMP 2B MINIMUM FLOW CHECK VALVE	U2 RB	519		AI	2
1034	08A	2-FCV-74-30	RHR/PUMP 2B&2D MINIMUM FLOW VALVE	U2 RB	519	SE CORNER	AI	2
1035	R	2-CKV-73-559	HPCI/HPCI PUMP MINIMUM FLOW CHECK VALVE	U2 RB			AI	2
1036	R	2-CKV-74-559B	RHR/PUMP 2B DISCHARGE CHECK VALVE	U2 RB	519		AI	2
1037	21	2-HEX-74-900B	RHR/HEAT EXCHANGER 2B	U2 RB	565	SE HX	AI	2
1038	08A	2-FCV-74-101	RHR/U2 TO U3 RHR DISCHARGE X-TIE ISOLATION VALVE	U2 RB	565	R13/T	AI	2
1039	08A	2-FCV-74-35	RHR/PUMP 2D SUCTION VALVE FROM SUPRESSION POOL	U2 RB	519	SE CORNER	AI	2A
1040	08A	2-FCV-74-36	RHR/PUMP 2D SUCTION VALVE FROM SHUTDOWN COOLING	U2 RB	519	SE CORNER	AI	2A
1041	08A	2-FCV-74-99	RHR/UNIT 2 TO UNIT 3 RHR X-TIE ISOLATION VALVE	U2 RB	519	SE CORNER	AI	2A
1042	06	2-PMP-74-39	RHR/PUMP 2D	U2 RB	519	SE CORNER	AI	2A
1043	R	2-CKV-74-560D	RHR/PUMP 2D MINIMUM FLOW CHECK VALVE	U2 RB	519		AI	2A

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
1044	R	2-CKV-74-559D	RHR/PUMP 2D DISCHARGE CHECK VALVE	U2 RB	519		AI	2A
1045	21	2-HEX-74-900D	RHR/HEAT EXCHANGER 2D	U2 RB	565	SE HX	AI	2A
1046	18	2-FI-74-64	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	AI	2
1047	18	2-FI-74-70	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	AI	2
1048	08A	2-FCV-74-71	RHR/LOOP II TORUS CONTAINMENT COOLING/SPRAY VALVE	U2 RB	519	R13/S	AI	2
1049	08A	2-FCV-74-73	RHR/LOOP II SUPRESSION POOL COOLING VALVE	U2 RB	519	R13/R	AI	2
1050	08A	2-FCV-74-72	RHR/LOOP II SUPRESSION POOL SPRAY VALVE	U2 RB	519	R13/R	I	2
1051	08A	2-FCV-74-66	RHR/LOOP II OUTBOARD INJECTION VALVE	U2 RB	565	T/R11	AI	2
1052	08A	2-FCV-74-67	RHR/LOOP II INBOARD INJECTION VALVE	U2 RB	565	T/R11	AI	2
1053	R	2-FCV-74-68	RHR/LOOP II TESTABLE CHECK VALVE	U2 DW			AI	2
1054	08A	2-FCV-74-74	RHR/LOOP II OUTBOARD DRYWELL SPRAY VALVE	U2 RB	593	R12/S	AI	2
1055	08A	2-FCV-74-75	RHR/LOOP II INBOARD DRYWELL SPRAY VALVE	U2 RB	593	R12/S	I	2
1056	08B	2-FSV-43-50	PASS LIQUID SAMPLE VALVE	U2 RB	565	S/R8	AI	1
2000	07	2-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2001	R	2-CKV-10-506	RVVD/MSRV 1-4 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2002	R	2-CKV-10-521	RVVD/MSRV 1-4 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2003	07	2-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2004	R	2-CKV-10-507	RVVD/MSRV 1-5 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2005	R	2-CKV-10-522	RVVD/MSRV 1-5 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2006	07	2-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2007	R	2-CKV-10-508	RVVD/MSRV 1-18 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2008	R	2-CKV-10-523	RVVD/MSRV 1-18 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2009	07	2-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2010	R	2-CKV-10-509	RVVD/MSRV 1-19 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2011	R	2-CKV-10-524	RVVD/MSRV 1-19 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2012	07	2-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2013	R	2-CKV-10-510	RVVD/MSRV 1-22 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2014	R	2-CKV-10-525	RVVD/MSRV 1-22 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2015	07	2-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2016	R	2-CKV-10-511	RVVD/MSRV 1-23 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2017	R	2-CKV-10-526	RVVD/MSRV 1-23 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2018	07	2-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	1
2019	R	2-CKV-10-519	RVVD/MSRV 1-179 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
2020	R	2-CKV-10-532	RVVD/MSRV 1-179 DISCHARGE LINE VACUUM BKR	U2 DW			AI	1
2021	07	2-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	2
2022	R	2-CKV-10-512	RVVD/MSRV 1-30 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2023	R	2-CKV-10-527	RVVD/MSRV 1-30 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2024	07	2-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	2
2025	R	2-CKV-10-513	RVVD/MSRV 1-31 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2026	R	2-CKV-10-528	RVVD/MSRV 1-31 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2027	07	2-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	2
2028	R	2-CKV-10-514	RVVD/MSRV 1-34 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2029	R	2-CKV-10-529	RVVD/MSRV 1-34 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2030	07	2-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	2
2031	R	2-CKV-10-515	RVVD/MSRV 1-41 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2032	R	2-CKV-10-530	RVVD/MSRV 1-41 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2033	07	2-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	2
2034	R	2-CKV-10-516	RVVD/MSRV 1-42 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2035	R	2-CKV-10-531	RVVD/MSRV 1-42 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2036	07	2-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE	U2 DW	585	DW	AI	2
2037	R	2-CKV-10-520	RVVD/MSRV 1-180 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
2038	R	2-CKV-10-533	RVVD/MSRV 1-180 DISCHARGE LINE VACUUM BKR	U2 DW			AI	2
3001	07	2-FCV-1-14	MSIV "A" INBOARD ISOLATION VALVE	U2 DW	563	DW	AI	1
3002	07	2-FCV-1-15	MSIV "A" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	AI	2
3003	07	2-FCV-1-26	MSIV "B" INBOARD ISOLATION VALVE	U2 DW	563	DW	AI	1
3004	07	2-FCV-1-27	MSIV "B" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT.	AI	2
3005	07	2-FCV-1-37	MSIV "C" INBOARD ISOLATION VALVE	U2 DW	563	DW	AI	1
3006	07	2-FCV-1-38	MSIV "C" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	AI	2
3007	07	2-FCV-1-51	MSIV "D" INBOARD ISOLATION VALVE	U2 DW	563	DW	AI	1
3008	07	2-FCV-1-52	MSIV "D" OUTBOARD ISOLATION VALVE	U2 RB	564	MSIV VAULT	AI	2
3009	08A	2-FCV-1-55	MAIN STEAM LINE DRAIN ISOLATION VALVE	U2 DW	563	DW	AI	1
3010	R	2-CKV-3-558	FEEDWATER "A" INBOARD ISOLATION VALVE	U2 DW			AI	1
3011	R	2-CKV-3-554	FEEDWATER "A" OUTBOARD ISOLATION VALVE	U2 RB			AI	2
3012	R	2-CKV-3-572	FEEDWATER "B" INBOARD ISOLATION VALVE	U2 DW			AI	1
3013	R	2-CKV-3-568	FEEDWATER "B" OUTBOARD ISOLATION VALVE	U2 RB			AI	2
3014	07	2-FCV-32-63	DRYWELL CONTROL AIR SUCTION VALVE	U2 RB	565	R11/T	I	1,2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
3015	07	2-FCV-64-17	CONTAINMENT VENTILATION ISOLATION VALVE	U2 RB	565	R12/T	I	1,2
3016	07	2-FCV-64-30	CONTAINMENT VENTILATION ISOLATION VALVE	U2 RB	621	R12/Q	I	1,2
3017	07	2-FCV-64-33	CONTAINMENT VENTILATION ISOLATION VALVE	U2 RB	565	R9/P	I	1,2
3018	07	2-FCV-64-139	CONTAINMENT DW DP ISOLATION VALVE	U2 RB	565	R9/P	I	1,2
3019	07	2-FCV-64-140	CONTAINMENT DW DP ISOLATION VALVE	U2 RB	565	R9/P	I	1,2
3020	07	2-FCV-64-28A	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3021	07	2-FCV-64-28B	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3022	07	2-FCV-64-28C	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3023	07	2-FCV-64-28D	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3024	07	2-FCV-64-28E	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3025	07	2-FCV-64-28F	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3026	07	2-FCV-64-28G	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3027	07	2-FCV-64-28H	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3028	07	2-FCV-64-28J	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3029	07	2-FCV-64-28K	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3030	07	2-FCV-64-28L	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3031	07	2-FCV-64-28M	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U2 DW	<550	IN TORUS	I	1,2
3032	07	2-FCV-64-222	HARDENED WETWELL VENT	U2 RB	565	R10/T	I	1,2
3033	08A	2-FCV-69-1	RWCU INBOARD ISOLATION VALVE	U2 DW	584	DW	AI	1
3034	08A	2-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U2 RB	593	R10/S	AI	2
3035	R	2-CKV-69-630	RWCU SYSTEM RETURN CHECK VALVE	U2 RB			AI	2
3036	08A	2-FCV-70-47	RBCCW DRYWELL RETURN VALVE	U2 RB	519	Q/R13	I	1,2
3037	R	2-CKV-70-506	RBCCW DRYWELL SUPPLY CHECK VALVE	U2 RB			I	1,2
3038	08A	2-FCV-71-2	RCIC INBOARD ISOLATION VALVE	U2 DW	584	DW	AI	1
3039	08A	2-FCV-71-3	RCIC OUTBOARD ISOLATION VALVE	U2 RB	565	MSIV VAULT	AI	2
3040	08A	2-FCV-71-18	RCIC OUTBOARD SUCTION VALVE	U2 RB	519	NW CORNER	I	1,2
3041	08A	2-FCV-73-2	HPCI STEAM SUPPLY ISOLATION VALVE	U2 DW	563	DW	AI	1
3042	08A	2-FCV-73-3	HPCI STEAM SUPPLY ISOLATION VALVE	U2 RB	519	TORUS	AI	2
3043	08A	2-FCV-73-81	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	U2 RB	519	TORUS	AI	2
3044	08A	2-FCV-73-27	HPCI OUTBOARD SUCTION VALVE	U2 RB	519	HPCI	I	1,2
3045	07	2-FCV-75-57	PSC PUMP SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	AI	1
3046	07	2-FCV-75-58	PSC PUMP SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	AI	2
3047	07	2-FCV-76-17	CONTAINMENT INERTING N2 MAKEUP	U2 RB	565	R12/T	I	1,2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
3048	07	2-FCV-76-24	PRIMARY CONTAINMENT ISOLATION VALVE	U2 RB	565	R12/T	I	1,2
3049	07	2-FCV-77-2B	DRYWELL FLOOR DRAIN SUMP DISCHARGE	U2 RB	519	TORUS	I	1,2
3050	07	2-FCV-77-15B	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE	U2 RB	519	TORUS	I	1,2
3051	07	2-FCV-84-19	CAD ISOLATION VALVE	U2 RB	621	R12/Q	I	1,2
3052	07	2-FCV-84-20	CAD ISOLATION VALVE	U2 RB	621	R12/Q	I	1,2
3053	20	2-LI-3-58A	RPV LEVEL INSTRUMENT	N/A	N/A	N/A	AI	1
3054	20	2-LI-3-58B	RPV LEVEL INSTRUMENT	N/A	N/A	N/A	AI	2
3055	20	2-PI-3-74A	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	AI	1
3056	20	2-PI-3-74B	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	AI	2
3057	20	2-XR-64-159	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	AI	1
3058	20	2-LI-64-159A	TORUS LEVEL INSTRUMENT	N/A	N/A	N/A	AI	2
3059	20	2-TI-64-161	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	AI	1
3060	20	2-TI-64-162	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	AI	2
3061	20	2-PI-64-67B	DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	I	1
3062	20	2-PI-64-160A	DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	I	2
3063	20	2-TI-64-52AB	DRYWELL TEMPERATURE INSTRUMENT	N/A	N/A	N/A	I	1
3064	20	2-XR-64-50	DRYWELL TEMPERATURE AND PRESSURE DEVICE	N/A	N/A	N/A	I	2
3065	20	2-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U2 MCR	AI	1
3066	20	2-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U2 MCR	AI	2
4001	06	0-PMP-23-85	RHRSW PUMP A3	INTAKE	565	A	AI	1
4002	R	0-CKV-23-588	RHRSW PMP A3 DISCHARGE CHECK VALVE	INTAKE	565		AI	1
4003	00	0-STN-67-925	A EECW PUMP DISCHARGE STRAINER	INTAKE	565	A	AI	1
4004	08A	0-FCV-67-1	A EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	A	AI	1
4005	R	0-CKV-67-622	EECW SYSTEM HORTH HEADER CHECK VALVE	U1/2 DG	565		AI	1
4006	10	2-CLR-67-917	EECW/RHR PUMP 2A ROOM COOLER	U2 RB	519	SW CORNER	AI	1
4007	10	2-CLR-67-919	EECW/CS PUMP 2A ROOM COOLER	U2 RB	519	NW CORNER	AI	1
4008	10	2-CLR-67-921	EECW/RHR PUMP 2C ROOM COOLER	U2 RB	519	SW CORNER	AI	1
4009	21	2-HEX-67-915	EECW/RHR SEAL HX 2A	U2 RB	519	SW CORNER	AI	1
4010	R	0-CKV-67-671	EECW SYSTEM HORTH HEADER CHECK VALVE	RB	565		AI	1
4011	06	0-PMP-23-91	RHRSW PUMP C3	INTAKE	565	C	AI	1
4012	R	0-CKV-23-594	RHRSW PMP C3 DISCHARGE CHECK VALVE	INTAKE	565		AI	1
4013	00	0-STN-67-927	C EECW PUMP DISCHARGE STRAINER	INTAKE	565	C	AI	1
4014	08A	0-FCV-67-8	C EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	C	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
4015	08A	0-FCV-67-49	RHRSW PUMP C1 TO EECW SYSTEM CROSS-CONNECT	INTAKE	565	C	AI	1
4016	07	1-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U1 RB	593	R3/P	AI	1
4017	07	2-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U2 RB	593	P/R13	AI	1
4018	07	3-FCV-67-50	EECW SYSTEM NORTH HEADER BACKUP TO RBCCW	U3 RB	593	R20/P	AI	1
4019	07	0-FCV-67-53	EECW SYSTEM NORTH HEADER BACKUP TO THE AIR COMPRESSORS	U1 RB	565	R3/N	AI	1
4020	R	2-CKV-67-638	EECW NORTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U2 RB	565		AI	1
4021	R	2-CKV-67-639	EECW NORTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U2 RB	565		AI	1
4022	R	2-CKV-67-648	EECW NORTH HEADER SUPPLY CHECK VALVE TO A CS	U2 RB	565		AI	1
4023	R	2-CKV-67-649	EECW NORTH HEADER SUPPLY CHECK VALVE TO A CS	U2 RB	565		AI	1
4024	R	2-CKV-67-659	EECW NORTH HEADER SUPPLY CHECK VALVE TO B&D RHR	U2 RB	565		AI	1
4025	R	2-CKV-67-660	EECW NORTH HEADER SUPPLY CHECK VALVE TO B&D RHR	U2 RB	565		AI	1
4026	R	2-CKV-67-656	EECW NORTH HEADER SUPPLY CHECK VALVE TO B CS	U2 RB	565		AI	1
4027	R	2-CKV-67-657	EECW NORTH HEADER SUPPLY CHECK VALVE TO B CS	U2 RB	565		AI	1
4028	R	0-CKV-67-634	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE A DG	U1/2 DG	565		AI	1
4029	R	0-CKV-67-635	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE A DG	U1/2 DG	565		AI	1
4030	R	0-CKV-67-630	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE B DG	U1/2 DG	565		AI	1
4031	R	0-CKV-67-631	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE B DG	U1/2 DG	565		AI	1
4032	R	0-CKV-67-624	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE C DG	U1/2 DG	565		AI	1
4033	R	0-CKV-67-625	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE C DG	U1/2 DG	565		AI	1
4034	R	0-CKV-67-627	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE D DG	U1/2 DG	565		AI	1
4035	R	0-CKV-67-628	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE D DG	U1/2 DG	565		AI	1
4036	R	3-CKV-67-693	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE 3EA DG	U3 DG	565		AI	1
4037	R	3-CKV-67-694	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE 3EA DG	U3 DG	565		AI	1
4038	R	3-CKV-67-703	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE 3EB DG	U3 DG	565		AI	1
4039	R	3-CKV-67-704	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE 3EB DG	U3 DG	565		AI	1
4040	21	2-HEX-67-916	EECW/RHR SEAL HX 2C	U2 RB	519	SW CORNER	AI	1
4041	20	0-EI-23-85/3	EECW PUMP A3 AMPERAGE INDICATION	N/A	N/A	N/A	AI	1
4042	20	0-EI-23-91/3	EECW PUMP C3 AMPERAGE INDICATION	N/A	N/A	N/A	AI	1
4044	06	0-PMP-23-88	RHRSW PUMP B3	INTAKE	565	B	AI	2
4045	R	0-CKV-23-591	RHRSW PMP B3 DISCHARGE CHECK VALVE	INTAKE	565		AI	2
4046	00	0-STN-67-926	B EECW PUMP DISCHARGE STRAINER	INTAKE	565	B	AI	2
4047	08A	0-FCV-67-5	B EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	B	AI	2
4048	R	0-CKV-67-502	EECW SYSTEM SOUTH HEADER CHECK VALVE	U1/2 DG	565		AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
4049	10	2-CLR-67-918	EECW/RHR PUMP 2B ROOM COOLER	U2 RB	519	SE CORNER	AI	2
4050	10	2-CLR-67-920	EECW/CS PUMP 2B ROOM COOLER	U2 RB	519	NE CORNER	AI	2
4051	10	2-CLR-67-922	EECW/RHR PUMP 2D ROOM COOLER	U2 RB	519	SE CORNER	AI	2
4052	21	2-HEX-67-923	EECW/RHR SEAL HX 2B	U2 RB	519	SE CORNER	AI	2
4053	R	0-CKV-67-619	EECW SYSTEM SOUTH HEADER CHECK VALVE	RB	565		AI	2
4054	06	0-PMP-23-94	RHRSW PUMP D3	INTAKE	565	D	AI	2
4055	R	0-CKV-23-597	RHRSW PMP D3 DISCHARGE CHECK VALVE	INTAKE	565		AI	2
4056	00	0-STN-67-928	D EECW PUMP DISCHARGE STRAINER	INTAKE	565	D	AI	2
4057	08A	0-FCV-67-11	D EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	D	AI	2
4058	08A	0-FCV-67-48	RHRSW PUMP D1 TO EECW SYSTEM CROSS-CONNECT	INTAKE	565	D	AI	2
4059	07	1-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U1 RB	565	R3/T	AI	2
4060	07	2-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U2 RB	565	R13/T	AI	2
4061	07	3-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U3 RB	565	R20/T	AI	2
4062	R	2-CKV-67-558	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U2 RB	593		AI	2
4063	R	2-CKV-67-559	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U2 RB	593		AI	2
4064	R	2-CKV-67-541	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A CS	U2 RB	593		AI	2
4065	R	2-CKV-67-542	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A CS	U2 RB	593		AI	2
4066	R	2-CKV-67-600	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B & D RHR	U2 RB	593		AI	2
4067	R	2-CKV-67-601	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B & D RHR	U2 RB	593		AI	2
4068	R	2-CKV-67-584	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B CS	U2 RB	593		AI	2
4069	R	2-CKV-67-585	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B CS	U2 RB	593		AI	2
4070	R	0-CKV-67-528	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE A DG	U1/2 DG	565		AI	2
4071	R	0-CKV-67-529	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE A DG	U1/2 DG	565		AI	2
4072	R	0-CKV-67-514	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE C DG	U1/2 DG	565		AI	2
4073	R	0-CKV-67-515	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE C DG	U1/2 DG	565		AI	2
4074	R	0-CKV-67-521	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE B DG	U1/2 DG	565		AI	2
4075	R	0-CKV-67-522	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE B DG	U1/2 DG	565		AI	2
4076	R	0-CKV-67-507	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE D DG	U1/2 DG	565		AI	2
4077	R	0-CKV-67-508	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE D DG	U1/2 DG	565		AI	2
4078	R	3-CKV-67-695	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE 3EA DG	U3 DG	565		AI	2
4079	R	3-CKV-67-696	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE 3EA DG	U3 DG	565		AI	2
4080	R	3-CKV-67-705	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE 3EB DG	U3 DG	565		AI	2
4081	R	3-CKV-67-706	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE 3EB DG	U3 DG	565		AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
4082	21	2-HEX-67-924	EECW/RHR SEAL HX 2D	U2 RB	519	SE CORNER	AI	2
4083	20	0-EI-23-88/3	EECW PUMP B3 AMPERAGE INDICATION	N/A	N/A	N/A	AI	2
4084	20	0-EI-23-94/3	EECW PUMP D3 AMPERAGE INDICATION	N/A	N/A	N/A	AI	2
5001	08A	2-FCV-75-2	CS/PUMP 2A SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	AI	1
5002	06	2-PMP-75-5	CS/PUMP 2A	U2 RB	519	NW CORNER	AI	1
5003	R	2-CKV-75-537A	CS/PUMP 2A DISCHARGE CHECK VALVE	U2 RB			AI	1
5004	R	2-CKV-75-570A	CS/PUMP 2A MINI-FLOW CHECK VALVE	U2 RB			AI	1
5005	08A	2-FCV-75-9	CS/PUMPS 2A & 2C MINI-FLOW VALVE	U2 RB	519	NW CORNER	AI	1
5006	08A	2-FCV-75-11	CS/PUMP 2C SUCTION ISOLATION VALVE	U2 RB	519	NW CORNER	AI	1
5007	06	2-PMP-75-14	CS/PUMP 2C	U2 RB	519	NW CORNER	AI	1
5008	R	2-CKV-75-537C	CS/PUMP 2C DISCHARGE CHECK VALVE	U2 RB			AI	1
5009	R	2-CKV-75-570C	CS/PUMP 2C MINI-FLOW CHECK VALVE	U2 RB			AI	1
5010	08A	2-FCV-75-22	CS/PUMPS 2A & 2C TEST ISOLATION VALVE	U2 RB	519	NW CORNER	AI	1
5011	18	2-FI-75-21	CS/PUMPS 2A & 2C FLOW INDICATOR	N/A	N/A	N/A	AI	1
5012	08A	2-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U2 RB	593	P/R10	AI	1
5013	08A	2-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U2 RB	593	P/R10	AI	1
5014	R	2-FCV-75-26	CS/DIV I TESTABLE CHECK VALVE	U2 DW			AI	1
5015	08A	2-FCV-75-30	CS/PUMP 2B SUCTION ISOLATION VALVE	U2 RB	519	NE CORNER	AI	2
5016	06	2-PMP-75-33	CS/PUMP 2B	U2 RB	519	NE CORNER	AI	2
5017	R	2-CKV-75-537B	CS/PUMP 2B DISCHARGE CHECK VALVE	U2 RB			AI	2
5018	R	2-CKV-75-570B	CS/PUMP 2B MINI-FLOW CHECK VALVE	U2 RB			AI	2
5019	08A	2-FCV-75-37	CS/PUMPS 2B & 2D MINI-FLOW VALVE	U2 RB	519	NE CORNER	AI	2
5020	08A	2-FCV-75-39	CS/PUMP 2D SUCTION ISOLATION VALVE	U2 RB	519	NE CORNER	AI	2
5021	06	2-PMP-75-42	CS/PUMP 2D	U2 RB	519	NE CORNER	AI	2
5022	R	2-CKV-75-537D	CS/PUMP 2D DISCHARGE CHECK VALVE	U2 RB			AI	2
5023	R	2-CKV-75-570D	CS/PUMP 2D MINI-FLOW CHECK VALVE	U2 RB			AI	2
5024	08A	2-FCV-75-50	CS/PUMPS 2B & 2D TEST ISOLATION VALVE	U2 RB	519	NE CORNER	AI	2
5025	18	2-FI-75-49	CS/PUMPS 2B & 2D FLOW INDICATOR	N/A	N/A	N/A	AI	2
5026	08A	2-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U2 RB	593	P/R11	AI	2
5027	08A	2-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U2 RB	593	P/R11	AI	2
5028	R	2-FCV-75-54	CS/DIV II TESTABLE CHECK VALVE	U2 DW			AI	2
6001	21	0-TNK-84-635	CAD/NITROGEN STORAGE TANK "A"	YARD	565	YARD	AI	1
6002	07	O-FCV-84-5	CAD/N2 TANK "A" ISOLATION VALVE	YARD	565	YARD	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
6003	08B	O-FSV-84-5	CAD/N2 TANK "A" ISOLATION SOLENOID VALVE	YARD	565	YARD	AI	1
6004	00	0-VPR-84-639	CAD/N2 TANK "A" VAPORIZER	YARD	565	YARD	AI	1
6005	00	0-HTR-84-5	CAD/N2 TANK "A" ELECTRIC HEATER	YARD	565	YARD	AI	1
6006	08B	2-FSV-84-8A	CAD/CAD TO DW (2-FCV-64-18) SOLENOID VALVE	U2 RB	565	R12/T	AI	1
6007	08B	2-FSV-84-8B	CAD/CAD TO DW (2-FCV-64-19) SOLENOID VALVE	U2 RB	565	R10/S	AI	1
6008	07	2-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	R11/U	AI	1
6009	08B	2-FSV-84-48	CAD/CAD SYSTEM "A" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	S/R10	AI	1
6010	R	2-CKV-32-2521	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 1	U2 RB			AI	1
6011	R	2-CKV-32-2516	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 1	U2 DW			AI	1
6012	R	2-CKV-32-826	CA/DRYWELL CONTROL AIR TO PSV-1-19	U2 DW			AI	1
6013	21	2-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U2 DW	563	DW	AI	1
6014	08B	2-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19	U2 DW	591	DW	AI	1
6015	R	2-CKV-32-872	CA/DRYWELL CONTROL AIR TO PSV-1-22	U2 DW			AI	1
6016	21	2-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U2 DW	563	DW	AI	1
6017	08B	2-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22	U2 DW	590	DW	AI	1
6018	R	2-CKV-32-869	CA/DRYWEWLL CONTROL AIR TO PSV-1-5	U2 DW			AI	1
6019	21	2-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U2 DW	563	DW	AI	1
6020	08B	2-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5	U2 DW	590	DW	AI	1
6021	08B	2-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23	U2 DW	590	DW	AI	1
6022	08B	2-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179	U2 DW	590	DW	AI	1
6023	08B	2-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4	U2 DW	590	DW	AI	1
6024	08B	2-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18	U2 DW	590	DW	AI	1
6025	21	0-TNK-84-636	CAD/NITROGEN STORAGE TANK "B"	YARD	565	YARD	AI	2
6026	07	0-FCV-84-16	CAD/N2 TANK "B" ISOLATION VALVE	YARD	565	YARD	AI	2
6027	08B	O-FSV-84-16	CAD/N2 TANK "B" ISOLATION SOLENOID VALVE	YARD	565	YARD	AI	2
6028	00	0-VPR-84-640	VAD/N2 TANK "B" VAPORIZER	YARD	565	YARD	AI	2
6029	00	0-HTR-84-16	CAD/N2 TANK "B" ELECTRIC HEATER	YARD	565	YARD	AI	2
6030	08B	2-FSV-84-8C	CAD/CAD TO DW (2-FCV-64-19) SOLENOID VALVE	U2 RB	565	R10/S	AI	2
6031	08B	2-FSV-84-8D	CAD/CAD TO DW (2-FCV-64-18) SOLENOID VALVE	U2 RB	565	R12/T	AI	2
6032	07	2-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	R11/U	AI	2
6033	08B	2-FSV-84-49	CAD/CAD SYSTEM "B" TO UNIT 2 DRYWELL CONTROL AIR	U2 RB	565	S/R12	AI	2
6034	R	2-CKV-32-336	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 2	U2 RB			AI	2
6035	R	2-CKV-32-2163	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 2	U2 DW			AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
6036	R	2-CKV-32-892	CA/DRYWELL CONTROL AIR TO PSV-1-30	U2 DW			AI	2
6037	21	2-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U2 DW	563	DW	AI	2
6038	08B	2-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30	U2 DW	591	DW	AI	2
6039	R	2-CKV-32-915	CA/DRYWELL CONTROL AIR TO PSV-1-31	U2 DW			AI	2
6040	21	2-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U2 DW	563	DW	AI	2
6041	08B	2-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31	U2 DW	591	DW	AI	2
6042	R	2-CKV-32-919	CA/DRYWELL CONTROL AIR TO PSV-1-34	U2 DW			AI	2
6043	21	2-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U2 DW	563	DW	AI	2
6044	08B	2-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34	U2 DW	591	DW	AI	2
6045	08B	2-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41	U2 DW	590	DW	AI	2
6046	08B	2-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42	U2 DW	590	DW	AI	2
6047	08B	2-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180	U2 DW	590	DW	AI	2
7001	17	0-GEN-82-A	UNIT 1 & 2 DIESEL GENERATOR "A"	U1/2 DG	565	DG A	AI	1
7002	21	0-TNK-18-45/1	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	AI	1
7003	21	0-TNK-18-45/2	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	AI	1
7004	21	0-TNK-18-45/3	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	AI	1
7005	21	0-TNK-86-650A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7006	21	0-TNK-86-651A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7007	21	0-TNK-86-652A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7008	21	0-TNK-86-653A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7009	21	0-TNK-86-654A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7010	21	0-TNK-86-655A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7011	21	0-TNK-86-656A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7012	21	0-TNK-86-657A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7013	21	0-TNK-86-658A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7014	21	0-TNK-86-659A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
7015	09	0-FAN-30-64	DG ROOM A EXHAUST FAN "A"	U1/2 DG	583	DG A	AI	1
7016	09	0-FAN-30-65	DG ROOM A EXHAUST FAN "B"	U1/2 DG	583	DG A	AI	1
7017	10	0-FCO-30-64A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
7018	10	0-FCO-30-64B	INLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
7019	10	0-FCO-30-64C	INLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
7020	10	0-FCO-30-65A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
7021	10	0-FCO-30-65B	INLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
7022	10	0-FCO-30-65C	INLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
7023	17	0-GEN-82-B	UNIT 1 & 2 DIESEL GENERATOR "B"	U1/2 DG	565	DG B	AI	1
7024	21	0-TNK-18-46/1	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	AI	1
7025	21	0-TNK-18-46/2	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	AI	1
7026	21	0-TNK-18-46/3	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	AI	1
7027	21	0-TNK-86-650B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
7028	21	0-TNK-86-651B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
7029	21	0-TNK-86-652B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
7030	21	0-TNK-86-653B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
7031	21	0-TNK-86-654B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
7032	21	0-TNK-86-655B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
7033	21	0-TNK-86-656B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
7034	21	0-TNK-86-657B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
7035	21	0-TNK-86-658B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
7036	21	0-TNK-86-659B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
7037	09	0-FAN-30-66	DG ROOM B EXHAUST FAN "A"	U1/2 DG	583	DG B	AI	1
7038	09	0-FAN-30-67	DG ROOM B EXHAUST FAN "B"	U1/2 DG	583	DG B	AI	1
7039	10	0-FCO-30-66A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
7040	10	0-FCO-30-66B	INLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
7041	10	0-FCO-30-66C	INLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
7042	10	0-FCO-30-67A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
7043	10	0-FCO-30-67B	INLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
7044	10	0-FCO-30-67C	INLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
7045	17	0-GEN-82-C	UNIT 1 & 2 DIESEL GENERATOR "C"	U1/2 DG	565	DG C	AI	2
7046	21	0-TNK-18-47/1	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	AI	2
7047	21	0-TNK-18-47/2	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	AI	2
7048	21	0-TNK-18-47/3	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	AI	2
7049	21	0-TNK-86-650C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7050	21	0-TNK-86-651C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7051	21	0-TNK-86-652C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7052	21	0-TNK-86-653C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7053	21	0-TNK-86-654C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7054	21	0-TNK-86-655C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
7055	21	0-TNK-86-656C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7056	21	0-TNK-86-657C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7057	21	0-TNK-86-658C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7058	21	0-TNK-86-659C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
7059	09	0-FAN-30-68	DG ROOM C EXHAUST FAN "A"	U1/2 DG	583	DG C	AI	2
7060	09	0-FAN-30-69	DG ROOM C EXHAUST FAN "B"	U1/2 DG	583	DG C	AI	2
7061	10	0-FCO-30-68A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
7062	10	0-FCO-30-68B	INLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
7063	10	0-FCO-30-68C	INLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
7064	10	0-FCO-30-69A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
7065	10	0-FCO-30-69B	INLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
7066	10	0-FCO-30-69C	INLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
7067	17	0-GEN-82-D	UNIT 1 & 2 DIESEL GENERATOR "D"	U1/2 DG	565	DG D	AI	2
7068	21	0-TNK-18-48/1	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	AI	2
7069	21	0-TNK-18-48/2	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	AI	2
7070	21	0-TNK-18-48/3	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	AI	2
7071	21	0-TNK-86-650D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7072	21	0-TNK-86-651D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7073	21	0-TNK-86-652D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7074	21	0-TNK-86-653D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7075	21	0-TNK-86-654D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7076	21	0-TNK-86-655D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7077	21	0-TNK-86-656D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7078	21	0-TNK-86-657D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7079	21	0-TNK-86-658D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7080	21	0-TNK-86-659D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
7081	09	0-FAN-30-70	DG ROOM D EXHAUST FAN "A"	U1/2 DG	583	DG D	AI	2
7082	09	0-FAN-30-71	DG ROOM D EXHAUST FAN "B"	U1/2 DG	583	DG D	AI	2
7083	10	0-FCO-30-70A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
7084	10	0-FCO-30-70B	INLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
7085	10	0-FCO-30-70C	INLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
7086	10	0-FCO-30-71A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
7087	10	0-FCO-30-71B	INLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
7088	10	0-FCO-30-71C	INLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
7089	17	3-GEN-82-3A	UNIT 3 DIESEL GENERATOR A	U3 DG	565	DG A	AI	1
7090	21	3-TNK-18-61/1	DG "3A" 7 DAY FUEL OIL TANK	U3 DG	565	DG A	AI	1
7091	21	3-TNK-18-61/2	DG "3A" 7 DAY FUEL OIL TANK	U3 DG	565	DG A	AI	1
7092	21	3-TNK-18-61/3	DG "3A" 7 DAY FUEL OIL TANK	U3 DG	565	DG A	AI	1
7093	21	3-TNK-86-650A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7094	21	3-TNK-86-651A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7095	21	3-TNK-86-652A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7096	21	3-TNK-86-653A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7097	21	3-TNK-86-654A	DG "3A" RIGHT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7098	21	3-TNK-86-655A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7099	21	3-TNK-86-656A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7100	21	3-TNK-86-657A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7101	21	3-TNK-86-658A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7102	21	3-TNK-86-659A	DG "3A" LEFT BANK STARTING AIR RECEIVER	U3 DG	565	DG A	AI	1
7103	09	3-FAN-30-230	DG ROOM 3A EXHAUST FAN "A"	U3 DG	583	DG A	AI	1
7104	10	3-FCO-30-230A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3A"	U3 DG	583	DG A	AI	1
7105	10	3-FCO-30-230B	INLET DAMPER FOR FAN "A" IN DG ROOM "3A"	U3 DG	583	DG A	AI	1
7106	10	3-FCO-30-230C	INLET DAMPER FOR FAN "A" IN DG ROOM "3A"	U3 DG	583	DG A	AI	1
7107	17	3-GEN-82-3B	UNIT 3 DIESEL GENERATOR B	U3 DG	565	DG B	AI	1
7108	21	3-TNK-18-62/1	DG "3B" 7 DAY FUEL OIL TANK	U3 DG	565	DG B	AI	1
7109	21	3-TNK-18-62/2	DG "3B" 7 DAY FUEL OIL TANK	U3 DG	565	DG B	AI	1
7110	21	3-TNK-18-62/3	DG "3B" 7 DAY FUEL OIL TANK	U3 DG	565	DG B	AI	1
7111	21	3-TNK-86-650B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7112	21	3-TNK-86-651B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7113	21	3-TNK-86-652B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7114	21	3-TNK-86-653B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7115	21	3-TNK-86-654B	DG "3B" RIGHT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7116	21	3-TNK-86-655B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7117	21	3-TNK-86-656B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7118	21	3-TNK-86-657B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7119	21	3-TNK-86-658B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1
7120	21	3-TNK-86-659B	DG "3B" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG B	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
7121	09	3-FAN-30-232	DG ROOM 3B EXHAUST FAN "A"	U3 DG	583	DG B	AI	1
7122	10	3-FCO-30-232A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3B"	U3 DG	583	DG B	AI	1
7123	10	3-FCO-30-232B	INLET DAMPER FOR FAN "A" IN DG ROOM "3B"	U3 DG	583	DG B	AI	1
7124	10	3-FCO-30-232C	INLET DAMPER FOR FAN "A" IN DG ROOM "3B"	U3 DG	583	DG B	AI	1
8001	06	0-PMP-23-005	RHRSW PUMP A2	INTAKE	565	A	AI	1
8002	R	0-CKV-23-506	RHRSW PMP A2 DISCHARGE CHECK VALVE	INTAKE	565		AI	1
8003	R	2-CKV-23-579	RHRSW TO HX A INLET CHECK VALVE	U2 RB	565		AI	1
8004	08A	1-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U1 RB	565	R2/U	AI	1
8005	08A	2-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U2 RB	565	R9/U	AI	1
8006	08A	3-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U3 RB	565	R17/T	AI	1
8007	06	0-PMP-23-012	RHRSW PUMP C2	INTAKE	565	C	AI	1
8008	R	0-CKV-23-542	RHRSW PMP C2 DISCHARGE CHECK VALVE	INTAKE	565		AI	1
8009	R	2-CKV-23-581	RHRSW TO HX C INLET CHECK VALVE	U2 RB	565		AI	1
8010	08A	1-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U1 RB	565	R2/U	AI	1
8011	08A	2-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U2 RB	565	R9/U	AI	1
8012	08A	3-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U3 RB	565	R17/T	AI	1
8013	06	0-PMP-23- 19	RHRSW PUMP B2	INTAKE	565	B	AI	2
8014	R	0-CKV-23-526	RHRSW PMP B2 DISCHARGE CHECK VALVE	INTAKE	565		AI	2
8015	R	2-CKV-23-580	RHRSW TO HX B INLET CHECK VALVE	U2 RB	565		AI	2
8016	08A	1-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U1 RB	565	R5/T	AI	2
8017	08A	2-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U2 RB	565	R13/U	AI	2
8018	08A	3-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U3 RB	565	R19/U	AI	2
8019	06	0-PMP-23-027	RHRSW PUMP D2	INTAKE	565	D	AI	2
8020	R	0-CKV-23-561	RHRSW PMP D2 DISCHARGE CHECK VALVE	INTAKE	565		AI	2
8021	R	2-CKV-23-582	RHRSW TO HX D INLET CHECK VALVE	U2 RB	565		AI	2
8022	08A	1-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U1 RB	565	R5/T	AI	2
8023	08A	2-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U2 RB	565	R13/U	AI	2
8024	08A	3-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U3 RB	565	R19/U	AI	2
8025	08A	1-FCV-23-57	RHR/RHRSW CROSS CONNECT VALVE	U1 RB	565	R6/S	AI	2
8026	08A	2-FCV-23-57	RHR/RHRSW CROSS CONNECT VALVE	U2 RB	565	R13/T	AI	2
8027	20	2-FI-23-36	RHRSW HX A FLOW INDICATOR	N/A	N/A	N/A	AI	1
8028	20	2-FI-23-42	RHRSW HX C FLOW INDICATOR	N/A	N/A	N/A	AI	1
8029	20	2-FI-23-48	RHRSW HX B FLOW INDICATOR	N/A	N/A	N/A	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
8030	20	2-FI-23-54	RHRSW HX D FLOW INDICATOR	N/A	N/A	N/A	AI	2
9001	04	2-XFA-231-TS2A	4KV/480V XFMR TS2A	U2 RB	621	T/R13	AI	IB
9002	04	2-XFA-231-TS2B	4KV/480V XFMR TS2B	U2 RB	621	T/R14	AI	IID
9003	04	3-XFA-231-TS3A	4KV/480V XFMR TS3A	U3 RB	621	S/R20	AI	I3A
9004	04	0-OXF-219-TDA	4KV/480V XFMR TDA	U1/2 DG	583	T/R1	AI	IA
9005	04	0-OXF-219-TDB	4KV/480V XFMR TDB	U1/2 DG	583	P/R1	AI	IID
9006	04	2-XFA-253-0002A1	480V-120/208V XFMR FOR I&C BUS 2A	U2 RB	621	P/R13	AI	I
9007	04	2-XFA-253-0002A2	208V/120V REG XFMR FOR I&C BUS 2A	U2 RB	621	P/R13	AI	I
9008	04	2-XFA-253-0002B1	480V-120/208V XFMR FOR I&C BUS 2B	U2 RB	593	R/R13	AI	II
9009	04	2-XFA-253-0002B2	208V/120V REG XFMR FOR I&C BUS 2B	U2 RB	593	R/R13	AI	II
9010	14	2-JBOX-253-7193	I&C BUS BREAKER BOX BUS 2A	U2 RB	621	P/R13	AI	I
9011	14	2-JBOX-253-7196	I&C BUS BREAKER BOX BUS 2B	U2 RB	593	P/R10	AI	II
9012	03	0-BDAA-211-0000A	4KV SHDN BD A	U1 RB	621	R/R2	AI	IA
9013	03	0-BDAA-211-0000B	4KV SHDN BD B	U1 RB	593	Q/R2	AI	IB
9014	03	0-BDAA-211-0000C	4KV SHDN BD C	U2 RB	621	R/R13	AI	IIC
9015	03	0-BDAA-211-0000D	4KV SHDN BD D	U2 RB	593	Q/R13	AI	IID
9016	03	3-BDAA-211-0003EA	4KV SHDN BD 3EA	U3 DG	583	4KV SD BD	AI	I3A
9017	03	3-BDAA-211-0003EB	4KV SHDN BD 3EB	U3 DG	565	4KV SD BD	AI	I3B
9018	02	1-BDBB-231-0001A	480V SHDN BD 1A	U1 RB	621	S/R1	AI	I
9019	02	1-BDBB-231-0001B	480V SHDN BD 1B	U1 RB	621	S/R2	AI	II
9020	02	2-BDBB-231-0002A	480V SHDN BD 2A	U2 RB	621	S/R13	AI	I
9021	02	2-BDBB-231-0002B	480V SHDN BD 2B	U2 RB	621	S/R14	AI	II
9022	02	3-BDBB-231-0003A	480V SHDN BD 3A	U3 RB	621	S/R20	AI	I
9023	01	1-BDBB-268-0001A	480V RMOV BD 1A	U1 RB	621	R/R1	AI	I
9024	01	1-BDBB-268-0001B	480V RMOV BD 1B	U1 RB	593	R/R1	AI	II
9025	01	2-BDBB-268-0002A	480V RMOV BD 2A	U2 RB	621	R/R14	AI	I
9026	01	2-BDBB-268-0002B	480V RMOV BD 2B	U2 RB	593	R/R14	AI	II
9027	01	2-BDBB-268-0002D	480V RMOV BD 2D	U2 RB	593	T/R11	AI	I
9028	01	2-BDBB-268-0002E	480V RMOV BD 2E	U2 RB	621	U/R8	AI	II
9031	01	0-BDBB-219-0000A	480V DSL AUX BD A	U1/2 DG	583	480V AUX BD	AI	I
9032	01	0-BDBB-219-0000B	480V DSL AUX BD B	U1/2 DG	583	480V AUX BD	AI	II
9033	01	3-BDBB-219-0003EA	480V DSL AUX BD 3EA	U3 DG	583	48OV AUX BD	AI	I
9034	01	2-BDBB-281-0002A	250V RMOV BD 2A	U2 RB	621	Q/R14	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9035	01	2-BDBB-281-0002B	250V RMOV BD 2B	U2 RB	593	Q/R14	AI	I
9036	01	2-BDBB-281-0002C	250V RMOV BD 2C	U2 RB	565	Q/R8	AI	I
9037	14	0-BDDD-280-0001	250V BATTERY BD 1	U1 RB	593	P/R4	AI	
9038	14	0-BDDD-280-0002	250V BATTERY BD 2	U2 RB	593	P/R10	AI	
9039	14	0-BDDD-280-0003	250V BATTERY BD 3	U3 RB	593	P/R18	AI	
9040	20	2-PNLA-009-0003A	PANEL 9-3A	U2 CB	617	U2 MCR	AI	
9041	20	2-PNLA-009-0003B	PANEL 9-3B	U2 CB	617	U2 MCR	AI	
9042	20	2-PNLA-009-0004	PANEL 9-4	U2 CB	617	U2 MCR	AI	
9043	20	2-PNLA-009-0005	PANEL 9-5	U2 CB	617	U2 MCR	AI	
9044	20	2-PNLA-009-0006	PANEL 9-6	U2 CB	617	U2 MCR	AI	
9045	20	2-PNLA-009-0009	PANEL 9-9	U2 CB	617	U2 MCR	AI	
9046	20	2-PNLA-009-0015	PANEL 9-15	U2 CB	593	U2 AIR	AI	
9047	20	2-PNLA-009-0017	PANEL 9-17	U2 CB	593	U2 AIR	AI	
9048	20	2-PNLA-009-0018	PANEL 9-18	U2 CB	593	U2 AIR	AI	
9049	20	2-PNLA-009-0019	PANEL 9-19	U2 CB	593	U2 AIR	AI	
9050	20	2-PNLA-009-0021	PANEL 9-21	U2 CB	617	U2 MCR	AI	
9051	20	0-PNLA-009-0023/7	PANEL 0-9-23-7	U2 CB	617	U2 MCR	AI	
9052	20	0-PNLA-009-0023/8	PANEL 0-9-23-8	U2 CB	617	U2 MCR	AI	
9053	20	3-PNLA-009-0023A	PANEL 3-9-23A	U3 CB	617	U3 MCR	AI	
9054	20	3-PNLA-009-0023B	PANEL 3-9-23B	U3 CB	617	U3 MCR	AI	
9055	20	3-PNLA-009-0023C	PANEL 3-9-23C	U3 CB	617	U3 MCR	AI	
9056	20	3-PNLA-009-0023D	PANEL 3-9-23D	U3 CB	617	U3 MCR	AI	
9057	20	0-PNLA-009-0028	PANEL 9-28	U2 CB	593	U2 AIR	AI	
9058	20	2-PNLA-009-0030	PANEL 9-30	U2 CB	593	U2 AIR	AI	
9059	20	2-PNLA-009-0032	PANEL 9-32	U2 CB	593	U2 AIR	AI	
9060	20	2-PNLA-009-0033	PANEL 9-33	U2 CB	593	U2 AIR	AI	
9061	20	2-PNLA-009-0039	PANEL 9-39	U2 CB	593	U2 AIR	AI	
9062	20	2-PNLA-009-0042	PANEL 9-42	U2 CB	593	U2 AIR	AI	
9063	20	2-PNLA-009-0043	PANEL 9-43	U2 CB	593	U2 AIR	AI	
9064	20	2-PNLA-009-0054	PANEL 9-54	U2 CB	617	U2 MCR	AI	
9065	20	2-PNLA-009-0055	PANEL 9-55	U2 CB	617	U2 MCR	AI	
9066	20	2-PNLA-009-0081	PANEL 9-81	U2 CB	593	U2 AIR	AI	I
9067	20	2-PNLA-009-0082	PANEL 9-82	U2 CB	593	U2 AIR	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9068	20	2-PNLA-009-0083	PANEL 9-83	U2 CB	593	U2 AIR	AI	
9069	20	2-PNLA-009-0084	PANEL 9-84	U2 CB	593	U2 AIR	AI	
9070	20	2-PNLA-009-0085	PANEL 9-85	U2 CB	593	U2 AIR	AI	
9071	20	2-PNLA-009-0086	PANEL 9-86	U2 CB	593	U2 AIR	AI	
9072	20	2-PNLA-009-0087	PANEL 9-87	U2 CB	593	U2 AIR	AI	I
9073	20	2-PNLA-009-0088	PANEL 9-88	U2 CB	593	U2 AIR	AI	II
9074	20	2-LPNL-925-0031	PANEL 25-31	U2 RB	621	Q/R13	AI	
9075	20	2-LPNL-925-0032	PANEL 25-32	U2 RB	621	Q/R13	AI	
9076	20	0-LPNL-925-0041A	PANEL 25-41A	U1/2 DG	583	NORTH END	AI	
9077	20	0-LPNL-925-0041B	PANEL 25-41B	U1/2 DG	583	NORTH END	AI	
9078	20	0-LPNL-925-0041C	PANEL 25-41C	U1/2 DG	583	NORTH END	AI	
9079	20	0-LPNL-925-0041D	PANEL 25-41D	U1/2 DG	583	NORTH END	AI	
9080	20	0-LPNL-925-0042A1	PANEL 25-42A1	U2 RB	621	R/R14	AI	
9081	20	0-LPNL-925-0042A2	PANEL 25-42A2	U2 RB	621	R/R14	AI	
9082	20	0-LPNL-925-0042B1	PANEL 25-42B1	U2 RB	621	Q/R14	AI	
9083	20	0-LPNL-925-0042B2	PANEL 25-42B2	U2 RB	621	Q/R14	AI	
9084	20	0-LPNL-925-0043A1	PANEL 25-43A1	U1/2 DG	583	HALLWAY	AI	
9085	20	0-LPNL-925-0043A2	PANEL 25-43A2	U1/2 DG	583	HALLWAY	AI	
9086	20	0-LPNL-925-0043B1	PANEL 25-43B1	U1/2 DG	583	HALLWAY	AI	
9087	20	0-LPNL-925-0043B2	PANEL 25-43B2	U1/2 DG	583	HALLWAY	AI	
9088	20	2-LPNL-925-044A/11	PANEL 25-44A11	U2 RB	621	S/R13	AI	
9089	20	2-LPNL-925-044A/12	PANEL 25-44A12	U2 RB	621	S/R14	AI	
9090	20	2-LPNL-925-044B/11	PANEL 25-44B11	U2 RB	621	S/R13	AI	
9091	20	2-LPNL-925-044B/12	PANEL 25-44B12	U2 RB	621	S/R14	AI	
9092	20	0-LPNL-925-0045A	PANEL 25-45A	U1 RB	621	R/R2	AI	
9093	20	0-LPNL-925-0045B	PANEL 25-45B	U1 RB	593	R/R2	AI	
9094	20	0-LPNL-925-0045C	PANEL 25-45C	U2 RB	621	R/R13	AI	
9095	20	0-LPNL-925-0045D	PANEL 25-45D	U2 RB	593	R/R13	AI	
9096	20	0-LPNL-925-0046A	PANEL 25-46A	U1/2 DG	565	DG A	AI	
9097	20	0-LPNL-925-0046B	PANEL 25-46B	U1/2 DG	565	DG B	AI	
9098	20	0-LPNL-925-0046C	PANEL 25-46C	U1/2 DG	565	DG C	AI	
9099	20	0-LPNL-925-0046D	PANEL 25-46D	U1/2 DG	565	DG D	AI	
9100	20	0-LPNL-925-0047A	PANEL 0-25-47A	U1/2 DG	565	DG A	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9101	20	0-LPNL-925-0047B	PANEL 0-25-47B	U1/2 DG	565	DG B	AI	
9102	20	0-LPNL-925-0047C	PANEL 0-25-47C	U1/2 DG	565	DG C	AI	
9103	20	0-LPNL-925-0047D	PANEL 0-25-47D	U1/2 DG	565	DG D	AI	
9104	20	3-LPNL-925-0047A	PANEL 3-25-47A	U3 DG	565	DG A	AI	
9105	20	3-LPNL-925-0047B	PANEL 3-25-47B	U3 DG	565	DG B	AI	
9106	20	3-LPNL-925-0047C	PANEL 3-25-47C	U3 DG	565	DG C	AI	
9107	20	3-LPNL-925-0047D	PANEL 3-25-47D	U3 DG	565	DG D	AI	
9108	20	0-PNLA-082-0000A	DG A ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG A	AI	
9109	20	0-PNLA-082-0000B	DG B ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG B	AI	
9110	20	0-PNLA-082-0000C	DG C ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG C	AI	
9111	20	0-PNLA-082-0000D	DG D ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG D	AI	
9112	20	3-PNLA-082-00003A	DG 3A ELECTRICAL CONTROL CABINET	U3 DG	565	DG A	AI	
9113	20	3-PNLA-082-00003B	DG 3B ELECTRICAL CONTROL CABINET	U3 DG	565	DG B	AI	
9114	16	2-INV-256-0001	DIVISION I ECCS ATU INVERTER	U2 RB	593	Q/R14	AI	I
9115	16	2-INV-256-0002	DIVISION II ECCS ATU INVERTER	U2 RB	621	P/R14	AI	II
9116	14	0-XSW-248-0001	250V MAIN BATT CHGR OUTPUT XFR SW 1	U1 RB	593	P/R4	AI	
9117	14	0-XSW-248-0002A	250V MAIN BATT CHGR OUTPUT XFR SW 2A	U2 RB	593	P/R9	AI	
9118	14	0-XSW-248-0003	250V MAIN BATT CHGR OUTPUT XFR SW 3	U3 RB	593	P/R16	AI	
9119	15	0-BATA-248-0000A	250V BATTERY SB-A	U1 RB	621	S/R2	AI	IA
9120	14	0-PNLA-248-0000A	250V DISTRIBUTION PANEL SB-A	U1 RB	621	S/R2	AI	IA
9121	16	0-CHGA-248-0000A	250V BATTERY CHARGER SB-A	U1 RB	621	S/R2	AI	IA
9122	15	0-BATA-248-0000B	250V BATTERY SB-B	U1 RB	621	S/R2	AI	IB
9123	14	0-PNLA-248-0000B	250V DISTRIBUTION PANEL SB-B	U1 RB	621	S/R2	AI	IB
9124	16	0-CHGA-248-0000B	250V BATTERY CHARGER SB-B	U1 RB	621	S/R2	AI	IB
9125	15	0-BATA-248-0000C	250V BATTERY SB-C	U2 RB	621	S/R13	AI	IIC
9126	14	0-PNLA-248-0000C	250V DISTRIBUTION PANEL SB-C	U2 RB	621	S/R13	AI	IIC
9127	16	0-CHGA-248-0000C	250V BATTERY CHARGER SB-C	U2 RB	621	S/R13	AI	IIC
9128	15	0-BATA-248-0000D	250V BATTERY SB-D	U2 RB	621	S/R13	AI	IID
9129	14	0-PNLA-248-0000D	250V DISTRIBUTION PANEL SB-D	U2 RB	621	S/R13	AI	IID
9130	16	0-CHGA-248-0000D	250V BATTERY CHARGER SB-D	U2 RB	621	S/R13	AI	IID
9131	15	3-BATA-248-0003EB	250V BATTERY SB-3EB	U3 DG	583	SE CORNER	AI	I3B
9132	14	3-PNLA-248-0003EB	250V DISTRIBUTION PANEL SB-3EB	U3 DG	583	SE CORNER	AI	I3B
9133	16	3-CHGA-248-0003EB	250V BATTERY CHARGER SB-3EB	U3 DG	583	SE CORNER	AI	I3B

