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DENTON,H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards responses to requests for addl info re draft SER open items. see rpt

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	NRR/DHFS/PSRB		1	1	NRR/DL/SSPB		1	0
	NRR/DSI/AEB	26	1	1	NRR/DSI/ASB		1	1
	NRR/DSI/CPB	10	1	1	NRR/DSI/CSB	09	1	1
	NRR/DSI/ICSB	16	1	1	NRR/DSI/METB	12	1	1
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Forwards responses to requests for ...

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CP&L

Carolina Power & Light Company

SERIAL: LAP-83-485

OCT 14 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
UNIT NOS. 1 AND 2
DOCKET NOS. 50-400 AND 50-401
RESPONSES TO REQUESTS FOR ADDITIONAL INFORMATION

Dear Mr. Denton:

Carolina Power & Light Company hereby transmits one original and forty copies of additional information requested by the NRC as part of the safety review of the Shearon Harris Nuclear Power Plant. The enclosed responses relate to Draft Safety Evaluation Report Open Items. The cover sheet of the attachment summarizes the related Open Item addressed in the attachment along with the corresponding review branch and reviewer for each response.

We will be providing responses to other requests for additional information shortly.

Yours very truly,

M. A. McDuffie
Senior Vice President
Nuclear Generation

FXT/kjr (8213FXT)
Enclosure

cc: Mr. B. C. Buckley (NRC)
Mr. G. F. Maxwell (NRC-SHNPP)
Mr. J. P. O'Reilly (NRC-RII)
Mr. Travis Payne (KUDZU)
Mr. Daniel F. Read (CHANGE/ELP)
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A001
1/0

411 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

LIST OF OPEN ITEMS/SAFETY REVIEW QUESTIONS, REVIEW BRANCH AND REVIEWER

Containment Systems Branch/J. Huang
Open Items 71, 303

Instrumentation and Control Systems Branch/H. Li
Open Item 94

Power Systems Branch/E. Tomlinson
Open Items 112, 390

Procedures and Systems Review Branch/W. Long
Open Item 201

Radiological Assessment Branch/S. Block
Open Item 170

(8213FXTkjr)

Shearon Harris Nuclear Power Plant
Containment Systems Branch
Draft SER Open Item 71
Revised Response

The staff has reviewed the containment leakage testing program contained in the FSAR and the responses to NRC Questions 480.48 through 480.55, and finds them acceptable with the following exceptions regarding Type C testing of certain containment isolation valves:

(1) Until justification is provided (see NRC Question 480.53), a Type C test will be required for those valves associated with Penetrations 9, 10, 11, 12, 13, 14, 17, 18, 20 through 32, 47, 48, 49, and 50.

(2) The staff has found the justification provided in the responses to NRC Question 480.54 inadequate for certain containment isolation valves. Unless additional justification is provided, a Type C test will be required for those valves associated with penetrations numbered 8, 15, 16, 35, 36, and 39.

(3) Appendix J permits reverse direction testing of an isolation valve if it can be demonstrated that leakage rates measured in the reverse direction are equivalent to or more conservative than those measured in the accident pressure direction. However, the applicant must prepare to make such a demonstration when requested, and retain the documentation on site for use by NRC inspectors.

Response

In an earlier response, CP&L committed to Type C test the containment isolation valves for the following penetrations: 12, 23, and 24. During a meeting with the NRC staff on August 25, 1983, CP&L was informed that the NRC accepted the justification for not Type C testing the containment isolation valves for the following additional penetrations: 15, 16, 47, 48, 49, and 50.

Chemical and Volume Control System Seal Water to the Reactor Coolant Pumps - Penetrations 9, 10, and 11. The containment isolation valves for these penetrations will be Type C tested.

Emergency Core Cooling System Low Head Safety Injection to Hot and Cold Legs - Penetrations 13, 14, and 18. Penetrations 13 and 14 will be continuously water sealed from both inside and outside reactor containment by flow from ECCS low head safety injection with a minimum pressure of 90 psig (greater than accident pressure of 36.7 psig) via cross connect lines 2SI6-283SAF-1 and 2SI10-257SAB-1 (refer to FSAR Figures 6.3.2-3 and 5.4.7-1).

The low head safety injection is automatically actuated for loss of coolant accident and other accidents. During cold leg injection and recirculation, pressure is always maintained on the inside containment isolation valves by cross-connect line 2SI6-283SAB-1. (The valves in this line are locked open manual valves.) Failure of flow through either penetration, due to a single active failure, will allow the flow from the opposite penetration to pressurize the inside containment isolation valve on the failed penetration.

