FACILITY RISK CONSULTANTS, INC.

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BROWNS FERRY NUCLEAR PLANT UNIT 1 USI A-46 SEISMIC EVALUATION REPORT

Prepared for:

BROWNS FERRY UNIT 1 RESTART PROJECT

TVA

September 2004

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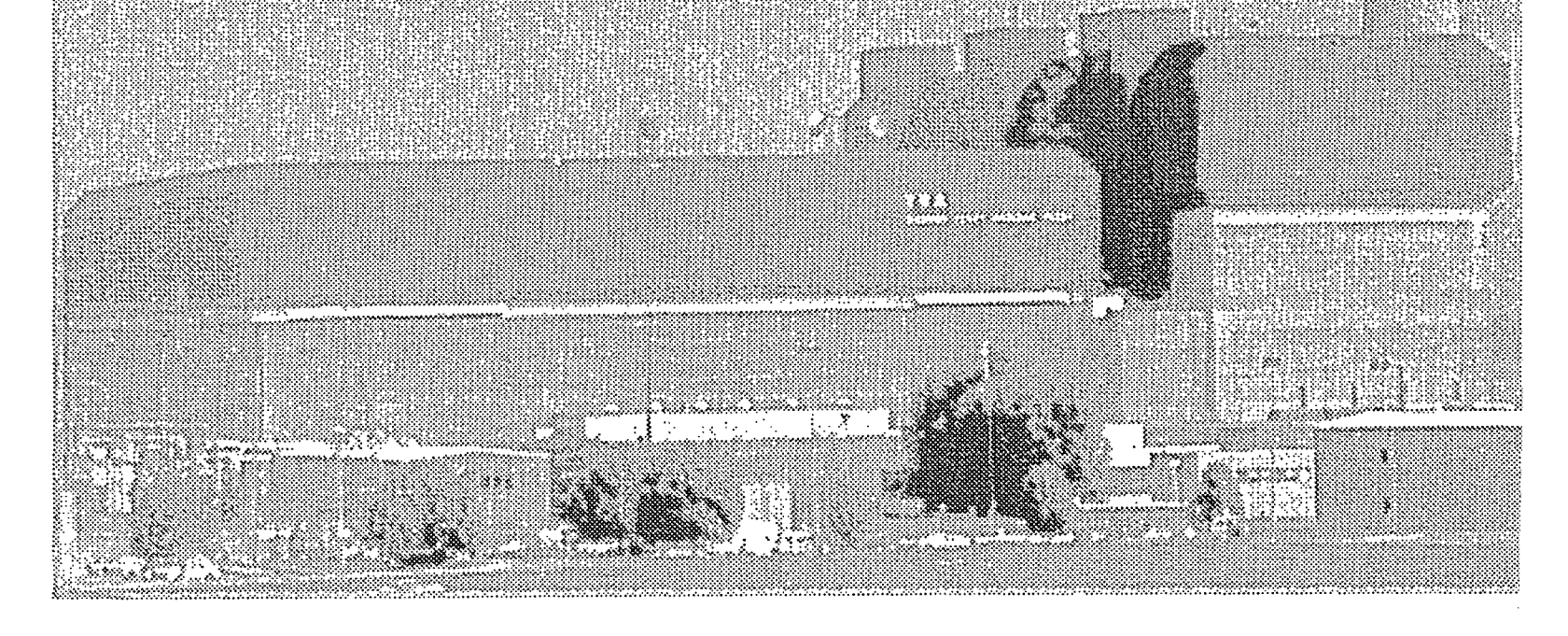

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Prepared by:

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APPROVAL COVER SHEET

Title:	Browns Ferry Nuclear Plant Unit 1 USI A-46 Seismic Evaluation Report
Report Number:	TVA/BFN-01-R-004
Client:	Browns Ferry Unit 1 Restart Project
Project Number:	TVA/BFN-01

Revision Number	Date	Prepared	Reviewed	Approved
0	9/23/04	Stephen J. Eder	John O. Dizon	Richard D. Cutsinger

TABLE OF REVISIONS		
Revision No.	**Description of Revision**	**Date**
0	ORIGINAL ISSUE This report contains 178 pages total	9/23/04

EXECUTIVE SUMMARY

The Browns Ferry Nuclear Plant Unit 1(BFN-1) seismic evaluation for Unresolved Safety Issue (USI) A-46 was performed in accordance with the appropriate industry guidance documents developed by the Seismic Qualification Utility Group (SQUG) and the Electric Power Research Institute (EPRI), and approved by the Nuclear Regulatory Commission (NRC). The evaluation was performed in a manner similar to that performed for resolution of USI A-46 for BFN-2 and BFN-3. The evaluation utilized the BFN design basis earthquake and design basis in-structure acceleration response spectra for seismic demand definition.

In summary, the evaluation results and findings are as follows:

Mechanical and Electrical Equipment

- The composite safe shutdown equipment list contains 900 items of mechanical and electrical equipment. The composite safe shutdown equipment list will be reviewed by the BFN-1 operations group for consistency with BFN-1 plant operating procedures.
- The seismic review safe shutdown equipment list contains 523 items of electrical and mechanical equipment. The seismic review safe shutdown equipment list includes the items from the composite safe shutdown equipment list, excluding the 128 items that are inherently rugged (such as check valves) and 18 items associated with the LPCI M-G sets that are being eliminated by DCN 51216; and excluding the 234 items of equipment that were previously evaluated in the BFN-2 and BFN-3 program which are not located in the BFN-1 Reactor Building, Control Bay, and Turbine Building.
- A total of 53 individual Outlier Seismic Verification Sheet (OSVS) forms were written, documenting a total of 84 individual items of mechanical and electrical equipment on the SSEL as outliers.
- These outliers were resolved as follows:
  - 21 outliers were determined to be acceptable based on more detailed evaluation. This included the CRD/Hydraulic Control Units which were evaluated as an outlier as Equipment Class 0 ("Other").

- 27 outliers will be resolved by procedural change (restraint of crane hoist and chains during plant operation to eliminate seismic interaction concerns)
- 30 outliers will be resolved by plant modification under the Design Change Notice process.
- 6 outliers will be resolved through plant maintenance activity initiated by work orders.
- No outliers will be left unresolved. The modifications will be completed prior to October 2006.

- A total of 81 items of equipment were found to be acceptable by taking special exception to enveloping of seismic demand spectrum. In all cases this involved determining the lowest natural frequency of the items of equipment because their seismic demand spectrum was not fully enveloped by the seismic capacity spectrum.

Tanks and Heat Exchangers

- A total of 16 tanks and heat exchangers were identified for evaluation in the USI A-46 program. None of these items are explicitly covered by the GIP, which only addresses large, flat-bottom vertical tanks and horizontal heat exchangers.
- A total of 6 outliers were identified for tanks and heat exchangers. All 6 outliers were resolved by more detailed evaluation.
- The remaining 10 tanks and heat exchangers were accepted as-is based on engineering judgment (small sizes; adequate attachment; and/or "rule-of-the-box" considerations).

Cable and Conduit Raceways

- The BFN-1 program addressed all cable trays and conduit located in the BFN-1 Rector Building. Note that cable trays and conduit in the BFN-1 Control Bay were previously evaluated in the BFN-2 and BFN-3 USI A-46 program.
- A total of 9 bounding support configurations were selected for Limited Analytical Reviews (LAR's).

- A total of 14 outliers were identified and documented.
- These outliers were resolved as follows:
  - Six (6) outliers were determined to be acceptable based on more detailed evaluation.
  - Three (3) outliers will be resolved by plant modification under the Design Change Notice process.
  - Five (5) outliers will be resolved through plant maintenance activity and work orders.
  - No outliers will be left unresolved. The modifications will be completed prior to October 2006.

Functional Screening of Relays

- Inherent ruggedness of contact devices, chatter acceptability, and seismic adequacy were sufficient to resolve the seismic acceptability of contact devices affecting the safe shutdown equipment list components.
- No outliers were identified in the relay evaluation.
- Mo low ruggedness (bad actor) relays were found to be essential relays.
- No operator actions are necessary.

No significant or programmatic deviations from the SQUG GIP were taken in the BFN-1 USI A-46 resolution program. The qualifications of the seismic capability engineers and the lead relay reviewer meet or exceed all requirements of the SQUG GIP.

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FIGURES

1. INTRODUCTION

This report provides supporting documentation for the resolution of Unresolved Safety Issue (USI) A-46 for Browns Ferry Nuclear Plant Unit 1 (BFN-1). The evaluations were performed in accordance with the Seismic Qualification Utility Group (SQUG) Generic Implementation Procedure (GIP) Revision 2A (Reference 1). The evaluations were performed consistent with the USI A-46 resolution programs for BFN-2 and BFN-3, and with the TVA and NRC agreed upon resolution process for USI A-46 at BFN (References 2 to 7). There were no significant or programmatic deviations from the SQUG GIP.

Chapter 2 of this report provides a summary description of the safe shutdown equipment list (SSEL) selection process for BFN-1. SSEL selection was generally consistent with and based largely on the BFN-2 and BFN-3 USI A-46 programs.

Chapter 3 of this report describes the safe shutdown earthquake (SSE) used in the USI A-46 program.

Chapter 4 of this report described the instances in which special exception to enveloping of seismic demand spectrum were used in the seismic screening evaluations of equipment and components.

Chapter 5 of this report describes the outliers that were identified and the planned outlier resolution process. The plan calls for all outliers to be resolved, without exception.

An independent peer review was performed for the BFN-1 USI A-46 program in accordance with the SQUG GIP. The review is confirmatory. It is summarized in Chapter 6.

References are listed in Chapter 7.

This report is issued with a companion report that contains the USI A-46 relay functionality review:

> *"USI A-46 / Seismic IPEEE Relay Evaluation Browns Ferry Nuclear Plant Unit 1,"* Facility Risk Consultants, Inc., Report No. TVA/BFN-01-R-001, Revision 0, 23 January 2004.

Additional supporting documentation is provided in the Appendices of this report:

Appendix A:	Lead Relay Reviewer and Seismic Review Team Qualifications
Appendix B:	Composite SSEL
Appendix C:	Seismic Review SSEL
Appendix D:	Screening Verification Data Sheets
Appendix E:	Results of the Cable and Conduit Raceway Review
Appendix F:	Operations Department Review of SSEL
Appendix G:	Independent Peer Reviewer Resume
Appendix H:	Area Turnover Walkdown Punch List

This report, its Appendices, and the above-listed companion relay review report comprise the entire documentation for TVA's resolution of USI A-46 for BFN-1.

2. SAFE SHUTDOWN EQUIPMENT LIST

2.1 Description of the Safe Shutdown Paths Chosen for the Resolution of USI A-46

The following sections describe the safe shutdown paths chosen to mitigate a postulated DBE. Specifically, it 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 2-1 through 2-4 illustrate the BFN-1 systems 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 TVA Calculation CDQ1-999-2003-0654, Revision 2 (Reference 8).

The primary path used for safe shutdown at BFN-1 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.

2.1.1 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 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 mechanical means to insert the control rods. Interaction between these two systems will provide for reactivity control. Note that both systems are designed to be fail-safe systems.

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.

2.1.2 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 SRVs at their respective set points. 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 is comprised of 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.

2.1.3 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. As such, reactor coolant inventory control can be achieved by manually depressurizing the SRVs and utilizing one loop of the CS or RHR systems for makeup.

2.1.3.1 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 injects into the RPV.

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.

2.1.3.2 RCS Inventory Discharge

The discharge from the RCS is controlled by minimizing the loss of inventory through various paths. Loss of inventory is limited to that necessary in utilization of the SRVs for depressurization to enable the low pressure ECCS systems to inject water into the RPV.

2.1.4 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 through the SRVs, and transferring sensible heat to the Residual Heat Removal Service Water (RHRSW) system before recirculation 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.

2.2 Systems Beyond A-46 Scope

The USI A-46 SSEL was expanded to include the additional items of equipment that are evaluated for Seismic IPEEE. This followed the same equipment selection process that was used in the BFN-2 and BFN-3 USI A-46 and Seismic IPEEE programs. The USI A-46 SSEL expansion for Seismic IPEEE facilitates the seismic IPEEE review of these components.

2.3 Plant Operations Department Review of SSEL

The BFN-1 Plant Operations Department will review the USI A-46 SSEL for BFN-1 for consistency with plant operating procedures for shutdown. This review will be performed after the plant operating procedures are complete. The review will be performed prior to plant start-up. The plan and schedule for the operations department review of the SSEL are summarized in Appendix F of this report.

A preliminary review of the SSEL was performed by the BFN-1 Plant Operations Department, and minor changes were made to the SSEL based on their comments. The preliminary review comments are also summarized in Appendix F.

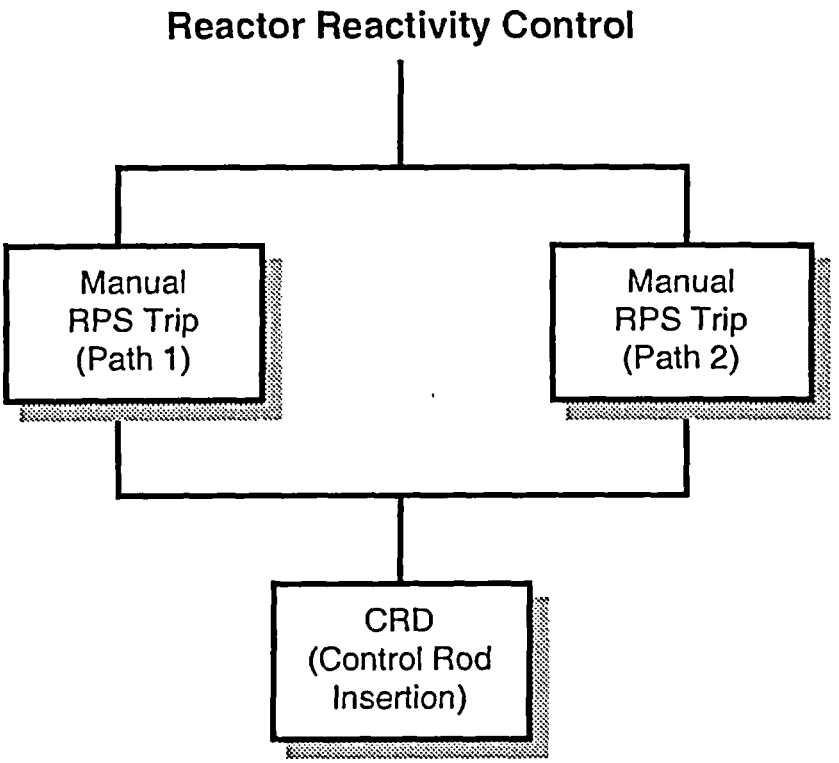


Figure 2-1: BFN Safe Shutdown for Reactor Reactivity Control

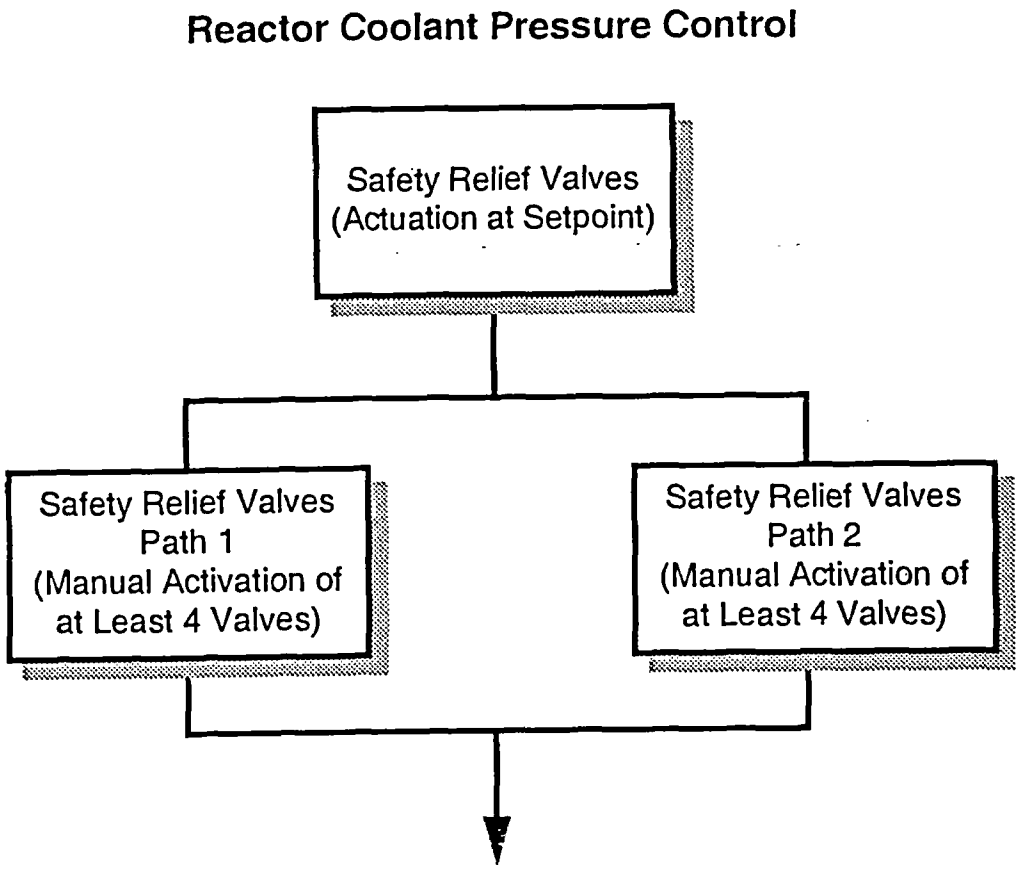


Figure 2-2: BFN Safe Shutdown for Reactor Coolant Pressure Control

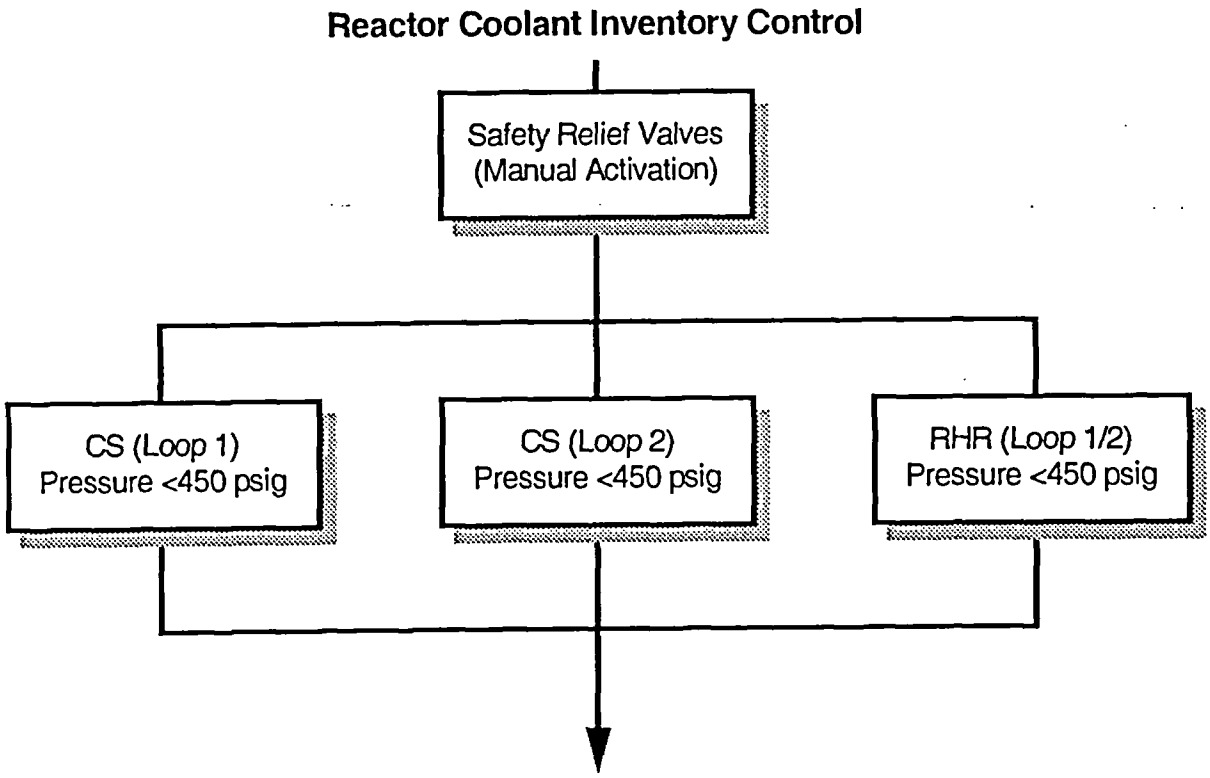


Figure 2-3: BFN Safe Shutdown for Reactor Coolant Inventory Control

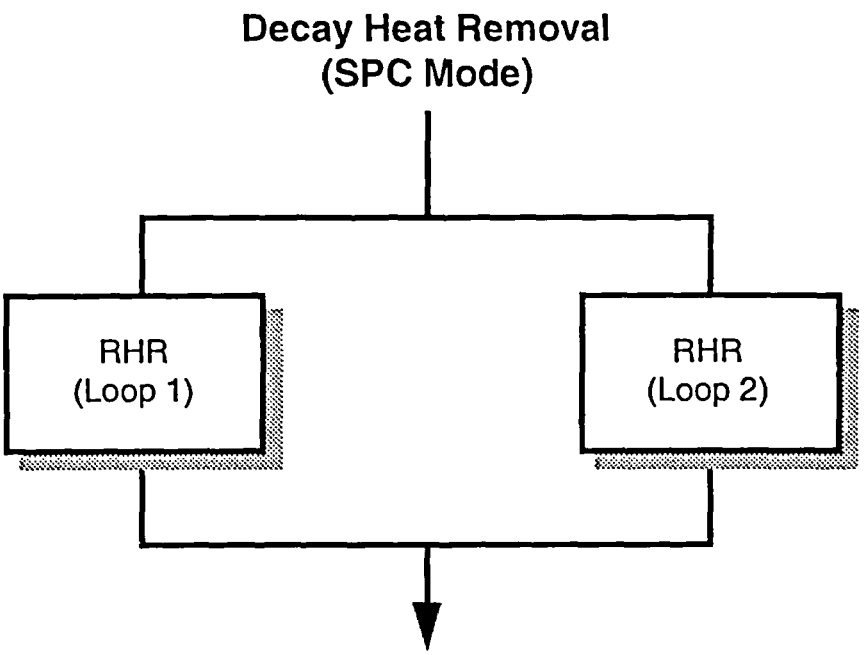


Figure 2-4: BFN Safe Shutdown for Decay Heat Removal

3. SAFE SHUTDOWN EARTHQUAKE

3.1 Design Basis Earthquake Ground Response Spectrum

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 (FSAR, Reference 3). The horizontal peak ground acceleration (PGA) corresponding to the DBE is 0.20g, defined at the top of sound rock. Vertical ground motion is two-thirds of the horizontal motion. The site DBE design ground motion is that of a Housner-shaped spectrum anchored to 0.20g PGA.

BFN-1 SSEL equipment are located in the Reactor Building and in the Turbine Building. Effective grade elevations for these structures were determined in accordance with Part II, Section 4.2 of the SQUG GIP, as follows:

Building	Effective Grade Elevation
Reactor Building	561'
Turbine Building	565'

The 5% damped BFN DBE ground motion response spectrum is fully enveloped by the SQUG Bounding Spectrum. See Figure 3-1.

3.2 In-structure Response Spectra

The 5% damped BFN Reactor Building DBE horizontal in-structure response spectra are compared with the SQUG Reference Spectrum in Figure 3-2. In summary:

Floor Elevation	Comparison with SQUG Reference Spectrum
519'	Fully enveloped (same as ground motion)
565'	Fully enveloped
593'	Partially enveloped (exceeds from about 5.5 to 6.2 Hz.)
621.25'	Partially enveloped (exceeds from about 5.0 to 7.0 Hz.)
639'	Partially enveloped (exceeds from about 4.8 to 7.3 Hz.)
664'	N/A – No SSEL items at El. 664'

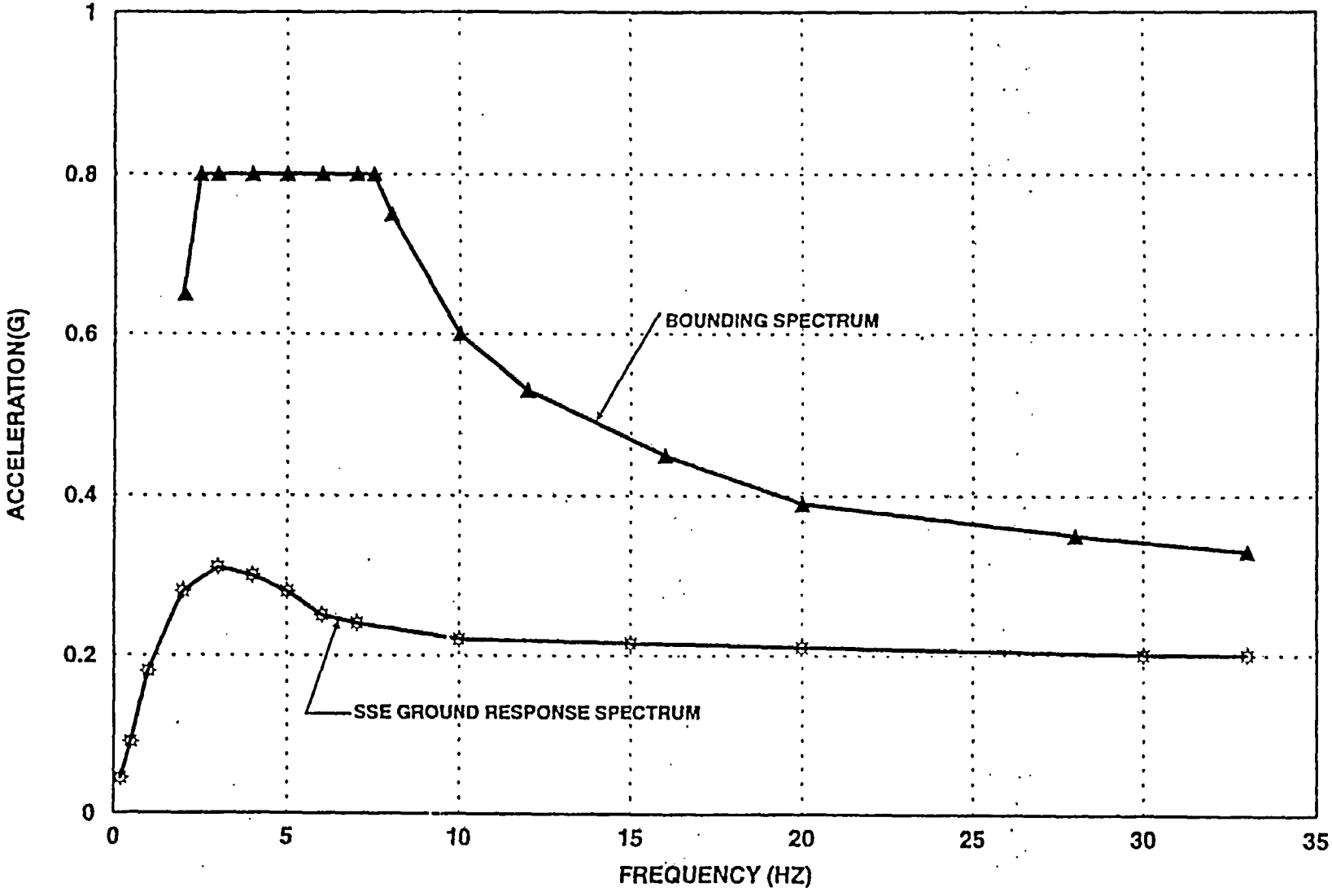


Figure 3-1: Comparison of BFN DBE ground motion response spectrum with the SQUG Bounding Spectrum

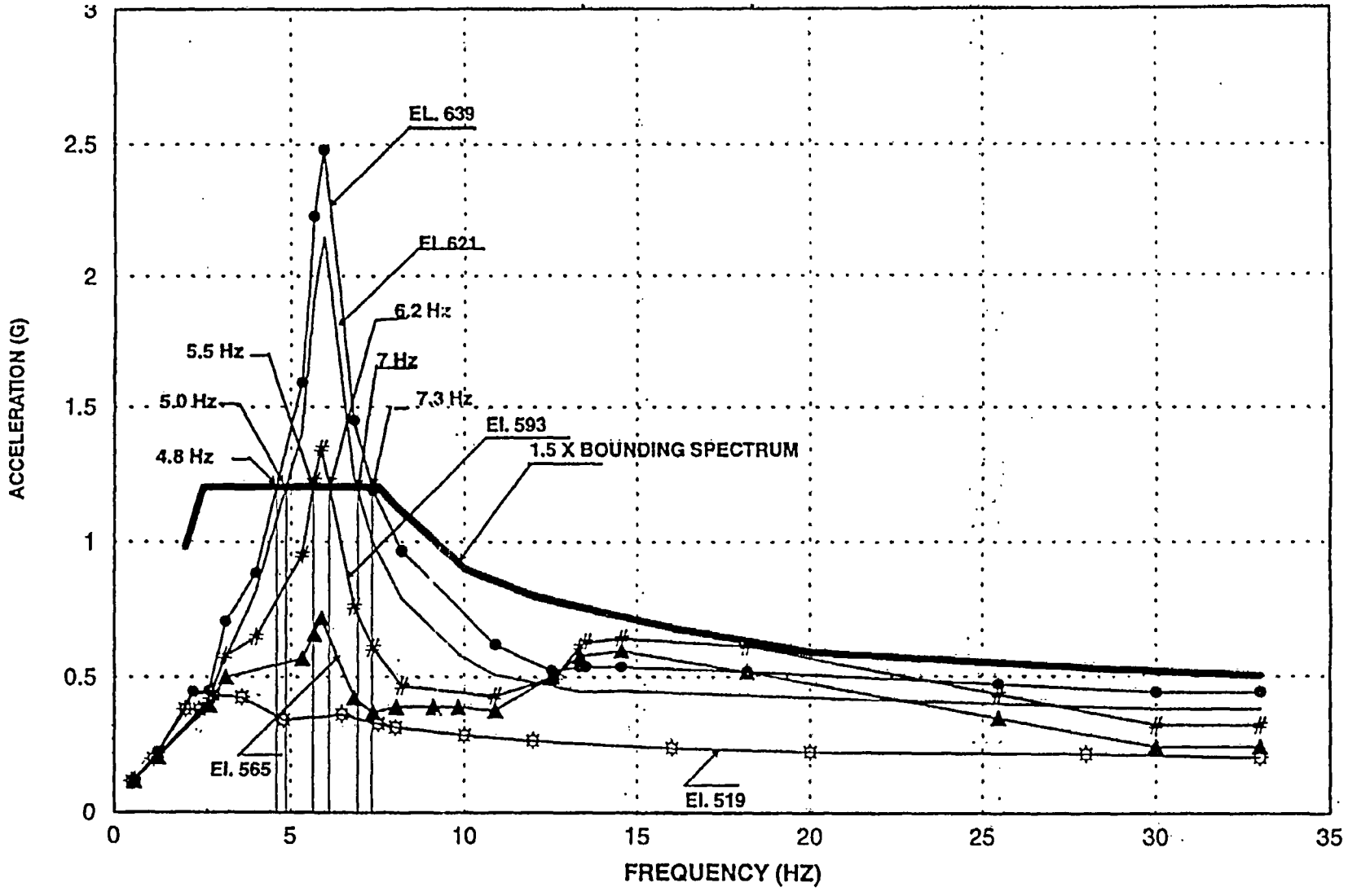


Figure 3-2: Comparison of BFN DBE in-structure response spectrum with the SQUG Reference Spectrum

4. EXCEPTIONS TO THE GIP

4.1 Capacity Versus Demand

In 81 instances, the seismic demand in-structure response spectrum for the floor elevation for SSEL items was not fully enveloped by the capacity spectrum that was used to define the seismic capacity of the item of equipment. In each of these 81 cases, the evaluation utilizing the estimated lowest natural frequency of the equipment component to verify that the seismic capacity of the item exceeds its seismic demand. These cases are listed in Table 4-1.

4.2 Caveats

In all cases where the item of equipment was determined to be acceptable, the specific wording of the applicable SQUG GIP caveat rule was met.

4.3 Anchorage

In all cases where the item of equipment was determined to be acceptable, the specific wording of the applicable SQUG GIP anchorage rule was met.

4.4 Interaction

In all cases where the item of equipment was determined to be acceptable, the specific wording of the applicable SQUG GIP seismic interaction rule was met.

4.5 Tank and Heat Exchangers

In all cases where the item of equipment was determined to be acceptable, the specific wording of the applicable SQUG GIP tank and /or heat exchanger rule was met.

4.6 Cable and Conduit Raceways

In the BFN-1 Reactor Building, a unique anchorage device termed as "loop insert" is used as a typical anchorage for overhead cable tray supports. The loop insert is a cast-in-place device, with reinforcing steel passing through the embedded loop. Engineering evaluations of manufacturer's data determined that the pullout resistance and shear capacity of the loop

insert is significantly larger than that of a comparable size expansion anchor. The BFN-1 USI A-46 cable and conduit raceway reviews used the expansion anchor capacities from the SQUG GIP to verify seismic adequacy. This was conservative.

4.7 Relay Functionality Review

In all cases where the relay was determined to be acceptable, the specific wording of the applicable SQUG GIP relay review rule was met.

Table 4-1: Instances of Special Exception for Capacity versus Demand

SSEL NO.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	FLOOR ELEV.
10016	20	1-HS-99-5A/S1A	RPS/REACTOR MANUAL SCRAM CHANNEL A1	U1 CB	617'
10017	20	1-HS-99-5A/S1B	RPS/REACTOR MANUAL SCRAM CHANNEL B1	U1 CB	617'
10018	20	1-HS-99-5A-S1	RPS/REACTOR MODE SWITCH	U1 CB	617'
11018	20	1-FI-74-50	RHR/LOOP I FLOW INDICATOR	U1 CB	617"
11019	20	1-FI-74-56	RHR/LOOP I FLOW INDICATOR	U1 CB	617"
11026	08A	1-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U1 RB	621'-3"
11043	20	1-FI-74-64	RHR/LOOP II FLOW INDICATOR	U1 CB	617'
11044	20	1-FI-74-70	RHR/LOOP II FLOW INDICATOR	U1 CB	617'
13016	07	1-FCV-64-30	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	621'-3"
13051	20	1-LI-3-58A	RPV LEVEL INSTRUMENT	U1 CB	617'
13052	20	1-LI-3-58B	RPV LEVEL INSTRUMENT	U1 CB	617'
13053	20	1-PI-3-74A	RPV PRESSURE INSTRUMENT	U1 CB	617'
13054	20	1-PI-3-74B	RPV PRESSURE INSTRUMENT	U1 CB	617'
13055	20	1-XR-64-159	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	U1 CB	617"
13056	20	1-LI-64-159A	TORUS LEVEL INSTRUMENT	U1 CB	617"
13057	20	1-TI-64-161	TORUS TEMPERATURE INSTRUMENT	U1 CB	617"
13058	20	1-TI-64-162	TORUS TEMPERATURE INSTRUMENT	U1 CB	617"
13059	20	1-PI-64-67	DRYWELL PRESSURE INSTRUMENT	U1 CB	617"
13060	20	1-PI-64-160A	DRYWELL PRESSURE INSTRUMENT	U1 CB	617"
13061	20	1-TI-64-52A	DRYWELL TEMPERATURE INSTRUMENT	U1 CB	617"
13062	20	1-XR-64-50	DRYWELL TEMP. AND PRESSURE INSTRUMENT	U1 CB	617"
15011	20	1-FI-75-21	CS/PUMPS 1A & 1C FLOW INDICATOR	U1 CB	617'
15025	20	1-FI-75-49	CS/PUMPS 1B & 1D FLOW INDICATOR	U1 CB	617'
18009	20	1-FI-23-36	RHRSW HX A FLOW INDICATOR	U1 CB	617'
18010	20	1-FI-23-42	RHRSW HX C FLOW INDICATOR	U1 CB	617'
18011	20	1-FI-23-48	RHRSW HX B FLOW INDICATOR	U1 CB	617'
18012	20	1-FI-23-54	RHRSW HX D FLOW INDICATOR	U1 CB	617'
19001	20	1-PNLA-009-0023/1	ELECTRICAL CONTROL PANEL 1-9-23-1	U1 CB	617'
19002	20	1-PNLA-009-0023/2	ELECTRICAL CONTROL PANEL 1-9-23-2	U1 CB	617'
19003	20	1-PNLA-009-0023/3	ELECTRICAL CONTROL PANEL 1-9-23-3	U1 CB	617'
19004	20	1-PNLA-009-0023/4	ELECTRICAL CONTROL PANEL 1-9-23-4	U1 CB	617'
19005	20	1-PNLA-009-0023/5	ELECTRICAL CONTROL PANEL 1-9-23-5	U1 CB	617'
19006	20	1-PNLA-009-0023/6	ELECTRICAL CONTROL PANEL 1-9-23-6	U1 CB	617'
19007	20	1-PNLA-009-0023/7	ELECTRICAL CONTROL PANEL 1-9-23-7	U1 CB	617'
19008	20	1-PNLA-009-0023/8	ELECTRICAL CONTROL PANEL 1-9-23-8	U1 CB	617'
19039	14	1-JBOX-253-6455	I&C BUS 1A DISC SWITCH 1A1	U1 RB	621'-3"

Table 4-1: Instances of Special Exception for Capacity versus Demand, Continued

SSEL NO.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	FLOOR ELEV.
19040	04	1-XFA-253-0001A1	I&C BUS 1A 480/208-120V TRANSFORMER	U1 RB	621'-3"
19043	14	1-JBOX-253-6456	I&C BUS 1A DISC SWITCHES 1A3, 1A4, 1A5, 1A6	U1 RB	621'-3"
19044	14	1-JBOX-253-8862	I&C BUS 1A DISC SWITCH	U1 RB	621'-3"
19045	20	1-PNLA-009-0009	I&C BUS 1A (CAB 2 OF PNL 1-9-9)	U1 CB	617'
19054	20	1-PNLA-009-0009	I&C BUS 1B (CAB 3 OF PNL 1-9-9)	U1 CB	617'
19073	20	1-PX-64-50	POWER SUPPLY (PNL 1-25-31: XR-64-50 [DEV BA TERM 11/12])	U1 RB	621'-3"
19088	20	1-LPNL-925-044A/11	COMMON BD LOGIC RELAY PANEL 25-44-A11	U1 RB	621'-3"
19089	20	1-LPNL-925-044A/12	COMMON BD LOGIC RELAY PANEL 25-44-A12	U1 RB	621'-3"
19090	20	1-LPNL-925-044B/11	COMMON BD LOGIC RELAY PANEL 25-44-B11	U1 RB	621'-3"
19091	20	1-LPNL-925-044B/12	COMMON BD LOGIC RELAY PANEL 25-44-B12	U1 RB	621'-3"
19114	20	1-PNLA-009-0003A	REACTOR SD & CONT. COOLING PNL	U1 CB	617'
19115	20	1-PNLA-009-0003B	REACTOR SD & CONT. COOLING PNL	U1 CB	617'
19116	20	1-PNLA-009-0004	CLEANUP & RECIRC PNL	U1 CB	617'
19117	20	1-PNLA-009-0005	REACTOR CONTROL PNL	U1 CB	617'
19118	20	1-PNLA-009-0006	FW & COND. PNL	U1 CB	617'
19125	20	1-PNLA-009-0021	TEMP RECORDING PNL	U1 CB	617'
19133	20	1-PNLA-009-0054	CONTAINMENT ATM. DILUTION PNL	U1 CB	617'
19134	20	1-PNLA-009-0055	CONTAINMENT ATM. DILUTION PNL	U1 CB	617'
19197	18	1-LPNL-925-005D	LOCAL PANEL 25-5-001	U1 RB	593'
19199	18	1-LPNL-925-006D	LOCAL PANEL 25-6-001	U1 RB	593'
19204	20	1-PNLA-925-0031	LOCAL PANEL 25-31	U1 RB	621'-3"
19205	20	1-PNLA-925-0032	LOCAL PANEL 25-32	U1 RB	621'-3"
19226	18	1-LPNL-925-247A	LOCAL PANEL 1-25-247A (CAD DRYWELL & SUPP. CHAMB. V.)	U1 RB	621'-3"
19229	18	1-LPNL-925-0247B	LOCAL PANEL 1-25-247B (CAD N2 SUPPLY PANEL B)	U1 RB	621'-3"
19268	14	1-HS-78-61B	HANDSWITCH FOR 1-FCV-78-61 (11026)	U1 RB	621'-3"
19300	20	1-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	U1 CB	617'
19301	20	1-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	U1 CB	617'
19302	20	1-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	U1 CB	617'
19303	20	1-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	U1 CB	617'
19304	20	1-PNLA-009-012	PANEL 1-9-12	CB	617'
19313	20	1-HS-1-56A	HANDSWITCH FOR 1-FCV-1-56 (13075)	U1 CB	617'
19316	20	1-HS-77-2A	HANDSWITCH FOR 1-FCV-77-2A (13080)	U1 CB	617'
19317	20	1-HS-77-15A	HANDSWITCH FOR 1-FCV-77-15A (13081)	U1 CB	617'
19318	20	1-HS-64-18	HANDSWITCH FOR 1-FCV-64-18 (13082)	U1 CB	617'
19319	20	1-HS-64-19	HANDSWITCH FOR 1-FCV-64-19 (13083)	U1 CB	617'
19320	20	1-HS-76-18	HANDSWITCH FOR 1-FCV-76-18 (13084)	U1 CB	617'
19321	20	1-HS-76-19	HANDSWITCH FOR 2-FCV-76-19 (13085)	U1 CB	617'

Table 4-1: Instances of Special Exception for Capacity versus Demand, Continued

SSEL NO.	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	FLOOR ELEV.
19412	03	0-BDAA-211-0000A	4KV SHDN BD A	U1 RB	621'-3"
19418	02	1-BDBB-231-0001A	480V SHDN BD 1A	U1 RB	621'-3"
19419	02	1-BDBB-231-0001B	480V SHDN BD 1B	U1 RB	621'-3"
19492	20	0-LPNL-925-0045A	PANEL 25-45A	U1 RB	621'-3"
19594	04	1-XFA-231-TS1A	4KV/480V TRANSFORMER TS1A	U1 RB	621'-3"
19595	04	1-XFA-231-TS1B	4KV/480V TRANSFORMER TS1B	U1 RB	621'-3"
19709	20	1-PNLA-009-0020	PANEL 1-9-20	U1 CB	617'
19791	20	1-PNLA-009-0008	PANEL 1-9-8	U1 CB	617"

5. OUTLIERS

5.1 Mechanical and Electrical Safe Shutdown Equipment

A total of 53 individual Outlier Seismic Verification Sheet (OSVS) forms were written, documenting a total of 84 individual items of mechanical and electrical equipment on the SSEL as outliers. The outliers are summarized in Table 5-1.

The types of outliers are as follows:

Major Concern	Number of Outliers
Capacity Versus Demand	8
Anchorage	15
Caveats	8
Seismic Interactions	52
Others – Outside of GIP screening criteria applicability	8
Equipment Class 0 (CRD/HCUs)	1
Affected by cable and conduit raceway (see Section 5.3).	2
TOTAL	**84**

5.2 Tanks and Heat Exchangers

A total of six (6) outliers were identified, affecting four heat exchangers and two tanks:

- The four RHR heat exchangers were designated as outliers because their vertical configuration falls outside of the applicability of the SQUG GIP screening criteria.
- The two CRD Scram Instrument Volume Tanks were designated as outliers because their vertical configuration falls outside of the applicability of the SQUG GIP screening criteria.

5.3 Cable and Conduit Raceways

A total of 14 outliers were identified in the cable and conduit raceway seismic evaluation program. See Appendix E.

5.4 Relay Functionality Review

No outliers were identified in the relay functionality review. See Reference 9.

5.5 Resolution of Outliers

All outliers will be resolved prior to restart of BFN-1. See Table 5-1 for mechanical and electrical equipment; and tanks and heat exchangers. See Appendix E for cable and conduit raceways. In general, the resolution of outliers is accomplished as follows:

Resolution Method	Number of Outliers
Further evaluation	21
Procedural revision (to require that crane hoists and chains are restrained during plant operation, to eliminate seismic interaction concerns)	27
Plant modification implemented by issue of Design Change Notice	30
Maintenance item resolved by issue of Work Order	6
TOTAL	**84**

5.6 Plan and Schedule for Resolution of Outliers

All of the USI A-46 outliers will be resolved before 12/30/06, prior to restart of BFN-1. Designs have been are completed for all modifications. Construction work has begun, and some of the modifications have already been constructed. Follow-up verification of each outlier that is resolved by work order or design change will be performed during plant area turnover walkdowns (see Appendix H punchlist).