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9134	16	0-CHGA-248-0001	250V BATTERY CHARGER 1	U1 RB	593	P/R4	AI	
9135	16	0-CHGA-248-0002A	250V BATTERY CHARGER 2A	U2 RB	593	P/R9	AI	
9136	16	0-CHGA-248-0003	250V BATTERY CHARGER 3	U3 RB	593	P/R18	AI	
9137	15	0-BATA-248-0001	250V MAIN BATTERY 1	U1 RB	593	P/R4	AI	
9138	15	0-BATA-248-0002	250V MAIN BATTERY 2	U2 RB	593	P/R9	AI	
9139	15	0-BATA-248-0003	250V MAIN BATTERY 3	U3 RB	593	P/R18	AI	
9140	13	2-MGEN-268-0002DN	LPCI M-G SET 2DN	U2 RB	621	U/R13	AI	I
9141	13	2-MGEN-268-0002EN	LPCI M-G SET 2EN	U2 RB	639	U/R14	AI	II
9142	15	0-BATB-254-0000A	125V DC DSL BATT A	U1/2 DG	565	DG A	AI	IA
9143	15	0-BATB-254-0000B	125V DC DSL BATT B	U1/2 DG	565	DG B	AI	IB
9144	15	0-BATB-254-0000C	125V DC DSL BATT C	U1/2 DG	565	DG C	AI	IIC
9145	15	0-BATB-254-0000D	125V DC DSL BATT D	U1/2 DG	565	DG D	AI	IID
9146	14	0-BDGG-254-0000A	125V DC DSL BATT BD A	U1/2 DG	565	DG A	AI	IA
9147	14	0-BDGG-254-0000B	125V DC DSL BATT BD B	U1/2 DG	565	DG B	AI	IB
9148	14	0-BDGG-254-0000C	125V DC DSL BATT BD C	U1/2 DG	565	DG C	AI	IIC
9149	14	0-BDGG-254-0000D	125V DC DSL BATT BD D	U1/2 DG	565	DG D	AI	IID
9150	16	0-CHGB-254-0000AA	125V DSL GEN A BATT CHGR A	U1/2 DG	565	DG A	AI	I
9151	16	0-CHGB-254-0000BA	125V DSL GEN B BATT CHGR A	U1/2 DG	565	DG B	AI	I
9152	16	0-CHGB-254-0000CB	125V DSL GEN C BATT CHGR B	U1/2 DG	565	DG C	AI	II
9153	16	0-CHGB-254-0000DB	125V DSL GEN D BATT CHGR B	U1/2 DG	565	DG D	AI	II
9154	15	3-BATB-254-0000A	125V DC DSL BATT 3A	U3 DG	565	DG A	AI	I3A
9155	15	3-BATB-254-0000B	125V DC DSL BATT 3B	U3 DG	565	DG B	AI	I3B
9156	14	3-BDGG-254-0003A	125V DC DSL BATT BD 3A	U3 DG	565	DG A	AI	I3A
9157	14	3-BDGG-254-0003B	125V DC DSL BATT BD 3B	U3 DG	565	DG B	AI	I3B
9158	16	3-CHGB-254-0000AA	125V DC DSL 3A BATT CHGR A	U3 DG	565	DG A	AI	I
9159	16	3-CHGB-254-0000BA	125V DC DSL 3B BATT CHGR A	U3 DG	565	DG B	AI	I
9168	00	2-PX-64-67B	POWER SUPPLY (PNL 2-9-19 ; SUPPORTS 2-PI-64-67B)	N/A	N/A	N/A	AI	
9169	00	2-PX-71-60-1	ECCS ATU CAB 2-9-81 POWER SUPPLY	N/A	N/A	N/A	AI	I
9170	00	2-PX-71-60-1A	ECCS ATU CAB 2-9-81 POWER SUPPLY	N/A	N/A	N/A	AI	I
9171	00	2-PX-71-60-2	ECCS ATU CAB 2-9-82 POWER SUPPLY	N/A	N/A	N/A	AI	II
9172	00	2-PX-71-60-2A	ECCS ATU CAB 2-9-82 POWER SUPPLY	N/A	N/A	N/A	AI	II
9173	00	2-PX-64-159A	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	AI	I
9174	00	2-PX-64-160A	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	AI	I