(8149PSAkjr)

The inside containment isolation valve is a swing check type and pressurization will be from the downstream side. The design of a swing check is such that the body/cap gasket will receive the downstream pressurization. Therefore, the containment atmoshpere will not have a pathway to the environment through the containment isolation valve so pressurized.

During hot leg recirculation, containment isolation vales 2SI-V578SB-1 (penetration 14) and 2SI-V579SA-1 (penetration 13) close and a water seal is established at these valves. Both of these valves are gate types with single piece wedge. Upon closure and pressurization, the wedge would seal the down stream seat (toward containment). The upstream set will not be seated and will allow the packing and body/bonet gasket to be pressurized. Thus, no containment atmosphere can enter the valve or be released to the outside environment through the packing or gasket.

No single active failure of any component will prevent pressurization of the penetrations, either before, during or after the change over from cold leg injection to hot leg recirculation.

The water supply to these penetrations is virtually unlimited since the RHR pumps are supplied initially from the Refueling Water Storage Tank, and then from the Containment recirculation sump after transfer to the recirculation mode. No single active failure will interrupt this water supply. Based on this analysis we conclude that Type C testing for the containment isolation valves for penetrations 13 and 14 is not required.

Penetration 18 will be type C tested.

Emergency Service Water Supply and Return for the Emergency Fan Coolers, Penetrations 25, 26, 27, 28, 29, 30, 31, and 32. These penetrations will be used following the accident to provide containment heat removal and reduce containment pressure. The containment isolation valves associated with these penetrations do not require testing as they do not meet the criteria stated in 10CFR50 Appendix J, paragraph II.H as discussed below.

1. This system is "closed" as defined by the Standard Review Plan 6.2.4, paragraph 7.0. Therefore, it does not provide a direct connection between the inside and outside atmosphere.

2. These valves are not required to close automatically upon receipt of a containment isolation signal in response to controls intended to effect containment isolation.

3. The system is required to operate continuously under post-accident conditions, since it will be used to provide containment heat removal and reduce containment pressure.

Based on this analysis, we conclude that Type C testing for penetrations 25-32 is not required.

Component Cooling Water Supply and Return to the Reactor Coolant Pumps, Penetrations 35, 36, and 39. Penetrations 35, 36, and 39 will be type C tested.

Emergency Core Cooling High Head Injection to the Hot and Cold Legs - Penetrations 17, 20, 21, 22. Penetrations 17, 20, 21, and 22 will be Type C tested.

Shearon Harris Nuclear Power Plant (SHNPP)
Containment Systems Branch
Draft SER Open Item 303
Supplemental Information

The staff, in a telephone conversation, indicated that Final Safety Analysis Report (FSAR) Table 6.3.4-1 needs to be revised to show the correct General Design Criteria (GDC) to which the penetrations therein listed are designed to. At present, more than one GDC is listed for the penetrations. This is not allowed.

Response

Carolina Power & Light Company will revise, in a future FSAR Amendment, the FSAR as marked in the enclosed pages to show the correct GDC's for the penetrations listed.

(7359PSAkjr)

3.1.48 CRITERION 55 - REACTOR COOLANT PRESSURE BOUNDARY PENETRATING CONTAINMENT

CRITERION:

Each line that is part of the reactor coolant pressure boundary and that penetrates primary reactor containment shall be provided with containment isolation valves as follows, unless it can be demonstrated that the containment isolation provisions for a specific class of lines, such as instrument lines, are acceptable on some other defined basis:

a) One locked closed isolation valve inside and one locked closed isolation valve outside Containment; or

b) One automatic valve inside and one locked closed isolation valve outside Containment; or

c) One locked closed isolation valve inside and one automatic isolation valve outside Containment. A simple check valve may not be used as the automatic isolation valve outside Containment; or

d) One automatic isolation valve inside and one automatic isolation valve outside Containment. A simple check valve may not be used as the automatic isolation valve outside Containment.

Isolation valves outside Containment shall be located as close to the Containment as practical and upon loss of actuating power, automatic isolation valves shall be designed to take the position that provides greater safety.

Other appropriate requirements to minimize the probability or consequences of an accidental rupture of these lines or of lines connected to them shall be provided as necessary to assure adequate safety. Determination of the appropriateness of these requirements, such as higher quality in design, fabrication, and testing, additional provisions for inservice inspection, protection against more severe natural phenomena, and additional isolation valves and Containment, shall include consideration of the population density, use characteristics, and physical characteristics of the site environs.