TABLE 5-1

SUMMARY OF OUTLIERS AND RESOLUTION METHODS:

MECHANICAL AND ELECTRICAL EQUIPMENT

OUTLIER INFORMATION			AFFECTED EQUIPMENT			
OSVS NO.	OUTLIER CONDITION AND PROPOSED RESOLUTION METHOD	RESOLUTION	SSEL NO.	EQUIP CLASS	EQUIPMENT I.D.	EQUIPMENT DESCRIPTION
10001-01	Equipment configuration falls outside of GIP screening criteria applicability. Perform further evaluation.	Resolved – Acceptable As-Is by further evaluation. (Calculation CDQ1 085 2004 0153).	10001	00	1-HCU-85, 1-185	CRD/HYDRAULIC CONTROL UNITS
10007-01	Interaction hazard - Sharp end of cut-off beam section is in contact with actuator diaphragm housing. Cope out beam.	Resolved – Work Order WO No. 04-715782-000 was issued to address the condition. Final configuration to be verified during area turnover walkdowns.	10007	07	1-FCV-85-83	CRD/EAST SDV VENT VALVE
10010-01	Vertical orientation falls outside of GIP screening criteria applicability	Resolved – Acceptable As-Is by further evaluation. (Calculation CDQ1 085 2004 0153).	10010	21	1-TNK-85-901	CRD/WEST SCRAM INSTRUMENT VOLUME
10011-01	Vertical orientation falls outside of GIP screening criteria applicability	Resolved – Acceptable As-Is by further evaluation. (Calculation CDQ1 085 2004 0153).	10011	21	1-TNK-85-902	CRD/EAST SCRAM INSTRUMENT VOLUME
11009-01	Vertical orientation falls outside of GIP screening criteria applicability. Perform further evaluation.	Resolved – Acceptable As-Is by further evaluation. (Calculation CDQ1 074 2003 2583).	11009	21	1-HEX-74-900A	RHR/HEAT EXCHANGER 1A
11017-01	Vertical orientation falls outside of GIP screening criteria applicability. Perform further evaluation.	Resolved – Acceptable As-Is by further evaluation. (Calculation CDQ1 074 2003 2583).	11017	21	1-HEX-74-900C	RHR/HEAT EXCHANGER 1C
11036-01	Vertical orientation falls outside of GIP screening criteria applicability. Perform further evaluation.	Resolved – Acceptable As-Is by further evaluation. (Calculation CDQ1 074 2003 2583).	11036	21	1-HEX-74-900B	RHR/HEAT EXCHANGER 1B
11042-01	Vertical orientation falls outside of GIP screening criteria applicability. Perform further evaluation.	Resolved – Acceptable As-Is by further evaluation. (Calculation CDQ1 074 2003 2583).	11042	21	1-HEX-74-900D	RHR/HEAT EXCHANGER 1D

TABLE 5-1 Summary of Outliers and Resolution Methods: Mechanical and Electrical Equipment, Continued

OUTLIER INFORMATION			AFFECTED EQUIPMENT			
OSVS NO.	OUTLIER CONDITION AND PROPOSED RESOLUTION METHOD	RESOLUTION	SSEL NO.	EQUIP CLASS	EQUIPMENT I.D.	EQUIPMENT DESCRIPTION
12001-01	Interaction hazard - Hoist/chains from overhead jib crane. Procedure revision is recommended.	Resolved – PER No. 64133 was issued to address the condition. Final configuration to be verified during area turnover walkdowns.	12001	07	1-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE
			12003	07	1-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE
			12006	07	1-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE
			12009	07	1-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE
			12012	07	1-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE
			12015	07	1-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE
			12018	07	1-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE
			12021	07	1-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE
			12024	07	1-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE
			12027	07	1-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE
			12030	07	1-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE
			12033	07	1-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE
			12036	07	1-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE
			16010	08B	1-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19
			16013	08B	1-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22
			16016	08B	1-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5
			16017	08B	1-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23
			16018	08B	1-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179
			16019	08B	1-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4
			16021	08B	1-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18

TABLE 5-1 Summary of Outliers and Resolution Methods: Mechanical and Electrical Equipment, Continued

OUTLIER INFORMATION			AFFECTED EQUIPMENT			
OSVS NO.	OUTLIER CONDITION AND PROPOSED RESOLUTION METHOD	RESOLUTION	SSEL NO.	EQUIP CLASS	EQUIPMENT I.D.	EQUIPMENT DESCRIPTION
12001-01	(Continued)		16030	08B	1-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30
			16033	08B	1-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31
			16036	08B	1-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34
			16038	08B	1-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41
			16040	08B	1-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42
			16041	08B	1-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180
12001-02	Interaction Hazard - The ring duct is a potential falling interaction hazard to fragile components if the listed equipment items. Perform further evaluation.	**Resolved – Acceptable As-Is** by further evaluation. (Calculation CDQ1 080 2003 1196).	12001	07	1-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE
			12003	07	1-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE
			12012	07	1-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE
			12018	07	1-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE
			12030	07	1-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE
			12033	07	1-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE
			12036	07	1-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE
			16013	08B	1-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22
			16016	08B	1-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5
			16018	08B	1-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179
			16019	08B	1-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4
			16038	08B	1-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41
			16040	08B	1-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42
			16041	08B	1-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180

Table 5-1 Summary of Outliers and Resolution Methods: Mechanical and Electrical Equipment, Continued

OUTLIER INFORMATION			AFFECTED EQUIPMENT			
OSVS NO.	OUTLIER CONDITION AND PROPOSED RESOLUTION METHOD	RESOLUTION	SSEL NO.	EQUIP CLASS	EQUIPMENT I.D.	EQUIPMENT DESCRIPTION
13001-01	The inboard and outboard MSIV's are not explicitly represented in the seismic experience database. In addition, the length from the centerline of 24"Φ MS pipe to the top of the valve operator is about 103" which exceeds the GIP limitation per Figure B.7-2 of the GIP for 18"Φ or larger pipes. Perform further evaluation.	Resolved – Acceptable As-Is by further evaluation. (Calculation CDQ1 001 2004 0143).	13001	07	1-FCV-1-14	MSIV "A" INBOARD ISOLATION VALVE
			13002	07	1-FCV-1-15	MSIV "A" OUTBOARD ISOLATION VALVE
			13003	07	1-FCV-1-26	MSIV "B" INBOARD ISOLATION VALVE
			13004	07	1-FCV-1-27	MSIV "B" OUTBOARD ISOLATION VALVE
			13005	07	1-FCV-1-37	MSIV "C" INBOARD ISOLATION VALVE
			13006	07	1-FCV-1-38	MSIV "C" OUTBOARD ISOLATION VALVE
			13007	07	1-FCV-1-51	MSIV "D" INBOARD ISOLATION VALVE
			13008	07	1-FCV-1-52	MSIV "D" OUTBOARD ISOLATION VALVE
13047-01	Caveat: Operator CG height not covered by GIP inclusion rules. Perform further evaluation.	Resolved – DCN. Valve and operators replaced with seismically qualified valve under DCN 51202. Final configuration to be verified during area turnover walkdowns.	13047	07	1-FCV-77-2B	DRYWELL FLOOR DRAIN SUMP DISCHARGE
13048-01	Caveat: Operator CG height not covered by GIP inclusion rules. Perform further evaluation.	Resolved – DCN. Valve and operators replaced with seismically qualified valve under DCN 51202. Final configuration to be verified during area turnover walkdowns.	13048	07	1-FCV-77-15B	DRYWELL EQUIP. DRAIN SUMP DISCHARGE
13049-01	Seismic Cap < Demand. Perform further evaluation.	Resolved – Acceptable As-Is by further evaluation. (Calculation CDQ1 084 2003 2584).	13049	07	1-FCV-84-19	CAD ISOLATION VALVE
13050-01	Seismic Cap < Demand. Perform further evaluation.	Resolved – Acceptable As-Is by further evaluation. (Calculation CDQ1 084 2003 2584).	13050	07	1-FCV-84-20	CAD ISOLATION VALVE
13075-01	Caveat: Operator CG height not covered per GIP inclusion rules. Perform further evaluation.	Resolved – Acceptable As-Is by further evaluation. (Calculation CDN1 999 2004 0037).	13075	08A	1-FCV-1-56	MAIN STEAM LINE DRAIN ISOLATION VALVE

Table 5-1 Summary of Outliers and Resolution Methods: Mechanical and Electrical Equipment, Continued

OUTLIER INFORMATION			AFFECTED EQUIPMENT			
OSVS NO.	OUTLIER CONDITION AND PROPOSED RESOLUTION METHOD	RESOLUTION	SSEL NO.	EQUIP CLASS	EQUIPMENT I.D.	EQUIPMENT DESCRIPTION
13080-01	Caveat: Operator CG height not covered per GIP inclusion rules. Modification is recommended	Resolved – DCN. Valve and operators replaced with seismically qualified valve under DCN 51202. Final configuration to be verified during area turnover walkdowns.	13080	07	1-FCV-77-2A	DRYWELL FLOOR DRAIN SUMP DISCHARGE
13081-01	Caveat: Operator CG height not covered per GIP inclusion rules. Modification is recommended	Resolved – DCN. Valve and operators replaced with seismically qualified valve under DCN 51202. Final configuration to be verified during area turnover walkdowns.	13081	07	1-FCV-77-15A	DRYWELL EQUIP. DRAIN SUMP DISCHARGE
14014-01	Caveat: Flex conduit connection loose. Issue work order for repair of coupling.	Resolved – Work Order was issued under DCN 51190 to repair coupling (WO # 02-016198-019). Final configuration to be verified during area turnover walkdowns.	14014	10	1-CLR-67-920	EECW/CS PUMP 1B ROOM COOLER
RB519-03	Interaction: Overhead conduits have span exceeding GIP raceway screening guidelines limit. Add new support to conduit. Note – see Appendix E for raceway seismic evaluation program.	Resolved – DCN. Support added under DCN 51521 & DCA 1-48B800-3639. Final configuration to be verified during area turnover walkdowns.	15007	06	1-PMP-75-14	CS/PUMP 1C
RB519-01 RB519-02	Interaction: Overhead conduits have span exceeding GIP raceway screening guidelines limit. Add new supports to conduit. Note – see Appendix E for raceway seismic evaluation program.	Resolved – DCN. Supports added under DCN 51521 & DCA 1-48B800-3638. Final configuration to be verified during area turnover walkdowns.	15021	06	1-PMP-75-42	CS/PUMP 1D
19030-01	Seismic Capacity < Demand. Further evaluation is recommended	Resolved – Acceptable As-Is. (Calculation CDQ0 999 96 0096 for BFN-2 & -3 documents a comparison of shake table test results for GE model 7700 MCC to appropriate BFN demand levels).	19030	01	1-BDBB-281-0001A	250V DC RMOV BOARD 1A

Table 5-1 Summary of Outliers and Resolution Methods: Mechanical and Electrical Equipment, Continued

OUTLIER INFORMATION			AFFECTED EQUIPMENT			
OSVS NO.	OUTLIER CONDITION AND PROPOSED RESOLUTION METHOD	RESOLUTION	SSEL NO.	EQUIP CLASS	EQUIPMENT I.D.	EQUIPMENT DESCRIPTION
19030-02	Caveat: Screws are missing on lower left cover panel. Modification is recommended	Resolved – Work Order was issued under DCN 51521 to install screws (WO # 03-015216-000). Final configuration to be verified during area turnover walkdowns.				
19030-03	Anchorage: Capacity < Demand. Modification is recommended.	Resolved – DCN. Top brace added to MCC per DCA 51521-001 under DCN 51521 (see Calculation CDQ1 999 2003 1499). Final configuration to be verified during area turnover walkdowns.				
19031-01	Seismic Cap < Demand. Further evaluation is recommended.	Resolved – Acceptable As-Is. (Calculation CDQ0 999 96 0096 for BFN-2 & -3 documents a comparison of shake table test results for GE model 7700 MCC to appropriate BFN demand levels).	19031	01	1-BDBB-281-0001B	250V DC RMOV BOARD 1B
19031-02	Caveat: Screws are missing on lower left cover panel. Modification is recommended	Resolved – Work Order WO No. 04-715780-000 was issued to install the missing screws.				
19042-01	Anchorage: Toggle bolts into block wall. Further evaluation is recommended.	Resolved – See mini-calculation documented directly on the 19042-01 OSVS form.	19042	14	1-JBOX-253-6457	I&C BUS 1A DISC SW 1A2
19042-02	Caveat: Anchor in oversized hole. Further evaluation is recommended.					
19070-01	Seismic Cap < Demand Caveat: Configuration not covered by inclusion rules Anchorage: Details could not be confirmed	Resolved – DCN. Inverter is to be replaced by a new seismically qualified unit under DCN 51085.	19070	16	1-INVT-256-0001	DIV I ECCS ATU INVERTER
19075-01	Seismic Cap < Demand Caveat: Configuration not covered by inclusion rules Anchorage: Details could not be confirmed	Resolved – DCN. Inverter is to be replaced by a new seismically qualified unit under DCN 51085.	19075	16	1-INVT-256-0002	DIV II ECCS ATU INVERTER

Table 5-1 Summary of Outliers and Resolution Methods: Mechanical and Electrical Equipment, Continued

OUTLIER INFORMATION			AFFECTED EQUIPMENT			
OSVS NO.	OUTLIER CONDITION AND PROPOSED RESOLUTION METHOD	RESOLUTION	SSEL NO.	EQUIP CLASS	EQUIPMENT I.D.	EQUIPMENT DESCRIPTION
19088-01	Anchorage: Gap at anchor. Interaction: Impact with wall. Modification is recommended.	Resolved – DCN. Shim plate(s) provided per Drawing 1-48B900-3085 under DCN 51521.	19088	20	1-LPNL-925-044A/11	COMMON BD LOGIC RELAY PANEL 25-44-A11
19120-01	Caveat: Impact with block wall Interaction: Impact with wall Modification is recommended.	Resolved – DCN. Gap filled with sealant under DCN 51085.	19120	20	1-PNLA-009-0015	RPS CH A (DIV I)
			19121	20	1-PNLA-009-0016	RPS CH A, B, C, D
			19122	20	1-PNLA-009-0017	RPS CH B (DIV II)
			19128	20	1-PNLA-009-0032	RHR, CS, & HPCI (CH A) PNL
19130-01	Caveat: Impact with adjacent panel Interaction: Impact with adjacent panel. Modification is recommended.	Resolved – DCN. Panels -39 and -82 attached together per DCA 51085-202 under DCN 51085 (Calculation CDQ1 999 2003 1491).	19129	20	1-PNLA-009-0033	RHR, CS, & HPCI (CH B) PNL
			19130	20	1-PNLA-009-0039	HPCI RELAY AUX PNL
			19132	20	1-PNLA-009-0043	MSIV (OUTBOARD) DIV II PNL
19136-01			19136	20	1-PNLA-009-0082	DIV II ECCS ATU CABINET (9-82)
19131-01	Caveat: Impact with adjacent panel Interaction: Impact with adjacent panel. Modification is recommended.	Resolved – DCN. Panels -42 and -81 attached together per DCA 51085-202 under DCN 51085 (Calculation CDQ1 999 2003 1491).	19131	20	1-PNLA-009-0042	MSIV (INBOARD) DIV ii PNL
19135-01			19135	20	1-PNLA-009-0081	DIV I ECCS ATU CABINET (9-81)
19137-01	Caveat: Impact with adjacent panel Interaction: Impact with adjacent panel. Modification is recommended.	Resolved – DCN. Panels -83, -84, -85, and -86 attached together per DCA 51085-202 under DCN 51085 (Calculation CDQ1 999 2003 1491)	19137	20	1-PNLA-009-0083	RPS ATU CAB
19138-01			19138	20	1-PNLA-009-0084	RPS ATU CAB
19139-01			19139	20	1-PNLA-009-0085	RPS ATU CAB
19140-01			19140	20	1-PNLA-009-0086	RPS ATU CAB
19154-01	Anchorage: Missing bolts to unistrut. Repair is recommended.	Resolved – PER No. 64136 was issued to address the condition. Final configuration to be verified during area turnover walkdowns.	19153	18	1-HS-74-52B	LOCAL HS STATION
			19154	14	1-JB-1079	JUNCT. BOX (TERM BLOCK) - SEALED BOX
			19155	18	1-HS-74-53B	LOCAL HS STATION

Table 5-1 Summary of Outliers and Resolution Methods: Mechanical and Electrical Equipment, Continued

OUTLIER INFORMATION			AFFECTED EQUIPMENT			
OSVS NO.	OUTLIER CONDITION AND PROPOSED RESOLUTION METHOD	RESOLUTION	SSEL NO.	EQUIP CLASS	EQUIPMENT I.D.	EQUIPMENT DESCRIPTION
19195-01	Caveat: Missing bolt to floor kicker. Repair is recommended.	Resolved – Work Order WO No. 04-715781-000 was issued to install bolts.	19195	18	1-LPNL-925-005A	LOCAL PANEL 25-5A
19198-01	Anchorage: Gap under base anchorage. Further evaluation is recommended. Work with OSVS 19792-01.	Resolved – PER No. 64139 was issued to address the condition. Final configuration to be verified during area turnover walkdowns.	19198	18	1-LPNL-925-006A	LOCAL PANEL 25-6A
19223-01	Anchorage: Four of six anchor bolts failed tightness check.	Resolved – Bolts were properly torqued under bolt tightness check, WO 03-011328-000. Operability was demonstrated for the case with only two bolts; see calculation CDQ1099 2003 2582	19223	20	1-PROT-099-0001B2	RPS CIRCUIT PROTECTOR CABINET 1B2
19287-01	Seismic Cap < Demand. Further evaluation is recommended.	Resolved – Acceptable As-Is. Capacity data in GERS report used to substantiate higher capacity. Resolved on OSVS form.	19287	18	1-TS-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH
19288-01	Seismic Cap < Demand. Further evaluation is recommended.	Resolved – Acceptable As-Is. Capacity data in GERS report used to substantiate higher capacity. Resolved on OSVS form.	19288	18	1-TS-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH
19289-01	Seismic Cap < Demand. Further evaluation is recommended.	Resolved – Acceptable As-Is. Capacity data in GERS report used to substantiate higher capacity. Resolved on OSVS form.	19289	18	1-TS-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH
19290-01	Seismic Cap < Demand. Further evaluation is recommended.	Resolved – Acceptable As-Is. Capacity data in GERS report used to substantiate higher capacity. Resolved on OSVS form.	19290	18	1-TS-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH
19307-01	Anchorage: Anchored to block wall without through bolts. Modification is recommended.	Resolved – DCN. New support system installed per DCA 51085-201 under DCN 51085 (Calculation CDQ1 999 2003 1491)	19307	16	1-CHGD-283-A1-1	24V NEUTRON BATTERY CHARGERS A1-1
19308-01	Anchorage: Anchored to block wall without through bolts. Modification is recommended.	Resolved – DCN. New support system installed per DCA 51085-201 under DCN 51085 (Calculation CDQ1 999 2003 1491)	19308	16	1-CHGD-283-A2-1	24V NEUTRON BATTERY CHARGERS A2-1

Table 5-1 Summary of Outliers and Resolution Methods: Mechanical and Electrical Equipment, Continued

OUTLIER INFORMATION			AFFECTED EQUIPMENT			
OSVS NO.	OUTLIER CONDITION AND PROPOSED RESOLUTION METHOD	RESOLUTION	SSEL NO.	EQUIP CLASS	EQUIPMENT I.D.	EQUIPMENT DESCRIPTION
19309-01	Anchorage: Anchored to block wall without through bolts. Modification is recommended.	Resolved – DCN. New support system installed per DCA 51085-201 under DCN 51085 (Calculation CDQ1 999 2003 1491)	19309	16	1-CHGD-283-B1-1	24V NEUTRON BATTERY CHARGERS B1-1
19310-01	Anchorage: Anchored to block wall without through bolts. Modification is recommended.	Resolved – DCN. New support system installed per DCA 51085-201 under DCN 51085 (Calculation CDQ1 999 2003 1491)	19310	16	1-CHGD-283-B2-1	24V NEUTRON BATTERY CHARGERS B2-1
19418-01	Seismic Interaction: Breaker lifting device not restrained. Review then enhance procedures as required.	Resolved – PER No. 64141 was issued to address the condition. Final configuration to be verified during area turnover walkdowns.	19418	02	1-BDBB-231-0001A	480V SHDN BD 1A
19792-01	Anchorage: Gap under base anchorage. Further evaluation is recommended. Work with OSVS 19198-01.	Resolved – PER No. 64139 was issued to address the condition. Final configuration to be verified during area turnover walkdowns.	19792	18	1-LPNL-925-006B	LOCAL PANEL 25-6B
19794-01	Caveat: Weak way bending on support base Modification is recommended.	Resolved – DCN. Anchorage detail modified under DCN 51085 (Calculation CDQ1 999 2003 1491).	19794	04	1-XFA-099-0010	RPS REGULATING TRANSFORMER TRP-1
19794-02	Anchorage: Anchor bolts missing from the rear. Modification is recommended.					
19797-01	Anchorage: Anchored to block wall with toggle bolts. Further evaluation is recommended	Resolved – See mini-calculation documented directly on the 19794-01 OSVS form.	19797	14	1-FUDS-099-0001CB	RPS BUS XFMR DISC SW
19797-02	Anchorage: One anchor bolt is loose. Work with OSVS 19797-01.					

6. INDEPENDENT PEER REVIEW

An independent, third-party peer review of the BFN-1 USI A-46 resolution program was performed by Dr. James J. Johnson. He was not a part of the walkdown team. This evaluation provided an assessment of the walkdown and analysis by audit and sampling. Dr. James J. Johnson meets the qualification requirements for a Seismic Capability Engineer; see resume in Appendix G. These reports include the following:

- Safe shutdown equipment selection
- Cable trays and conduit raceways
- Mechanical and electrical equipment

6.1 SAFE SHUTDOWN EQUIPMENT SELECTION

PEER REVIEW REPORT

JAMES J. JOHNSON, PH.D., P.E.

James J. Johnson and Associates
7 Essex Court, Alamo, CA 94507
Phone: (925) 837-4749 ~ Fax: (925) 838-9227

17 March 2003

Mr. Richard D. Cutsinger
Tennessee Valley Authority
Browns Ferry Nuclear Plant, RSB1-7/BFN
P.O. Box 2000
Decatur, AL 35609-2000

Subject: Independent Peer Review Browns Ferry Unit 1 (BFN-1) Safe Shutdown Equipment List (SSEL) for Resolution of NRC Unresolved Safety Issue (USI) A-46 and Addressing Independent Plant Examination for External Events (IPEEE)

Dear Mr. Cutsinger:

During the period of 27 February 2003 to 17 March 2003, I performed an Independent Peer Review of the subject Safe Shutdown Equipment List (Ref. 1).

The approach and result appear to be consistent with the GIP (Ref. 2) and EPRI NP-6041 (Ref. 3) methodologies. Importantly, the approach and result are consistent with that used for BFN Units 2 and 3. This latter point is particularly important since operators for the Browns Ferry Nuclear Plant are trained to operate all three units. Hence, consistency in the definition of the safe shutdown paths and the safe shutdown equipment lists for the three units should be maintained to the extent possible. Also, shared systems are assumed in a number of areas, which further requires this consistency.

Two areas of emphasis for this review are:

Plant Operations Department Review

The GIP (Ref. 2) and EPRI NP-6041 (Ref. 3) require Plant Operations Department review of a number of elements and concurrence of their acceptance:

- The plant procedures for shutting down the reactor should be reviewed by the Operations Department to verify that the plant procedures are compatible with the identified method of safe shutdown, and that they do not preclude the use of the safe shutdown equipment, if some other method of shutting down the reactor is first attempted. For BFN-1, one area where this question should be addressed is initial use of HPCI and RCIC systems, not on the safe shutdown path, but likely to be called upon first during plant shutdown. The method of verification by the Operations Department should be documented.

- Permitted operator actions that are identified as initial or back-up procedures should be verified for feasibility, i.e., required time frame can be met, physical path to achieve action is unrestricted, access to components is not hampered by high temperature, humidity, or other environmental effects, etc.

- Shared systems of the multiple units have the capacity to meet the demand of the multiple units when simultaneously subjected to the event of interest – the design basis earthquake for USI A-46 and the review level earthquake for IPEEE.

Shared Systems Reviewed

Reference 1 and its predecessors for Units 2 and 3 identified systems that are shared between Units 1, 2, and 3 or Units 1 and 2. These shared systems were evaluated previously with respect to Units 2 and 3 capacity to meet safe shutdown requirements for USI A-46 and seismic IPEEE and verified as being adequate. For Unit 1 evaluation, the following should be noted:

- For completeness, the Unit 1 SSEL should include the safe shutdown equipment items contained in shared systems that are relied upon by Unit 1 for safe shutdown. This permits a complete and adequate review by Plant Operations and other parties.

- Detailed calculations need not be repeated to verify the seismic capacity of these shared system components. However, it is the responsibility of the Seismic Review Team (SRT) to validate that the field conditions of the equipment have not changed in a manner that would invalidate the previously determined capacity of the equipment. In particular, that adverse seismic spatial interaction issues have not been introduced that would preclude the equipment from performing its designated function. This validation could be accomplished through a number of approaches, e.g., review of configuration control procedures to verify that effective configuration control is in place, brief area or equipment specific walk-bys to verify no adverse seismic system interactions exist, etc.

References

1. BFN – 1, "Composite Safe Shutdown Equipment List (SSEL) for USI A-46 and Seismic IPEEE Programs," Cal. No. CDQ1-999-2003-0654, Rev. 0.
2. Seismic Qualification Utility Group (SQUG), "Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment," Rev. 2A, March 1993.
3. Electric Power Research Institute (EPRI), "A Methodology for Assessment of Nuclear Power Plant Seismic Margin (Revision 1)," EPRI NP- 6041-SL, Rev. 1, August 1991.

If questions arise as to the substance of this review, please feel free to contact me. It is my pleasure to continue to support the efforts of TVA to bring BFN Unit 1 on-line to support the energy demands of the United States.

Sincerely,

James J. Johnson
President

cc: John O. Dizon, Facility Risk Consultants

6.2 CABLE TRAYS AND CONDUIT RACEWAYS

PEER REVIEW REPORT

JAMES J. JOHNSON, PH.D., P.E.

James J. Johnson and Associates
7 Essex Court, Alamo, CA 94507
Phone: (925) 837-4749 ~ Fax: (925) 838-9227

13 August 2003

Mr. Richard D. Cutsinger
Tennessee Valley Authority
Browns Ferry Nuclear Plant, RSB1-7/BFN
P. O. Box 2000
Decatur, AL 35609-2000

Subject: Independent Peer Review Browns Ferry Unit 1 (BFN-1) Seismic Verification of Cable Tray and Conduit Raceway Systems for Resolution of NRC Unresolved Safety Issue (USI) A-46

Dear Mr. Cutsinger:

During the period of 4 August 2003 to the current date, I performed an Independent Peer Review of the subject program USI A-46 Seismic Verification of Cable Tray and Conduit Raceway Systems (Ref. 1). The scope of this program covers all electrical raceway systems (cable tray and conduit systems) at BFN-1 not previously evaluated during the USI A-46 programs for BFN Units 2 and 3. Hence, the present program covers the Unit 1 Reactor Building, below elevation 664', including the drywell.

The approach and result are consistent with the GIP (Ref. 2) and acceptable to meet the requirements for resolution of USI A-46 for BFN Unit 1.

Walkdown Observations

The walkdown packages (Refs. 3-8) were reviewed. In general, the walkdown packages were very well documented with easy to follow highlights identified. Discussions were conducted with available Seismic Review Team members. The identified outliers were discussed in detail to understand the reasoning for identifying them so. It was observed that the Seismic Review Team performed a complete in-plant walkdown of the program scope raceways, and conducted several close-up inspections of select details. The Seismic Review Team was thorough and managed the program by use of designated plant areas at the various elevations..

I participated in an in-plant walkby covering Reactor Building elevations within the scope of the program. The identified outliers were viewed in the plant. A selected group of cases identified for Limited Analytical Review were also viewed. I concur with the outlier identification and the selected cases for Limited Analytical Review.

The approach used for the walkdown adheres to the guidance in the GIP (Ref. 2).

Outlier Resolution and Limited Analytical Review

The outlier resolutions and limited analytical reviews contained in Ref. 1 were reviewed for approach and adherence to the guidelines provided in the GIP (Ref. 2). They were found to meet the guidelines and approach.

Attachment A of Ref. 1 presents the Checker's perspective on areas of excess conservatism in the outlier resolution and limited analytical review calculations. I concur with these observations.

Configuration Control

Most of the cable trays inside drywell are supported from overhead drywell platform steel and have been temporarily disconnected during the replacement of platform steel. These supports are intended to be re-welded to the new platform steel in the same, or close to the same, configuration as originally installed. A walkby to verify the re-installation after its completion should be performed.

New systems or modifications to existing systems, which will be installed over the next one or two years to complete BFN Unit 1, should be verified to not invalidate the assessments performed herein. Verification of no new hazards may be accomplished through an office evaluation and/or in-plant walkdown. This may be accomplished at the final walkdown stage prior to area turnover.

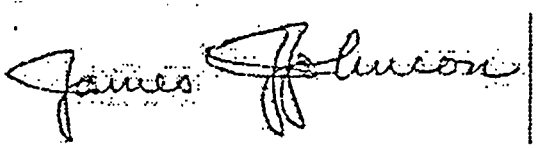
References

1. BFN – 1, "USI A-46 Seismic Verification of Cable Tray and Conduit Raceway Systems," Cal. No. CDQ1-000-2003-2203, Rev. 0.
2. Seismic Qualification Utility Group (SQUG), "Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment," Rev. 2A, March 1993.
3. "Walkdown Data Packages for Cable Tray and Conduit Raceway Review for USI A-46 and Seismic IPEEE – Documentation for BFN Unit 1 Drywell," WDP No. BFN1-CEB-RCWY-DW, 7/31/03.
4. "Walkdown Data Packages for Cable Tray and Conduit Raceway Review for USI A-46 and Seismic IPEEE – Documentation for BFN Unit 1 Reactor Building El. 519'," WDP No. BFN1-CEB-RCWY-519, 7/31/03.
5. "Walkdown Data Packages for Cable Tray and Conduit Raceway Review for USI A-46 and Seismic IPEEE – Documentation for BFN Unit 1 Reactor Building El. 565'," WDP No. BFN1-CEB-RCWY-565, 7/31/03.
6. "Walkdown Data Packages for Cable Tray and Conduit Raceway Review for USI A-46 and Seismic IPEEE – Documentation for BFN Unit 1 Reactor Building El. 593'," WDP No. BFN1-CEB-RCWY-593, 7/31/03.

7. "Walkdown Data Packages for Cable Tray and Conduit Raceway Review for USI A-46 and Seismic IPEEE – Documentation for BFN Unit 1 Reactor Building El. 621'," WDP No. BFN1-CEB-RCWY-621, 7/31/03.
8. "Walkdown Data Packages for Cable Tray and Conduit Raceway Review for USI A-46 and Seismic IPEEE – Documentation for BFN Unit 1 Reactor Building El. 639'," WDP No. BFN1-CEB-RCWY-639, 7/31/03.

If questions arise as to the substance of this review, please feel free to contact me. It is my pleasure to continue to support the efforts of TVA to bring BFN Unit 1 on-line to support the energy demands of the United States.

Sincerely,



James J. Johnson
President

cc. John O. Dizon, Facility Risk Consultants

6.3 MECHANICAL AND ELECTRICAL EQUIPMENT

PEER REVIEW REPORT

JAMES J. JOHNSON, PH.D., P.E.

James J. Johnson and Associates
7 Essex Court, Alamo, CA 94507
Phone: (925) 837-4749 ~ Fax: (925) 838-9227

30 June 2004

Mr. Richard D. Cutsinger
Tennessee Valley Authority
Browns Ferry Nuclear Plant, RSB1-7/BFN
P. O. Box 2000
Decatur, AL 35609-2000

Subject: Independent Peer Review Browns Ferry Unit 1 (BFN-1) Seismic Verification of Mechanical and Electrical Components for Resolution of NRC Unresolved Safety Issue (USI) A-46

Dear Mr. Cutsinger:

During the period of 10 June 2004 to the current date, I performed an Independent Peer Review of the seismic verification of mechanical and electrical components of the Seismic Verification of Nuclear Plant Equipment Program (Resolution of USI A-46). The complete program is documented in Ref. 1. Its implementation was separated into four phases: Safe Shutdown Equipment List, Cable Tray and Conduit Raceway Systems, Mechanical and Electrical Components, and Relay Review. I previously performed the Independent Peer Review of the Safe Shutdown Equipment List (Ref. 2) and the Cable Tray and Conduit Raceway Systems (Ref. 3). The scope of this portion of the program covers all mechanical and electrical components at BFN-1 on the Safe Shutdown Equipment List (SSEL) (Ref. 5) and not previously evaluated during the USI A-46 programs for BFN Units 2 and 3. This Independent Peer Review completes the Independent Peer Review of the implementation.

The approach and result are consistent with the GIP (Ref. 4) and acceptable to meet the requirements for resolution of USI A-46 for BFN Unit 1.

Mechanical and Electrical Components on the BFN-1 SSEL

The composite safe shutdown equipment list for BFN-1 contains 906 items. A total of 525 components were identified on the BFN-1 SSEL for detailed evaluation. This list excludes items evaluated in the seismic verification of safe shutdown components for BFN-2 and BFN-3, which are part of shared systems. It, also, excludes items that are deemed inherently rugged, such as check valves, and items associated with the LPCI M-G sets, since these M-G sets are being eliminated. Table 1 summarizes the components by GIP equipment class.

A representative set of Screening Evaluation Work Sheets (SEWS) was reviewed. A general observation is that the SEWS are very clear and well document the in-field condition of the components and their in-office evaluation, supported by calculations as necessary. Extensive use of photographs documents important aspects of the components and the surrounding areas.

A particular focus of my review was on the components identified to have outlier conditions. The number of mechanical and electrical components with outlier conditions was 84, Table 5-1 (Ref. 1). Fifty-three individual Outlier Seismic Verification Sheets (OSVS) were written, which affected the 84 components. Obviously, an individual OSVS can affect a number of components and a component may have more than one OSVS. The details are well documented in Ref. 1. An additional six outliers were identified for tanks and heat exchangers.

I reviewed representative components identified to be outliers in more detail, including in-plant walkbys where accessible. Some examples are:

- "Outlier Evaluation of Main Steam Isolation Valves for USI A-46 Resolution," CDQ1 001 2004 0143. Four inboard and four outboard valves were evaluated following the approach taken for BFN-2 and BFN-3. Reviewed in-office.
- "Seismic II/I Evaluation of HVAC Ducts and Supports Inside Unit 1 Drywell," CDQ1 080-2003-1196. Seven Main Steam Relief Valves (MSRVs) and seven associated solenoid valves for the MSRVs were resolved for seismic interaction II/I issues inside the drywell. Reviewed in office.
- Motor Control Centers 19030 and 19031 reviewed in-office and in-plant.
- Junction box 19042 reviewed in-office and in-plant.
- Instrument panel 19088 reviewed in-office and in-plant.
- RPS panels 19120, 19121, 19122, and 19128 reviewed in-office and in-plant.
- Instrument panels 19129, 19130, 19132, and 19136 reviewed in-office and in-plant.
- Instruments on rack 19128 reviewed in-office and in-plant.
- RPS panel 19223 reviewed in-office and in-plant.
- Battery chargers 19307, 19308, 19309, and 19310 reviewed in-office and in-plant.
- Shutdown board 19418 reviewed in-office and in-plant.
- Transformer 19794 reviewed in-office and in-plant.

Intent Versus Specific Wording of the GIP

In addition to the outliers identified above, there were 78 instances of the seismic demand response spectrum at the support locations of the components (floor level) exceeding the capacity spectrum in a limited frequency range. Elevations in the reactor building where this situation could exist are floor elevations 593', 621.25', and 639'. Table 4-1 (Ref. 1) identifies these situations. Each of these situations was evaluated individually and the estimated lowest frequency of the component was verified to be in a frequency range where the capacity spectrum exceeded the demand spectrum.

A representative sample of these cases was reviewed.

Configuration Control

Resolution of a number of outliers was through modification, maintenance, or replacement of equipment components. This is appropriate. However, new systems or modifications to existing systems, which will be installed over the next one or two years to complete BFN Unit 1, should be verified to not invalidate the assessments performed herein. Verification of no new hazards may be accomplished through an office evaluation and/or in-plant walkdown. This may be accomplished at the final walkdown stage prior to area turnover. Along this vane, Ref. 1 contains Appendix H Area Turnover Walkdown Punch List, which documents actions to be taken to verify the seismic adequacy of components before plant startup.

This is an excellent approach to verifying that no new hazards are introduced and that appropriate outlier resolutions have been made before plant startup.

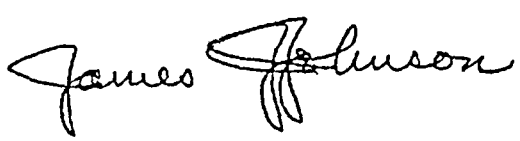
References

1. Facility Risk Consultants, "Browns Ferry Nuclear Plant Unit 1 USI A-46 Seismic Evaluation Report," Report No. TVA/BFN-01-R-004, Rev. 0, Draft, 30 June 2004.
2. "Independent Peer Review Browns Ferry Unit 1 (BFN-1) Safe Shutdown Equipment List (SSEL) for Resolution of NRC Unresolved Safety Issue (USI) A-46 and Addressing Individual Plant Examination for External Events (IPEEE)," Letter, James J. Johnson and Associates to RDCutsinger, 17 March 2003.
3. "Independent Peer Review Browns Ferry Unit 1 (BFN-1) Seismic Verification of Cable Tray and Conduit Raceway Systems for Resolution of NRC Unresolved Safety Issue (USI) A-46," Letter, James J. Johnson and Associates to RDCutsinger, 13 August 2003.
4. Seismic Qualification Utility Group (SQUG), "Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment," Rev. 2A, March 1993.
5. BFN – 1, "Composite Safe Shutdown Equipment List (SSEL) for USI A-46 and Seismic IPEEE Programs," Cal. No. CDQ1-999-2003-0654, Rev. 002.

Table 1 Equipment Class			
Description	Class Identification No.	No. on BFN-1 SSEL	No. of Components with Outliers
Motor Control Centers	1	7	2
Low Voltage Switch Gear	2	2	1
Medium Voltage Switch Gear	3	2	0
Transformers	4	8	1
Horizontal Pumps	5	0	0
Vertical Pumps	6	8	2
Fluid-Operated Valves	7	70	28
Motor Operated Valves	8a	60	1
Solenoid Operated Valves	8b	27	13
Fans	9	0	0
Air Handlers	10	6	1
Chillers	11	0	0
Air Compressors	12	0	0
Motor Generators	13	0	0
Distribution Panels	14	86	3
Batteries on Racks	15	5	0
Battery Chargers and Inverters	16	9	6
Engine Generators	17	0	0
Instruments on Racks	18	88	9
Temperature Sensors	19	16	0
Instrument and Control Panels	20	110	16
Tanks and Heat Exchangers	21	16	6
Other	0	5	1

If questions arise as to the substance of this review, please feel free to contact me. It is my pleasure to continue to support the efforts of TVA to bring BFN Unit 1 on-line to support the energy demands of the United States.

Sincerely,



James J. Johnson
President

cc. John O. Dizon, Facility Risk Consultants

7. REFERENCES

1. "Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment." © Seismic Qualification Utility Group (SQUG). Revision 2A. March 1993.

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

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

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

6. 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 IPEE. R08 930119 958. January 19, 1993.

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

8. TVA Calculation no. CDQ1-999-2003-0654, "Composite Safe Shutdown Equipment List (SSEL) for USI A-46 and Seismic IPEEE Programs." Revision 3.

9. FRC Report no. TVA/BFN-01-R-001, "USI A-46 / Seismic IPEEE Relay Evaluation Browns Ferry Nuclear Plant Unit 1." Revision 0, 23 January 2004.

APPENDIX A

LEAD RELAY REVIEWER AND SEISMIC REVIEW TEAM QUALIFICATIONS

RESUME – Lead Relay Reviewer

Performed Relay Functionality Review

Tennessee Valley Authority
Browns Ferry Nuclear Plant Unit 1

Name:		Jess O. Betlack
Bachelors Degree:		B.S. Electrical Engineering, 1966
Institution:		University of Kansas
Advanced Degree:		M.S. Electrical Engineering, 1967 Graduate Studies in Electrical Engineering and Computer Science
Institution:		University of Kansas and University of New Mexico
Date and location of Seismic Adequacy Verification Training Courses:		
USI A-46	Course:	SQUG Relay Seismic Functionality Evaluation
	Date:	1988 – 1996
	Location:	SQUG Subject Matter Expert and Course Instructor
Seismic IPEEEE	Course:	
	Date:	
	Location:	
Earthquake engineering experience applicable to nuclear power plants and in structural or mechanical engineering:		
30 years (see attached resume)		
Licensed Professional Engineer: Yes ☑ No ☐		State of Maryland

RESUME - Seismic Capability Engineer

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant Unit 1

Name:		John O. Dizon
Bachelors Degree:		B.S. Civil Engineering, 1973
Institution:		Mapua Institute of Technology
Advanced Degree:		M.S. Structural Engineering, 1975 Engineer Degree, 1977
Institution:		Stanford University
Date and location of Seismic Adequacy Verification Training Courses:		
USI A-46	Course:	SQUG Walkdown Screening & Seismic Evaluation Training Course
	Date:	January 13 – 19, 1993
	Location:	San Francisco, CA (EQE)
Seismic IPEEEE	Course:	Seismic IPE Add-on Training Course
	Date:	October 13 – 15, 1992
	Location:	Chicago, IL
Earthquake engineering experience applicable to nuclear power plants and in structural or mechanical engineering:		
27 years (see attached resume)		
Licensed Professional Engineer: Yes ☑ No ☐		State of California

RESUME - Seismic Capability Engineer

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant Unit 1

Name:	Stephen J. Eder	
Bachelors Degree:	B.S. Civil and Environmental Engineering, 1980	
Institution:	Clarkson College of Technology	
Advanced Degree:	M.Eng. Structural Engineering & Structural Mechanics, 1982	
Institution:	University of California, Berkeley	
Date and location of Seismic Adequacy Verification Training Courses:		
USI A-46	Course:	SQUG Walkdown Screening & Seismic Evaluation Training Course
	Date:	1988 – 1994
	Location:	SQUG Subject Matter Expert and Course Instructor
Seismic IPEEEE	Course:	Seismic IPE Ad-on training
	Date:	1992 – 1994
	Location:	Reviewer of EPRI seismic margins training course as SQUG Subject Matter Expert
Earthquake engineering experience applicable to nuclear power plants and in structural or mechanical engineering:		
22 years (see attached resume)		
Licensed Professional Engineer: Yes ☑ No ☐		States of Alabama & California

RESUME - Seismic Capability Engineer

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant Unit 1

Name:	Farid Elsabee	
Bachelors Degree:	B.S. Engineering, 1973	
Institution:	State University of New York at Stony Brook	
Advanced Degree:	M.S. Civil Engineering (Structures), 1975	
Institution:	Massachusetts Institute of Technology	
Date and location of Seismic Adequacy Verification Training Courses:		
USI A-46	Course:	SQUG Walkdown Screening & Seismic Evaluation Training Course
	Date:	August 10 – 14, 1992
	Location:	Millstone Nuclear Station
Seismic IPEEEE	Course:	Seismic IPE Ad-on training
	Date:	November 2 – 4, 1992
	Location:	Millstone Nuclear Station
Earthquake engineering experience applicable to nuclear power plants and in structural or mechanical engineering:		
27 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 Unit 1

Name:	Robert D. Hookway	
Bachelors Degree:	B.S. Mechanical Engineering, 1963	
Institution:	Lowell Technological Institute	
Advanced Degree:	M.S. Mechanical Engineering, 1970	
Institution:	Northeastern University	
Date and location of Seismic Adequacy Verification Training Courses:		
USI A-46	Course:	SQUG Walkdown Screening & Seismic Evaluation Training Course
	Date:	January 13 – 19, 1993
	Location:	San Francisco, CA (EQE)
Seismic IPEEEE	Course:	
	Date:	
	Location:	
Earthquake engineering experience applicable to nuclear power plants and in structural or mechanical engineering:		
30 years (see attached resume)		
Licensed Professional Engineer: Yes ☑ No ☐		States of Massachusetts & Virginia

RESUME – Relay Reviewer

Performed Relay Functionality Review

Tennessee Valley Authority
Browns Ferry Nuclear Plant Unit 1

Name:	Marc D. Quilici	
Bachelors Degree:	B.S. Engineering, 1977	
Institution:	Idaho State University	
Advanced Degree:		
Institution:		
Date and location of Seismic Adequacy Verification Training Courses:		
USI A-46	Course:	Equipment Selection and Relay Evaluation Training Course
	Date:	March 22 – 24, 1993
	Location:	Rockville, MD
Seismic IPEEEE	Course:	
	Date:	
	Location:	
Earthquake engineering experience applicable to nuclear power plants and in structural or mechanical engineering:		
27 years : 24 years experience in systems engineering; and		
10 years experience in seismic relay evaluation and SSEL work		
Licensed Professional Engineer: Yes ☐ No ☑		

RESUME - Seismic Capability Engineer

Member of a Seismic Review Team

Tennessee Valley Authority
Browns Ferry Nuclear Plant Unit 1

Name:	Richard L. Tiong	
Bachelors Degree:	B.S. Civil Engineering, 1978	
Institution:	University of London, England	
Advanced Degree:	M.S. Structural Engineering and Structural Mechanics, 1981	
Institution:	University of California, Berkeley	
Date and location of Seismic Adequacy Verification Training Courses:		
USI A-46	Course:	SQUG Walkdown Screening & Seismic Evaluation Training Course
	Date:	January 15 – 20, 1993
	Location:	Irvine, CA (EQE)
Seismic IPEEEE	Course:	
	Date:	
	Location:	
Earthquake engineering experience applicable to nuclear power plants and in structural or mechanical engineering:		
22 years (see attached resume)		
Licensed Professional Engineer: Yes ☑ No ☐		State of California

JESS BETLACK, P.E.

EDUCATION

University of Kansas and University of New Mexico, Graduate Studies
in Electrical Engineering and Computer Science
University of Kansas, M.S. Electrical Engineering, 1967
University of Kansas, B.S. Electrical Engineering, 1966 (With Distinction)

PROFESSIONAL HISTORY

1964 - 1968	University of Kansas
1968 - 1973	Sandia Laboratories
1973 - present	MPR Associates, Inc.(currently as a special assignment employee)

EXPERIENCE

Mr. Betlack has worked in the fields of electrical engineering and computer science since 1964. Specific activities have included the design, analysis, development and testing of computer systems and components (both hardware and software), electrical and electro-mechanical systems and components, and instrumentation and controls. Projects have involved data acquisition, processing, monitoring, simulation and control computer systems, database systems, test facility and power plant instrumentation and controls, and modeling and simulation of power plants and power plant equipment including steam generators, turbines, pumps, instrumentation, controls and electrical equipment. The design and analysis activities, including troubleshooting and plant life extension evaluations, have involved extensive in-plant experience. Projects have also included seismic functionality evaluations of relays and other electrical equipment, and vibration monitoring and testing of such equipment. Specific examples of Mr. Betlack's experience include:

Design, Development, and Evaluation of Computer Systems

Designed, developed, implemented and tested on-line and real-time computer systems used in support of flight, environmental, and full-scale testing. Specific activities have included feasibility studies, systems analysis and design, software development, preparation of functional specifications, component and system specifications, component and system procurement, data acquisition and reduction, acceptance and benchmark tests, and system and component evaluations.

Participated as a committee member and writer of several Electric Power Research Institute (EPRI) guidelines for design, development, licensing, and dedication of digital I&C system upgrades for the nuclear industry.

Evaluated the design and standards compliance of several power plant instrumentation, control, and protection digital systems.

Design and development of a networked environmental monitoring system.

Design and Development of Instrumentation and Controls (I&C)

Designed and coordinated the development and check-out of power plant I&C equipment including a reactor coolant pump seal leakage flowmeter, an ultrasonic level sensing system controller, and a nuclear plant steam generator cleaning system controller.

Specified, reviewed and provided oversight of the design, development, installation and testing of a five-instrument two-phase flowmeter and other advanced instruments used in international reactor safety test facilities.

Developed instrumentation and monitoring capabilities for the evaluation of equipment problems including fan vibration and pump seal rubbing.

Technical lead for implementation of U.S. Nuclear Regulatory Commission (USNRC) Regulatory Guide (R.G.) 1.97 design requirements at a nuclear power station.

Life Extension Evaluations

Performed life extension evaluations of electrical equipment, instrumentation and controls in over 15 fossil and nuclear plants.

Relay/Control Seismic Functionality Evaluations

Developed relay seismic functionality evaluation procedure for application in resolving USNRC Unresolved Safety Issue (USI A-46) and Individual Plant Examination of External Events (IPEEE). Coordinated and evaluated seismic testing of over 150 relays in support of the nuclear power industry resolution of USI A-46.

Performed and reviewed relay seismic functionality evaluations for several nuclear plants.

Training and Teaching

Taught over 20 industry training courses on USI A-46 relay seismic functionality evaluation and courses on computer-based I&C systems. Teaching assistant in logic design and laboratory instructor for computer science and programming at the University of Kansas.

MEMBERSHIPS

Tau Beta Pi - National Engineering
Eta Kappa Nu - National Electrical Engineering
Instrument Society of America (ISA)-Senior Member
Registered Professional Engineer – Maryland

PUBLICATIONS

Publications have consisted of many reports, software documents and internal design and evaluation documents at MPR, Sandia Laboratories, and CRES (University of Kansas Research Center). These have included:

- Master's Thesis -- "A Preprocessor for Multi-Spectral Images."
- SC-DR-21-0419 -- "Area III Automated Data Processing System."
- SC-TM-69-509 -- "Operations and Maintenance Documents for Program FIXCAM."
- EPRI NP-7148 -- "Procedure for Evaluating Nuclear Power Plant Relay Seismic Functionality." (Primary author).
- EPRI TR-107980, "I&C Upgrades for Nuclear Plants -- Desk Reference 1997," December 1997.
- EPRI TR-107339, "Evaluating Commercial Digital Equipment for High Integrity Applications," December 1997 (Co-writer).
- EPRI TR-106436, "Guidance on Evaluation and Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Applications," October 1996 (Co-writer).
- EPRI TR-102348, "Guideline on Licensing Digital Upgrades," December 1993 (Co-writer).

Presentations on digital I&C, database systems, and relay seismic functionality evaluation and testing have been made at national and international conferences including:

- EPRI International I&C Conference (December, 1997).
- ANS 1994 Winter Meeting
- EPRI Workshop on Licensing Issues Concerning Digital I&C Upgrades for Nuclear Power Plants (March, 1992).
- 10th International Conference on Structural Mechanics in Reactor Technology (SMIRT).
- 3rd Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment and Piping.
- 6th Water Reactor Safety Information Meeting of the U.S. Nuclear Regulatory Commission.

JOHN O. DIZON, P.E.

PROFESSIONAL HISTORY

Facility Risk Consultants, Inc., Fremont, Callifornia & Huntsville, Alabama, President, 2002-present
ABS Consulting (formerly EQE International), Oakland, California, Director and VP of Facility Risk, 2000-2002
EQE International, Oakland, California, Vice President, 1998-2000; Associate, 1991-1998; Senior Engineer, 1986-1991
Engineering Decision Analysis Company, Cupertino, California, Senior 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 25 years of experience in the field of civil and structural engineering, earthquake engineering, risk assessment and project management. He has extensive knowledge in the areas of seismic analyses and design assessments of primary structures and piping systems, seismic upgrade and retrofit design, seismic qualification of mechanical and electrical systems and components, and technical development of seismic evaluation criteria and programs for various industries, including power, oil and gas, petrochemical, and high tech process and manufacturing facilities. Mr. Dizon has undertaken and managed a wide variety of seismic projects, ranging from traditional structural engineering design and seismic retrofits to complex nuclear power plant and DOE facilities' seismic verification projects.

As President of Facility Risk Consultants, Mr. Dizon is currently managing all associated tasks under a subcontract with Bechtel Power Corporation for all seismic-related issues associated with Browns Ferry Unit 1 Restart Project for Tennessee Valley Authority. The seismic works include USI A-46/IPEEE implementation programs, seismic II/I spray hazard evaluations, new cable routing utilizing the SQUG/GIP methodology, MSIV seismic ruggedness verification, among others. Currently, he is also actively involved in the development of seismic II/I design criteria for distribution systems and equipment for DOE's PDCF project, under a subcontract with the Washington Group, Inc. In addition, Mr. Dizon is participating as a subject matter expert witness in a litigation project for a large foreign company in the area of seismic performance of structures, piping systems and associated equipment associated with earthquake damges in a coal-fired power plant located in South America.

As EQE Project Manager for various seismic programs associated with the restart of Browns Ferry Units 2 and 3, Mr. Dizon was responsible for all engineering activities associated with USI A-46

resolution and seismic IPEEE implementation; seismic proximity and II/I spray interaction evaluations; MSIV seismic ruggedness verification; cable tray and conduit raceway and supports; and HVAC support evaluation programs. These activities consisted of seismic criteria development, seismic walkdown assessments and mitigation of findings, including retrofit designs and plant upgrades. He was also responsible for the A-46 seismic evaluation program for major equipment items at Davis-Besse, Duane Arnold and H.B. Robinson power plants. Mr. Dizon also served as Project Manager for the HVAC seismic verification program at Salem Nuclear Plant, MSIV seismic projects at Hope Creek and Brunswick plants, and participated in a number of related seismic evaluation projects at Sequoyah, Watts Bar, Bellefonte, Pickering A, Bruce A, Forsmark, Liebstadt, among others.

As Managing Director of EQE's Hsinchu, Taiwan project office following the 1999 Chi-Chi earthquake, he was in charge of the region's business development and project management. Mr. Dizon managed a number of seismic risk assessment and structural upgrade projects for the high tech industry, including seismic consultation on a number of projects for Taiwan Semiconductor Manufacturing Co., seismic strengthening projects for United Microelectronics, Applied Materials, Winbond Electronics and Macronix International in Taiwan. In addition, he also managed the seismic upgrades for the Cypress Semiconductor and Amkor facilities and seismic design review project for IBM in the Philippines, seismic risk assessment for AMP facilities in Japan, and seismic assessment of structural and non-structural components of several Intel fab plants in the Northwest region in U.S., among others.

As Group Manager for EQE at the US Department of Energy 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; managing the seismic walkdown and evaluation efforts; providing technical support in resolving seismic issues; and serving as an interface with the client. Mr. Dizon was also responsible for the seismic walkdown and evaluation of various distribution systems at the Pantex Facilities, including developing the walkdown screening criteria and evaluation acceptance criteria. 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. Other DOE facilities he has involvement with included Los Alamos, Livermore and Hanford sites. Mr. Dizon has also been involved in a number of risk assessment programs for petrochemical plants and refineries, including seismic walkdowns at the Imperial West Chemical plants in Pittsburg and Antioch, CA; Tosco Refinery in Avon, CA; and Dupont Chemical plant in Antioch, CA, among others.

At EDAC, Mr. Dizon was responsible for the development and verification of a pipe support optimization program (OPTPIPE) and was involved in a number of snubber reduction pilot projects. 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.

With General Electric Company, Mr. Dizon was responsible for stress analysis and code conformation of main steam and recirculation piping systems for generic BWR 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 linear and nonlinear dynamic analyses, finite element modeling, and generation of floor response spectra for several nuclear power plants. 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.

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 several BWR plants for the various types of hydrodynamic loads. He was involved in a BWR in-plant test procedures, data reduction and correlation study to determine the dynamic response, including soil-structure interaction of the reactor/control buildings during GE Mark II reactor 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

SELECTED PUBLICATIONS

With S. J. Eder, and R. D. Cutsinger. 2003. " Browns Ferry Cable Tray Evaluations." Presented to the SQUG/SEQUAL Annual Meeting, San Antonio, TX, December 10-12, 2003.

With S. J. Eder. 2003. " Technical Position Paper for Seismic II/I Design of Cable Tray Raceway Systems at PDCF." Presented to Washington Group, Inc., December 2003.

With S. J. Eder, W. H. Tong, and E. H. Wong, 1999. "Chichi, Taiwan Earthquake of September 21, 1999 (M7.6). An EQE Briefing. Oakland, CA. October, 1999.
With S. J. Eder. 1998. "Risk Management for Power and Industrial Facilities -- Focus on Business Interruption". Second Biennial Federation of Asian Pacific & African Risk Management Organization. Manila, Philippines. October, 1998.
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. Glova, 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.

"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.

STEPHEN J. EDER, P.E.

PROFESSIONAL HISTORY

Facility Risk Consultants, Fremont, California, Chief Executive Officer, 2003-present

ABS Consulting, Houston, Texas, Vice President, North Asia Pacific Region, 2001-2003

EQE International, San Francisco, California, Senior Vice President, 1985-2001 (ABS Purchased EQE in 2000).

URS/John A. Blume & Associates, Engineers, San Francisco, California, 1982-1985

J. G. Bouwkamp, Inc., Structural Engineers, Berkeley, California, 1981-1982

PROFESSIONAL EXPERIENCE

Mr. Stephen J. Eder provides senior engineering and management consultant services, licensing support, and expert testimony in the fields of natural hazards risk assessment, seismic analysis, structural performance evaluation, and retrofit design. His background includes project management, engineering, risk management, and planning for domestic and multinational corporations, insurance and financial institutions, construction companies, utilities, and the government. Mr. Eder is based in Madison, Alabama.

Prior to Facility Risk Consultants, Mr. Eder was stationed in Tokyo, Japan for 8 years and led all operations for ABS Consulting Inc. (formerly EQE International, Inc.) in Japan, China, Korea and Taiwan -- including risk consulting, structural engineering and design, probabilistic financial loss estimation, and the development and maintenance of management systems.

Mr. Eder has performed many post-earthquake reconnaissance studies -- most notably he led investigations of the M8.4 earthquake in Arequipa, Peru of June 2001; the M7.6 earthquake in Chichi, Taiwan of September 1999; and he was lead investigator of the M8.1 earthquake in Mexico of September 1985, for the US Electrical Power Research Institute (EPRI).

Prior to his assignment in Japan, Mr. Eder focused primarily in the seismic risk evaluation and seismic retrofit design of critical equipment and systems. Mr. Eder pioneered the development of many seismic risk evaluation procedures and criteria for the US and European nuclear power industry, the Seismic Qualification Utilities Group (SQUG), and the US Department of Energy (DOE). This included conducting a series of week-long seismic evaluation training courses for a total of about 500 engineers, and serving as subject matter expert and technical liason for industry groups.

Mr. Eder served as project manager or project consultant for the seismic risk surveys of critical equipment and systems at about 60 nuclear power plants in the US and Europe, and many DOE facilities. He has developed unique, cost-effective structural designs for new installations and seismic strengthening of structures, equipment, and distribution systems including raceways, piping, and HVAC ducting. He performed research for and supported many U.S. industry and professional groups, to advance the state-of-the-art of seismic risk assessment techniques and seismic design guidelines.