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9175	00	2-PXMC-23-114	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	AI	I
9176	00	2-PXMC-23-115	POWER SUPPLY (PNL 2-9-19)	N/A	N/A	N/A	AI	II
9177	14	2-JBOX-253-7192	DISC SW BOX (I&C BUS A)	U2 RB	621	SD BD C	AI	I
9178	14	2-JBOX-253-7194	DISC SW BOX (I&C BUS A)	U2 CB	593	BATT BD 2	AI	I
9179	14	2-JBOX-253-7195	DISC SW BOX (I&C BUS B)	U2 RB	593	SD BD D	AI	II
9180	14	2-JBOX-253-7197	DISC SW BOX (I&C BUS B)	U2 CB	593	BATT BD 2	AI	II
9181	14	2-JBOX-268-5990	MG SET 2DN CONTROL STATION (2-HS-268-0002DN)	U2 RB	621	U/R13	AI	I
9182	14	2-JBOX-268-5992	MG SET 2EN CONTROL STATION (2-HS-268-0002EN)	U2 RB	639	U/R14	AI	II
9183	20	2-PNLA-009-0093	CONTROL PANEL 9-93	U2 CB	593	U2 AIR	AI	
9184	18	2-LPNL-925-005A	LOCAL PANEL 25-5A	U2 RB	593	S/R10	AI	
9185	18	2-LPNL-925-005B	LOCAL PANEL 25-5B	U2 RB	593	S/R10	AI	
9186	18	2-LPNL-925-005D	LOCAL PANEL 25-5D	U2 RB	593	S/R10	AI	
9187	18	2-LPNL-925-006A	LOCAL PANEL 25-6A	U2 RB	593	P/R12	AI	
9188	18	2-LPNL-925-006D	LOCAL PANEL 25-6D	U2 RB	593	P/R12	AI	
9189	18	2-LPNL-925-0059	LOCAL PANEL 25-59	U2 RB	519	T/R8	AI	
9190	18	2-LPNL-925-0062	LOCAL PANEL 25-62	U2 RB	519	T/R14	AI	
9191	00	2-PX-74-56	POWER SUPPLY (PNL 2-9-18)	N/A	N/A	N/A	AI	I
9192	00	2-PX-74-70	POWER SUPPLY (2-9-19)	N/A	N/A	N/A	AI	II
9193	14	2-JBOX-256-9722	DIV I ECCS ATU INV FUSE BOX	U2 RB	593	Q/R14	AI	I
9194	04	1-XFA-231-TS1A	4KV/480V TRANSFORMER TS1A	U1 RB	621	T/R1	AI	IA
9195	18	2-HS-74-7B	LOCAL HS STATION	U2 RB	541	T/R9	AI	I
9196	14	2-JBOX-74-2255	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	T/R9	AI	I
9197	18	2-HS-74-57B	LOCAL HS STATION	U2 RB	519	TORUS	AI	I
9198	14	2-JBOX-74-2309	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	R/R8	AI	I
9199	18	2-HS-74-59B	LOCAL HS STATION	U2 RB	519	TORUS	AI	I
9200	18	2-HS-74-58B	LOCAL HS STATION	U2 RB	519	TORUS	I	I
9201	18	2-HS-74-52B	LOCAL HS STATION	U2 RB	565	S/R10	AI	II
9202	14	2-JBOX-74-2134	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	T/R10	AI	
9203	18	2-HS-74-53B	LOCAL HS STATION	U2 RB	565	T/R10	AI	I
9204	18	2-HS-74-60B	LOCAL HS STATION	U2 RB	565	S/R10	AI	I
9205	14	2-JBOX-74-2146	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	S/R10	AI	I
9206	18	2-HS-74-61B	LOCAL HS STATION	U2 RB	565	S/R10	I	I
9207	18	2-HS-74-30B	LOCAL HS STATION	U2 RB	541	T/R13	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9208	14	2-JBOX-74-2296	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	T/R13	AI	II
9209	18	2-HS-74-71B	LOCAL HS STATION	U2 RB	519	TORUS	AI	II
9210	14	2-JBOX-74-2310	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	R/R14	AI	II
9211	18	2-HS-74-72B	LOCAL HS STATION	U2 RB	519	TORUS	I	II
9212	18	2-HS-74-66B	LOCAL HS STATION	U2 RB	565	T/R11	AI	II
9213	14	2-JBOX-74-2132	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	T/R11	AI	II
9214	18	2-HS-74-67B	LOCAL HS STATION	U2 RB	565	T/R11	AI	II
9215	14	2-JBOX-75-1223	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593	P/R11	AI	II
9216	14	2-JBOX-74-2938	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593	S/R12	AI	II
9217	18	2-HS-74-75B	LOCAL HS STATION	U2 RB	593	S/R12	I	II
9218	18	2-HS-70-47B	LOCAL HS STATION	U2 RB	541	TORUS	I	II
9219	14	2-JBOX-70-2111	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	P/R13	AI	II
9220	18	2-HS-75-9B	LOCAL HS STATION	U2 RB	541	N/R9	AI	II
9221	14	2-JBOX-75-2237	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	541	N/R9	AI	II
9222	18	2-HS-75-25B	LOCAL HS STATION	U2 RB	593	P/R11	AI	I
9223	14	2-JBOX-75-1222	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	593	P/R11	AI	I
9224	18	2-HS-75-37B	LOCAL HS STATION	U2 RB	519	N/R13	AI	II
9225	14	2-JBOX-75-2246	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	519	N/R13	AI	II
9226	18	2-HS-75-53B	LOCAL HS STATION	U2 RB	593	P/R11	AI	II
9227	18	2-HS-23-34B	LOCAL HS STATION	U2 RB	565	U/R9	AI	I
9228	14	2-JBOX-23-2115	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	U/R9	AI	I
9229	18	2-HS-23-40B	LOCAL HS STATION	U2 RB	565	U/R9	AI	I
9230	18	2-HS-23-46B	LOCAL HS STATION	U2 RB	565	U/R13	AI	II
9231	14	2-JBOX-23-2116	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U2 RB	565	U/R13	AI	II
9232	18	2-HS-23-52B	LOCAL HS STATION	U2 RB	565	U/R13	AI	II
9235	18	2-HS-74-0005B	LOCAL HS STATION - RHR PUMP 2A	U2 RB	519	U/R8	AI	I
9236	18	2-HS-74-0028B	LOCAL HS STATION - RHR PUMP 2B	U2 RB	519	U/R13	AI	II
9237	18	2-HS-74-0016B	LOCAL HS STATION - RHR PUMP 2C	U2 RB	519	U/R9	AI	I
9238	18	2-HS-74-0039B	LOCAL HS STATION - RHR PUMP 2D	U2 RB	519	U/R13	AI	II
9239	18	2-HS-75-0005B	LOCAL HS STATION - CS PUMP 2A	U2 RB	519	N/R8	AI	I
9240	18	2-HS-75-0033B	LOCAL HS STATION - CS PUMP 2B	U2 RB	519	N/R14	AI	II
9241	18	2-HS-75-0014B	LOCAL HS STATION - CS PUMP 2C	U2 RB	519	N/R9	AI	I
9242	18	2-HS-75-0042B	LOCAL HS STATION - CS PUMP 2D	U2 RB	519	N/R14	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9243	18	0-HS-23-5B	LOCAL HS STATION - RHRSW PUMP A2	INTAKE	565	A	AI	I
9244	18	0-HS-23-85B	LOCAL HS STATION - RHRSW PUMP A3	INTAKE	565	A	AI	I
9245	18	0-HS-23-19B	LOCAL HS STATION - RHRSW PUMP B2	INTAKE	565	B	AI	II
9246	18	0-HS-23-88B	LOCAL HS STATION - RHRSW PUMP B3	INTAKE	565	B	AI	II
9247	18	0-HS-23-12B	LOCAL HS STATION - RHRSW PUMP C2	INTAKE	565	C	AI	I
9248	18	0-HS-23-91B	LOCAL HS STATION - RHRSW PUMP C3	INTAKE	565	C	AI	I
9249	18	0-HS-23-27B	LOCAL HS STATION - RHRSW PUMP D2	INTAKE	565	D	AI	II
9250	18	0-HS-23-94B	LOCAL HS STATION - RHRSW PUMP D3	INTAKE	565	D	AI	IID
9251	20	2-JBOX-268-5951	MG SET 2DN CONTROL BOX	U2 RB	621	U/R13	AI	I
9252	20	2-JBOX-268-5953	MG SET 2EN CONTROL BOX	U2 RB	639	U/R14	AI	II
9253	14	NONE	LPCI MG SET 2DN VOLTAGE REGULATOR BOX	U2 RB	621	480V BD 2A	AI	I
9254	14	NONE	LPCI MG SET 2EN VOLTAGE REGULATOR BOX	U2 RB	621	480V BD 2A	AI	II
9255	14	0-JBOX-30-0640	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM A	AI	I
9256	18	0-HS-30-64	LOCAL HS STATION - DG A EXH FAN A	U1/2 DG	583	ELEC BD A	AI	I
9257	14	0-JBOX-30-1817	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM A	AI	II
9258	18	0-HS-30-65	LOCAL HS STATION - DG A EXH FAN B	U1/2 DG	583	ELEC BD A	AI	II
9259	14	0-JBOX-30-1825	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM B	AI	I
9260	18	0-HS-30-66	LOCAL HS STATION - DG B EXH FAN A	U1/2 DG	583	ELEC BD A	AI	I
9261	14	0-JBOX-30-1826	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM B	AI	II
9262	18	0-HS-30-67	LOCAL HS STATION - DG B EXH FAN B	U1/2 DG	583	ELEC BD A	AI	II
9263	14	0-JBOX-30-1828	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM C	AI	I
9264	18	0-HS-30-69	LOCAL HS STATION - DG C EXH FAN B	U1/2 DG	583	ELEC BD B	AI	I
9265	14	0-JBOX-30-1827	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM C	AI	II
9266	18	0-HS-30-68	LOCAL HS STATION - DG C EXH FAN A	U1/2 DG	583	ELEC BD B	AI	II
9267	14	0-JBOX-30-1830	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM D	AI	I
9268	18	0-HS-30-71	LOCAL HS STATION - DG D EXH FAN B	U1/2 DG	583	ELEC BD B	AI	I
9269	14	0-JBOX-30-1829	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM D	AI	II
9270	18	0-HS-30-70	LOCAL HS STATION - DG D EXH FAN A	U1/2 DG	583	ELEC BD B	AI	II
9271	14	3-JBOX-30-4239	JUNCTION BOX (TERM BLOCK)	U3 DG	583	FAN RM 3A	AI	I
9272	18	3-HS-30-230	LOCAL HS STATION - DG 3A EXH FAN A	U3 DG	583	ELEC BD 3EA	AI	I
9273	14	3-JBOX-30-4241	JUNCTION BOX (TERM BLOCK)	U3 DG	583	FAN RM 3B	AI	I
9274	18	3-HS-30-232	LOCAL HS STATION - DG 3B EXH FAN A	U3 DG	583	ELEC BD 3EA	AI	I
9275	00	2-PX-64-159B	POWER SUPPLY (PNL 9-19)	N/A	N/A	N/A	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9276	00	2-PX-64-160B	POWER SUPPLY (PNL 9-19)	N/A	N/A	N/A	AI	II
9277	00	2-PX-64-50	POWER SUPPLY (PNL 25-32)	N/A	N/A	N/A	AI	
9278	00	2-PX-64-161	POWER SUPPLY (PNL 9-87)	N/A	N/A	N/A	AI	I
9279	00	2-PX-64-162	POWER SUPPLY (PNL 9-88)	N/A	N/A	N/A	AI	II
9280	18	2-LPNL-925-0001	PANEL 25-0001	U2 RB	519	NW CORNER	AI	
9281	18	2-LPNL-925-0060	PANEL 25-60	U2 RB	519	NE CORNER	AI	
9282	04	1-XFA-231-TS1B	4KV/480V TRANSFORMER TS1B	U1 RB	621	T/R1	AI	
9283	13	2-MGEN-268-0002DA	LPCI MG SET 2DA	U2 RB	639	U/R14	AI	
9284	14	NONE	MG SET 2DA VOLTAGE REGULATOR BOX	U2 RB	621	480V SD 2	AI	
9285	14	2-JBOX-268-5991	MG SET 2DA CONTROL STATION (2-HS-268-0002DA)	U2 RB	639	U/R14	AI	
9286	20	2-JBOX-268-5952	MG SET 2DA CONTROL BOX (RELAYS)	U2 RB	639	U/R14	AI	
9287	13	2-MGEN-268-0002EA	LPCI MG SET 2EA	U2 RB	621	U/R14	AI	
9288	14	NONE	MG SET 2EA VOLTAGE REGULATOR BOX	U2 RB	621	480V BD 2A	AI	
9289	14	2-JBOX-268-5993	MG SET 2EA CONTROL STATION (2-HS-268-0002EA)	U2 RB	621	U/R14	AI	
9290	20	2-JBOX-268-5954	MG SET 2EA CONTROL BOX (RELAYS)	U2 RB	621	U/R14	AI	
9291	20	0-ECAB-067-0925	EECW PUMP DISCHARGE STRAINER A CONTROL PANEL	INTAKE	565	A	AI	
9292	20	0-ECAB-067-0926	EECW PUMP DISCHARGE STRAINER B CONTROL PANEL	INTAKE	565	B	AI	
9293	20	0-ECAB-067-0927	EECW PUMP DISCHARGE STRAINER C CONTROL PANEL	INTAKE	565	C	AI	
9294	20	0-ECAB-067-0928	EECW PUMP DISCHARGE STRAINER D CONTROL PANEL	INTAKE	565	D	AI	
9295	20	2-ECAB-099-0002A1	RPS CIRCUIT PROTECTOR CABINET 2A1	U2 RB	593	BATT BD 2	AI	
9296	20	2-ECAB-099-0002A2	RPS CIRCUIT PROTECTOR CABINET 2A2	U2 RB	593	BATT BD 2	AI	
9297	20	2-ECAB-099-0002B1	RPS CIRCUIT PROTECTOR CABINET 2B1	U2 RB	593	BATT BD 2	AI	
9298	20	2-ECAB-099-0002B2	RPS CIRCUIT PROTECTOR CABINET 2B2	U2 RB	593	BATT BD 2	AI	
9299	20	2-ECAB-099-0002C1	RPS CIRCUIT PROTECTOR CABINET 2C1	U2 RB	593	BATT BD 2	AI	
9300	20	2-ECAB-099-0002C2	RPS CIRCUIT PROTECTOR CABINET 2C2	U2 RB	593	BATT BD 2	AI	
9301	20	1-PNLA-009-0054	PANEL 1-9-54	U1 CB	617	U1 MCR	AI	
9302	20	1-PNLA-009-0055	PANEL 1-9-55	U1 CB	617	U1 MCR	AI	
9303	20	0-LPNL-925-0246A	PANEL 25-246A (CAD N2 SUPPLY PNL A)	YARD	565	YARD	AI	
9304	20	0-LPNL-925-0246B	PANEL 25-246B (CAD N2 SUPPLY PNL B)	YARD	565	YARD	AI	
9305	18	2-LPNL-925-247A	LOCAL PANEL 2-25-247A (CAD DRYWELL & SUPP. CHAM. V.)	U2 RB	621	Q/R11	AI	
9306	01	2-BDBB-265-0002B	480V RB VENT BD 2B	U2 RB	565	U/R11	AI	
9307	20	2-PNLA-009-0036A	PANEL 2-9-36A	U2 CB	593	U2 AIR	AI	
9308	18	2-LPNL-925-0247B	LOCAL PANEL 2-25-247B (CAD N2 SUPPLY PANEL B)	U2 RB	621	Q/R12	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9309	20	1-PNLA-009-0020	PANEL 1-9-20	U1 CB	617	U1 MCR	AI	
9310	20	2-PNLA-009-0020	PANEL 2-9-20	U2 CB	617	U2 MCR	AI	
9311	20	NONE	CO2 RELAY PNL FOR 39-10	U1/2 DG	565	DG D	AI	
9312	20	NONE	CO2 RELAY PNL FOR 39-7	U1/2 DG	565	DG A	AI	
9313	20	NONE	CO2 RELAY PNL FOR 39-8	U1/2 DG	565	DG B	AI	
9314	20	NONE	CO2 RELAY PNL FOR 39-9	U1/2 DG	565	DG C	AI	
9315	20	1-LPNL-925-0032	LOCAL PANEL 1-25-32	U1 RB	621	Q/R2	AI	
9316	18	1-LPNL-925-0223	LOCAL PANEL 1-25-233	U1 RB	593	Q/R2	AI	
9317	20	2-PNLA-009-0008	PANEL 2-9-8	U2 CB	617	U2 MCR	AI	
9318	20	1-PNLA-009-0003	PANEL 1-9-3	U1 CB	617	U1 MCR	AI	
9319	18	2-LPNL-925-0223	LOCAL PANEL 2-25-223	U2 RB	593	Q/R12	AI	
9320	18	2-LPNL-925-0007A	LOCAL PANEL 2-25-7A	U2 RB	541	SW CORNER	AI	
9321	18	2-LPNL-925-0007B	LOCAL PANEL 2-25-7B	U2 RB	541	SW CORNER	AI	
9322	18	0-HS-67-48B	HANDSWITCH FOR 0-FCV-67-48 (4058)	INTAKE	565	D	AI	
9323	18	0-HS-67-49B	HANDSWITCH FOR 0-FCV-67-49 (4015)	INTAKE	565	C	AI	
9324	18	2-HS-73-81B	HANDSWITCH FOR 2-FCV-73-81 (3043)	U2 RB	519	TORUS	AI	
9325	18	1-HS-23-34B	HANDSWITCH FOR 1-FCV-23-034 (8004)	U1 RB	565	R2/U	AI	
9326	18	1-HS-23-40B	HANDSWITCH FOR 1-FCV-23-040 (8010)	U1 RB	565	R2/U	AI	
9327	14	1-HS-23-46B	HANDSWITCH FOR 1-FCV-23-046 (8016)	U1 RB	565	R5/T	AI	
9328	14	1-HS-23-52B	HANDSWITCH FOR 1-FCV-23-052 (8022)	U1 RB	565	R5/T	AI	
9329	14	1-HS-23-57B	HANDSWITCH FOR 1-FCV-23-57 (8025)	U1 RB	565	R6/S	AI	
9330	14	2-HS-74-100B	HANDSWITCH FOR 2-FCV-74-100 (1010)	U2 RB	565	R8/T	AI	
9331	14	2-HS-74-99B	HANDSWITCH FOR 2-FCV-74-99 (1041)	U2 RB	519	SE CORNER	AI	
9332	18	2-HS-64-68	HANDSWITCH FOR 2-CLR-67-917 (4006)	U2 RB	519	SW CORNER	AI	
9333	18	2-HS-64-69	HANDSWITCH FOR 2-CLR-67-918 (4049)	U2 RB	519	SE CORNER	AI	
9334	18	2-HS-64-70	HANDSWITCH FOR 2-CLR-67-921 (4008)	U2 RB	519	SW CORNER	AI	
9335	18	2-HS-64-71	HANDSWITCH FOR 2-CLR-67-922 (4051)	U2 RB	519	SE CORNER	AI	
9336	14	2-HS-64-72	HANDSWITCH FOR 2-CLR-67-919 (4007)	U2 RB	519	NW CORNER	AI	
9337	14	2-HS-64-73	HANDSWITCH FOR 2-CLR-67-920 (4050)	U2 RB	519	NE CORNER	AI	
9338	14	2-HS-69-2B	HANDSWITCH FOR 2-FCV-69-2 (3034)	U2 RB	593	R10/S	AI	
9339	14	2-HS-71-18B	HANDSWITCH FOR 2-FCV-71-18 (3040)	U2 RB	519	NW CORNER	I	
9340	20	2-HS-71-2B	HANDSWITCH FOR 2-FCV-71-2 (3038)	U2 RB	593	R/R14	AI	
9341	14	2-HS-73-27B	HANDSWITCH FOR 2-FCV-73-27 (3044)	U2 RB	519	HPCI	I	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9342	18	2-HS-73-3B	HANDSWITCH FOR 2-FCV-73-3 (3042)	U2 RB	519	TORUS	AI	
9343	14	2-HS-74-12B	HANDSWITCH FOR 2-FCV-74-12 (1011)	U2 RB	519	SW CORNER	AI	
9344	14	2-HS-74-13B	HANDSWITCH FOR 2-FCV-74-13 (1012)	U2 RB	519	SE CORNER	AI	
9345	14	2-HS-74-1B	HAND SWITCH FOR 2-FCV-74-1 (1001)	U2 RB	519	SW CORNER	AI	
9346	14	2-HS-74-24B	HANDSWITCH FOR 2-FCV-74-24 (1029)	U2 RB	519	SE CORNER	AI	
9347	18	2-HS-74-25B	HANDSWITCH FOR 2-FCV-74-25 (1030)	U2 RB	519	SE CORNER	AI	
9348	14	2-HS-74-2B	HANDSWITCH FOR 2-FCV-74-2 (1002)	U2 RB	519	SW CORNER	AI	
9349	14	2-HS-74-35B	HANDSWITCH FOR 2-FCV-74-35 (1039)	U2 RB	519	SE CORNER	AI	
9350	18	2-HS-74-36B	HANDSWITCH FOR 2-FCV-74-36 (1040)	U2 RB	519	SE CORNER	AI	
9351	18	2-HS-74-73B	HANDSWITCH FOR 2-FCV-74-73 (1049)	U2 RB	519	TORUS	AI	
9352	14	2-HS-74-96B	HANDSWITCH FOR 2-FCV-74-96 (1003)	U2 RB	519	SW CORNER	AI	
9353	14	2-HS-74-97B	HANDSWITCH FOR 2-FCV-74-97 (1013)	U2 RB	519	SW CORNER	AI	
9354	14	2-HS-74-98B	HANDSWITCH FOR 2-FCV-74-98 (1031)	U2 RB	519	SE CORNER	AI	
9355	18	2-HS-75-11B	HANDSWITCH FOR 2-FCV-75-11 (5006)	U2 RB	519	NW CORNER	AI	
9356	14	2-HS-75-22B	HANDSWITCH FOR 2-FCV-75-22 (5010)	U2 RB	519	NW CORNER	AI	
9357	14	2-HS-75-23B	HANDSWITCH FOR 2-FCV-75-23 (5012)	U2 RB	593	P/R10	AI	
9358	18	2-HS-75-2B	HANDSWITCH FOR 2-FCV-75-2 (5001)	U2 RB	519	NW CORNER	AI	
9359	18	2-HS-75-30B	HANDSWITCH FOR 2-FCV-75-30 (5015)	U2 RB	519	NE CORNER	AI	
9360	18	2-HS-75-39B	HANDSWITCH FOR 2-FCV-75-39 (5020)	U2 RB	519	NE CORNER	AI	
9361	14	2-HS-75-50B	HANDSWITCH FOR 2-FCV-75-50 (5024)	U2 RB	519	NE CORNER	AI	
9362	14	2-HS-75-51B	HANDSWITCH FOR 2-FCV-75-51 (5026)	U2 RB	593	P/R11	AI	
9363	14	2-HS-78-61B	HANDSWITCH FOR 2-FCV-78-61 (1026)	U2 RB	621	R10/S	AI	
9364	18	2-PS-67-50	PRESSURE SWITCH FOR 2-FCV-67-50 (4017)	U2 RB	593	P/R13	AI	
9365	18	2-PS-67-51	PRESSURE SWITCH FOR 2-FCV-67-51 (4060)	U2 RB	565	R13/T	AI	
9366	18	2-TS-64-68	TEMPERATURE SWITCH FOR 2-CLR-67-917 (4006)	U2 RB	519	SW CORNER	AI	
9367	18	2-TS-64-69	TEMPERATURE SWITCH FOR 2-CLR-67-918 (4049)	U2 RB	519	SE CORNER	AI	
9368	18	2-TS-64-70	TEMPERATURE SWITCH FOR 2-CLR-67-921 (4008)	U2 RB	519	SW CORNER	AI	
9369	18	2-TS-64-71	TEMPERATURE SWITCH FOR 2-CLR-67-922 (4051)	U2 RB	519	SE CORNER	AI	
9370	18	2-TS-64-72	TEMPERATURE SWITCH FOR 2-CLR-67-919 (4007)	U2 RB	519	NW CORNER	AI	
9371	18	2-TS-64-73	TEMPERATURE SWITCH FOR 2-CLR-67-920 (4050)	U2 RB	519	NE CORNER	AI	
9372	18	2-TS-1-17A	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	AI	
9373	18	2-TS-1-17B	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	AI	
9374	18	2-TS-1-17C	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9375	18	2-TS-1-17D	MAIN STEAM VAULT TEMPERATURE SWITCH	U2 RB	565	MS VLT N/T9	AI	
9376	18	2-TS-1-29A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	AI	
9377	18	2-TS-1-29B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	AI	
9378	18	2-TS-1-29C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	AI	
9379	18	2-TS-1-29D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	565	MS TNL K/T9	AI	
9380	18	2-TS-1-40A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9381	18	2-TS-1-40B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9382	18	2-TS-1-40C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9383	18	2-TS-1-40D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9384	18	2-TS-1-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9385	18	2-TS-1-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9386	18	2-TS-1-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9387	18	2-TS-1-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U2 TB	586	MS TNL K/T9	AI	
9388	14	2-HS-23-57B	HANDSWITCH FOR 2-FCV-23-57 (8026)	U2 RB	565	R13/T	AI	
9389	14	2-HS-74-101B	HANDSWITCH FOR 2-FCV-74-101 (1038)	U2 RB	565	R13/T	AI	
9390	18	3-PS-67-50	PRESSURE SWITCH FOR 3-FCV-67-50 (4018)	U3 RB	593	P/R20	AI	
9391	20	1-PNLA-009-0008	PANEL 1-9-8	U1 CB	617	U1 MCR	AI	
9392	18	3-PS-67-51	PRESSURE SWITCH FOR 3-FCV-67-51 (4061)	U3 RB	565	R20/T	AI	
9393	00	2-AMP-092-0007/41A	IRM CH. "A" VOLTAGE PREAMPLIFIER 7-34A	RB	565	S/R10	AI	
9394	00	2-AMP-092-0007/41B	IRM CH. "B" VOLTAGE PREAMPLIFIER 7-34B	RB	565	S/R10	AI	
9395	14	2-LPNL-925-0027	PANEL 2-25-27 IRM PREAMP. RPS I	RB	565	S/R10	AI	
9396	00	2-AMP-092-0007/41C	IRM CH. "C" VOLTAGE PREAMPLIFIER 7-34C	RB	577	Q/R12	AI	
9397	00	2-AMP-092-0007/41D	IRM CH. "D" VOLTAGE PREAMPLIFIER 7-34D	RB	577	Q/R12	AI	
9398	14	2-LPNL-925-0061	PANEL 2-25-61 IRM PREAMP. RPS II	RB	577	Q/R12	AI	
9399	20	2-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U2 MCR	AI	
9400	20	2-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U2 MCR	AI	
9401	20	2-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	CB	617	U2 MCR	AI	
9402	20	2-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	CB	617	U2 MCR	AI	
9403	20	2-PNLA-009-012	PANEL 2-9-12	CB	617	U2 MCR	AI	
9404	15	2-BATD-283-000A2	24V NEUTRON MONITORING BATTERY, U2 CHANNEL A	CB	593	BAT RM 2	AI	
9405	15	2-BATD-283-000B2	24V NEUTRON MONITORING BATTERY, U2 CHANNEL B	CB	593	BAT RM 2	AI	
9406	16	2-CHGD-283-A1-2	24V NEUTRON BATTERY CHARGERS A1-2	CB	593	BAT BD RM 2	AI	
9407	16	2-CHGD-283-A2-2	24V NEUTRON BATTERY CHARGERS A2-2	CB	593	BAT BD RM 2	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
9408	16	2-CHGD-283-B1-2	24V NEUTRON BATTERY CHARGERS B1-2	CB	593	BAT BD RM 2	AI	
9409	16	2-CHGD-283-B2-2	24V NEUTRON BATTERY CHARGERS B2-2	CB	593	BAT BD RM 2	AI	
30001	00	3-HCU-85,1-185	CRD\HYDRAULIC CONTROL UNIT	U3 RB	565	R16&20/P-S	AI	1,2
30002	07	3-FCV-85-82A	CRD\WEST SDV VENT VALVE	U3 RB	565	R16/S	AI	1
30003	07	3-FCV-85-82	CRD\WEST SDV VENT VALVE	U3 RB	565	R16/S	AI	2
30004	07	3-FCV-85-37C	CRD\WEST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	AI	1
30005	07	3-FCV-85-37D	CRD\WEST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	AI	2
30006	07	3-FCV-85-83A	CRD\EAST SDV VENT VALVE	U3 RB	565	R20/S	AI	1
30007	07	3-FCV-85-83	CRD\EAST SDV VENT VALVE	U3 RB	565	R20/S	AI	2
30008	07	3-FCV-85-37E	CRD\EAST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	AI	1
30009	07	3-FCV-85-37F	CRD\EAST SDV DRAIN VALVE	U3 RB	565	P/R16&R20	AI	2
30010	21	3-TNK-85-901	CRD\WEST SCRAM INSTRUMENT VOLUME	U3 RB	565	P/R16	AI	1,2
30011	21	3-TNK-85-902	CRD\EAST SCRAM INSTRUMENT VOLUME	U3 RB	565	P/R20	AI	1,2
30012	08B	3-FSV-85-37A	CRD\SCRAM DUMP VALVE	U3 RB	565	R19/N	AI	1
30013	08B	3-FSV-85-37B	CRD\SCRAM DUMP VALVE	U3 RB	565	R19/N	AI	1
30014	08B	3-FSV-85-35A	CRD\BACKUP SCRAM VALVE	U3 RB	565	R19/N	AI	2
30015	08B	3-FSV-85-35B	CRD\BACKUP SCRAM VALVE	U3 RB	565	R19/N	AI	2
30016	20	3-HS-99-5A/S3A	RPS\REACTOR MANUAL SCRAM CHANNEL A3	U3 CB	617	U3 MCR	AI	1
30017	20	3-HS-99-5A/S3B	RPS\REACTOR MANUAL SCRAM CHANNEL B3	U3 CB	617	U3 MCR	AI	1
30018	20	3-HS-99-5A-S1	RPS\REACTOR MODE SWITCH	U3 CB	617	U3 MCR	AI	2
31001	08A	3-FCV-74-1	RHR/PUMP 3A SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SW CORNER	AI	1
31002	08A	3-FCV-74-2	RHR/PUMP 3A SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SW CORNER	AI	1
31003	08A	3-FCV-74-96	RHR/UNIT 3 TO UNIT 2 RHR X-TIE ISOLATION VALVE	U3 RB	519	SW CORNER	AI	1
31004	06	3-PMP-74-5	RHR/PUMP 3A	U3 RB	519	SW CORNER	AI	1
31005	R	3-CKV-74-560A	RHR/PUMP 3A MINIMUM FLOW CHECK VALVE	U3 RB	519		AI	1
31006	08A	3-FCV-74-7	RHR/PUMP 3A&3C MINIMUM FLOW VALVE	U3 RB	519	SW CORNER	AI	1
31007	R	3-CKV-71-547	RCIC/RCIC MINIMUM FLOW CHECK VALVE	U3 RB			AI	1
31008	R	3-CKV-74-559A	RHR/PUMP 3A DISCHARGE CHECK VALVE	U3 RB	519		AI	1
31009	21	3-HEX-74-900A	RHR/HEAT EXCHANGER 3A	U3 RB	565	SW HX	AI	1
31010	08A	3-FCV-74-100	RHR/U3 TO U2 RHR DISCHARGE X-TIE ISOLATION VALVE	U3 RB	565	R14/T	AI	1
31011	08A	3-FCV-74-12	RHR/PUMP 3C SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SW CORNER	AI	1A
31012	08A	3-FCV-74-13	RHR/PUMP 3C SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SW CORNER	AI	1A
31013	08A	3-FCV-74-97	RHR/UNIT 3 TO UNIT 2 RHR X-TIE ISOLATION VALVE	U3 RB	519	SW CORNER	AI	1A