DISCUSSION:

SHNPP conforms to the criterion with exceptions as stated in Section 6.2.4. ~~The design of the SHNPP does not have RCPB piping which penetrates Containment.~~

For further discussions, see the following sections:

a)	Integrity of Reactor Coolant Pressure Boundary	5.2
b)	Containment Isolation Systems	6.2.4
c)	Instrument and Controls	7.0
d)	Accident Analysis	15.0

6.2.4.2.4.2 General Design Criterion 55

There are no lines that are part of the reactor coolant pressure boundary (RCPB) that penetrate the Containment (however, there are some safety Class 1 valves within the containment boundary), therefore GDC 55 is not applicable to SHNPP. However, for lines such as charging, safety injection and letdown there is not an applicable GDC because these lines are connected to the RCPB but not part of the RCPB. Lines which are connected to the reactor coolant pressure boundary are shown in Table 6.2.4-1. Each penetration is provided with one of the following valve arrangements conforming to the requirements of 10CFR50, Appendix A, General Design Criterion 55, as follows:

a) One locked-closed-isolation valve inside and one locked-closed-isolation valve outside Containment; or

b) One automatic-isolation valve inside and one locked-closed-isolation valve outside Containment; or

c) One locked-closed-isolation valve inside and one automatic-isolation valve outside Containment; a simple check valve is not used as the automatic-isolation valve outside Containment; or

d) One automatic-isolation valve inside and one automatic-isolation valve outside Containment; a simple check valve is not used as the automatic-isolation valve outside Containment.

Isolation valves are located as close to the Containment as practical and, upon loss of actuating power, solenoid and air-operated automatic-isolation valves fail closed.

An exception of GDC 55 is taken for the RHR suction lines. The lines from the RCS hot legs to the RHR pump suctions each contain two remote manual (motor operated) valves, which are locked closed during normal plant power operation and are under administrative control to assure that they cannot be inadvertently opened, in accordance with SRP Section 6.2.4 Item II.f. The valves are interlocked such that they cannot be opened when the RCS pressure is greater than the design pressure of the RHR system. This valve arrangement is provided in accordance with Westinghouse Systems Standard Design Criteria, Number 1.14, Revision 2 and Appendix B of ANSI Standard N271-1976. 5

An exception to Criterion 55 is taken for several isolation valves in lines which penetrate Containment and are required to perform safeguards functions following an accident. Lines which fall into this category include the RHR and safety injection lines, and RCP seal injection lines. Since these valves must remain open or be opened, a trip signal cannot be used. Instead, each of these motor operated valves is capable of remote manual operation. Upon completion of the safeguards function of the line, the operator can close the isolation valve from the Control Room. Leak detection capabilities for these lines is discussed in Section 5.2.5. 5 5

6.2.4.2.4.3 General Design Criterion 56

The lines that penetrate the Containment and communicate directly with both the atmosphere inside and outside of the Containment are of two types. The

withstand temperatures and pressures at least equal to the containment design pressure and temperature. Should the postulated loss-of-coolant accident occur, containment pressure would be felt on the downstream side of a relief valve inside the Containment and would act in conjunction with the spring pressure setting of the relief valve to further enhance seating.

6.2.4.2.4.4 General Design Criterion 57

Closed systems used as an isolation barrier, ~~either~~ inside ~~or outside~~ the Containment, meet the following requirements:

a) The systems are protected against postulated missiles and pipe-whip.

b) The systems are designed to Seismic Category I.

c) The systems meet ~~Quality Group B and C~~ Safety Class 2 standards and are inservice inspected as described in Section 6.6.