EDUCATION

UNIVERSITY OF CALIFORNIA, Berkeley: M.Eng., Structural Engineering and Structural Mechanics, 1982

CLARKSON COLLEGE OF TECHNOLOGY, Potsdam, New York: B.S., Magna Cum Laude, Civil and Environmental Engineering, 1980

REGISTRATION

California: Civil Engineer, 1985

Alabama: Civil Engineer, 2003

PROFESSIONAL AND BUSINESS AFFILIATIONS

American Society of Civil Engineers

Earthquake Engineering Research Institute

Structural Engineers Association of Northern California

Applied Technology Council

Tau Beta Pi National Engineering Honor Society

Phi Kappa Phi National Honor Society

American and British Chambers of Commerce in Japan

COMMITTEES -- PAST EXPERIENCE

- *Electric Power Research Institute* - Post Earthquake Investigation Team - Leader
- *U.S. Department of Energy* – Tiger Team Member – Natural Hazards Risk Analysis
- *U.S. Department of Energy* - Steering Committee on Natural Hazards – Technical Liason – Mechanical and Eletrical Equipment Evaluation and Design
- *Seismic Qualification Utility Group* – Equipment Seismic Evaluation Training – Lead Instructor and Subject Matter Expert
- Joint *American Society of Mechanical Engineers* and *Institute of Electrical and Electronics Engineers* - Special Seismic Qualification Working Group - CoChairman
- *National Center for Earthquake Engineering Research* – Critical Equipment Seismic Risk Analysis – Chief Researcher
- *National Fire Protection Association* (NFPA) – Seismic Technical Committee Member, NFPA-13.
- *Building Seismic Safety Council* - Seismic Rehabilitation Advisory Panel Member – Mechanical Equipment. NEHRP, FEMA 273.
- *American Society of Civil Engineers* – Electrical Raceway and HVAC Duct Seismic Design - Working Groups
- *Structural Engineers Association of California* - Seismology Subcommittee - Non-Building Structures and Equipment

SELECTED PUBLICATIONS & PRESENTATIONS

"Analysis of Ilo2 Plant Components Affected by the June 23, 2001 Mw 8.4 Arequipa, Peru Earthquake". Prepared for Hitachi Corporation. December 2002. Presented in London, U.K.

"The Use of Modeling and Natural Risk Analysis for Power Plants". Presented at Second International Conference on Mitigating Your Risks in Energy. February 2002. Singapore.

"Using Risk Based Inspection Techniques to Assess Maintenance of Power Plants". 2002. Presented at Second International Conference on Mitigating Your Risks in Energy. February 2002. Singapore.

"Preparing Your Properties for Major Earthquakes". 2001. Prepared for Architecture, Construction, and Engineering Subcomittee, American Chamber of Commerce in Japan. December 2001. Tokyo.

"Earthquake Hazards and Earthquake Risks in Tokyo". 2001. TELS-Setagaya, Earthquake Disaster Information and Preparedness Seminar. October 2001. Tokyo.

"Geographic Information Systems". 2000. Prepared for Non-Life Insurance Institute, ISJ Advanced Course 2000 Program, Natural Hazards and Underwriting Capacity. November 2000. Tokyo.

With J. O. Dizon, W. H. Tong, and E. R. Wong, 1999. "Chichi, Taiwan Earthquake of September 21, 1999 (M7.6). An EQE Briefing. Oakland, CA. October, 1999.

With G.S. Johnson, R.E. Sheppard, M.D. Quilici, and C.R. Scawthorn, 1999. "Seismic Reliability Assessment of Critical Facilities: A Handbook, Supporting Documentation, and Model Code Provisions." Technical Report MCEER-99-0008. Multidisciplinary Center for Earthquake Engineering Research, Buffalo, NY.

"Earthquake Risk of Independent Power Producer Stations", 1999. Prepared for Lloyd's Japan Power Seminar. June 1999. Tokyo.

With J. O. Dizon. "Risk Management for Power and Industrial Facilities -- Focus on Business Interruption". Second Biennial Federation of Asian Pacific & African Risk Management Organization. Manilla, Philippines. October, 1998.

"3 Years After the Hanshin-Kobe Earthquake, Earthquake Risk Management, Damage Assessment and Mitigation". 1998. High Pressure Gase Safety Association of Japan. Vol. 35, No. 2 (1998). Tokyo.

With G. S. Johnson, R.E. Sheppard, and S.P. Harris. 1998. "A Method to Assess and Improve the Operational Reliability of Critical Systems Following Earthquakes." Presented at the 6th U.S. National Conference on Earthquake Engineering, Seattle, WA, June 1998.

With G. S. Johnson, R.E. Sheppard, and S.P. Harris. 1998. "The Development of Model Code Provisions to Address System Reliability Following Earthquakes." Presented at the ATC-29-1 Seminar on Seismic Design, Retrofit, and Performance of Nonstructural Components, San Francisco, CA, January 1998.

With D. W. Jones, M. K. Ravindra, C. R. Scawthorn, and K. Iida. 1996. "Earthquake Risk Management for Process Industries". High Pressure Gas Safety Institute of Japan. Vol. 35, No. 5 (1996). Tokyo.

With G. A. Antaki. 1994. "Recommended Provisions for Equipment Seismic Qualification Consistent with IEEE and ASME Criteria for Use of Experience." ASME 1994, PVP-Vol. 275-2, Seismic Engineering, Volume 2.

With P. J. Butler and R. P. Kassawara. 1994. "Application of the Generic Implementation Procedure Methodology to Demonstrate Seismic Adequacy of New and Replacement Equipment and Parts in USI A-46 Plants." ASME 1994, PVP-Vol. 275-2, Seismic Engineering - Volume 2. Proceedings American Power Conference, Illinois Institute of Technology, April 1994, Chicago, Illinois.

With N. P. Smith and R. P. Kassawara. 1994. "Future Direction for the Use of Earthquake Experience Data." Proceedings American Power Conference, Illinois Institute of Technology, April 1994, Chicago, Illinois.

With M. W. Eli and M. W. Salmon. November 1993. "Walkthrough Screening Evaluation Field Guide, Natural Phenomena Hazards at Department of Energy Facilities." UCRL-ID-115714, Revision 2. Lawrence Livermore National Laboratory.

"Seismic Design of Important Systems and Components--Functionality Considerations." 1993. Structural Engineers Association of Northern California, 1993 Fall Seminar, Nonstructural Components: Design and Detailing. San Francisco, California.

With C. Scawthorn, M. Zadeh, and G. Johnson. 1993. "Economic Impacts of Earthquake Damage to Nonstructural Components." 40th North American Meetings of the Regional Sciences Association International, Houston, Texas.

With M. W. Barlow, R. J. Budnitz, and M. W. Eli. 1993. "Use of Experience Data for DOE Seismic Evaluations." 4th DOE Natural Phenomena Hazards Mitigation Conference, Atlanta, Georgia.

With K. Porter, G. S. Johnson, M. M. Zadeh, and C. Scawthorn. 1993. "Seismic Vulnerability of Equipment in Critical Facilities: Life-safety and Operational Consequences." Technical; Report NCEER-93-0022. National Center for Earthquake Engineering Research.

With J. K. Arros. 1993. "Applications of Experience-based Methods for Seismic Qualification of Distribution Systems." Prepared for Advanced Reactor Corporation FOAKE ALWR Seismic Qualification Project.

With MPR Associates and Winston and Strawn. 1993. "Verifying the Seismic Adequacy of New and Replacement Equipment and Parts." Prepared for the SQUG Management Guidelines Document.

With Lawrence Livermore National Laboratory. 1992. "Program Plan for the Evaluation of Systems and Components in Existing DOE Facilities Subject to Natural Phenonema Hazards." Prepared for the U.S. Department of Energy.

With J. O. Dizon, P. D. Baughman, and G. S. Johnson. 1992. "Peer Review of the Watts Bar Nuclear Plant Integrated Interaction Program Suspended Systems Proximity Task." Prepared for Tennessee Valley Authority.

With G. S. Hardy, G. S. Johnson, and R. W. Cushing of EQE; MPR; S&A; and URS. 1992. "Walkdown Screening and Seismic Evaluation Training Course." Prepared for Seismic Qualification Utility Group.

With M. W. Salmon. 1992. "Technical Safety Appraisal of the Idaho Chemical Processing Plant, NPH Discipline." Prepared for the U.S. Department of Energy.

With M. W. Eli. 1992. "NPH Walkdown Evaluation Summary Report - Paducah Gaseous Diffusion Plant." Prepared for the U.S. Department of Energy.

With G. S. Johnson, R. H. Kincaid, and G. S. Hardy. 1992. "High-rise Building Critical Equipment Study." Prepared for National Center for Earthquake Engineering Research.

With K. E. Smith. 1992. "Seismic Performance of Standby and Emergency Power Engine Generator Systems." Prepared for National Center for Earthquake Engineering Research.

With M. W. Eli. 1991. "Use of Earthquake Experience Data." Prepared for the Third DOE Natural Phenomena Hazards Mitigation Conference, St. Louis, Missouri.

With J. O. Dizon. 1991. "Advancement in Design Standards for Raceway Supports and Its Applicability to Piping systems." PVP-Volume 210-1, Codes and Standards and Applications for Design and Analysis of Pressure Vessel and Piping Components. ASME 1991.

"Cable Tray and Conduit System Seismic Evaluation Guidelines." March 1991. EPRI Report NP-7151. Prepared for the Electric Power Research Institute. San Francisco, CA: EQE International.

With G. S. Johnson. March 1991. "The Performance of Raceway Systems in Strong-motion Earthquakes." EPRI Report NP-7150. Prepared for the Electric Power Research Institute. San Francisco, CA: EQE International.

With G. S. Johnson. March 1991. "Longitudinal Load Resistance in Seismic Experience Data Base Raceway Systems." EPRI Report NP-7153. Prepared for the Electric Power Research Institute. San Francisco, CA: EQE International.

With J. P. Conoscente and B. N. Sumodobila. March 1991. "Seismic Evaluation of Rod Hanger Supports for Electrical Raceway Systems." EPRI Report NP-7152. Prepared for the Electric Power Research Institute. San Francisco, CA: EQE International.

With Winston & Strawn, MPR Associates, Inc., etal. June 1991. "Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment." Revision 2. Prepared for the Seismic Qualification Utility Group.

With M. W. Eli and L. J. Bragagnolo. 1991. "Walkthrough Screening Evaluation Field Guide, Natural Phenomena Hazards at Department of Energy Facilities." Special Release for 3rd DOE Natural Phenomena Hazard Mitigation Conference, October 1991, St. Louis, Missouri.

With L. J. Bragagnolo and J. P. Conoscente. 1990. "A Proposed Methodology for the Seismic Design of Rectangular Duct Systems." Applied Technology Center (ATC) Seminar on Seismic Design and Performance of Equipment and Nonstructural Elements in Building and Industrial Structures, Irvine, California. ATC-29.

With J. J. Johnson and N. P. Smith. 1990. "Developments of the Seismic Qualification Utility Group." Applied Technology Center (ATC) Seminar on Seismic Design and Performance of Equipment and Nonstructural Elements in Building and Industrial Structures, Irvine, California. ATC-29.

With W. Djordjevic, J. Eidinger, and F. Hettinger. 1990. "American Society of Civil Engineers Activities on Seismic Design of Electrical Raceways." Current Issues Related of Nuclear Power Plant Structures, Equipment, and Piping. Proceedings of the Third Symposium, Orlando, Florida, December 1990.

With H. L. Williams. 1990. "Qualification of Cable Tray Supports by Earthquake Experience Data: Application at H. B. Robinson Plant" Current Issues Related of Nuclear Power Plant Structures, Equipment, and Piping. Proceedings of the Third Symposium, Orlando, Florida, December 1990.

With R. P. Kennedy, J. D. Stevenson, J. J. Johnson, W. R. Schmidt, and K. Collins. June 1990. "Watts Bar Civil Program Review." Prepared for Tennessee Valley Authority.

With J. P. Conoscente, B. N. Sumodobila, and S. P. Harris. 1989. "Seismic Fatigue Evaluation of Rod Hung Systems." Prepared for the *Tenth Conference on Structural Mechanics in Reactor Technology*, (SMiRT).

With P. D. Smith and J. P. Conoscente. December 1988. "SQUG Cable Tray and Conduit Evaluation Procedure." Paper presented at the Second Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment and Piping, Orlando, FL.

With P. I. Yanev. 1988. "Evaluation of Cable Tray and Conduit Systems Using the Seismic Experience Data Base." *Nuclear Engineering and Design* (North-Holland, Amsterdam) 107: 149-153.

With S. P. Harris, P. D. Smith, and J. E. Hoekendijk. October 1988. "Performance of Condensers and Main Steam Piping in Past Earthquakes." Report prepared for General Electric Nuclear Energy Boiling Water Reactor Owners Group. San Francisco: EQE Engineering.

With J. J. Johnson, G. S. Hardy, N. G. Horstman, G. Rigamonti, M. R. Reyne, and D. R. Ketcham. August 1988. "Technical Basis, Procedures and Guidelines for Seismic Characterization of Savannah River Plant Reactors." E. I. Dupont De Nemours & Co, Aiken, South Carolina.

With S. P. Harris, P. S. Hashimoto, J. O. Dizon, B. Sumodobila, G. M. Zaharoff, and L. J. Bragagnolo. March 1988. "Seismic Evaluation of the High Flux Isotope Reactor Primary Containment System." Report prepared for Martin Marietta Energy Systems, Inc. San Francisco: EQE Engineering.

With S. W. Swan, "Summary of the Effects of the 1985 Mexico Earthquake to Power and Industrial Facilities." Proceedings of the American Society of Civil Engineers International Conference on the 1985 Mexico Earthquake, Factors Involved and Lessons Learned, Mexico City, Mexico, September 1986.

With A. F. Kabir and S. Bolourchi, "Seismic Response of Pipes Supported on Complex Framing Systems." Proceedings of the American Society of Civil Engineers Structures Congress, New Orleans, Louisiana, September 1986.

With S. W. Swan, "The Mexico Earthquake of September 19, 1985; Performance of Power and Industrial Facilities," Proceedings of the Third U. S. National Conference on Earthquake Engineering, Charleston, South Carolina, August 1986.

"Performance of Industrial Facilities in the Mexican Earthquake of September 19, 1985," Electric Power Research Institute Report No. NP-4605, Project 1707-30 Final Report, Palo Alto, California, June 1986, also presented at the IEEE Power Engineering Society Summer Meeting, Mexico City, Mexico, July 1986.

"Earthquake Response Analysis of a Braced Offshore Platform," University of California, Berkeley (June 1982), also American Petroleum Institute, October 1982, San Francisco, California.

FARID ELSABEE

SUMMARY Engineering: Analysis, Design, Inspection / Audit, and Management

Over twenty five years of extensive experience in the nuclear power industry undertaking and managing retrofit and analysis projects. Experience includes linear and non-linear analysis of static and dynamic structural and mechanical systems where compliance with codes, standards, and specifications is required. The methods used include detailed finite element analyses. Expertise was acquired at both Architect / Engineer and consulting firms using and developing state-of-the-art analysis techniques for nuclear power plants. Experience includes plant walkdowns at DOE facilities (Rocky Flats and Hanford) and numerous nuclear power plants (including SEP and USI A-46 related walkdowns) for review of seismic adequacy of various types of equipment. Attended EPRI sponsored training programs and certification for:

- CHEC Family of Codes, for Erosion Corrosion
- Walkdown Screening and Seismic Evaluation for USI A-46 (as a Seismic Capability Engineer)
- Add-on Seismic IPE, Seismic PRA and SMA for Seismic IPE Reviews

EDUCATION

MS Civil Engineering (Structures), Massachusetts Institute of Technology, 1975
BS Engineering, SUNY at Stony Brook, 1973

EXPERIENCE

APPLIED ENGINEERING ASSOCIATES (1990 - present)

Principal with responsibilities in client development, applied mechanics projects, technical reviews and development and verification of CAE/CAD/FEM and data base management applications. Consulting projects consisted of:

» Providing Analysis and Field Support at TVA Browns Ferry Unit 1 (Through Facility Risk Consultants and Bechtel Corporation) for the following projects:

- Seismic evaluation and field walkdowns of plant Equipment in support of the resolution of USI A-46 requirements as a Seismic Capability Engineer. The work included plant mechanical and electrical equipment required for safe shutdown, including all plant cable tray and conduit systems. Evaluation of seismic II over I interactions, of piping and other support systems, was also performed to insure adequate non seismic supports in the vicinity of the safety related equipment. All work was performed per the requirements of the SQUG GIP. Recommendations for resolution of outliers were also prepared.

- Development of a generic design for the installation of new cable tray and conduit systems following the guidelines used in the USI A-46 evaluations. The designs were prepared and presented in a procedure format which is extremely easy to follow and implement by field electricians and engineers.

» Providing Stress analysis support at ABS Consulting for the following projects:

- Seismic analysis of the refueling machine at the Bruce Nuclear Power Plant using a finite element model of the machine and the entire supporting structure. The dynamic analysis was performed using a linear elastic model of the machine head and suspension assemblies as well as the supporting frames, columns, elevators, bridge and carriage. The analysis of the detailed model, using the SAP 2000 software, resulted in the elimination of numerous modifications planned for implementation prior to the restart of the unit.
- A three dimensional non-linear analysis of various Main Steam pipe clamps at snubber locations at the Pilgrim Nuclear power station. The clamp stresses were determined using static analyses of the non-linear models, which accounted for friction, gaps and interface loads at the pipe to clamp interface, using the ANSYS finite element program. The stress evaluations, performed for the mechanical loads applied by the snubbers to the pipe, were per the ASME Section III requirements.

» Providing Project Engineering support at Altran Corporation for several projects including:

- Analysis, testing, project engineering and coordination for the evaluation and analysis of Steam Generator internals at Indian Point Unit 2. The project was in support of the restart effort associated with the tube leak resulting from Primary Water Stress Corrosion Cracking at a Row 2 U-bend tube. The project consisted of FEA of tube support plates and U-bend tubes; crack initiation and growth studies; experimental testing of U-bends; development of degradation assessments, condition monitoring and operational assessment of the secondary side components.
- Analysis, design and implementation of a large bore snubber reduction project for the steam generator support structures at Indian Point Unit 2.
- Inspection of roof structures and supporting decks, including development of repair specifications, for Con Edison's 59th Street fossil station.
- Assessment, evaluation and closure of condition reports and preparation of structural, mechanical and piping calculation revisions for Indian Point Unit 2.

» Supporting Millstone Unit 2 (MP2) Design Engineering staff in day to day activities for a duration of six years, including their major recovery effort. Responsibilities included:

- Responsible engineer for seismic qualification and heavy load drop issues;
- Supporting the Configuration Management Project and Independent Corrective Action Verification Project (ICAVP) in investigating and addressing design basis issues and discrepancies in the areas of seismic equipment qualification, seismic structural analysis and design, heavy load drop analyses, and fuel rack design issues. This work was in support of the 50.54(f) effort and included interfacing with the NRC and the ICAVP contractor;

- Design Basis reconstitution of the reactor coolant loop system and the major NSSS components.
- Investigations of noted adverse conditions (Condition Reports) for design basis reviews of plant configurations;
- Review and preparation of FSAR changes and license amendments;
- Preparation of reportability and operability determinations, corrective actions and Licensee Event Reports;
- Preparation and review of plant modification packages for structural and equipment modifications;
- Preparation and review of calculations, DCN's, Technical Evaluations, Specifications and Procedures;
- Providing support for the reconstitution of the High Energy Line Break (HELB) program.
- Review and close out of administrative department items such as Assignment Requests, Engineering Work Requests, Project Files, etc.. and
- Providing vendor interface.

» USI A-46 and IPEEE related consulting services at Northeast Utilities for three plants (CY, MP1 and MP2). Work included development of a detailed project description, outline and plan, a program manual/instruction for the implementation phase, and a specification for new and replacement parts/components based on the EPRI/ STERI process to be used for plant end of life.

The project also included specific support for MP2 associated with plant walkdowns per the GIP (for USI A-46) and EPRI NP6041 (for IPEEE); interface with and managing other consulting companies; coordination of efforts between the appropriate Engineering and plant operations departments within the utility; preparing modification packages to correct identified outliers; providing response to NRC requests for additional information and justification of methods used (MP2's response on GIP Method A issues was identified by NRC as a good model to be used in other utilities' responses); providing interface with the NRC and SQUG steering group on generic responses to NRC questions; and preparing and updating final reports.

» Responsible for the structural aspects of an Appendix R fire protection modification which improved on the existing oil collection system to the RCP motors of a PWR unit.

» Seismic equipment qualification consulting services related to the MOV Generic Letter 89-10 (CY, MP1, MP2, MP3), USI A-46 & IPEEE (MP2) and numerous plant design changes (CY, MP1, MP2); including test plan development, seismic qualification (in accordance with IEEE 344-1975) and development of replacement part requirements for a complete hydraulic power unit and it's controls by shake table testing (CY). The GL 89-10 work included review and update of MOV seismic qualification (weak link) reports, for Northeast Utilities and New York Power Authority, covering six nuclear plants, to maximize the valve structural thrust capacity by eliminating conservatisms found in existing qualification reports and previously used criteria. Prepared, managed and implemented two associated modification packages.

» Development of a Seismic Equipment Qualification Manual, for Northeast Utilities, which is applicable to four nuclear units spanning in design basis history from the SEP plants to a recently designed plant which is in full conformance with the SRP.

» Development of a specification for the seismic evaluation of existing rod hung electrical raceway systems to allow addition of new cables as well as for the design of new systems.

» Evaluation of an Erosion / Corrosion inspection program for MP3 using EPRI's recommended practices. Supported the overall E/C program and the structural evaluation of the measured data at two plants (MP1 & MP2).

» Technical audits of the design and installation of piping, cable tray and conduit supports on the Philippines Nuclear Power Plant as part of an independent assessment of the design of the plant.

CYGNA ENERGY SERVICES (1985 - 1990)

Senior Project Manager
Technical Specialist
Division Manager

Responsibilities included development and verification of CAE/CAD/FEM applications, analysis and design, bid preparation, client development, project management and technical review for a number of diversified projects related to structural, equipment qualification, configuration management, licensing reviews, and Safety System Functional Inspections. Major specific projects included:

» Specialized evaluation of non-conformance's associated with wind, tornado and seismic events for mechanical and electrical components using finite element analysis and simplified calculations.

» Development and implementation of an asbestos survey program which included the identification, gathering and assimilation of the data into a computerized asbestos tracking system.

» Gathering, assimilation and compilation of data into a Data Base Management System (DBMS) for several inspection programs which are part of a major fossil plant life extension program.

» Independent review of a major drawing discrepancy resolution and update project. This effort which is part of the utility's configuration management program includes instrumentation, electrical, mechanical, and piping systems.

» Participated in the Safety System Functional Inspections (SSFI) of the pneumatic systems at a nuclear power plant. Responsibilities included preparations, inspections and reviews for structural and seismic related topics.

» Seismic and tornado evaluation of two existing structures against possible collapse using realistic structural characteristics and inelastic responses.

» Supervised and coordinated projects in the area of erosion/corrosion of carbon steel piping and microbe induced corrosion in buried lined pipes.

STONE & WEBSTER ENGINEERING CORPORATION (1973 - 1977 & 1984 - 1985)

Engineer
Project Management

Responsible for several specialized projects in the area of seismic equipment qualification and large bore snubber elimination. Also participated in the development of the state-of-the-art procedures for soil structure interaction analysis. A few of the more noteworthy projects include:

» Responsible for the analysis, design, and plant change packages for the elimination of large bore snubbers supporting steam generators and reactor coolant pumps on the primary coolant loop piping of three PWR's.

» Development of generic seismic acceptance criteria of non-safety related equipment and review of numerous seismic equipment qualification vendor reports; including performing a seismic re-qualification of a 125 ton crane while accounting for its flexible girder support system.

» Evaluation and resolution of safety related hazards resulting from postulated internally generated missiles.

» Performed seismic analyses of various structures, including both detailed and simplified soil-structure interaction procedures and developed structural design forces and in-structure response spectra.

» Performed dynamic analyses of a BWR Mark II containment structure for hydro-dynamic loads.

URS/JOHN A BLUME AND ASSOCIATES (1979 - 1984)

Equipment Qualification
Project Manager

Developed specialized expertise in the area of seismic equipment qualification. Experience includes the development and implementation of full-scale seismic shaking-table testing programs; in-situ low-level excitation modal testing programs; innovative, state of the art techniques in seismic qualification by combined testing and analysis procedures; and field investigations / plant walkdowns consisting of "Expert Earthquake Engineers" to evaluate the seismic ruggedness of existing equipment. Attended and participated in early SQUG meetings where development of seismic equipment evaluation methods using experience gained from performance of equipment during strong motion earthquakes was being formulated. Some of the projects undertaken include:

» Development of realistic anchorage guidelines for EPRI and SQUG to be used in the SQUG-GIP for the resolution of generic issue A-46.

» Seismic evaluation of various types of mechanical and electrical equipment at nuclear power plants using finite element and simplified analyses, in-situ testing, shake-table testing and combined techniques. Some of the more significant equipment have included existing laterally flexible cable trays and conduits at the SEP plants (this work was subsequently used by the SQUG in the development of the GIP guidelines), control room panels and boards, motor control centers, switchgears and diesel generators.

» Evaluation of more than 60 items of mechanical and electrical equipment for seismic and tornado loads at the DOE Rocky Flats Facility. Structural integrity and operability evaluations for the seismic effects were performed using analytical techniques, in-situ modal testing, and full-scale shaking-table testing.

» Evaluation of the seismic ruggedness of existing equipment at the DOE Hanford facility and the Nine Mile Point Unit 1 nuclear power plant as a member of a team of "Expert Earthquake Engineers".

IMPELL CORPORATION (EDS Nuclear) (1977 - 1979)

Supervisor
Senior Engineer

Responsible for the technical and administrative management of specialized projects such as pipe ruptures, finite element analysis and soil structure interaction. Analysis and development of pipe restraint design loads due to pipe whip and jet impingement effects resulting from postulated pipe breaks at several nuclear power plants. Analysis procedures included both simplified energy balance techniques and detailed non-linear analysis.

Responsible for the structural design evaluation of miscellaneous structural steel frames for pipe support and pipe rupture loads.

Performed the seismic analysis of all Category I structures at a BWR plant including soil structure interaction and generation of design forces as well as amplified floor response spectra.

Performed static and dynamic analysis of a BWR Mark I suppression pool torus for hydrodynamic loads.

Responsible for finite element stress analysis of various piping components such as sweepolets, reducers, and anchoring devices.

PUBLICATIONS

"Seismic Investigation of Electrical Raceway Components," with L. Serdar, Jr. and D. Williams, ASME paper 84-PVP-43, PVP Conference and Exhibition, San Antonio, Texas (June 1984)

"A Seismic Evaluation Study of Mechanical and Electrical Equipment at an Existing Nuclear Handling Facility," with L. Serdar, Jr., et al., 7th International Conference on Structural Mechanics In Reactor Technology, Chicago, Illinois (August 1983)

"Seismic Evaluation of Electrical Raceway Systems," with S. Anagnostis and W. Djordjevic, ASME paper 83-PVP-18, 4th National Congress on Pressure Vessel and Piping Technology, Portland, Oregon (June 1983)

"A Survey and Assessment of Major Mechanical Equipment Capability During Seismic Events," with W. Djordjevic, ASME Pressure Vessel and Piping Conference and Exhibit, Orlando, Florida (June 1982)

"The Spring Method For Embedded Foundations," with E. Kausel, et al., Nuclear Engineering and Design Journal, Volume 48 (August 1978)

"Dynamic Analysis of Embedded Structures," with E. Kausel, et al., 4th international Conference on Structural Mechanics In Reactor Technology, San Francisco, California (August 1977)

"Dynamic Stiffness of Embedded Foundations," with E. Kausel, and J. M. Roesset, ASCE 2nd Annual Engineering Mechanics Division Speciality Conference, North Carolina (May 1977)

"Static Stiffness Coefficients For Circular Foundations Embedded In An Elastic Medium," M. S. Thesis, Massachusetts Institute of Technology, Cambridge, Massachusetts (June 1975)

ROBERT D. HOOKWAY, P.E.

PROFESSIONAL HISTORY

Hookway Engineering, Consulting Engineer, 1996-present
EQE International, Stratham, New Hampshire, Technical Manager, 1990-1996
Teledyne Engineering Services, Waltham, Massachusetts, Manager, 1967-1990

PROFESSIONAL EXPERIENCE

Mr. Hookway has over 35 years of professional engineering and project management experience. Specific background experience includes project management for design, analysis and evaluation of piping system and pressure vessels, supports and structures in power generation stations (fossil and Nuclear), petrochemical facilities, and Navy nuclear installations considering weight, thermal, seismic and dynamic loadings.

As a member of the ASME Section III Working Group on Piping Design, ASME B31.3 Main Piping Committee, and a past member of the ASME Section III Special Working Group on Seismic Design Rules, he is familiar with the requirements of and is involved in the development of these design codes for piping. Past projects include: litigation support for fossil plant piping failure, seismic evaluation of piping, mechanical, electrical and I & C equipment at the Paks Nuclear Plant in Hungary, seismic upgrade of piping at various U.S. Nuclear facilities, anchor bolt study to investigate the dynamic capacities of concrete expansion bolts, seismic margins evaluation of critical piping at the Haddam Neck Nuclear Plant, various piping design and evaluation projects at nuclear and fossil generation stations, petrochemical and cryogenic plants.

Mr. Hookway has completed the Seismic Qualification Utility Group (SQUG), Seismic Capacity Engineer (SCE) training required by the USNRC for A-46 evaluations. He has been involved with A-46 and other similar projects at numerous nuclear facilities in the U.S. and Internationally. Project management responsibilities include a variety of piping, mechanical, and civil/structural consulting engineering projects. Tasks include project planning, technical direction, manpower assignment, cost and schedule control, client interface, and writing of technical procedures.

Some of Mr. Hookway's specific projects include the following:

- Design Review support for General Electric HRSG' projects. The scope includes a detailed review of the design process for all Balance of Plant high energy piping systems and pipe supports provided by the G.E selected Architect Engineer. Services also include general consulting to GE on an as-needed basis regarding ASME code compliance and piping design.

- Design Analysis & Evaluation for numerous LNG facility upgrade projects.

- Expert witness and engineering support for litigation of feedwater piping flow accelerated corrosion (erosion/corrosion) failure at a midwest fossil powered electric generation plant. Engineering support for this project included complete documentation search and reviews, plant operations and maintenance reviews, detailed system flow evaluations, white paper preparation for various associated issues, depositions, deposition reviews and technical

guidance for the legal staff. Discipline expertise for this project included pipe stress and design, failure evaluation, metallurgical, fluid mechanics, non-destructive examination and water chemistry.

- Millstone II Nuclear Power Plant 9/97-present: Design Engineering support for resolution of piping design issues considering weight, thermal expansion, seismic and other dynamic loadings to satisfy US Nuclear Regulatory Commission concerns relative to configuration control of the plant. In addition, provided support for the corrective action department performing Condition Report investigations, Root Cause analyses, Corrective action prescription, Operability Determinations, and Licensee Evaluation Reports (LER) preparation.

- Millstone III Nuclear Power Plant - 11/96-8/97 50.54f Restart Oversight Group - participated in the assessment of numerous systems (SSFI/vertical slice) in addition to the assessment of selected engineering programs such as erosion/corrosion, stress data packages, Seismic Design, Active Valves and Components, P&ID Upgrades, and Component Labeling.

- Connecticut Yankee Nuclear Plant - 6/96-11/97 Configuration Management Program (CMP) responsible for all structural tasks within the CMP. Tasks included Graded System Reviews and Topical Reports for selected Engineering Programs (e.g. Seismic Design, Piping Design and Structural Design)

- Task manager for the recently completed seismic qualification task for the Category I(L) piping at Tennessee Valley Authority's Watts Bar Nuclear Plant. This task included the walkthrough and bounding case evaluations for all piping interaction issues (proximity, shakespace flexibility and II/I).

- Lead engineer for the seismic upgrade of equipment at the Paks Nuclear Power Plant in Hungary. The plant is a four unit VVER type 213 Russian design plant. The project included walkdown screening evaluation for all equipment, seismic capacity evaluations and preparation of modification designs.

- Project manager for the expansion anchor bolt study to remove conservatism in design criteria for nuclear power plants, including dynamic anchor bolt testing as part of the EPRI study of Improved Guidelines and Criteria for Nuclear Piping and System Evaluation and Design. Scope of work included test plan preparation, supervision of anchor bolt testing, interpretation of test data, final report preparation, and EPRI interface.

- Project manager for anchor bolt testing in cracked concrete. The purpose of this project was to develop capacities for epoxy anchor bolts and to assist in the development of epoxy anchor bolts use for the power industry.

- Design, analysis, and evaluation of nuclear Class 1, 2, and 3 piping systems. Plants include Nine Mile 1, Vermont Yankee, Millstone 1, Hatch 1, Hatch 2, North Anna I, North Anna II, Davis Besse, DC Cook, Millstone 2, Millstone 3, Pilgrim, Fitzpatrick Hope Creek, and Monticello.

- Preparation of design specifications for Class 1 piping systems.

- Project management for various failure evaluation, plant modification, and new system design projects.

- Lead engineer for the evaluation of various pressure vessels, heat exchangers and valves for navy nuclear, commercial nuclear and process plant facilities.

- Direct interface with the NRC and provided technical management services. As project manager for "The Study to Determine the Effects of Hydrodynamic Loads on the Control Rod Drive Piping System for BWR Plant Designs," he managed the technical investigation and provided a communication link between the BWR Owner's Group (which included 11 utilit4ies and 1 plants) and the NRC.

- Participated in design reviews for the Millstone I, Vermont Yankee, Nine Mile Point I, LaSalle, and Comanche Peak (which was under contract to the NRC).

- A study to "Determine the Effects of Postulated Events Devices on Normal Operation of Piping systems in Nuclear Power Plants" the NRC. The results of this work contributed to the refinement of code criteria and NRC regulatory guides for seismic pipe whip restraint design. Plants included in the study included Farley Unit 2, Diablo Canyon and Zimmer.

- A study to upgrade the design criteria for submarine sea connected piping using high strength thin-walled piping material. This work was performed for the David Taylor Naval Research Center.

EDUCATION

NORTHEASTERN UNIVERSITY, Boston, MA: M.S. Mechanical Engineering, 1970
LOWELL TECHNOLOGICAL INSTITUTE: B.S. Mechanical Engineering, 1963

AFFILIATIONS

Member, ASME Section III Working Group Piping Design
Member, ASME B31.3 Chemical Plant and Petroleum Piping Committee
Member, Past Vice Chair, Pressure Vessel and Piping Subcommittee of the ASME NED
Past Member ASME Section III Special Working Group Seismic Design Rules
American Society of Mechanical Engineers

REGISTRATION

Professional Engineer: Massachusetts
Professional Engineer: Virginia

PUBLICATIONS

"Effects of Postulated Events Devices on Normal Operation of Piping Systems in Nuclear Power Plants." 1981. NUREG/CR-2136. U.S. Nuclear Regulatory Study.

With S. J. Eder and T. R. Kipp. 1991. "Commodity Clearance Requirements." Engineering Specification N3C-941. Prepared for Tennessee Valley Authority.

With S. J. Eder and T. R. Kipp. 1991. "Seismic Qualification of Category I(L) Fluid System Components and Electrical or Mechanical Equipment." Design Criteria WB-DC-40-31.13. Prepared for Tennessee Valley Authority.

With S. J. Eder and T. R. Kipp. 1991. "Seismic Design Specification for Category I (L) Piping, Pipe Supports, and In-line Components." Engineering Specification N3C-943. Prepared for Tennessee Valley Authority.

With R.D. Campbell, T.R. Roche, P.D. Baughman, S.J. Eder 1995 "Use of Seismic Experience Data for Seismic Verification of VVER Reactors" International Atomic Energy Agency Coordinated Research Program.

RICHARD L. W. TIONG, P.E.

PROFESSIONAL HISTORY

Independent Consultant, 2000 - present
EQE International (S) Pte. Ltd, Singapore, Senior Consultant, 1995 - 2000
EQE International, Irvine, California, Project Engineer to Technical Manager and Associate, 1986 - 1995
Structural Mechanics Associates, San Ramon, California, Staff Engineer, 1982 - 1985

PROFESSIONAL EXPERIENCE

Mr. Tiong has over twenty years of experience in the technical execution of projects requiring the design, construction, and integrity evaluation of civil structures. He started his consulting practice in California in 1982 after graduation from the Master's program at UC Berkerley, California, where he specialized in structural engineering and structural mechanics with emphasis on the seismic aspects. He has been involved in a wide variety of projects such as seismic risk assessment, structural and equipment fragilities quantification, soil-structure interaction analyses of nuclear facilities, earthquake protection of structures and critical equipment against seismic-induced damage, risk-based inspection (RBI) of offshore platforms, among others. He has performed numerous post-earthquake investigations in California, Japan, Taiwan and Indonesia. Some salient aspects of his previous work experiences are summarized in the following.

Mr. Tiong was exposed to detailed finite element analysis work in the early 80's while working for Structural Mechanics Associates, California. He is also well-versed in performing seismic response analyses including the effects of dynamic soil-structure interaction. He has also participated in research projects aimed at calibrating analytical methods for estimating structural response using actual recorded data obtained during strong motion earthquakes. These projects involved the Lotung scale model containment structures located in Taiwan, and the Pacific Bell telephone building at Watsonville. Mr. Tiong is conversant with Seismic Probabilistic Risk Assessment (PRA) and Seismic Margins methodology as practiced in the US for nuclear facilities, having direct involvement in over 10 such studies in the U.S., Japan and Korea. This type of study focuses on realistic failure modes of structures and components, to determine realistic factors of safety under seismic conditions.

Since joining EQE in 1986, Mr. Tiong participated in numerous seismic projects utilizing both the conventional structural dynamics as well as experience-based methodologies. These included the Seabrook cable tray seismic evaluation project, Browns Ferry Unit 2 cable tray and conduit seismic verification, and Comanche Peak II/I evaluation for non-safety, non-seismic large and small bore piping. He had contributed significantly in the early development work on the limited analytical review guidelines for SQUG conduit and cable tray raceway supports. Mr. Tiong completed the SQUG-sponsored walkdown screening and seismic evaluation training course as Seismic Capability Engineer in January 1993, and was actively involved in numerous seismic verification walkdowns of nuclear power plant equipment to support USI A-46 resolution for many U.S. plants.

In late 1995, Mr. Tiong transferred to EQE's Singapore office where his interests expanded to areas such as infrastructure design, structural integrity/damage assessment and rehabilitation activities. The type of structures included commercial buildings, manufacturing facilities, bridges, marine terminals and offshore structures. In December 1998, he was engaged by insurance interests to perform earthquake damage assessment at a large timber processing facility in Indonesia. He formulated and directed the field investigation program and retrofit design for a building owned by Unocal in Indonesia. The building suffered from under-strength concrete and required retrofit strengthening to meet ACI code. He has also performed integrity assessment of a jetty, including load test to address short-term operability concerns. He has also performed seismic evaluation walkdowns of mechanical and electrical equipment on an offshore platform located in Baku, Azerbaijan.

Practicing as an independent consultant since 2000, Mr. Tiong has been actively involved in the seismic strengthening of semiconductor manufacturing equipment and distribution systems in several wafer fabrication plants, and seismic consultation and design review for new fab construction in Hsin-Chu and Tainan Science-Based Parks in Taiwan. He is also involved in the seismic risk assessment of several oil refineries for Mitsubishi in Japan, RBI projects for BP/Amoco in Indonesia and Thailand. Currently, Mr. Tiong is actively involved in the Browns Ferry Unit 1 restart project

EDUCATION

UNIVERSITY OF CALIFORNIA, Berkeley: M.S. Structural Engineering and Structural Mechanics, 1981

UNIVERSITY OF LONDON, England: B.Sc (Engineering) 1st Class Honors, Civil Engineering, 1978

REGISTRATION

California: Civil Engineer since 1984

PUBLICATIONS

A selection of technical reports and journal articles for which Mr. Tiong is a principal contributor are lised below:

With A.P. Asfura, et. al., "Seismic Analysis of Multiple Supported Bridges," *Conference Proceeding, Bridge into the 21st Century,* Hong Kong, 2-5 October, 1995.

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

With M.K. Ravindra, "Comparison of Methods for Seismic Risk Quantification." *Proceedings of 10th SMiRT Conference*, Anaheim, California, August 14-18, 1989.

With O.R. Maslenikov, J.J. Johnson, and M.J. Mraz, "Seismic Analysis of the MFTF Facility." In *Proceeding of 8th SMiRT Conference*, Brussels, Belgium, August 19-23, 1985.

With O. R. Maslenikov, J.J. Johnson, M. J. Mraz, S. Bumpus, and M.A. Gerhard. "SMACS - A System of Computer Programs for Probabilistic Seismic Analysis of Structures and Subsystems, Volume I User's Manual, Volume II Example Problem." SMA 12211.31.01/12211.31.02. Prepared for *Lawrence Livermore National Laboratory,* 1984

With J.J. Johnson and B.J. Benda. "Stress Analysis of the Neutral Beam Pivot Point Bellows for Tokamak Fusion Test Reactor." In *Proceeding of the 10th Symposium on Fusion Engineering*, Philadelphia, PA, 1983.