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
31014	06	3-PMP-74-16	RHR/PUMP 3C	U3 RB	519	SW CORNER	AI	1A
31015	R	3-CKV-74-560C	RHR/PUMP 3C MINIMUM FLOW CHECK VALVE	U3 RB	519		AI	1A
31016	R	3-CKV-74-559C	RHR/PUMP 3C DISCHARGE CHECK VALVE	U3 RB	519		AI	1A
31017	21	3-HEX-74-900C	RHR/HEAT EXCHANGER 3C	U3 RB	565	SW HX	AI	1A
31018	18	3-FI-74-50	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	AI	1
31019	18	3-FI-74-56	RHR/LOOP I FLOW INDICATOR	N/A	N/A	N/A	AI	1
31020	08A	3-FCV-74-57	RHR/LOOP I TORUS CONTAINMENT COOLING/SPRAY VALVE	U3 RB	519	TORUS	AI	1
31021	08A	3-FCV-74-59	RHR/LOOP I SUPRESSION POOL COOLING VALVE	U3 RB	519	TORUS	AI	1
31022	08A	3-FCV-74-58	RHR/LOOP I SUPRESSION POOL SPRAY VALVE	U3 RB	519	TORUS	I	1
31023	08A	3-FCV-74-52	RHR/LOOP I OUTBOARD INJECTION VALVE	U3 RB	565	T/R18	AI	1
31024	08A	3-FCV-74-53	RHR/LOOP I INBOARD INJECTION VALVE	U3 RB	565	T/R18	AI	1
31025	R	3-FCV-74-54	RHR/LOOP I TESTABLE CHECK VALVE	U3 DW			AI	1
31026	08A	3-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U3 RB	621	R17/S	AI	1
31027	08A	3-FCV-74-60	RHR/LOOP I OUTBOARD DRYWELL SPRAY VALVE	U3 RB	565	R16/S	AI	1
31028	08A	3-FCV-74-61	RHR/LOOP I INBOARD DRYWELL SPRAY VALVE	U3 RB	565	R16/S	I	1
31029	08A	3-FCV-74-24	RHR/PUMP 3B SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SE CORNER	AI	2
31030	08A	3-FCV-74-25	RHR/PUMP 3B SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SE CORNER	AI	2
31031	06	3-PMP-74-28	RHR/PUMP 3B	U3 RB	519	SE CORNER	AI	2
31032	R	3-CKV-74-560B	RHR/PUMP 3B MINIMUM FLOW CHECK VALVE	U3 RB	519		AI	2
31033	08A	3-FCV-74-30	RHR/PUMP 3B&3D MINIMUM FLOW VALVE	U3 RB	519	SE CORNER	AI	2
31034	R	3-CKV-73-559	HPCI/HPCI PUMP MINIMUM FLOW CHECK VALVE	U3 RB			AI	2
31035	R	3-CKV-74-559B	RHR/PUMP 3B DISCHARGE CHECK VALVE	U3 RB	519		AI	2
31036	21	3-HEX-74-900B	RHR/HEAT EXCHANGER 3B	U3 RB	565	SE HX	AI	2
31037	08A	3-FCV-74-35	RHR/PUMP 3D SUCTION VALVE FROM SUPRESSION POOL	U3 RB	519	SE CORNER	AI	2A
31038	08A	3-FCV-74-36	RHR/PUMP 3D SUCTION VALVE FROM SHUTDOWN COOLING	U3 RB	519	SE CORNER	AI	2A
31039	06	3-PMP-74-39	RHR/PUMP 3D	U3 RB	519	SE CORNER	AI	2A
31040	R	3-CKV-74-560D	RHR/PUMP 3D MINIMUM FLOW CHECK VALVE	U3 RB	519		AI	2A
31041	R	3-CKV-74-559D	RHR/PUMP 3D DISCHARGE CHECK VALVE	U3 RB	519		AI	2A
31042	21	3-HEX-74-900D	RHR/HEAT EXCHANGER 3D	U3 RB	565	SE HX	AI	2A
31043	18	3-FI-74-64	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	AI	2
31044	18	3-FI-74-70	RHR/LOOP II FLOW INDICATOR	N/A	N/A	N/A	AI	2
31045	08A	3-FCV-74-71	RHR/LOOP II TORUS CONTAINMENT COOLING/SPRAY VALVE	U3 RB	519	TORUS	AI	2
31046	08A	3-FCV-74-73	RHR/LOOP II SUPRESSION POOL COOLING VALVE	U3 RB	519	TORUS	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
31047	08A	3-FCV-74-72	RHR/LOOP II SUPRESSION POOL SPRAY VALVE	U3 RB	519	TORUS	I	2
31048	08A	3-FCV-74-66	RHR/LOOP II OUTBOARD INJECTION VALVE	U3 RB	565	T/R18	AI	2
31049	08A	3-FCV-74-67	RHR/LOOP II INBOARD INJECTION VALVE	U3 RB	565	T/R18	AI	2
31050	R	3-FCV-74-68	RHR/LOOP II TESTABLE CHECK VALVE	U3 DW			AI	2
31051	08A	3-FCV-74-74	RHR/LOOP II OUTBOARD DRYWELL SPRAY VALVE	U3 RB	593	R19/S	AI	2
31052	08A	3-FCV-74-75	RHR/LOOP II INBOARD DRYWELL SPRAY VALVE	U3 RB	593	R19/S	I	2
32000	07	3-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32001	R	3-CKV-10-506	RVVD/MSRV 1-4 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32002	R	3-CKV-10-521	RVVD/MSRV 1-4 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32003	07	3-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32004	R	3-CKV-10-507	RVVD/MSRV 1-5 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32005	R	3-CKV-10-522	RVVD/MSRV 1-5 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32006	07	3-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32007	R	3-CKV-10-508	RVVD/MSRV 1-18 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32008	R	3-CKV-10-523	RVVD/MSRV 1-18 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32009	07	3-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32010	R	3-CKV-10-509	RVVD/MSRV 1-19 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32011	R	3-CKV-10-524	RVVD/MSRV 1-19 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32012	07	3-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32013	R	3-CKV-10-510	RVVD/MSRV 1-22 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32014	R	3-CKV-10-525	RVVD/MSRV 1-22 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32015	07	3-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32016	R	3-CKV-10-511	RVVD/MSRV 1-23 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32017	R	3-CKV-10-526	RVVD/MSRV 1-23 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32018	07	3-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	1
32019	R	3-CKV-10-519	RVVD/MSRV 1-179 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32020	R	3-CKV-10-532	RVVD/MSRV 1-179 DISCHARGE LINE VACUUM BKR	U3 DW			AI	1
32021	07	3-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	2
32022	R	3-CKV-10-512	RVVD/MSRV 1-30 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32023	R	3-CKV-10-527	RVVD/MSRV 1-30 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32024	07	3-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	2
32025	R	3-CKV-10-513	RVVD/MSRV 1-31 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32026	R	3-CKV-10-528	RVVD/MSRV 1-31 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
32027	07	3-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	2
32028	R	3-CKV-10-514	RVVD/MSRV 1-34 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32029	R	3-CKV-10-529	RVVD/MSRV 1-34 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32030	07	3-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	2
32031	R	3-CKV-10-515	RVVD/MSRV 1-41 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32032	R	3-CKV-10-530	RVVD/MSRV 1-41 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32033	07	3-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	2
32034	R	3-CKV-10-516	RVVD/MSRV 1-42 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32035	R	3-CKV-10-531	RVVD/MSRV 1-42 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32036	07	3-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE	U3 DW	584	DW	AI	2
32037	R	3-CKV-10-520	RVVD/MSRV 1-180 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
32038	R	3-CKV-10-533	RVVD/MSRV 1-180 DISCHARGE LINE VACUUM BKR	U3 DW			AI	2
33001	07	3-FCV-1-14	MSIV "A" INBOARD ISOLATION VALVE	U3 DW	563	DW	AI	1
33002	07	3-FCV-1-15	MSIV "A" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	AI	2
33003	07	3-FCV-1-26	MSIV "B" INBOARD ISOLATION VALVE	U3 DW	563	DW	AI	1
33004	07	3-FCV-1-27	MSIV "B" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	AI	2
33005	07	3-FCV-1-37	MSIV "C" INBOARD ISOLATION VALVE	U3 DW	563	DW	AI	1
33006	07	3-FCV-1-38	MSIV "C" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	AI	2
33007	07	3-FCV-1-51	MSIV "D" INBOARD ISOLATION VALVE	U3 DW	563	DW	AI	1
33008	07	3-FCV-1-52	MSIV "D" OUTBOARD ISOLATION VALVE	U3 RB	564	MSIV VAULT	AI	2
33009	08A	3-FCV-1-55	MAIN STEAM LINE DRAIN ISOLATION VALVE	U3 DW	563	DW	AI	1
33010	R	3-CKV-3-558	FEEDWATER "A" INBOARD ISOLATION VALVE	U3 DW			AI	1
33011	R	3-CKV-3-554	FEEDWATER "A" OUTBOARD ISOLATION VALVE	U3 RB			AI	2
33012	R	3-CKV-3-572	FEEDWATER "B" INBOARD ISOLATION VALVE	U3 DW			AI	1
33013	R	3-CKV-3-568	FEEDWATER "B" OUTBOARD ISOLATION VALVE	U3 RB			AI	2
33014	07	3-FCV-32-63	DRYWELL CONTROL AIR SUCTION VALVE	U3 RB	565	CLEAN RM	I	1,2
33015	07	3-FCV-64-17	CONTAINMENT VENTILATION ISOLATION VALVE	U3 RB	565	RR19/T	I	1,2
33016	07	3-FCV-64-30	CONTAINMENT VENTILATION ISOLATION VALVE	U3 RB	621	Q/R18	I	1,2
33017	07	3-FCV-64-33	CONTAINMENT VENTILATION ISOLATION VALVE	U3 RB	565	P/R16	I	1,2
33018	07	3-FCV-64-139	CONTAINMENT DW DP ISOLATION VALVE	U3 RB	565	P/R16	I	1,2
33019	07	3-FCV-64-140	CONTAINMENT DW DP ISOLATION VALVE	U3 RB	565	P/R16	I	1,2
33020	07	3-FCV-64-28A	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33021	07	3-FCV-64-28B	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
33022	07	3-FCV-64-28C	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33023	07	3-FCV-64-28D	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33024	07	3-FCV-64-28E	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33025	07	3-FCV-64-28F	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33026	07	3-FCV-64-28G	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33027	07	3-FCV-64-28H	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33028	07	3-FCV-64-28J	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33029	07	3-FCV-64-28K	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33030	07	3-FCV-64-28L	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33031	07	3-FCV-64-28M	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U3 DW	<550	IN TORUS	I	1,2
33032	08A	3-FCV-69-1	RWCU INBOARD ISOLATION VALVE	U3 DW	584	DW	AI	1
33033	08A	3-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U3 RB	593	R17/S	AI	2
33034	R	3-CKV-69-629	RWCU SYSTEM RETURN CHECK VALVE	U3 RB			AI	2
33035	08A	3-FCV-70-47	RBCCW DRYWELL RETURN VALVE	U3 RB	519	TORUS	I	1,2
33036	R	3-CKV-70-506	RBCCW DRYWELL SUPPLY CHECK VALVE	U3 RB			I	1,2
33037	08A	3-FCV-71-2	RCIC INBOARD ISOLATION VALVE	U3 DW	584	DW	AI	1
33038	08A	3-FCV-71-3	RCIC OUTBOARD ISOLATION VALVE	U3 RB	565	MSIV VAULT	AI	2
33039	08A	3-FCV-71-18	RCIC OUTBOARD SUCTION VALVE	U3 RB	519	R15/N	I	1,2
33040	08A	3-FCV-73-2	HPCI STEAM SUPPLY ISOLATION VALVE	U3 DW	563	DW	AI	1
33041	08A	3-FCV-73-3	HPCI STEAM SUPPLY ISOLATION VALVE	U3 RB	519	TORUS	AI	2
33042	08A	3-FCV-73-81	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	U3 RB	519	TORUS	AI	2
33043	08A	3-FCV-73-27	HPCI OUTBOARD SUCTION VALVE	U3 RB	519	R19/V	I	1,2
33044	07	3-FCV-75-57	PSC PUMP SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	AI	1
33045	07	3-FCV-75-58	PSC PUMP SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	AI	2
33046	07	3-FCV-76-24	PRIMARY CONTAINMENT ISOLATION VALVE	U3 RB	565	R19/T	I	1,2
33047	07	3-FCV-77-2B	DRYWELL FLOOR DRAIN SUMP DISCHARGE	U3 RB	519	TORUS	I	1,2
33048	07	3-FCV-77-15B	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE	U3 RB	519	TORUS	I	1,2
33049	07	3-FCV-84-19	CAD ISOLATION VALVE	U3 RB	621	R18/Q	I	1,2
33050	07	3-FCV-84-20	CAD ISOLATION VALVE	U3 RB	621	Q/R18	I	1,2
33051	20	3-LI-3-58A	RPV LEVEL INSTRUMENT	N/A	N/A	N/A	AI	1
33052	20	3-LI-3-58B	RPV LEVEL INSTRUMENT	U3 CB	N/A	N/A	AI	2
33053	20	3-PI-3-74A	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	AI	1
33054	20	3-PI-3-74B	RPV PRESSURE INSTRUMENT	N/A	N/A	N/A	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
33055	20	3-XR-64-159	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	AI	1
33056	20	3-LI-64-159A	TORUS LEVEL INSTRUMENT	N/A	N/A	N/A	AI	2
33057	20	3-TI-64-161	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	AI	1
33058	20	3-TI-64-162	TORUS TEMPERATURE INSTRUMENT	N/A	N/A	N/A	AI	2
33059	20	3-PI-64-67B	DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	I	1
33060	20	3-PI-64-160A	DRYWELL PRESSURE INSTRUMENT	N/A	N/A	N/A	I	2
33061	20	3-TI-64-52AB	DRYWELL TEMPERATURE INSTRUMENT	N/A	N/A	N/A	I	1
33062	20	3-XR-64-50	DRYWELL TEMPERATURE AND PRESSURE INSTRUMENT	N/A	N/A	N/A	I	2
33063	07	3-FCV-76-17	CONTAINMENT INERTING N2 MAKEUP	U3 RB	565	R19/T	I	1,2
33064	07	3-FCV-64-222	HARDENED WETWELL VENT	U3 RB	565	R17/T	I	1,2
33065	20	3-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U3 MCR	AI	1
33066	20	3-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U3 MCR	AI	2
34001	10	3-CLR-67-917	EECW/RHR PUMP 3A ROOM COOLER	U3 RB	519	SW CORNER	AI	1
34002	10	3-CLR-67-919	EECW/CS PUMP 3A ROOM COOLER	U3 RB	519	NW CORNER	AI	1
34003	10	3-CLR-67-921	EECW/RHR PUMP 3C ROOM COOLER	U3 RB	519	SW CORNER	AI	1
34004	21	3-HEX-67-915	EECW/RHR SEAL HX 3A	U3 RB	519	SW CORNER	AI	1
34005	R	3-CKV-67-638	EECW NORTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U3 RB	565		AI	1
34006	R	3-CKV-67-639	EECW NORTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U3 RB	565		AI	1
34007	R	3-CKV-67-648	EECW NORTH HEADER SUPPLY CHECK VALVE TO A CS	U3 RB	565		AI	1
34008	R	3-CKV-67-649	EECW NORTH HEADER SUPPLY CHECK VALVE TO A CS	U3 RB	565		AI	1
34009	R	3-CKV-67-659	EECW NORTH HEADER SUPPLY CHECK VALVE TO B&D RHR	U3 RB	565		AI	1
34010	R	3-CKV-67-660	EECW NORTH HEADER SUPPLY CHECK VALVE TO B&D RHR	U3 RB	565		AI	1
34011	R	3-CKV-67-656	EECW NORTH HEADER SUPPLY CHECK VALVE TO B CS	U3 RB	565		AI	1
34012	R	3-CKV-67-657	EECW NORTH HEADER SUPPLY CHECK VALVE TO B CS	U3 RB	565		AI	1
34013	10	3-CLR-67-918	EECW/RHR PUMP 3B ROOM COOLER	U3 RB	519	SE CORNER	AI	2
34014	10	3-CLR-67-920	EECW/CS PUMP 3B ROOM COOLER	U3 RB	519	NE CORNER	AI	2
34015	10	3-CLR-67-922	EECW/RHR PUMP 3D ROOM COOLER	U3 RB	519	SE CORNER	AI	2
34016	21	3-HEX-67-923	EECW/RHR SEAL HX 3B	U3 RB	519	SE CORNER	AI	2
34017	R	3-CKV-67-558	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U3 RB	593		AI	2
34018	R	3-CKV-67-559	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U3 RB	593		AI	2
34019	R	3-CKV-67-541	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A CS	U3 RB	593		AI	2
34020	R	3-CKV-67-542	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A CS	U3 RB	593		AI	2
34021	R	3-CKV-67-600	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B & D RHR	U3 RB	593		AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
34022	R	3-CKV-67-601	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B & D RHR	U3 RB	593		AI	2
34023	R	3-CKV-67-584	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B CS	U3 RB	593		AI	2
34024	R	3-CKV-67-585	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B CS	U3 RB	593		AI	2
34025	21	3-HEX-67-916	EECW/RHR SEAL HX 3C	U3 RB	519	SW CORNER	AI	1
34026	21	3-HEX-67-924	EECW/RHR SEAL HX 3D	U3 RB	519	SE CORNER	AI	2
34027	R	3-CKV-67-598	EECW SEAL DISCHARGE CHECK VALVE	U3 RB	593		AI	2
34028	R	3-CKV-67-713	EECW NORTH HEADER SUPPLY CHECK VALVE TO 3EC DG	U3 DG	565		AI	1
34029	R	3-CKV-67-714	EECW NORTH HEADER SUPPLY CHECK VALVE TO 3EC DG	U3 DG	565		AI	1
34030	R	3-CKV-67-723	EECW NORTH HEADER SUPPLY CHECK VALVE TO 3ED DG	U3 DG	565		AI	1
34031	R	3-CKV-67-724	EECW NORTH HEADER SUPPLY CHECK VALVE TO 3ED DG	U3 DG	565		AI	1
34032	R	3-CKV-67-715	EECW SOUTH HEADER SUPPLY CHECK VALVE TO 3EC DG	U3 DG	565		AI	2
34033	R	3-CKV-67-716	EECW SOUTH HEADER SUPPLY CHECK VALVE TO 3EC DG	U3 DG	565		AI	2
34034	R	3-CKV-67-725	EECW SOUTH HEADER SUPPLY CHECK VALVE TO 3ED DG	U3 DG	565		AI	2
34035	R	3-CKV-67-726	EECW SOUTH HEADER SUPPLY CHECK VALVE TO 3ED DG	U3 DG	565		AI	2
35001	08A	3-FCV-75-2	CS/PUMP 3A SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	AI	1
35002	06	3-PMP-75-5	CS/PUMP 3A	U3 RB	519	NW CORNER	AI	1
35003	R	3-CKV-75-537A	CS/PUMP 3A DISCHARGE CHECK VALVE	U3 RB			AI	1
35004	R	3-CKV-75-570A	CS/PUMP 3A MINI-FLOW CHECK VALVE	U3 RB			AI	1
35005	08A	3-FCV-75-9	CS/PUMPS 3A & 3C MINI-FLOW VALVE	U3 RB	519	NW CORNER	AI	1
35006	08A	3-FCV-75-11	CS/PUMP 3C SUCTION ISOLATION VALVE	U3 RB	519	NW CORNER	AI	1
35007	06	3-PMP-75-14	CS/PUMP 3C	U3 RB	519	NW CORNER	AI	1
35008	R	3-CKV-75-537C	CS/PUMP 3C DISCHARGE CHECK VALVE	U3 RB			AI	1
35009	R	3-CKV-75-570C	CS/PUMP 3C MINI-FLOW CHECK VALVE	U3 RB			AI	1
35010	08A	3-FCV-75-22	CS/PUMPS 3A & 3C TEST ISOLATION VALVE	U3 RB	519	NW CORNER	AI	1
35011	18	3-FI-75-21	CS/PUMPS 3A & 3C FLOW INDICATOR	N/A	N/A	N/A	AI	1
35012	08A	3-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U3 RB	593	P/R18	AI	1
35013	08A	3-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U3 RB	593	P/R18	AI	1
35014	R	3-FCV-75-26	CS/DIV I TESTABLE CHECK VALVE	U3 DW			AI	1
35015	08A	3-FCV-75-30	CS/PUMP 3B SUCTION ISOLATION VALVE	U3 RB	519	NE CORNER	AI	2
35016	06	3-PMP-75-33	CS/PUMP 3B	U3 RB	519	NE CORNER	AI	2
35017	R	3-CKV-75-537B	CS/PUMP 3B DISCHARGE CHECK VALVE	U3 RB			AI	2
35018	R	3-CKV-75-570B	CS/PUMP 3B MINI-FLOW CHECK VALVE	U3 RB			AI	2
35019	08A	3-FCV-75-37	CS/PUMPS 3B & 3D MINI-FLOW VALVE	U3 RB	519	NE CORNER	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
35020	08A	3-FCV-75-39	CS/PUMP 3D SUCTION ISOLATION VALVE	U3 RB	519	NE CORNER	AI	2
35021	06	3-PMP-75-42	CS/PUMP 3D	U3 RB	519	NE CORNER	AI	2
35022	R	3-CKV-75-537D	CS/PUMP 3D DISCHARGE CHECK VALVE	U3 RB			AI	2
35023	R	3-CKV-75-570D	CS/PUMP 3D MINI-FLOW CHECK VALVE	U3 RB			AI	2
35024	08A	3-FCV-75-50	CS/PUMPS 3B & 3D TEST ISOLATION VALVE	U3 RB	519	NE CORNER	AI	2
35025	18	3-FI-75-49	CS/PUMPS 3B & 3D FLOW INDICATOR	N/A	N/A	N/A	AI	2
35026	08A	3-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U3 RB	593	P/R18	AI	2
35027	08A	3-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U3 RB	593	P/R18	AI	2
35028	R	3-FCV-75-54	CS/DIV II TESTABLE CHECK VALVE	U3 DW			AI	2
36001	08B	3-FSV-84-8A	CAD/CAD TO DW (3-FCV-64-18) SOLENOID VALVE	U3 RB	565	R19/T	AI	1
36002	08B	3-FSV-84-8B	CAD/CAD TO DW (3-FCV-64-19) SOLENOID VALVE	U3 RB	565	R17/S	AI	1
36003	07	3-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R17/U	AI	1
36004	08B	3-FSV-84-48	CAD/CAD SYSTEM "A" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R17/S	AI	1
36005	R	3-CKV-32-2521	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 1	U3 RB			AI	1
36006	R	3-CKV-32-2163	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 2	U3 DW			AI	2
36007	R	3-CKV-32-2516	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 1	U3 DW			AI	1
36008	R	3-CKV-32-826	CA/DRYWELL CONTROL AIR TO PSV-1-19	U3 DW			AI	1
36009	21	3-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U3 DW	584	DW	AI	1
36010	08B	3-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19	U3 DW	584	DW	AI	1
36011	R	3-CKV-32-892	CA/DRYWELL CONTROL AIR TO PSV-1-22	U3 DW			AI	1
36012	21	3-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U3 DW	584	DW	AI	1
36013	08B	3-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22	U3 DW	584	DW	AI	1
36014	R	3-CKV-32-869	CA/DRYWEWLL CONTROL AIR TO PSV-1-5	U3 DW			AI	1
36015	21	3-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U3 DW	584	DW	AI	1
36016	08B	3-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5	U3 DW	584	DW	AI	1
36017	08B	3-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23	U3 DW	584	DW	AI	1
36018	08B	3-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179	U3 DW	584	DW	AI	1
36019	08B	3-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4	U3 DW	584	DW	AI	1
36020	21	3-ACC-32-6104	CA/ACCUMULATOR FOR PSV-1-18	U3 DW	584	DW	AI	2
36021	08B	3-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18	U3 DW	584	DW	AI	2
36022	R	3-CKV-32-872	CA/DRYWELL CONTROL AIR TO PSV-1-18	U3 DW			AI	2
36023	08B	3-FSV-84-8C	CAD/CAD TO DW (3-FCV-64-19) SOLENOID VALVE	U3 RB	565	R17/S	AI	2
36024	08B	3-FSV-84-8D	CAD/CAD TO DW (3-FCV-64-18) SOLENOID VALVE	U3 RB	565	R19/T	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
36025	07	3-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R18/U	AI	2
36026	08B	3-FSV-84-49	CAD/CAD SYSTEM "B" TO UNIT 3 DRYWELL CONTROL AIR	U3 RB	565	R19/Q	AI	2
36027	R	3-CKV-32-336	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 2	U3 RB			AI	2
36028	R	3-CKV-32-2376	CA/DRYWELL CONTROL AIR TO PSV-1-30	U3 DW			AI	2
36029	21	3-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U3 DW	584	DW	AI	2
36030	08B	3-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30	U3 DW	584	DW	AI	2
36031	R	3-CKV-32-2378	CA/DRYWELL CONTROL AIR TO PSV-1-31	U3 DW	584		AI	2
36032	21	3-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U3 DW	584	DW	AI	2
36033	08B	3-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31	U3 DW	584	DW	AI	2
36034	R	3-CKV-32-919	CA/DRYWELL CONTROL AIR TO PSV-1-34	U3 DW			AI	2
36035	21	3-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U3 DW	584	DW	AI	2
36036	08B	3-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34	U3 DW	584	DW	AI	2
36037	21	3-ACC-32-6110	CA/ACCUMULATOR FOR PSV-1-41	U3 DW	584	DW	AI	2
36038	08B	3-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41	U3 DW	584	DW	AI	2
36039	R	3-CKV-32-915	CA/DRYWELL CONTROL AIR TO PSV-1-41	U3 DW			AI	2
36040	08B	3-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42	U3 DW	584	DW	AI	2
36041	08B	3-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180	U3 DW	584	DW	AI	2
36042	R	3-CKV-32-3749	CAD/CONTROL AIR/CAD CHECK VALVE	U3 RB			AI	1
37001	17	3-GEN-82-3C	UNIT 3 DIESEL GENERATOR "C"	U3 DG	565	DG C	AI	2
37002	21	3-TNK-18-63/1	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565	DG C	AI	2
37003	21	3-TNK-18-63/2	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565	DG C	AI	2
37004	21	3-TNK-18-63/3	DG "3C" 7 DAY FUEL OIL TANK	U3 DG	565	DG C	AI	2
37005	21	3-TNK-86-650C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI	2
37006	21	3-TNK-86-651C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI	2
37007	21	3-TNK-86-652C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI	2
37008	21	3-TNK-86-653C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI	2
37009	21	3-TNK-86-654C	DG "3C" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG C	AI	2
37010	21	3-TNK-86-655C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI	2
37011	21	3-TNK-86-656C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI	2
37012	21	3-TNK-86-657C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI	2
37013	21	3-TNK-86-658C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI	2
37014	21	3-TNK-86-659C	DG "3C" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG C	AI	2
37015	09	3-FAN-30-234	DG ROOM 3C EXHAUST FAN "A"	U3 DG	583	DG C	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
37016	09	3-FAN-30-235	DG ROOM 3C EXHAUST FAN "B"	U3 DG	583	DG C	AI	2
37017	10	3-FCO-30-234A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3C"	U3 DG	583	DG C	AI	2
37018	10	3-FCO-30-234B	INLET DAMPER FOR FAN "A" IN DG ROOM "3C"	U3 DG	583	DG C	AI	2
37019	10	3-FCO-30-234C	INLET DAMPER FOR FAN "A" IN DG ROOM "3C"	U3 DG	583	DG C	AI	2
37020	10	3-FCO-30-235A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3C"	U3 DG	583	DG C	AI	2
37021	10	3-FCO-30-235B	INLET DAMPER FOR FAN "B" IN DG ROOM "3C"	U3 DG	583	DG C	AI	2
37022	10	3-FCO-30-235C	INLET DAMPER FOR FAN "B" IN DG ROOM "3C"	U3 DG	583	DG C	AI	2
37023	17	3-GEN-82-3D	UNIT 3 DIESEL GENERATOR "D"	U3 DG	565	DG D	AI	2
37024	21	3-TNK-18-64/1	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565	DG D	AI	2
37025	21	3-TNK-18-64/2	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565	DG D	AI	2
37026	21	3-TNK-18-64/3	DG "3D" 7 DAY FUEL OIL TANK	U3 DG	565	DG D	AI	2
37027	21	3-TNK-86-650D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI	2
37028	21	3-TNK-86-651D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI	2
37029	21	3-TNK-86-652D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI	2
37030	21	3-TNK-86-653D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI	2
37031	21	3-TNK-86-654D	DG "3D" RIGHT BANK STARTING AIR RECIEVERS	U3 DG	565	DG D	AI	2
37032	21	3-TNK-86-655D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI	2
37033	21	3-TNK-86-656D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI	2
37034	21	3-TNK-86-657D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI	2
37035	21	3-TNK-86-658D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI	2
37036	21	3-TNK-86-659D	DG "3D" LEFT BANK STARTING AIR RECEIVERS	U3 DG	565	DG D	AI	2
37037	09	3-FAN-30-236	DG ROOM 3D EXHAUST FAN "A"	U3 DG	583	DG D	AI	2
37038	09	3-FAN-30-237	DG ROOM 3D EXHAUST FAN "B"	U3 DG	583	DG D	AI	2
37039	10	3-FCO-30-236A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "3D"	U3 DG	583	DG D	AI	2
37040	10	3-FCO-30-236B	INLET DAMPER FOR FAN "A" IN DG ROOM "3D"	U3 DG	583	DG D	AI	2
37041	10	3-FCO-30-236C	INLET DAMPER FOR FAN "A" IN DG ROOM "3D"	U3 DG	583	DG D	AI	2
37042	10	3-FCO-30-237A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3D"	U3 DG	583	DG D	AI	2
37043	10	3-FCO-30-237B	INLET DAMPER FOR FAN "B" IN DG ROOM "3D"	U3 DG	583	DG D	AI	2
37044	10	3-FCO-30-237C	INLET DAMPER FOR FAN "B" IN DG ROOM "3D"	U3 DG	583	DG D	AI	2
37045	09	3-FAN-30-231	DG ROOM 3A EXHAUST FAN "B"	U3 DG	583	DG A	AI	1
37046	10	3-FCO-30-231A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3A"	U3 DG	583	DG A	AI	1
37047	10	3-FCO-30-231B	INLET DAMPER FOR FAN "B" IN DG ROOM "3A"	U3 DG	583	DG A	AI	1
37048	10	3-FCO-30-231C	INLET DAMPER FOR FAN "B" IN DG ROOM "3A"	U3 DG	583	DG A	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
37049	09	3-FAN-30-233	DG ROOM 3B EXHAUST FAN "B"	U3 DG	583	DG B	AI	1
37050	10	3-FCO-30-233A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "3B"	U3 DG	583	DG B	AI	1
37051	10	3-FCO-30-233B	INLET DAMPER FOR FAN "B" IN DG ROOM "3B"	U3 DG	583	DG B	AI	1
37052	10	3-FCO-30-233C	INLET DAMPER FOR FAN "B" IN DG ROOM "3B"	U3 DG	583	DG B	AI	1
38001	R	3-CKV-23-579	RHRSW TO HX A INLET CHECK VALVE	U3 RB	565		AI	1
38002	08A	3-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U3 RB	565	R17/T	AI	1
38003	R	3-CKV-23-581	RHRSW TO HX C INLET CHECK VALVE	U3 RB	565		AI	1
38004	08A	3-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U3 RB	565	R17/T	AI	1
38005	R	3-CKV-23-580	RHRSW TO HX B INLET CHECK VALVE	U3 RB	565		AI	2
38006	08A	3-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U3 RB	565	R19/U	AI	2
38007	R	3-CKV-23-582	RHRSW TO HX D INLET CHECK VALVE	U3 RB	565		AI	2
38008	08A	3-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U3 RB	565	R19/U	AI	2
38009	20	3-FI-23-36	RHRSW HX A FLOW INDICATOR	N/A	N/A	N/A	AI	1
38010	20	3-FI-23-42	RHRSW HX C FLOW INDICATOR	N/A	N/A	N/A	AI	1
38011	20	3-FI-23-48	RHRSW HX B FLOW INDICATOR	N/A	N/A	N/A	AI	2
38012	20	3-FI-23-54	RHRSW HX D FLOW INDICATOR	N/A	N/A	N/A	AI	2
39001	03	3-BDAA-211-0003EC	4KV SHUTDOWN BOARD 3EC	U3 DG	583	4KV SD BD	AI	II3C
39002	15	3-BATB-254-0000C	DIESEL 3C 125V BATTERY	U3 DG	565	DG C	AI	II3C
39003	14	3-BDGG-254-0003C	DIESEL 3C 125V BATTERY BOARD	U3 DG	565	DG C	AI	II3C
39004	16	3-CHGB-254-0000CB	DIESEL 3C BATTERY CHARGER B	U3 DG	565	DG C	AI	II3C
39005	01	3-BDBB-219-0003EB	480V DIESEL AUX BOARD 3EB	U3 DG	583	480V AUX BD	AI	II
39006	04	3-XFA-231-TS3B	4KV/480V TRANSFORMER TS3B	U3 RB	621	S/R21	AI	II3C
39007	02	3-BDBB-231-0003B	480V SD BOARD 3B	U3 RB	621	SD BD F	AI	II
39008	01	3-BDBB-268-0003A	480V RMOV BOARD 3A	U3 RB	621	SD BD E	AI	I
39009	01	3-BDBB-268-0003B	480V RMOV BOARD 3B	U3 RB	593	SD BD F	AI	II
39010	14	3-JBOX-268-5994	MG SET 3DN CONTROL STATION (3-HS-268-0003DN)	U3 RB	621	U/R18	AI	I
39011	14	3-JBOX-268-5996	MG SET 3EN CONTROL STATION (3-HS-268-0003EN)	U3 RB	621	S/R21	AI	II
39012	20	3-JBOX-268-5955	MG SET 3DN CONTROL BOX (RELAYS) - SEALED BOX	U3 RB	621	U/R18	AI	I
39013	14	NONE	MG SET 3DN VOLTAGE REGULATOR BOX	U3 RB	621	S/R20	AI	I
39014	20	3-JBOX-268-5957	MG SET 3EN CONTROL BOX (RELAYS) - SEALED BOX	U3 RB	621	S/R21	AI	II
39015	13	3-MGEN-268-0003DN	LPCI MG SET 3DN	U3 RB	621	U/R18	AI	I
39016	01	3-BDBB-268-0003D	480V RMOV BOARD 3D	U3 RB	593	U/R17	AI	I
39017	13	3-MGEN-268-0003EN	LPCI MG SET 3EN	U3 RB	621	U/R21	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39018	01	3-BDBB-268-0003E	480V RMOV BOARD 3E	U3 RB	621	S/R20	AI	II
39019	14	NONE	MG SET 3EN VOLTAGE REGULATOR BOX	U3 RB	621	S/R20	AI	II
39020	03	3-BDAA-211-0003ED	4KV SHUTDOWN BOARD 3ED	U3 DG	565	HALLWAY	AI	II3D
39021	15	3-BATB-254-0000D	DIESEL 3D 125V BATTERY	U3 DG	565	DG D	AI	II
39022	14	3-BDGG-254-0003D	DIESEL 3D 125V BATTERY BOARD	U3 DG	565	DG D	AI	II3D
39023	16	3-CHGB-254-0000DB	DIESEL 3D BATTERY CHARGER B	U3 DG	565	DG D	AI	II3D
39030	01	3-BDBB-281-0003A	250V DC RMOV BOARD 3A	U3 RB	621	SD BD E	AI	II
39031	01	3-BDBB-281-0003B	250V DC RMOV BOARD 3B	U3 RB	593	SD BD F	AI	I
39033	01	3-BDBB-281-0003C	250V DC RMOV BOARD 3C	U3 RB	565	P/R15	AI	I
39039	14	3-JBOX-253-7163	I&C BUS 3A DISC SWITCH	U3 RB	593	SD BD E	AI	I
39040	04	3-XFA-253-0003A1	I&C BUS A 480/208-120V TRANSFORMER	U3 RB	621	SD BD E	AI	I
39041	04	3-XFA-253-0003A2	I&C BUS 3A REGULATING TRANSFORMER	U3 RB	621	SD BD E	AI	I
39042	14	3-JBOX-253-7159	I&C BUS 3A BREAKER BOX	U3 RB	621	SD BD E	AI	I
39043	14	3-JBOX-253-8866	I&C BUS 3A DISC SWITCH	U3 RB	621	SD BD E	AI	I
39044	14	3-JBOX-253-7158	I&C BUS 3A DISC SWITCH	U3 RB	621	SD BD E	AI	I
39045	20	3-PNLA-009-0009	I&C BUS 3A (CAB 2 OF PNL 3-9-9) {(SEE 39119)}	U3 CB	617	U3 MCR	AI	I
39046	00	3-PX-64-160B	POWER SUPPLY (PNL 3-9-19: 3-LI-64-159B,160B)	N/A	N/A	N/A	AI	I
39047	00	3-PXMC-23-114	POWER SUPPLY (PNL 3-9-18: FI-23-36,42 : FI-74-50)	N/A	N/A	N/A	AI	I
39048	00	3-PXMC-23-115 A&B	POWER SUPPLY (PNL 3-9-19: FI-23-48,54; FI-74-64)	N/A	N/A	N/A	AI	II
39049	04	3-XFA-253-0003B1	I&C BUS 3B 480/208-120V TRANSFORMER	U3 RB	593	SD BD F	AI	II
39050	04	3-XFA-253-0003B2	I&C BUS B REGULATING TRANSFORMER	U3 RB	593	SD BD F	AI	II
39051	14	3-JBOX-253-7162	I&C BUS 3B BREAKER BOX	U3 RB	593	SD BD F	AI	II
39052	14	3-JBOX-253-7161	I&C BUS 3B DISC SWITCH	U3 RB	593	SD BD F	AI	II
39053	14	3-JBOX-253-8868	I&C BUS 3B DISC SWITCHES	U3 RB	593	SD BD F	AI	II
39054	20	3-PNLA-009-0009	I&C BUS 3B (CAB 3 OF PNL 3-9-9) {(SEE 39119)}	U3 CB	617	U3 MCR	AI	II
39055	00	3-PX-64-159B	POWER SUPPLY (PNL 3-9-19)	N/A	N/A	N/A	AI	II
39056	14	3-JBOX-30-4243	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3C	AI	II
39057	18	3-HS-30-234	LOCAL HS STATION - DG 3C EXH FAN A	U3 DG	583	BD 3EB	AI	II
39058	14	3-JBOX-30-4244	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3C	AI	I
39059	18	3-HS-30-235	LOCAL HS STATION - DG 3C EXH FAN B	U3 DG	583	BD 3EB	AI	I
39060	14	3-JBOX-30-4245	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3D	AI	II
39061	18	3-HS-30-236	LOCAL HS STATION - DG 3D EXH FAN A	U3 DG	583	BD 3EB	AI	II
39062	14	3-JBOX-30-4246	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3D	AI	I