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

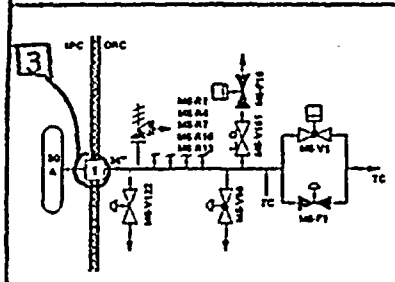
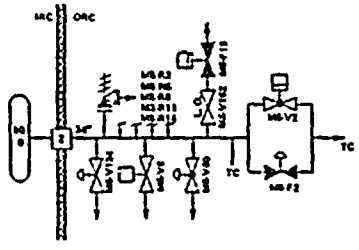
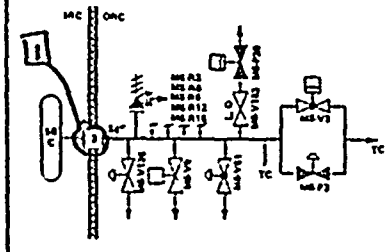
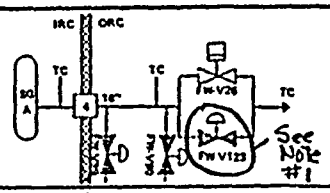
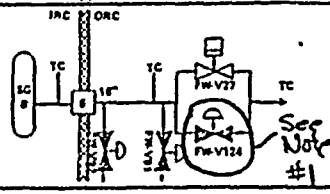
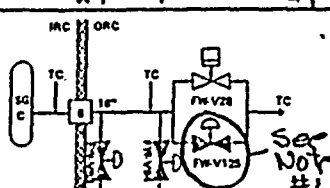
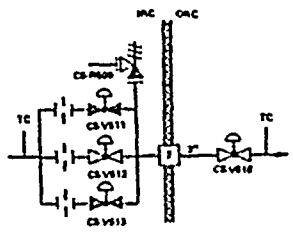
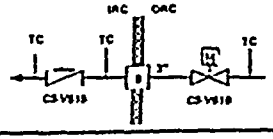
PENETRATION DATA							VALVE DATA																								
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS PATH LEAKAGE	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	VALVE POSITION: ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
	042	~~S-4~~ 57	S	YES	NO	MAIN STEAM LOOP A	R1	-	4'	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							R4	-	6'	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							R7	-	8'	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							R10	-	10'	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							R13	-	13'	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							P18	A	28'	G	EH	A	RM	-	-	-	C	C	C	C	C	NO	YES	NO	1
							V1	A&B	27'	G	AO	A	RM	5	-	5	O	C	C	C	C	NO	YES	NO	
							F1	A&B	37'	G	AO	A	RM	5	-	10	C	C	C	C	C	NO	YES	NO	
							V59	A&B	25'	G	AO	A	RM	5	-	10	O	C	C	C	C	NO	YES	NO	
							V122	A&B	4	G	AO	A	RM	1	-	10	O	C	C	C	C	NO	YES	NO	
	042	~~S-4~~ 57	S	YES	NO	MAIN STEAM LOOP B	R2	-	4	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							R5	-	6	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							R8	-	8	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							R11	-	10	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							R14	-	13	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							P19	B	28'	G	EH	A	RM	-	-	-	C	C	C	C	C	NO	YES	NO	
							V2	A&B	27	G	AO	A	RM	5	-	5	O	C	C	C	C	NO	YES	NO	
							F2	A&B	37	G	AO	A	RM	5	-	10	C	C	C	C	C	NO	YES	NO	
							V60	A&B	25'	G	AO	A	RM	5	-	10	O	C	C	C	C	NO	YES	NO	
							V8	B	26'	G	HO	A	RM	-	2,13	10	C	C	O	AI	C	YES	NO	NO	1
							V124	A&B	4	G	AO	A	RM	1	-	10	O	C	C	C	C	NO	YES	NO	
	042	~~S-4~~ 57	S	YES	NO	MAIN STEAM LOOP C	R3	-	4	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							R6	-	6	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							R9	-	8	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							R12	-	10	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							R15	-	13	RL	SA	-	-	-	-	-	C	C	C	C	C	YES	NO	NO	
							P20	A	28'	G	EH	A	RM	-	-	-	C	C	C	C	C	NO	YES	NO	
							V3	A&B	27	G	AO	A	RM	5	-	5	O	C	C	C	C	NO	YES	NO	
							F3	A&B	37	G	AO	A	RM	5	-	10	C	C	C	C	C	NO	YES	NO	
							V61	A&B	25'	G	AO	A	RM	5	-	10	O	C	C	C	C	NO	YES	NO	
							V9	A	26'	G	HO	A	RM	-	2,13	10	C	C	O	AI	C	YES	NO	NO	
							V126	A&B	4	G	AO	A	RM	1	-	10	O	C	C	C	C	NO	YES	NO	