APPENDIX B

COMPOSITE SSEL

APPENDIX B
COMPOSITE SSEL

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
10001	00	1-HCU-85,1-185	CRD/HYDRAULIC CONTROL UNIT	U1 RB	565	R2 & R6/P-S	AI	1,2
10002	07	1-FCV-85-82A	CRD/WEST SDV VENT VALVE	U1 RB	565	R2/S	AI	1
10003	07	1-FCV-85-82	CRD/WEST SDV VENT VALVE	U1 RB	565	R2/S	AI	2
10004	07	1-FCV-85-37C	CRD/WEST SDV DRAIN VALVE	U1 RB	565	R2/P	AI	1
10005	07	1-FCV-85-37D	CRD/WEST SDV DRAIN VALVE	U1 RB	565	R2/P	AI	2
10006	07	1-FCV-85-83A	CRD/EAST SDV VENT VALVE	U1 RB	565	R6/S	AI	1
10007	07	1-FCV-85-83	CRD/EAST SDV VENT VALVE	U1 RB	565	R6/S	AI	2
10008	07	1-FCV-85-37E	CRD/EAST SDV DRAIN VALVE	U1 RB	565	R6/P	AI	1
10009	07	1-FCV-85-37F	CRD/EAST SDV DRAIN VALVE	U1 RB	565	R6/P	AI	2
10010	21	1-TNK-85-901	CRD/WEST SCRAM INSTRUMENT VOLUME	U1 RB	565	R2/P	AI	1,2
10011	21	1-TNK-85-902	CRD/EAST SCRAM INSTRUMENT VOLUME	U1 RB	565	R6/P	AI	1,2
10012	08B	1-FSV-85-37A	CRD/SCRAM DUMP VALVE	U1 RB	565	R5/N	AI	1
10013	08B	1-FSV-85-37B	CRD/SCRAM DUMP VALVE	U1 RB	565	R5/N	AI	1
10014	08B	1-FSV-85-35A	CRD/BACKUP SCRAM VALVE	U1 RB	565	R5/N	AI	2
10015	08B	1-FSV-85-35B	CRD/BACKUP SCRAM VALVE	U1 RB	565	R5/N	AI	2
10016	20	1-HS-99-5A/S1A	RPS/REACTOR MANUAL SCRAM CHANNEL A1	U1 CB	617	U1 MCR	AI	1
10017	20	1-HS-99-5A/S1B	RPS/REACTOR MANUAL SCRAM CHANNEL B1	U1 CB	617	U1 MCR	AI	1
10018	20	1-HS-99-5A-S1	RPS/REACTOR MODE SWITCH	U1 CB	617	U1 MCR	AI	2
10019	8B	1-FSV-85-70A	CRD/BACKUP PILOT SCRAM VALVE 'A'	U1 RB	565	R5/N	AI	
10020	8B	1-FSV-85-70B	CRD/ BACKUP PILOT SCRAM VALVE 'B'	U1 RB	565	R5/N	AI	
10021	R	1-CKV-85-330	CRD/ISOLATION CHECK VALVE	U1 RB	565		AI	
10022	R	1-CKV-85-576	CRD/ISOLATION CHECK VALVE	U1 RB	565		AI	
10023	8B	1-FSV-85-39A	CRD/ISOLATION VALVE	U1 RB	565	CRD RACKS	AI	
10024	8B	1-FSV-85-39B	CRD/ISOLATION VALVE	U1 RB	565	CRD RACKS	AI	
10025	18	1-PI-85-88	PRESSURE INDICATOR	U1 RB	565	R6/S	AI	
10026	18	1-PI-85-89	PRESSURE INDICATOR	U1 RB	565	R2/P	AI	
10027	18	1-PI-85-90	PRESSURE INDICATOR	U1 RB	565	R2/P	AI	
10028	R	1-CKV-85-597	CRD/ISOLATION CHECK VALVE	U1 RB	565		AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
10029	R	1-CKV-85-616	CRD/ISOLATION CHECK VALVE	U1 RB	565		AI	
11001	08A	1-FCV-74-1	RHR/PUMP 1A SUCTION VALVE FROM SUPRESSION POOL	U1 RB	519	SW CORNER	AI	1
11002	08A	1-FCV-74-2	RHR/PUMP 1A SUCTION VALVE FROM SHUTDOWN COOLING	U1 RB	541	SW CORNER	AI	1
11003 *	08A	2-FCV-74-96 *	RHR/U2 TO U1 RHR X-TIE ISOLATION VALVE	U2 RB	519	SW CORNER	AI	1
11004	06	1-PMP-74-5	RHR/PUMP 1A	U1 RB	519	SW CORNER	AI	1
11005	R	1-CKV-74-560A	RHR/PUMP 1A MINIMUM FLOW CHECK VALVE	U1 RB	519		AI	1
11006	08A	1-FCV-74-7	RHR/PUMP 1A & 1C MINIMUM FLOW VALVE	U1 RB	541	SW CORNER	AI	1
11007	R	1-CKV-171-547	RCIC/RCIC MINIMUM FLOW CHECK VALVE	U1 RB	519		AI	1
11008	R	1-CKV-74-559A	RHR/PUMP 1A DISCHARGE CHECK VALVE	U1 RB	519		AI	1
11009	21	1-HEX-74-900A	RHR/HEAT EXCHANGER 1A	U1 RB	565	SW HX	AI	1
11010 *	08A	2-FCV-74-100 *	RHR/U2 TO U1 RHR DISCHARGE X-TIE ISOLATION VALVE (A,C)	U2 RB	565	R8/T	AI	1
11011	08A	1-FCV-74-12	RHR/PUMP 1C SUCTION VALVE FROM SUPRESSION POOL	U1 RB	519	SW CORNER	AI	1A
11012	08A	1-FCV-74-13	RHR/PUMP 1C SUCTION VALVE FROM SHUTDOWN COOLING	U1 RB	541	SW CORNER	AI	1A
11013 *	08A	2-FCV-74-97 *	RHR/U2 TO U1 RHR X-TIE ISOLATION VALVE	U2 RB	519	SW CORNER	AI	1A
11014	06	1-PMP-74-16	RHR/PUMP 1C	U1 RB	519	SW CORNER	AI	1A
11015	R	1-CKV-74-560C	RHR/PUMP 1C MINIMUM FLOW CHECK VALVE	U1 RB	519		AI	1A
11016	R	1-CKV-74-559C	RHR/PUMP 1C DISCHARGE CHECK VALVE	U1 RB	519		AI	1A
11017	21	1-HEX-74-900C	RHR/HEAT EXCHANGER 1C	U1 RB	565	SW HX	AI	1A
11018	20	1-FI-74-50	RHR/LOOP I FLOW INDICATOR	U1 CB	617	U1 MCR	AI	1
11019	20	1-FI-74-56	RHR/LOOP I FLOW INDICATOR	U1 CB	617	U1 MCR	AI	1
11020	08A	1-FCV-74-57	RHR/LOOP I TORUS CONTAINMENT COOLING/SPRAY VALVE	U1 RB	551	TORUS	AI	1
11021	08A	1-FCV-74-59	RHR/LOOP I SUPRESSION POOL COOLING VALVE	U1 RB	551	TORUS	AI	1
11022	08A	1-FCV-74-58	RHR/LOOP I SUPRESSION POOL SPRAY VALVE	U1 RB	551	TORUS	I	1
11023	08A	1-FCV-74-52	RHR/LOOP I OUTBOARD INJECTION VALVE	U1 RB	565	R4/T	AI	1
11024	08A	1-FCV-74-53	RHR/LOOP I INBOARD INJECTION VALVE	U1 RB	565	R4/T	AI	1
11025	R	1-FCV-74-54	RHR/LOOP I TESTABLE CHECK VALVE	U1 DW			AI	1
11026	08A	1-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U1 RB	621	R5/S	AI	1
11027	08A	1-FCV-74-60	RHR/LOOP I OUTBOARD DRYWELL SPRAY VALVE	U1 RB	593	R3/S	AI	1
11028	08A	1-FCV-74-61	RHR/LOOP I INBOARD DRYWELL SPRAY VALVE	U1 RB	593	R3/S	I	1
11029	08A	1-FCV-74-24	RHR/PUMP 1B SUCTION VALVE FROM SUPRESSION POOL	U1 RB	519	SE CORNER	AI	2
11030	08A	1-FCV-74-25	RHR/PUMP 1B SUCTION VALVE FROM SHUTDOWN COOLING	U1 RB	541	SE CORNER	AI	2
11031	06	1-PMP-74-28	RHR/PUMP 1B	U1 RB	519	SE CORNER	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
11032	R	1-CKV-74-560B	RHR/PUMP 1B MINIMUM FLOW CHECK VALVE	U1 RB	519		AI	2
11033	08A	1-FCV-74-30	RHR/PUMP 1B & 1D MINIMUM FLOW VALVE	U1 RB	541	SE CORNER	AI	2
11034	R	1-CKV-73-559	HPCI/HPCI PUMP MINIMUM FLOW CHECK VALVE	U1 RB			AI	2
11035	R	1-CKV-74-559B	RHR/PUMP 1B DISCHARGE CHECK VALVE	U1 RB	519		AI	2
11036	21	1-HEX-74-900B	RHR/HEAT EXCHANGER 1B	U1 RB	565	SE HX	AI	2
11037	08A	1-FCV-74-35	RHR/PUMP 1D SUCTION VALVE FROM SUPRESSION POOL	U1 RB	519	SE CORNER	AI	2A
11038	08A	1-FCV-74-36	RHR/PUMP 1D SUCTION VALVE FROM SHUTDOWN COOLING	U1 RB	541	SE CORNER	AI	2A
11039	06	1-PMP-74-39	RHR/PUMP 1D	U1 RB	519	SE CORNER	AI	2A
11040	R	1-CKV-74-560D	RHR/PUMP 1D MINIMUM FLOW CHECK VALVE	U1 RB	519		AI	2A
11041	R	1-CKV-74-559D	RHR/PUMP 1D DISCHARGE CHECK VALVE	U1 RB	519		AI	2A
11042	21	1-HEX-74-900D	RHR/HEAT EXCHANGER 1D	U1 RB	565	SE HX	AI	2A
11043	20	1-FI-74-64	RHR/LOOP II FLOW INDICATOR	U1 CB	617	U1 MCR	AI	2
11044	20	1-FI-74-70	RHR/LOOP II FLOW INDICATOR	U1 CB	617	U1 MCR	AI	2
11045	08A	1-FCV-74-71	RHR/LOOP II TORUS CONTAINMENT COOLING/SPRAY VALVE	U1 RB	551	TORUS	AI	2
11046	08A	1-FCV-74-73	RHR/LOOP II SUPRESSION POOL COOLING VALVE	U1 RB	551	TORUS	AI	2
11047	08A	1-FCV-74-72	RHR/LOOP II SUPRESSION POOL SPRAY VALVE	U1 RB	551	TORUS	I	2
11048	08A	1-FCV-74-66	RHR/LOOP II OUTBOARD INJECTION VALVE	U1 RB	565	R5/T	AI	2
11049	08A	1-FCV-74-67	RHR/LOOP II INBOARD INJECTION VALVE	U1 RB	565	R5/T	AI	2
11050	R	1-FCV-74-68	RHR/LOOP II TESTABLE CHECK VALVE	U1 DW			AI	2
11051	08A	1-FCV-74-74	RHR/LOOP II OUTBOARD DRYWELL SPRAY VALVE	U1 RB	565	R5/S	AI	2
11052	08A	1-FCV-74-75	RHR/LOOP II INBOARD DRYWELL SPRAY VALVE	U1 RB	565	R6/S	I	2
11053	08A	1-FCV-74-101	RHR/U2 TO U1 RHR DISCHARGE X-TIE ISOLATION VALVE (B,D)	U1 RB	565	R6/T	AI	1
12001	07	1-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12002	R	1-CKV-10-521	RVVD/MSRV 1-4 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12003	07	1-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12004	R	1-CKV-10-507	RVVD/MSRV 1-5 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12005	R	1-CKV-10-522	RVVD/MSRV 1-5 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12006	07	1-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12007	R	1-CKV-10-508	RVVD/MSRV 1-18 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12008	R	1-CKV-10-523	RVVD/MSRV 1-18 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12009	07	1-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12010	R	1-CKV-10-509	RVVD/MSRV 1-19 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
12011	R	1-CKV-10-524	RVVD/MSRV 1-19 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12012	07	1-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12013	R	1-CKV-10-510	RVVD/MSRV 1-22 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12014	R	1-CKV-10-525	RVVD/MSRV 1-22 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12015	07	1-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12016	R	1-CKV-10-511	RVVD/MSRV 1-23 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12017	R	1-CKV-10-526	RVVD/MSRV 1-23 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12018	07	1-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12019	R	1-CKV-10-519	RVVD/MSRV 1-179 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12020	R	1-CKV-10-532	RVVD/MSRV 1-179 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12021	07	1-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	2
12022	R	1-CKV-10-512	RVVD/MSRV 1-30 DISCHARGE LINE VACUUM BKR	U1 DW			AI	2
12023	R	1-CKV-10-527	RVVD/MSRV 1-30 DISCHARGE LINE VACUUM BKR	U1 DW			AI	2
12024	07	1-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	2
12025	R	1-CKV-10-513	RVVD/MSRV 1-31 DISCHARGE LINE VACUUM BKR	U1 DW			AI	2
12026	R	1-CKV-10-528	RVVD/MSRV 1-31 DISCHARGE LINE VACUUM BKR	U1 DW			AI	2
12027	07	1-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	2
12028	R	1-CKV-10-514	RVVD/MSRV 1-34 DISCHARGE LINE VACUUM BKR	U1 DW			AI	2
12029	R	1-CKV-10-529	RVVD/MSRV 1-34 DISCHARGE LINE VACUUM BKR	U1 DW			AI	2
12030	07	1-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	2
12031	R	1-CKV-10-515	RVVD/MSRV 1-41 DISCHARGE LINE VACUUM BKR	U1 DW			AI	2
12032	R	1-CKV-10-530	RVVD/MSRV 1-41 DISCHARGE LINE VACUUM BKR	U1 DW			AI	2
12033	07	1-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	2
12034	R	1-CKV-10-516	RVVD/MSRV 1-42 DISCHARGE LINE VACUUM BKR	U1 DW			AI	2
12035	R	1-CKV-10-531	RVVD/MSRV 1-42 DISCHARGE LINE VACUUM BKR	U1 DW			AI	2
12036	07	1-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	2
12037	R	1-CKV-10-520	RVVD/MSRV 1-180 DISCHARGE LINE VACUUM BKR	U1 DW			AI	2
12038	R	1-CKV-10-506	RVVD/MSRV 1-4 DISCHARGE LINE VACUUM BKR	U1 DW			AI	1
12039	R	1-CKV-10-533	RVVD/MSRV 1-180 DISCHARGE LINE VACUUM BKR	U1 DW			AI	2
13001	07	1-FCV-1-14	MSIV "A" INBOARD ISOLATION VALVE	U1 DW	563	DW	AI	1
13002	07	1-FCV-1-15	MSIV "A" OUTBOARD ISOLATION VALVE	U1 RB	565	MSIV VAULT	AI	2
13003	07	1-FCV-1-26	MSIV "B" INBOARD ISOLATION VALVE	U1 DW	563	DW	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
13004	07	1-FCV-1-27	MSIV "B" OUTBOARD ISOLATION VALVE	U1 RB	565	MSIV VAULT	AI	2
13005	07	1-FCV-1-37	MSIV "C" INBOARD ISOLATION VALVE	U1 DW	563	DW	AI	1
13006	07	1-FCV-1-38	MSIV "C" OUTBOARD ISOLATION VALVE	U1 RB	565	MSIV VAULT	AI	2
13007	07	1-FCV-1-51	MSIV "D" INBOARD ISOLATION VALVE	U1 DW	563	DW	AI	1
13008	07	1-FCV-1-52	MSIV "D" OUTBOARD ISOLATION VALVE	U1 RB	565	MSIV VAULT	AI	2
13009	08A	1-FCV-1-55	MAIN STEAM LINE DRAIN ISOLATION VALVE	U1 DW	563	DW	AI	1
13010	R	1-CKV-3-558	FEEDWATER "A" INBOARD ISOLATION VALVE	U1 DW			AI	1
13011	R	1-CKV-3-554	FEEDWATER "A" OUTBOARD ISOLATION VALVE	U1 RB			AI	2
13012	R	1-CKV-3-572	FEEDWATER "B" INBOARD ISOLATION VALVE	U1 DW			AI	1
13013	R	1-CKV-3-568	FEEDWATER "B" OUTBOARD ISOLATION VALVE	U1 RB			AI	2
13015	07	1-FCV-64-17	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	565	R3/U	I	1,2
13016	07	1-FCV-64-30	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	621	R3/Q	I	1,2
13017	07	1-FCV-64-33	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	565	R2/P	I	1,2
13018	07	1-FCV-64-139	CONTAINMENT DW DP ISOLATION VALVE	U1 RB	565	R2/P	I	1,2
13019	07	1-FCV-64-140	CONTAINMENT DW DP ISOLATION VALVE	U1 RB	565	R2/P	I	1,2
13020	07	1-FCV-64-28A	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13021	07	1-FCV-64-28B	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13022	07	1-FCV-64-28C	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13023	07	1-FCV-64-28D	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13024	07	1-FCV-64-28E	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13025	07	1-FCV-64-28F	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13026	07	1-FCV-64-28G	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13027	07	1-FCV-64-28H	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13028	07	1-FCV-64-28J	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13029	07	1-FCV-64-28K	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13030	07	1-FCV-64-28L	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13031	07	1-FCV-64-28M	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13032	08A	1-FCV-69-1	RWCU INBOARD ISOLATION VALVE	U1 DW	584	DW	AI	1
13033	08A	1-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U1 RB	593	R5/S	AI	2
13034	R	1-CKV-69-579	RWCU SYSTEM RETURN CHECK VALVE	U1 RB			AI	2
13035	08A	1-FCV-70-47	RBCCW DRYWELL RETURN VALVE	U1 RB	551	TORUS	I	1,2
13036	R	1-CKV-70-506	RBCCW DRYWELL SUPPLY CHECK VALVE	U1 RB			I	1,2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
13037	08A	1-FCV-71-2	RCIC INBOARD ISOLATION VALVE	U1 DW	584	DW	AI	1
13038	08A	1-FCV-71-3	RCIC OUTBOARD ISOLATION VALVE	U1 RB	565	MSIV VAULT	AI	2
13039	08A	1-FCV-71-18	RCIC OUTBOARD SUCTION VALVE	U1 RB	519	NW CORNER	I	1,2
13040	08A	1-FCV-73-2	HPCI STEAM SUPPLY ISOLATION VALVE	U1 DW	563	DW	AI	1
13041	08A	1-FCV-73-3	HPCI STEAM SUPPLY ISOLATION VALVE	U1 RB	551	TORUS	AI	2
13042	08A	1-FCV-73-81	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	U1 RB	551	TORUS	AI	2
13043	08A	1-FCV-73-27	HPCI OUTBOARD SUCTION VALVE	U1 RB	519	HPCI ROOM	I	1,2
13044	07	1-FCV-75-57	PSC PUMP SUCTION ISOLATION VALVE	U1 RB	519	NW CORNER	AI	1
13045	07	1-FCV-75-58	PSC PUMP SUCTION ISOLATION VALVE	U1 RB	519	NW CORNER	AI	2
13046	07	1-FCV-76-24	PRIMARY CONTAINMENT ISOLATION VALVE	U1 RB	565	R3/U	I	1,2
13047	07	1-FCV-77-2B	DRYWELL FLOOR DRAIN SUMP DISCHARGE	U1 RB	551	TORUS	I	1,2
13048	07	1-FCV-77-15B	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE	U1 RB	551	TORUS	I	1,2
13049	07	1-FCV-84-19	CAD ISOLATION VALVE	U1 RB	621	R3/Q	I	1,2
13050	07	1-FCV-84-20	CAD ISOLATION VALVE	U1 RB	621	R3/Q	I	1,2
13051	20	1-LI-3-58AA	RPV LEVEL INSTRUMENTATION	U1 RB	617	U1 MCR	AI	1
13052	20	1-LI-3-58BB	RPV LEVEL INSTRUMENTATION	U1 RB	617	U1 MCR	AI	2
13053	20	1-PI-3-74A	RPV PRESSURE INSTRUMENT	U1 CB	617	U1 MCR	AI	1
13054	20	1-PI-3-74B	RPV PRESSURE INSTRUMENT	U1 CB	617	U1 MCR	AI	2
13055	20	1-XR-64-159	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	U1 CB	617	U1 MCR	AI	1
13056	20	1-LI-64-159A	TORUS LEVEL INSTRUMENT	U1 CB	617	U1 MCR	AI	2
13057	20	1-TI-64-161	TORUS TEMPERATURE INSTRUMENT	U1 CB	617	U1 MCR	AI	1
13058	20	1-TI-64-162	TORUS TEMPERATURE INSTRUMENT	U1 CB	617	U1 MCR	AI	2
13059	20	1-PI-64-67	DRYWELL PRESSURE INSTRUMENT	U1 CB	617	U1 MCR	I	1
13060	20	1-PI-64-160A	DRYWELL PRESSURE INSTRUMENT	U1 CB	617	U1 MCR	I	2
13061	20	1-TI-64-52A	DRYWELL TEMPERATURE INSTRUMENT	U1 CB	617	U1 MCR	I	1
13062	20	1-XR-64-50	DRYWELL TEMPERATURE AND PRESSURE INSTRUMENT	U1 CB	617	U1 MCR	I	2
13063	07	1-FCV-76-17	CONTAINMENT INERTING N2 MAKEUP	U1 RB	565	R5/T	I	1,2
13064	07	1-FCV-64-222	HARDENED WETWELL VENT	U1 RB	565	R3/T	I	1,2
13067	R	1-CKV-63-525	PRIMARY CONTAINMENT ISOLATION CHECK VALVE	U1 RB	565		AI	
13068	R	1-CKV-63-526	PRIMARY CONTAINMENT ISOLATION CHECK VALVE	U1 RB	565		AI	
13069	08A	1-FCV-71-40	PRIMARY CONTAINMENT ISOLATION VALVE	U1 RB	565	R4/P	AI	
13070	R	1-CKV-71-580	PRIMARY CONTAINMENT ISOLATION CHECK VALVE	U1 RB	565		AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
13071	R	1-CKV-71-592	PRIMARY CONTAINMENT ISOLATION CHECK VALVE	U1 RB	565		AI	
13072	R	1-CKV-73-603	PRIMARY CONTAINMENT ISOLATION CHECK VALVE	U1 RB	565		AI	
13073	R	1-CKV-73-609	PRIMARY CONTAINMENT ISOLATION CHECK VALVE	U1 RB	565		AI	
13074	08A	1-FCV-71-17	RCIC INBOARD SUCTION VALVE	U1 RB	519	NW CORNER	I	1,2
13075	08A	1-FCV-1-56	MAIN STEAM LINE DRAIN ISOLATION VALVE	U1 RB	565	MSIV VAULT?	AI	
13076	08A	1-FCV-73-26	HPCI INBOARD SUCTION VALVE	U1 RB	519	SW CORNER	I	1,2
13077	R	1-CKV-73-517	HPCI CHECK VALVE	U1 RB	519		AI	
13079	07	1-FCV-32-62	DRYWELL CONTROL AIR SUCTION VALVE	U1 RB	565	CLEAN RM	I	1,2
13080	07	1-FCV-77-2A	DRYWELL FLOOR DRAIN SUMP DISCHARGE	U1 RB	551	TORUS	I	1,2
13081	07	1-FCV-77-15A	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE	U1 RB	551	TORUS	I	1,2
13082	07	1-FCV-64-18	COOLING/PURGE AIR TO DRYWELL	U1 RB	565	R5/T	I	1,2
13083	07	1-FCV-64-19	COOLING/PURGE AIR TO SUPPRESSION CHAMBER	U1 RB	565	R3/T	I	1,2
13084	07	1-FCV-76-18	CONTAINMENT INERTING DRYWELL N2 MAKEUP VALVE	U1 RB	565	R5/T	I	1,2
13085	07	1-FCV-76-19	CONTAINMENT INERTING - PSC N2 MAKEUP VALVE	U1 RB	565	R3/T	I	1,2
13101	18	1-LT-64-159A	TORUS LEVEL TRANSMITTER	U1 RB	519	TORUS		
13102	18	1-LT-64-159B	TORUS LEVEL TRANSMITTER	U1 RB	519	TORUS		
13111	19	1-TE-64-161A	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13112	19	1-TE-64-161B	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13113	19	1-TE-64-161C	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13114	19	1-TE-64-161D	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13115	19	1-TE-64-161E	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13116	19	1-TE-64-161F	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13117	19	1-TE-64-161G	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13118	19	1-TE-64-161H	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13211	19	1-TE-64-162A	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13212	19	1-TE-64-162B	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13213	19	1-TE-64-162C	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13214	19	1-TE-64-162D	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13215	19	1-TE-64-162E	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13216	19	1-TE-64-162F	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13217	19	1-TE-64-162G	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13218	19	1-TE-64-162H	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
14001	10	1-CLR-67-917	EECW/RHR PUMP 1A ROOM COOLER	U1 RB	519	SW CORNER	AI	1
14002	10	1-CLR-67-919	EECW/CS PUMP 1A ROOM COOLER	U1 RB	519	NW CORNER	AI	1
14003	10	1-CLR-67-921	EECW/RHR PUMP 1C ROOM COOLER	U1 RB	519	SW CORNER	AI	1
14004	21	1-HEX-67-915	EECW/RHR SEAL HX 1A	U1 RB	519	SW CORNER	AI	1
14005	R	1-CKV-67-638	EECW NORTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U1 RB	565		AI	1
14006	R	1-CKV-67-639	EECW NORTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U1 RB	565		AI	1
14007	R	1-CKV-67-648	EECW NORTH HEADER SUPPLY CHECK VALVE TO A CS	U1 RB	565		AI	1
14008	R	1-CKV-67-649	EECW NORTH HEADER SUPPLY CHECK VALVE TO A CS	U1 RB	565		AI	1
14009	R	1-CKV-67-659	EECW NORTH HEADER SUPPLY CHECK VALVE TO B&D RHR	U1 RB	565		AI	1
14010	R	1-CKV-67-660	EECW NORTH HEADER SUPPLY CHECK VALVE TO B&D RHR	U1 RB	565		AI	1
14011	R	1-CKV-67-656	EECW NORTH HEADER SUPPLY CHECK VALVE TO B CS	U1 RB	565		AI	1
14012	R	1-CKV-67-657	EECW NORTH HEADER SUPPLY CHECK VALVE TO B CS	U1 RB	565		AI	1
14013	10	1-CLR-67-918	EECW/RHR PUMP 1B ROOM COOLER	U1 RB	519	SE CORNER	AI	2
14014	10	1-CLR-67-920	EECW/CS PUMP 1B ROOM COOLER	U1 RB	519	NE CORNER	AI	2
14015	10	1-CLR-67-922	EECW/RHR PUMP 1D ROOM COOLER	U1 RB	519	SE CORNER	AI	2
14016	21	1-HEX-67-923	EECW/RHR SEAL HX 1B	U1 RB	519	SE CORNER	AI	2
14017	R	1-CKV-67-558	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U1 RB	593		AI	2
14018	R	1-CKV-67-559	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A & C RHR	U1 RB	593		AI	2
14019	R	1-CKV-67-541	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A CS	U1 RB	593		AI	2
14020	R	1-CKV-67-542	EECW SOUTH HEADER SUPPLY CHECK VALVE TO A CS	U1 RB	593		AI	2
14021	R	1-CKV-67-600	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B & D RHR	U1 RB	593		AI	2
14022	R	1-CKV-67-601	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B & D RHR	U1 RB	593		AI	2
14023	R	1-CKV-67-584	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B CS	U1 RB	593		AI	2
14024	R	1-CKV-67-585	EECW SOUTH HEADER SUPPLY CHECK VALVE TO B CS	U1 RB	593		AI	2
14025	21	1-HEX-67-916	EECW/RHR SEAL HX 1C	U1 RB	519	SW CORNER	AI	1
14026	21	1-HEX-67-924	EECW/RHR SEAL HX 1D	U1 RB	519	SE CORNER	AI	2
14027	R	1-CKV-67-598	EECW SEAL DISCHARGE CHECK VALVE	U1 RB	593		AI	2
14028	R	1-CKV-67-554	EECW CHECK VALVE	U1 RB	593		AI	2
14031 *	06	0-PMP-23-85	RHRSW PUMP A3	INTAKE	565	A	AI	1
14032 *	R	0-CKV-23-588	RHRSW PMP A3 DISCHARGE CHECK VALVE	INTAKE	565		AI	1
14033 *	00	0-STN-67-925	A EECW PUMP DISCHARGE STRAINER	INTAKE	565	A	AI	1
14034 *	08A	0-FCV-67-1	A EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	A	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
14035 *	R	0-CKV-67-622	EECW SYSTEM NORTH HEADER CHECK VALVE	U1/2 DG	565		AI	1
14040 *	R	0-CKV-67-671	EECW SYSTEM NORTH HEADER CHECK VALVE	RB	565		AI	1
14041 *	06	0-PMP-23-91	RHRSW PUMP C3	INTAKE	565	C	AI	1
14042 *	R	0-CKV-23-594	RHRSW PMP C3 DISCHARGE CHECK VALVE	INTAKE	565		AI	1
14043 *	00	0-STN-67-927	C EECW PUMP DISCHARGE STRAINER	INTAKE	565	C	AI	1
14044 *	08A	0-FCV-67-8	C EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	C	AI	1
14045 *	08A	0-FCV-67-49	RHRSW PUMP C1 TO EECW SYSTEM CROSS-CONNECT	INTAKE	565	C	AI	1
14046	07	1-FCV-67-50	EECW NORTH HEADER BACKUP TO RBCCW	U1 RB	593	R3/P	AI	1
14049	07	0-FCV-67-53	EECW NORTH HEADER BACKUP TO THE AIR COMPRESSORS	U1 RB	565	R3/N	AI	1
14058 *	R	0-CKV-67-634	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE A DG	U1/2 DG	565		AI	1
14059 *	R	0-CKV-67-635	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE A DG	U1/2 DG	565		AI	1
14060 *	R	0-CKV-67-630	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE B DG	U1/2 DG	565		AI	1
14061 *	R	0-CKV-67-631	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE B DG	U1/2 DG	565		AI	1
14062 *	R	0-CKV-67-624	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE C DG	U1/2 DG	565		AI	1
14063 *	R	0-CKV-67-625	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE C DG	U1/2 DG	565		AI	1
14064 *	R	0-CKV-67-627	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE D DG	U1/2 DG	565		AI	1
14065 *	R	0-CKV-67-628	EECW NORTH HEADER SUPPLY CHECK VALVE TO THE D DG	U1/2 DG	565		AI	1
14072 *	20	0-EI-23-91/3	EECW PUMP C3 AMPERAGE INDICATION	N/A	N/A	N/A	AI	1
14074 *	06	0-PMP-23-88	RHRSW PUMP B3	INTAKE	565	B	AI	2
14075 *	R	0-CKV-23-591	RHRSW PMP B3 DISCHARGE CHECK VALVE	INTAKE	565		AI	2
14076 *	00	0-STN-67-926	B EECW PUMP DISCHARGE STRAINER	INTAKE	565	B	AI	2
14077 *	08A	0-FCV-67-5	B EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	B	AI	2
14078 *	R	0-CKV-67-502	EECW SYSTEM SOUTH HEADER CHECK VALVE	U1/2 DG	565		AI	2
14083 *	R	0-CKV-67-619	EECW SYSTEM SOUTH HEADER CHECK VALVE	RB	565		AI	2
14084 *	06	0-PMP-23-94	RHRSW PUMP D3	INTAKE	565	D	AI	2
14085 *	R	0-CKV-23-597	RHRSW PMP D3 DISCHARGE CHECK VALVE	INTAKE	565		AI	2
14086 *	00	0-STN-67-928	D EECW PUMP DISCHARGE STRAINER	INTAKE	565	D	AI	2
14087 *	08A	0-FCV-67-11	D EECW PUMP DISCHARGE STRAINER DRAIN VALVE	INTAKE	565	D	AI	2
14088 *	08A	0-FCV-67-48	RHRSW PUMP D1 TO EECW SYSTEM CROSS-CONNECT	INTAKE	565	D	AI	2
14089	07	1-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U1 RB	565	R3/T	AI	2
14090 *	R	0-CKV-67-528	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE A DG	U1/2 DG	565		AI	2
14091 *	R	0-CKV-67-529	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE A DG	U1/2 DG	565		AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
14092 *	R	0-CKV-67-514	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE C DG	U1/2 DG	565		AI	2
14093 *	R	0-CKV-67-515	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE C DG	U1/2 DG	565		AI	2
14094 *	R	0-CKV-67-521	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE B DG	U1/2 DG	565		AI	2
14095 *	R	0-CKV-67-522	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE B DG	U1/2 DG	565		AI	2
14096 *	R	0-CKV-67-507	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE D DG	U1/2 DG	565		AI	2
14097 *	R	0-CKV-67-508	EECW SOUTH HEADER SUPPLY CHECK VALVE TO THE D DG	U1/2 DG	565		AI	2
15001	08A	1-FCV-75-2	CS/PUMP 1A SUCTION ISOLATION VALVE	U1 RB	519	NW CORNER	AI	1
15002	06	1-PMP-75-5	CS/PUMP 1A	U1 RB	519	NW CORNER	AI	1
15003	R	1-CKV-75-537A	CS/PUMP 1A DISCHARGE CHECK VALVE	U1 RB			AI	1
15004	R	1-CKV-75-5170A	CS/PUMP 1A MINI-FLOW CHECK VALVE	U1 RB			AI	1
15005	08A	1-FCV-75-9	CS/PUMPS 1A & 1C MINI-FLOW VALVE	U1 RB	541	NW CORNER	AI	1
15006	08A	1-FCV-75-11	CS/PUMP 1C SUCTION ISOLATION VALVE	U1 RB	519	NW CORNER	AI	1
15007	06	1-PMP-75-14	CS/PUMP 1C	U1 RB	519	NW CORNER	AI	1
15008	R	1-CKV-75-537C	CS/PUMP 1C DISCHARGE CHECK VALVE	U1 RB			AI	1
15009	R	1-CKV-75-5170C	CS/PUMP 1C MINI-FLOW CHECK VALVE	U1 RB			AI	1
15010	08A	1-FCV-75-22	CS/PUMPS 1A & 1C TEST ISOLATION VALVE	U1 RB	541	NW CORNER	AI	1
15011	20	1-FI-75-21	CS/PUMPS 1A & 1C FLOW INDICATOR	U1 CB	617	MCR	AI	1
15012	08A	1-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U1 RB	593	R4/P	AI	1
15013	08A	1-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U1 RB	593	R4/P	AI	1
15014	R	1-FCV-75-26	CS/DIV I TESTABLE CHECK VALVE	U1 DW			AI	1
15015	08A	1-FCV-75-30	CS/PUMP 1B SUCTION ISOLATION VALVE	U1 RB	519	NE CORNER	AI	2
15016	06	1-PMP-75-33	CS/PUMP 1B	U1 RB	519	NE CORNER	AI	2
15017	R	1-CKV-75-537B	CS/PUMP 1B DISCHARGE CHECK VALVE	U1 RB			AI	2
15018	R	1-CKV-75-5170B	CS/PUMP 1B MINI-FLOW CHECK VALVE	U1 RB			AI	2
15019	08A	1-FCV-75-37	CS/PUMPS 1B & 1D MINI-FLOW VALVE	U1 RB	541	NE CORNER	AI	2
15020	08A	1-FCV-75-39	CS/PUMP 1D SUCTION ISOLATION VALVE	U1 RB	519	NE CORNER	AI	2
15021	06	1-PMP-75-42	CS/PUMP 1D	U1 RB	519	NE CORNER	AI	2
15022	R	1-CKV-75-537D	CS/PUMP 1D DISCHARGE CHECK VALVE	U1 RB			AI	2
15023	R	1-CKV-75-5170D	CS/PUMP 1D MINI-FLOW CHECK VALVE	U1 RB			AI	2
15024	08A	1-FCV-75-50	CS/PUMPS 1B & 1D TEST ISOLATION VALVE	U1 RB	541	NE CORNER	AI	2
15025	20	1-FI-75-49	CS/PUMPS 1B & 1D FLOW INDICATOR	U1 CB	617	MCR	AI	2
15026	08A	1-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U1 RB	593	R4/P	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
15027	08A	1-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U1 RB	593	R4/P	AI	2
15028	R	1-FCV-75-54	CS/DIV II TESTABLE CHECK VALVE	U1 DW			AI	2
16001	08B	1-FSV-84-8A	CAD/CAD TO DW (1-FCV-64-18) SOLENOID VALVE	U1 RB	565	R5/T	AI	1
16002	08B	1-FSV-84-8B	CAD/CAD TO DW (1-FCV-64-19) SOLENOID VALVE	U1 RB	565	R3/T	AI	1
16003	07	1-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 1 DRYWELL CONTROL AIR	U1 RB	565	R4/U	AI	1
16004	08B	1-FSV-84-48	CAD/CAD SYSTEM "A" TO UNIT 1 DRYWELL CONTROL AIR	U1 RB	565	R3/T	AI	1
16005	R	1-CKV-32-2521	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 1	U1 RB			AI	1
16006	R	1-CKV-32-915	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 2	U1 DW			AI	2
16007	R	1-CKV-32-2516	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 1	U1 DW			AI	1
16008	R	1-CKV-32-872	CA/DRYWELL CONTROL AIR TO PSV-1-19	U1 DW			AI	1
16009	21	1-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U1 DW	584	DW	AI	1
16010	08B	1-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19	U1 DW	584	DW	AI	1
16011	R	1-CKV-32-826	CA/DRYWELL CONTROL AIR TO PSV-1-22	U1 DW			AI	1
16012	21	1-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U1 DW	584	DW	AI	1
16013	08B	1-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22	U1 DW	584	DW	AI	1
16014	R	1-CKV-32-869	CA/DRYWEWLL CONTROL AIR TO PSV-1-5	U1 DW			AI	1
16015	21	1-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U1 DW	584	DW	AI	1
16016	08B	1-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5	U1 DW	584	DW	AI	1
16017	08B	1-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23	U1 DW	584	DW	AI	1
16018	08B	1-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179	U1 DW	584	DW	AI	1
16019	08B	1-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4	U1 DW	584	DW	AI	1
16021	08B	1-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18	U1 DW	584	DW	AI	2
16023	08B	1-FSV-84-8C	CAD/CAD TO DW (1-FCV-64-19) SOLENOID VALVE	U1 RB	565	R3/T	AI	2
16024	08B	1-FSV-84-8D	CAD/CAD TO DW (1-FCV-64-18) SOLENOID VALVE	U1 RB	565	R5/T	AI	2
16025	07	1-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 1 DRYWELL CONTROL AIR	U1 RB	565	R4/U	AI	2
16026	08B	1-FSV-84-49	CAD/CAD SYSTEM "B" TO UNIT 1 DRYWELL CONTROL AIR	U1 RB	565	R3/T	AI	2
16027	R	1-CKV-32-336	CA/CHECK VALVE FROM DWCA CMPRSSR TO DRYWELL-PATH 2	U1 RB			AI	2
16028	R	1-CKV-32-919	CA/DRYWELL CONTROL AIR TO PSV-1-30	U1 DW			AI	2
16029	21	1-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U1 DW	584	DW	AI	2
16030	08B	1-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30	U1 DW	584	DW	AI	2
16031	R	1-CKV-32-894	CA/DRYWELL CONTROL AIR TO PSV-1-31	U1 DW	584		AI	2
16032	21	1-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U1 DW	584	DW	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
16033	08B	1-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31	U1 DW	584	DW	AI	2
16034	R	1-CKV-32-895	CA/DRYWELL CONTROL AIR TO PSV-1-34	U1 DW			AI	2
16035	21	1-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U1 DW	584	DW	AI	2
16036	08B	1-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34	U1 DW	584	DW	AI	2
16038	08B	1-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41	U1 DW	584	DW	AI	2
16040	08B	1-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42	U1 DW	584	DW	AI	2
16041	08B	1-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180	U1 DW	584	DW	AI	2
16042	R	1-CKV-32-3749	CAD/CONTROL AIR/CAD CHECK VALVE	U1 RB			AI	1
16043	07	1-FCV-64-20	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	565	R3/T	AI	
16044	07	1-FCV-64-21	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	565	R3/T	AI	
16045	R	1-CKV-64-800	CONTAINMENT VENTILATION ISOLATION CHECK VALVE	U1 RB	565		AI	
16046	R	1-CKV-64-801	CONTAINMENT VENTILATION ISOLATION CHECK VALVE	U1 RB	565		AI	
16051 *	21	0-TNK-84-635	CAD/NITROGEN STORAGE TANK "A"	YARD	565	YARD	AI	1
16052 *	07	0-FCV-84-5	CAD/N2 TANK "A" ISOLATION VALVE	YARD	565	YARD	AI	1
16053 *	08B	0-FSV-84-5	CAD/N2 TANK "A" ISOLATION SOLENOID VALVE	YARD	565	YARD	AI	1
16054 *	00	0-VPR-84-639	CAD/N2 TANK "A" VAPORIZER	YARD	565	YARD	AI	1
16055 *	00	0-HTR-84-5	CAD/N2 TANK "A" ELECTRIC HEATER	YARD	565	YARD	AI	1
16061 *	21	0-TNK-84-636	CAD/NITROGEN STORAGE TANK "B"	YARD	565	YARD	AI	2
16062 *	07	0-FCV-84-16	CAD/N2 TANK "B" ISOLATION VALVE	YARD	565	YARD	AI	2
16063 *	08B	0-FSV-84-16	CAD/N2 TANK "B" ISOLATION SOLENOID VALVE	YARD	565	YARD	AI	2
16064 *	00	0-VPR-84-640	VAD/N2 TANK "B" VAPORIZER	YARD	565	YARD	AI	2
16065 *	00	0-HTR-84-16	CAD/N2 TANK "B" ELECTRIC HEATER	YARD	565	YARD	AI	2
17001 *	17	0-GEN-82-A	UNIT 1 & 2 DIESEL GENERATOR "A"	U1/2 DG	565	DG A	AI	1
17002 *	21	0-TNK-18-45/1	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	AI	1
17003 *	21	0-TNK-18-45/2	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	AI	1
17004 *	21	0-TNK-18-45/3	DG "A" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG A	AI	1
17005 *	21	0-TNK-86-650A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
17006 *	21	0-TNK-86-651A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
17007 *	21	0-TNK-86-652A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
17008 *	21	0-TNK-86-653A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
17009 *	21	0-TNK-86-654A	DG A LEFT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
17010 *	21	0-TNK-86-655A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
17011 *	21	0-TNK-86-656A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
17012 *	21	0-TNK-86-657A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
17013 *	21	0-TNK-86-658A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
17014 *	21	0-TNK-86-659A	DG A RIGHT BANK STARTING AIR RECIEVERS	U1/2 DG	565	DG A	AI	1
17015 *	09	0-FAN-30-64	DG ROOM A EXHAUST FAN "A"	U1/2 DG	583	DG A	AI	1
17016 *	09	0-FAN-30-65	DG ROOM A EXHAUST FAN "B"	U1/2 DG	583	DG A	AI	1
17017 *	10	0-FCO-30-64A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
17018 *	10	0-FCO-30-64B	INLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
17019 *	10	0-FCO-30-64C	INLET DAMPER FOR FAN "A" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
17020 *	10	0-FCO-30-65A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
17021 *	10	0-FCO-30-65B	INLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
17022 *	10	0-FCO-30-65C	INLET DAMPER FOR FAN "B" IN DG ROOM "A"	U1/2 DG	583	DG A	AI	1
17023 *	17	0-GEN-82-B	UNIT 1 & 2 DIESEL GENERATOR "B"	U1/2 DG	565	DG B	AI	1
17024 *	21	0-TNK-18-46/1	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	AI	1
17025 *	21	0-TNK-18-46/2	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	AI	1
17026 *	21	0-TNK-18-46/3	DG "B" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG B	AI	1
17027 *	21	0-TNK-86-650B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
17028 *	21	0-TNK-86-651B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
17029 *	21	0-TNK-86-652B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
17030 *	21	0-TNK-86-653B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
17031 *	21	0-TNK-86-654B	DG "B" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG B	AI	1
17032 *	21	0-TNK-86-655B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
17033 *	21	0-TNK-86-656B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
17034 *	21	0-TNK-86-657B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
17035 *	21	0-TNK-86-658B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
17036 *	21	0-TNK-86-659B	DG "B" RIGHT BANK STARTING AIR RECEIVER	U1/2 DG	565	DG B	AI	1
17037 *	09	0-FAN-30-66	DG ROOM B EXHAUST FAN "A"	U1/2 DG	583	DG B	AI	1
17038 *	09	0-FAN-30-67	DG ROOM B EXHAUST FAN "B"	U1/2 DG	583	DG B	AI	1
17039 *	10	0-FCO-30-66A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
17040 *	10	0-FCO-30-66B	INLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
17041 *	10	0-FCO-30-66C	INLET DAMPER FOR FAN "A" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
17042 *	10	0-FCO-30-67A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
17043 *	10	0-FCO-30-67B	INLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
17044 *	10	0-FCO-30-67C	INLET DAMPER FOR FAN "B" IN DG ROOM "B"	U1/2 DG	583	DG B	AI	1
17045 *	17	0-GEN-82-C	UNIT 1 & 2 DIESEL GENERATOR "C"	U1/2 DG	565	DG C	AI	2
17046 *	21	0-TNK-18-47/1	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	AI	2
17047 *	21	0-TNK-18-47/2	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	AI	2
17048 *	21	0-TNK-18-47/3	DG "C" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG C	AI	2
17049 *	21	0-TNK-86-650C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
17050 *	21	0-TNK-86-651C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
17051 *	21	0-TNK-86-652C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
17052 *	21	0-TNK-86-653C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
17053 *	21	0-TNK-86-654C	DG "C" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
17054 *	21	0-TNK-86-655C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
17055 *	21	0-TNK-86-656C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
17056 *	21	0-TNK-86-657C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
17057 *	21	0-TNK-86-658C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
17058 *	21	0-TNK-86-659C	DG "C" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG C	AI	2
17059 *	09	0-FAN-30-68	DG ROOM C EXHAUST FAN "A"	U1/2 DG	583	DG C	AI	2
17060 *	09	0-FAN-30-69	DG ROOM C EXHAUST FAN "B"	U1/2 DG	583	DG C	AI	2
17061 *	10	0-FCO-30-68A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
17062 *	10	0-FCO-30-68B	INLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
17063 *	10	0-FCO-30-68C	INLET DAMPER FOR FAN "A" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
17064 *	10	0-FCO-30-69A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
17065 *	10	0-FCO-30-69B	INLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
17066 *	10	0-FCO-30-69C	INLET DAMPER FOR FAN "B" IN DG ROOM "C"	U1/2 DG	583	DG C	AI	2
17067 *	17	0-GEN-82-D	UNIT 1 & 2 DIESEL GENERATOR "D"	U1/2 DG	565	DG D	AI	2
17068 *	21	0-TNK-18-48/1	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	AI	2
17069 *	21	0-TNK-18-48/2	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	AI	2
17070 *	21	0-TNK-18-48/3	DG "D" 7 DAY FUEL OIL TANK	U1/2 DG	565	DG D	AI	2
17071 *	21	0-TNK-86-650D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
17072 *	21	0-TNK-86-651D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
17073 *	21	0-TNK-86-652D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
17074 *	21	0-TNK-86-653D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
17075 *	21	0-TNK-86-654D	DG "D" LEFT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
17076 *	21	0-TNK-86-655D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
17077 *	21	0-TNK-86-656D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
17078 *	21	0-TNK-86-657D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
17079 *	21	0-TNK-86-658D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
17080 *	21	0-TNK-86-659D	DG "D" RIGHT BANK STARTING AIR RECEIVERS	U1/2 DG	565	DG D	AI	2
17081 *	09	0-FAN-30-170	DG ROOM D EXHAUST FAN "A"	U1/2 DG	583	DG D	AI	2
17082 *	09	0-FAN-30-171	DG ROOM D EXHAUST FAN "B"	U1/2 DG	583	DG D	AI	2
17083 *	10	0-FCO-30-170A	OUTLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
17084 *	10	0-FCO-30-170B	INLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
17085 *	10	0-FCO-30-170C	INLET DAMPER FOR FAN "A" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
17086 *	10	0-FCO-30-171A	OUTLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
17087 *	10	0-FCO-30-171B	INLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
17088 *	10	0-FCO-30-171C	INLET DAMPER FOR FAN "B" IN DG ROOM "D"	U1/2 DG	583	DG D	AI	2
18001	R	1-CKV-23-510	RHRSW TO HX A INLET CHECK VALVE	U1 RB	565		AI	1
18002	08A	1-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U1 RB	565	R2/U	AI	1
18003	R	1-CKV-23-550	RHRSW TO HX C INLET CHECK VALVE	U1 RB	565		AI	1
18004	08A	1-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U1 RB	565	R2/U	AI	1
18005	R	1-CKV-23-530	RHRSW TO HX B INLET CHECK VALVE	U1 RB	565		AI	2
18006	08A	1-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U1 RB	565	R5/T	AI	2
18007	R	1-CKV-23-569	RHRSW TO HX D INLET CHECK VALVE	U1 RB	565		AI	2
18008	08A	1-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U1 RB	565	R5/T	AI	2
18009	20	1-FI-23-36	RHRSW HX A FLOW INDICATOR	U1 CB	617	MCR	AI	1
18010	20	1-FI-23-42	RHRSW HX C FLOW INDICATOR	U1 CB	617	MCR	AI	1
18011	20	1-FI-23-48	RHRSW HX B FLOW INDICATOR	U1 CB	617	MCR	AI	2
18012	20	1-FI-23-54	RHRSW HX D FLOW INDICATOR	U1 CB	617	MCR	AI	2
18021 *	06	0-PMP-23-005	RHRSW PUMP A2	INTAKE	565	A	AI	1
18022 *	R	0-CKV-23-506	RHRSW PMP A2 DISCHARGE CHECK VALVE	INTAKE	565		AI	1
18024 *	06	0-PMP-23-012	RHRSW PUMP C2	INTAKE	565	C	AI	1
18025 *	R	0-CKV-23-542	RHRSW PMP C2 DISCHARGE CHECK VALVE	INTAKE	565		AI	1
18027 *	06	0-PMP-23- 19	RHRSW PUMP B2	INTAKE	565	B	AI	2
18028 *	R	0-CKV-23-526	RHRSW PMP B2 DISCHARGE CHECK VALVE	INTAKE	565		AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
18029	08A	1-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U1 RB	565	R5/T	AI	2
18030 *	06	0-PMP-23-027	RHRSW PUMP D2	INTAKE	565	D	AI	2
18031 *	R	0-CKV-23-561	RHRSW PMP D2 DISCHARGE CHECK VALVE	INTAKE	565		AI	2
18032	08A	1-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U1 RB	565	R5/T	AI	2
18033	08A	1-FCV-23-57	RHR/RHRSW CROSS CONNECT VALVE	U1 RB	565	R6/S	AI	2
19001	20	1-PNLA-009-0023/1	ELECTRICAL CONTROL PANEL 1-9-23-1	U1 CB	617	U1 MCR	AI	
19002	20	1-PNLA-009-0023/2	ELECTRICAL CONTROL PANEL 1-9-23-2	U1 CB	617	U1 MCR	AI	
19003	20	1-PNLA-009-0023/3	ELECTRICAL CONTROL PANEL 1-9-23-3	U1 CB	617	U1 MCR	AI	
19004	20	1-PNLA-009-0023/4	ELECTRICAL CONTROL PANEL 1-9-23-4	U1 CB	617	U1 MCR	AI	
19005	20	1-PNLA-009-0023/5	ELECTRICAL CONTROL PANEL 1-9-23-5	U1 CB	617	U1 MCR	AI	
19006	20	1-PNLA-009-0023/6	ELECTRICAL CONTROL PANEL 1-9-23-6	U1 CB	617	U1 MCR	AI	
19007	20	1-PNLA-009-0023/7	ELECTRICAL CONTROL PANEL 1-9-23-7	U1 CB	617	U1 MCR	AI	
19008	20	1-PNLA-009-0023/8	ELECTRICAL CONTROL PANEL 1-9-23-8	U1 CB	617	U1 MCR	AI	
19010**	14	1-JBOX-268-5986	MG SET 1DN CONTROL STATION (1-HS-268-0001DN)	U1 RB	621	U/R2	AI	I
19011**	14	1-JBOX-268-5988	MG SET 1EN CONTROL STATION (1-HS-268-0001EN)	U1 RB	639	S/R7	AI	II
19012**	14	1-JBOX-268-5947	MG SET 1DN CONTROL BOX (RELAYS) - SEALED BOX	U1 RB	621	U/R2	AI	I
19013**	14	V.R. Box 1DN	MG SET 1DN VOLTAGE REGULATOR BOX	U1 RB	621	S/R1	AI	I
19014**	14	1-JBOX-268-5949	MG SET 1EN CONTROL BOX (RELAYS) - SEALED BOX	U1 RB	639	S/R7	AI	II
19015**	13	1-MGEN-268-0001DN	LPCI MG SET 1DN	U1 RB	621	U/R2	AI	I
19016**	01	1-BDBB-268-0001D	480V RMOV BOARD 1D	U1 RB	593	U/R4	AI	I
19017**	13	1-MGEN-268-0001EN	LPCI MG SET 1EN	U1 RB	639	S/R7	AI	II
19018**	01	1-BDBB-268-0001E	480V RMOV BOARD 1E	U1 RB	621	S/R3	AI	II
19019**	14	VR Box 1EN	MG SET 1EN VOLTAGE REGULATOR BOX	U1 RB	621	S/R2	AI	II
19030	01	1-BDBB-281-0001A	250V DC RMOV BOARD 1A	U1 RB	621	Q/R1	AI	II
19031	01	1-BDBB-281-0001B	250V DC RMOV BOARD 1B	U1 RB	593	Q/R1	AI	I
19033	01	1-BDBB-281-0001C	250V DC RMOV BOARD 1C	U1 RB	565	Q/R1	AI	I
19039	14	1-JBOX-253-6455	I&C BUS 1A DISC SWITCH 1A1	U1 RB	621	R/R1	AI	I
19040	04	1-XFA-253-0001A1	I&C BUS 1A 480/208-120V TRANSFORMER	U1 RB	621	R/R1	AI	I
19041	04	1-XFA-253-0001A	I&C BUS 1A REGULATING TRANSFORMER	U1 RB	621	R/R1	AI	I
19042	14	1-JBOX-253-6457	I&C BUS 1A DISC SW 1A2	U1 CB	593	BATT BD 1	AI	I
19043	14	1-JBOX-253-6456	I&C BUS 1A DISC SWITCHES 1A3, 1A4, 1A5, 1A6	U1 RB	621	R/R1	AI	I
19044	14	1-JBOX-253-8862	I&C BUS 1A DISC SWITCH	U1 RB	621	R/R1	AI	I

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19045	20	1-PNLA-009-0009	I&C BUS 1A (CAB 2 OF PNL 1-9-9)	U1 CB	617	U1 MCR	AI	I
19046	20	1-PX-64-160B	POWER SUPPLY (PNL 1-9-19: 1-LI-64-159B,160B)	U1 CB	593	U1 AIR	AI	I
19047	20	1-PXMC-23-114	POWER SUPPLY (PNL 1-9-18: FI-23-36,42 : FI-74-50)	U1 CB	593	U1 AIR	AI	I
19048	20	1-PXMC-23-115 A&B	POWER SUPPLY (PNL 1-9-19: FI-23-48,54; FI-74-64)	U1 CB	593	U1 AIR	AI	II
19049	04	1-XFA-253-0001B1	I&C BUS 1B 480/208-120V TRANSFORMER	U1 RB	593	R/R1	AI	II
19050	04	1-XFA-253-0001B2	I&C BUS 1B REGULATING TRANSFORMER	U1 RB	593	R/R1	AI	II
19051	14	1-JBOX-253-6460	I&C BUS 1B DISC SW 1B2	U1 CB	593	BATT BD 1	AI	II
19052	14	1-JBOX-253-8865	I&C BUS 1B DISC SWITCH	U1 RB	593	R/R1	AI	II
19053	14	1-JBOX-253-6459	I&C BUS 1B DISC SWITCHES 1B3, 1B4, 1B5, 1B6	U1 RB	593	R/R1	AI	II
19054	20	1-PNLA-009-0009	I&C BUS 1B (CAB 3 OF PNL 1-9-9)	U1 CB	617	U1 MCR	AI	II
19055	20	1-PX-64-159B	POWER SUPPLY (PNL 1-9-19)	U1 CB	593	U1 AIR	AI	II
19068	14	1-JBOX-253-7160	I&C BUS 1B DISC SWITCH 1B1	U1 RB	593	R/R1	AI	II
19070	16	1-INVT-256-0001	DIV I ECCS ATU INVERTER	U1 RB	593	Q/R1	AI	I
19071	20	1-PX-71-60-1	ECCS ATU CAB 1-9-81 POWER SUPPLY	U1 CB	593	U1 AIR	AI	I
19072	20	1-PX-71-60-1A	ECCS ATU CAB 1-9-81 POWER SUPPLY	U1 CB	593	U1 AIR	AI	I
19073	20	1-PX-64-50	POWER SUPPLY (PNL 1-25-31: XR-64-50 [DEV BA TERM 11/12])	U1 RB	621	Q/R2	AI	I
19074	20	1-PX-74-56	POWER SUPPLY (PNL 1-9-18: FI-74-56)	U1 CB	593	U1 AIR	AI	I
19075	16	1-INVT-256-0002	DIV II ECCS ATU INVERTER	U1 RB	621	P/R1	AI	II
19076	20	1-PX-71-60-2	ECCS ATU CAB 1-9-82 POWER SUPPLY	U1 CB	593	U1 AIR	AI	II
19077	20	1-PX-71-60-2A	ECCS ATU CAB 1-9-82 POWER SUPPLY	U1 CB	593	U1 AIR	AI	II
19078	20	1-PX-74-70	POWER SUPPLY (PNL 1-9-19: FI-74-70)	U1 CB	593	U1 AIR	AI	II
19079	20	1-PX-64-159A	POWER SUPPLY (1-9-18)	U1 CB	593	U1 AIR	AI	I
19080	20	1-PX-64-160A	POWER SUPPLY (1-9-18)	U1 CB	593	U1 AIR	AI	I
19081	20	1-PX-64-67B	POWER SUPPLY (1-9-19)	U1 CB	593	U1 AIR	AI	II
19082	20	1-PX-64-161	POWER SUPPLY (PNL 9-87)	U1 CB	593	U1 AIR	AI	I
19083	20	1-PX-64-162	POWER SUPPLY (PNL 9-88)	U1 CB	593	U1 AIR	AI	II
19084	18	1-PS-67-50	PRESSURE SWITCH FOR 1-FCV-67-50 (14046)	U1 RB	593	P/R3	AI	
19085	18	1-PS-67-51	PRESSURE SWITCH FOR 1-FCV-67-51 (14047)	U1 RB	565	T/R3	AI	
19088	20	1-LPNL-925-044A/11	COMMON BD LOGIC RELAY PANEL 25-44-A11	U1 RB	621	S/R1	AI	
19089	20	1-LPNL-925-044A/12	COMMON BD LOGIC RELAY PANEL 25-44-A12	U1 RB	621	S/R2	AI	
19090	20	1-LPNL-925-044B/11	COMMON BD LOGIC RELAY PANEL 25-44-B11	U1 RB	621	S/R1	AI	
19091	20	1-LPNL-925-044B/12	COMMON BD LOGIC RELAY PANEL 25-44-B12	U1 RB	621	S/R2	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19100*	14	3-ECAB-231-001A	250V DC CONT PWR TRANSFER SW - 480V SD BD 1A	U3 RB	593	S/R1	AI	I
19101*	14	3-ECAB-231-001B	250V DC CONT PWR TRANSFER SW - 480V SD BD 1B	U3 RB	593	S/R2	AI	II
19114	20	1-PNLA-009-0003A	REACTOR SD & CONT. COOLING PNL	U1 CB	617	U1 MCR	AI	
19115	20	1-PNLA-009-0003B	REACTOR SD & CONT. COOLING PNL	U1 CB	617	U1 MCR	AI	
19116	20	1-PNLA-009-0004	CLEANUP & RECIRC PNL	U1 CB	617	U1 MCR	AI	
19117	20	1-PNLA-009-0005	REACTOR CONTROL PNL	U1 CB	617	U1 MCR	AI	
19118	20	1-PNLA-009-0006	FW & COND PNL	U1 CB	617	U1 MCR	AI	
19120	20	1-PNLA-009-0015	RPS CH A (DIV I)	U1 CB	593	U1 AIR	AI	I
19121	20	1-PNLA-009-0016	RPS CH A, B, C, D	U1 CB	593	U1 AIR	AI	
19122	20	1-PNLA-009-0017	RPS CH B (DIV II)	U1 CB	593	U1 AIR	AI	II
19123	20	1-PNLA-009-0018	FW & RECIRC PNL	U1 CB	593	U1 AIR	AI	
19124	20	1-PNLA-009-0019	PROCESS INSTR PNL	U1 CB	593	U1 AIR	AI	
19125	20	1-PNLA-009-0021	TEMP RECORDING PNL	U1 CB	617	U1 MCR	AI	
19126	20	1-PNLA-009-0028	CRD SELECT RELAY AUX PNL	U1 CB	593	U1 AIR	AI	
19127	20	1-PNLA-009-0030	AUTO BLOWNDOWN AUX PNL	U1 CB	593	U1 AIR	AI	
19128	20	1-PNLA-009-0032	RHR, CS, & HPCI (CH A) PNL	U1 RB	593	U1 AIR	AI	
19129	20	1-PNLA-009-0033	RHR, CS, & HPCI (CH B) PNL	U1 CB	593	U1 AIR	AI	
19130	20	1-PNLA-009-0039	HPCI RELAY AUX PNL	U1 CB	593	U1 AIR	AI	
19131	20	1-PNLA-009-0042	MSIV (INBOARD) DIV II PNL	U1 CB	593	U1 AIR	AI	
19132	20	1-PNLA-009-0043	MSIV (OUTBOARD) DIV II PNL	U1 CB	593	U1 AIR	AI	
19133	20	1-PNLA-009-0054	CONTAINMENT ATM. DILUTION PNL	U1 CB	617	U1 MCR	AI	
19134	20	1-PNLA-009-0055	CONTAINMENT ATM. DILUTION PNL	U1 CB	617	U1 MCR	AI	
19135	20	1-PNLA-009-0081	DIV I ECCS ATU CABINET	U1 CB	593	U1 AIR	AI	
19136	20	1-PNLA-009-0082	DIV II ECCS ATU CABINET	U1 CB	593	U1 AIR	AI	II
19137	20	1-PNLA-009-0083	RPS ATU CAB	U1 CB	593	U1 AIR	AI	I
19138	20	1-PNLA-009-0084	RPS ATU CAB	U1 CB	593	U1 AIR	AI	I
19139	20	1-PNLA-009-0085	RPS ATU CAB	U1 CB	593	U1 AIR	AI	II
19140	20	1-PNLA-009-0086	RPS ATU CAB	U1 CB	593	U1 AIR	AI	II
19141	20	1-PNLA-009-0087	DIV I TORUS TEMP MONITORING	U1 CB	593	U1 AIR	AI	I
19142	20	1-PNLA-009-0088	DIV II TORUS TEMP MONITORING	U1 CB	593	U1 AIR	AI	II
19145	20	1-PNLA-009-0093	NEW PNL (INSTALLED BY DCN W19433)	U1 CB	593	U1 AIR	AI	
19146	18	1-HS-74-7B	LOCAL HS STATION	U1 RB	541	SW CORNER	AI	I