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39063	18	3-HS-30-237	LOCAL HS STATION - DG 3D EXH FAN B	U3 DG	583	BD 3EB	AI	I
39064	14	3-JBOX-30-4240	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3A	AI	II
39065	18	3-HS-30-231	LOCAL HS STATION - DG 3A EXH FAN B	U3 DG	583	BD 3EA	AI	II
39066	14	3-JBOX-30-4242	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 DG	583	FAN 3B	AI	II
39067	18	3-HS 30-233	LOCAL HS STATION - DG 3B EXH FAN B	U3 DG	583	BD 3EA	AI	II
39068	14	3-JBOX-253-7160	I&C BUS 3B DISC SWITCH	U3 RB	593	SD BD F	AI	II
39070	16	3-INVT-256-0001	DIV I ECCS ATU INVERTER	U3 RB	593	SD BD F	AI	I
39071	00	3-PX-71-60-1	ECCS ATU CAB 3-9-81 POWER SUPPLY	N/A	N/A	N/A	AI	I
39072	00	3-PX-71-60-1A	ECCS ATU CAB 3-9-81 POWER SUPPLY	N/A	N/A	N/A	AI	I
39073	00	3-PX-64-50	POWER SUPPLY (PNL 3-25-31: XR-64-50 [DEV BA TERM 11/12)	N/A	N/A	N/A	AI	I
39074	00	3-PX-74-56	POWER SUPPLY (PNL 3-9-18: FI-74-56)	N/A	N/A	N/A	AI	I
39075	16	3-INVT-256-0002	DIV II ECCS ATU INVERTER	U3 RB	621	SD BD E	AI	II
39076	00	3-PX-71-60-2	ECCS ATU CAB 3-9-82 POWER SUPPLY	N/A	N/A	N/A	AI	II
39077	00	3-PX-71-60-2A	ECCS ATU CAB 3-9-82 POWER SUPPLY	N/A	N/A	N/A	AI	II
39078	00	3-PX-74-70	POWER SUPPLY (PNL 3-9-19: FI-74-70)	N/A	N/A	N/A	AI	II
39079	00	3-PX-64-159A	POWER SUPPLY (3-9-18)	N/A	N/A	N/A	AI	I
39080	00	3-PX-64-160A	POWER SUPPLY (3-9-18)	N/A	N/A	N/A	AI	I
39081	00	3-PX-64-67B	POWER SUPPLY (3-9-19)	N/A	N/A	N/A	AI	II
39082	00	3-PX-64-161	POWER SUPPLY (PNL 9-87)	N/A	N/A	N/A	AI	I
39083	00	3-PX-64-162	POWER SUPPLY (PNL 9-88)	N/A	N/A	N/A	AI	II
39099	20	3-PNLA-009-0042	MSRV (OUTBOARD) DIV I PNL	U3 CB	593	U3 AIR	AI	
39100	14	3-ECAB-231-003A	250V DC CONT PWR TRANSFER SW - 480V SD BD 3A	U3 RB	593	SD BD F	AI	I
39101	14	3-ECAB-231-003B	250V DC CONT PWR TRANSFER SW - 480V SD BD 3B	U3 RB	593	SD BD F	AI	II
39105	20	3-LPNL-925-654A	DIV I LOAD SHED LOGIC PANEL - DCN W21284	U3 RB	621	SD BD E	AI	I
39106	20	3-LPNL-925-654B	DIV II LOAD SHED LOGIC PANEL - DCN W21284	U3 RB	593	SD BD F	AI	II
39107	20	3-LPNL-925-656A	480V RMOV BD 3A LOAD SHED PANEL - DCN W21284	U3 RB	621	SD BD E	AI	I
39108	20	3-LPNL-925-656B	480V RMOV BD 3B LOAD SHED PANEL - DCN W21284	U3 RB	593	SD BD F	AI	II
39110	20	3-LPNL-925-0658	MSRV TRANSFER CONTROL PANEL (DCN W21814)	U3 RB	593	SD BD F	AI	
39115	20	3-PNLA-009-0003	REACTOR SD & CONT. COOLING PNL	U3 CB	617	U3 MCR	AI	
39116	20	3-PNLA-009-0004	CLEANUP & RECIRC PNL	U3 CB	617	U3 MCR	AI	
39117	20	3-PNLA-009-0005	REACTOR CONTROL PNL	U3 CB	617	U3 MCR	AI	
39118	20	3-PNLA-009-0006	FW & COND. PNL	U3 CB	617	U3 MCR	AI	
39119	20	3-PNLA-009-0009	PNL 9-9 (I&C CONT PWR, CAB 2&3)	U3 CB	617	U3 MCR	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39120	20	3-PNLA-009-0015	RPS CH A (DIV I)	U3 CB	593	U3 AIR	AI	I
39121	20	3-PNLA-009-0016	RPS CH A, B, C, D	U3 CB	593	U3 AIR	AI	
39122	20	3-PNLA-009-0017	RPS CH B (DIV II)	U3 CB	593	U3 AIR	AI	II
39123	20	3-PNLA-009-0018	FW & RECIRC PNL	U3 CB	593	U3 AIR	AI	
39124	20	3-PNLA-009-0019	PROCESS INSTR PNL	U3 CB	593	U3 AIR	AI	
39125	20	3-PNLA-009-0021	TEMP RECORDING PNL	U3 CB	617	U3 MCR	AI	
39126	20	3-PNLA-009-0028	CRD SELECT RELAY AUX PNL	U3 CB	593	U3 AIR	AI	
39127	20	3-PNLA-009-0030	AUTO BLOWNDOWN AUX PNL	U3 CB	593	U3 AIR	AI	
39128	20	3-PNLA-009-0032	RHR, CS, & HPCI (CH A) PNL	U3 RB	593	U3 AIR	AI	
39129	20	3-PNLA-009-0033	RHR, CS, & HPCI (CH B) PNL	U3 CB	593	U3 AIR	AI	
39130	20	3-PNLA-009-0039	HPCI RELAY AUX PNL	U3 CB	593	U3 AIR	AI	
39132	20	3-PNLA-009-0043	MSIV (OUTBOARD) DIV II PNL	U3 CB	593	U3 AIR	AI	
39133	20	3-PNLA-009-0054	CONTAINMENT ATM. DILUTION PNL	U3 CB	617	U3 MCR	AI	
39134	20	3-PNLA-009-0055	CONTAINMENT ATM. DILUTION PNL	U3 CB	617	U3 MCR	AI	
39135	20	3-PNLA-009-0081	DIV I ECCS ATU CABINET	U3 CB	593	U3 AIR	AI	
39136	20	3-PNLA-009-0082	DIV II ECCS ATU CABINET	U3 CB	593	U3 AIR	AI	II
39137	20	3-PNLA-009-0083	RPS ATU CAB	U3 CB	593	U3 AIR	AI	I
39138	20	3-PNLA-009-0084	RPS ATU CAB	U3 CB	593	U3 AIR	AI	I
39139	20	3-PNLA-009-0085	RPS ATU CAB	U3 CB	593	U3 AIR	AI	II
39140	20	3-PNLA-009-0086	RPS ATU CAB	U3 CB	593	U3 AIR	AI	II
39141	20	3-PNLA-009-0087	DIV I TORUS TEMP MONITORING	U3 CB	593	U3 AIR	AI	I
39142	20	3-PNLA-009-0088	DIV II TORUS TEMP MONITORING	U3 CB	593	U3 AIR	AI	II
39145	20	3-PNLA-009-0093	NEW PNL (INSTALLED BY DCN W19433)	U3 CB	593	U3 AIR	AI	
39146	18	3-HS-74-7B	LOCAL HS STATION	U3 RB	519	T/R16	AI	I
39147	14	3-JBOX-74-3503	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	T/R16	AI	I
39148	18	3-HS-74-57B	LOCAL HS STATION	U3 RB	519	TORUS	AI	I
39149	14	3-JBOX-74-3391	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	R/R16	AI	I
39150	18	3-HS-74-59B	LOCAL HS STATION	U3 RB	519	TORUS	AI	I
39151	18	3-HS-74-58B	LOCAL HS STATION	U3 RB	519	TORUS	I	I
39152	14	3-JBOX-74-3391	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	R/R16	AI	II
39153	18	3-HS-74-52B	LOCAL HS STATION	U3 RB	565	T/R17	AI	II
39154	14	3-JBOX-74-2135	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	580	T/R17	AI	II
39155	18	3-HS-74-53B	LOCAL HS STATION	U3 RB	565	T/R17	AI	I

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39156	18	3-HS-74-60B	LOCAL HS STATION	U3 RB	565	S/R17	AI	I
39157	14	3-JBOX-74-3543	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	S/R17	AI	I
39158	18	3-HS-74-61B	LOCAL HS STATION	U3 RB	565	S/R17	I	I
39160	18	3-HS-74-30B	LOCAL HS STATION	U3 RB	541	T/R20	AI	II
39161	14	3-JBOX-74-3535	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	T/R20	AI	II
39162	18	3-HS-74-71B	LOCAL HS STATION	U3 RB	519	TORUS	AI	II
39163	14	3-JBOX-74-3840	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	S/R20	AI	II
39164	18	3-HS-74-72B	LOCAL HS STATION	U3 RB	519	TORUS	I	II
39165	18	3-HS-74-66B	LOCAL HS STATION	U3 RB	519	TORUS	AI	II
39166	14	3-JBOX-74-2133	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	T/R18	AI	II
39167	18	3-HS-74-67B	LOCAL HS STATION	U3 RB	565	T/R18	AI	II
39169	14	3-JBOX-74-2939	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	593	S/R19	AI	II
39170	18	3-HS-74-75B	LOCAL HS STATION	U3 RB	593	S/R19	I	II
39171	18	3-HS-70-47B	LOCAL HS STATION	U3 RB	519	TORUS	I	II
39172	14	3-JBOX-70-3398	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	P/R20	AI	II
39173	18	3-HS-75-9B	LOCAL HS STATION	U3 RB	519	N/R16	AI	I
39174	14	3-JBOX-75-3390	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	N/R16	AI	I
39175	18	3-HS-75-25B	LOCAL HS STATION	U3 RB	565	P/R18	AI	I
39176	14	3-JBOX-75-3333	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	593	P/R18	AI	I
39177	18	3-HS-75-37B	LOCAL HS STATION	U3 RB	519	N/R20	AI	II
39178	14	3-JBOX-75-3448	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	519	N/R20	AI	I
39179	18	3-HS-75-53B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	593	P/R18	AI	II
39180	14	3-JBOX-75-3345	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	593	P/R18	AI	II
39181	18	3-HS-23-34B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	565	T/R17	AI	I
39182	14	3-JBOX-23-4190	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	U/R20	AI	I
39183	18	3-HS-23-40B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U3 RB	565	T/R17	AI	I
39184	18	3-HS-23-46B	LOCAL HS STATION	U3 RB	565	U/R20	AI	II
39185	14	3-JBOX-23-4189	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U3 RB	565	U/R20	AI	II
39186	18	3-HS-23-52B	LOCAL HS STATION	U3 RB	565	U/R20	AI	II
39187	18	3-HS-74-0005B	LOCAL HS STATION - RHR PUMP 3A	U3 RB	519	U/R16	AI	I
39188	18	3-HS-74-0028B	LOCAL HS STATION - RHR PUMP 3B	U3 RB	519	S/R20	AI	II
39189	18	3-HS-74-0016B	LOCAL HS STATION - RHR PUMP 3C	U3 RB	519	T/R16	AI	I
39190	18	3-HS-74-0039B	LOCAL HS STATION - RHR PUMP 3D	U3 RB	519	U/R20	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39191	18	3-HS-75-0005B	LOCAL HS STATION - CS PUMP 3A	U3 RB	519	N/R16	AI	I
39192	18	3-HS-75-0033B	LOCAL HS STATION - CS PUMP 3B	U3 RB	519	N/R20	AI	II
39193	18	3-HS-75-0014B	LOCAL HS STATION - CS PUMP 3C	U3 RB	519	N/R16	AI	I
39194	18	3-HS-75-0042B	LOCAL HS STATION - CS PUMP 3D	U3 RB	519	N/R20	AI	II
39195	18	3-LPNL-925-005A	LOCAL PANEL 25-5A	U3 RB	593	S/R17	AI	
39196	18	3-LPNL-925-005B	LOCAL PANEL 25-5B	U3 RB	593	S/R17	AI	
39197	18	3-LPNL-925-005D	LOCAL PANEL 25-5D	U3 RB	593	S/R17	AI	
39198	18	3-LPNL-925-006A	LOCAL PANEL 25-6A	U3 RB	593	Q/R19	AI	
39199	18	3-LPNL-925-006D	LOCAL PANEL 25-6D	U3 RB	593	Q/R19	AI	
39200	18	3-LPNL-925-0059	LOCAL PANEL 25-59	U3 RB	519	T/R15	AI	
39201	18	3-LPNL-925-0062	LOCAL PANEL 25-62	U3 RB	519	T/R15	AI	
39202	20	3-PNLA-082-00003C	DG 3C ELECTRICAL CONTROL CABINET	U3 DG	565	DG C	AI	II3C
39203	20	3-PNLA-082-00003D	DG 3D ELECTRICAL CONTROL CABINET	U3 DG	565	DG D	AI	II3D
39204	20	3-PNLA-925-0031	LOCAL PANEL 25-31	U3 RB	621	Q/R20	AI	
39205	20	3-PNLA-925-0032	LOCAL PANEL 25-32	U3 RB	621	SD BD E	AI	
39206	18	3-LPNL-925-0001	LOCAL PANEL 25-1	U3 RB	519	N/R15	AI	
39207	18	3-LPNL-925-0060	LOCAL PANEL 25-60	U3 RB	519	N/R21	AI	
39208	13	3-MGEN-268-0003DA	LPCI MG SET 3DA	U3 RB	621	T/R20	AI	
39209	14	NONE	MG SET 3DA VOLTAGE REGULATOR BOX	U3 RB	621	480V BD 3B	AI	
39210	14	3-JBOX-268-5995	MG SET 3DA CONTROL STATION (3-HS-268-0003DA)	U3 RB	621	S/R20	AI	
39211	20	3-JBOX-268-5956	MG SET 3DA CONTROL BOX (RELAYS)	U3 RB	621	S/R20	AI	
39212	13	3-MGEN-268-0003EA	LPCI MG SET 3EA	U3 RB	621	T/R19	AI	
39213	14	NONE	MG SET 3EA VOLTAGE REGULATOR BOX	U3 RB	621	480V BD 3A	AI	
39214	14	3-JBOX-268-5997	MG SET 3EA CONTROL STATION (3-HS-268-0003EA)	U3 RB	621	S/R20	AI	
39215	20	3-JBOX-268-5958	MG SET 3EA CONTROL BOX (RELAYS)	U3 RB	621	S/R20	AI	
39216	20	3-LPNL-925-655A	DIV I LOAD SHED LOGIC PANEL	U3 RB	621	480V BD 3A	AI	
39217	20	3-LPNL-925-655B	DIV II LOAD SHED LOGIC PANEL	U3 RB	621	480V BD 3B	AI	
39218	20	3-LPNL-925-657A	DIV I LOAD SHED LOGIC PANEL	U3 DG	583	HALLWAY	AI	
39219	20	3-LPNL-925-657B	DIV II LOAD SHED LOGIC PANEL	U3 DG	583	HALLWAY	AI	
39220	20	3-PROT-099-0003A1	RPS CIRCUIT PROTECTOR CABINET 3A1	U3 RB	593	BATT BD 3	AI	
39221	20	3-PROT-099-0003A2	RPS CIRCUIT PROTECTOR CABINET 3A2	U3 RB	593	BATT BD 3	AI	
39222	20	3-PROT-099-0003B1	RPS CIRCUIT PROTECTOR CABINET 3B1	U3 RB	593	BATT BD 3	AI	
39223	20	3-PROT-099-0003B2	RPS CIRCUIT PROTECTOR CABINET 3B2	U3 RB	593	BATT BD 3	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39224	20	3-PROT-099-0003C1	RPS CIRCUIT PROTECTOR CABINET 3C1	U3 RB	593	BATT BD 3	AI	
39225	20	3-PROT-099-0003C2	RPS CIRCUIT PROTECTOR CABINET 3C2	U3 RB	593	BATT BD 3	AI	
39226	18	3-LPNL-925-247A	LOCAL PANEL 3-25-247A (CAD DRYWELL & SUPP. CHAMB. V.)	U3 RB	621	Q/R18	AI	
39227	01	3-BDBB-265-0003B	480V RB VENT BD 3B	U3 RB	565	U/R19	AI	
39228	20	3-PNLA-009-0036A	PANEL 3-9-36A	U3 CB	593	U3 AIR	AI	
39229	18	3-LPNL-925-0247B	LOCAL PANEL 3-25-247B (CAD N2 SUPPLY PANEL B)	U3 RB	621	Q/R19	AI	
39230	20	3-PNLA-009-0020	PANEL 3-9-20	U3 CB	617	U3 MCR	AI	
39231	20	NONE	CO2 RELAY PNL FOR 3-39-38	U3 DG	565	DG A	AI	
39232	20	NONE	CO2 RELAY PNL FOR 3-39-39	U3 DG	565	DG B	AI	
39233	20	NONE	CO2 RELAY PNL FOR 3-39-40	U3 DG	565	DG C	AI	
39234	20	NONE	CO2 RELAY PNL FOR 3-39-41	U3 DG	565	DG D	AI	
39235	18	3-LPNL-925-0007A	LOCAL PANEL 3-25-7A	U3 RB	541	SW CORNER	AI	
39236	18	3-LPNL-925-0007B	LOCAL PANEL 3-25-7A	U3 RB	541	SW CORNER	AI	
39237	18	3-LPNL-925-0223	LOCAL PANEL 3-25-223	U3 RB	593	Q/R19	AI	
39238	20	3-PNLA-009-0008	PANEL 3-9-8	U3 CB	617	U3 MCR	AI	
39239	18	3-HS-64-68	HANDSWITCH FOR 3-CLR-67-917 (34001)	U3 RB	519	SW CORNER	AI	
39240	18	3-HS-64-69	HANDSWITCH FOR 3-CLR-67-918 (34013)	U3 RB	519	SE CORNER	AI	
39241	18	3-HS-64-70	HANDSWITCH FOR 3-CLR-67-921 (34003)	U3 RB	519	SW CORNER	AI	
39242	18	3-HS-64-71	HANDSWITCH FOR 3-CLR-67-922 (34015)	U3 RB	519	SE CORNER	AI	
39243	14	3-HS-69-2B	HANDSWITCH FOR 3-FCV-69-2 (33033)	U3 RB	593	R17/S	AI	
39244	14	3-HS-71-18B	HANDSWITCH FOR 3-FCV-71-18 (33039)	U3 RB	519	NW CORNER	I	
39245	20	3-HS-71-2B	HANDSWITCH FOR 3-FCV-71-2 (33037)	U3 RB	593	R/R14	AI	
39246	14	3-HS-73-27B	HANDSWITCH FOR 3-FCV-73-27 (33043)	U3 RB	519	HPCI	I	
39247	18	3-HS-73-3B	HANDSWITCH FOR 3-FCV-73-3 (33041)	U3 RB	519	TORUS	AI	
39248	18	3-HS-73-81B	HANDSWITCH FOR 3-FCV-73-81 (33042)	U3 RB	519	TORUS	AI	
39249	14	3-HS-74-100B	HANDSWITCH FOR 3-FCV-74-100 (31010)	U3 RB	565	SW CORNER	AI	
39250	14	3-HS-74-12B	HANDSWITCH FOR 3-FCV-74-12 (31011)	U3 RB	519	SW CORNER	AI	
39251	14	3-HS-74-13B	HANDSWITCH FOR 3-FCV-74-13 (31012)	U3 RB	519	SW CORNER	AI	
39252	14	3-HS-74-1B	HANDSWITCH FOR 3-FCV-74-1 (31001)	U3 RB	519	SW CORNER	AI	
39253	14	3-HS-74-24B	HANDSWITCH FOR 3-FCV-74-24 (31029)	U3 RB	519	SE CORNER	AI	
39254	14	3-HS-74-25B	HANDSWITCH FOR 3-FCV-74-25 (31030)	U3 RB	519	SE CORNER	AI	
39255	14	3-HS-74-2B	HANDSWITCH FOR 3-FCV-74-2 (31002)	U3 RB	519	SW CORNER	AI	
39256	14	3-HS-74-35B	HANDSWITCH FOR 3-FCV-74-35 (31037)	U3 RB	519	SE CORNER	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39257	14	3-HS-74-36B	HANDSWITCH FOR 3-FCV-74-36 (31038)	U3 RB	519	SE CORNER	AI	
39258	18	3-HS-74-73B	HANDSWITCH FOR 3-FCV-74-73 (31046)	U3 RB	519	TORUS	AI	
39259	14	3-HS-74-97B	HANDSWITCH FOR 3-FCV-74-97 (31013)	U3 RB	519	SW CORNER	AI	
39260	18	3-HS-75-11B	HANDSWITCH FOR 3-FCV-75-11 (35006)	U3 RB	519	NW CORNER	AI	
39261	14	3-HS-75-22B	HANDSWITCH FOR 3-FCV-75-22 (35010)	U3 RB	519	NW CORNER	AI	
39262	18	3-HS-75-23B	HANDSWITCH FOR 3-FCV-75-23 (35012)	U3 RB	593	P/R18	AI	
39263	18	3-HS-75-2B	HANDSWITCH FOR 3-FCV-75-2 (35001)	U3 RB	519	NW CORNER	AI	
39264	18	3-HS-75-30B	HANDSWITCH FOR 3-FCV-75-30 (35015)	U3 RB	519	NE CORNER	AI	
39265	18	3-HS-75-39B	HANDSWITCH FOR 3-FCV-75-39 (35020)	U3 RB	519	NE CORNER	AI	
39266	14	3-HS-75-50B	HANDSWITCH FOR 3-FCV-75-50 (35024)	U3 RB	519	NE CORNER	AI	
39267	18	3-HS-75-51B	HANDSWITCH FOR 3-FCV-75-51 (35026)	U3 RB	593	P/R18	AI	
39268	14	3-HS-78-61B	HANDSWITCH FOR 3-FCV-78-61 (31026)	U3 RB	621	R17/S	AI	
39269	14	3-HS-64-72	HANDSWITCH FOR 3-CLR-67-919 (34002)	U3 RB	519	NW CORNER	AI	
39270	14	3-HS-64-73	HANDSWITCH FOR 3-CLR-67-920 (34014)	U3 RB	519	NE CORNER	AI	
39271	18	3-TS-64-68	TEMPERATURE SWITCH FOR 3-CLR-67-917 (34001)	U3 RB	519	SW CORNER	AI	
39272	18	3-TS-64-69	TEMPERATURE SWITCH FOR 3-CLR-67-918 (34013)	U3 RB	519	SE CORNER	AI	
39273	18	3-TS-64-70	TEMPERATURE SWITCH FOR 3-CLR-67-921 (34003)	U3 RB	519	SW CORNER	AI	
39274	18	3-TS-64-71	TEMPERATURE SWITCH FOR 3-CLR-67-922 (34015)	U3 RB	519	SE CORNER	AI	
39275	18	3-TS-1-17A	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	AI	
39276	18	3-TS-1-17B	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	AI	
39277	18	3-TS-1-17C	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	AI	
39278	18	3-TS-1-17D	MAIN STEAM VAULT TEMPERATURE SWITCH	U3 RB	565	MSVLT N/T15	AI	
39279	18	3-TS-1-29A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	AI	
39280	18	3-TS-1-29B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	AI	
39281	18	3-TS-1-29C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	AI	
39282	18	3-TS-1-29D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	565	MSTNL K/T15	AI	
39283	18	3-TS-1-40A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39284	18	3-TS-1-40B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39285	18	3-TS-1-40C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39286	18	3-TS-1-40D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39287	18	3-TS-1-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39288	18	3-TS-1-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39289	18	3-TS-1-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
39290	18	3-TS-1-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U3 TB	586	MSTNL K/T15	AI	
39291	18	3-TS-64-72	TEMPERATURE SWITCH FOR 3-CLR-67-919 (34002)	U3 RB	519	NW CORNER	AI	
39292	18	3-TS-64-73	TEMPERATURE SWITCH FOR 3-CLR-67-920 (34014)	U3 RB	519	NE CORNER	AI	
39293	14	3-HS-74-96B	HAND SWITCH FOR 3-FCV-74-96 (SSEL # 31003)	RB	519	SW CORNER	AI	
39294	00	3-AMP-092-0007/41A	IRM CH. "A" VOLTAGE PREAMPLIFIER 7-34A	RB	565	S/R17	AI	
39295	00	3-AMP-092-0007/41B	IRM CH. "B" VOLTAGE PREAMPLIFIER 7-34B	RB	565	S/R17	AI	
39296	14	3-LPNL-925-0027	PANEL 3-25-27 IRM PREAMP. RPS I	RB	565	S/R17	AI	
39297	00	3-AMP-092-0007/41C	IRM CH. "C" VOLTAGE PREAMPLIFIER 7-34C	RB	577	Q/R19	AI	
39298	00	3-AMP-092-0007/41D	IRM CH. "D" VOLTAGE PREAMPLIFIER 7-34D	RB	577	Q/R19	AI	
39299	14	3-LPNL-925-0061	PANEL 3-25-61 IRM PREAMP. RPS II	RB	577	Q/R19	AI	
39300	20	3-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U3 MCR	AI	
39301	20	3-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U3 MCR	AI	
39302	20	3-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	CB	617	U3 MCR	AI	
39303	20	3-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	CB	617	U3 MCR	AI	
39304	20	3-PNLA-009-012	PANEL 3-9-12	CB	617	U3 MCR	AI	
39305	15	3-BATD-283-000A3	24V NEUTRON MONITORING BATTERY, U3 CHANNEL A	CB	593	BAT RM 3	AI	
39306	15	3-BATD-283-000B3	24V NEUTRON MONITORING BATTERY, U3 CHANNEL B	CB	593	BAT RM 3	AI	
39307	16	3-CHGD-283-A1-3	24V NEUTRON BATTERY CHARGERS A1-3	CB	593	BAT BD RM 3	AI	
39308	16	3-CHGD-283-A2-3	24V NEUTRON BATTERY CHARGERS A2-3	CB	593	BAT BD RM 3	AI	
39309	16	3-CHGD-283-B1-3	24V NEUTRON BATTERY CHARGERS B1-3	CB	593	BAT BD RM 3	AI	
39310	16	3-CHGD-283-B2-3	24V NEUTRON BATTERY CHARGERS B2-3	CB	593	BAT BD RM 3	AI	
9160	04	0-XFA-082-000AA	DG-A NEUTRAL GRN XFMR	DGB 1/2	565	DG - A	AI	
9161	04	0-XFA-082-000BA	DG-B NEUTRAL GRN XFMR	DGB 1/2	565	DG - B	AI	
9162	04	0-XFA-082-000CA	DG-C NEUTRAL GRN XFMR	DGB 1/2	565	DG - C	AI	
9163	04	0-XFA-082-000DA	DG-D NEUTRAL GRN XFMR	DGB 1/2	565	DG - D	AI	
9164	04	3-XFA-082-0003AA	DG-3A NEUTRAL GRN XFMR	DGB 3	565	DG - 3A	AI	
9165	04	3-XFA-082-0003BA	DG-3B NEUTRAL GRN XFMR	DGB 3	565	DG - 3B	AI	
9166	04	3-XFA-082-0003CA	DG-3C NEUTRAL GRN XFMR	DGB 3	565	DG - 3C	AI	
9167	04	3-XFA-082-0003DA	DG-3D NEUTRAL GRN XFMR	DGB 3	565	DG - 3D	AI	