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

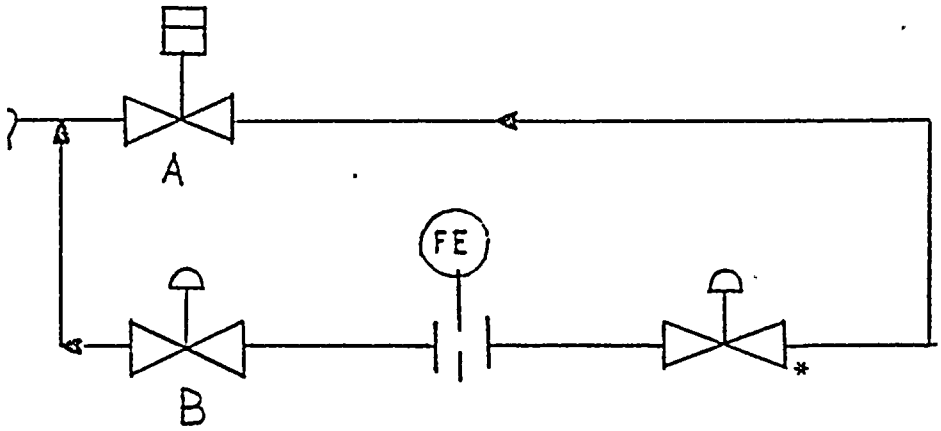
PENETRATION DATA							VALVE DATA																								
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS LEAKAGE PATH	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	VALVE POSITION: I.L.R.T	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
	044	54 57	W	YES	NO	FEEDWATER LOOP A	V26 V123 V89 V90	A&B A&B A&B A&B	2 8 2 2	GA GA GA GA	EH AO AO AO	A A A A	RH RH RH RH	14 14 14 14	- - - -	5 5 10 10	0 C C C	C C C C	C C C C	C C C C	C C C C	NO NO NO NO	YES YES YES YES	NO NO NO NO	1
	044	54 57	W	YES	NO	FEEDWATER LOOP B	V27 V124 V91 V92	A&B A&B A&B A&B	2 8 2 2	GA GA GA GA	EH AO AO AO	A A A A	RH RH RH RH	14 14 14 14	- - - -	5 5 10 10	0 C C C	C C C C	C C C C	C C C C	C C C C	NO NO NO NO	YES YES YES YES	NO NO NO NO	
	044	54 57	W	YES	NO	FEEDWATER LOOP C	V28 V125 V93 V94	A&B A&B A&B A&B	2 8 2 2	GA GA GA GA	EH AO AO AO	A A A A	RH RH RH RH	14 14 14 14	- - - -	5 5 10 10	0 C C C	C C C C	C C C C	C C C C	C C C C	NO NO NO NO	YES YES YES YES	NO NO NO NO	1
	803	54 55 57	W	YES	NO	CVCS - NORMAL LETDOWN	R500 V511 V512 V513 V518	- A A A B	15 17 15 15 1	RL GL GL GL GL	SA AO AO AO AO	- A A A A	- RH RH RH RH	- 1 1 1 1	- - - - -	- 10 10 10 10	C CY O CY O	C C C C C	C C C C C	C C C C C	C C C C C	NO NO NO NO NO	YES YES YES YES YES	YES YES YES YES YES	
	803	54 55 57	W	YES	NO	CVCS - NORMAL CHARGING	V515 V610	- A	2 1	CK GA	SA MO	- A	- RH	- -	- 3	- 10	O O	C C	C C	- AI	C C	NO NO	YES YES	NO NO	

Note #1 : The arrangement should be shown as detail "C" "Typical Bypass at Feedwater Isolation Valve" of FSAR Figure 10.1.0-3 (See Sheet 1)

6.2.4-19

Amendment No. 5

INSERT 1

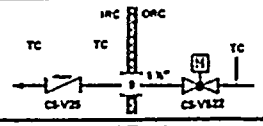
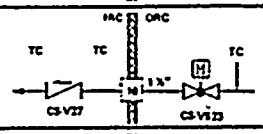
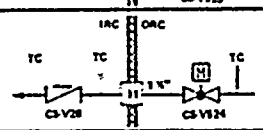
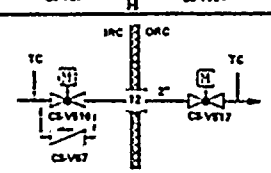
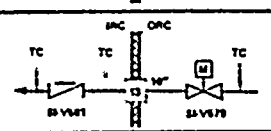
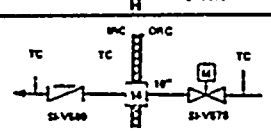
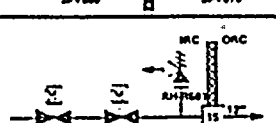


Item	To SG 1A	To SG 1B	To SG 1C
A	V26	V27	V28
B	V123	V124	V125

*This valve is shown for reference only. It is not part of containment isolation.