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19147	14	1-JB-668	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541	SW CORNER	AI	I
19148	18	1-HS-74-57B	LOCAL HS STATION	U1 RB	551	TORUS	AI	I
19149	14	1-JB-654	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	551	TORUS	AI	I
19150	18	1-HS-74-59B	LOCAL HS STATION	U1 RB	551	TORUS	AI	I
19151	18	1-HS-74-58B	LOCAL HS STATION	U1 RB	551	TORUS	I	I
19153	18	1-HS-74-52B	LOCAL HS STATION	U1 RB	565	T/R3	AI	II
19154	14	1-JB-1079	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	583	T/R3	AI	II
19155	18	1-HS-74-53B	LOCAL HS STATION	U1 RB	565	T/R3	AI	I
19156	18	1-HS-74-60B	LOCAL HS STATION	U1 RB	593	S/R3	AI	I
19158	18	1-HS-74-61B	LOCAL HS STATION	U1 RB	593	S/R3	I	I
19160	18	1-HS-74-30B	LOCAL HS STATION	U1 RB	541	SE CORNER	AI	II
19162	18	1-HS-74-71B	LOCAL HS STATION	U1 RB	551	TORUS	AI	II
19163	14	1-JB-665	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	551	TORUS	AI	II
19164	18	1-HS-74-72B	LOCAL HS STATION	U1 RB	551	TORUS	I	II
19165	18	1-HS-74-66B	LOCAL HS STATION	U1 RB	583	T/R4	AI	II
19166	14	1-JB-1080	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	583	T/R4	AI	II
19167	18	1-HS-74-67B	LOCAL HS STATION	U1 RB	583	T/R4	AI	II
19170	18	1-HS-74-75B	LOCAL HS STATION	U1 RB	565	S/R6	I	II
19171	18	1-HS-70-47B	LOCAL HS STATION	U1 RB	551	TORUS	I	II
19172	14	1-JB-1204	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	551	TORUS	AI	II
19173	18	1-HS-75-09B	LOCAL HS STATION	U1 RB	519	NW CORNER	AI	I
19175	18	1-HS-75-25B	LOCAL HS STATION	U1 RB	593	P/R4	AI	I
19176	14	1-JBOX-1064	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	593	P/R4	AI	I
19177	18	1-HS-75-37B	LOCAL HS STATION	U1 RB	519	NE CORNER	AI	II
19179	18	1-HS-75-53B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U1 RB	593	P/R4	AI	II
19180	14	1-JBOX-1067	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U1 RB	593	P/R4	AI	II
19181	18	1-HS-23-34B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U1 RB	565	U/R2	AI	I
19182	14	1-JBOX-1077	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565	U/R2	AI	I
19183	18	1-HS-23-40B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U1 RB	565	U/R2	AI	I
19184	18	1-HS-23-46B	LOCAL HS STATION	U1 RB	565	T/R4	AI	II
19185	14	1-JB-1087	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565	T/R4	AI	II
19186	18	1-HS-23-52B	LOCAL HS STATION	U1 RB	565	T/R4	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19187	18	1-HS-74-0005B	LOCAL HS STATION - RHR PUMP 1A	U1 RB	519	SW CORNER	AI	I
19188	18	1-HS-74-0028B	LOCAL HS STATION - RHR PUMP 1B	U1 RB	519	SE CORNER	AI	II
19189	18	1-HS-74-0016B	LOCAL HS STATION - RHR PUMP 1C	U1 RB	519	SW CORNER	AI	I
19190	18	1-HS-74-0039B	LOCAL HS STATION - RHR PUMP 1D	U1 RB	519	SE CORNER	AI	II
19191	18	1-HS-75-0005B	LOCAL HS STATION - CS PUMP 1A	U1 RB	519	NW CORNER	AI	I
19192	18	1-HS-75-0033B	LOCAL HS STATION - CS PUMP 1B	U1 RB	519	NE CORNER	AI	II
19193	18	1-HS-75-0014B	LOCAL HS STATION - CS PUMP 1C	U1 RB	519	NW CORNER	AI	I
19194	18	1-HS-75-0042B	LOCAL HS STATION - CS PUMP 1D	U1 RB	519	NE CORNER	AI	II
19195	18	1-LPNL-925-005A	LOCAL PANEL 25-5A	U1 RB	593	S/R3	AI	
19196	18	1-LPNL-925-005B	LOCAL PANEL 25-5B	U1 RB	593	S/R3	AI	
19197	18	1-LPNL-925-005D	LOCAL PANEL 25-5-001	U1 RB	593	S/R3	AI	
19198	18	1-LPNL-925-006A	LOCAL PANEL 25-6A	U1 RB	593	P/R5	AI	
19199	18	1-LPNL-925-006D	LOCAL PANEL 25-6-001	U1 RB	593	Q/R5	AI	
19200	18	1-LPNL-925-0059	LOCAL PANEL 25-59	U1 RB	519	SW CORNER	AI	
19201	18	1-LPNL-925-0062	LOCAL PANEL 25-62	U1 RB	519	SE CORNER	AI	
19204	20	1-PNLA-925-0031	LOCAL PANEL 25-31	U1 RB	621	Q/R2	AI	
19205	20	1-PNLA-925-0032	LOCAL PANEL 25-32	U1 RB	621	Q/R2	AI	
19206	18	1-LPNL-925-0001	LOCAL PANEL 25-1	U1 RB	519	NW CORNER	AI	
19207	18	1-LPNL-925-0060	LOCAL PANEL 25-60	U1 RB	519	N/E CORNER	AI	
19208**	13	1-MGEN-268-0001DA	LPCI MG SET 1DA	U1 RB	621	U/R4	AI	
19209**	14	VRBOX 1DA	MG SET 1DA VOLTAGE REGULATOR BOX	U1 RB	621	S/R2	AI	
19210**	14	1-JBOX-268-5987	MG SET 1DA CONTROL STATION (1-HS-268-0001DA)	U1 RB	621	U/R4	AI	
19211**	20	1-JBOX-268-5948	MG SET 1DA CONTROL BOX (RELAYS)	U1 RB	621	U/R4	AI	
19212**	13	1-MGEN-268-0001EA	LPCI MG SET 1EA	U1 RB	639	U/R5	AI	
19213**	14	VRBOX 1EA	MG SET 1EA VOLTAGE REGULATOR BOX	U1 RB	621	S/R1	AI	
19214**	14	1-JBOX-268-5989	MG SET 1EA CONTROL STATION (1-HS-268-0001EA)	U1 RB	621	S/R6	AI	
19215**	20	1-JBOX-268-5950	MG SET 1EA CONTROL BOX (RELAYS)	U1 RB	639	U/R4	AI	
19220	20	1-PROT-099-0001A1	RPS CIRCUIT PROTECTOR CABINET 1A1	U1 RB	593	BATT BD 1	AI	
19221	20	1-PROT-099-0001A2	RPS CIRCUIT PROTECTOR CABINET 1A2	U1 RB	593	BATT BD 1	AI	
19222	20	1-PROT-099-0001B1	RPS CIRCUIT PROTECTOR CABINET 1B1	U1 RB	593	BATT BD 1	AI	
19223	20	1-PROT-099-0001B2	RPS CIRCUIT PROTECTOR CABINET 1B2	U1 RB	593	BATT BD 1	AI	
19224	20	1-PROT-099-0001C1	RPS CIRCUIT PROTECTOR CABINET 1C1	U1 RB	593	BATT BD 1	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19225	20	1-PROT-099-0001C2	RPS CIRCUIT PROTECTOR CABINET 1C2	U1 RB	593	BATT BD 1	AI	
19226	18	1-LPNL-925-247A	LOCAL PANEL 1-25-247A (CAD DRYWELL & SUPP. CHAMB. V.)	U1 RB	621	Q/R4	AI	
19227	01	1-BDBB-265-0001B	480V RB VENT BD 1B	U1 RB	565	U/R4	AI	
19228	20	1-PNLA-009-0036A	PANEL 1-9-36A	U1 CB	593	U1 AIR	AI	
19229	18	1-LPNL-925-0247B	LOCAL PANEL 1-25-247B (CAD N2 SUPPLY PANEL B)	U1 RB	621	Q/R4	AI	
19230	18	1-LPNL-925-0007A	LOCAL PANEL 1-25-7A	U1 RB	541	SW CORNER	AI	
19231	18	1-LPNL-925-0007B	LOCAL PANEL 1-25-7B	U1 RB	541	SW CORNER	AI	
19232	14	1-HS-74-101B	HANDSWITCH FOR 1-FCV-74-101 (11055)	U1 RB	565	T/R6	AI	
19239	18	1-TS-64-68	HANDSWITCH FOR 1-CLR-67-917 (14001)	U1 RB	541	SW CORNER	AI	
19240	18	1-HS-64-69	HANDSWITCH FOR 1-CLR-67-918 (14013)	U1 RB	541	SE CORNER	AI	
19241	18	1-TS-64-70	HANDSWITCH FOR 1-CLR-67-921 (14003)	U1 RB	541	SW CORNER	AI	
19242	18	1-HS-64-71	HANDSWITCH FOR 1-CLR-67-922 (14015)	U1 RB	541	SE CORNER	AI	
19243	14	1-HS-69-2B	HANDSWITCH FOR 1-FCV-69-2 (13033)	U1 RB	593	R5/S	AI	
19244	14	1-HS-71-18B	HANDSWITCH FOR 1-FCV-71-18 (13039)	U1 RB	519	NW CORNER	I	
19245	01	1-HS-71-2B	HANDSWITCH FOR 1-FCV-71-2 (13037)	U1 RB	593	R/R1	AI	
19246	14	1-HS-73-27	HANDSWITCH FOR 1-FCV-73-27 (13043)	U1 RB	519	HPCI	I	
19247	18	1-HS-73-3B	HANDSWITCH FOR 1-FCV-73-3 (13041)	U1 RB	551	TORUS	AI	
19248	18	1-HS-73-81B	HANDSWITCH FOR 1-FCV-73-81 (13042)	U1 RB	551	TORUS	AI	
19249 *	14	2-HS-74-100B	HANDSWITCH FOR 2-FCV-74-100 (11010)	U2 RB	565	T/R8	AI	
19250	14	1-HS-74-12B	HANDSWITCH FOR 1-FCV-74-12 (11011)	U1 RB	519	SW CORNER	AI	
19251	14	1-HS-74-13B	HANDSWITCH FOR 1-FCV-74-13 (11012)	U1 RB	541	SW CORNER	AI	
19252	14	1-HS-74-1B	HANDSWITCH FOR 1-FCV-74-1 (11001)	U1 RB	519	SW CORNER	AI	
19253	14	1-HS-74-24B	HANDSWITCH FOR 1-FCV-74-24 (11029)	U1 RB	519	SE CORNER	AI	
19254	14	1-HS-74-25B	HANDSWITCH FOR 1-FCV-74-25 (11030)	U1 RB	541	SE CORNER	AI	
19255	14	1-HS-74-2B	HANDSWITCH FOR 1-FCV-74-2 (11002)	U1 RB	541	SW CORNER	AI	
19256	14	1-HS-74-35B	HANDSWITCH FOR 1-FCV-74-35 (11037)	U1 RB	519	SE CORNER	AI	
19257	14	1-HS-74-36B	HANDSWITCH FOR 1-FCV-74-36 (11038)	U1 RB	541	SE CORNER	AI	
19258	18	1-HS-74-73B	HANDSWITCH FOR 1-FCV-74-73 (11046)	U1 RB	551	TORUS	AI	
19259 *	14	2-HS-74-97B	HANDSWITCH FOR 2-FCV-74-97 (11013)	U2 RB	519	SW CORNER	AI	
19260	18	1-HS-75-11B	HANDSWITCH FOR 1-FCV-75-11 (15006)	U1 RB	519	NW CORNER	AI	
19261	14	1-HS-75-22B	HANDSWITCH FOR 1-FCV-75-22 (15010)	U1 RB	541	NW CORNER	AI	
19262	18	1-HS-75-23B	HANDSWITCH FOR 1-FCV-75-23 (15012)	U1 RB	593	P/R4	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19263	18	1-HS-75-2B	HANDSWITCH FOR 1-FCV-75-2 (15001)	U1 RB	519	NW CORNER	AI	
19264	18	1-HS-75-30B	HANDSWITCH FOR 1-FCV-75-30 (15015)	U1 RB	519	NE CORNER	AI	
19265	18	1-HS-75-39B	HANDSWITCH FOR 1-FCV-75-39 (15020)	U1 RB	519	NE CORNER	AI	
19266	14	1-HS-75-50B	HANDSWITCH FOR 1-FCV-75-50 (15024)	U1 RB	541	NE CORNER	AI	
19267	18	1-HS-75-51B	HANDSWITCH FOR 1-FCV-75-51 (15026)	U1 RB	593	P/R4	AI	
19268	14	1-HS-78-61B	HANDSWITCH FOR 1-FCV-78-61 (11026)	U1 RB	621	R5/S	AI	
19269	14	1-HS-64-72	HANDSWITCH FOR 1-CLR-67-919 (14002)	U1 RB	541	NW CORNER	AI	
19270	14	1-HS-64-73	HANDSWITCH FOR 1-CLR-67-920 (14014)	U1 RB	541	NE CORNER	AI	
19271	18	1-TS-64-68	TEMPERATURE SWITCH FOR 1-CLR-67-917 (14001)	U1 RB	519	SW CORNER	AI	
19272	18	1-TS-64-69	TEMPERATURE SWITCH FOR 1-CLR-67-918 (14013)	U1 RB	519	SE CORNER	AI	
19273	18	1-TS-64-70	TEMPERATURE SWITCH FOR 1-CLR-67-921 (14003)	U1 RB	519	SW CORNER	AI	
19274	18	1-TS-64-71	TEMPERATURE SWITCH FOR 1-CLR-67-922 (14015)	U1 RB	519	SE CORNER	AI	
19275	18	1-TS-1-17A	MAIN STEAM VAULT TEMPERATURE SWITCH	U1 RB	565	MSVLT N/T3	AI	
19276	18	1-TS-1-17B	MAIN STEAM VAULT TEMPERATURE SWITCH	U1 RB	565	MSVLT N/T3	AI	
19277	18	1-TS-1-17C	MAIN STEAM VAULT TEMPERATURE SWITCH	U1 RB	565	MSVLT N/T3	AI	
19278	18	1-TS-1-17D	MAIN STEAM VAULT TEMPERATURE SWITCH	U1 RB	565	MSVLT N/T3	AI	
19279	18	1-TS-1-29A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	565	MSTNL K/T3	AI	
19280	18	1-TS-1-29B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	565	MSTNL K/T3	AI	
19281	18	1-TS-1-29C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	565	MSTNL K/T3	AI	
19282	18	1-TS-1-29D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	565	MSTNL K/T3	AI	
19283	18	1-TS-1-40A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19284	18	1-TS-1-40B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19285	18	1-TS-1-40C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19286	18	1-TS-1-40D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19287	18	1-TS-1-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19288	18	1-TS-1-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19289	18	1-TS-1-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19290	18	1-TS-1-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19291	18	1-TS-64-72	TEMPERATURE SWITCH FOR 1-CLR-67-919 (14002)	U1 RB	519	NW CORNER	AI	
19292	18	1-TS-64-73	TEMPERATURE SWITCH FOR 1-CLR-67-920 (14014)	U1 RB	519	NE CORNER	AI	
19293*	14	2-HS-74-96B	HAND SWITCH FOR 2-FCV-74-96 (11003)	RB	519	SW CORNER	AI	
19294	00	1-AMP-092-0007/41A	IRM CH. "A" VOLTAGE PREAMPLIFIER 7-34A	RB	565	S/R3	AI	

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19295	00	1-AMP-092-0007/41B	IRM CH. "B" VOLTAGE PREAMPLIFIER 7-34B	RB	565	S/R3	AI	
19296	14	1-LPNL-925-0027	PANEL 1-25-27 IRM PREAMP. RPS I	RB	565	S/R3	AI	
19297	00	1-AMP-092-0007/41C	IRM CH. "C" VOLTAGE PREAMPLIFIER 7-34C	RB	577	Q/R5	AI	
19298	00	1-AMP-092-0007/41D	IRM CH. "D" VOLTAGE PREAMPLIFIER 7-34D	RB	577	Q/R5	AI	
19299	14	1-LPNL-925-0061	PANEL 1-25-61 IRM PREAMP. RPS II	RB	577	Q/R5	AI	
19300	20	1-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U1 MCR	AI	
19301	20	1-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U1 MCR	AI	
19302	20	1-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	CB	617	U1 MCR	AI	
19303	20	1-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	CB	617	U1 MCR	AI	
19304	20	1-PNLA-009-012	PANEL 1-9-12	CB	617	U1 MCR	AI	
19305	15	1-BATD-283-000A1	24V NEUTRON MONITORING BATTERY, U1 CHANNEL A	CB	593	BAT RM 1	AI	
19306	15	1-BATD-283-000B1	24V NEUTRON MONITORING BATTERY, U1 CHANNEL B	CB	593	BAT RM 1	AI	
19307	16	1-CHGD-283-A1-1	24V NEUTRON BATTERY CHARGERS A1-1	CB	593	BAT BD RM 1	AI	
19308	16	1-CHGD-283-A2-1	24V NEUTRON BATTERY CHARGERS A2-1	CB	593	BAT BD RM 1	AI	
19309	16	1-CHGD-283-B1-1	24V NEUTRON BATTERY CHARGERS B1-1	CB	593	BAT BD RM 1	AI	
19310	16	1-CHGD-283-B2-1	24V NEUTRON BATTERY CHARGERS B2-1	CB	593	BAT BD RM 1	AI	
19312	14	1-HS-71-17B	HANDSWITCH FOR 1-FCV-71-17 (13074)	U1 RB	519	NW CORNER	AI	
19313	20	1-HS-1-56A	HANDSWITCH FOR 1-FCV-1-56 (13075)	U1 CB	617	U1 MCR	AI	
19314	14	1-HS-73-26B	HANDSWITCH FOR 1-FCV-73-26 (13076)	U1 RB	519	SW CORNER	AI	
19316	20	1-HS-77-2A	HANDSWITCH FOR 1-FCV-77-2A (13080)	U1 CB	617	U1 MCR	AI	
19317	20	1-HS-77-15A	HANDSWITCH FOR 1-FCV-77-15A (13081)	U1 CB	617	U1 MCR	AI	
19318	20	1-HS-64-18	HANDSWITCH FOR 1-FCV-64-18 (13082)	U1 CB	617	U1 MCR	AI	
19319	20	1-HS-64-19	HANDSWITCH FOR 1-FCV-64-19 (13083)	U1 CB	617	U1 MCR	AI	
19320	20	1-HS-76-18	HANDSWITCH FOR 1-FCV-76-18 (13084)	U1 CB	617	U1 MCR	AI	
19321	20	1-HS-76-19	HANDSWITCH FOR 1-FCV-76-19 (13085)	U1 CB	617	U1 MCR	AI	
19323	14	1-JB-0375	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	519	SE CORNER	AI	
19324	14	1-JB-0662	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541	SE CORNER	AI	
19325	14	1-JB-0658	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541	SE CORNER	AI	
19326	14	1-JB-1032	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	593	S/R3	AI	
19327	14	1-JB-1095	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565	S/R6	AI	
19328	14	1-JB-1559	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565	T/R6	AI	
19329	14	1-JB-0670	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541	NE CORNER	AI	

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19330	14	1-JB-0791	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	519	NW CORNER	AI	
19331	14	1-JB-0681	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541	NW CORNER	AI	
19332	14	1-CS-75-9B	CONTROL STATION FOR 1-HS-75-9B	U1 RB	519	NW CORNER	AI	
19333	14	1-CS-75-37B	CONTROL STATION FOR 1-HS-75-37B	U1 RB	519	NE CORNER	AI	
19334	14	1-JB-1231	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565	S/R6	AI	
19351	14	1-JB-3828	JUNCTION BOX FOR 1-TS-1-29A	U1 RB	565	MSTNL K/T3	AI	
19352	14	1-JB-3829	JUNCTION BOX FOR 1-TS-1-29B	U1 RB	565	MSTNL K/T3	AI	
19353	14	1-JB-3830	JUNCTION BOX FOR 1-TS-1-29C	U1 RB	565	MSTNL K/T3	AI	
19354	14	1-JB-3831	JUNCTION BOX FOR 1-TS-1-29D	U1 RB	565	MSTNL K/T3	AI	
19355	14	1-JB-3801	JUNCTION BOX FOR 1-TS-1-40A	U1 RB	586	MSTNL K/T3	AI	
19356	14	1-JB-3802	JUNCTION BOX FOR 1-TS-1-40B	U1 RB	586	MSTNL K/T3	AI	
19357	14	1-JB-3803	JUNCTION BOX FOR 1-TS-1-40C	U1 RB	586	MSTNL K/T3	AI	
19358	14	1-JB-3804	JUNCTION BOX FOR 1-TS-1-40D	U1 RB	586	MSTNL K/T3	AI	
19359	14	1-JB-3813	JUNCTION BOX FOR 1-TS-1-54A	U1 RB	586	MSTNL K/T3	AI	
19360	14	1-JB-3814	JUNCTION BOX FOR 1-TS-1-54B	U1 RB	586	MSTNL K/T3	AI	
19361	14	1-JB-3815	JUNCTION BOX FOR 1-TS-1-54C	U1 RB	586	MSTNL K/T3	AI	
19362	14	1-JB-3816	JUNCTION BOX FOR 1-TS-1-54D	U1 RB	586	MSTNL K/T3	AI	
19404 *	04	0-OXF-219-TDA	4KV/480V XFMR TDA	U1/2 DG	583	T/R1	AI	IA
19405 *	04	0-OXF-219-TDB	4KV/480V XFMR TDB	U1/2 DG	583	P/R1	AI	IID
19412	03	0-BDAA-211-0000A	4KV SHDN BD A	U1 RB	621	R/R2	AI	IA
19413	03	0-BDAA-211-0000B	4KV SHDN BD B	U1 RB	593	Q/R2	AI	IB
19414 *	03	0-BDAA-211-0000C	4KV SHDN BD C	U2 RB	621	R/R13	AI	IIC
19415 *	03	0-BDAA-211-0000D	4KV SHDN BD D	U2 RB	593	Q/R13	AI	IID
19418	02	1-BDBB-231-0001A	480V SHDN BD 1A	U1 RB	621	S/R1	AI	I
19419	02	1-BDBB-231-0001B	480V SHDN BD 1B	U1 RB	621	S/R2	AI	II
19423	01	1-BDBB-268-0001A	480V RMOV BD 1A	U1 RB	621	R/R1	AI	I
19424	01	1-BDBB-268-0001B	480V RMOV BD 1B	U1 RB	593	R/R1	AI	II
19431 *	01	0-BDBB-219-0000A	480V DSL AUX BD A	U1/2 DG	583	480V AUX BD	AI	I
19432 *	01	0-BDBB-219-0000B	480V DSL AUX BD B	U1/2 DG	583	480V AUX BD	AI	II
19437	14	0-BDDD-280-0001	250V BATTERY BD 1	U1 RB	593	P/R4	AI	
19438 *	14	0-BDDD-280-0002	250V BATTERY BD 2	U2 RB	593	P/R10	AI	
19439 *	14	0-BDDD-280-0003	250V BATTERY BD 3	U3 RB	593	P/R18	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19451 *	20	0-PNLA-009-0023/7	PANEL 0-9-23-7	U2 CB	617	U2 MCR	AI	
19452 *	20	0-PNLA-009-0023/8	PANEL 0-9-23-8	U2 CB	617	U2 MCR	AI	
19457 *	20	0-PNLA-009-0028	PANEL 9-28	U2 CB	593	U2 AIR	AI	
19476 *	20	0-LPNL-925-0041A	PANEL 25-41A	U1/2 DG	583	NORTH END	AI	
19477 *	20	0-LPNL-925-0041B	PANEL 25-41B	U1/2 DG	583	NORTH END	AI	
19478 *	20	0-LPNL-925-0041C	PANEL 25-41C	U1/2 DG	583	NORTH END	AI	
19479 *	20	0-LPNL-925-0041D	PANEL 25-41D	U1/2 DG	583	NORTH END	AI	
19480 *	20	0-LPNL-925-0042A1	PANEL 25-42A1	U2 RB	621	R/R14	AI	
19481 *	20	0-LPNL-925-0042A2	PANEL 25-42A2	U2 RB	621	R/R14	AI	
19482 *	20	0-LPNL-925-0042B1	PANEL 25-42B1	U2 RB	621	Q/R14	AI	
19483 *	20	0-LPNL-925-0042B2	PANEL 25-42B2	U2 RB	621	Q/R14	AI	
19484 *	20	0-LPNL-925-0043A1	PANEL 25-43A1	U1/2 DG	583	HALLWAY	AI	
19485 *	20	0-LPNL-925-0043A2	PANEL 25-43A2	U1/2 DG	583	HALLWAY	AI	
19486 *	20	0-LPNL-925-0043B1	PANEL 25-43B1	U1/2 DG	583	HALLWAY	AI	
19487 *	20	0-LPNL-925-0043B2	PANEL 25-43B2	U1/2 DG	583	HALLWAY	AI	
19492	20	0-LPNL-925-0045A	PANEL 25-45A	U1 RB	621	R/R2	AI	
19493	20	0-LPNL-925-0045B	PANEL 25-45B	U1 RB	593	R/R2	AI	
19494 *	20	0-LPNL-925-0045C	PANEL 25-45C	U2 RB	621	R/R13	AI	
19495 *	20	0-LPNL-925-0045D	PANEL 25-45D	U2 RB	593	R/R13	AI	
19496 *	20	0-LPNL-925-0046A	PANEL 25-46A	U1/2 DG	565	DG A	AI	
19497 *	20	0-LPNL-925-0046B	PANEL 25-46B	U1/2 DG	565	DG B	AI	
19498 *	20	0-LPNL-925-0046C	PANEL 25-46C	U1/2 DG	565	DG C	AI	
19499 *	20	0-LPNL-925-0046D	PANEL 25-46D	U1/2 DG	565	DG D	AI	
19500 *	20	0-LPNL-925-0047A	PANEL 0-25-47A	U1/2 DG	565	DG A	AI	
19501 *	20	0-LPNL-925-0047B	PANEL 0-25-47B	U1/2 DG	565	DG B	AI	
19502 *	20	0-LPNL-925-0047C	PANEL 0-25-47C	U1/2 DG	565	DG C	AI	
19503 *	20	0-LPNL-925-0047D	PANEL 0-25-47D	U1/2 DG	565	DG D	AI	
19508 *	20	0-PNLA-082-0000A	DG A ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG A	AI	
19509 *	20	0-PNLA-082-0000B	DG B ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG B	AI	
19510 *	20	0-PNLA-082-0000C	DG C ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG C	AI	
19511 *	20	0-PNLA-082-0000D	DG D ELECTRICAL CONTROL CABINET	U1/2 DG	565	DG D	AI	
19516	14	0-XSW-248-0001	250V MAIN BATT CHGR OUTPUT XFR SW 1	U1 RB	593	P/R4	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19517 *	14	0-XSW-248-0002A	250V MAIN BATT CHGR OUTPUT XFR SW 2A	U2 RB	593	P/R9	AI	
19518 *	14	0-XSW-248-0003	250V MAIN BATT CHGR OUTPUT XFR SW 3	U3 RB	593	P/R16	AI	
19519	15	0-BATA-248-0000A	250V BATTERY SB-A	U1 RB	621	S/R2	AI	IA
19520	14	0-PNLA-248-A	250V DISTRIBUTION PANEL SB-A	U1 RB	621	S/R2	AI	IA
19521	16	0-CHGA-248-0000A	250V BATTERY CHARGER SB-A	U1 RB	621	S/R2	AI	IA
19522	15	0-BATA-248-0000B	250V BATTERY SB-B	U1 RB	621	R/R2	AI	IB
19523	14	0-PNLA-248-B	250V DISTRIBUTION PANEL SB-B	U1 RB	621	R/R2	AI	IB
19524	16	0-CHGA-248-0000B	250V BATTERY CHARGER SB-B	U1 RB	621	R/R2	AI	IB
19525 *	15	0-BATA-248-0000C	250V BATTERY SB-C	U2 RB	621	S/R13	AI	IIC
19526 *	14	0-PNLA-248-0000C	250V DISTRIBUTION PANEL SB-C	U2 RB	621	S/R13	AI	IIC
19527 *	16	0-CHGA-248-0000C	250V BATTERY CHARGER SB-C	U2 RB	621	S/R13	AI	IIC
19528 *	15	0-BATA-248-0000D	250V BATTERY SB-D	U2 RB	621	S/R13	AI	IID
19529 *	14	0-PNLA-248-0000D	250V DISTRIBUTION PANEL SB-D	U2 RB	621	S/R13	AI	IID
19530 *	16	0-CHGA-248-0000D	250V BATTERY CHARGER SB-D	U2 RB	621	S/R13	AI	IID
19534	16	0-CHGA-248-0001	250V BATTERY CHARGER 1	U1 RB	593	P/R4	AI	
19535 *	16	0-CHGA-248-0002A	250V BATTERY CHARGER 2A	U2 RB	593	P/R9	AI	
19536 *	16	0-CHGA-248-0003	250V BATTERY CHARGER 3	U3 RB	593	P/R18	AI	
19537	15	0-BATA-248-0001	250V MAIN BATTERY 1	U1 RB	593	P/R4	AI	
19538 *	15	0-BATA-248-0002	250V MAIN BATTERY 2	U2 RB	593	P/R9	AI	
19539 *	15	0-BATA-248-0003	250V MAIN BATTERY 3	U3 RB	593	P/R18	AI	
19542 *	15	0-BATB-254-0000A	125V DC DSL BATT A	U1/2 DG	565	DG A	AI	IA
19543 *	15	0-BATB-254-0000B	125V DC DSL BATT B	U1/2 DG	565	DG B	AI	IB
19544 *	15	0-BATB-254-0000C	125V DC DSL BATT C	U1/2 DG	565	DG C	AI	IIC
19545 *	15	0-BATB-254-0000D	125V DC DSL BATT D	U1/2 DG	565	DG D	AI	IID
19546 *	14	0-BDGG-254-0000A	125V DC DSL BATT BD A	U1/2 DG	565	DG A	AI	IA
19547 *	14	0-BDGG-254-0000B	125V DC DSL BATT BD B	U1/2 DG	565	DG B	AI	IB
19548 *	14	0-BDGG-254-0000C	125V DC DSL BATT BD C	U1/2 DG	565	DG C	AI	IIC
19549 *	14	0-BDGG-254-0000D	125V DC DSL BATT BD D	U1/2 DG	565	DG D	AI	IID
19550 *	16	0-CHGB-254-0000AA	125V DSL GEN A BATT CHGR A	U1/2 DG	565	DG A	AI	I
19551 *	16	0-CHGB-254-0000BA	125V DSL GEN B BATT CHGR A	U1/2 DG	565	DG B	AI	I
19552 *	16	0-CHGB-254-0000CB	125V DSL GEN C BATT CHGR B	U1/2 DG	565	DG C	AI	II
19553 *	16	0-CHGB-254-0000DB	125V DSL GEN D BATT CHGR B	U1/2 DG	565	DG D	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19560 *	04	0-XFA-082-000AA	DG-A NEUTRAL GRN XFMR	DGB 1/2	565	DG - A	AI	
19561 *	04	0-XFA-082-000BA	DG-B NEUTRAL GRN XFMR	DGB 1/2	565	DG - B	AI	
19562 *	04	0-XFA-082-000CA	DG-C NEUTRAL GRN XFMR	DGB 1/2	565	DG - C	AI	
19563 *	04	0-XFA-082-000DA	DG-D NEUTRAL GRN XFMR	DGB 1/2	565	DG - D	AI	
19594	04	1-XFA-231-TS1A	4KV/480V TRANSFORMER TS1A	U1 RB	621	T/R1	AI	I
19595	04	1-XFA-231-TS1B	4KV/480V TRANSFORMER TS1B	U1 RB	621	S/R7	AI	II
19643 *	18	0-HS-23-5B	LOCAL HS STATION - RHRSW PUMP A2	INTAKE	565	A	AI	I
19644 *	18	0-HS-23-85B	LOCAL HS STATION - RHRSW PUMP A3	INTAKE	565	A	AI	I
19645 *	18	0-HS-23-19B	LOCAL HS STATION - RHRSW PUMP B2	INTAKE	565	B	AI	II
19646 *	18	0-HS-23-88B	LOCAL HS STATION - RHRSW PUMP B3	INTAKE	565	B	AI	II
19647 *	18	0-HS-23-12B	LOCAL HS STATION - RHRSW PUMP C2	INTAKE	565	C	AI	I
19648 *	18	0-HS-23-91B	LOCAL HS STATION - RHRSW PUMP C3	INTAKE	565	C	AI	I
19649 *	18	0-HS-23-27B	LOCAL HS STATION - RHRSW PUMP D2	INTAKE	565	D	AI	II
19650 *	18	0-HS-23-94B	LOCAL HS STATION - RHRSW PUMP D3	INTAKE	565	D	AI	IID
19655 *	14	0-JBOX-30-0640	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM A	AI	I
19656 *	18	0-HS-30-64	LOCAL HS STATION - DG A EXH FAN A	U1/2 DG	583	ELEC BD A	AI	I
19657 *	14	0-JBOX-30-1817	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM A	AI	II
19658 *	18	0-HS-30-65	LOCAL HS STATION - DG A EXH FAN B	U1/2 DG	583	ELEC BD A	AI	II
19659 *	14	0-JBOX-30-1825	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM B	AI	I
19660 *	18	0-HS-30-66	LOCAL HS STATION - DG B EXH FAN A	U1/2 DG	583	ELEC BD A	AI	I
19661 *	14	0-JBOX-30-1826	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM B	AI	II
19662 *	18	0-HS-30-67	LOCAL HS STATION - DG B EXH FAN B	U1/2 DG	583	ELEC BD A	AI	II
19663 *	14	0-JBOX-30-1828	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM C	AI	I
19664 *	18	0-HS-30-69	LOCAL HS STATION - DG C EXH FAN B	U1/2 DG	583	ELEC BD B	AI	I
19665 *	14	0-JBOX-30-1827	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM C	AI	II
19666 *	18	0-HS-30-68	LOCAL HS STATION - DG C EXH FAN A	U1/2 DG	583	ELEC BD B	AI	II
19667 *	14	0-JBOX-30-1830	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM D	AI	I
19668 *	18	0-HS-30-71	LOCAL HS STATION - DG D EXH FAN B	U1/2 DG	583	ELEC BD B	AI	I
19669 *	14	0-JBOX-30-1829	JUNCTION BOX (TERM BLOCK)	U1/2 DG	583	FAN RM D	AI	II
19670 *	18	0-HS-30-70	LOCAL HS STATION - DG D EXH FAN A	U1/2 DG	583	ELEC BD B	AI	II
19691 *	20	0-ECAB-067-0925	EECW PUMP DISCHARGE STRAINER A CONTROL PANEL	INTAKE	565	A	AI	
19692 *	20	0-ECAB-067-0926	EECW PUMP DISCHARGE STRAINER B CONTROL PANEL	INTAKE	565	B	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19693 *	20	0-ECAB-067-0927	EECW PUMP DISCHARGE STRAINER C CONTROL PANEL	INTAKE	565	C	AI	
19694 *	20	0-ECAB-067-0928	EECW PUMP DISCHARGE STRAINER D CONTROL PANEL	INTAKE	565	D	AI	
19703 *	20	0-LPNL-925-0246A	PANEL 25-246A (CAD N2 SUPPLY PNL A)	YARD	565	YARD	AI	
19704 *	20	0-LPNL-925-0246B	PANEL 25-246B (CAD N2 SUPPLY PNL B)	YARD	565	YARD	AI	
19709	20	1-PNLA-009-0020	PANEL 1-9-20	U1 CB	617	U1 MCR	AI	
19711 *	20	NONE	CO2 RELAY PNL FOR 39-10	U1/2 DG	565	DG D	AI	
19712 *	20	NONE	CO2 RELAY PNL FOR 39-7	U1/2 DG	565	DG A	AI	
19713 *	20	NONE	CO2 RELAY PNL FOR 39-8	U1/2 DG	565	DG B	AI	
19714 *	20	NONE	CO2 RELAY PNL FOR 39-9	U1/2 DG	565	DG C	AI	
19716	18	1-LPNL-925-0223	LOCAL PANEL 1-25-223 – RAW COOLING WATER PANEL	U1 RB	593	Q/R2	AI	
19717 *	20	2-PNLA-009-0008	PANEL 2-9-8	U2 CB	617	U2 MCR	AI	
19719 *	18	2-LPNL-925-0223	LOCAL PANEL 2-25-223	U2 RB	593	Q/R12	AI	
19720 *	18	2-LPNL-925-0007A	LOCAL PANEL 2-25-7A	U2 RB	541	SW CORNER	AI	
19721 *	18	2-LPNL-925-0007B	LOCAL PANEL 2-25-7B	U2 RB	541	SW CORNER	AI	
19722 *	18	0-HS-67-48B	HANDSWITCH FOR 0-FCV-67-48	INTAKE	565	D	AI	
19723 *	18	0-HS-67-49B	HANDSWITCH FOR 0-FCV-67-49	INTAKE	565	C	AI	
19724 *	18	2-HS-73-81B	HANDSWITCH FOR 2-FCV-73-81	U2 RB	519	TORUS	AI	
19729	14	1-HS-23-57B	HANDSWITCH FOR 1-FCV-23-57	U1 RB	565	R6/S	AI	
19791	20	1-PNLA-009-0008	PANEL 1-9-8	U1 CB	617	U1 MCR	AI	
19792	18	1-LPNL-925-006B	LOCAL PANEL 25-6B	U1 RB	593	R5/P	AI	
19794	04	1-XFA-099-0010	RPS REGULATING TRANSFORMER TRP-1	U1 CB	593	BATT BD 1	AI	
19795	14	1-FUDS-099-0001CA	RPS REG XFMR DISC SW FROM 480 V RMOV BD 1B	U1 CB	593	BATT BD 1	AI	
19796	04	TUP1	UNIT PREFERRED XFMR	U1 CB	593	BATT BD 1	AI	
19797	14	1-FUDS-099-0001CB	RPS BUS XFMR DISC SW	U1 CB	593	BATT BD 1	AI	
19801	14	1-JB-6439	JUNCTION BOX SERVING 1-TE-161A	U1 RB	519	TORUS		
19802	14	1-JB-6440	JUNCTION BOX SERVING 1-TE-161B	U1 RB	519	TORUS		
19803	14	1-JB-6441	JUNCTION BOX SERVING 1-TE-161C	U1 RB	519	TORUS		
19804	14	1-JB-6442	JUNCTION BOX SERVING 1-TE-161D	U1 RB	519	TORUS		
19805	14	1-JB-6443	JUNCTION BOX SERVING 1-TE-161E	U1 RB	519	TORUS		
19806	14	1-JB-6444	JUNCTION BOX SERVING 1-TE-161F	U1 RB	519	TORUS		
19807	14	1-JB-6445	JUNCTION BOX SERVING 1-TE-161G	U1 RB	519	TORUS		
19808	14	1-JB-6446	JUNCTION BOX SERVING 1-TE-161H	U1 RB	519	TORUS		

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19809	14	1-JB-6453	JUNCTION BOX SERVING 1-TE-162A	U1 RB	519	TORUS		
19810	14	1-JB-6454	JUNCTION BOX SERVING 1-TE-162B	U1 RB	519	TORUS		
19811	14	1-JB-6447	JUNCTION BOX SERVING 1-TE-162C	U1 RB	519	TORUS		
19812	14	1-JB-6448	JUNCTION BOX SERVING 1-TE-162D	U1 RB	519	TORUS		
19813	14	1-JB-6449	JUNCTION BOX SERVING 1-TE-162E	U1 RB	519	TORUS		
19814	14	1-JB-6450	JUNCTION BOX SERVING 1-TE-162F	U1 RB	519	TORUS		
19815	14	1-JB-6451	JUNCTION BOX SERVING 1-TE-162G	U1 RB	519	TORUS		
19816	14	1-JB-6452	JUNCTION BOX SERVING 1-TE-162H	U1 RB	519	TORUS		

* Note that these equipment items are either common to or shared by both Units 1 & 2, are not physically located in Unit 1, and were previously evaluated under the Unit 2 USI A-46 program. These items are included in the Unit 1 Safe Shutdown Equipment List for completeness.

** DCN 51216, Stages 3 and 4, will remove all four U1 LPCI M/G Sets and associated automatic transfer capability for the 480V RMOV Boards 1D and 1E respectively. New cable feeds will be installed directly between the 480V Shutdown Boards 1A & 1B and the 480V RMOV Boards 1D & 1E replacing the LPCI M/G Set feeds.

APPENDIX C

SEISMIC REVIEW SSEL

APPENDIX C
SEISMIC REVIEW SSEL

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
10001	00	1-HCU-85,1-185	CRD/HYDRAULIC CONTROL UNIT	U1 RB	565	R2 & R6/P-S	AI	1,2
10002	07	1-FCV-85-82A	CRD/WEST SDV VENT VALVE	U1 RB	565	R2/S	AI	1
10003	07	1-FCV-85-82	CRD/WEST SDV VENT VALVE	U1 RB	565	R2/S	AI	2
10004	07	1-FCV-85-37C	CRD/WEST SDV DRAIN VALVE	U1 RB	565	R2/P	AI	1
10005	07	1-FCV-85-37D	CRD/WEST SDV DRAIN VALVE	U1 RB	565	R2/P	AI	2
10006	07	1-FCV-85-83A	CRD/EAST SDV VENT VALVE	U1 RB	565	R6/S	AI	1
10007	07	1-FCV-85-83	CRD/EAST SDV VENT VALVE	U1 RB	565	R6/S	AI	2
10008	07	1-FCV-85-37E	CRD/EAST SDV DRAIN VALVE	U1 RB	565	R6/P	AI	1
10009	07	1-FCV-85-37F	CRD/EAST SDV DRAIN VALVE	U1 RB	565	R6/P	AI	2
10010	21	1-TNK-85-901	CRD/WEST SCRAM INSTRUMENT VOLUME	U1 RB	565	R2/P	AI	1,2
10011	21	1-TNK-85-902	CRD/EAST SCRAM INSTRUMENT VOLUME	U1 RB	565	R6/P	AI	1,2
10012	08B	1-FSV-85-37A	CRD/SCRAM DUMP VALVE	U1 RB	565	R5/N	AI	1
10013	08B	1-FSV-85-37B	CRD/SCRAM DUMP VALVE	U1 RB	565	R5/N	AI	1
10014	08B	1-FSV-85-35A	CRD/BACKUP SCRAM VALVE	U1 RB	565	R5/N	AI	2
10015	08B	1-FSV-85-35B	CRD/BACKUP SCRAM VALVE	U1 RB	565	R5/N	AI	2
10016	20	1-HS-99-5A/S1A	RPS/REACTOR MANUAL SCRAM CHANNEL A1	U1 CB	617	U1 MCR	AI	1
10017	20	1-HS-99-5A/S1B	RPS/REACTOR MANUAL SCRAM CHANNEL B1	U1 CB	617	U1 MCR	AI	1
10018	20	1-HS-99-5A-S1	RPS/REACTOR MODE SWITCH	U1 CB	617	U1 MCR	AI	2
10019	8B	1-FSV-85-70A	CRD/BACKUP PILOT SCRAM VALVE 'A'	U1 RB	565	R5/N	AI	
10020	8B	1-FSV-85-70B	CRD/ BACKUP PILOT SCRAM VALVE 'B'	U1 RB	565	R5/N	AI	
10023	8B	1-FSV-85-39A	CRD/ISOLATION VALVE	U1 RB	565	CRD RACKS	AI	
10024	8B	1-FSV-85-39B	CRD/ISOLATION VALVE	U1 RB	565	CRD RACKS	AI	
10025	18	1-PI-85-88	PRESSURE INDICATOR	U1 RB	565	R6/S	AI	
10026	18	1-PI-85-89	PRESSURE INDICATOR	U1 RB	565	R2/P	AI	
10027	18	1-PI-85-90	PRESSURE INDICATOR	U1 RB	565	R2/P	AI	
11001	08A	1-FCV-74-1	RHR/PUMP 1A SUCTION VALVE FROM SUPRESSION POOL	U1 RB	519	SW CORNER	AI	1
11002	08A	1-FCV-74-2	RHR/PUMP 1A SUCTION VALVE FROM SHUTDOWN COOLING	U1 RB	541	SW CORNER	AI	1
11004	06	1-PMP-74-5	RHR/PUMP 1A	U1 RB	519	SW CORNER	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
11006	08A	1-FCV-74-7	RHR/PUMP 1A & 1C MINIMUM FLOW VALVE	U1 RB	541	SW CORNER	AI	1
11009	21	1-HEX-74-900A	RHR/HEAT EXCHANGER 1A	U1 RB	565	SW HX	AI	1
11011	08A	1-FCV-74-12	RHR/PUMP 1C SUCTION VALVE FROM SUPRESSION POOL	U1 RB	519	SW CORNER	AI	1A
11012	08A	1-FCV-74-13	RHR/PUMP 1C SUCTION VALVE FROM SHUTDOWN COOLING	U1 RB	541	SW CORNER	AI	1A
11014	06	1-PMP-74-16	RHR/PUMP 1C	U1 RB	519	SW CORNER	AI	1A
11017	21	1-HEX-74-900C	RHR/HEAT EXCHANGER 1C	U1 RB	565	SW HX	AI	1A
11018	20	1-FI-74-50	RHR/LOOP I FLOW INDICATOR	U1 CB	617	U1 MCR	AI	1
11019	20	1-FI-74-56	RHR/LOOP I FLOW INDICATOR	U1 CB	617	U1 MCR	AI	1
11020	08A	1-FCV-74-57	RHR/LOOP I TORUS CONTAINMENT COOLING/SPRAY VALVE	U1 RB	551	TORUS	AI	1
11021	08A	1-FCV-74-59	RHR/LOOP I SUPRESSION POOL COOLING VALVE	U1 RB	551	TORUS	AI	1
11022	08A	1-FCV-74-58	RHR/LOOP I SUPRESSION POOL SPRAY VALVE	U1 RB	551	TORUS	I	1
11023	08A	1-FCV-74-52	RHR/LOOP I OUTBOARD INJECTION VALVE	U1 RB	565	R4/T	AI	1
11024	08A	1-FCV-74-53	RHR/LOOP I INBOARD INJECTION VALVE	U1 RB	565	R4/T	AI	1
11026	08A	1-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U1 RB	621	R5/S	AI	1
11027	08A	1-FCV-74-60	RHR/LOOP I OUTBOARD DRYWELL SPRAY VALVE	U1 RB	593	R3/S	AI	1
11028	08A	1-FCV-74-61	RHR/LOOP I INBOARD DRYWELL SPRAY VALVE	U1 RB	593	R3/S	I	1
11029	08A	1-FCV-74-24	RHR/PUMP 1B SUCTION VALVE FROM SUPRESSION POOL	U1 RB	519	SE CORNER	AI	2
11030	08A	1-FCV-74-25	RHR/PUMP 1B SUCTION VALVE FROM SHUTDOWN COOLING	U1 RB	541	SE CORNER	AI	2
11031	06	1-PMP-74-28	RHR/PUMP 1B	U1 RB	519	SE CORNER	AI	2
11033	08A	1-FCV-74-30	RHR/PUMP 1B & 1D MINIMUM FLOW VALVE	U1 RB	541	SE CORNER	AI	2
11036	21	1-HEX-74-900B	RHR/HEAT EXCHANGER 1B	U1 RB	565	SE HX	AI	2
11037	08A	1-FCV-74-35	RHR/PUMP 1D SUCTION VALVE FROM SUPRESSION POOL	U1 RB	519	SE CORNER	AI	2A
11038	08A	1-FCV-74-36	RHR/PUMP 1D SUCTION VALVE FROM SHUTDOWN COOLING	U1 RB	541	SE CORNER	AI	2A
11039	06	1-PMP-74-39	RHR/PUMP 1D	U1 RB	519	SE CORNER	AI	2A
11042	21	1-HEX-74-900D	RHR/HEAT EXCHANGER 1D	U1 RB	565	SE HX	AI	2A
11043	20	1-FI-74-64	RHR/LOOP II FLOW INDICATOR	U1 CB	617	U1 MCR	AI	2
11044	20	1-FI-74-70	RHR/LOOP II FLOW INDICATOR	U1 CB	617	U1 MCR	AI	2
11045	08A	1-FCV-74-71	RHR/LOOP II TORUS CONTAINMENT COOLING/SPRAY VALVE	U1 RB	551	TORUS	AI	2
11046	08A	1-FCV-74-73	RHR/LOOP II SUPRESSION POOL COOLING VALVE	U1 RB	551	TORUS	AI	2
11047	08A	1-FCV-74-72	RHR/LOOP II SUPRESSION POOL SPRAY VALVE	U1 RB	551	TORUS	I	2
11048	08A	1-FCV-74-66	RHR/LOOP II OUTBOARD INJECTION VALVE	U1 RB	565	R5/T	AI	2
11049	08A	1-FCV-74-67	RHR/LOOP II INBOARD INJECTION VALVE	U1 RB	565	R5/T	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
11051	08A	1-FCV-74-74	RHR/LOOP II OUTBOARD DRYWELL SPRAY VALVE	U1 RB	565	R5/S	AI	2
11052	08A	1-FCV-74-75	RHR/LOOP II INBOARD DRYWELL SPRAY VALVE	U1 RB	565	R6/S	I	2
11053	08A	1-FCV-74-101	RHR/U2 TO U1 RHR DISCHARGE X-TIE ISOLATION VALVE (B,D)	U1 RB	565	R6/T	AI	1
12001	07	1-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12003	07	1-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12006	07	1-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12009	07	1-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12012	07	1-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12015	07	1-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12018	07	1-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	1
12021	07	1-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	2
12024	07	1-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	2
12027	07	1-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	2
12030	07	1-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	2
12033	07	1-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	2
12036	07	1-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	584	DW	AI	2
13001	07	1-FCV-1-14	MSIV "A" INBOARD ISOLATION VALVE	U1 DW	563	DW	AI	1
13002	07	1-FCV-1-15	MSIV "A" OUTBOARD ISOLATION VALVE	U1 RB	565	MSIV VAULT	AI	2
13003	07	1-FCV-1-26	MSIV "B" INBOARD ISOLATION VALVE	U1 DW	563	DW	AI	1
13004	07	1-FCV-1-27	MSIV "B" OUTBOARD ISOLATION VALVE	U1 RB	565	MSIV VAULT	AI	2
13005	07	1-FCV-1-37	MSIV "C" INBOARD ISOLATION VALVE	U1 DW	563	DW	AI	1
13006	07	1-FCV-1-38	MSIV "C" OUTBOARD ISOLATION VALVE	U1 RB	565	MSIV VAULT	AI	2
13007	07	1-FCV-1-51	MSIV "D" INBOARD ISOLATION VALVE	U1 DW	563	DW	AI	1
13008	07	1-FCV-1-52	MSIV "D" OUTBOARD ISOLATION VALVE	U1 RB	565	MSIV VAULT	AI	2
13009	08A	1-FCV-1-55	MAIN STEAM LINE DRAIN ISOLATION VALVE	U1 DW	563	DW	AI	1
13015	07	1-FCV-64-17	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	565	R3/U	I	1,2
13016	07	1-FCV-64-30	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	621	R3/Q	I	1,2
13017	07	1-FCV-64-33	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	565	R2/P	I	1,2
13018	07	1-FCV-64-139	CONTAINMENT DW DP ISOLATION VALVE	U1 RB	565	R2/P	I	1,2
13019	07	1-FCV-64-140	CONTAINMENT DW DP ISOLATION VALVE	U1 RB	565	R2/P	I	1,2
13020	07	1-FCV-64-28A	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13021	07	1-FCV-64-28B	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
13022	07	1-FCV-64-28C	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13023	07	1-FCV-64-28D	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13024	07	1-FCV-64-28E	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13025	07	1-FCV-64-28F	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13026	07	1-FCV-64-28G	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13027	07	1-FCV-64-28H	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13028	07	1-FCV-64-28J	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13029	07	1-FCV-64-28K	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13030	07	1-FCV-64-28L	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13031	07	1-FCV-64-28M	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	<550	IN TORUS	I	1,2
13032	08A	1-FCV-69-1	RWCU INBOARD ISOLATION VALVE	U1 DW	584	DW	AI	1
13033	08A	1-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U1 RB	593	R5/S	AI	2
13035	08A	1-FCV-70-47	RBCCW DRYWELL RETURN VALVE	U1 RB	551	TORUS	I	1,2
13037	08A	1-FCV-71-2	RCIC INBOARD ISOLATION VALVE	U1 DW	584	DW	AI	1
13038	08A	1-FCV-71-3	RCIC OUTBOARD ISOLATION VALVE	U1 RB	565	MSIV VAULT	AI	2
13039	08A	1-FCV-71-18	RCIC OUTBOARD SUCTION VALVE	U1 RB	519	NW CORNER	I	1,2
13040	08A	1-FCV-73-2	HPCI STEAM SUPPLY ISOLATION VALVE	U1 DW	563	DW	AI	1
13041	08A	1-FCV-73-3	HPCI STEAM SUPPLY ISOLATION VALVE	U1 RB	551	TORUS	AI	2
13042	08A	1-FCV-73-81	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	U1 RB	551	TORUS	AI	2
13043	08A	1-FCV-73-27	HPCI OUTBOARD SUCTION VALVE	U1 RB	519	HPCI ROOM	I	1,2
13044	07	1-FCV-75-57	PSC PUMP SUCTION ISOLATION VALVE	U1 RB	519	NW CORNER	AI	1
13045	07	1-FCV-75-58	PSC PUMP SUCTION ISOLATION VALVE	U1 RB	519	NW CORNER	AI	2
13046	07	1-FCV-76-24	PRIMARY CONTAINMENT ISOLATION VALVE	U1 RB	565	R3/U	I	1,2
13047	07	1-FCV-77-2B	DRYWELL FLOOR DRAIN SUMP DISCHARGE	U1 RB	551	TORUS	I	1,2
13048	07	1-FCV-77-15B	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE	U1 RB	551	TORUS	I	1,2
13049	07	1-FCV-84-19	CAD ISOLATION VALVE	U1 RB	621	R3/Q	I	1,2
13050	07	1-FCV-84-20	CAD ISOLATION VALVE	U1 RB	621	R3/Q	I	1,2
13051	20	1-LI-3-58AA	RPV LEVEL INSTRUMENTATION	U1 RB	617	U1 MCR	AI	1
13052	20	1-LI-3-58BB	RPV LEVEL INSTRUMENTATION	U1 RB	617	U1 MCR	AI	2
13053	20	1-PI-3-74A	RPV PRESSURE INSTRUMENT	U1 CB	617	U1 MCR	AI	1
13054	20	1-PI-3-74B	RPV PRESSURE INSTRUMENT	U1 CB	617	U1 MCR	AI	2
13055	20	1-XR-64-159	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	U1 CB	617	U1 MCR	AI	1