APPENDIX C

THIRD-PARTY AUDIT REPORTS

JAMES J. JOHNSON

PROFESSIONAL HISTORY

EQE International, San Francisco, California, Executive Vice President, Division President (Engineering Consultants Division), 1986-present

NTS/ Structural Mechanics Associates, San Ramon, California, Vice President, 1984-1986

Structural Mechanics Associates, San Ramon, California, Vice President, Project Manager, 1980-1984

Lawrence Livermore National Laboratory, Livermore, California, Project Manager, 1978-1980

General Atomic Company, San Diego, California, Branch Manager, Staff Engineer, Senior Engineer, 1972-1978

PROFESSIONAL EXPERIENCE

Dr. Johnson has more than 22 years of project management and civil/nuclear engineering experience. Dr. Johnson has participated in the development, implementation, and teaching of seismic risk and seismic margin assessment methodologies. He has participated in seismic PRAs of over 20 nuclear power plants. His participation encompasses many aspects including hazard definition, seismic response and uncertainty determination, detailed walkdowns, and fragility assessment. A major element of seismic PRAs and seismic margin assessments is best estimate response analyses. Dr. Johnson participated in the development of best estimate or median-centered response procedures and has participated in its application to over 60 nuclear facilities. Dr. Johnson was responsible for several portions of the U.S. Nuclear Regulatory Commission (NRC) Seismic Safety Margins Research Program (SSMRP) -- soil-structure interaction, major structure response, subsystem response, and the seismic analysis calculational procedures (SMACS).

Dr. Johnson has presented numerous seminars and training courses on seismic PRA and seismic margin methodologies. Most recently, Dr. Johnson participated in the U.S. NRC-sponsored Eastern European Regulatory Training in Hungary and Slovakia (February 1995). He also participated in a presentation sponsored by the China State Education Commission in cooperation with Tsinghua University and China National Regulatory Bureau of Nuclear Safety on seismic issues of nuclear power plant design and analysis which was presented in Beijing, China (May 1994); and the International Atomic Energy Agency's Regional Training Course on re-evaluation of seismic safety of existing nuclear power plants in Paks, Hungary (May 1993).

Dr. Johnson has played a significant role in the development of general and plant-specific seismic evaluation procedures. This project participation has ranged from the SQUG Generic Implementation Procedure (GIP) to plant-specific procedures for the Savannah River Site. Procedures include criteria for assessing equipment and component functionality and structural integrity, seismic systems interaction, anchorage, and other issues.

PROFESSIONAL EXPERIENCE (Continued)

Dr. Johnson has extensive theoretical and practical experience in the soil-structure interaction (SSI) analysis of major facilities and has written a comprehensive assessment of the state-of-the-art of SSI. Most recently, Dr. Johnson was a lecturer for the NATO Advanced Study Institute on Developments in Dynamic Soil-structure Interaction. Dr. Johnson was principal investigator for EQE on the SSI modeling, predictive analysis, and resolution of measured and predicted response for the combined EPRI/NRC Lotung, Taiwan scale model project. He has performed SSI analyses of a wide variety of surface and embedded structures using simplified to sophisticated substructure methods and linear and nonlinear finite element techniques. Nonlinear analyses included geometric effects (sliding and separation) and soil material behavior. He has made extensive use of comparative analyses and parametric studies to benchmark techniques and soil and structure configurations. He has extensive experience applying SASSI and CLASSI to SSI analysis of major facilities. Dr. Johnson was a consultant to the U.S. Nuclear Regulatory Commission (NRC) concerning revisions to the Standard Review Plan for seismic analysis and design.

In addition, Dr. Johnson was project manager for the U.S. NRC Structural Damping Research Program.

Dr. Johnson has developed, verified, maintained, and extensively applied several large computer programs to perform stress and seismic analysis. Among these are: MODSAP, a general purpose finite element program with special capability in the dynamic analysis of structures with localized nonlinearities; and SMACS, a probabilistic response analysis program for soil, structures, equipment, and piping systems.

Dr. Johnson was responsible for the analysis and design of components subjected to extreme internally and externally generated loading conditions. This work includes seismic qualification of control room equipment and motor control centers, fuel handling components, core and core support structures, heat exchanger shell and tubes subjected to tube burst loadings, and shipping casks of irradiated fuel and equipment subjected to impact loading.

Dr. Johnson has taught Earthquake Engineering of Major Facilities at the University of California, Berkeley. This course covered all phases of the earthquake engineering process, including seismic hazard definition; seismic analysis and design of structures, equipment and tanks; and seismic risk analysis. Dr. Johnson coordinated and taught portions of the SQUG training course that covered the seismic evaluation of equipment, cable trays and conduit, piping, anchorage, and seismic systems interaction. He has completed the SQUG SCE training and add-on seismic IPEEE training courses.

EDUCATION

UNIVERSITY OF ILLINOIS: Ph.D. Civil Engineering, 1972
UNIVERSITY OF ILLINOIS: M.S. Civil Engineering, 1969
UNIVERSITY OF MINNESOTA: B.C.E. Civil Engineering, 1967

REGISTRATION

California: Civil Engineer

SECURITY CLEARANCE

Department of Energy: Q-Clearance

AFFILIATIONS

American Society of Civil Engineers, Member
    Nuclear Structural and Materials Committee
    Dynamic Analysis Committee
    Committee on Nuclear Standards, Seismic Analysis of Safety Class Structures
Earthquake Engineering Research Institute
Phi Kappa Phi Honor Society
Sigma Xi

PUBLICATIONS AND REPORTS

Dr. Johnson has contributed to over 80 technical reports and journal articles. The following is a selection of documents for which he is a principal contributor.

Seismic Margin Studies and Risk Analyses

With O. R. Maslenikov and R. D. Campbell. 1995. "Comparison of Design and Probabilistic Analyses of Nuclear Power Plants." To Be Presented at the 13th International Conference on Structural Mechanics in Reactor Technology, SMiRT 13, Porto Alegre, Brazil, August 13-18, 1995.

With A. P. Asfura and M. J. Jordanov. 1995. "Dynamic Analysis of Three 1000 MW WWER Reactors in Eastern Europe." To Be Presented at the 13th International Conference on Structural Mechanics in Reactor Technology, SMiRT 13, Porto Alegre, Brazil, August 13-18, 1995.

With R. D. Campbell, "Overview of Seismic Reevaluation Methodologies," SMiRT 12, Conference Seminar 16, Vienna, Austria, August 1993.

With P. S. Hashimoto and R. D. Campbell. 1993. "Seismic Analysis and Structure Capacity Evaluation of the Belene Nuclear Power Plant." Presented at the SMiRT 12 Conference sponsored by the International Atomic Energy Agency, Vienna, Austria, 1993.

"Seismically Induced Common Cause Failures in PSA of Nuclear Power Plants," August 1991, with M. K. Ravindra, Transactions of 11th SMiRT Conference, Tokyo, Japan, Volume M, pp 85-90.

"A Methodology for Assessment of Nuclear Power Plant Seismic Margin (Rev. 1)." August 1991. Electric Power Research Institute. EPRI NP-6041-SL, Rev. 1.

PUBLICATIONS AND REPORTS (Continued)

With M. K. Ravindra. June 1991. "Treatment of Seismically Induced Common Cause Failures in Nuclear Power Plant PSA." In *Proceedings of Sixth International Conference on Applications of Statistics and Probability in Civil Engineering.* Mexico City, Mexico.

With D. P. Moore et al. 1990. "Seismic Margin Assessment of Edwin I. Hatch Nuclear Plant Unit 1." Electric Power Research Institute.

With M. P. Bohn et al. April 1990. "Analysis of Core Damage Frequency Due to External Events at the DOE N-Reactor." SAND89-1147. Sandia National Laboratories. Albuquerque, New Mexico.

With M. P. Bohn. December 1990. "Analysis of Core Damage Frequency: Peach Bottom, Unit 2 External Events." NUREG/CR-4550, SAND86-2084, Vol. 4, Rev. 1, Part 3. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a Combustion Engineering 2-Loop Pressurized Water Reactor -- Case Study (St. Lucie)." August 1987. NUREG/CR-4710, SAND86-1797. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a Westinghouse 3-Loop Pressurized Water Reactor -- Case Study (Turkey Point)." March 1987. NUREG/CR-4762, SAND86-2377. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a General Electric BWR4/Mark 1 -- Case Study (Cooper)." July 1987. NUREG/CR-4767, SAND86-2419. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a General Electric BWR3/Mark 1 -- Case Study (Quad Cities)." March 1987. NUREG/CR-4448, SAND85-2373. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a Babcock and Wilcox Pressurized Water Reactor -- Case Study (ANO-1)." March 1987. NUREG/CR-4713, SAND86-1832. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a Westinghouse 2-Loop Pressurized Water Reactor -- Case Study (Point Beach). March 1987. NUREG/CR-4458, SAND86-2496. Sandia National Laboratories. Albuquerque, New Mexico.

With M. P. Bohn. December 1990. "Analysis of Core Damage Frequency: Surry Power Station, Unit 1 External Events." NUREG/CR-4550, SAND86-2084, Vol. 3, Rev. 1, Part 3. Sandia National Laboratories. Albuquerque, New Mexico.

With A. P. Asfura et al. March 1990. "Pilot Study of Reactor/Containment Building: Oskarshamn 2 and Barsebeck 1 and 2, Probabilistic Response and Capacity." Rev. 1. Prepared for Sydkraft and OKG Aktiebolag, Sweden. San Francisco, CA: EQE Engineering.

With G. E. Cummings and R. J. Budnitz. October 1984. "NRC Seismic Design Margins Program Plan." UCID-20247. Lawrence Livermore National Laboratory.

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With L. C. Shieh et al. August 1985. "Simplified Seismic Probabilistic Risk Assessment: Procedures and Limitations." NUREG/CR-4331. UCID-20468. Lawrence Livermore National Laboratory.

With B. J. Benda. 1986. "Seismic Fragility Analysis: Methodology and Application." Prepared for Earthquake Engineering Technology. San Ramon, CA.

With R. D. Campbell et al. 1985. "LaSalle Seismic Probabilistic Risk Assessment: Responses and Fragilities." Report SMA 12211.21. Prepared for Lawrence Livermore National Laboratory. San Ramon, CA: Structural Mechanics Associates.

With T. Y. Chuang et al. August 19-23, 1985. "Seismic Risk Assessment of a BWR: Status Report." Preprint, *Proceedings Eighth SMiRT Conference.* Brussels, Belgium,

With M. P. Bohn et al. 1984. "Application of the SSMRP Methodology to the Seismic Risk at the Zion Nuclear Power Plant." UCRL-53483; NUREG/CR-3429. Livermore, CA: Lawrence Livermore National Laboratory.

With M. P. Bohn et al. August 22-26, 1983. "Application of the SSMRP Methodology to the Seismic Probabilistic Risk Analysis at the Zion Nuclear Power Plant." In *Proceedings Seventh SMiRT Conference.* Chicago, Illinois.

With P. D. Smith et al. 1981. "SSMRP Phase I Final Report: Overview." UCRL-53021, vol. 1; NUREG/CR-2015, vol. 1. Livermore, CA: Lawrence Livermore National Laboratory.

With O. R. Maslenikov et al. 1982. "SSMRP Phase I Final Report: Soil Structure Interaction (Project III)." UCRL-53021, vol 4; NUREG/CR-2015, vol. 4. Livermore, CA: Lawrence Livermore National Laboratory.

With B. J. Benda and T. Y. Lo. 1981. "SSMRP Phase I Final Report: Major Structure Response (Project IV)." UCRL-53021, vol. 5; NUREG/CR-2015, vol. 5. Livermore, CA: Lawrence Livermore National Laboratory.

With G. L. Goudreau et al. 1981. "SSMRP Phase I Final Report: SMACS (Seismic Methodology Analysis Chain with Statistics) (Project VIII)." UCRL-53021, vol. 9; NUREG/CR-2015, vol. 9. Livermore, CA: Lawrence Livermore National Laboratory.

With P. D. Smith et al. 1981. "A Review of a Seismic Risk Analysis of the Decay Heat Removal Capability of Nuclear Power Plants." UCID-18692. Livermore, CA: Lawrence Livermore National Laboratory.

"Seismic Response Calculations for the U.S. NRC Seismic Safety Margins Research Program." August 17-22, 1981. In *Proceedings Sixth SMiRT Conference.* Paris, France.

With P. D. Smith et al. 1980. "An Overview of Seismic Risk Analysis for Nuclear Power Plants." UCID-18680. Livermore, CA: Lawrence Livermore National Laboratory.

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With S. E. Bumpus and P. D. Smith. 1980. "Best Estimate Method vs. Evaluation Method: a Comparison of Two Techniques in Evaluating Seismic Analysis and Design." UCID-52746; NUREG/CR-1489. Livermore, CA: Lawrence Livermore National Laboratory.

"Soil Structure Interaction Analysis for the U.S. NRC Seismic Safety Margins Research Program." August 13-17, 1979. In *Proceedings Fifth SMiRT Conference.* Berlin, Germany.

"Subsystem Response Determination for the U.S. NRC Seismic Safety Margins Research Program." August 13-17, 1979. In *Proceedings Fifth SMiRT Conference.* Berlin, Germany.

Calculational Margin

With B. J. Benda et al. June 1988. "Quantification of Calculational Margins in Piping System Seismic Response: Methodologies and Damping." *Seismic Engineering, 1988,* The Pressure Vessels and Piping Division, ASME, PVP-Vol. 144. (Received "Certificate of Recognition," July 1989.) San Ramon, CA: EQE Engineering.

With B. J. Benda. February 1988. "Quantification of Margins in Piping System Seismic Response: Methodologies and Damping." NUREG/CR-5073, UCRL-21000. Prepared for Lawrence National Laboratory. Livermore, CA.

With B. J. Benda et al. May 16-18, 1983. "Response Margins of the Dynamic Analysis of Piping Systems: Best Estimate vs. Evaluation Method." In *Proceedings of the Second CSNI Specialist Meeting on Probabilistic Methods in Seismic Risk Assessment for Nuclear Power Plants.* Livermore, CA,

With B. J. Benda et al. 1984. "Response Margins of the Dynamic Analysis of Piping Systems." UCID-20067, rev. 1; NUREG/CR-3996. Livermore, CA: Lawrence Livermore National Laboratory.

With B. J. Benda and L. Y. Cheng. 1983. "Evaluation of PVRC Proposed Changes for the Seismic Analysis and Design of Piping Systems: Damping and Peak Broadening." Report SMA 12209.03-01. Prepared for Lawrence Livermore National Laboratory. San Ramon, CA: Structural Mechanics Associates.

With T. Y. Chuang et al. 1983. "Impact of Changes in Damping and Spectrum Peak Broadening on the Seismic Response of Piping Systems." UCRL-53491; NUREG/CR-3526. Livermore, CA: Lawrence Livermore National Laboratory,

With S. E. Bumpus and P. D. Smith. August 17-21, 1981. "Best Estimate vs. Evaluation Method Seismic (BE-EMS): an Introduction and Demonstration." In *Proceedings Sixth SMiRT Conference.* Paris, France.

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Soil-structure Interaction

With A. P. Asfura. July 1992. "Soil-structure Interaction (SSI): Observations, Data, and Correlative Analysis." In Proceedings of the NATO Advanced Study Institute on Developments in Dynamic Soil-structure Interaction, Kemei, Antalya, Turkey.

With A. P. Asfura and O. R. Maslenikov. 1990. "Topics in Soil-Structure Interaction." Paper presented at the Ninth Earthquake Engineering Conference, December 1990, Roorkee, India.

With O. R. Maslenikov et al. March 1989. "Analysis of Large-Scale Containment Model in Lotung, Taiwan: Forced Vibration and Earthquake Response Analysis and Comparison." In *Proceedings: EPRI/NRC/TPC Workshop on Seismic Soil-Structure Interaction Analysis Techniques Using Data From Lotung, Taiwan.* NP-6154, Vol. 1, Paper 13. Electric Power Research Institute.

With O. R. Maslenikov and D. J. Doyle. 1987. "Review of Seismic Analysis of Hatch Units 1 and 2: In-Structure Response Spectra." UCID-21015. Lawrence Livermore National Laboratory.

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With O. R. Maslenikov and R. P. Kennedy. 1985. "Washington Public Power Supply System WNP-1 Containment Building: SSI Analysis and the Effect of Control Point Location." Report SMA 46001.03. Prepared for United Engineers and Constructors. San Ramon, CA: Structural Mechanics Associates.

With R. P. Kennedy. 1985. "Summary of Observations on Control Point Location and Spatial Variation of Free-Field Ground Motion." Report SMA 46001.02. Prepared for United Engineers and Constructors. San Ramon, CA: Structural Mechanics Associates.

With J. C. Chen. August 19-23, 1985. "Influence of the Local Site Condition on Seismic Response of a PWR-Containment Building." In *Proceedings Eighth SMiRT Conference.* Brussels, Belgium.

With O. R. Maslenikov and E. C. Schewe. August 19-23, 1985. "SSI Response of a Typical Shear Wall Structure." In *Proceedings Eighth SMiRT Conference.* Brussels, Belgium.

With B. J. Benda et al. 1985. "The Effects of Basemat Uplift on the Seismic Response of Structures and Interbuilding Piping Systems." Report SMA 12211.44.01. Prepared for Lawrence Livermore National Laboratory. San Ramon, CA: Structural Mechanics Associates.

With O. R. Maslenikov and B. J. Benda. 1984. "SSI Sensitivity Studies and Model Improvements for the U.S. NRC Seismic Safety Margins Research Program." UCID 20212; NUREG/CR-4018. Livermore, CA: Lawrence Livermore National Laboratory.

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GREGORY S. HARDY

PROFESSIONAL HISTORY

EQE International, Inc., Irvine, California, Vice President and Regional Manager, 1985-present
Structural Mechanics Associates, Inc., Newport Beach, California, Technical Manager, 1980-1985
Engineering Decision Analysis Company, Inc., Irvine, California, Senior Engineer, 1979-1980
Ford Aerospace and Communications Corporation, Newport Beach, California, Staff Engineer, 1977-1979
TRW Systems, Inc., San Bernardino, California, Staff Engineer, 1975

PROFESSIONAL EXPERIENCE

Mr. Hardy has over 18 years experience in the design, analysis and testing of chemical, nuclear and aerospace structures and components. His responsibilities have included probabilistic risk assessments, earthquake experience data-based studies, stress analysis, finite element analysis, seismic margin studies, mass property studies, and shock and vibration environmental testing for hardware qualification.

Seismic Evaluation

Mr. Hardy has been sponsored by the Electric Power Research Institute, the Department of Energy and the Seismic Qualification Utility Group to perform post-earthquake investigations of numerous oil refineries, pumping stations, power plants and industrial facilities. He was a key investigator of earthquake damage effects to equipment following the 1994 Northridge Earthquake and the 1989 Loma Prieta Earthquake. He has performed seismic evaluations on a variety of existing facilities including Shell Oil (piping and tank yards), TRW (aerospace facilities) San Diego Gas and Electric Co. (compress or stations and gas pumping facilities), Southern California Electric Corporation (San Onofre Nuclear Power Plants and SCE substations) as well as for numerous nuclear and conventional power plants.

Mr. Hardy participated in the USNRC sponsored Seismic Safety Margin Research Program (SSMRP). In the SSMRP, he developed criteria for assessing the uncertainties in dynamic response and developed fragility descriptions for equipment as a part of the pilot plant study at Zion.

Mr. Hardy participated in a program to perform a seismic audit of the Lawrence Livermore National Laboratory Plutonium Facility (Building 332). He was responsible for the seismic safety verification of the critical plutonium containment barriers, including glove boxes, ventilation piping, fans and filters.

Mr. Hardy has played a principal role in the probabilistic quantification of indirectly-induced Double Ended Guillotine Break (DEGB) of BWR nuclear plants. The Brunswick nuclear generating station was utilized as a pilot plant as part of the NRC sponsored Load Combination Program. He has developed ultimate capacities of major equipment supports under seismic loads and subsequently evaluated the probability of DEGB.

Mr. Hardy has been involved with the deterministic seismic margin study conducted on the Midland Nuclear Power Plant Category 1 equipment and piping. Adequate seismic margins were shown to exist based on the new response spectra loads developed for the study.

PROFESSIONAL EXPERIENCE (CONTINUED)

Mr. Hardy has directed and/or participated in the capacity evaluations of mechanical and electrical components on over 25 Probabilistic Risk Assessments (PRAs) for nuclear power plants. He has played a major role in both the development of the methodology and in the completion of the equipment fragility studies. These PRA studies have considered the nonlinear behavior of the component, actual damping, mode combination, analysis/test methods, response of the structure and the equipment capacity. The uncertainty and randomness in each of the above quantities are accounted for on a probabilistic basis.

Mr. Hardy has contributed to the development of the earthquake experience data base generated for the Seismic Qualification Utilities Group (SQUG). This seismic experience data is being utilized by the nuclear industry to resolve the seismic issues associated with the NRC's Unresolved Safety Issue A-46. He was responsible for directing the effort to assess the structural and the systems effects of electromechanical relays during past earthquakes.

Analysis and Testing

Mr. Hardy has extensive experience with the dynamic analysis of numerous nuclear power plant mechanical and electrical equipment components. Response spectrum analyses have been performed on piping, valves, tanks, heat exchangers, pumps, compressors, switchgear, motor control centers, neutron detectors and diesel generators. He has performed thermal time history analyses using ANSYS on a sodium pressure sensor for the Clinch River Breeder Reactor. He has also performed pressure profile time history analyses of a missile rocker motor case and a relief valve. He has performed finite element analyses using the SAP, NUPIPE, NASTRAN, and STARDYNE.

Mr. Hardy has analyzed the effects of uneven ground settlement on a large, flat-bottomed borated water storage tank at the Midland Nuclear Plant. The analysis utilized laboratory tested material properties of the supporting structures and nonlinear finite element models. He has also conducted nonlinear analyses for the Shell Oil Company of pipeline lowering and fault movement, using the PIPLIN finite element code.

Mr. Hardy was responsible for design of a torsional pendulum moment of inertia measurement system for measuring rocker motors, warheads, guidance sections and other Sidewinder missile components. He designed a static loader frame structure for testing of aerodynamic loadings on the missile airframe.

In the area of environmental testing, Mr. Hardy was responsible for generation of environmental criteria for the AIM-9J and Chaparral Sidewinder missiles. He participated in shock and vibration testing of missile components and conducted static loads test on missile airframes to simulate aerodynamic loading. He conducted burst pressure tests on small pressure vessels and has consulted on a seismic testing program of a helical tube bundle from a nuclear power plant steam generator.

EDUCATION

UNIVERSITY OF CALIFORNIA, Los Angeles: M.S. Mechanics and Structural Engineering, 1976
UNIVERSITY OF REDLANDS, Redlands, California: B.S. Mechanical Engineering, 1975

REGISTRATION

Mechanical Engineer: California

AFFILIATIONS

American Society of Mechanical Engineers
American Nuclear Society

PUBLICATIONS

"Electric Power System Equipment Performance During the Northridge Earthquake." Presented at the *Disaster Preparedness Conference III*, St. Louis, MO., April, 1994

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With R. P. Kennedy, R. D. Campbell, and H. Banon. "Subsystem Fragility: Seismic Safety Margins Research Program." U.S. Nuclear Regulatory Commission report NUREG/CR-2405 and Lawrence Livermore National Laboratory report UCRL-15407. February 1982.

With R. D. Campbell. "Development of Probabilistic Seismic Failure Relationships of Nuclear Components for the SSMRP." Paper UCRL-84196 presented at the *Sixth Structural Mechanics in Reactor Technology, SMiRT, Conference*, Paris, France, August 1981.

EQE
ENGINEERING CONSULTANTS

A Division of EQE International

EQE Correspondence
No. 50147.01-O-001

September 9, 1994

Mr. R.D. Cutsinger
TENNESSEE VALLEY AUTHORITY
Browns Ferry Nuclear Plant, EDB 1F-BFN
P.O. Box 2000
Decatur, AL 35609

Subject: *TVA Contract No. TV-91124V, TAO No. 0001-370208*
Initial Peer Review on the Implementation of
USI-A46 & Seismic IPEEE Programs at
Browns Ferry Nuclear Plant (BFN)

Dear Rick:

Enclosed is the report summarizing EQE peer review comments and recommendations associated with the subject task. This initial peer review focused mainly on the completed in-plant walkdowns, analytical evaluations and documentation package for Unit 3 and Common raceway system reviews. Other procedural/programmatic issues related to the implementation of USI A-46 and seismic IPEEE programs were also reviewed and discussed.

If you have any questions, please feel free to contact me or Jim Johnson at (415)989-2000.

Sincerely,

John O. Dizon

John O. Dizon
Project Manager
EQE Engineering Consultants
San Francisco, CA

Attachment

cc: J.R. Glass (TVA)
J.J. Johnson (EQE)
S.J. Eder (EQE)

50147/rpt01

REPORT OF THE INITIAL PEER REVIEW BFN USI A-46/IPEEE SEISMIC ASSESSMENT

Date: August 23 to 26, 1994

Location: Browns Ferry Nuclear Plant (BFN)
Athens, Alabama

Peer Reviewers: Dr. James J. Johnson, EQE
Mr. John O. Dizon, EQE

PURPOSE

The purpose of this report is to summarize the results of the initial Peer Review on the portions of the seismic assessments performed by Seismic Capability Engineers (SCEs) for the resolution and implementation of USI A-46 and seismic IPEEE programs at BFN.

The initial Peer Review is intended to cover the technical approach, procedures, personnel qualifications, pre-walkdown planning and preparations including data gathering, and preliminary findings. The objective of this initial Peer Review is to provide guidance and recommendations, consistent with the SQUG/GIP implementation, to BFN SCEs based on the review of work performed to date. Additional Peer Review is strongly recommended halfway through the program. A final review will be performed at or near the completion of the program and will concentrate on findings and the final report of the walkdown.

SCOPE OF REVIEW

The scope of review includes those portions of the seismic assessments performed by the SCEs for the resolution and implementation of USI A-46 and seismic IPEEE programs at BFN, as well as other related procedural/ programmatic issues. The main focus is on the completed in-plant walkdowns, analytical evaluations and documentation package for Unit 3 and Common raceway reviews.