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

PENETRATION DATA							VALVE DATA																									
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS LEAKAGE PATH	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	VALVE POSITION NORMAL	VALVE POSITION SHUTDOWN	VALVE POSITION POST-ACCIDENT	VALVE POSITION POWER FAILURE	VALVE POSITION ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE	
	803	54 55 56 57 *	W	YES	NO	CVCS - SEAL WATER TO RCP 'A'	V25 V522	- B	2 1	CK GL	SA MO	- RM	- M	- -	- -	- 10	0 0	0 0	0 0	- AI	0 0	YES YES	NO NO	NO NO	4	15
	803	54 55 56 57 *	W	YES	NO	CVCS - SEAL WATER TO RCP 'B'	V26 V523	- B	2 1	CK GL	SA MO	- RM	- M	- -	- -	- 10	0 0	0 0	0 0	- AI	0 0	YES YES	NO NO	NO NO	4	15
	803	54 55 56 57 *	W	YES	NO	CVCS - SEAL WATER TO RCP 'C'	V27 V524	- B	2 1	CK GL	SA MO	- RM	- M	- -	- -	- 10	0 0	0 0	0 0	- AI	0 0	YES YES	NO NO	NO NO	4	15
	803	54 55 56 57 *	W	NO	NO	CVCS - SEAL WATER RETURN & EXCESS LETDOWN	V67 V516 V517	- A B	3 2 1	CK GL GL	SA MO MO	- A A	- RH RH	- 1 1	- - -	- 10 10	C 0 0	C 0 0	C C C	- AI AI	0 0 0	NO NO NO	YES YES YES	NO NO NO		
	810	54 55 56 57 *	W	YES	NO	SAFETY INJECTION - LOW HEAD TO COLD LEGS	V581 V579	- A	1 4	CK GA	SA MO	- RM	- M	- -	- -	- 15	£0 0	0 0	0 0	- AI	0 0	YES YES	NO NO	NO NO	2, 3, 4	15
	810	54 55 56 57 *	W	YES	NO	SAFETY INJECTION - LOW HEAD TO COLD LEGS	V580 V578	- B	1 4	CK GA	SA MO	- RM	- M	- -	- -	- 15.	C 0	0 0	0 0	- AI	0 0	YES YES	NO NO	NO NO	2, 3, 4	15
	810	54 55 56 57 *	W	YES	NO	RHR SUCTION FROM HOT LEG	R501 V502 V503	- B A	1 100 12	RL GA GA	SA MO MO	- RM RM	- M M	- - -	- - -	- 15 15	C C C	C 0 0	C C C	- AI AI	C 0 0	YES YES YES	NO NO NO	NO NO NO	2, 3	15

* Exception to GDC 55
See Section 6.2.4.2.4.2

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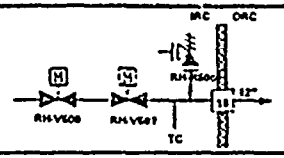
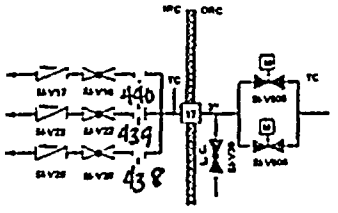
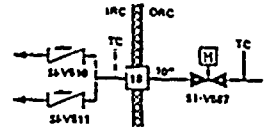
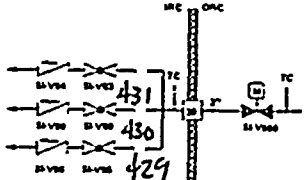
Amendment No. 5

SHNPP FSAR

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

PENETRATION DATA							VALVE DATA																								
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS PATH LEAKAGE	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	VALVE POSITION: ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
	810	54 55 57 *	W	YES	NO	RHR SUCTION FROM HOT LEG	R500 V500 V501	- B A	1 100 12	RF GA GA	SA MO MO	- RH RH	- M M	- - -	- - -	- 15 15	C C C	C O O	C C C	- AI AI	C O O	YES YES YES	NO NO NO	NO NO NO	2, 3	15
	808	54 55 57 *	W	YES	NO	SAFETY INJECTION - HIGH HEAD TO COLD LEGS	V17 V23 V29 ~~V26~~ ~~V32~~ ~~V28~~ V30 V505 V506	- - - - - - - B A	120 26 135 119 25 144 3 2 2	CK CK CK GL GL GL GL GA GA	SA SA SA M M M M MO MO	- - - H H H H A A	- - - - - - - RH RH	- - - - - - - - -	- - - - - - - 3 3	- - - - - - - 10 10	C C C TL TL TL LC C C	C C C TL TL TL LC C C	O O O TL TL TL LC O O	- - - - - - - AI AI	C C C TL TL TL LC C C	YES YES YES YES YES YES YES YES YES	NO NO NO NO NO NO NO NO NO	NO NO NO NO NO NO NO NO NO	2, 3	
	808	54 55 57 *	W	YES	NO	SAFETY INJECTION - LOW HEAD TO HOT LEGS	V510 V511 V587	- - A	53 55 1	CK CK GA	SA SA MO	- - RH	- - H	- - -	- - -	- - 15	C C C	C C C	O O O	- - AI	C C C	YES YES YES	NO NO NO	NO NO NO	2, 3	15
19						SPARE																				
	808	54 55 57 *	W	YES	NO	SAFETY INJECTION - HIGH HEAD TO HOT LEGS	V84 V90 V96 ~~V88~~ ~~V89~~ ~~V95~~ V500	- - - - - - A	82 36 140 81 35 139 1	CK CK CK GL GL GL GA	SA SA SA M M M MO	- - - H H H RH	- - - - - - H	- - - - - - -	- - - - - - -	- - - - - - 10	C C C TL TL TL C	C C C TL TL TL C	O O O TL TL TL O	- - - - - - AI	C C C TL TL TL C	YES YES YES YES YES YES YES	NO NO NO NO NO NO NO	NC NO NO NO NO NO NO	2, 3	