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
13056	20	1-LI-64-159A	TORUS LEVEL INSTRUMENT	U1 CB	617	U1 MCR	AI	2
13057	20	1-TI-64-161	TORUS TEMPERATURE INSTRUMENT	U1 CB	617	U1 MCR	AI	1
13058	20	1-TI-64-162	TORUS TEMPERATURE INSTRUMENT	U1 CB	617	U1 MCR	AI	2
13059	20	1-PI-64-67	DRYWELL PRESSURE INSTRUMENT	U1 CB	617	U1 MCR	I	1
13060	20	1-PI-64-160A	DRYWELL PRESSURE INSTRUMENT	U1 CB	617	U1 MCR	I	2
13061	20	1-TI-64-52A	DRYWELL TEMPERATURE INSTRUMENT	U1 CB	617	U1 MCR	I	1
13062	20	1-XR-64-50	DRYWELL TEMPERATURE AND PRESSURE INSTRUMENT	U1 CB	617	U1 MCR	I	2
13063	07	1-FCV-76-17	CONTAINMENT INERTING N2 MAKEUP	U1 RB	565	R5/T	I	1,2
13064	07	1-FCV-64-222	HARDENED WETWELL VENT	U1 RB	565	R3/T	I	1,2
13069	08A	1-FCV-71-40	PRIMARY CONTAINMENT ISOLATION VALVE	U1 RB	565	R4/P	AI	
13074	08A	1-FCV-71-17	RCIC INBOARD SUCTION VALVE	U1 RB	519	NW CORNER	I	1,2
13075	08A	1-FCV-1-56	MAIN STEAM LINE DRAIN ISOLATION VALVE	U1 RB	565	MSIV VAULT?	AI	
13076	08A	1-FCV-73-26	HPCI INBOARD SUCTION VALVE	U1 RB	519	SW CORNER	I	1,2
13079	07	1-FCV-32-62	DRYWELL CONTROL AIR SUCTION VALVE	U1 RB	565	CLEAN RM	I	1,2
13080	07	1-FCV-77-2A	DRYWELL FLOOR DRAIN SUMP DISCHARGE	U1 RB	551	TORUS	I	1,2
13081	07	1-FCV-77-15A	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE	U1 RB	551	TORUS	I	1,2
13082	07	1-FCV-64-18	COOLING/PURGE AIR TO DRYWELL	U1 RB	565	R5/T	I	1,2
13083	07	1-FCV-64-19	COOLING/PURGE AIR TO SUPPRESSION CHAMBER	U1 RB	565	R3/T	I	1,2
13084	07	1-FCV-76-18	CONTAINMENT INERTING DRYWELL N2 MAKEUP VALVE	U1 RB	565	R5/T	I	1,2
13085	07	1-FCV-76-19	CONTAINMENT INERTING - PSC N2 MAKEUP VALVE	U1 RB	565	R3/T	I	1,2
13101	18	1-LT-64-159A	TORUS LEVEL TRANSMITTER	U1 RB	519	TORUS		
13102	18	1-LT-64-159B	TORUS LEVEL TRANSMITTER	U1 RB	519	TORUS		
13111	19	1-TE-64-161A	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13112	19	1-TE-64-161B	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13113	19	1-TE-64-161C	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13114	19	1-TE-64-161D	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13115	19	1-TE-64-161E	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13116	19	1-TE-64-161F	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13117	19	1-TE-64-161G	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13118	19	1-TE-64-161H	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13211	19	1-TE-64-162A	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13212	19	1-TE-64-162B	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
13213	19	1-TE-64-162C	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13214	19	1-TE-64-162D	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13215	19	1-TE-64-162E	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13216	19	1-TE-64-162F	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13217	19	1-TE-64-162G	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
13218	19	1-TE-64-162H	TORUS TEMPERATURE ELEMENT	U1 RB	519	TORUS		
14001	10	1-CLR-67-917	EECW/RHR PUMP 1A ROOM COOLER	U1 RB	519	SW CORNER	AI	1
14002	10	1-CLR-67-919	EECW/CS PUMP 1A ROOM COOLER	U1 RB	519	NW CORNER	AI	1
14003	10	1-CLR-67-921	EECW/RHR PUMP 1C ROOM COOLER	U1 RB	519	SW CORNER	AI	1
14004	21	1-HEX-67-915	EECW/RHR SEAL HX 1A	U1 RB	519	SW CORNER	AI	1
14013	10	1-CLR-67-918	EECW/RHR PUMP 1B ROOM COOLER	U1 RB	519	SE CORNER	AI	2
14014	10	1-CLR-67-920	EECW/CS PUMP 1B ROOM COOLER	U1 RB	519	NE CORNER	AI	2
14015	10	1-CLR-67-922	EECW/RHR PUMP 1D ROOM COOLER	U1 RB	519	SE CORNER	AI	2
14016	21	1-HEX-67-923	EECW/RHR SEAL HX 1B	U1 RB	519	SE CORNER	AI	2
14025	21	1-HEX-67-916	EECW/RHR SEAL HX 1C	U1 RB	519	SW CORNER	AI	1
14026	21	1-HEX-67-924	EECW/RHR SEAL HX 1D	U1 RB	519	SE CORNER	AI	2
14046	07	1-FCV-67-50	EECW NORTH HEADER BACKUP TO RBCCW	U1 RB	593	R3/P	AI	1
14049	07	0-FCV-67-53	EECW NORTH HEADER BACKUP TO THE AIR COMPRESSORS	U1 RB	565	R3/N	AI	1
14089	07	1-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U1 RB	565	R3/T	AI	2
15001	08A	1-FCV-75-2	CS/PUMP 1A SUCTION ISOLATION VALVE	U1 RB	519	NW CORNER	AI	1
15002	06	1-PMP-75-5	CS/PUMP 1A	U1 RB	519	NW CORNER	AI	1
15005	08A	1-FCV-75-9	CS/PUMPS 1A & 1C MINI-FLOW VALVE	U1 RB	541	NW CORNER	AI	1
15006	08A	1-FCV-75-11	CS/PUMP 1C SUCTION ISOLATION VALVE	U1 RB	519	NW CORNER	AI	1
15007	06	1-PMP-75-14	CS/PUMP 1C	U1 RB	519	NW CORNER	AI	1
15010	08A	1-FCV-75-22	CS/PUMPS 1A & 1C TEST ISOLATION VALVE	U1 RB	541	NW CORNER	AI	1
15011	20	1-FI-75-21	CS/PUMPS 1A & 1C FLOW INDICATOR	U1 CB	617	MCR	AI	1
15012	08A	1-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U1 RB	593	R4/P	AI	1
15013	08A	1-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U1 RB	593	R4/P	AI	1
15015	08A	1-FCV-75-30	CS/PUMP 1B SUCTION ISOLATION VALVE	U1 RB	519	NE CORNER	AI	2
15016	06	1-PMP-75-33	CS/PUMP 1B	U1 RB	519	NE CORNER	AI	2
15019	08A	1-FCV-75-37	CS/PUMPS 1B & 1D MINI-FLOW VALVE	U1 RB	541	NE CORNER	AI	2
15020	08A	1-FCV-75-39	CS/PUMP 1D SUCTION ISOLATION VALVE	U1 RB	519	NE CORNER	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
15021	06	1-PMP-75-42	CS/PUMP 1D	U1 RB	519	NE CORNER	AI	2
15024	08A	1-FCV-75-50	CS/PUMPS 1B & 1D TEST ISOLATION VALVE	U1 RB	541	NE CORNER	AI	2
15025	20	1-FI-75-49	CS/PUMPS 1B & 1D FLOW INDICATOR	U1 CB	617	MCR	AI	2
15026	08A	1-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U1 RB	593	R4/P	AI	2
15027	08A	1-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U1 RB	593	R4/P	AI	2
16001	08B	1-FSV-84-8A	CAD/CAD TO DW (1-FCV-64-18) SOLENOID VALVE	U1 RB	565	R5/T	AI	1
16002	08B	1-FSV-84-8B	CAD/CAD TO DW (1-FCV-64-19) SOLENOID VALVE	U1 RB	565	R3/T	AI	1
16003	07	1-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 1 DRYWELL CONTROL AIR	U1 RB	565	R4/U	AI	1
16004	08B	1-FSV-84-48	CAD/CAD SYSTEM "A" TO UNIT 1 DRYWELL CONTROL AIR	U1 RB	565	R3/T	AI	1
16009	21	1-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U1 DW	584	DW	AI	1
16010	08B	1-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19	U1 DW	584	DW	AI	1
16012	21	1-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U1 DW	584	DW	AI	1
16013	08B	1-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22	U1 DW	584	DW	AI	1
16015	21	1-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U1 DW	584	DW	AI	1
16016	08B	1-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5	U1 DW	584	DW	AI	1
16017	08B	1-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23	U1 DW	584	DW	AI	1
16018	08B	1-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179	U1 DW	584	DW	AI	1
16019	08B	1-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4	U1 DW	584	DW	AI	1
16021	08B	1-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18	U1 DW	584	DW	AI	2
16023	08B	1-FSV-84-8C	CAD/CAD TO DW (1-FCV-64-19) SOLENOID VALVE	U1 RB	565	R3/T	AI	2
16024	08B	1-FSV-84-8D	CAD/CAD TO DW (1-FCV-64-18) SOLENOID VALVE	U1 RB	565	R5/T	AI	2
16025	07	1-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 1 DRYWELL CONTROL AIR	U1 RB	565	R4/U	AI	2
16026	08B	1-FSV-84-49	CAD/CAD SYSTEM "B" TO UNIT 1 DRYWELL CONTROL AIR	U1 RB	565	R3/T	AI	2
16029	21	1-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U1 DW	584	DW	AI	2
16030	08B	1-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30	U1 DW	584	DW	AI	2
16032	21	1-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U1 DW	584	DW	AI	2
16033	08B	1-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31	U1 DW	584	DW	AI	2
16035	21	1-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U1 DW	584	DW	AI	2
16036	08B	1-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34	U1 DW	584	DW	AI	2
16038	08B	1-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41	U1 DW	584	DW	AI	2
16040	08B	1-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42	U1 DW	584	DW	AI	2
16041	08B	1-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180	U1 DW	584	DW	AI	2

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
16043	07	1-FCV-64-20	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	565	R3/T	AI	
16044	07	1-FCV-64-21	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	565	R3/T	AI	
18002	08A	1-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U1 RB	565	R2/U	AI	1
18004	08A	1-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U1 RB	565	R2/U	AI	1
18006	08A	1-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U1 RB	565	R5/T	AI	2
18008	08A	1-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U1 RB	565	R5/T	AI	2
18009	20	1-FI-23-36	RHRSW HX A FLOW INDICATOR	U1 CB	617	MCR	AI	1
18010	20	1-FI-23-42	RHRSW HX C FLOW INDICATOR	U1 CB	617	MCR	AI	1
18011	20	1-FI-23-48	RHRSW HX B FLOW INDICATOR	U1 CB	617	MCR	AI	2
18012	20	1-FI-23-54	RHRSW HX D FLOW INDICATOR	U1 CB	617	MCR	AI	2
18029	08A	1-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U1 RB	565	R5/T	AI	2
18032	08A	1-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U1 RB	565	R5/T	AI	2
18033	08A	1-FCV-23-57	RHR/RHRSW CROSS CONNECT VALVE	U1 RB	565	R6/S	AI	2
19001	20	1-PNLA-009-0023/1	ELECTRICAL CONTROL PANEL 1-9-23-1	U1 CB	617	U1 MCR	AI	
19002	20	1-PNLA-009-0023/2	ELECTRICAL CONTROL PANEL 1-9-23-2	U1 CB	617	U1 MCR	AI	
19003	20	1-PNLA-009-0023/3	ELECTRICAL CONTROL PANEL 1-9-23-3	U1 CB	617	U1 MCR	AI	
19004	20	1-PNLA-009-0023/4	ELECTRICAL CONTROL PANEL 1-9-23-4	U1 CB	617	U1 MCR	AI	
19005	20	1-PNLA-009-0023/5	ELECTRICAL CONTROL PANEL 1-9-23-5	U1 CB	617	U1 MCR	AI	
19006	20	1-PNLA-009-0023/6	ELECTRICAL CONTROL PANEL 1-9-23-6	U1 CB	617	U1 MCR	AI	
19007	20	1-PNLA-009-0023/7	ELECTRICAL CONTROL PANEL 1-9-23-7	U1 CB	617	U1 MCR	AI	
19008	20	1-PNLA-009-0023/8	ELECTRICAL CONTROL PANEL 1-9-23-8	U1 CB	617	U1 MCR	AI	
19030	01	1-BDBB-281-0001A	250V DC RMOV BOARD 1A	U1 RB	621	Q/R1	AI	II
19031	01	1-BDBB-281-0001B	250V DC RMOV BOARD 1B	U1 RB	593	Q/R1	AI	I
19033	01	1-BDBB-281-0001C	250V DC RMOV BOARD 1C	U1 RB	565	Q/R1	AI	I
19039	14	1-JBOX-253-6455	I&C BUS 1A DISC SWITCH 1A1	U1 RB	621	R/R1	AI	I
19040	04	1-XFA-253-0001A1	I&C BUS 1A 480/208-120V TRANSFORMER	U1 RB	621	R/R1	AI	I
19041	04	1-XFA-253-0001A	I&C BUS 1A REGULATING TRANSFORMER	U1 RB	621	R/R1	AI	I
19042	14	1-JBOX-253-6457	I&C BUS 1A DISC SW 1A2	U1 CB	593	BATT BD 1	AI	I
19043	14	1-JBOX-253-6456	I&C BUS 1A DISC SWITCHES 1A3, 1A4, 1A5, 1A6	U1 RB	621	R/R1	AI	I
19044	14	1-JBOX-253-8862	I&C BUS 1A DISC SWITCH	U1 RB	621	R/R1	AI	I
19045	20	1-PNLA-009-0009	I&C BUS 1A (CAB 2 OF PNL 1-9-9)	U1 CB	617	U1 MCR	AI	I
19046	20	1-PX-64-160B	POWER SUPPLY (PNL 1-9-19: 1-LI-64-159B,160B)	U1 CB	593	U1 AIR	AI	I

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19047	20	1-PXMC-23-114	POWER SUPPLY (PNL 1-9-18: FI-23-36,42 : FI-74-50)	U1 CB	593	U1 AIR	AI	I
19048	20	1-PXMC-23-115 A&B	POWER SUPPLY (PNL 1-9-19: FI-23-48,54; FI-74-64)	U1 CB	593	U1 AIR	AI	II
19049	04	1-XFA-253-0001B1	I&C BUS 1B 480/208-120V TRANSFORMER	U1 RB	593	R/R1	AI	II
19050	04	1-XFA-253-0001B2	I&C BUS 1B REGULATING TRANSFORMER	U1 RB	593	R/R1	AI	II
19051	14	1-JBOX-253-6460	I&C BUS 1B DISC SW 1B2	U1 CB	593	BATT BD 1	AI	II
19052	14	1-JBOX-253-8865	I&C BUS 1B DISC SWITCH	U1 RB	593	R/R1	AI	II
19053	14	1-JBOX-253-6459	I&C BUS 1B DISC SWITCHES 1B3, 1B4, 1B5, 1B6	U1 RB	593	R/R1	AI	II
19054	20	1-PNLA-009-0009	I&C BUS 1B (CAB 3 OF PNL 1-9-9)	U1 CB	617	U1 MCR	AI	II
19055	20	1-PX-64-159B	POWER SUPPLY (PNL 1-9-19)	U1 CB	593	U1 AIR	AI	II
19068	14	1-JBOX-253-7160	I&C BUS 1B DISC SWITCH 1B1	U1 RB	593	R/R1	AI	II
19070	16	1-INVT-256-0001	DIV I ECCS ATU INVERTER	U1 RB	593	Q/R1	AI	I
19071	20	1-PX-71-60-1	ECCS ATU CAB 1-9-81 POWER SUPPLY	U1 CB	593	U1 AIR	AI	I
19072	20	1-PX-71-60-1A	ECCS ATU CAB 1-9-81 POWER SUPPLY	U1 CB	593	U1 AIR	AI	I
19073	20	1-PX-64-50	POWER SUPPLY (PNL 1-25-31: XR-64-50 [DEV BA TERM 11/12])	U1 RB	621	Q/R2	AI	I
19074	20	1-PX-74-56	POWER SUPPLY (PNL 1-9-18: FI-74-56)	U1 CB	593	U1 AIR	AI	I
19075	16	1-INVT-256-0002	DIV II ECCS ATU INVERTER	U1 RB	621	P/R1	AI	II
19076	20	1-PX-71-60-2	ECCS ATU CAB 1-9-82 POWER SUPPLY	U1 CB	593	U1 AIR	AI	II
19077	20	1-PX-71-60-2A	ECCS ATU CAB 1-9-82 POWER SUPPLY	U1 CB	593	U1 AIR	AI	II
19078	20	1-PX-74-70	POWER SUPPLY (PNL 1-9-19: FI-74-70)	U1 CB	593	U1 AIR	AI	II
19079	20	1-PX-64-159A	POWER SUPPLY (1-9-18)	U1 CB	593	U1 AIR	AI	I
19080	20	1-PX-64-160A	POWER SUPPLY (1-9-18)	U1 CB	593	U1 AIR	AI	I
19081	20	1-PX-64-67B	POWER SUPPLY (1-9-19)	U1 CB	593	U1 AIR	AI	II
19082	20	1-PX-64-161	POWER SUPPLY (PNL 9-87)	U1 CB	593	U1 AIR	AI	I
19083	20	1-PX-64-162	POWER SUPPLY (PNL 9-88)	U1 CB	593	U1 AIR	AI	II
19084	18	1-PS-67-50	PRESSURE SWITCH FOR 1-FCV-67-50 (14046)	U1 RB	593	P/R3	AI	
19085	18	1-PS-67-51	PRESSURE SWITCH FOR 1-FCV-67-51 (14047)	U1 RB	565	T/R3	AI	
19088	20	1-LPNL-925-044A/11	COMMON BD LOGIC RELAY PANEL 25-44-A11	U1 RB	621	S/R1	AI	
19089	20	1-LPNL-925-044A/12	COMMON BD LOGIC RELAY PANEL 25-44-A12	U1 RB	621	S/R2	AI	
19090	20	1-LPNL-925-044B/11	COMMON BD LOGIC RELAY PANEL 25-44-B11	U1 RB	621	S/R1	AI	
19091	20	1-LPNL-925-044B/12	COMMON BD LOGIC RELAY PANEL 25-44-B12	U1 RB	621	S/R2	AI	
19114	20	1-PNLA-009-0003A	REACTOR SD & CONT. COOLING PNL	U1 CB	617	U1 MCR	AI	
19115	20	1-PNLA-009-0003B	REACTOR SD & CONT. COOLING PNL	U1 CB	617	U1 MCR	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19116	20	1-PNLA-009-0004	CLEANUP & RECIRC PNL	U1 CB	617	U1 MCR	AI	
19117	20	1-PNLA-009-0005	REACTOR CONTROL PNL	U1 CB	617	U1 MCR	AI	
19118	20	1-PNLA-009-0006	FW & COND. PNL	U1 CB	617	U1 MCR	AI	
19120	20	1-PNLA-009-0015	RPS CH A (DIV I)	U1 CB	593	U1 AIR	AI	I
19121	20	1-PNLA-009-0016	RPS CH A, B, C, D	U1 CB	593	U1 AIR	AI	
19122	20	1-PNLA-009-0017	RPS CH B (DIV II)	U1 CB	593	U1 AIR	AI	II
19123	20	1-PNLA-009-0018	FW & RECIRC PNL	U1 CB	593	U1 AIR	AI	
19124	20	1-PNLA-009-0019	PROCESS INSTR PNL	U1 CB	593	U1 AIR	AI	
19125	20	1-PNLA-009-0021	TEMP RECORDING PNL	U1 CB	617	U1 MCR	AI	
19126	20	1-PNLA-009-0028	CRD SELECT RELAY AUX PNL	U1 CB	593	U1 AIR	AI	
19127	20	1-PNLA-009-0030	AUTO BLOWNDOWN AUX PNL	U1 CB	593	U1 AIR	AI	
19128	20	1-PNLA-009-0032	RHR, CS, & HPCI (CH A) PNL	U1 RB	593	U1 AIR	AI	
19129	20	1-PNLA-009-0033	RHR, CS, & HPCI (CH B) PNL	U1 CB	593	U1 AIR	AI	
19130	20	1-PNLA-009-0039	HPCI RELAY AUX PNL	U1 CB	593	U1 AIR	AI	
19131	20	1-PNLA-009-0042	MSIV (INBOARD) DIV II PNL	U1 CB	593	U1 AIR	AI	
19132	20	1-PNLA-009-0043	MSIV (OUTBOARD) DIV II PNL	U1 CB	593	U1 AIR	AI	
19133	20	1-PNLA-009-0054	CONTAINMENT ATM. DILUTION PNL	U1 CB	617	U1 MCR	AI	
19134	20	1-PNLA-009-0055	CONTAINMENT ATM. DILUTION PNL	U1 CB	617	U1 MCR	AI	
19135	20	1-PNLA-009-0081	DIV I ECCS ATU CABINET	U1 CB	593	U1 AIR	AI	
19136	20	1-PNLA-009-0082	DIV II ECCS ATU CABINET	U1 CB	593	U1 AIR	AI	II
19137	20	1-PNLA-009-0083	RPS ATU CAB	U1 CB	593	U1 AIR	AI	I
19138	20	1-PNLA-009-0084	RPS ATU CAB	U1 CB	593	U1 AIR	AI	I
19139	20	1-PNLA-009-0085	RPS ATU CAB	U1 CB	593	U1 AIR	AI	II
19140	20	1-PNLA-009-0086	RPS ATU CAB	U1 CB	593	U1 AIR	AI	II
19141	20	1-PNLA-009-0087	DIV I TORUS TEMP MONITORING	U1 CB	593	U1 AIR	AI	I
19142	20	1-PNLA-009-0088	DIV II TORUS TEMP MONITORING	U1 CB	593	U1 AIR	AI	II
19145	20	1-PNLA-009-0093	NEW PNL (INSTALLED BY DCN W19433)	U1 CB	593	U1 AIR	AI	
19146	18	1-HS-74-7B	LOCAL HS STATION	U1 RB	541	SW CORNER	AI	I
19147	14	1-JB-668	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541	SW CORNER	AI	I
19148	18	1-HS-74-57B	LOCAL HS STATION	U1 RB	551	TORUS	AI	I
19149	14	1-JB-654	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	551	TORUS	AI	I
19150	18	1-HS-74-59B	LOCAL HS STATION	U1 RB	551	TORUS	AI	I

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19151	18	1-HS-74-58B	LOCAL HS STATION	U1 RB	551	TORUS	I	I
19153	18	1-HS-74-52B	LOCAL HS STATION	U1 RB	565	T/R3	AI	II
19154	14	1-JB-1079	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	583	T/R3	AI	II
19155	18	1-HS-74-53B	LOCAL HS STATION	U1 RB	565	T/R3	AI	I
19156	18	1-HS-74-60B	LOCAL HS STATION	U1 RB	593	S/R3	AI	I
19158	18	1-HS-74-61B	LOCAL HS STATION	U1 RB	593	S/R3	I	I
19160	18	1-HS-74-30B	LOCAL HS STATION	U1 RB	541	SE CORNER	AI	II
19162	18	1-HS-74-71B	LOCAL HS STATION	U1 RB	551	TORUS	AI	II
19163	14	1-JB-665	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	551	TORUS	AI	II
19164	18	1-HS-74-72B	LOCAL HS STATION	U1 RB	551	TORUS	I	II
19165	18	1-HS-74-66B	LOCAL HS STATION	U1 RB	583	T/R4	AI	II
19166	14	1-JB-1080	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	583	T/R4	AI	II
19167	18	1-HS-74-67B	LOCAL HS STATION	U1 RB	583	T/R4	AI	II
19170	18	1-HS-74-75B	LOCAL HS STATION	U1 RB	565	S/R6	I	II
19171	18	1-HS-70-47B	LOCAL HS STATION	U1 RB	551	TORUS	I	II
19172	14	1-JB-1204	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	551	TORUS	AI	II
19173	18	1-HS-75-09B	LOCAL HS STATION	U1 RB	519	NW CORNER	AI	I
19175	18	1-HS-75-25B	LOCAL HS STATION	U1 RB	593	P/R4	AI	I
19176	14	1-JBOX-1064	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	593	P/R4	AI	I
19177	18	1-HS-75-37B	LOCAL HS STATION	U1 RB	519	NE CORNER	AI	II
19179	18	1-HS-75-53B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U1 RB	593	P/R4	AI	II
19180	14	1-JBOX-1067	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U1 RB	593	P/R4	AI	II
19181	18	1-HS-23-34B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U1 RB	565	U/R2	AI	I
19182	14	1-JBOX-1077	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565	U/R2	AI	I
19183	18	1-HS-23-40B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U1 RB	565	U/R2	AI	I
19184	18	1-HS-23-46B	LOCAL HS STATION	U1 RB	565	T/R4	AI	II
19185	14	1-JB-1087	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565	T/R4	AI	II
19186	18	1-HS-23-52B	LOCAL HS STATION	U1 RB	565	T/R4	AI	II
19187	18	1-HS-74-0005B	LOCAL HS STATION - RHR PUMP 1A	U1 RB	519	SW CORNER	AI	I
19188	18	1-HS-74-0028B	LOCAL HS STATION - RHR PUMP 1B	U1 RB	519	SE CORNER	AI	II
19189	18	1-HS-74-0016B	LOCAL HS STATION - RHR PUMP 1C	U1 RB	519	SW CORNER	AI	I
19190	18	1-HS-74-0039B	LOCAL HS STATION - RHR PUMP 1D	U1 RB	519	SE CORNER	AI	II

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19191	18	1-HS-75-0005B	LOCAL HS STATION - CS PUMP 1A	U1 RB	519	NW CORNER	AI	I
19192	18	1-HS-75-0033B	LOCAL HS STATION - CS PUMP 1B	U1 RB	519	NE CORNER	AI	II
19193	18	1-HS-75-0014B	LOCAL HS STATION - CS PUMP 1C	U1 RB	519	NW CORNER	AI	I
19194	18	1-HS-75-0042B	LOCAL HS STATION - CS PUMP 1D	U1 RB	519	NE CORNER	AI	II
19195	18	1-LPNL-925-005A	LOCAL PANEL 25-5A	U1 RB	593	S/R3	AI	
19196	18	1-LPNL-925-005B	LOCAL PANEL 25-5B	U1 RB	593	S/R3	AI	
19197	18	1-LPNL-925-005D	LOCAL PANEL 25-5-001	U1 RB	593	S/R3	AI	
19198	18	1-LPNL-925-006A	LOCAL PANEL 25-6A	U1 RB	593	P/R5	AI	
19199	18	1-LPNL-925-006D	LOCAL PANEL 25-6-001	U1 RB	593	Q/R5	AI	
19200	18	1-LPNL-925-0059	LOCAL PANEL 25-59	U1 RB	519	SW CORNER	AI	
19201	18	1-LPNL-925-0062	LOCAL PANEL 25-62	U1 RB	519	SE CORNER	AI	
19204	20	1-PNLA-925-0031	LOCAL PANEL 25-31	U1 RB	621	Q/R2	AI	
19205	20	1-PNLA-925-0032	LOCAL PANEL 25-32	U1 RB	621	Q/R2	AI	
19206	18	1-LPNL-925-0001	LOCAL PANEL 25-1	U1 RB	519	NW CORNER	AI	
19207	18	1-LPNL-925-0060	LOCAL PANEL 25-60	U1 RB	519	N/E CORNER	AI	
19220	20	1-PROT-099-0001A1	RPS CIRCUIT PROTECTOR CABINET 1A1	U1 RB	593	BATT BD 1	AI	
19221	20	1-PROT-099-0001A2	RPS CIRCUIT PROTECTOR CABINET 1A2	U1 RB	593	BATT BD 1	AI	
19222	20	1-PROT-099-0001B1	RPS CIRCUIT PROTECTOR CABINET 1B1	U1 RB	593	BATT BD 1	AI	
19223	20	1-PROT-099-0001B2	RPS CIRCUIT PROTECTOR CABINET 1B2	U1 RB	593	BATT BD 1	AI	
19224	20	1-PROT-099-0001C1	RPS CIRCUIT PROTECTOR CABINET 1C1	U1 RB	593	BATT BD 1	AI	
19225	20	1-PROT-099-0001C2	RPS CIRCUIT PROTECTOR CABINET 1C2	U1 RB	593	BATT BD 1	AI	
19226	18	1-LPNL-925-247A	LOCAL PANEL 1-25-247A (CAD DRYWELL & SUPP. CHAMB. V.)	U1 RB	621	Q/R4	AI	
19227	01	1-BDBB-265-0001B	480V RB VENT BD 1B	U1 RB	565	U/R4	AI	
19228	20	1-PNLA-009-0036A	PANEL 1-9-36A	U1 CB	593	U1 AIR	AI	
19229	18	1-LPNL-925-0247B	LOCAL PANEL 1-25-247B (CAD N2 SUPPLY PANEL B)	U1 RB	621	Q/R4	AI	
19230	18	1-LPNL-925-0007A	LOCAL PANEL 1-25-7A	U1 RB	541	SW CORNER	AI	
19231	18	1-LPNL-925-0007B	LOCAL PANEL 1-25-7B	U1 RB	541	SW CORNER	AI	
19232	14	1-HS-74-101B	HANDSWITCH FOR 1-FCV-74-101 (11055)	U1 RB	565	T/R6	AI	
19239	18	1-TS-64-68	HANDSWITCH FOR 1-CLR-67-917 (14001)	U1 RB	541	SW CORNER	AI	
19240	18	1-HS-64-69	HANDSWITCH FOR 1-CLR-67-918 (14013)	U1 RB	541	SE CORNER	AI	
19241	18	1-TS-64-70	HANDSWITCH FOR 1-CLR-67-921 (14003)	U1 RB	541	SW CORNER	AI	
19242	18	1-HS-64-71	HANDSWITCH FOR 1-CLR-67-922 (14015)	U1 RB	541	SE CORNER	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19243	14	1-HS-69-2B	HANDSWITCH FOR 1-FCV-69-2 (13033)	U1 RB	593	R5/S	AI	
19244	14	1-HS-71-18B	HANDSWITCH FOR 1-FCV-71-18 (13039)	U1 RB	519	NW CORNER	I	
19245	01	1-HS-71-2B	HANDSWITCH FOR 1-FCV-71-2 (13037)	U1 RB	593	R/R1	AI	
19246	14	1-HS-73-27	HANDSWITCH FOR 1-FCV-73-27 (13043)	U1 RB	519	HPCI	I	
19247	18	1-HS-73-3B	HANDSWITCH FOR 1-FCV-73-3 (13041)	U1 RB	551	TORUS	AI	
19248	18	1-HS-73-81B	HANDSWITCH FOR 1-FCV-73-81 (13042)	U1 RB	551	TORUS	AI	
19250	14	1-HS-74-12B	HANDSWITCH FOR 1-FCV-74-12 (11011)	U1 RB	519	SW CORNER	AI	
19251	14	1-HS-74-13B	HANDSWITCH FOR 1-FCV-74-13 (11012)	U1 RB	541	SW CORNER	AI	
19252	14	1-HS-74-1B	HANDSWITCH FOR 1-FCV-74-1 (11001)	U1 RB	519	SW CORNER	AI	
19253	14	1-HS-74-24B	HANDSWITCH FOR 1-FCV-74-24 (11029)	U1 RB	519	SE CORNER	AI	
19254	14	1-HS-74-25B	HANDSWITCH FOR 1-FCV-74-25 (11030)	U1 RB	541	SE CORNER	AI	
19255	14	1-HS-74-2B	HANDSWITCH FOR 1-FCV-74-2 (11002)	U1 RB	541	SW CORNER	AI	
19256	14	1-HS-74-35B	HANDSWITCH FOR 1-FCV-74-35 (11037)	U1 RB	519	SE CORNER	AI	
19257	14	1-HS-74-36B	HANDSWITCH FOR 1-FCV-74-36 (11038)	U1 RB	541	SE CORNER	AI	
19258	18	1-HS-74-73B	HANDSWITCH FOR 1-FCV-74-73 (11046)	U1 RB	551	TORUS	AI	
19260	18	1-HS-75-11B	HANDSWITCH FOR 1-FCV-75-11 (15006)	U1 RB	519	NW CORNER	AI	
19261	14	1-HS-75-22B	HANDSWITCH FOR 1-FCV-75-22 (15010)	U1 RB	541	NW CORNER	AI	
19262	18	1-HS-75-23B	HANDSWITCH FOR 1-FCV-75-23 (15012)	U1 RB	593	P/R4	AI	
19263	18	1-HS-75-2B	HANDSWITCH FOR 1-FCV-75-2 (15001)	U1 RB	519	NW CORNER	AI	
19264	18	1-HS-75-30B	HANDSWITCH FOR 1-FCV-75-30 (15015)	U1 RB	519	NE CORNER	AI	
19265	18	1-HS-75-39B	HANDSWITCH FOR 1-FCV-75-39 (15020)	U1 RB	519	NE CORNER	AI	
19266	14	1-HS-75-50B	HANDSWITCH FOR 1-FCV-75-50 (15024)	U1 RB	541	NE CORNER	AI	
19267	18	1-HS-75-51B	HANDSWITCH FOR 1-FCV-75-51 (15026)	U1 RB	593	P/R4	AI	
19268	14	1-HS-78-61B	HANDSWITCH FOR 1-FCV-78-61 (11026)	U1 RB	621	R5/S	AI	
19269	14	1-HS-64-72	HANDSWITCH FOR 1-CLR-67-919 (14002)	U1 RB	541	NW CORNER	AI	
19270	14	1-HS-64-73	HANDSWITCH FOR 1-CLR-67-920 (14014)	U1 RB	541	NE CORNER	AI	
19271	18	1-TS-64-68	TEMPERATURE SWITCH FOR 1-CLR-67-917 (14001)	U1 RB	519	SW CORNER	AI	
19272	18	1-TS-64-69	TEMPERATURE SWITCH FOR 1-CLR-67-918 (14013)	U1 RB	519	SE CORNER	AI	
19273	18	1-TS-64-70	TEMPERATURE SWITCH FOR 1-CLR-67-921 (14003)	U1 RB	519	SW CORNER	AI	
19274	18	1-TS-64-71	TEMPERATURE SWITCH FOR 1-CLR-67-922 (14015)	U1 RB	519	SE CORNER	AI	
19275	18	1-TS-1-17A	MAIN STEAM VAULT TEMPERATURE SWITCH	U1 RB	565	MSVLT N/T3	AI	
19276	18	1-TS-1-17B	MAIN STEAM VAULT TEMPERATURE SWITCH	U1 RB	565	MSVLT N/T3	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19277	18	1-TS-1-17C	MAIN STEAM VAULT TEMPERATURE SWITCH	U1 RB	565	MSVLT N/T3	AI	
19278	18	1-TS-1-17D	MAIN STEAM VAULT TEMPERATURE SWITCH	U1 RB	565	MSVLT N/T3	AI	
19279	18	1-TS-1-29A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	565	MSTNL K/T3	AI	
19280	18	1-TS-1-29B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	565	MSTNL K/T3	AI	
19281	18	1-TS-1-29C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	565	MSTNL K/T3	AI	
19282	18	1-TS-1-29D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	565	MSTNL K/T3	AI	
19283	18	1-TS-1-40A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19284	18	1-TS-1-40B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19285	18	1-TS-1-40C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19286	18	1-TS-1-40D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19287	18	1-TS-1-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19288	18	1-TS-1-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19289	18	1-TS-1-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19290	18	1-TS-1-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	586	MSTNL K/T3	AI	
19291	18	1-TS-64-72	TEMPERATURE SWITCH FOR 1-CLR-67-919 (14002)	U1 RB	519	NW CORNER	AI	
19292	18	1-TS-64-73	TEMPERATURE SWITCH FOR 1-CLR-67-920 (14014)	U1 RB	519	NE CORNER	AI	
19294	00	1-AMP-092-0007/41A	IRM CH. "A" VOLTAGE PREAMPLIFIER 7-34A	RB	565	S/R3	AI	
19295	00	1-AMP-092-0007/41B	IRM CH. "B" VOLTAGE PREAMPLIFIER 7-34B	RB	565	S/R3	AI	
19296	14	1-LPNL-925-0027	PANEL 1-25-27 IRM PREAMP. RPS I	RB	565	S/R3	AI	
19297	00	1-AMP-092-0007/41C	IRM CH. "C" VOLTAGE PREAMPLIFIER 7-34C	RB	577	Q/R5	AI	
19298	00	1-AMP-092-0007/41D	IRM CH. "D" VOLTAGE PREAMPLIFIER 7-34D	RB	577	Q/R5	AI	
19299	14	1-LPNL-925-0061	PANEL 1-25-61 IRM PREAMP. RPS II	RB	577	Q/R5	AI	
19300	20	1-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	CB	617	U1 MCR	AI	
19301	20	1-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	CB	617	U1 MCR	AI	
19302	20	1-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	CB	617	U1 MCR	AI	
19303	20	1-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	CB	617	U1 MCR	AI	
19304	20	1-PNLA-009-012	PANEL 1-9-12	CB	617	U1 MCR	AI	
19305	15	1-BATD-283-000A1	24V NEUTRON MONITORING BATTERY, U1 CHANNEL A	CB	593	BAT RM 1	AI	
19306	15	1-BATD-283-000B1	24V NEUTRON MONITORING BATTERY, U1 CHANNEL B	CB	593	BAT RM 1	AI	
19307	16	1-CHGD-283-A1-1	24V NEUTRON BATTERY CHARGERS A1-1	CB	593	BAT BD RM 1	AI	
19308	16	1-CHGD-283-A2-1	24V NEUTRON BATTERY CHARGERS A2-1	CB	593	BAT BD RM 1	AI	
19309	16	1-CHGD-283-B1-1	24V NEUTRON BATTERY CHARGERS B1-1	CB	593	BAT BD RM 1	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19310	16	1-CHGD-283-B2-1	24V NEUTRON BATTERY CHARGERS B2-1	CB	593	BAT BD RM 1	AI	
19312	14	1-HS-71-17B	HANDSWITCH FOR 1-FCV-71-17 (13074)	U1 RB	519	NW CORNER	AI	
19313	20	1-HS-1-56A	HANDSWITCH FOR 1-FCV-1-56 (13075)	U1 CB	617	U1 MCR	AI	
19314	14	1-HS-73-26B	HANDSWITCH FOR 1-FCV-73-26 (13076)	U1 RB	519	SW CORNER	AI	
19316	20	1-HS-77-2A	HANDSWITCH FOR 1-FCV-77-2A (13080)	U1 CB	617	U1 MCR	AI	
19317	20	1-HS-77-15A	HANDSWITCH FOR 1-FCV-77-15A (13081)	U1 CB	617	U1 MCR	AI	
19318	20	1-HS-64-18	HANDSWITCH FOR 1-FCV-64-18 (13082)	U1 CB	617	U1 MCR	AI	
19319	20	1-HS-64-19	HANDSWITCH FOR 1-FCV-64-19 (13083)	U1 CB	617	U1 MCR	AI	
19320	20	1-HS-76-18	HANDSWITCH FOR 1-FCV-76-18 (13084)	U1 CB	617	U1 MCR	AI	
19321	20	1-HS-76-19	HANDSWITCH FOR 1-FCV-76-19 (13085)	U1 CB	617	U1 MCR	AI	
19323	14	1-JB-0375	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	519	SE CORNER	AI	
19324	14	1-JB-0662	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541	SE CORNER	AI	
19325	14	1-JB-0658	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541	SE CORNER	AI	
19326	14	1-JB-1032	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	593	S/R3	AI	
19327	14	1-JB-1095	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565	S/R6	AI	
19328	14	1-JB-1559	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565	T/R6	AI	
19329	14	1-JB-0670	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541	NE CORNER	AI	
19330	14	1-JB-0791	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	519	NW CORNER	AI	
19331	14	1-JB-0681	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541	NW CORNER	AI	
19332	14	1-CS-75-9B	CONTROL STATION FOR 1-HS-75-9B	U1 RB	519	NW CORNER	AI	
19333	14	1-CS-75-37B	CONTROL STATION FOR 1-HS-75-37B	U1 RB	519	NE CORNER	AI	
19334	14	1-JB-1231	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565	S/R6	AI	
19351	14	1-JB-3828	JUNCTION BOX FOR 1-TS-1-29A	U1 RB	565	MSTNL K/T3	AI	
19352	14	1-JB-3829	JUNCTION BOX FOR 1-TS-1-29B	U1 RB	565	MSTNL K/T3	AI	
19353	14	1-JB-3830	JUNCTION BOX FOR 1-TS-1-29C	U1 RB	565	MSTNL K/T3	AI	
19354	14	1-JB-3831	JUNCTION BOX FOR 1-TS-1-29D	U1 RB	565	MSTNL K/T3	AI	
19355	14	1-JB-3801	JUNCTION BOX FOR 1-TS-1-40A	U1 RB	586	MSTNL K/T3	AI	
19356	14	1-JB-3802	JUNCTION BOX FOR 1-TS-1-40B	U1 RB	586	MSTNL K/T3	AI	
19357	14	1-JB-3803	JUNCTION BOX FOR 1-TS-1-40C	U1 RB	586	MSTNL K/T3	AI	
19358	14	1-JB-3804	JUNCTION BOX FOR 1-TS-1-40D	U1 RB	586	MSTNL K/T3	AI	
19359	14	1-JB-3813	JUNCTION BOX FOR 1-TS-1-54A	U1 RB	586	MSTNL K/T3	AI	
19360	14	1-JB-3814	JUNCTION BOX FOR 1-TS-1-54B	U1 RB	586	MSTNL K/T3	AI	

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19361	14	1-JB-3815	JUNCTION BOX FOR 1-TS-1-54C	U1 RB	586	MSTNL K/T3	AI	
19362	14	1-JB-3816	JUNCTION BOX FOR 1-TS-1-54D	U1 RB	586	MSTNL K/T3	AI	
19412	03	0-BDAA-211-0000A	4KV SHDN BD A	U1 RB	621	R/R2	AI	IA
19413	03	0-BDAA-211-0000B	4KV SHDN BD B	U1 RB	593	Q/R2	AI	IB
19418	02	1-BDBB-231-0001A	480V SHDN BD 1A	U1 RB	621	S/R1	AI	I
19419	02	1-BDBB-231-0001B	480V SHDN BD 1B	U1 RB	621	S/R2	AI	II
19423	01	1-BDBB-268-0001A	480V RMOV BD 1A	U1 RB	621	R/R1	AI	I
19424	01	1-BDBB-268-0001B	480V RMOV BD 1B	U1 RB	593	R/R1	AI	II
19437	14	0-BDDD-280-0001	250V BATTERY BD 1	U1 RB	593	P/R4	AI	
19492	20	0-LPNL-925-0045A	PANEL 25-45A	U1 RB	621	R/R2	AI	
19493	20	0-LPNL-925-0045B	PANEL 25-45B	U1 RB	593	R/R2	AI	
19516	14	0-XSW-248-0001	250V MAIN BATT CHGR OUTPUT XFR SW 1	U1 RB	593	P/R4	AI	
19519	15	0-BATA-248-0000A	250V BATTERY SB-A	U1 RB	621	S/R2	AI	IA
19520	14	0-PNLA-248-A	250V DISTRIBUTION PANEL SB-A	U1 RB	621	S/R2	AI	IA
19521	16	0-CHGA-248-0000A	250V BATTERY CHARGER SB-A	U1 RB	621	S/R2	AI	IA
19522	15	0-BATA-248-0000B	250V BATTERY SB-B	U1 RB	621	R/R2	AI	IB
19523	14	0-PNLA-248-B	250V DISTRIBUTION PANEL SB-B	U1 RB	621	R/R2	AI	IB
19524	16	0-CHGA-248-0000B	250V BATTERY CHARGER SB-B	U1 RB	621	R/R2	AI	IB
19534	16	0-CHGA-248-0001	250V BATTERY CHARGER 1	U1 RB	593	P/R4	AI	
19537	15	0-BATA-248-0001	250V MAIN BATTERY 1	U1 RB	593	P/R4	AI	
19594	04	1-XFA-231-TS1A	4KV/480V TRANSFORMER TS1A	U1 RB	621	T/R1	AI	I
19595	04	1-XFA-231-TS1B	4KV/480V TRANSFORMER TS1B	U1 RB	621	S/R7	AI	II
19709	20	1-PNLA-009-0020	PANEL 1-9-20	U1 CB	617	U1 MCR	AI	
19716	18	1-LPNL-925-0223	LOCAL PANEL 1-25-223 – RAW COOLING WATER PANEL	U1 RB	593	Q/R2	AI	
19729	14	1-HS-23-57B	HANDSWITCH FOR 1-FCV-23-57	U1 RB	565	R6/S	AI	
19791	20	1-PNLA-009-0008	PANEL 1-9-8	U1 CB	617	U1 MCR	AI	
19792	18	1-LPNL-925-006B	LOCAL PANEL 25-6B	U1 RB	593	R5/P	AI	
19794	04	1-XFA-099-0010	RPS REGULATING TRANSFORMER TRP-1	U1 CB	593	BATT BD 1	AI	
19795	14	1-FUDS-099-0001CA	RPS REG XFMR DISC SW FROM 480 V RMOV BD 1B	U1 CB	593	BATT BD 1	AI	
19796	04	TUP1	UNIT PREFERRED XFMR	U1 CB	593	BATT BD 1	AI	
19797	14	1-FUDS-099-0001CB	RPS BUS XFMR DISC SW	U1 CB	593	BATT BD 1	AI	
19801	14	1-JB-6439	JUNCTION BOX SERVING 1-TE-161A	U1 RB	519	TORUS		

SSEL NUMBER	CLASS	EQUIPMENT I.D.	DESCRIPTION	BUILDING	ELEV.	ROOM	ISSUE	TRAIN
19802	14	1-JB-6440	JUNCTION BOX SERVING 1-TE-161B	U1 RB	519	TORUS		
19803	14	1-JB-6441	JUNCTION BOX SERVING 1-TE-161C	U1 RB	519	TORUS		
19804	14	1-JB-6442	JUNCTION BOX SERVING 1-TE-161D	U1 RB	519	TORUS		
19805	14	1-JB-6443	JUNCTION BOX SERVING 1-TE-161E	U1 RB	519	TORUS		
19806	14	1-JB-6444	JUNCTION BOX SERVING 1-TE-161F	U1 RB	519	TORUS		
19807	14	1-JB-6445	JUNCTION BOX SERVING 1-TE-161G	U1 RB	519	TORUS		
19808	14	1-JB-6446	JUNCTION BOX SERVING 1-TE-161H	U1 RB	519	TORUS		
19809	14	1-JB-6453	JUNCTION BOX SERVING 1-TE-162A	U1 RB	519	TORUS		
19810	14	1-JB-6454	JUNCTION BOX SERVING 1-TE-162B	U1 RB	519	TORUS		
19811	14	1-JB-6447	JUNCTION BOX SERVING 1-TE-162C	U1 RB	519	TORUS		
19812	14	1-JB-6448	JUNCTION BOX SERVING 1-TE-162D	U1 RB	519	TORUS		
19813	14	1-JB-6449	JUNCTION BOX SERVING 1-TE-162E	U1 RB	519	TORUS		
19814	14	1-JB-6450	JUNCTION BOX SERVING 1-TE-162F	U1 RB	519	TORUS		
19815	14	1-JB-6451	JUNCTION BOX SERVING 1-TE-162G	U1 RB	519	TORUS		
19816	14	1-JB-6452	JUNCTION BOX SERVING 1-TE-162H	U1 RB	519	TORUS		

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
John O. Dizon, P.E. (JOD)	John O. Dizon	6/30/04
Stephen J. Eder, P.E. (SJE)		6/30/04
Farid Elsabee (FE)		6/30/04
Robert D. Hookway, P.E. (RDH)	Robert D. Hookway	6/30/04
Richard L. Tiong, P.E. (RLT)	Richard L. Tiong	6-30-04

APPENDIX D
SCREENING VERIFICATION DATA SHEETS (SVDS)

(see Page D-19 for notes)