SUMMARY

A detailed review of the Unit 3 and Common raceway evaluation program was performed. The Peer Review included reviews of the technical approach and completed analyses and documentation, followed by in-plant walkdown evaluations to spot-check findings and judgements made to date by the Seismic Review Teams (SRTs). Other technical issues related to the resolution and implementation of USI A-46 and seismic IPEEE programs were also reviewed and discussed. The main areas covered, conclusions reached and recommendations are summarized below.

1. **Unit 3 Raceway Evaluations -** In-plant walkdown evaluations of the raceway systems at Unit 3 and Common Areas have been completed. Walkdown documentation, bounding support analyses and outlier resolutions were contained in TVA Calculation no. CD-Q0000-931227, Rev. 0. A total of 97 outliers were identified by the SRTs. Of these outliers, 11 resulted in design modifications and/or new support installations while 44 required minor maintenance type fixes such as replacing missing or tightening loose clamps, replacing broken parts, etc. The remaining outliers were resolved by further analytical evaluations consistent with the SQUG/GIP outlier resolution guidelines.

   In addition, an in-plant walkdown was performed on Unit 3 and Common raceway systems to verify the seismic ruggedness of these systems in general, as well as to spot-check findings and judgements made by the various SRTs. The areas covered during this walkdown were as follows:

   - Units 2 and 3 Cable Spreading Room, El. 606'
   - Unit 3 Mechanical Equipment Room, El. 606'
   - Electrical Equipment Room (Door 473), El. 593'
   - Genral Areas in the Control Bay, El. 593', El. 606' and El. 617'

2. **Procedural/Programmatic Issues -** Specific procedural and programmatic issues discussed during this visit include the following:

   - Definition of "effective grade" and application of "40-foot" rule for BFN buildings.
   - Determination of seismic demand for equipment in all BFN buildings, including comparison of seismic ground motion spectra with the SQUG Bounding Spectrum, comparison of in-structure response spectra with the SQUG Reference Spectrum, applicable soil amplification factors and categorization of BFN in-structure response spectra as realistic, median-centered spectra.

- Critical relay evaluation, equipment selection, equipment seismic walkdowns, and disposition of findings.

- Licensing and restart deferred issues, such as flexible conduit.

- Types of concrete anchorages used at BFN and the concrete strengths used for anchorage evaluations.

- Methodology for evaluating masonry (block) walls associated with IE 80-11 program, for use in addressing seismic interaction concerns.

- Qualifications of Seismic Capability Engineers (SCEs).

In conjunction with the determination of seismic demand, a soil amplification study was conducted for the Diesel Generator Building (DGB). Site analyses were performed using the *SHAKE* program to determine the ground surface (free-field) response and the response at the DGB foundation level due to BFN site-specific (Housner) design basis earthquake input as rock outcrop motion. A 76 foot soil column was used to model the free-field, while a 35 foot column consisting of 3' of indigenous soil and 32' of crushed stone was used to model the soil profile underneath the DGB foundation. Soil degradation was a variable parameter considered in obtaining the high strain soil properties used in these analyses.

CONCLUSIONS

The main conclusions of the raceway review are as follows:

1. Overall implementation of the SQUG/GIP raceway evaluation program is judged to be good.

2. Documentation package is very thorough. This demonstrates conscientious and careful evaluations by the SRT members. However, certain aspects of the evaluations tend to be overly cautious. For example, insignificant proximity interactions were documented as outliers and subsequently resolved by engineering judgements.

3. The technical approach for bounding analyses and outlier resolution is judged to be appropriate but conservative in general. Peak spectral accelerations were used when performing equivalent static hand calculations. In some cases, analyses were performed using a finite element structural analysis program in lieu of simple hand calculations utilizing the SQUG/GIP limited analytical review guidelines for typical raceway supports.

Futhermore, based on the discussions of the various procedural/programmatic issues, the following conclusions can be made:

1. Implementation and coordination efforts at BFN are progressing in the right direction, given the current status of the program.

2. Preliminary estimate on the "effective grade" level for Unit 2 is at about 540' elevation. The "effective grade" level for Units 1 and 3 may be higher.

3. The preliminary results of the above soil amplification study indicate that the horizontal soil amplification factor of 1.6, as provided in the BFN FSAR, is not overly conservative for both free-field and DGB applications.

RECOMMENDATIONS

The following recommendations are provided as a result of this initial review:

1. For upcoming raceway evaluations, it is recommended that the SRTs utilize the Plant Area Summary Sheet, as recommended in the SQUG/GIP (Exhibit 8-1), for documenting field notes as well as in-plant evaluations where considerable engineering judgements were made. This may minimize the use of the Outlier Seismic Verification Sheet (OSVS), thus reducing the number of outliers.

2. For the resolution of outliers pertaining to overspan, it is recommended that the SRTs utilize the simplified methods as provided in the SQUG/GIP, i.e., use 50% of the NEMA rated capacity to check against the load on the overspan tray, or use 3.0 times conduit dead load as the collapse load for evaluating conduit overspan. Where spectral acceleration input is opted, avoid using the peak value by simply calculating the fundamental frequency of the conduit. This may reduce the number of new support installations.

3. For consistent USI A-46/IPEEE applications, it is recommended that the SRTs should document the definition of "effective grade" and the determination of seismic demand for equipment in all BFN buildings in the form of a calculation package. This includes comparison of seismic ground motion spectra with the SQUG Bounding Spectrum, comparison of in-structure response spectra with the SQUG Reference Spectrum, with applicable soil amplification factors. Displacement and Zero Period Acceleration (ZPA) values at various elevations of the buildings should also be included.

4. Similarly, documentation should also be established to address generic issues such as capacity of certain anchor types, concrete strengths and provision for using higher values, block walls identified under IE 80-11 program, etc.

5. To be consistent with NRC letter dated March 19, 1993, it is recommended that the SRTs use the 5% damped in-structure response spectra for calculations of seismic demand for quantitative analyses. For anchorage evaluations, a 1.25 factor is required to account for the uncertainties inherent in median-centered type of response spectra.

6. A relay walkdown procedure should be developed to identify SCE interfaces and responsibilities in the relay evaluation. These include assisting in estimating and approving in-cabinet amplifications and natural frequencies, which are needed for the evaluation of relay capacity.

7. To account for soil amplification at various BFN buildings, it is recommended that the soil amplification factors as provided in the FSAR be used. Exceptions should be reviewed on a case-by-case basis.

VECTRA

March 31, 1995
0006-00919-OC-001

Mr. J. R. Glass
Principle Civil Engineer
Browns Ferry Nuclear Plant
Tennessee Valley Authority
Post Office Box 2000
Decatur, AL 35609-2000

SUBJECT: Peer Review of Safe Shutdown Equipment List (SSEL) for USI A-46 and IPEEE

Dear Mr. Glass,

Please find attached a summary of VECTRA's review of the subject BFNPP SSEL for Unit 2 that was performed in your offices between March 22 and 24.

Based upon this review, the TVA SSEL for Browns Ferry Unit 2 meets the guidance provided in both the SQUG GIP and EPRI NP-6041, and is consistent with the approach currently being used by other nuclear facilities. As identified in the recommendations section of the attached, there are a couple of items that should be addressed by TVA in preparation of the final USI A-46 and IPEEE report.

Should you have any additional questions, or wish to discuss any item in further detail, please do not hesitate to contact me in our Framingham MA office at (508) 370-3330.

Very truly yours,

Steve Reichle

Steve Reichle
Project/Service Area Manager

VECTRA Technologies, Inc. 600 Worcester Road Framingham, MA 01701-5360 Tel (508) 370-3266 Fax (508) 370-3223

PURPOSE

The purpose of this project was to perform an independent (peer) review the BFNPP Unit 2 (BFN2) SSEL that was prepared as part of TVA's response to USI A-46 and IPEEE. The review focused on the following issues to ensure conformance of the BFN2 SSEL and supporting documentation with both the SQUG GIP and EPRI NP-6041 guidance:

- Safe shutdown path(s) and systems have been selected for each safe shutdown function. A summary description has been prepared to document the basis for systems selected.
- Assumptions used in identifying the safe shutdown paths have been documented.
- Identification of front-line safe shutdown equipment and required support equipment on the BFN2 SSEL.
- The correct evaluation type(s) (seismic and/or relay) have been identified for each SSEL component.
- Color coded flow diagrams have been developed to show each of the safe shutdown funstions.
- Operations Department has reviewed the SSEL and concurs with the paths and components selected, and they are covered by existing procedures.

WHAT WAS REVIEWED

VECTRA met with Messrs. R. H. Wright and J. D. McCamy upon arrival at BFN2 and was provided with a current copy of the BFN2 SSEL (TVA Doc. No. QIR LMEBFN94094, dated 10/21/94) along with the original set of color coded flow diagrams used in the development of the SSEL. TVA also provided VECTRA with a copy of the Electrical SSEL that was completed, but not yet incorporated into QIR LMEBFN94044. The only other documentation that was available was a memorandum sent from the Nuclear Engineering (NE) Group to Operations on November 2, 1992, and a separate project memo that documented the change of equipment classifications for motor operated dampers from 8A to 10.

The 11/2/92 memorandum to Operations (J. A. Scalice) identified the scope of the A-46 and IPEEE work and presented an outline of the plant systems that would be used in performing each of the four safe shutdown functions. The memo also informed

Operations of NE's intent to develop a SSEL that Operations could use to mitigate a seismic event with the existing Emergency Operating Instruction (EOI) flow charts. It was also noted that the existing plant procedure (0-AOI-100-5, "Earthquake Abnormal Operating Instructions") that would be used following an earthquake, may require a revision. Mr. McCamy informed VECTRA durinf this review that Operations never formally responded to his memorandum, but that he intended to follow up on this issue.

Although TVA has not yet formally documented all the processes that are needed to finalize the SSEL, sufficient documentation was available to assess the status of the SSEL for BFN2. The following TVA engineers provided additional information and input during the review process:

Mr. J. D. McCamy	Mechanical Supervisor
Mr. R. H. Wright	Electrical Supervisor
Mr. J. R. Sampson	Electrical Engineer
Mr. W. L. Aldredge	Electrical Engineer

Using the above referenced documents, the review focused on determining if TVA had developed a plan that considered all of the systems and equipment that might be called upon during or following a seismic event to ensure a safe shutdown of the BFN2. The review also focused on compliance with industry guidance (SQUG GIP, EPRI NP-6041 and NUREG-1407)

In addition to the SSEL, VECTRA also reviewed preliminary relay review data prepared by TVA. Although TVA had not fully initiated the relay review effort, the Electrical Group had completed a trial review on a handful of components, and presented a number of questions to VECTRA for interpretation. VECTRA plans to re-visit BFN2 after work has officially started and sufficient data has been generated to review.

FINDINGS

The SSEL appears to have included all systems and most of the components that would be required to ensure a safe shutdown of the BFN2 plant in the event of a safe shutdown earthquake (SSE) for A-46, or Seismic Margin Earthquake (SME) for IPEEE. Attachment A to this report contains a listing of specific VECTRA comments that should be considered while finalizing the SSEL.

Instrumentation for monitoring containment conditions, has been excluded from the SSEL. However, based on current information provided by SQUG on their electronic bulletin board, the need to include instrumentation for monitoring containment performance has not been determined.

Personnel that developed the SSEL met the qualification requirements of the SQUG GIP and EPRI NP-6041. In addition to meeting degree requirements, the systems engineer is also SRO qualified which aided in the process of developing the SSEL.

COMMENTS ON TRIAL RELAY EVALUATIONS

The following VECTRA comments were made during a review of the trial relay reviews performed by the BFN2 Electrical Group, and were discussed with TVA during the review. In addition to these comments, VECTRA has provided a response to questions on the relay review process presented to VECTRA during the review process (see Attachment B).

1. During the process of identifying associated relays for safe shutdown component, relay reviewer should also identify motive and control power supplies for each component. This will allow the electrical engineer to highlight an electrical one-line to show all electrical components and validate the Electrical SSEL.

2. Develop a relay tabulation sheet for each component. It is not recommended the evaluations be performed at a system level.

3. Place all relay data into aa electronic database that is independent of the SSEL. Additional data that should be included in this database, above that shown on the EPRI tabulation sheet, includes:

    - Relay location by: Panel No., Building and Elevation (3 fields)
    - Motive power
    - Control power
    - Manufacturer and type
    - Model number
    - Relay coil normally energized (Yes/No)
    - Contact NO/NC (in de-energized state)
    - Duplicate relay identifier

4. List all relays associated with that component. Attempt to screen relays as they are added to tabulation sheet.

5. Ensure that relays in auxiliary circuits are identified and evaluated.

6. Motor starters (contactors) should not necessarily be classified as "not vulnerable" (NV) on the relay tabulation sheets. The motor starters and thermal overloads should be screened from the list of essential relays by using the MCC/GERS if the motor control center meets the caveats provided in the SQUG GIP.

7. Time delay relays (i.e. Agastats) should be considered susceptible to relay chatter. However, the possibility of a time delay relay's timing being affected as a result of a seismic event is not addressed by either the SQUG GIP methodology or EPRI NP-6041 for IPEEE. Since the SQUG methodology is based on industry experience, if testing or experience had shown this to be a concern it would have been addressed. The relay reviewers should attempt not read to many issues into the scope of these projects.

8. During the course of performing the relay review, the review team should be on the lookout and aware of potential adverse plant conditions that might develop as a result of relay chatter. However, the relay reviewers should not attempt to read more into the guidance documents than what is written. Events and situations proposed by TVA such as electrical faults created by the earthquake, concurrent with partial relay chatter as a result of the seismic event, are outside the scope of the SQUG GIP.

9. Every effort should be made during the relay review to ensure that valves stay in their required positions, or only move to the required position when necessary. If too many valves are allowed to move as a result of relay chatter, the Operators may called upon to perform an unacceptable number of actions to restore system alignment.

VECTRA believes that if the above techniques are factored into the TVA relay review effort the process will be more efficient. It would also eliminate the lengthy analysis text that is was generated during the trial reviews. With all associated relays listed against each safe shutdown component, and provided with an appropriate screening code, supplemented with standardized and specific notes, the results of the review effort can be easily followed by anyone else in the future.

RECOMMENDATIONS

Action Items

The following items were identified and discussed with TVA during the review process. It is recommended that TVA close out these items prior to completing the seismic walkdowns and submittal of the final USI A-46/IPEEE Report to the NRC.

1. The Shutdown Cooling mode of RHR has not been selected for either USI A-46 or IPEEE. However, the RHR Shutdown Cooling suction valves FCV-74-47 and 48 should be included on the SSEL for the following reasons:

   - It is understood that power has been removed from one or both of these valves. These high/low pressure interface valve could spuriously open as a result of relay chatter resulting in a potential LOCA.

   - Although neither the A-46 or IPEEE programs require the plant to go to cold shutdown, the intent is that the plant will be ready to transition to cold shutdown at the end of the 72 hour period. With this in mind; it is recommended that the subject valves be reviewed seismically so that there will be some assurance that they can be opened subsequent to the earthquake.

2. It is recommended that the process used to develop the list safe shutdown components for USI A-46 and IPEEE be documented. If there are no additional assumptions other than those contained in the SQUG GIP and EPRI NP-6041 that document should explain that. This document could also be used to:

   - Explain the SSEL codes and reference the SSEL document number.
   - Describe why certain HVAC systems are excluded.

3. Systems required to support each of the shutdown functions have not been specifically identified. A matrix could be used to show which systems are required to support each safe shutdown function, as well identify those that perform more than one role (i.e. CRD/scram discharge volume, and RHR/LPCI and Shutdown Cooling). The matrix can also be used to identify how each support system is related to front-line systems.

4. For IPEEE the exclusion for NSSS components does not exists as it does under the SQUG methodology. Therefore NSSS items such as the control rod drives, reactor internals, reactor recirculation pumps should be included. VECTRA understands that while these components will be evaluated as part of the IPEEE process TVA

does not plan to place them on the SSEL. This position this should be documented in either the SSEL report, or the TVA report to the NRC. .

5. The BFN2 position on HVAC for the various plant areas needs to be documented for the final report. The SQUG GIP (Section 3.3.6) in identifying the types of support systems and equipment for safe shutdown functions specifically calls out HVAC as one such system. Unless a specific analysis or calculation can be presented to support the need to exclude such systems, they should be included on the SSEL.

   Currently the BFN2 A-46/IPEEE SSEL only identifies the following ventilation systems as being needed:

   - Diesel Generator Room Exhaust Fans
   - RHR Pump Room Cooling Units
   - CS Pump Room Cooling Units

   Other areas such as electrical switchgear rooms and the Control Room should be addressed.

6. The relay review for BFN2 should be started, and completed, as soon as possible to ensure that all associated relays are identified and that the essentially reviews are completed before the seismic evaluations progress much further. The current methodology being used to identify essential relays might miss some relays, and may result in unessary seismic evaluations of other relays. Without having completed the relay review process, TVA may not have taken full advantage of the screening methods available to reduce the population of essential relays.

Documentation

During the review of the BFN2 SSEL, a number of the issues that were considered by TVA in developing their SSELs for Unit 2 were conveyed to VECTRA verbally (i.e. high pressure injections systems for inventory control would not be included in the SSEL). Although the processes used are acceptable, it is recommended that they be documented as soon as possible so that all of the details are captured (see Action Item #2 above).

Documentation should identify method and approach used, as well as a description of the procedures used, to identify systems and components for the seismic walkdowns and relay reviews. It should also identify any key assumptions made during the project (i.e. high pressure systems were not selected because of their low availability). The report should include a concise description of the documentation used to generate the SSEL (procedures, flow diagrams, FSAR, etc.).

In addition to documenting the SSEL methodology the Operations Department review of the SSEL and the systems selection should be formally documented. The GIP requirement for their review is to verify that, using plant procedures the Operators will be lead to the safe shutdown paths selected. VECTRA understands that TVA plans to validate the SSEL by using the BFN simulator. VECTRA recommendes that this be discussed in the projects final report to the NRC.

General Comments

1. Check valves: The SQUG GIP (Section 3.3.5) allows for the exclusion of certain "potentially active components such as in line check valves from the need to perform a seismic review as long as they do not have external actuators. This is because they are inherently seismically rugged and not vulnerable to damage during a seismic event.

   Those check valves that are considered active components could remain on the SSEL. If they remain they should be identified as seismically, or inherently, rugged by placing an "R" in the "Equipment Class" field and leaving the "Sort" field blank.

2. When a pneumatically operated valve (FCV) is on the SSEL along with it's controlling solenoid valve (FSV), it is recommended that the FSV be listed as a support component to the FCV. The relay review for this combination should be tracked against the FSV.

   In addition, if the FSV is attached to the FCV, no seismic review of the FSV would be required since in would fall within the "rule-of-the-box" and be evaluated with the FCV.

3. Flow elements: These devices should be considered seismically rugged with no need to be included on SSEL.

   If flow indication is required, the specific indicator should be included on the SSEL and identified as requiring a seismic and relay review. Support components would then be the transmitter and the panel on which the indicator is mounted on. The transmitter would the also be listed as a SSEL component with the rack on which it is mounted identified as a support component.

   If more than one SSEL transmitter turns out to be located on that rack, then the individual transmitters could be replaced with a single SSEL entry to identify the rack. A note would then be used to identify the instruments on the rack of interest.

4. Use the "Required Support Component" field to identify the power supply required (i.e. 250V BD-2A, etc.) to operate the component. This will allow users and reviewers to identify why specific electrical components are on the Electrical SSEL.

Control Rod Drive SSEL

1. Lines #0001-0009: The directional control, scram and check valves (597 and 616) along with the scram accumulator could all be listed as a single component (HCU) on the SSEL. Seismic reviews of HCUs are normally handled as unit.

2. A relay review of the HCUs and the scram pilot valves should not be necessary if the assumption is made that there are no single failure vulnerabilities within the CRD or RPS that would preclude all but a single stuck rod from inserting.

3. Lines #0018 and 0019: The CRD Instrument Volumes should be considered as piping which is not required to be reviewed under USI A-46.

4. No relay review would be required of the individual SDV vent and drain valves since the SOVs (FSV-85-37A/B) that control these valves are already on the SSEL and identified as requiring a relay review. This relationship could be tracked by listing the scram dump valves as required components against the vent and drain valves.

5. Control air and power should not be a required support systems for any of the CRD System components since they should all fail in the desired position.

6. The control switches (reactor mode and scram push-button) taken from the RPS schematics should not be included on the SSEL. If they were to be tracked they would be identified during the relay review process and identified as not being vulnerable to chatter since they are mechanically actuated devices.

Residual Heat Removal SSEL

1. Note 5 makes reference to functions "I" and "H" referring to inventory and decay heat removal control functions. The SSEL does not show or provide a description of the codes. The matrix previously for inclusion in an SSEL report discussed should help clarify the dual role RHR plays.

2. Line #1001, description should be "Pump 2A".

3. RHR pumps desired state should be "STBY/RUN", currently identified as "RUN". This will key the relay reviewers to look at both conditions to ensure that there are no relays that would cause the pump to spuriously start when it is not required.

4. Room coolers are identified as support components for the RHR pumps. The fans associated with these coolers are required, and are included on the EECW SSEL.

5. Lines #1003, 1012A, 1027A and 1035A: Could the breakers for these valves be "racked out" or locked open to preclude the need to perform relay review of their control circuit?

6. Line #1005. The "Normal" and "Desired" state is not consistent with the other minimum flow line check valves.

7. Line #1007. In-lieu of performing a relay review of RCIC valve FCV-71-34, why not replace it with check valve CKV-71-547 if flow diversion is the only concern?

   What about flow diversion to Aux. Boiler System shown on Flow Diagram 2-47E813-3 that also ties into the RHR line to the Suppression Pool?

8. RHR heat exchangers, use of Note #2 is not clear.

9. Lines #1010 and 1033A. Could the breakers for these valves be "racked out" or locked open to preclude the need to perform relay review of their control circuit?

10. The color coded flow diagrams for RHR show a number of FTs and FSs circled but they do not appear on the RHR SSEL?

11. Lines #1017 and 1040: The "Desired" position for these valves should be "CL/OP" since the valves would remain closed if RHR is in the LPCI mode of operation.

12. Lines #1018, 1019, 1041 and 1042: The "Desired" position of these valves will be dependent upon the mode of operation the RHR system is in, Suppression Pool Cooling or Spray. Therefore, the "Desired" position should be shown as "CL/OP".

13. Lines #1021, 1022, 1044 and 1045: Desired position should be "CL/OP" since LPCI may not be initially used, and it may be desired to keep the valves closed.

14. Line #1024 and 1046: Should Note #3 be used for these valves since the valves will be required to isolate the drywell spray line when RHR is in the LPCI mode of operation under A-46.

15. Line #1031. In-lieu of performing a relay review of HPCI valve FCV-73-30, why not replace it with check valve CKV-73-559 if flow diversion is a concern?

<u>Main Steam Relief Valves SSEL</u>

1. Would the accumulators for PSV-1-5, -19 -22, -30, -31 and -34 be of sufficient size and capacity to facilitate de-pressurizing the reactor to initiate LPCI? If they are, would it still be necessary to include all of the CAD System? CAD could have some seismically vulnerable components.

2. Recommend deleting the relay review for the relief valves and identify the solenoid valves (PSVs) as support components. The solenoid valves are currently listed under the CAD System and identified as requiring a relay review.

3. Flow diagram 2-47E817-1, Reactor Water Recirculation Vents and Drains, shows two reactor head vent valves (numbers can not be identified) that are not highlighted nor appear to be included on the SSEL. This would be a potential path for loss of inventory or pressure control.

<u>Containment Isolation SSEL</u>

1. The MSIVs and the drain line isolation valves also function under inventory and pressure control using the SQUG GIP guidelines. These valves and the MS relief valves could be listed under a Main Steam SSEL.

2. Since main steam line drain valves FCV-1-55 and -56 are normally closed, only on of the valves needs to be included on the SSEL. A relay review of one passive valve would ensure that containment isolation and inventory control functions are maintained. No single failure needs to be considered here.

3. Recommend adding the MSIV SOVs as support components for the MSIVs, and assign the relay review requirement to the components.

4. Recommend that the panel where the indicator or recorder is installed be identified in the "Location" or "Supporting Component" field. This would identify the basis for including the panel on the Electrical SSEL.

5. The transmitters for the various indicators found on the SSEL should be listed as a "Req'd Supporting Component".

6. Lines #3011 thru 3014, 3036 and 3038: These check valves will not require a seismic review (See comment under RHR).

7. Testable check valves are an exclusion to the rule on check valves not requiring a seismic review. Since these valves have external actuators a seismic review is required to ensure that there are no interaction issues that might cause the valve to be forced open.

   Therefore, RCIC valve FCV-71-40, and HPCI valve FCV-73-45 should be returned to the SSEL.

9. Line #3015: The accumulator that may be needed to close FCV-32-63 should be listed as a required support component. This will ensure that the Seismic Review Team look at the accum. and it's associated piping to ensure that there are no seismic issues that need to be addressed.

Emergency Equipment Cooling Water (EECW) SSEL

1. Lines #4003, 40013. 4046 and 4056: These strainers could be eliminated from the SSEL if it can be shown that they are not required for the 72 hour period, or that spurious operation of the strainers during the strong motion period of the earthquake.

2. Lines #4004, 4014, 4047 and 4057: Strainer drain valves opening during the event may not divert a sufficient amount of water to require a seismic or relay review.

3. Since the diesel generator coolers are not specifically listed on the DG SSEL (see note 3) it is assumed that they are part of the diesel generator line item as "rule-of-the-box".

4. Are the Unit 1 CS and RHR room coolers on the Unit 1 SSEL? Required to ensure that they do not present a potential flow diversion problem.

5. Have the 6 inch EECW line that connect to Raw Water System (Dwg. 1-47E844-2) been evaluated for potential flow diversion?

   Have the 8 inch EECW line that connect to Raw Water System (Dwg. 1-47E844-2) been evaluated for potential flow diversion?

   Other lines and equipment on highlighted flow diagrams not highlighted. Equipment in these lines may need to be evaluated to assess the impact of flow diversions on EECW.

6. Lines #4009, 4040, 4052 and 4082: RHR seal water heat exchangers could possibly be seismically evaluated with the RHR pumps under the "rule-of-the-box".

7. Lines #4015 and 4058: EECW valves connecting the RHRSW pumps with RHRSW system could be excluded from the SSEL. With the RHRSW system being evaluated , spurious operation of the valves should not affect safe shutdown. If the valves opened they could be manually re-closed to terminate any flow diversion.

8. Lines #4041, 4042. 4083 and 4084: Amperage indication (pump running?) could be eliminated. Verification of the system operating could be that supported systems (DGs, rooms coolers, etc.) are operating as required.

Core Spray SSEL

1. The "Desired" operating state for the Core Spray pumps is identified as "ON". If there may be a concern from an electrical load standpoint for the 4KV busses. The relay reviews should be notified that spurious operation (starting) of the pumps during the earthquake may not be acceptable. This can be done by identifing the "Desired" state as "OFF/ON" on the SSEL.

Containment Atmosphere Dilution SSEL

1. See comment #1 under Main Steam Relief Valves SSEL above.

2. Lines #6002 and 6026: The relay review identified for this component can be deleted since the SOV that controls the valve is on the SSEL and identified as requiring a relay review. The FSV should be identified as support component, and "Power Req'd" should be "No".

3. Lines #6010, 6011, 6034 and 6035: Check valve that can be classified as inherently rugged, but exempted from containment isolation due to their size (< 1 inch).

4. The solenoid valves for the MS relief valves could be considered as "rule-of-the-box" if mounted on the relief valve. This would eliminate the need for a specific seismic review of the PSV.

Diesel Generators SSEL

1. The Unit 3 Diesel Generators are on the SSEL, are they required to support a Unit 2 safe shutdown?

RHR Service Water (RHRSW) SSEL

1. As was identified on the CS pumps, the Desired Operating State for the RHRSW pumps is identified as "ON". If there is any concern from an electrical load standpoint for the 4KV busses, the relay reviews should be notified that spurious operation (starting) of the pumps during the earthquake may not be acceptable.

2. Can one RHRSW pump supply all three RHR heat exchangers? The Unit 2 SSEL indicates that the outlet valves from the Unit 1 and 3 heat exchangers are passive and will remain closed. Is this true? If not seismic reviews will be required of all outlet valves.

3. Transmitters for flow indicators should be listed as "Required Support Components", and the transmitters listed on the SSEL so that they can be seismically evaluated.

Electrical SSEL

1. Backfeed transformers TS1E, TS2E, TS3E and TDE are currently included on the SSEL. If these transformers are not required, and are normally isolated by open breakers following a loss of offsite power, they could be excluded from the SSEL.

2. Electrical busses and MCCs required for safe shutdown should fall out from the front-line and support systems equipment selection process. Busses on SSEL do not appear to be consistent between units.

3. Diesel Generator grounding resistor: Porcelain insulators would be subject to seismic damage. Would a short of this resistor result in a trip of the diesel or it's output breaker?

Instrumentation

1 Instrumentation included on SSEL should be consistent with Category 1 equipment seismically qualified under the Regulatory Guideline 1.97 program will resolve the USI A-46 requirements for that equipment.

(1) Yes. See Action Item #5 in the body of the letter.

(2) Yes. Resetting the battery chargers following a seismic event would be an acceptable method of eliminating the need to perform a relay review of the components. However, the station procedures should support this approach by ensuring steps or a notice is placed in the appropriate document to alert the Operators to the potential loss of the chargers.

(3) The separation criteria drawings would be an acceptable alternative to highlighting electrical single line diagrams. The primary purpose foe performing this exercise is to ensure that all electrical equipment that may be required to make a path available has been considered and included on the SSEL.

(4) No. To some extent circuit continuity has not been an issue in responding to either A-46 or IPEEE. However, the raceway review which included conduits should have considered electrical junction boxes, and like raceways, these items are not included on the SSEL.

RESPONSE TO VECTRA'S PEER REVIEW OF THE BFNPP UNIT 2 USI A-46 AND IPEEE SSEL

The HVAC Systems for the Control Building and the Reactor Building Shutdown Board Rooms are not included in the Safe Shutdown Equipment List because:

The Control Building HVAC system is composed of the following subsystems:

1. Chilled water: For Unit 1/2, this system consists of two 100% capacity chillers, associated pumps, and air handlers. This system serves the Unit 1/2 Control Bays, adjacent Unit 1/2 rooms on elevation 617', the relay room also located on 617', and areas containing Unit 1/2 safety related electrical equipment located on elevation 593'. For Unit 3, this system consists of two 100% chillers, air handlers, and associated pumps. The Unit 3 system is completely redundant in both equipment and piping. In addition, a cross-tie arrangement exists to supply chilled water to the "B" relay room air handler if required.

2. As noted above, 100% redundant air handlers are provided for the areas in the building containing temperature sensitive safety related equipment.

3. Outside air is provided for make-up and to cool the remaining areas of the building. Outside air used for cooling of safety related equipment is composed of 100% redundant fans.