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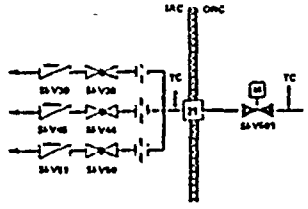
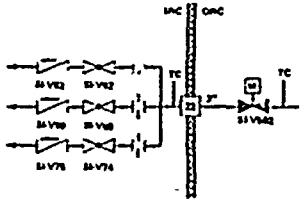
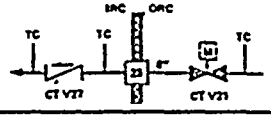
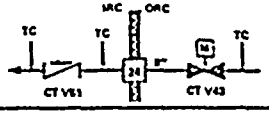
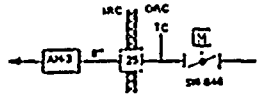
Amendment No. 5

SHINE FSAR

Exceptions to GDC 55
See Section 6.2.4.2.4.2

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

PENETRATION DATA							VALVE DATA																								
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS LEAKAGE PATH	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	VALVE POSITION: ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE	
	808	54 55 57 *	W	YES	NO	SAFETY INJECTION - HIGH HEAD TO HOT LEGS	V39	-	118	CK	SA	-	-	-	-	-	C	C	O	-	C	YES	NO	NO		
							V45	-	28	CK	SA	-	-	-	-	-	C	C	O	-	C	YES	NO	NO		
							V51	-	131	CK	SA	-	-	-	-	-	C	C	O	-	C	YES	NO	NO		
							~~V38~~ V434	-	117	GL	M	M	-	-	-	-	TL	TL	TL	-	TL	YES	NO	NO		
							~~V44~~ V433	-	27	GL	M	M	-	-	-	-	TL	TL	TL	-	TL	YES	NO	NO		
							~~V50~~ V432	-	130	GL	M	M	-	-	-	-	TL	TL	TL	-	TL	YES	NO	NO		
							V501	B	1	GA	MO	RM	M	-	-	10	C	C	O	AI	C	YES	NO	NO	2, 3	5
	808	54 55 57 *	W	YES	NO	SAFETY INJECTION - HIGH HEAD TO COLD LEGS	V63	-	151	CK	SA	-	-	-	-	-	C	C	O	-	C	YES	NO	NO		
							V69	-	18	CK	SA	-	-	-	-	-	C	C	O	-	C	YES	NO	NO		
							V75	-	81	CK	SA	-	-	-	-	-	C	C	O	-	C	YES	NO	NO		
							V62	-	150	GL	M	M	-	-	-	-	TL	TL	TL	-	TL	YES	NO	NO		
							V68	-	17	GL	M	M	-	-	-	-	TL	TL	TL	-	TL	YES	NO	NO		
							V74	-	80	GL	M	M	-	-	-	-	TL	TL	TL	-	TL	YES	NO	NO		
							V502	A	1	GA	MO	RM	M	-	-	10	C	C	O	AI	C	YES	NO	NO	2, 3	5
	050	54 56 57	W	YES	NO	CONTAINMENT SPRAY	V27	-	2	CK	SA	-	-	-	-	-	C	C	O	-	C	YES	NO	NO		
							V21	A	1	GA	MO	A	RM	-	11	10	C	C	O	AI	C	YES	NO	NO	2, 3	5
	050	54 56 57	W	YES	NO	CONTAINMENT SPRAY	V51	-	2	CK	SA	-	-	-	-	-	C	C	O	-	C	YES	NO	NO		
							V43	B	1	GA	MO	A	RM	-	11	10	C	C	O	AI	C	YES	NO	NO	2, 3	5
	047	54 57	W	NO	NO	SERVICE WATER TO FAN COOLER AH-3	B46	A	1	BF	MO	RM	M	-	-	15	0	0	0	AI	0	YES	NO	NO	1	5