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
10001	00	1-HCU-85,1-185	CRD/HYDRAULIC CONTROL UNIT	U1 RB	565'	R2 & R6/P-S	565'	Y	DOC	RRS	Y	N/A	Y	Y	N	SJE/JOD	4
10002	07	1-FCV-85-82A	CRD/WEST SDV VENT VALVE	U1 RB	565'	R2/S	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
10003	07	1-FCV-85-82	CRD/WEST SDV VENT VALVE	U1 RB	565'	R2/S	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
10004	07	1-FCV-85-37C	CRD/WEST SDV DRAIN VALVE	U1 RB	565'	R2/P	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
10005	07	1-FCV-85-37D	CRD/WEST SDV DRAIN VALVE	U1 RB	565'	R2/P	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
10006	07	1-FCV-85-83A	CRD/EAST SDV VENT VALVE	U1 RB	565'	R6/S	565'	Y	BS	GRS	Y	Y*	N/A	Y*	Y*	FE/RLT	1
10007	07	1-FCV-85-83	CRD/EAST SDV VENT VALVE	U1 RB	565'	R6/S	565'	Y	BS	GRS	Y	Y	N/A	N	N	FE/RLT	
10008	07	1-FCV-85-37E	CRD/EAST SDV DRAIN VALVE	U1 RB	565'	R6/P	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
10009	07	1-FCV-85-37F	CRD/EAST SDV DRAIN VALVE	U1 RB	565'	R6/P	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
10010	21	1-TNK-85-901	CRD/WEST SCRAM INSTRUMENT VOLUME	U1 RB	565'	R2/P	565'	Y	N/A	N/A	Y	N/A	Y	Y	N	JOD/SJE	4
10011	21	1-TNK-85-902	CRD/EAST SCRAM INSTRUMENT VOLUME	U1 RB	565'	R6/P	565'	Y	N/A	N/A	Y	N/A	Y	Y	N	JOD/SJE	4
10012	08B	1-FSV-85-37A	CRD/SCRAM DUMP VALVE	U1 RB	565'	R5/N	565'	Y	GERS	RRS	Y	Y	N/A	Y	Y	FE/RLT	
10013	08B	1-FSV-85-37B	CRD/SCRAM DUMP VALVE	U1 RB	565'	R5/N	565'	Y	GERS	RRS	Y	Y	N/A	Y	Y	FE/RLT	
10014	08B	1-FSV-85-35A	CRD/BACKUP SCRAM VALVE	U1 RB	565'	R5/N	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
10015	08B	1-FSV-85-35B	CRD/BACKUP SCRAM VALVE	U1 RB	565'	R5/N	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
10016	20	1-HS-99-5A/S1A	RPS/REACTOR MANUAL SCRAM CHANNEL A1	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y	Y	SJE/JOD	2, 3
10017	20	1-HS-99-5A/S1B	RPS/REACTOR MANUAL SCRAM CHANNEL B1	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y	Y	SJE/JOD	2, 3
10018	20	1-HS-99-5A-S1	RPS/REACTOR MODE SWITCH	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y	Y	FE/SJE	2, 3
10019	8B	1-FSV-85-70A	CRD/BACKUP PILOT SCRAM VALVE 'A'	U1 RB	565'	R5/N	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
10020	8B	1-FSV-85-70B	CRD/ BACKUP PILOT SCRAM VALVE 'B'	U1 RB	565'	R5/N	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
10023	8B	1-FSV-85-39A	CRD/ISOLATION VALVE	U1 RB	565'	CRD RACKS	565'	Y	GERS	RRS	Y	Y	N/A	Y	Y	FE/RLT	
10024	8B	1-FSV-85-39B	CRD/ISOLATION VALVE	U1 RB	565'	CRD RACKS	565'	Y	GERS	RRS	Y	Y	N/A	Y	Y	FE/RLT	
10025	18	1-PI-85-88	PRESSURE INDICATOR	U1 RB	565'	R6/S	565'	Y	ABS	RRS	Y	Y	Y	Y	Y	JOD/SJE	
10026	18	1-PI-85-89	PRESSURE INDICATOR	U1 RB	565'	R2/P	565'	Y	ABS	RRS	Y	Y	Y	Y	Y	JOD/SJE	
10027	18	1-PI-85-90	PRESSURE INDICATOR	U1 RB	565'	R2/P	565'	Y	ABS	RRS	Y	Y	Y	Y	Y	JOD/SJE	
11001	08A	1-FCV-74-1	RHR/PUMP 1A SUCTION VALVE FROM SUPRESSION POOL	U1 RB	519	SW CORNER	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11002	08A	1-FCV-74-2	RHR/PUMP 1A SUCTION VALVE FROM SHUTDOWN COOLING	U1 RB	541'-6"	SW CORNER	541'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11004	06	1-PMP-74-5	RHR/PUMP 1A	U1 RB	519	SW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
11006	08A	1-FCV-74-7	RHR/PUMP 1A & 1C MINIMUM FLOW VALVE	U1 RB	541'-6"	SW CORNER	541'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
11009	21	1-HEX-74-900A	RHR/HEAT EXCHANGER 1A	U1 RB	565'	SW HX	565'	Y	N/A	N/A	Y	N/A	Y	Y	N	JOD/SJE	4
11011	08A	1-FCV-74-12	RHR/PUMP 1C SUCTION VALVE FROM SUPRESSION POOL	U1 RB	519'	SW CORNER	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11012	08A	1-FCV-74-13	RHR/PUMP 1C SUCTION VALVE FROM SHUTDOWN COOLING	U1 RB	541'-6"	SW CORNER	541'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11014	06	1-PMP-74-16	RHR/PUMP 1C	U1 RB	519'	SW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
11017	21	1-HEX-74-900C	RHR/HEAT EXCHANGER 1C	U1 RB	565'	SW HX	565'	Y	N/A	N/A	Y	N/A	Y	Y	N	JOD/SJE	4
11018	20	1-FI-74-50	RHR/LOOP I FLOW INDICATOR	U1 CB	617"	U1 MCR	617"	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2
11019	20	1-FI-74-56	RHR/LOOP I FLOW INDICATOR	U1 CB	617"	U1 MCR	617"	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2
11020	08A	1-FCV-74-57	RHR/LOOP I TORUS CONTAINMENT COOLING/SPRAY VALVE	U1 RB	551'	TORUS	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11021	08A	1-FCV-74-59	RHR/LOOP I SUPRESSION POOL COOLING VALVE	U1 RB	551'	TORUS	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11022	08A	1-FCV-74-58	RHR/LOOP I SUPRESSION POOL SPRAY VALVE	U1 RB	551'	TORUS	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11023	08A	1-FCV-74-52	RHR/LOOP I OUTBOARD INJECTION VALVE	U1 RB	565'	R4/T	565'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
11024	08A	1-FCV-74-53	RHR/LOOP I INBOARD INJECTION VALVE	U1 RB	565'	R4/T	565'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
11026	08A	1-FCV-78-61	FPC/SPENT FUEL POOL COOLING X-TIE TO RHR	U1 RB	621'-3"	R5/S	621'-3"	N	ABS	RRS	Y*	Y	N/A	Y	Y	FE/RLT	2
11027	08A	1-FCV-74-60	RHR/LOOP I OUTBOARD DRYWELL SPRAY VALVE	U1 RB	593'	R3/S	593'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
11028	08A	1-FCV-74-61	RHR/LOOP I INBOARD DRYWELL SPRAY VALVE	U1 RB	593'	R3/S	593'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11029	08A	1-FCV-74-24	RHR/PUMP 1B SUCTION VALVE FROM SUPRESSION POOL	U1 RB	519'	SE CORNER	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11030	08A	1-FCV-74-25	RHR/PUMP 1B SUCTION VALVE FROM SD COOLING	U1 RB	541'-6"	SE CORNER	541'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11031	06	1-PMP-74-28	RHR/PUMP 1B	U1 RB	519'	SE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
11033	08A	1-FCV-74-30	RHR/PUMP 1B & 1D MINIMUM FLOW VALVE	U1 RB	541'-6"	SE CORNER	541'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11036	21	1-HEX-74-900B	RHR/HEAT EXCHANGER 1B	U1 RB	565'	SE HX	565'	Y	N/A	N/A	Y	N/A	Y	Y	N	JOD/SJE	4
11037	08A	1-FCV-74-35	RHR/PUMP 1D SUCTION VALVE FROM SUPRESSION POOL	U1 RB	519'	SE CORNER	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11038	08A	1-FCV-74-36	RHR/PUMP 1D SUCTION VALVE FROM SD COOLING	U1 RB	541'-6"	SE CORNER	541'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11039	06	1-PMP-74-39	RHR/PUMP 1D	U1 RB	519	SE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
11042	21	1-HEX-74-900D	RHR/HEAT EXCHANGER 1D	U1 RB	565'	SE HX	565'	Y	N/A	N/A	Y	N/A	Y	Y	N	JOD/SJE	4
11043	20	1-FI-74-64	RHR/LOOP II FLOW INDICATOR	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
11044	20	1-FI-74-70	RHR/LOOP II FLOW INDICATOR	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
11045	08A	1-FCV-74-71	RHR/LOOP II TORUS CONT. COOLING/SPRAY VALVE	U1 RB	551	TORUS	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11046	08A	1-FCV-74-73	RHR/LOOP II SUPRESSION POOL COOLING VALVE	U1 RB	551	TORUS	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11047	08A	1-FCV-74-72	RHR/LOOP II SUPRESSION POOL SPRAY VALVE	U1 RB	551	TORUS	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11048	08A	1-FCV-74-66	RHR/LOOP II OUTBOARD INJECTION VALVE	U1 RB	565'	R5/T	565'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
11049	08A	1-FCV-74-67	RHR/LOOP II INBOARD INJECTION VALVE	U1 RB	565'	R5/T	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11051	08A	1-FCV-74-74	RHR/LOOP II OUTBOARD DRYWELL SPRAY VALVE	U1 RB	565'	R6/S	581'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHO R OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
11052	08A	1-FCV-74-75	RHR/LOOP II INBOARD DRYWELL SPRAY VALVE	U1 RB	565'	R6/S	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
11053	08A	1-FCV-74-101	RHR/U2 TO U1 RHR DISCHARGE X-TIE ISO. VALVE (B,D)	U1 RB	565'	R6/T	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
12001	07	1-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=79°	585'	Y	BS	GRS	Y	U	N/A	N	N	JOD/RDH	
12003	07	1-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=135°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
12006	07	1-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=35°	585'	Y	BS	GRS	Y	U	N/A	N	N	JOD/RDH	
12009	07	1-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=45°	585'	Y	BS	GRS	Y	U	N/A	N	N	JOD/RDH	
12012	07	1-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=127.5°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
12015	07	1-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=137.5°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
12018	07	1-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=105°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
12021	07	1-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=325°	585'	Y	BS	GRS	Y	U	N/A	N	N	JOD/RDH	
12024	07	1-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=315°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
12027	07	1-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=222.5°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
12030	07	1-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=281°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
12033	07	1-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=225°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
12036	07	1-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE	U1 DW	585'	AZ=255°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
13001	07	1-FCV-1-14	MSIV "A" INBOARD ISOLATION VALVE	U1 DW	563'	AZ=160°	563'	Y	BS	GRS	Y	N	N/A	Y	N	JOD/RDH	4
13002	07	1-FCV-1-15	MSIV "A" OUTBOARD ISOLATION VALVE	U1 RB	564'	MSIV VAULT	564'	Y	BS	GRS	Y	N	N/A	Y	N	SJE/JOD	4
13003	07	1-FCV-1-26	MSIV "B" INBOARD ISOLATION VALVE	U1 DW	563'	AZ=170°	563'	Y	BS	GRS	Y	N	N/A	Y	N	JOD/RDH	4
13004	07	1-FCV-1-27	MSIV "B" OUTBOARD ISOLATION VALVE	U1 RB	564'	MSIV VAULT	564'	Y	BS	GRS	Y	N	N/A	Y	N	SJE/JOD	4
13005	07	1-FCV-1-37	MSIV "C" INBOARD ISOLATION VALVE	U1 DW	563'	AZ=190°	563'	Y	BS	GRS	Y	N	N/A	Y	N	JOD/RDH	4
13006	07	1-FCV-1-38	MSIV "C" OUTBOARD ISOLATION VALVE	U1 RB	564'	MSIV VAULT	564'	Y	BS	GRS	Y	N	N/A	Y	N	SJE/JOD	4
13007	07	1-FCV-1-51	MSIV "D" INBOARD ISOLATION VALVE	U1 DW	563'	AZ=200°	563'	Y	BS	GRS	Y	N	N/A	Y	N	JOD/RDH	4
13008	07	1-FCV-1-52	MSIV "D" OUTBOARD ISOLATION VALVE	U1 RB	564'	MSIV VAULT	564'	Y	BS	GRS	Y	N	N/A	Y	N	SJE/JOD	4
13009	08A	1-FCV-1-55	MAIN STEAM LINE DRAIN ISOLATION VALVE	U1 DW	563'	AZ=180°	563'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	JOD/RDH	1
13015	07	1-FCV-64-17	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	565'	R3/U	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13016	07	1-FCV-64-30	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	621'-3"	R3/Q	631'	N	ABS	RRS	Y*	Y	N/A	Y	Y	FE/RLT	2
13017	07	1-FCV-64-33	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	565'	R2/P	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13018	07	1-FCV-64-139	CONTAINMENT DW DP ISOLATION VALVE	U1 RB	565'	R2/P	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13019	07	1-FCV-64-140	CONTAINMENT DW DP ISOLATION VALVE	U1 RB	565'	R2/P	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13020	07	1-FCV-64-28A	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	519'	IN TORUS	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	SJE/JOD	
13021	07	1-FCV-64-28B	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	519'	IN TORUS	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	SJE/JOD	
13022	07	1-FCV-64-28C	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	519'	IN TORUS	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	SJE/JOD	

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
13023	07	1-FCV-64-28D	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	519'	IN TORUS	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	SJE/JOD	
13024	07	1-FCV-64-28E	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	519'	IN TORUS	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	SJE/JOD	
13025	07	1-FCV-64-28F	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	519'	IN TORUS	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	SJE/JOD	
13026	07	1-FCV-64-28G	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	519'	IN TORUS	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	SJE/JOD	
13027	07	1-FCV-64-28H	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	519'	IN TORUS	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	SJE/JOD	
13028	07	1-FCV-64-28J	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	519'	IN TORUS	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	SJE/JOD	
13029	07	1-FCV-64-28K	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	519'	IN TORUS	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	SJE/JOD	
13030	07	1-FCV-64-28L	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	519'	IN TORUS	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	SJE/JOD	
13031	07	1-FCV-64-28M	SUPPRESSION CHAMBER/DRYWELL VACUUM BREAKERS	U1 DW	519'	IN TORUS	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	SJE/JOD	
13032	08A	1-FCV-69-1	RWCU INBOARD ISOLATION VALVE	U1 DW	585'	AZ=0°	585'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	JOD/RDH	1
13033	08A	1-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	U1 RB	593'	R5/S	593'	Y	BS	GRS	Y	Y*	N/A	Y*	Y*	FE/RLT	1
13035	08A	1-FCV-70-47	RBCCW DRYWELL RETURN VALVE	U1 RB	551'	TORUS	540'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13037	08A	1-FCV-71-2	RCIC INBOARD ISOLATION VALVE	U1 DW	585'	AZ=185°	585'	Y	BS	GRS	Y	Y	N/A	Y	Y	JOD/RDH	
13038	08A	1-FCV-71-3	RCIC OUTBOARD ISOLATION VALVE	U1 RB	565'	MSIV VAULT	565'	Y	DOC	RRS	Y	Y	N/A	Y*	Y*	SJE/JOD	1
13039	08A	1-FCV-71-18	RCIC OUTBOARD SUCTION VALVE	U1 RB	519'	NW CORNER	527'-10"	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13040	08A	1-FCV-73-2	HPCI STEAM SUPPLY ISOLATION VALVE	U1 DW	563'	AZ=50°	563'	Y	BS	GRS	Y	Y	N/A	Y	Y	JOD/RDH	
13041	08A	1-FCV-73-3	HPCI STEAM SUPPLY ISOLATION VALVE	U1 RB	551'	TORUS	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13042	08A	1-FCV-73-81	HPCI STEAM SUPPLY ISOLATION BYPASS VALVE	U1 RB	551'	TORUS	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13043	08A	1-FCV-73-27	HPCI OUTBOARD SUCTION VALVE	U1 RB	519'	HPCI ROOM	523'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
13044	07	1-FCV-75-57	PSC PUMP SUCTION ISOLATION VALVE	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13045	07	1-FCV-75-58	PSC PUMP SUCTION ISOLATION VALVE	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13046	07	1-FCV-76-24	PRIMARY CONTAINMENT ISOLATION VALVE	U1 RB	565'	R3/U	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13047	07	1-FCV-77-2B	DRYWELL FLOOR DRAIN SUMP DISCHARGE	U1 RB	551	TORUS	565'	Y	BS	GRS	Y	N	N/A	Y	N	FE/RLT	
13048	07	1-FCV-77-15B	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE	U1 RB	551	TORUS	565'	Y	BS	GRS	Y	N	N/A	Y	N	FE/RLT	
13049	07	1-FCV-84-19	CAD ISOLATION VALVE	U1 RB	621'-3"	R3/Q	631'	N	ABS	RRS	N	Y	N/A	Y	N	FE/JOD	
13050	07	1-FCV-84-20	CAD ISOLATION VALVE	U1 RB	621'-3"	R3/Q	631'	N	ABS	RRS	N	Y	N/A	Y	N	FE/RLT	
13051	20	1-LI-3-58A	RPV LEVEL INSTRUMENT	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y*	Y*	SJE/JOD	1, 2, 3
13052	20	1-LI-3-58B	RPV LEVEL INSTRUMENT	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y*	Y*	SJE/JOD	1, 2, 3
13053	20	1-PI-3-74A	RPV PRESSURE INSTRUMENT	U1 CB	617'	U1 MCR	617"	N	ABS	RRS	Y*	N/A	Y	Y*	Y*	SJE/JOD	1, 2, 3
13054	20	1-PI-3-74B	RPV PRESSURE INSTRUMENT	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y*	Y*	SJE/JOD	1, 2, 3
13055	20	1-XR-64-159	TORUS LEVEL AND DRYWELL PRESSURE INSTRUMENT	U1 CB	617"	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
13056	20	1-LI-64-159A	TORUS LEVEL INSTRUMENT	U1 CB	617"	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
13057	20	1-TI-64-161	TORUS TEMPERATURE INSTRUMENT	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
13058	20	1-TI-64-162	TORUS TEMPERATURE INSTRUMENT	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
13059	20	1-PI-64-67	DRYWELL PRESSURE INSTRUMENT	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
13060	20	1-PI-64-160A	DRYWELL PRESSURE INSTRUMENT	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
13061	20	1-TI-64-52A	DRYWELL TEMPERATURE INSTRUMENT	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
13062	20	1-XR-64-50	DRYWELL TEMPERATURE AND PRESSURE INSTRUMENT	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
13063	07	1-FCV-76-17	CONTAINMENT INERTING N2 MAKEUP	U1 RB	565'	R5/T	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13064	07	1-FCV-64-222	HARDENED WETWELL VENT	U1 RB	565'	R3/T	565'	Y	BS	GRS	Y	Y*	N/A	Y*	Y*	FE/RLT	1
13069	08A	1-FCV-71-40	CONTAINMENT ISOLATION RCIC VALVE	U1 RB	565'	MSIV VAULT	565'	Y	DOC	RRS	Y	Y*	N/A	Y*	Y*	SJE/JOD	1
13074	08A	1-FCV-71-17	RCIC INBOARD SUCTION VALVE	U1 RB	519'	NW CORNER	527'-10"	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
13075	08A	1-FCV-1-56	MAIN STEAM LINE DRAIN ISOLATION VALVE	U1 RB	564'	MSIV VAULT	564'	Y	BS	GRS	Y	N	N/A	Y	N	SJE/JOD	
13076	08A	1-FCV-73-26	HPCI INBOARD SUCTION VALVE	U1 RB	519'	SW CORNER	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13079	07	1-FCV-32-62	DRYWELL CONTROL AIR SUCTION VALVE	U1 RB	565'	CLEAN RM	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13080	07	1-FCV-77-2A	DRYWELL FLOOR DRAIN SUMP DISCHARGE	U1 RB	551'	TORUS	565'	Y	BS	GRS	Y	N	N/A	Y	N	FE/RLT	
13081	07	1-FCV-77-15A	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE	U1 RB	551'	TORUS	565'	Y	BS	GRS	Y	N	N/A	Y	N	FE/RLT	
13082	07	1-FCV-64-18	COOLING/PURGE AIR TO DRYWELL	U1 RB	565'	R5/T	565'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
13083	07	1-FCV-64-19	COOLING/PURGE AIR TO SUPPRESSION CHAMBER	U1 RB	565'	R3/T	565'	Y	BS	GRS	Y	Y*	N/A	Y*	Y*	FE/RLT	1
13084	07	1-FCV-76-18	CONTAINMENT INERTING DRYWELL N2 MAKEUP VALVE	U1 RB	565'	R5/T	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13085	07	1-FCV-76-19	CONTAINMENT INERTING - PSC N2 MAKEUP VALVE	U1 RB	565'	R3/T	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
13101	18	1-LT-64-159A	TORUS LEVEL TRANSMITTER	U1 RB	519'	TORUS	524'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13102	18	1-LT-64-159B	TORUS LEVEL TRANSMITTER	U1 RB	519'	TORUS	524'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13111	19	1-TE-64-161A	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13112	19	1-TE-64-161B	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13113	19	1-TE-64-161C	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13114	19	1-TE-64-161D	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13115	19	1-TE-64-161E	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13116	19	1-TE-64-161F	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13117	19	1-TE-64-161G	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13118	19	1-TE-64-161H	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13211	19	1-TE-64-162A	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13212	19	1-TE-64-162B	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13213	19	1-TE-64-162C	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
13214	19	1-TE-64-162D	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13215	19	1-TE-64-162E	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13216	19	1-TE-64-162F	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13217	19	1-TE-64-162G	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
13218	19	1-TE-64-162H	TORUS TEMPERATURE ELEMENT	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
14001	10	1-CLR-67-917	EECW/RHR PUMP 1A ROOM COOLER	U1 RB	541'-6"	SW CORNER	565'	Y	BS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
14002	10	1-CLR-67-919	EECW/CS PUMP 1A ROOM COOLER	U1 RB	541'-6"	NW CORNER	565'	Y	BS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
14003	10	1-CLR-67-921	EECW/RHR PUMP 1C ROOM COOLER	U1 RB	541'-6"	SW CORNER	565'	Y	BS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
14004	21	1-HEX-67-915	EECW/RHR SEAL HX 1A	U1 RB	519'	SW CORNER	519'	Y	BS	GRS	Y	N/A	Y	Y	Y	SJE/JOD	3
14013	10	1-CLR-67-918	EECW/RHR PUMP 1B ROOM COOLER	U1 RB	541'-6"	SE CORNER	565'	Y	BS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
14014	10	1-CLR-67-920	EECW/CS PUMP 1B ROOM COOLER	U1 RB	541'-6"	NE CORNER	565'	Y	BS	RRS	Y	N	Y	Y	N	SJE/JOD	
14015	10	1-CLR-67-922	EECW/RHR PUMP 1D ROOM COOLER	U1 RB	541'-6"	SE CORNER	565'	Y	BS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
14016	21	1-HEX-67-923	EECW/RHR SEAL HX 1B	U1 RB	519'	SE CORNER	519'	Y	BS	GRS	Y	N/A	Y	Y	Y	SJE/JOD	3
14025	21	1-HEX-67-916	EECW/RHR SEAL HX 1C	U1 RB	519'	SW CORNER	519'	Y	BS	GRS	Y	N/A	Y	Y	Y	SJE/JOD	3
14026	21	1-HEX-67-924	EECW/RHR SEAL HX 1D	U1 RB	519'	SE CORNER	519'	Y	BS	GRS	Y	N/A	Y	Y	Y	SJE/JOD	3
14046	07	1-FCV-67-50	EECW NORTH HEADER BACKUP TO RBCCW	U1 RB	593'	R3/P	604'	Y	BS	GRS	Y	N/A	Y	Y	Y	SJE/JOD	
14049	07	0-FCV-67-53	EECW N. HEADER BACKUP TO THE AIR COMPRESSORS	U1 RB	565'	R3/N	568'	Y	BS	GRS	Y	N/A	Y	Y	Y	SJE/JOD	
14089	07	1-FCV-67-51	EECW SYSTEM SOUTH HEADER BACKUP TO RBCCW	U1 RB	565'	R3/T	567'	Y	BS	GRS	Y	N/A	Y	Y	Y	SJE/JOD	
15001	08A	1-FCV-75-2	CS/PUMP 1A SUCTION ISOLATION VALVE	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
15002	06	1-PMP-75-5	CS/PUMP 1A	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
15005	08A	1-FCV-75-9	CS/PUMPS 1A & 1C MINI-FLOW VALVE	U1 RB	541'-6"	NW CORNER	541'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
15006	08A	1-FCV-75-11	CS/PUMP 1C SUCTION ISOLATION VALVE	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
15007	06	1-PMP-75-14	CS/PUMP 1C	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	Y	N	N	SJE/JOD	
15010	08A	1-FCV-75-22	CS/PUMPS 1A & 1C TEST ISOLATION VALVE	U1 RB	541'-6"	NW CORNER	543'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
15011	20	1-FI-75-21	CS/PUMPS 1A & 1C FLOW INDICATOR	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
15012	08A	1-FCV-75-23	CS/DIV I OUTBOARD INJECTION VALVE	U1 RB	593'	R4/P	604'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
15013	08A	1-FCV-75-25	CS/DIV I INBOARD INJECTION VALVE	U1 RB	593'	R4/P	604'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
15015	08A	1-FCV-75-30	CS/PUMP 1B SUCTION ISOLATION VALVE	U1 RB	519'	NE CORNER	519'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
15016	06	1-PMP-75-33	CS/PUMP 1B	U1 RB	519'	NE CORNER	519'	Y	BS	GRS	Y	Y*	Y	Y	Y*	SJE/JOD	1
15019	08A	1-FCV-75-37	CS/PUMPS 1B & 1D MINI-FLOW VALVE	U1 RB	541'-6"	NE CORNER	540'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
15020	08A	1-FCV-75-39	CS/PUMP 1D SUCTION ISOLATION VALVE	U1 RB	519	NE CORNER	519'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
15021	06	1-PMP-75-42	CS/PUMP 1D	U1 RB	519	NE CORNER	519'	Y	BS	GRS	Y	Y*	Y	N	N	SJE/JOD	

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
15024	08A	1-FCV-75-50	CS/PUMPS 1B & 1D TEST ISOLATION VALVE	U1 RB	541'-6"	NE CORNER	541'	Y	BS	GRS	Y	Y	N/A	Y*	Y*	FE/RLT	1
15025	20	1-FI-75-49	CS/PUMPS 1B & 1D FLOW INDICATOR	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
15026	08A	1-FCV-75-51	CS/DIV II OUTBOARD DISCHARGE VALVE	U1 RB	593'	R4/P	604'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
15027	08A	1-FCV-75-53	CS/DIV II INBOARD DISCHARGE VALVE	U1 RB	593'	R4/P	604'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
16001	08B	1-FSV-84-8A	CAD/CAD TO DW (1-FCV-64-18) SOLENOID VALVE	U1 RB	565'	R5/T	565'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
16002	08B	1-FSV-84-8B	CAD/CAD TO DW (1-FCV-64-19) SOLENOID VALVE	U1 RB	565'	R3/T	565'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
16003	07	1-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 1 DRYWELL CONTROL AIR	U1 RB	565'	R4/U	565'	Y	DOC	RRS	Y	Y*	N/A	Y*	Y*	FE/RLT	1
16004	08B	1-FSV-84-48	CAD/CAD SYSTEM "A" TO UNIT 1 DRYWELL CONTROL AIR	U1 RB	565'	R3/T	565'	Y	BS	GRS	Y	Y*	N/A	Y*	Y*	FE/RLT	1
16009	21	1-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	U1 DW	585'	AZ=45°	585'	Y	DOC	RRS	Y	Y	Y*	Y	Y*	JOD/RDH	1
16010	08B	1-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19	U1 DW	585'	AZ=45°	585'	Y	BS	GRS	Y	U	N/A	N	N	JOD/RDH	
16012	21	1-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	U1 DW	585'	AZ=127.5°	585'	Y	DOC	RRS	Y	Y	Y*	Y	Y*	JOD/RDH	1
16013	08B	1-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22	U1 DW	585'	AZ=127.5°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
16015	21	1-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	U1 DW	585'	AZ=135°	585'	Y	DOC	RRS	Y	Y	Y*	Y	Y*	JOD/RDH	1
16016	08B	1-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5	U1 DW	585'	AZ=135°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
16017	08B	1-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23	U1 DW	585'	AZ=137.5°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
16018	08B	1-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179	U1 DW	585'	AZ=105°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
16019	08B	1-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4	U1 DW	585'	AZ=79°	585'	Y	BS	GRS	Y	U	N/A	N	N	JOD/RDH	
16021	08B	1-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18	U1 DW	585'	AZ=35°	585'	Y	BS	GRS	Y	U	N/A	N	N	JOD/RDH	
16023	08B	1-FSV-84-8C	CAD/CAD TO DW (1-FCV-64-19) SOLENOID VALVE	U1 RB	565'	R3/T	565'	Y	BS	GRS	Y	Y*	N/A	Y	Y*	FE/RLT	1
16024	08B	1-FSV-84-8D	CAD/CAD TO DW (1-FCV-64-18) SOLENOID VALVE	U1 RB	565'	R5/T	565'	Y	BS	GRS	Y	Y	N/A	Y	Y	FE/RLT	
16025	07	1-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 1 DRYWELL CONTROL AIR	U1 RB	565'	R4/U	565'	Y	DOC	RRS	Y	Y*	N/A	Y*	Y*	FE/RLT	1
16026	08B	1-FSV-84-49	CAD/CAD SYSTEM "B" TO UNIT 1 DRYWELL CONTROL AIR	U1 RB	565'	R3/T	565'	Y	BS	GRS	Y	Y*	N/A	Y*	Y*	FE/RLT	1
16029	21	1-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	U1 DW	585'	AZ=325°	585'	Y	DOC	RRS	Y	Y	Y*	Y	Y*	JOD/RDH	1
16030	08B	1-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30	U1 DW	585'	AZ=325°	585'	Y	BS	GRS	Y	U	N/A	N	N	JOD/RDH	
16032	21	1-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	U1 DW	585'	AZ=315°	585'	Y	DOC	RRS	Y	Y	Y*	Y	Y*	JOD/RDH	1
16033	08B	1-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31	U1 DW	585'	AZ=315°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
16035	21	1-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	U1 DW	585'	AZ=222.5°	585'	Y	DOC	RRS	Y	Y	Y*	Y	Y*	JOD/RDH	1
16036	08B	1-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34	U1 DW	585'	AZ=222.5°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
16038	08B	1-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41	U1 DW	585'	AZ=281°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
16040	08B	1-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42	U1 DW	585'	AZ=225°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
16041	08B	1-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180	U1 DW	585'	AZ=255°	585'	Y	BS	GRS	Y	Y	N/A	N	N	JOD/RDH	
16043	07	1-FCV-64-20	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	565'	R3/T	565'	Y	BS	GRS	Y	Y*	N/A	Y*	Y*	FE/RLT	1

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
16044	07	1-FCV-64-21	CONTAINMENT VENTILATION ISOLATION VALVE	U1 RB	565'	R3/T	565'	Y	BS	GRS	Y	Y*	N/A	Y*	Y*	FE/RLT	1
18002	08A	1-FCV-23-034	RHR/RHRSW HX A OUTLET VALVE	U1 RB	565'	R2/U	565'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
18004	08A	1-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	U1 RB	565'	R2/U	565'	Y	BS	GRS	Y	Y*	Y	Y*	Y*	SJE/JOD	1
18006	08A	1-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U1 RB	565'	R5/T	580	Y	BS	GRS	Y	Y*	N/A	Y*	Y*	FE/RLT	1
18008	08A	1-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U1 RB	565'	R5/T	565'	Y	BS	GRS	Y	Y*	N/A	Y*	Y*	FE/RLT	1
18009	20	1-FI-23-36	RHRSW HX A FLOW INDICATOR	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
18010	20	1-FI-23-42	RHRSW HX C FLOW INDICATOR	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
18011	20	1-FI-23-48	RHRSW HX B FLOW INDICATOR	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
18012	20	1-FI-23-54	RHRSW HX D FLOW INDICATOR	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	NA	Y	Y	Y	FE/SJE	2, 3
18029	08A	1-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	U1 RB	565'	R5/T	580'	Y	BS	GRS	Y	Y	N/A	Y	Y	JOD/SJE	
18032	08A	1-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	U1 RB	565'	R5/T	580'	Y	BS	GRS	Y	Y	N/A	Y*	Y*	JOD/SJE	1
18033	08A	1-FCV-23-57	RHR/RHRSW CROSS CONNECT VALVE	U1 RB	565'	R6/S	565'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19001	20	1-PNLA-009-0023/1	ELECTRICAL CONTROL PANEL 1-9-23-1	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19002	20	1-PNLA-009-0023/2	ELECTRICAL CONTROL PANEL 1-9-23-2	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19003	20	1-PNLA-009-0023/3	ELECTRICAL CONTROL PANEL 1-9-23-3	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19004	20	1-PNLA-009-0023/4	ELECTRICAL CONTROL PANEL 1-9-23-4	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19005	20	1-PNLA-009-0023/5	ELECTRICAL CONTROL PANEL 1-9-23-5	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19006	20	1-PNLA-009-0023/6	ELECTRICAL CONTROL PANEL 1-9-23-6	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19007	20	1-PNLA-009-0023/7	ELECTRICAL CONTROL PANEL 1-9-23-7	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19008	20	1-PNLA-009-0023/8	ELECTRICAL CONTROL PANEL 1-9-23-8	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19030	01	1-BDBB-281-0001A	250V DC RMOV BOARD 1A	U1 RB	621'-3"	Q/R1	621'-3"	N	ABS	RRS	N	N	N	Y	N	SJE/JOD	
19031	01	1-BDBB-281-0001B	250V DC RMOV BOARD 1B	U1 RB	593'	Q/R1	593'	Y	ABS	RRS	N	N	Y	Y	N	SJE/JOD	
19033	01	1-BDBB-281-0001C	250V DC RMOV BOARD 1C	U1 RB	565'	Q/R1	565'	Y	ABS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19039	14	1-JBOX-253-6455	I&C BUS 1A DISC SWITCH 1A1	U1 RB	621'-3"	R/R1	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19040	04	1-XFA-253-0001A1	I&C BUS 1A 480/208-120V TRANSFORMER	U1 RB	621'-3"	R/R1	621'-3"	N	GERS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19041	04	1-XFA-253-0001A	I&C BUS 1A REGULATING TRANSFORMER	U1 RB	621'-3"	R/R1	621'-3"	N	DOC	RRS	Y	N/A	Y	Y	Y	SJE/JOD	
19042	14	1-JBOX-253-6457	I&C BUS 1A DISC SW 1A2	U1 CB	593'	BATT BD 1	593'	Y	BS	GRS	Y	N	N	Y	N	SJE/JOD	
19043	14	1-JBOX-253-6456	I&C BUS 1A DISC SWITCHES 1A3, 1A4, 1A5, 1A6	U1 RB	621'-3"	R/R1	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19044	14	1-JBOX-253-8862	I&C BUS 1A DISC SWITCH	U1 RB	621'-3"	R/R1	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19045	20	1-PNLA-009-0009	I&C BUS 1A (CAB 2 OF PNL 1-9-9)	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19046	20	1-PX-64-160B	POWER SUPPLY (PNL 1-9-19: 1-LI-64-159B,160B)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19047	20	1-PXMC-23-114	POWER SUPPLY (PNL 1-9-18: FI-23-36,42 : FI-74-50)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
19048	20	1-PXMC-23-115 A&B	POWER SUPPLY (PNL 1-9-19: FI-23-48,54; FI-74-64)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19049	04	1-XFA-253-0001B1	I&C BUS 1B 480/208-120V TRANSFORMER	U1 RB	593'	R/R1	593'	Y	GERS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19050	04	1-XFA-253-0001B2	I&C BUS 1B REGULATING TRANSFORMER	U1 RB	593'	R/R1	593'	Y	DOC	RRS	Y	N/A	Y	Y	Y	SJE/JOD	
19051	14	1-JBOX-253-6460	I&C BUS 1B DISC SW 1B2	U1 CB	593'	BATT BD 1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19052	14	1-JBOX-253-8865	I&C BUS 1B DISC SWITCH	U1 RB	593'	R/R1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19053	14	1-JBOX-253-6459	I&C BUS 1B DISC SWITCHES 1B3, 1B4, 1B5, 1B6	U1 RB	593'	R/R1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19054	20	1-PNLA-009-0009	I&C BUS 1B (CAB 3 OF PNL 1-9-9)	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19055	20	1-PX-64-159B	POWER SUPPLY (PNL 1-9-19)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19068	14	1-JBOX-253-7160	I&C BUS 1B DISC SWITCH 1B1	U1 RB	593'	R/R1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19070	16	1-INVT-256-0001	DIV I ECCS ATU INVERTER	U1 RB	593'	Q/R1	593'	Y	ABS	RRS	N	N	N	Y	N	SJE/JOD	
19071	20	1-PX-71-60-1	ECCS ATU CAB 1-9-81 POWER SUPPLY	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19072	20	1-PX-71-60-1A	ECCS ATU CAB 1-9-81 POWER SUPPLY	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19073	20	1-PX-64-50	PWR SUPPLY (PNL 1-25-31; XR-64-50 [DEV BA TERM 11/12])	U1 RB	621'-3"	Q/R2	621'-3"	N	ABS	RRS	Y*	N/A	Y	Y*	Y*	SJE/JOD	1, 2, 3
19074	20	1-PX-74-56	POWER SUPPLY (PNL 1-9-18: FI-74-56)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19075	16	1-INVT-256-0002	DIV II ECCS ATU INVERTER	U1 RB	621'-3"	P/R1	621'-3"	N	ABS	RRS	N	N	N	Y	N	SJE/JOD	
19076	20	1-PX-71-60-2	ECCS ATU CAB 1-9-82 POWER SUPPLY	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19077	20	1-PX-71-60-2A	ECCS ATU CAB 1-9-82 POWER SUPPLY	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19078	20	1-PX-74-70	POWER SUPPLY (PNL 1-9-19: FI-74-70)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19079	20	1-PX-64-159A	POWER SUPPLY (1-9-18)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19080	20	1-PX-64-160A	POWER SUPPLY (1-9-18)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19081	20	1-PX-64-67B	POWER SUPPLY (1-9-19)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19082	20	1-PX-64-161	POWER SUPPLY (PNL 9-87)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19083	20	1-PX-64-162	POWER SUPPLY (PNL 9-88)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19084	18	1-PS-67-50	PRESSURE SWITCH FOR 1-FCV-67-50 (14046)	U1 RB	593'	P/R3	604'	Y	DOC	RRS	Y	Y	Y	Y*	Y*	SJE/JOD	1
19085	18	1-PS-67-51	PRESSURE SWITCH FOR 1-FCV-67-51 (14047)	U1 RB	565'	T/R3	580'	Y	DOC	RRS	Y	Y	Y	Y*	Y*	SJE/JOD	1
19088	20	1-LPNL-925-044A/11	COMMON BD LOGIC RELAY PANEL 25-44-A11	U1 RB	621'-3"	S/R1	621'-3"	N	ABS	RRS	Y*	Y	N	N	N	SJE/JOD	2
19089	20	1-LPNL-925-044A/12	COMMON BD LOGIC RELAY PANEL 25-44-A12	U1 RB	621'-3"	S/R2	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19090	20	1-LPNL-925-044B/11	COMMON BD LOGIC RELAY PANEL 25-44-B11	U1 RB	621'-3"	S/R1	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19091	20	1-LPNL-925-044B/12	COMMON BD LOGIC RELAY PANEL 25-44-B12	U1 RB	621'-3"	S/R2	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19114	20	1-PNLA-009-0003A	REACTOR SD & CONT. COOLING PNL	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19115	20	1-PNLA-009-0003B	REACTOR SD & CONT. COOLING PNL	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19116	20	1-PNLA-009-0004	CLEANUP & RECIRC PNL	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
19117	20	1-PNLA-009-0005	REACTOR CONTROL PNL	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19118	20	1-PNLA-009-0006	FW & COND. PNL	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19120	20	1-PNLA-009-0015	RPS CH A (DIV I)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19121	20	1-PNLA-009-0016	RPS CH A, B, C, D	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19122	20	1-PNLA-009-0017	RPS CH B (DIV II)	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19123	20	1-PNLA-009-0018	FW & RECIRC PNL	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19124	20	1-PNLA-009-0019	PROCESS INSTR PNL	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19125	20	1-PNLA-009-0021	TEMP RECORDING PNL	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19126	20	1-PNLA-009-0028	CRD SELECT RELAY AUX PNL	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19127	20	1-PNLA-009-0030	AUTO BLOWNDOWN AUX PNL	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19128	20	1-PNLA-009-0032	RHR, CS, & HPCI (CH A) PNL	U1 RB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19129	20	1-PNLA-009-0033	RHR, CS, & HPCI (CH B) PNL	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19130	20	1-PNLA-009-0039	HPCI RELAY AUX PNL	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19131	20	1-PNLA-009-0042	MSIV (INBOARD) DIV II PNL	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19132	20	1-PNLA-009-0043	MSIV (OUTBOARD) DIV II PNL	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19133	20	1-PNLA-009-0054	CONTAINMENT ATM. DILUTION PNL	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19134	20	1-PNLA-009-0055	CONTAINMENT ATM. DILUTION PNL	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19135	20	1-PNLA-009-0081	DIV I ECCS ATU CABINET	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19136	20	1-PNLA-009-0082	DIV II ECCS ATU CABINET	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19137	20	1-PNLA-009-0083	RPS ATU CAB	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19138	20	1-PNLA-009-0084	RPS ATU CAB	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19139	20	1-PNLA-009-0085	RPS ATU CAB	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19140	20	1-PNLA-009-0086	RPS ATU CAB	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	N	Y	N	N	SJE/JOD	
19141	20	1-PNLA-009-0087	DIV I TORUS TEMP MONITORING	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19142	20	1-PNLA-009-0088	DIV II TORUS TEMP MONITORING	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19145	20	1-PNLA-009-0093	ELECTRICAL PANELS FS-90-134B & C	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19146	18	1-HS-74-7B	LOCAL HS STATION	U1 RB	541'-6"	SW CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19147	14	1-JB-668	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541'-6"	SW CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19148	18	1-HS-74-57B	LOCAL HS STATION	U1 RB	519'	TORUS	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19149	14	1-JB-654	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	519'	TORUS	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19150	18	1-HS-74-59B	LOCAL HS STATION	U1 RB	519'	TORUS	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19151	18	1-HS-74-58B	LOCAL HS STATION	U1 RB	519'	TORUS	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	

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19153	18	1-HS-74-52B	LOCAL HS STATION	U1 RB	565'	T/R3	583'	Y	BS	GRS	Y	N	N	Y	N	FE/RLT	
19154	14	1-JB-1079	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565'	T/R3	583'	Y	BS	GRS	Y	N	N	Y	N	FE/RLT	
19155	18	1-HS-74-53B	LOCAL HS STATION	U1 RB	565'	T/R3	583'	Y	BS	GRS	Y	N	N	Y	N	FE/RLT	
19156	18	1-HS-74-60B	LOCAL HS STATION	U1 RB	593'	S/R3	593'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19158	18	1-HS-74-61B	LOCAL HS STATION	U1 RB	593'	S/R3	593'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19160	18	1-HS-74-30B	LOCAL HS STATION	U1 RB	541'-6"	SE CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19162	18	1-HS-74-71B	LOCAL HS STATION	U1 RB	519'	TORUS	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19163	14	1-JB-665	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	519'	TORUS	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19164	18	1-HS-74-72B	LOCAL HS STATION	U1 RB	519'	TORUS	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19165	18	1-HS-74-66B	LOCAL HS STATION	U1 RB	565'	T/R4	583'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19166	14	1-JB-1080	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565'	T/R4	583'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19167	18	1-HS-74-67B	LOCAL HS STATION	U1 RB	583'	T/R4	583'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19170	18	1-HS-74-75B	LOCAL HS STATION	U1 RB	565'	S/R6	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19171	18	1-HS-70-47B	LOCAL HS STATION	U1 RB	519'	TORUS	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19172	14	1-JB-1204	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	519'	TORUS	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19173	18	1-HS-75-09B	LOCAL HS STATION	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19175	18	1-HS-75-25B	LOCAL HS STATION	U1 RB	593'	P/R4	593'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19176	14	1-JBOX-1064	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	593'	P/R4	593'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19177	18	1-HS-75-37B	LOCAL HS STATION	U1 RB	519'	NE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19179	18	1-HS-75-53B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U1 RB	593'	P/R4	593'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19180	14	1-JBOX-1067	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U1 RB	593'	P/R4	593'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19181	18	1-HS-23-34B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U1 RB	565'	U/R2	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19182	14	1-JBOX-1077	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565'	U/R2	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19183	18	1-HS-23-40B	LOCAL HS STATION (TERM BLOCK) - SEALED BOX	U1 RB	565'	U/R2	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19184	18	1-HS-23-46B	LOCAL HS STATION	U1 RB	565'	T/R4	584'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19185	14	1-JB-1087	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565'	T/R4	584'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19186	18	1-HS-23-52B	LOCAL HS STATION	U1 RB	565'	T/R4	584'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19187	18	1-HS-74-0005B	LOCAL HS STATION - RHR PUMP 1A	U1 RB	519'	SW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19188	18	1-HS-74-0028B	LOCAL HS STATION - RHR PUMP 1B	U1 RB	519'	SE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19189	18	1-HS-74-0016B	LOCAL HS STATION - RHR PUMP 1C	U1 RB	519'	SW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19190	18	1-HS-74-0039B	LOCAL HS STATION - RHR PUMP 1D	U1 RB	519'	SE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19191	18	1-HS-75-0005B	LOCAL HS STATION - CS PUMP 1A	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	

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19192	18	1-HS-75-0033B	LOCAL HS STATION - CS PUMP 1B	U1 RB	519'	NE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19193	18	1-HS-75-0014B	LOCAL HS STATION - CS PUMP 1C	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19194	18	1-HS-75-0042B	LOCAL HS STATION - CS PUMP 1D	U1 RB	519'	NE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19195	18	1-LPNL-925-005A	LOCAL PANEL 25-5A	U1 RB	593'	S/R3	593'	Y	BS	GRS	Y	N	Y	Y	N	SJE/JOD	
19196	18	1-LPNL-925-005B	LOCAL PANEL 25-5B	U1 RB	593'	S/R3	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19197	18	1-LPNL-925-005D	LOCAL PANEL 25-5-001	U1 RB	593'	S/R3	593'	Y	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19198	18	1-LPNL-925-006A	LOCAL PANEL 25-6A	U1 RB	593'	P/R5	593'	Y	BS	GRS	Y	N	N	Y	N	SJE/JOD	
19199	18	1-LPNL-925-006D	LOCAL PANEL 25-6-001	U1 RB	593'	Q/R5	593'	Y	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19200	18	1-LPNL-925-0059	LOCAL PANEL 25-59	U1 RB	519'	SW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19201	18	1-LPNL-925-0062	LOCAL PANEL 25-62	U1 RB	519'	SE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19204	20	1-PNLA-925-0031	LOCAL PANEL 25-31	U1 RB	621'-3"	Q/R2	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19205	20	1-PNLA-925-0032	LOCAL PANEL 25-32	U1 RB	621'-3"	Q/R2	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19206	18	1-LPNL-925-0001	LOCAL PANEL 25-1	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19207	18	1-LPNL-925-0060	LOCAL PANEL 25-60	U1 RB	519'	N/E CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19220	20	1-PROT-099-0001A1	RPS CIRCUIT PROTECTOR CABINET 1A1	U1 RB	593'	BATT BD 1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19221	20	1-PROT-099-0001A2	RPS CIRCUIT PROTECTOR CABINET 1A2	U1 RB	593'	BATT BD 1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19222	20	1-PROT-099-0001B1	RPS CIRCUIT PROTECTOR CABINET 1B1	U1 RB	593'	BATT BD 1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19223	20	1-PROT-099-0001B2	RPS CIRCUIT PROTECTOR CABINET 1B2	U1 RB	593'	BATT BD 1	593'	Y	BS	GRS	Y	Y	N	Y	N	SJE/JOD	
19224	20	1-PROT-099-0001C1	RPS CIRCUIT PROTECTOR CABINET 1C1	U1 RB	593'	BATT BD 1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19225	20	1-PROT-099-0001C2	RPS CIRCUIT PROTECTOR CABINET 1C2	U1 RB	593'	BATT BD 1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19226	18	1-LPNL-925-247A	LOCAL PANEL 1-25-247A (CAD DRYWELL & SUPP. CHAMB. V.)	U1 RB	621'-3"	Q/R4	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19227	01	1-BDBB-265-0001B	480V RB VENT BD 1B	U1 RB	565'	U/R4	565'	Y	ABS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19228	20	1-PNLA-009-0036A	PANEL 1-9-36A	U1 CB	593'	U1 AIR	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19229	18	1-LPNL-925-0247B	LOCAL PANEL 1-25-247B (CAD N2 SUPPLY PANEL B)	U1 RB	621'-3"	Q/R4	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19230	18	1-LPNL-925-0007A	LOCAL PANEL 1-25-7A	U1 RB	541'-6"	SW CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19231	18	1-LPNL-925-0007B	LOCAL PANEL 1-25-7B	U1 RB	541'-6"	SW CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19232	14	1-HS-74-101B	HANDSWITCH FOR 1-FCV-74-101 (11055)	U1 RB	565'	T/R6	580'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19239	18	1-TS-64-68	HANDSWITCH FOR 1-CLR-67-917 (14001)	U1 RB	541'-6"	SW CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19240	18	1-HS-64-69	HANDSWITCH FOR 1-CLR-67-918 (14013)	U1 RB	541'-6"	SE CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19241	18	1-TS-64-70	HANDSWITCH FOR 1-CLR-67-921 (14003)	U1 RB	541'-6"	SW CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19242	18	1-HS-64-71	HANDSWITCH FOR 1-CLR-67-922 (14015)	U1 RB	541'-6"	SE CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19243	14	1-HS-69-2B	HANDSWITCH FOR 1-FCV-69-2 (13033)	U1 RB	593'	R5/S	593'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
19244	14	1-HS-71-18B	HANDSWITCH FOR 1-FCV-71-18 (13039)	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19245	01	1-HS-71-2B	HANDSWITCH FOR 1-FCV-71-2 (13037)	U1 RB	593'	R/R1	593'	Y	BS	GRS	Y	N/A	Y	Y	Y	FE/JOD	3
19246	14	1-HS-73-27	HANDSWITCH FOR 1-FCV-73-27 (13043)	U1 RB	519'	HPCI	519'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19247	18	1-HS-73-3B	HANDSWITCH FOR 1-FCV-73-3 (13041)	U1 RB	519'	TORUS	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19248	18	1-HS-73-81B	HANDSWITCH FOR 1-FCV-73-81 (13042)	U1 RB	519'	TORUS	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19250	14	1-HS-74-12B	HANDSWITCH FOR 1-FCV-74-12 (11011)	U1 RB	519'	SW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19251	14	1-HS-74-13B	HANDSWITCH FOR 1-FCV-74-13 (11012)	U1 RB	541'-6"	SW CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19252	14	1-HS-74-1B	HANDSWITCH FOR 1-FCV-74-1 (11001)	U1 RB	519'	SW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19253	14	1-HS-74-24B	HANDSWITCH FOR 1-FCV-74-24 (11029)	U1 RB	519'	SE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19254	14	1-HS-74-25B	HANDSWITCH FOR 1-FCV-74-25 (11030)	U1 RB	541'-6"	SE CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19255	14	1-HS-74-2B	HANDSWITCH FOR 1-FCV-74-2 (11002)	U1 RB	541'-6"	SW CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19256	14	1-HS-74-35B	HANDSWITCH FOR 1-FCV-74-35 (11037)	U1 RB	519'	SE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19257	14	1-HS-74-36B	HANDSWITCH FOR 1-FCV-74-36 (11038)	U1 RB	541'-6"	SE CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19258	18	1-HS-74-73B	HANDSWITCH FOR 1-FCV-74-73 (11046)	U1 RB	519'	TORUS	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19260	18	1-HS-75-11B	HANDSWITCH FOR 1-FCV-75-11 (15006)	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19261	14	1-HS-75-22B	HANDSWITCH FOR 1-FCV-75-22 (15010)	U1 RB	541'-6"	NW CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19262	18	1-HS-75-23B	HANDSWITCH FOR 1-FCV-75-23 (15012)	U1 RB	593'	P/R4	593'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19263	18	1-HS-75-2B	HANDSWITCH FOR 1-FCV-75-2 (15001)	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19264	18	1-HS-75-30B	HANDSWITCH FOR 1-FCV-75-30 (15015)	U1 RB	519'	NE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19265	18	1-HS-75-39B	HANDSWITCH FOR 1-FCV-75-39 (15020)	U1 RB	519'	NE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19266	14	1-HS-75-50B	HANDSWITCH FOR 1-FCV-75-50 (15024)	U1 RB	541'-6"	NE CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19267	18	1-HS-75-51B	HANDSWITCH FOR 1-FCV-75-51 (15026)	U1 RB	593'	P/R4	593'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19268	14	1-HS-78-61B	HANDSWITCH FOR 1-FCV-78-61 (11026)	U1 RB	621'-3"	R5/S	621'-3"	Y	ABS	RRS	Y*	Y	Y	Y	Y	FE/JOD	2
19269	14	1-HS-64-72	HANDSWITCH FOR 1-CLR-67-919 (14002)	U1 RB	541'-6"	NW CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19270	14	1-HS-64-73	HANDSWITCH FOR 1-CLR-67-920 (14014)	U1 RB	541'-6"	NE CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19271	18	1-TS-64-68	TEMPERATURE SWITCH FOR 1-CLR-67-917 (14001)	U1 RB	541'-6"	SW CORNER	541'-6"	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19272	18	1-TS-64-69	TEMPERATURE SWITCH FOR 1-CLR-67-918 (14013)	U1 RB	541'-6"	SE CORNER	541'-6"	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19273	18	1-TS-64-70	TEMPERATURE SWITCH FOR 1-CLR-67-921 (14003)	U1 RB	541'-6"	SW CORNER	541'-6"	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19274	18	1-TS-64-71	TEMPERATURE SWITCH FOR 1-CLR-67-922 (14015)	U1 RB	541'-6"	SE CORNER	541'-6"	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19275	18	1-TS-1-17A	MAIN STEAM VAULT TEMPERATURE SWITCH	U1 RB	565'	MSVLT N/T3	593'	Y	DOC	RRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19276	18	1-TS-1-17B	MAIN STEAM VAULT TEMPERATURE SWITCH	U1 RB	565'	MSVLT N/T3	593'	Y	DOC	RRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19277	18	1-TS-1-17C	MAIN STEAM VAULT TEMPERATURE SWITCH	U1 RB	565'	MSVLT N/T3	593'	Y	DOC	RRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
19278	18	1-TS-1-17D	MAIN STEAM VAULT TEMPERATURE SWITCH	U1 RB	565'	MSVLT N/T3	593'	Y	DOC	RRS	Y	N/A	Y	Y*	Y*	SJE/JOD	1, 3
19279	18	1-TS-1-29A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	565'	MSTNL K/T3	580'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19280	18	1-TS-1-29B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	565'	MSTNL K/T3	580'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19281	18	1-TS-1-29C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	565'	MSTNL K/T3	580'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19282	18	1-TS-1-29D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	565'	MSTNL K/T3	580'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19283	18	1-TS-1-40A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	606'	MSTNL K/T3	606'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19284	18	1-TS-1-40B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	606'	MSTNL K/T3	606'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19285	18	1-TS-1-40C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	606'	MSTNL K/T3	606'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19286	18	1-TS-1-40D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	606'	MSTNL K/T3	606'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19287	18	1-TS-1-54A	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	634'	MSTNL K/T3	630'	N	ABS	RRS	N	Y	Y	Y	N	SJE/JOD	
19288	18	1-TS-1-54B	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	634'	MSTNL K/T3	630'	N	ABS	RRS	N	Y	Y	Y	N	SJE/JOD	
19289	18	1-TS-1-54C	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	634'	MSTNL K/T3	630'	N	ABS	RRS	N	Y	Y	Y	N	SJE/JOD	
19290	18	1-TS-1-54D	MAIN STEAM TUNNEL TEMPERATURE SWITCH	U1 TB	634'	MSTNL K/T3	630'	N	ABS	RRS	N	Y	Y	Y	N	SJE/JOD	
19291	18	1-TS-64-72	TEMPERATURE SWITCH FOR 1-CLR-67-919 (14002)	U1 RB	541'-6"	NW CORNER	541'-6"	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19292	18	1-TS-64-73	TEMPERATURE SWITCH FOR 1-CLR-67-920 (14014)	U1 RB	541'-6"	NE CORNER	541'-6"	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19294	14	1-AMP-092-0007/41A	IRM CH. "A" VOLTAGE PREAMPLIFIER 7-34A	U1RB	565'	S/R3	565'	Y	BS	GRS	Y	Y	Y*	Y	Y*	SJE/JOD	1, 3
19295	14	1-AMP-092-0007/41B	IRM CH. "B" VOLTAGE PREAMPLIFIER 7-34B	U1RB	565'	S/R3	565'	Y	BS	GRS	Y	Y	Y*	Y	Y*	SJE/JOD	1, 3
19296	14	1-LPNL-925-0027	PANEL 1-25-27 IRM PREAMP. RPS I	U1RB	565'	S/R3	565'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19297	14	1-AMP-092-0007/41C	IRM CH. "C" VOLTAGE PREAMPLIFIER 7-34C	U1RB	577'	Q/R5	577'	Y	BS	GRS	Y	Y	Y*	Y	Y*	SJE/JOD	1, 3
19298	14	1-AMP-092-0007/41D	IRM CH. "D" VOLTAGE PREAMPLIFIER 7-34D	U1RB	577'	Q/R5	577'	Y	BS	GRS	Y	Y	Y*	Y	Y*	SJE/JOD	1, 3
19299	14	1-LPNL-925-0061	PANEL 1-25-61 IRM PREAMP. RPS II	U1RB	577'	Q/R5	577'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19300	20	1-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	U1 CB	617'	MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y*	Y*	FE/SJE	1, 2, 3
19301	20	1-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	U1 CB	617'	MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y*	Y*	FE/SJE	1, 2, 3
19302	20	1-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	U1 CB	617'	MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y*	Y*	FE/SJE	1, 2, 3
19303	20	1-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	U1 CB	617'	MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y*	Y*	FE/SJE	1, 2, 3
19304	20	1-PNLA-009-012	PANEL 1-9-12	CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19305	15	1-BATD-283-000A1	24V NEUTRON MONITORING BATTERY, U1 CHANNEL A	CB	593'	BAT RM 1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19306	15	1-BATD-283-000B1	24V NEUTRON MONITORING BATTERY, U1 CHANNEL B	CB	593'	BAT RM 1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19307	16	1-CHGD-283-A1-1	24V NEUTRON BATTERY CHARGERS A1-1	CB	593'	BAT BD RM 1	593'	Y	BS	GRS	Y	N	N	Y	N	SJE/JOD	
19308	16	1-CHGD-283-A2-1	24V NEUTRON BATTERY CHARGERS A2-1	CB	593'	BAT BD RM 1	593'	Y	BS	GRS	Y	N	N	Y	N	SJE/JOD	
19309	16	1-CHGD-283-B1-1	24V NEUTRON BATTERY CHARGERS B1-1	CB	593'	BAT BD RM 1	593'	Y	BS	GRS	Y	N	N	Y	N	SJE/JOD	
19310	16	1-CHGD-283-B2-1	24V NEUTRON BATTERY CHARGERS B2-1	CB	593'	BAT BD RM 1	593'	Y	BS	GRS	Y	N	N	Y	N	SJE/JOD	