4. Emergency Condensing Unit: Located in the Unit 1/2 elevation 606' equipment room, serves the Unit 1/2 conditioned spaces. This unit is provided for conditions when the chilled water piping system is inoperable. The chilled water piping for Unit 1/2 is a single loop system and loss of it would prevent chilled water from reaching the air handlers. In this unlikely event, the emergency condensing unit can provide an alternate source of cooling for the conditioned areas of the Unit 1/2 Control Building. The various air handlers have direct expansion cooling coils installed that are connected to the emergency condensing unit. The air handling unit fans distribute the cooled air to the areas served.

5. Calculation ND-Q0999-930029 determined the minimum manual actions required for maintaining acceptable room temperatures for operation of Units 1, 2, and 3 with a temporary loss of HVAC. These manual actions vary with each room and in some instances, the time frame can be relaxed. For example:

Room/Area	Manual Action
Electric Board Room 1C (593-R1B)	Turn off lights within 6 hrs. and open door within 30 hrs.
Electric Board Room 2C (621.25-R2A)	Turn off lights and open door within 2 hrs.

Other manual actions include open access panels, blank off return grille, and re-open intake damper. Tables 5.1 through 5.6 also indicate that some existing manual actions can be deleted; however, performance of these manual actions within the identified time frame will result in maintaining acceptable room temperatures.

6. During a postulated Station Blackout Event, all AC power is lost and the plant must rely solely on DC powered systems for plant recovery. As such, all heating, ventilation, and air conditioning systems are rendered inoperable. Therefore, Calculation MD-N2031-920011 (Reference 4) determined the temperature profiles for various rooms in the Control Building and Reactor Building following this event. Some high temperatures can be expected; for example, temperature exceeding 144°F in room 593-C22A. Although some high temperatures can be expected, Electrical Calculation ED-Q2999-920046 (Reference 5) and Mechanical Calculation MD-N2999-890014 (Reference 6) provide reasonable assurance of the operability of Station Blackout response equipment in dominate areas of concern. Calculation ED-Q2999-920046 concluded all Class 1E electrical equipment is operable for a Station Blackout Event. In addition, the calculated 4 hr. Station Blackout temperatures are below the 4 hr. duration Station Blackout Operability temperatures for the ten categories of equipment generically excluded by NUMARC 87-00 R1 Appendix G (Attachment B of Reference 5). That is, 144°F is less than 160°F which is the lowest temperature allowed by NUMARC. Therefore, reasonable assurance exists for the operability of the equipment required to cope with the Station Blackout event.

The Control Rooms are continuously occupied and any failure of cooling to these spaces would be noted fairly quickly. Operating Instruction OI-31 Section 8.13 provides instructions for coping with a loss of cooling to the various areas which contain sensitive equipment. Based on the equipment redundancy provided in the various sub-systems and the Operating Instructions provided as well as minimum manual actions, the HVAC systems need not be included in the Safe Shutdown Equipment List.

References:

1. Operating Instruction OI-31
2. Drawing 0-47E866-4 Flow Diagram
3. TVA Calculation ND-Q0999-930029, "Appendix R Manual Actions for Temporary Loss of HVAC."
4. TVA Calculation MD-N2013-920011, "Loss of Control Bay Cooling During Station Blackout."
5. TVA Calculation MD-N2999-890014, "Operability of Station Blackout Response Equipment for BFN."
6. TVA Calculation ED-Q2999-920046, "Assessment of Class 1E Electrical Equipment Operability in Dominant Areas Under Station Blackout (SBO) Conditions."

EQE INTERNATIONAL

Engineering
Risk ■ Safety ■ Design

February 9, 1996

50147.14-O-001

Mr. John R. Glass
TENNESSEE VALLEY AUTHORITY
Browns Ferry Nuclear Plant, EDB 1F-BFN
Browns Ferry Road
Athens, AL 35611

Subject: ***Peer Review Report for the Browns Ferry Units 2 and 3 USI A-46 and Seismic IPEEE Programs***

Dear John:

Attached is the peer review report for the Browns Ferry USI A-46 and Seismic IPEEE programs.

This report summarizes the results of the review that Rick Cutsinger and I performed during January. Overall the programs were conducted in a thorough and professional manner. No deficiencies or gross errors were discovered during the review. However, Rick and I have made several suggestions that could strengthen specific areas of the programs. Please feel free to call either Rick or I to discuss any questions you may have with the attached peer review.

Sincerely,
EQE International, Inc.

Greg Hardy

Greg S. Hardy
Senior Vice President

cc: John Dizon (EQE)
Rick Cutsinger (TVA)

Attachment: *Peer Review Report*

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BROWNS FERRY PEER REVIEW

1. EXECUTIVE SUMMARY

The Tennessee Valley Authority is in the process of resolving their unresolved safety issue A-46 and seismic IPEEE programs at their Browns Ferry Units 2 and 3 nuclear power plants. They are utilizing the SQUG Generic Implementation Procedure (GIP) as the basis for their resolution of USI A-46. The seismic IPEEE issue was addressed using deterministic (EPRI) margin methods. The GIP and NUREG 1407 contain requirements to perform independent peer reviews of the entire A-46 and seismic IPEEE review processes. This report documents the peer review for Browns Ferry Units 2 and 3. This peer review was performed by Greg Hardy of EQE International and Rick Cutsinger of TVA during a January 9-11 trip to the Browns Ferry site.

Mr. Hardy has over 20 years of experience in the field of dynamics, structural mechanics and stress analysis. He has been the independent peer reviewer for several nuclear plants both for their USI A-46 resolution as well as their seismic IPEEE resolution. He has been a key participant in the development of the SQUG methodology over the past 10 years. This participation includes the following:

- Co-author of the SQUG Generic Implementation Procedure
- Trainer for SQUG Training Course
- Reviewer for EPRI Margins Course
- Co-author of EQE "20 Classes of Equipment" document
- Contributor to NUREG 1407 for IPEEE
- Principal author of NUREG/CR-5499, Guidance on Relay Chatter Effects

Mr. Cutsinger has over 15 years of experience in the design and qualification of nuclear power plant structures, equipment, piping and other suspended system supports. He also spent 18 months at the Institute of Nuclear Power Operations performing evaluations of the civil design and qualification of 12 nuclear power plants. He is currently the Chief Civil Engineer for TVA and is also a member of the

Browns Ferry Nuclear Safety Review Board. He recently authored an EPRI innovator utilizing the use of seismic experience data to qualify HVAC support anchorages.

The overall A-46 resolution program by TVA is judged to be proceeding in accordance with the GIP. There were no gross errors or deficiencies discovered in the sampling review conducted on this peer review. Several areas were identified where the Peer Reviewers recommended additional actions to strengthen or confirm the Seismic Review Team (SRT) conclusions. Since this was an "in-progress" peer review, several key areas were not completed at the time of the review and, thus, could not be included within this report.

2. PURPOSE OF PEER REVIEW

The independent peer review of a plant-specific USI A-46 and seismic IPEEE implementation is intended to provide a senior level review of the overall program. The review is not intended to be a quality assurance type review. The State-of-the-art seismic review methodologies include peer reviews to provide a higher level of assurance that the judgments implicit to these methodologies (GIP and NP6041) are being properly applied and to look for gross errors. The peer review is typically conducted on a sampling basis wherein a "vertical slice" of the major elements of the A-46 and seismic IPEEE programs are selected for review.

3. SCOPE OF PEER REVIEW

The scope of this peer review encompassed the seismic assessment portions of the USI A-46 program performed by the Seismic Capability Engineers (SCE). Attachment A has a detailed agenda for this peer review. The following areas were included within the agenda for the peer review:

- Qualifications of Seismic Review Team
- Plant Walkdown Reviews
- Project Documentation (SEWS, OSVS, SVDS)
- Seismic Response Utilization
- Identification of Outliers
- Identification of Bad Actor Relays

- Overall Conduct of the A-46 Program
- Observations of SCE personnel performing in-plant evaluations were conducted in October 1995 by Mr. Cutsinger

As specified within the SQUG/EPRI methodology documents, the peer review of the SSEL and the relay SSEL are addressed by virtue of the required plant operations department review and concurrence. In addition, an initial peer review had already been conducted for Browns Ferry by a contractor in March of 1995. Thus, the relay and equipment SSEL portions have not been specifically included within this peer review. However, the systems engineer responsible for generating these lists was interviewed as part of this peer review to ensure proper communication and teamwork was established between the systems engineers and the SCE's. The systems engineers were integral SRT members at Browns Ferry and properly performed their role of helping to define the components and boundaries of these lists to the SCE's. In addition, specific discussions were conducted to ensure issues such as containment performance, fire protection inadvertent interaction and operator action were addressed when selecting the SSEL.

The following portions of the A-46 and seismic IPEEE programs could not be totally reviewed at the time of this peer review since they were still in progress.

- Outlier Resolution
- Final Reports
- HCLPF Results

4. PROGRAM STATUS

At the time of the peer review, the SSEL had been developed and initial reviews have been conducted by the operations department. In addition, the walkdown, load path and anchorage evaluation phases of the project were essentially completed. The essential relay list was still in the process of being completed and relay capacity to demand comparisons were in progress. Outlier resolution was also in progress and the final reports had yet to be written.

At the time of the peer review, the program had identified 1015 components in the seismic SSEL. There have been 153 outliers identified on the project to date.

5. RESULTS OF THE PEER REVIEW

As documented in the attached agenda, the peer review concentrated on a sampling review of key areas identified by the NRC in Generic Letter 88-20 Supplement 5. Additional critical areas were identified by the reviewers based on their experience with earthquake experience, test data and PRA results. The specific results from the review are documented in the subsections below.

5.1 Qualifications of Seismic Review Team Members

The peer reviewers checked the qualifications of the seismic review team members to verify that their experience and training met the requirements within the GIP. Short resumes together with a table listing all the SRT members and their level of training and experience were made available to the peer reviewers. The SRT members are judged to meet the qualifications within the GIP.

5.2 Walkdown Results

The peer reviewers selected 13 components to walkdown in the plant. These 13 components were selected after reviewing the list of outliers, reviewing selected SEWS forms and consulting with the seismic review team members. Table 1 contains the listing of these 13 components together with the observations on the walkdown and recommended action items. The observations of SCE personnel performing in-plant evaluations concluded that: Personnel performing the in-plant evaluation applied a questioning attitude with respect to the component being evaluated as well as discussing whether there were any other seismic concerns. The engineering judgment used during this in-plant evaluation appeared reasonable and prudent. In general, the SCE teams did a commendable job in their reviews and evaluations.

5.3 Response Spectra

The NRC accepted the Browns Ferry floor response spectra as "median centered" in their response to the USI A-46 submittal. This NRC review and statement forms the basis for our judgments that the design spectra are acceptable and appropriate for the USI A-46 program.

The seismic margin program utilized a scaled set of spectra generated by ratioing the design spectra up to a 0.3g ZPA level. Structural damping was assumed to be 7% for all three buildings (Reactor, Diesel and Service Water). The peer review team feel that these spectra need to be reassessed and possibly revised to reflect the following:

1) Damping should be established based on the state of stress in the structure at the applicable earthquake level (see NUREG 6041). It can be higher, lower or equal to the 7% used depending on this state of stress.

2) The scaling of spectra to reflect different structural damping levels is based on the difference in response at the main structural frequencies (i.e. where the majority of the mass is participating). Thus, the square root of the ratio of the damping values is appropriate to scale different equipment damping ratios but not the structural damping ratio.

5.4 Open Issues

These open issues are items which were discussed with the project team during the site visit and which the project team was going to do some additional investigation.

- Cardox system in diesel rooms - project team to review whether this system should be added to the SSEL

- Resolution of relays - the relay review had not been conducted at the time of the peer review

- Demonstration that equipment >8 Hz (including subassembly frequencies) since bounding spectrum used in capacity to demand screening

CONCLUSIONS AND RECOMMENDATIONS

1. All activities evaluated by this peer reviewer were performed in accordance with the GIP. No gross errors or deficiencies were discovered in this peer review. The seismic review teams are knowledgeable and meet the requirements for the review.

2. A few SEWS forms and associated calculations (as noted in the table) should be modified to reflect the comments and suggestions contained within this review.

3. The scaling of the design basis spectra to achieve 0.3g seismic margin spectra needs to be reassessed using appropriate scaling methods.

ATTACHMENT A

AGENDA

BROWNS FERRY PEER REVIEW: USI A-46 AND SEISMIC IPEEE

I. Review Project Status and History

II. Review Initial Browns Ferry Peer Review Comments and Results

III. Review Draft Reports (if available)

- SSEL, Walkdown, Relay and Seismic Summary Reports (A-46)
- IPEEE report

IV. Review NRC "In Progress" Audit Results

V. Review Documentation

- SEWS, Anchorage Calculations, Outlier Resolutions (A-46)
- HCLPF Calculations (IPEEE)

VI. In Plant Review of Sample of Equipment (vertical slice)

VII. NRC Items from Generic Letter 88-20 Supplement 5

- Bad Actors Relay
- Masonry Block Walls
- Flat Bottom Tanks
- Inadequate Anchorage / Bracing
- Seismic Interactions
- Building Impact / Pounding

VIII. High Profile Items from Seismic IPEEE Review

- NSSS Components
- Seismic/Fire Interactions
- Containment Systems
- Structures

IX. Additional Potential Critical Elements from Past Experience

- Emergency Batteries
- 4160/480 V Transformers
- Diesel Start System Elements
- Control Room Ceiling

Table 1

THIRD PARTY WALKDOWN RESULTS

SSEL Component	Third Party Audit Walkdown	Third Party Audit Comments	Suggested Actions
1. DG A Electrical Control Cabinet (PNLA-082-0000A)	Yes	SCE's used bounding spectrum as the basis of the seismic capacity. Auditors unable to judge the assumption that all subassembly frequencies were greater than 8 Hz due to cabinet being locked. Frequency calculation for internal plate used unconservative assumption of fixed boundary conditions for a stitch weld. Probably compensated by other conservative assumptions in this frequency calculation. All other aspects of the SCE's review judged appropriate.	Revisit the plate frequency calculation.
2. 480 Volt DSL Aux BDA (MCC)	Yes	Concur with judgments of the SCE's. This MCC is an outlier due to frequency < 8 Hz.	None
3. Diesel Air Receiver Tank	Yes	Tank load path in the longitudinal direction is taken by friction and/or load into threaded attached piping nozzle.	SEWS form should address longitudinal load path issue.
4. Diesel Fuel Oil Storage Tank	Yes	Concur with judgments of the SCE's.	None
5. Diesel Generator	Yes	Overall opinion is that the diesel skid assembly is rugged and can withstand the envisioned seismic loads. Several comments were noted by the reviewers which would strengthen the documentation. 1. Question 7 under Anchorage and Question 2 under interactions should by "Yes" and not "NA".	Revise SEWS as appropriate.

Table 1 (Continued)

THIRD PARTY WALKDOWN RESULTS

SSEL Component	Third Party Audit Walkdown	Third Party Audit Comments	Suggested Actions
5. Diesel Generator (Cont.)		2. Most large diesels have natural frequencies in the 15-20 Hz range. The SEWS had documented a judgment by the SCE's of the diesel being "rigid" and used the spectra ZPA for calculating uplift. This should be reviewed and updated, but is not expected to change the conclusion. 3. Since bounding spectrum used for capacity, > 8 Hz frequency must exist for all appropriate subcomponents.	
6. Diesel Batteries (125 Volt DSL Battery A)	Yes	Concur with judgments of SCE's. Battery Racks are floor and wall mounted, thus frequencies > 8 Hz.	None
7. Diesel Battery Chargers	Yes	Concur with judgments of SCE's. NOTE: The reviewers are unsure why these chargers are required to be on the SSEL.	None
8. Diesel Distribution Panel	Yes	Concur with judgments of SCE's.	None
9. DG Neutral Grounding Transformer	Yes	The reviewers had 3 comments relative to this transformer: 1. The explanation as to the intent of the caveat being met for the 8 Hz caveat needs to be revisited. The core/coil clearance issue is related to, but clearly separate from, the capacity/demand caveat. Using GERS for this component (if appropriate) may resolve this issue. 2. The large resistor mounted above the transformer is supported on insulators. Clear direction as to the consequences of this insulator failure needs to be solicited.	Address frequency caveat and review consequences of insulator failure.

Table 1 (Continued)

THIRD PARTY WALKDOWN RESULTS

SSEL Component	Third Party Audit Walkdown	Third Party Audit Comments	Suggested Actions
9. DG Neutral Grounding Transformer (Cont.)		3. Agree that isolators beneath the transformer need to be evaluated (basis of outlier).	
10. 250 Volt Main Batteries	Yes	Concur with judgments of SCE's. Would strengthen documentation to stipulate battery weight and frequency together with the reference for these values on the SEWS.	None Required
11. 480 Volt MCC (RMOV Board 3D)	Yes	1. This component is really a combination of switchgear and MCC's. 2. The frequency was judged by SCE's to be > 8 Hz, yet the EPRI guidelines suggest that it takes a lineup of 6 or more sections to have > 8 Hz frequency (side to side). 3. 2" - 3" grout pad with significant cracking was observed. This condition could lead to bolt bending concerns if adequate load path does not exist.	1. Document basis for frequency estimate. 2. Review grout pad load path to ensure bolt bending not an issue. 3. Ensure all appropriate switchgear caveats have been met since MCC SEWS was used.
12. RHR Service Water Pumps A2	No	Component not walked down. Outlier due to cantilever length.	Complete outlier calculation.
13. RHR Heat Exchanger 2A	Yes	Concur with judgments of SCE's.	None

EQE Correspondence
No. 50147.13-O-003

February 23, 1996

Mr. John R. Glass
TENNESSEE VALLEY AUTHORITY
Browns Ferry Nuclear Plant, EDB 1F-BFN
Browns Ferry Road
Athens, AL 35611

Subject: *Responses to USI-A46/IPEEE Third Party Audit Comments Browns Ferry Nuclear Plant (BFN)*

Dear Mr. Glass:

Attached are the SRT responses to comments resulted from the third party audit performed by Mr. Rick Cutsinger and Mr. Greg Hardy on January 9 -11, 1996. A copy of this document is also transmitted to each of the peer reviewers above for their information.

If you have any questions, please feel free to contact me at (415)989-2000.

Sincerely,

John O. Dizon

John O. Dizon
Project Manager
EQE International
San Francisco, CA

Attachment

cc: J. Valente (TVA)
R.D. Cutsinger (TVA)
G.S. Hardy (EQE)

50147/ltr03

RESPONSES TO BFN PEER REVIEW COMMENTS
(Section 5 of Attachment to EQE 50147.14-O-001)

5.1 Qualifications of Seismic Review Team Members

Each Seismic Review Team (SRT) consisted of a minimum of two Seismic Capability Engineers (SCEs), one of which is a registered Professional Engineer. The SCEs consisted of highly qualified staff from both TVA and EQE organizations. The engineers who participated in the screening evaluation walkdown are listed below, together with their backgound, experience and training requirements. Resumes of selected SCEs will be included in Appendix A of the USI A-46 Seismic Evaluation Report.

Name	Org	Yrs Exp	Seismic	PE	SQUG Course	IPE Add-on
Richard D. Augustine	EQE	15	x	x	x	
Paul D. Baughman	EQE	26	x	x	x	x
Jerry W. Beason	TVA	26	x		x	x
Farzin R. Beigi	EQE	13	x		x	
Jakub J. Betka	TVA	15	x	x	x	
Brantley C. Buerger	EQE	14	x	x	x	
James R. Disser	EQE	15	x		x	
John O. Dizon	EQE	18	x	x	x	x
Eric J. Frevold	TVA	14	x		x	x
Partha S. Ghosal	TVA	17	x	x	x	x
Krystyn H. Gromek	TVA	23	x	x	x	x
Syed S. Haider	TVA	20	x		x	x
Russell O. Jansen	TVA	12	x	x	x	x
Steven A. Locke	TVA	14	x	x	x	x
Jon E. McCord	TVA	23	x	x	x	
Cesar O. Pascua	TVA	17	x	x	x	x
Braulio M. Pedroso, Jr.	TVA	9	x		x	
Anand C. Relwani	TVA	15	x	x	x	x
Claude N. Simms	TVA	21	x		x	x
Angel G. Tambora	TVA	6	x		x	x
Thurman G. Thaxton, Jr.	TVA	23	x	x	x	x
William T. White	TVA	20	x	x	x	

Technical supports on systems related issues, including mechanical and electrical SSELs, I&Cs, and relays, were provided by the following TVA and EQE personnel.

Name	Org	Yrs Exp	Systems	Relays	PE	SQUG Course	IPE Add-on
John D. McCamy	TVA	15	x			x	
David L. Moore	EQE	15	x	x		x	
Malcolm L. Pyatt	TVA	10		x		x	
Marc D. Quilici	EQE	15	x	x		x	
Thomas R. Roche	EQE	12		x	x	x	x

5.2 Walkdown Results

For those SSEL components in which "Suggested Actions" were listed in Table 1 of the Attachment to EQE 50147.14-O-001 (Third Party Walkdown Results), the SRT's responses and justifications are contained in the attached Table A.

5.3 IPEEE Response Spectra

- Structural damping based on the state of stress in the structures

  The use of 7% structural damping for IPEEE evaluations was further investigated. Based on the review of selected TVA design calcs., some of the RB reinforced concrete walls were estimated to have stresses above 50% yield or near yield. It should be noted that the RB is founded on rock and the design basis analysis was based on a fixed base lumped mass model. On the other hand, although the DGB is founded on soil, the effects of soil structure interaction including radiation damping were not explicitly accounted for in the existing analysis. Rather, the effects of soil-structure interaction were conservatively accounted for through the application of soil amplification factors of 1.6 and 1.1 in the horizontal and vertical directions, respectively. Therefore, the use of 7% structural damping for the higher IPEEE seismic demand (0.3g), as opposed to 5% structural damping used for design basis evaluations (0.2g), may not be all that unconservative. IPS will assume the same structural damping value for IPEEE as in DBE analysis (5% damping).

- Method of scaling spectra to reflect different structural damping values

  The more appropriate method of scaling spectra to account for different structural damping values, as suggested by the third party auditors, will be used.

  TVA CALC. NO. CD-Q0000-940339 WILL BE REVISED TO ADDRESS THE ABOVE COMMENTS.

5.4 Open Issues

- Cardox system in diesel rooms

  The seismic adequacy of the cardox systems in the DG buildings have been addressed in the Conditions Adverse to Quality Report (CAQR) BFT870344. The seismic adequacy of the associated mechanical and electrical equipment, and the storage tank anchorage are documented in TVA calc. no. CD-Q0039-884911 and CD-Q0039-885127, respectively. In addition, the Chemetron Fire System for Unit 3 DGB was shake table tested and the test results are contained in the Wyle Test Report 45145-1, dated 2/81. Similar system for Unit 1/2 DGB was qualified based on similarity.

  Furthermore, relay cabinets (8 total) associated with the cardox systems for the diesel rooms in Unit 1/2 and Unit 3 DGBs were recently added into the electrical SSEL for A-46 evaluations.

- Resolution of relays

  Relay evaluations are still on-going at the moment. The relay evaluation is currently scheduled to be completed by 3/8/96.

- Demonstration that SSEL equipment (including subassembly) has F > 8 hz.

  During the screening walkdown and evaluation of an SSEL equipment, the SRT diligently attempted to estimate the lowest fundamental frequency of such SSEL item including its subcomponents by the one of the following methods:

  1. Engineering judgement based on configuration and construction;
  2. Calculations;
  3. Reference to EPRI Report TR-102180 - Guidelines for Estimation or Verification of Equipment Natural Frequency;
  4. Existing documentation, including analyses or test reports.

  The frequency estimation has to be performed in broad scale due to the unrealistically high in-structure response spectra for BFN. However, any equipment frequency estimated by the SRT is well documented in the respective SEWS, as evidenced from a number of SEWS selected for review by the third party auditors. In some cases, calculations were performed to benchmark the estimated frequency to some known frequency obtained from testing or analysis.

TABLE A

SRT's Responses and Justifications to Peer Review Suggested Actions

SSEL NO.	COMPONENT I.D.	SUGGESTED ACTION BY THE THIRD PARTY	SRT's RESPONSES and JUSTIFICATIONS
9108 (Item 1)	PNLA-082-0000A DG A Electrical Control Cabinet	• Revisit the plate frequency calculation performed in the SEWS for this panel	• Note No. 7 on the SEWS for this panel states that the lowest natural frequency of this panel per seismic simulation test report no. 42531-1, by Wyle Labs in 6/73, is determined to be 8.5 hz. The frequency estimation calculation performed in the SEWS by the SRT considers the plate , where all internal components of the panel are mounted on, to have fixed edge boundary condition. This assumption was based on the fact that the plate is welded to the stiff internal framings by 3" of 1/8" fillet welds at about every 12" (conservative). This assumption can be substantiated by the fact that the calculation does not take into account the stiffening effect that is provided to the plate by the welded mounting brackets behind the plate. As such, this conservatism was judged to offset the rather unconservative assumption of the fixed boundary condition. The true boundary condition of the plate edges lies somewhere between the fixed and pinned. If pinned end condition is used the resulting frequency would be 5.7 hz. The average of the fixed end and pinned end frequency is 8.3 hz. Nevertheless, since the evaluation relies upon the results from the test report (f_n=8.5 hz), the frequency estimation performed in the SEWS by the SRT only provides another benchmark and more or less confirms the test results.
7005 (Item 3)	0-TNK-86-650A Diesel Air Receiver Tank	• SEWS form should address longitudinal load path issue	• The tanks are configured such that they are restrained in the longitudinal direction by the socket-welded nipples of the tank against the support frames in one direction, and by the attached piping supported to the wall in the other direction. Piping flexibilities were judged to be adequate by the SRT.
7001 (Item 5)	0-GEN-82-A Diesel Generator A	• Comments on the answers to SEWS questions • Use of ZPA values to determine any uplift • Ensure subcomponents have frequency > 8 hz.	• SEWS has been modified to incorporate the reviewers' comments for consistency. • DG base anchorage consists of series of 1-1/4" dia. C-I-P bolts (7 on each side, 14 total) each with a pullout capacity of about 42 k. SRT concurred with the reviewers' comments that the conclusion remains same even if the spectral accelerations at 15 to 20 hz. were used instead of the ZPA values. • All subcomponents of the DG are judged to have frequency > 8 hz. by SRT.

TABLE A (Cont'd)

SRT's Responses and Justifications to Peer Review Suggested Actions

SSEL NO.	COMPONENT I.D.	SUGGESTED ACTION BY THE THIRD PARTY	SRT's RESPONSES and JUSTIFICATIONS
39016 (Item 11)	3-BDBB-268-0003D 480V RMOV Bd 3D	• Document basis for frequency estimate	• The frequency is estimated to be greater than 8 hz. This judgment is supported by the fact that Note 7 on the SEWS for this equipment states that the base of each unit consists of L1-1/2X 1-1/2X1/4 angles and the internal framing consists of L1-1/2X1-1/2X1/8 angles and that the side panels are continuous (there is no cutout in the sheet metal between the adjacent bays). The anchoring of this equipment is achieved by 3/8" dia. machine bolts that go through the base framing angles and connect to the sill channel. The panel construction along with the stiff anchoring system is similar to the configuration shown on Figure 3-4 (Detail A-A) of the referenced document :"Guidelines for Estimation or Verification of Equipment Natural Frequency", by EPRI. The base Detail A-A in the referenced document, which is for a free-standing MCC, was shown to have a test frequency of 7.5 to 8.5 hz.
		• Review grout pad load path to ensure bolt bending not an issue	• <u>Bolt Bending</u> - As stated in Note 3 on the SEWS for this equipment, the weak link in the load path is judged to be the 3/8" dia. machine bolts and the 3/4" dia. redhead expansion anchors. The bolt bending, however not stated, was judged not to be a concern. Note 6 on the SEWS mentions that this equipment is mounted on a 1-1/2" tapered grout pad. The third party auditors' comments indicated 2" to 3" of grout pad. Based on the third party auditors' inquiry into the bolt bending issue for this particular equipment, a calculation was performed to determine the stress interaction ratio corresponding to bolt bending. This calculation followed the recommended procedure in the referenced document: "Recommended Approaches For Resolving Anchorage Outliers", by EPRI. The resulting interaction ratio (using a 2-1/2" grout pad) was shown to be 0.32. The interaction ratio calculated on the SEWS for the anchorage is 0.66. Therefore, the bolt bending is not a concern, and the highest stressed component of the anchorage system for this equipment was properly selected on the SEWS and evaluated.
		• Ensure all appropriate switchgear caveats have been met since MCC SEWS was used	• <u>Coverage of the Switchgear Caveats</u> : The only additional caveat on the SEWS for LVSG's as compared to the MCC caveats is to ensure the side-to-side restraint of the drawout circuit breakers. This caveat is covered in the Note 9 of the SEWS for this equipment.

TABLE A (Cont'd)

SRT's Responses and Justifications to Peer Review Suggested Actions

SSEL NO.	COMPONENT I.D.	SUGGESTED ACTION BY THE THIRD PARTY	SRT's RESPONSES and JUSTIFICATIONS
9160 (Item 9)	0-XFA-082-000AA DG-A Neutral Ground XFMR	• Address frequency caveat and review consequences of insulator failure	• All DG neutral ground XFMRs (8 total) will be deleted from the SSEL since they are not required for the DGs to operate. Based on the review of the electrical circuit diagrams, the XFMR is there solely to detect faulted condition for personal safety protection rather than functionality of the DG.
8001 (Item 12)	0-PMP-23-005 RHRSW Pump A2	• Complete outlier calculation	• Outlier resolution for the RHRSW pump anchorage has been completed and is documented in EQE Calc. No. 50147-C-005. Pump anchorage has an interaction ratio of < 1.0 for USI A-46, and a HCLPF of > 0.3 g for seismic IPEEE evaluations.

ENCLOSURE 4

TENNESSEEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNITS 2 AND 3

GENERIC LETTER 87-02, SUPPLEMENT 1,
VERIFICATION OF SEISMIC ADEQUACY OF MECHANICAL AND ELECTRICAL EQUIPMENT IN OPERATING REACTORS, UNRESOLVED SAFETY ISSUE (USI) A-46 AND GL 88-20, SUPPLEMENT 4,
INDIVIDUAL PLANT EXAMINATION OF EXTERNAL EVENTS (IPEEE) FOR SEVERE ACCIDENT VULNERABILITIES

COMMITMENT SUMMARY

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1. For Unit 2, TVA will resolve outliers identified during its USI A-46 evaluation prior to restart from the Cycle 9 refueling outage.

2. For Unit 3, TVA will resolve outliers identified during its USI A-46 evaluation prior to restart from the Cycle 7 refueling outage.

3. TVA will submit Completion Reports, as specified in the Generic Implementation Procedure, for Units 2 and 3 upon completion of outlier resolutions.