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
19312	14	1-HS-71-17B	HANDSWITCH FOR 1-FCV-71-17 (13074)	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19313	20	1-HS-1-56A	HANDSWITCH FOR 1-FCV-1-56 (13075)	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y	Y	FE/JOD	2, 3
19314	14	1-HS-73-26B	HANDSWITCH FOR 1-FCV-73-26 (13076)	U1 RB	519'	SW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19316	20	1-HS-77-2A	HANDSWITCH FOR 1-FCV-77-2A (13080)	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y	Y	FE/JOD	2, 3
19317	20	1-HS-77-15A	HANDSWITCH FOR 1-FCV-77-15A (13081)	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y	Y	FE/JOD	2, 3
19318	20	1-HS-64-18	HANDSWITCH FOR 1-FCV-64-18 (13082)	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y	Y	FE/JOD	2, 3
19319	20	1-HS-64-19	HANDSWITCH FOR 1-FCV-64-19 (13083)	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y	Y	FE/JOD	2, 3
19320	20	1-HS-76-18	HANDSWITCH FOR 1-FCV-76-18 (13084)	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y	Y	FE/JOD	2, 3
19321	20	1-HS-76-19	HANDSWITCH FOR 2-FCV-76-19 (13085)	U1 CB	617'	U1 MCR	617'	N	ABS	RRS	Y*	N/A	Y	Y	Y	FE/JOD	2, 3
19323	14	1-JB-0375	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	519'	SE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19324	14	1-JB-0662	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541'-6"	SE CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19325	14	1-JB-0658	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541'-6"	SE CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19326	14	1-JB-1032	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	593'	S/R3	593'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19327	14	1-JB-1095	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565'	S/R6	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19328	14	1-JB-1559	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565'	T/R6	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/JOD	
19329	14	1-JB-0670	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541'-6"	NE CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19330	14	1-JB-0791	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19331	14	1-JB-0681	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	541'-6"	NW CORNER	541'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19332	14	1-CS-75-9B	CONTROL STATION FOR 1-HS-75-9B	U1 RB	519'	NW CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19333	14	1-CS-75-37B	CONTROL STATION FOR 1-HS-75-37B	U1 RB	519'	NE CORNER	519'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19334	14	1-JB-1231	JUNCTION BOX (TERM BLOCK) - SEALED BOX	U1 RB	565'	S/R6	565'	Y	BS	GRS	Y	Y	Y	Y	Y	FE/RLT	
19351	14	1-JB-3828	JUNCTION BOX FOR 1-TS-1-29A	U1 TB	565'	MSTNL K/T3	580'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19352	14	1-JB-3829	JUNCTION BOX FOR 1-TS-1-29B	U1 TB	565'	MSTNL K/T3	580'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19353	14	1-JB-3830	JUNCTION BOX FOR 1-TS-1-29C	U1 TB	565'	MSTNL K/T3	580'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19354	14	1-JB-3831	JUNCTION BOX FOR 1-TS-1-29D	U1 TB	565'	MSTNL K/T3	580'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19355	14	1-JB-3801	JUNCTION BOX FOR 1-TS-1-40A	U1 TB	606'	MSTNL K/T3	606'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19356	14	1-JB-3802	JUNCTION BOX FOR 1-TS-1-40B	U1 TB	606'	MSTNL K/T3	606'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19357	14	1-JB-3803	JUNCTION BOX FOR 1-TS-1-40C	U1 TB	606'	MSTNL K/T3	606'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19358	14	1-JB-3804	JUNCTION BOX FOR 1-TS-1-40D	U1 TB	606'	MSTNL K/T3	606'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19359	14	1-JB-3813	JUNCTION BOX FOR 1-TS-1-54A	U1 TB	634'	MSTNL K/T3	630'	N	GERS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19360	14	1-JB-3814	JUNCTION BOX FOR 1-TS-1-54B	U1 TB	634'	MSTNL K/T3	630'	N	GERS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19361	14	1-JB-3815	JUNCTION BOX FOR 1-TS-1-54C	U1 TB	634'	MSTNL K/T3	630'	N	GERS	RRS	Y	Y	Y	Y	Y	SJE/JOD	

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
19362	14	1-JB-3816	JUNCTION BOX FOR 1-TS-1-54D	U1 TB	634'	MSTNL K/T3	630'	N	GERS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19412	03	0-BDAA-211-0000A	4KV SHDN BD A	U1 RB	621'-3"	R/R2	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19413	03	0-BDAA-211-0000B	4KV SHDN BD B	U1 RB	593	Q/R2	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19418	02	1-BDBB-231-0001A	480V SHDN BD 1A	U1 RB	621'-3"	S/R1	621'-3"	N	ABS	RRS	Y*	Y	Y	N	N	SJE/JOD	2
19419	02	1-BDBB-231-0001B	480V SHDN BD 1B	U1 RB	621'-3"	S/R2	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19423	01	1-BDBB-268-0001A	480V RMOV BD 1A	U1 RB	621'-3"	R/R1	621'-3"	N	DOC	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19424	01	1-BDBB-268-0001B	480V RMOV BD 1B	U1 RB	593	R/R1	593'	Y	DOC	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19437	14	0-BDDD-280-0001	250V BATTERY BD 1	U1 RB	593'	P/R4	593'	Y	DOC	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19492	20	0-LPNL-925-0045A	PANEL 25-45A	U1 RB	621'-3"	S/R1	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19493	20	0-LPNL-925-0045B	PANEL 25-45B	U1 RB	593'	R/R2	600'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19516	14	0-XSW-248-0001	250V MAIN BATT CHGR OUTPUT XFR SW 1	U1 RB	593'	P/R4	598'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19519	15	0-BATA-248-0000A	250V BATTERY SB-A	U1 RB	621'-3"	S/R2	621'-3"	N	GERS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19520	14	0-PNLA-248-A	250V DISTRIBUTION PANEL SB-A	U1 RB	621'-3"	S/R2	621'-3"	N	DOC	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19521	16	0-CHGA-248-0000A	250V BATTERY CHARGER SB-A	U1 RB	621'-3"	S/R2	621'-3"	N	DOC	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19522	15	0-BATA-248-0000B	250V BATTERY SB-B	U1 RB	621'-3"	S/R2	621'-3"	N	GERS	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19523	14	0-PNLA-248-B	250V DISTRIBUTION PANEL SB-B	U1 RB	621'-3"	R/R2	621'-3"	N	DOC	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19524	16	0-CHGA-248-0000B	250V BATTERY CHARGER SB-B	U1 RB	621'-3"	R/R2	621'-3"	N	DOC	RRS	Y	Y	Y	Y	Y	SJE/JOD	
19534	16	0-CHGA-248-0001	250V BATTERY CHARGER 1	U1 RB	593'	P/R4	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19537	15	0-BATA-248-0001	250V MAIN BATTERY 1	U1 RB	593'	P/R4	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19594	04	1-XFA-231-TS1A	4KV/480V TRANSFORMER TS1A	U1 RB	621'-3"	T/R1	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19595	04	1-XFA-231-TS1B	4KV/480V TRANSFORMER TS1B	U1 RB	621'-3"	T/R1	621'-3"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19709	20	1-PNLA-009-0020	PANEL 1-9-20	U1 CB	617'	U1 MCR	617"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19716	18	1-LPNL-925-0223	LOCAL PANEL 1-25-223 – RAW COOLING WATER PANEL	U1 RB	593'	Q/R3	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19729	14	1-HS-23-57B	HANDSWITCH FOR 1-FCV-23-57	U1 RB	565'	R6/S	565'	Y	BS	GRS	Y	Y	Y	Y	Y	RLT/FE	
19791	20	1-PNLA-009-0008	PANEL 1-9-8	U1 CB	617"	U1 MCR	617"	N	ABS	RRS	Y*	Y	Y	Y	Y	SJE/JOD	2
19792	18	1-LPNL-925-006B	LOCAL PANEL 25-6B	U1 RB	593'	R5/P	593'	Y	BS	GRS	Y	N	N	Y	N	SJE/JOD	
19794	04	1-XFA-099-0010	RPS REGULATING TRANSFORMER TRP-1	U1 CB	593'	BATT BD 1	593'	Y	ABS	GERS	Y	N	N	Y	N	SJE/JOD	
19795	14	1-FUDS-099-0001CA	RPS REG XFMR DISC SW FROM 480 V RMOV BD 1B	U1 CB	593'	BATT BD 1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19796	04	TUP1	UNIT PREFERRED XFMR	U1 CB	593'	BATT BD 1	593'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19797	14	1-FUDS-099-0001CB	RPS BUS XFMR DISC SW	U1 CB	593'	BATT BD 1	593'	Y	BS	GRS	Y	N	N	Y	N	SJE/JOD	
19801	14	1-JB-6439	JUNCTION BOX SERVING 1-TE-161A	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19802	14	1-JB-6440	JUNCTION BOX SERVING 1-TE-161B	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	

SSEL NO.	EQ. CL.	EQUIPMENT I.D.	DESCRIPTION	BLDG.	FLOOR ELEV.	LOCATION	BASE ELEV.	BELOW -40'?	CAP SPEC	DEM SPEC	CAP OK?	CAV OK?	ANCHOR OK?	INTER OK?	EQUIP OK?	TEAM	NOTES
19803	14	1-JB-6441	JUNCTION BOX SERVING 1-TE-161C	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19804	14	1-JB-6442	JUNCTION BOX SERVING 1-TE-161D	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19805	14	1-JB-6443	JUNCTION BOX SERVING 1-TE-161E	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19806	14	1-JB-6444	JUNCTION BOX SERVING 1-TE-161F	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19807	14	1-JB-6445	JUNCTION BOX SERVING 1-TE-161G	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19808	14	1-JB-6446	JUNCTION BOX SERVING 1-TE-161H	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19809	14	1-JB-6453	JUNCTION BOX SERVING 1-TE-162A	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19810	14	1-JB-6454	JUNCTION BOX SERVING 1-TE-162B	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19811	14	1-JB-6447	JUNCTION BOX SERVING 1-TE-162C	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19812	14	1-JB-6448	JUNCTION BOX SERVING 1-TE-162D	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19813	14	1-JB-6449	JUNCTION BOX SERVING 1-TE-162E	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19814	14	1-JB-6450	JUNCTION BOX SERVING 1-TE-162F	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19815	14	1-JB-6451	JUNCTION BOX SERVING 1-TE-162G	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	
19816	14	1-JB-6452	JUNCTION BOX SERVING 1-TE-162H	U1 RB	519'	TORUS	528'	Y	BS	GRS	Y	Y	Y	Y	Y	SJE/JOD	

NOTES:

1. Based on the walkdown evaluation and available existing documentation, the item passes the GIP screening criteria and a conditional Y (Y*) is assigned on the SVDS. The final configuration will be verified in the Area Turnover walkdowns (see Appendix H).
2. A special exception to enveloping of seismic demand spectrum is invoked per Section 4.2 of the GIP. The capacity spectrum envelops the demand spectrum for frequencies at and above a conservatively estimated lowest natural frequency of the component. See discussion in Chapter 4 of this report. The intent of the capacity versus demand screening criteria is met.
3. The "CAV OK?" criterion is marked with "N/A" because this item of equipment is included within the evaluation of a separate SSEL item as "rule-of-the box" and that separate SSEL item was found to be acceptable.
4. The type or configuration of this equipment item is not specifically covered by the SQUG GIP screening criteria, so this equipment item is documented as an outlier.

APPENDIX E

RESULTS OF THE CABLE TRAY AND CONDUIT RACEWAY REVIEW

APPENDIX E: RESULTS OF THE CABLE TRAY AND CONDUIT RACEWAY REVIEW

The scope of the review covers all the electrical raceway systems at BFN-1 not previously covered in the BFN-2 & 3 A-46 program. All common areas between Units 1, 2 and 3 as well as some areas in Unit 1 were evaluated in the BFN-2 & 3 A-46 program. All of the required modifications as a result of those reviews have been implemented. The areas previously covered are:

- U3 Reactor Building (all elevations, including Drywell)
- U3 Diesel Generator Building
- Control Bay (all elevations), Units 1, 2, and 3
- Stand By Gas Treatment (SBGT) Building
- Off Gas Building
- Intake Pump House
- Cable Tunnel
- Reactor Building, Units 1 and 2, EL 664 Ft.
- U2 Reactor Building (all elevations except El. 664 Ft., and including Drywell)
- U1/U2 Diesel Generator Building

Based on the BFN-1 A-46 evaluations performed per the requirements of the GIP, there are no indications of any generic seismic concerns with the cable tray and conduit systems at BFN-1. Furthermore, all analytical evaluations performed to resolve the outliers and the limited analytical reviews (LAR) were performed using a 100% fill for the cable trays and conduits. Therefore, addition of cables to existing systems is acceptable as long as the raceways are not overfilled beyond their physical capacity.

Table E-1 provides a summary of the results.

Table E-1: Results of the Cable and Conduit Raceway Review

Location	LAR/Outlier #	Conduit/ Cable Tray	Type of Concern	Corrective Action		
				Evaluated as Acceptable	Modification Required	Maintenance Required
Throughout	RB639-01	Conduit	Wall supports with ¼" anchors	Acceptable		
N/A	RB621-01		No. not used			
EL 621'-3" / Between Q&R East of R2	RB621-02	Conduit	Bent ¾" rod	Acceptable		
EL 621'-3" / Between R3&R4 Adjacent to North Wall	RB621-03	Conduit	Broken Weld			Re-weld the Support using ¼" weld 3" long
EL 621'-3"	RB621-04	Cable Tray	Limited analytical review	Acceptable		
EL 593' / Between R4&R5 at T	RB593-01	Cable Tray	Two tiers of trays not using Tee section at a tray intersection			Rework tray connections to meet NEMA Standards
EL 593' / Near R5 & S	RB593-02	Cable Tray	Rod missing from a trapeze rod hanger	Acceptable		
EL593' / R3&T	RB593-03	Conduit	Hanger offset from wall and using ¼" anchors	Acceptable		
EL 593' / East face of T&R2	RB593-04	Conduit	Short rod trapeze	Acceptable		
EL 593'	RB593-05	Cable Tray	Limited analytical review	Acceptable		
EL 593'	RB593-06	Cable Tray	Limited analytical review	Acceptable		
EL 593'	RB593-07	Cable Tray	Limited analytical review	Acceptable		
EL 593'	RB593-08	Conduit	Limited analytical review	Acceptable		
EL 593'	RB593-09	Conduit	Limited analytical review	Acceptable		
EL 565' / Southwest stairwell	RB565-01	Conduit	Improper anchor installation	Acceptable		
EL 565' / Above West CRD Platform	RB565-02	Conduit	Loose coupling			Tighten threaded coupling

Location	LAR/Outlier #	Conduit/ Cable Tray	Type of Concern	Corrective Action		
				Evaluated as Acceptable	Modification Required	Maintenance Required
EL 565' / Above MCC along West Wall	RB565-03	Conduit	Overspan			Provide clamp to the 3" conduit to attach to existing strut for the three 1" conduits
N/A	RB565-04		Number not used			
EL 565' / West of R2&Q	RB565-05	Conduit	Anchorage Detail	Acceptable		
EL 565'	RB565-06	Cable Tray	Limited analytical review	Acceptable		
EL 565'	RB565-07	Conduit	Limited analytical review	Acceptable		
EL 565'	RB565-08	Conduit	Limited analytical review	Acceptable		
EL 519' / Northeast Corner Room	RB519-01	Conduit	Long vertical drop for 1@1" and 1@1-1/2" conduits may sway and cause damage to flex connection to core spray pump motor. In addition, the last (existing) support for both conduit is disengaged.		Provide new lateral restraint for both conduits (5' below overhead platform support steel).	Re-install missing clamps to existing conduit strut support
EL 519' / Northeast Corner Room	RB519-02	Conduit	Long vertical drop for 3" conduit may sway and cause damage to flex connection to core spray pump motor.		Provide new lateral restraint for conduit (5' below overhead platform support steel).	
EL 519' / Northwest Corner Room	RB519-03	Conduit	Long vertical drop for 2@1" and 1@3" conduits may sway and cause damage to flex connection to core spray pump motor.		Provide new lateral restraint for all 3 conduits (5' below overhead platform support steel).	

APPENDIX F

RESULTS OF THE PLANT OPERATIONS DEPARTMENT REVIEW OF THE SSEL AGAINST THE PLANT OPERATING PROCEDURES

F.1 Summary

The BFN-1 Operations Department review of the SSEL against plant operating procedures will be completed after:

- Major plant modifications are complete.
- Operating procedures for BFN-1 are completed.

The plant operations department review will be performed as a desk top study of the applicable plant normal and emergency operating procedures. The review will check whether all equipment called out in the operating procedures for the selected path are included on the SSEL. The review will also verify that there are no paths from which an operator could not recover with the selected set of SSEL equipment. Common and shared BFN-2 and BFN-3 plant systems will be reviewed in light of a scenario involving simultaneous shutdown of all three operating units with loss of offsite power.

Plant operating procedures and/or the SSEL will be revised as required based on the results of the plant operations department review.

The planned schedule for the plant operations department review of the SSEL is as follows:

Item	Completion Date
Completion of major modifications	4/30/05
Completion of BFN-1 plant operating procedures	6/30/05
Review of BFN-1 SSEL against plant operating procedures	8/30/05
Review of common and shared plant systems for simultaneous 3 unit shutdown with loss of offsite power.	8/30/05
Completion of operations department review of the SSEL	8/30/05

The BFN-1 Operations Department performed a preliminary review of the SSEL based on their working knowledge of the plant design changes that are going to be implemented prior to plant start-p. They recommended the following changes to the SSEL. Note that these recommendations have been implemented in the SSEL as shown in this report (Appendix B).

- The Drywell header for CAD will be split and supply will be provided through separate penetrations. This configuration will provide redundant pressure relief.
- The CAD system, which is currently cut and capped to BFN-1, will be re-connected and tied into the two Drywell control air headers to supply the safety-related back-up.
- The Drywell control air system suction isolation valves will be deleted and capped.

APPENDIX G

INDEPENDENT PEER REVIEWER RESUME

RESUME - Seismic Capability Engineer

Independent Peer Reviewer

Tennessee Valley Authority
Browns Ferry Nuclear Plant Unit 1

Name:		James J. Johnson
Bachelors Degree:		B. of Civil Engineering, 1967
Institution:		University of Minnesota, Minneapolis
Advanced Degree:		M.S. (1969); Ph.D. (1972) Civil Engineering
Institution:		University of Illinois, Urbana-Champaign
Date and location of Seismic Adequacy Verification Training Courses:		
USI A-46	Course:	SQUG Walkdown Screening & Seismic Evaluation Training Course
	Date:	June 22 – 26, 1992
	Location:	Charlotte, NC
Seismic IPEEEE	Course:	Seismic IPE Add-On Training Course
	Date:	July 27 – 29, 1992
	Location:	Charlotte, NC
Earthquake engineering experience applicable to nuclear power plants and in structural or mechanical engineering:		
32 years (see attached resume)		
Licensed Professional Engineer: Yes ☑ No ☐		States of Alabama & California

JAMES J. JOHNSON, PH.D., P.E.

PROFESSIONAL HISTORY

James J. Johnson and Associates, President, 2001-Present
EQECAT, Inc., San Francisco, California, Chairman, 1995-2001
EQE International, San Francisco, California, Chief Operating Officer, Executive Vice President, 1986-2001
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, President of James J. Johnson and Associates, is an independent consultant specializing in risk management consulting for operational and personnel risks due to natural hazards (earthquakes, wind storms, floods, etc.), terrorist perils, such as aircraft impact, vehicle and other bombs, chemical and biological agent releases, etc., and internally generated hazards (fires, explosions, chemical spills, etc.). Dr. Johnson specializes in assembling and managing teams of experts to address complex inter-disciplinary issues and problems. Dr. Johnson draws from an extensive group of colleagues for team composition.

Dr. Johnson was Executive Vice President and Chief Operating Officer of EQE International, the fourth largest independent risk management consulting firm in the US, as rated by Business Insurance. EQE specializes in operational risk management and mitigation services by providing software, information/data, and consulting to it's clients. EQE's annual revenue exceeded $70 million during his tenure. The company has offices throughout the world. Dr. Johnson, also, was responsible for the firm's insurance industry services. He served as Chairman, President and Chief Operating Officer of EQECAT. Established in 1994, EQECAT provides catastrophic risk management services to the global insurance and reinsurance industries, including catastrophe modeling software, portfolio and single site analysis, risk management consulting, training, and information.

During the period 2001 September to the present (2004 May), Dr. Johnson has participated in numerous programs related to terrorist attack risk assessments. Dr. Johnson was a key contributor to the development of EQECAT's terrorist risk assessment methodology, a fully probabilistic methodology whose result metrics are financial losses (average annualized losses and loss exceedance relationships). The focus of his contributions were frequency of occurrence estimates by peril, by location (facility, city, state), and overall likelihood in the US; and the engineering methodologies (blast and explosion, chemical and biological releases, sabotage of critical facilities and infrastructure) and their application to terrorist attack scenarios. Dr. Johnson is a key contributor to the development of self-assessment guidelines for the terrorist attack of nuclear facilities (power plants, research facilities, spent fuel storage facilities). These guidelines are being developed, implemented, and training provided by the International Atomic Energy Agency (IAEA).

During this same period (September 2001 to the present), Dr. Johnson supported the independent review of: the TVA Sequoyah ISFSI pad/cask assemblage including soil-structure interaction effects; and the TVA Browns Ferry Unit 1 Recovery Programs of seismic II/I systems interaction, A-46/IPEEE safe shutdown equipment list development, cable tray/conduit seismic evaluation.

In addition, Dr. Johnson has more than 30 years of experience in risk analysis for natural and man-made hazards. 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 beyond design basis events, including seismic PRA and seismic margin methodologies. Recently, Dr. Johnson participated in a number of IAEA sponsored missions and activities, e.g., development of "Guidelines for the Self-Assessment of Safety and Security of Nuclear Installations," 2002-present; evaluation of the design for external events of the Korean Peninsula Energy Development Organization's (KEDO's) North Korean LWR project, Kumho, DPRK, and Taejon, South Korea, 18-29 June 2001; Technical Committee Meeting on Structural Safety of NPPs in Relation to Extreme Loads, Vienna, 4-8 December, 2000 and Expert Team Mission, Romania, 12-16 March 2001; and he 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.

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 authored "Soil-Structure Interaction," Chap. 10, and co-authored "Loss Estimation," Chap. 30, Earthquake Engineering Handbook, 2003. 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.

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
Alabama: Civil Engineer

AFFILIATIONS

American Society of Civil Engineers, Member
Dynamic Analysis Committee
Committee on Nuclear Standards, Seismic Analysis of Safety Class Structures,
Author of ASCE 4-98, "Seismic Analysis of Safety-Related Nuclear Structures and Commentary."

Earthquake Engineering Research Institute
Phi Kappa Phi Honor Society
Sigma Xi

PUBLICATIONS

Dr. Johnson has over 120 publications. A detailed list is available upon request.

APPENDIX H

AREA TURNOVER WALKDOWN PUNCH LIST

Appendix H: Area Turnover Walkdown Punch List

Certain items of equipment on the SVDS (Appendix D) are designated as conditionally acceptable (the final column on the SVDS is filled in with a "Y*" instead of a "Y"). For these items, based on the walkdown evaluation and available existing documentation, the item of equipment passes the GIP screening criteria. However, full verification of final configuration was not possible at the time of the walkdown due to ongoing plant activities such as maintenance or DCN implementation. For these items, final seismic verification will be conducted during the Area Turnover walkdowns. This Appendix H contains the Punch List for those items of equipment requiring verification of the final configuration during the Area Turnover walkdowns prior to plant restart.

In addition, several outliers are resolved by plant modifications in the form of Design Change Notices (DCNs), Work Orders, or Problem Evaluation Report (PER) corrective actions. For these items, final verification for outlier resolution will be performed during the Area Turnover walkdowns. As such, this Appendix H also contains the Punch List for those items of equipment requiring verification of the final configuration for outlier resolution during the Area Turnover walkdowns prior to plant restart.

A total of 139 SSEL equipment items will require verification of the final configuration during the Area Turnover walkdowns prior to plant restart.

Punch List for Area Turnover Walkdowns

SSEL No.	Class	Component ID	Description	Final Verification Required During Area Turnover Walkdown	
				A-46 Criterion to be Addressed	Description of Issue to be Assessed
10006	07	1-FCV-85-83A	CRD/EAST SDV VENT VALVE	Seismic Interaction	Valve will be repaired by WO. Verify acceptability of final configuration.
10007	07	1-FCV-85-83	CRD/EAST SDV VENT VALVE	Seismic Interaction (OSVS 10007-01)	Beam will be coped by WO. Verify acceptability of final configuration.
11023	08A	1-FCV-74-52	RHR/LOOP I OUTBOARD INJECTION VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
11024	08A	1-FCV-74-53	RHR/LOOP I INBOARD INJECTION VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
11027	08A	1-FCV-74-60	RHR/LOOP I OUTBOARD DRYWELL SPRAY VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
11048	08A	1-FCV-74-66	RHR/LOOP II OUTBOARD INJECTION VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
12001	07	1-PCV-1-4	MS/MAIN STEAM SAFETY RELIEF VALVE	Seismic Interaction (OSVS 12001-01)	Verify that chain hoists are properly restrained.
12003	07	1-PCV-1-5	MS/MAIN STEAM SAFETY RELIEF VALVE		
12006	07	1-PCV-1-18	MS/MAIN STEAM SAFETY RELIEF VALVE		
12009	07	1-PCV-1-19	MS/MAIN STEAM SAFETY RELIEF VALVE		
12012	07	1-PCV-1-22	MS/MAIN STEAM SAFETY RELIEF VALVE		
12015	07	1-PCV-1-23	MS/MAIN STEAM SAFETY RELIEF VALVE		
12018	07	1-PCV-1-179	MS/MAIN STEAM SAFETY RELIEF VALVE		
12021	07	1-PCV-1-30	MS/MAIN STEAM SAFETY RELIEF VALVE		
12024	07	1-PCV-1-31	MS/MAIN STEAM SAFETY RELIEF VALVE		
12027	07	1-PCV-1-34	MS/MAIN STEAM SAFETY RELIEF VALVE		
12030	07	1-PCV-1-41	MS/MAIN STEAM SAFETY RELIEF VALVE		
12033	07	1-PCV-1-42	MS/MAIN STEAM SAFETY RELIEF VALVE		
12036	07	1-PCV-1-180	MS/MAIN STEAM SAFETY RELIEF VALVE		
13009	08A	1-FCV-1-55	MAIN STEAM LINE DRAIN ISOLATION VALVE	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
13032	08A	1-FCV-69-1	RWCU INBOARD ISOLATION VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
13033	08A	1-FCV-69-2	RWCU OUTBOARD ISOLATION VALVE	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
13038	08A	1-FCV-71-3	RCIC OUTBOARD ISOLATION VALVE	Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.

SSEL No.	Class	Component ID	Description	Final Verification Required During Area Turnover Walkdown	
				A-46 Criterion to be Addressed	Description of Issue to be Assessed
13043	08A	1-FCV-73-27	HPCI OUTBOARD SUCTION VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
13047	07	1-FCV-77-2B	DRYWELL FLOOR DRAIN SUMP DISCHARGE	BS Caveats (OSVS 13047-01)	Valve will be modified by DCN. Verify acceptability of final configuration.
13048	07	1-FCV-77-15B	DRYWELL EQUIP. DRAIN SUMP DISCHARGE	BS Caveats (OSVS 13048-01)	Valve will be modified by DCN. Verify acceptability of final configuration.
13051	20	1-LI-3-58A	RPV LEVEL INSTRUMENT	Seismic Interaction	Verify component mounting to panel and final configuration.
13052	20	1-LI-3-58B	RPV LEVEL INSTRUMENT	Seismic Interaction	Verify component mounting to panel and final configuration.
13053	20	1-PI-3-74A	RPV PRESSURE INSTRUMENT	Seismic Interaction	Verify component mounting to panel and final configuration.
13054	20	1-PI-3-74B	RPV PRESSURE INSTRUMENT	Seismic Interaction	Verify component mounting to panel and final configuration.
13064	07	1-FCV-64-222	HARDENED WETWELL VENT	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
13069	08A	1-FCV-71-40	CONTAINMENT ISOLATION RCIC VALVE	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
13074	08A	1-FCV-71-17	RCIC INBOARD SUCTION VALVE	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
13080	07	1-FCV-77-2A	DRYWELL FLOOR DRAIN SUMP DISCHARGE	BS Caveats (OSVS 13080-01)	Valve will be modified by DCN. Verify acceptability of final configuration.
13081	07	1-FCV-77-15A	DRYWELL EQUIP. DRAIN SUMP DISCHARGE	BS Caveats (OSVS 13081-01)	Valve will be modified by DCN. Verify acceptability of final configuration.
13082	07	1-FCV-64-18	COOLING/PURGE AIR TO DRYWELL	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
13083	07	1-FCV-64-19	COOLING/PURGE AIR TO SUPPRESSION CHAMBER	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
14014	10	1-CLR-67-920	EECW/CS PUMP 1B ROOM COOLER	BS Caveats (OSVS 14014-01)	Conduit coupling will be repaired by work order. Verify acceptability of final configuration.
15001	08A	1-FCV-75-2	CS/PUMP 1A SUCTION ISOLATION VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
15007	06	1-PMP-75-14	CS/PUMP 1C	BS Caveats (OSVS RB519-03)	Conduit support will be added by DCN. Verify acceptability of final configuration.
15015	08A	1-FCV-75-30	CS/PUMP 1B SUCTION ISOLATION VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
15016	06	1-PMP-75-33	CS/PUMP 1B	BS Caveats	Pump motor was disassembled. Verify acceptability of final configuration.
15019	08A	1-FCV-75-37	CS/PUMPS 1B & 1D MINI-FLOW VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.

SSEL No.	Class	Component ID	Description	Final Verification Required During Area Turnover Walkdown	
				A-46 Criterion to be Addressed	Description of Issue to be Assessed
15020	08A	1-FCV-75-39	CS/PUMP 1D SUCTION ISOLATION VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
15021	06	1-PMP-75-42	CS/PUMP 1D	BS Caveats	Pump motor was disassembled. Verify acceptability of final configuration.
				BS Caveats (OSVS RB519-01 & RB519-02)	Conduit support will be added by DCN. Verify acceptability of final configuration.
15024	08A	1-FCV-75-50	CS/PUMPS 1B & 1D TEST ISOLATION VALVE	Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
16001	08B	1-FSV-84-8A	CAD/CAD TO DW (1-FCV-64-18) SOLENOID VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
16002	08B	1-FSV-84-8B	CAD/CAD TO DW (1-FCV-64-19) SOLENOID VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
16003	07	1-PREG-84-52	CAD/CAD SYSTEM "A" TO UNIT 1 DRYWELL CONTROL AIR	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
16004	08B	1-FSV-84-48	CAD/CAD SYSTEM "A" TO UNIT 1 DRYWELL CONTROL AIR	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
16009	21	1-ACC-32-6105	CA/ACCUMULATOR FOR PSV-1-19	Anchorage	Accumulator will be modified by DCN. Verify acceptability of final configuration
16012	21	1-ACC-32-6107	CA/ACCUMULATOR FOR PSV-1-22	Anchorage	Accumulator will be modified by DCN. Verify acceptability of final configuration
16015	21	1-ACC-32-6106	CA/ACCUMULATOR FOR PSV-1-5	Anchorage	Accumulator will be modified by DCN. Verify acceptability of final configuration
16010	08B	1-PSV-1-19	MS/SOLENOID VALVE FOR PCV-1-19	Seismic Interaction (OSVS 12001-01)	Verify that chain hoists are properly restrained.
16013	08B	1-PSV-1-22	MS/SOLENOID VALVE FOR PCV-1-22		
16016	08B	1-PSV-1-5	MS/SOLENOID VALVE FOR PCV-1-5		
16017	08B	1-PSV-1-23	MS/SOLENOID VALVE FOR PCV-1-23		
16018	08B	1-PSV-1-179	MS/SOLENOID VALVE FOR PCV-1-179		
16019	08B	1-PSV-1-4	MS/SOLENOID VALVE FOR PCV-1-4		
16021	08B	1-PSV-1-18	MS/SOLENOID VALVE FOR PCV-1-18		
16030	08B	1-PSV-1-30	MS/SOLENOID VALVE FOR PCV-1-30		
16033	08B	1-PSV-1-31	MS/SOLENOID VALVE FOR PCV-1-31		
16036	08B	1-PSV-1-34	MS/SOLENOID VALVE FOR PCV-1-34		
16038	08B	1-PSV-1-41	MS/SOLENOID VALVE FOR PCV-1-41		
16040	08B	1-PSV-1-42	MS/SOLENOID VALVE FOR PCV-1-42		

SSEL No.	Class	Component ID	Description	Final Verification Required During Area Turnover Walkdown	
				A-46 Criterion to be Addressed	Description of Issue to be Assessed
16041	08B	1-PSV-1-180	MS/SOLENOID VALVE FOR PCV-1-180		
16023	08B	1-FSV-84-8C	CAD/CAD TO DW (1-FCV-64-19) SOLENOID VALVE	BS Caveats	Valve will be modified by DCN. Verify acceptability of final configuration.
16025	07	1-PREG-84-54	CAD/CAD SYSTEM "B" TO UNIT 1 DRYWELL CONTROL AIR	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
16026	08B	1-FSV-84-49	CAD/CAD SYSTEM "B" TO UNIT 1 DRYWELL CONTROL AIR	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
16029	21	1-ACC-32-6111	CA/ACCUMULATOR FOR PSV-1-30	Anchorage	Accumulator will be modified by DCN. Verify acceptability of final configuration
16032	21	1-ACC-32-6108	CA/ACCUMULATOR FOR PSV-1-31	Anchorage	Accumulator will be modified by DCN. Verify acceptability of final configuration
16035	21	1-ACC-32-6109	CA/ACCUMULATOR FOR PSV-1-34	Anchorage	Accumulator will be modified by DCN. Verify acceptability of final configuration
16043	07	1-FCV-64-20	CONTAINMENT VENTILATION ISOLATION VALVE	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
16044	07	1-FCV-64-21	CONTAINMENT VENTILATION ISOLATION VALVE	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
18004	08A	1-FCV-23-040	RHR/RHRSW HX C OUTLET VALVE	BS Caveats and Seismic Interaction	Valve will be modified by DCN. Verify acceptability of final configuration.
18006	08A	1-FCV-23-046	RHR/RHRSW HX B OUTLET VALVE	BS Caveats and Seismic Interaction	Cables to operator will be replaced by DCN. Verify acceptability of final configuration.
18008	08A	1-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	BS Caveats and Seismic Interaction	Cables to operator will be replaced by DCN. Verify acceptability of final configuration.
18032	08A	1-FCV-23-052	RHR/RHRSW HX D OUTLET VALVE	Seismic Interaction	Valve will be modified by DCN. Check flexibility of attached conduit on final assembly.
19030	01	1-BDBB-281-0001A	250V DC RMOV BOARD 1A	BS Caveats (OSVS 19030-02)	MCC will be modified by DCN. Verify acceptability of final configuration.
				Anchorage (OSVS 19030-03)	MCC will be modified by DCN. Verify acceptability of final configuration.
19031	01	1-BDBB-281-0001B	250V DC RMOV BOARD 1B	BS Caveats (OSVS 19031-02)	MCC will be modified by DCN. Verify acceptability of final configuration.
19046	20	1-PX-64-160B	POWER SUPPLY (PNL 1-9-19: 1-LI-64-159B,160B)	Anchorage	After installation of device, verify its mounting to the panel.
19047	20	1-PXMC-23-114	POWER SUPPLY (PNL 1-9-18: FI-23-36,42 : FI-74-	Anchorage	After installation of device, verify its mounting to the panel.

SSEL No.	Class	Component ID	Description	Final Verification Required During Area Turnover Walkdown	
				A-46 Criterion to be Addressed	Description of Issue to be Assessed
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19048	20	1-PXMC-23-115 A&B	POWER SUPPLY (PNL 1-9-19: FI-23-48,54; FI-74-64)	Anchorage	After installation of device, verify its mounting to the panel.
19055	20	1-PX-64-159B	POWER SUPPLY (PNL 1-9-19)	Seismic Interaction	After installation of device, verify its mounting to the panel.
19070	16	1-INVT-256-0001	DIV I ECCS ATU INVERTER	BS Caveats (OSVS 19031-02)	Inverter will be replaced by DCN. Verify acceptability of final configuration.
19071	20	1-PX-71-60-1	ECCS ATU CAB 1-9-81 POWER SUPPLY	Seismic Interaction	After installation of device, verify its mounting to the panel.
19072	20	1-PX-71-60-1A	ECCS ATU CAB 1-9-81 POWER SUPPLY	Seismic Interaction	After installation of device, verify its mounting to the panel.
19073	20	1-PX-64-50	POWER SUPPLY (PNL 1-25-31: XR-64-50 [DEV BA TERM 11/12])	Seismic Interaction	After installation of device, verify its mounting to the panel.
19074	20	1-PX-74-56	POWER SUPPLY (PNL 1-9-18: FI-74-56)	Seismic Interaction	After installation of device, verify its mounting to the panel.
19075	16	1-INVT-256-0002	DIV II ECCS ATU INVERTER	BS Caveats (OSVS 19031-02)	Inverter will be replaced by DCN. Verify acceptability of final configuration.
19076	20	1-PX-71-60-2	ECCS ATU CAB 1-9-82 POWER SUPPLY	Seismic Interaction	After installation of device, verify its mounting to the panel.
19077	20	1-PX-71-60-2A	ECCS ATU CAB 1-9-82 POWER SUPPLY	Seismic Interaction	After installation of device, verify its mounting to the panel.
19078	20	1-PX-74-70	POWER SUPPLY (PNL 1-9-19: FI-74-70)	Seismic Interaction	After installation of device, verify its mounting to the panel.
19079	20	1-PX-64-159A	POWER SUPPLY (1-9-18)	Seismic Interaction	After installation of device, verify its mounting to the panel.
19080	20	1-PX-64-160A	POWER SUPPLY (1-9-18)	Seismic Interaction	After installation of device, verify its mounting to the panel.
19081	20	1-PX-64-67B	POWER SUPPLY (1-9-19)	Seismic Interaction	After installation of device, verify its mounting to the panel.
19082	20	1-PX-64-161	POWER SUPPLY (PNL 9-87)	Seismic Interaction	After installation of device, verify its mounting to the panel.
19083	20	1-PX-64-162	POWER SUPPLY (PNL 9-88)	Seismic Interaction	After installation of device, verify its mounting to the panel.
19084	18	1-PS-67-50	PRESSURE SWITCH FOR 1-FCV-67-50 (14046)	Seismic Interaction	New pressure switch will be installed by DCN. Verify acceptability of final configuration.
19085	18	1-PS-67-51	PRESSURE SWITCH FOR 1-FCV-67-51 (14047)	Seismic Interaction	New pressure switch will be installed by DCN. Verify acceptability of final configuration.
19088	20	1-LPNL-925-044A/11	COMMON BD LOGIC RELAY PANEL 25-44-A11	Seismic Interaction and Anchorage (OSVS 19088-01).	Panel will be modified by DCN. Verify acceptability of final configuration.

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				A-46 Criterion to be Addressed	Description of Issue to be Assessed
19120	20	1-PNLA-009-0015	RPS CH A (DIV I)	Seismic Interaction and BS Caveat (OSVS 19120-01)	Panel will be modified by DCN (gap between wall and panel filled with sealant). Verify acceptability of final configuration.
19121	20	1-PNLA-009-0016	RPS CH A, B, C, D		
19122	20	1-PNLA-009-0017	RPS CH B (DIV II)		
19128	20	1-PNLA-009-0032	RHR, CS, & HPCI (CH A) PNL		
19129	20	1-PNLA-009-0033	RHR, CS, & HPCI (CH B) PNL		
19130	20	1-PNLA-009-0039	HPCI RELAY AUX PNL		
19132	20	1-PNLA-009-0043	MSIV (OUTBOARD) DIV II PNL		
19136	20	1-PNLA-009-0082	DIV II ECCS ATU CABINET (9-82)		
19129 (1)	20	1-PNLA-009-0033	RHR, CS, & HPCI (CH B) PNL	Seismic Interaction and BS Caveat (OSVS 19130-01 and 19136-01)	Panels -39 and -82 will be bolted together by DCN. Verify acceptability of final configuration.
19130 (1)	20	1-PNLA-009-0039	HPCI RELAY AUX PNL		
19132 (1)	20	1-PNLA-009-0043	MSIV (OUTBOARD) DIV II PNL		
19136 (1)	20	1-PNLA-009-0082	DIV II ECCS ATU CABINET (9-82)		
19131	20	1-PNLA-009-0042	MSIV (INBOARD) DIV II PNL	Seismic Interaction and BS Caveat (OSVS 19131-01 and 19135-01)	Panels -42 and -81 will be bolted together by DCN. Verify acceptability of final configuration
19135	20	1-PNLA-009-0081	DIV I ECCS ATU CABINET (9-81)		
19137	20	1-PNLA-009-0083	RPS ATU CAB	Seismic Interaction and BS Caveat (OSVS 19137-01 thru 19140-01)	Panels -83 thru -86 will be bolted together by DCN. Verify acceptability of final configuration
19138	20	1-PNLA-009-0084	RPS ATU CAB		
19139	20	1-PNLA-009-0085	RPS ATU CAB		
19140	20	1-PNLA-009-0086	RPS ATU CAB		
19153	18	1-HS-74-52B	LOCAL HS STATION	Anchorage (OSVS 19154-01)	Junction box will be repaired by work order. Verify acceptability of final configuration.
19154	14	1-JB-1079	JUNCTION BOX (TERM BLOCK) - SEALED BOX		
19155	18	1-HS-74-53B	LOCAL HS STATION		
19195	18	1-LPNL-925-005A	LOCAL PANEL 25-5A	BS Caveats (OSVS 19195-01)	Instrument rack to be repaired by work order. Verify acceptability of final configuration.
19198	18	1-LPNL-925-006A	LOCAL PANEL 25-6A	Anchorage (OSVS 19198-01).	Grout to be installed by work order. Verify acceptability of final configuration.
19275	18	1-TS-1-17A	MAIN STEAM VAULT TEMPERATURE SWITCH	Seismic Interaction	Mounting of new temperature switch in RPS ATU Cabinet 9-83.
19276	18	1-TS-1-17B	MAIN STEAM VAULT TEMPERATURE SWITCH	Seismic Interaction	Mounting of new temperature switch in RPS ATU Cabinet 9-84.

SSEL No.	Class	Component ID	Description	Final Verification Required During Area Turnover Walkdown	
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19277	18	1-TS-1-17C	MAIN STEAM VAULT TEMPERATURE SWITCH	Seismic Interaction	Mounting of new temperature switch in RPS ATU Cabinet 9-85.
19278	18	1-TS-1-17D	MAIN STEAM VAULT TEMPERATURE SWITCH	Seismic Interaction	Mounting of new temperature switch in RPS ATU Cabinet 9-86.
19294	00	1-AMP-092-0007/41A	IRM CH. "A" VOLTAGE PREAMPLIFIER 7-34A	Anchorage	After installation of device, verify its mounting to the panel.
19295	00	1-AMP-092-0007/41B	IRM CH. "B" VOLTAGE PREAMPLIFIER 7-34B	Anchorage	After installation of device, verify its mounting to the panel.
19297	00	1-AMP-092-0007/41C	IRM CH. "C" VOLTAGE PREAMPLIFIER 7-34C	Anchorage	After installation of device, verify its mounting to the panel.
19298	00	1-AMP-092-0007/41D	IRM CH. "D" VOLTAGE PREAMPLIFIER 7-34D	Anchorage	After installation of device, verify its mounting to the panel.
19300	20	1-NM-92-7/41A	CHANNEL "A" IRM INDICATOR	Anchorage	Verify equipment mounting to panel
19301	20	1-NM-92-7/41B	CHANNEL "B" IRM INDICATOR	Anchorage	Verify equipment mounting to panel
19302	20	1-NM-92-7/41C	CHANNEL "C" IRM INDICATOR	Anchorage	Verify equipment mounting to panel
19303	20	1-NM-92-7/41D	CHANNEL "D" IRM INDICATOR	Anchorage	Verify equipment mounting to panel
19307	16	1-CHGD-283-A1-1	24V NEUTRON BATTERY CHARGERS A1-1	Anchorage (OSVS 19307-01)	New support system to be installed by DCN. Verify acceptability of final configuration.
19308	16	1-CHGD-283-A2-1	24V NEUTRON BATTERY CHARGERS A2-1	Anchorage (OSVS 19308-01)	New support system to be installed by DCN. Verify acceptability of final configuration.
19309	16	1-CHGD-283-B1-1	24V NEUTRON BATTERY CHARGERS B1-1	Anchorage (OSVS 19309-01)	New support system to be installed by DCN. Verify acceptability of final configuration.
19310	16	1-CHGD-283-B2-1	24V NEUTRON BATTERY CHARGERS B2-1	Anchorage (OSVS 19310-01)	New support system to be installed by DCN. Verify acceptability of final configuration.
19418	02	1-BDBB-231-0001A	480V SHDN BD 1A	Interaction (OSVS 19418-01)	Procedure will be improved as required to ensure breaker lifting device is restrained when lifting device is not being used. Verify acceptability of final configuration.
19792	18	1-LPNL-925-006B	LOCAL PANEL 25-6B	Anchorage (OSVS 19792-01).	Grout to be installed by work order. Verify acceptability of final configuration.

SSEL No.	Class	Component ID	Description	Final Verification Required During Area Turnover Walkdown	
				A-46 Criterion to be Addressed	Description of Issue to be Assessed
19794	04	1-XFA-099-0010	RPS REGULATING TRANSFORMER TRP-1	Caveats (OSVS 19794-01)	Anchorage detail will be modified by DCN. Verify acceptability of final configuration.
				Anchorage (OSVS 19794-02)	

Note: (1) This item of equipment appears more than once in the above table.