* Exception to GDC 55
See Section 6.2.4.2.2

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

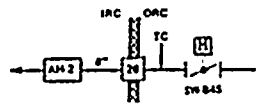
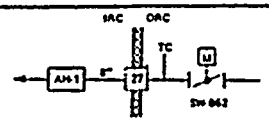
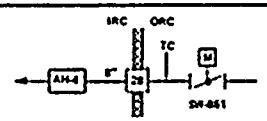
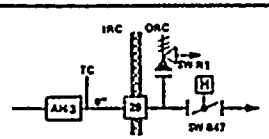
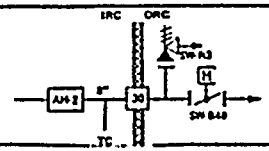
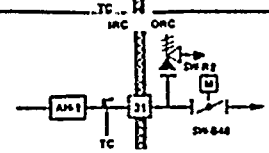
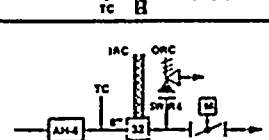
PENETRATION DATA							VALVE DATA																					
																		VALVE POSITION										
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS LEAKAGE PATH	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	SHUTDOWN	POST-ACCIDENT	POWER FAILURE	ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE	
	047	57	W	NO	NO	SERVICE WATER TO FAN COOLER AH-2	B45	A	1	BF	MO	RM	M	-	-	15	0	0	0	AI	0	YES	NO	NO	1	5
	047	57	W	NO	NO	SERVICE WATER TO FAN COOLER AH-1	B52	B	1	BF	MO	RM	M	-	-	15	0	0	0	AI	0	YES	NO	NO	1	5
	047	57	W	NO	NO	SERVICE WATER TO FAN COOLER AH-4	B51	B	1	BF	MO	RM	M	-	-	15	0	0	0	AI	0	YES	NO	NO	1	5
	047	57	W	NO	NO	SERVICE WATER FROM FAN COOLER AH-3	B47 R1	A -	1 1	BF RF	MO SA	RM -	M -	- -	- -	15 -	0 C	0 C	0 C	AI -	0 C	YES YES	NO NO	NO NO	1	5
	047	57	W	NO	NO	SERVICE WATER FROM FAN COOLER AH-2	B49 R3	A -	1 1	BF RF	MO SA	RM -	M -	- -	- -	15 -	C C	0 C	0 C	AI -	0 C	YES YES	NO NO	NO NO	1	5
	047	57	W	NO	NO	SERVICE WATER FROM FAN COOLER AH-1	B48 R2	B -	1 1	BF RF	MO SA	RM -	M -	- -	- -	15 -	0 C	0 C	0 C	AI -	0 C	YES YES	NO NO	NO NO	1	5
	047	57	W	NO	NO	SERVICE WATER FROM FAN COOLER AH-4	B50 R4	B -	1 1	BF RF	MO SA	RM -	M -	- -	- -	15 -	0 C	0 C	0 C	AI -	o C	YES YES	NO NO	NO NO	1	5

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

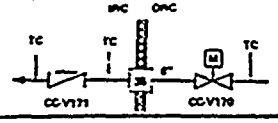
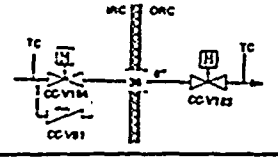
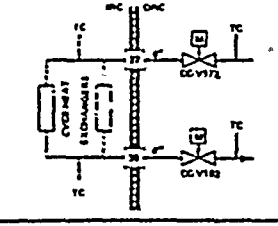
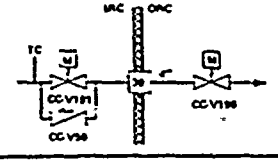
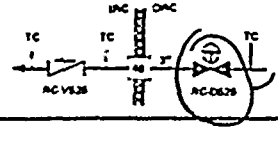
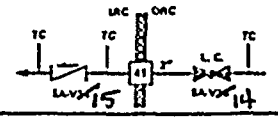
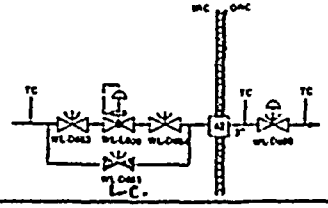
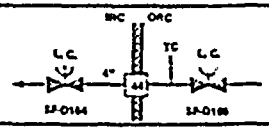
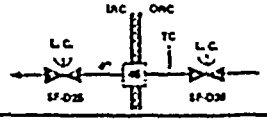
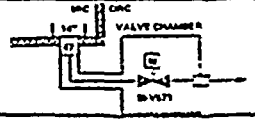
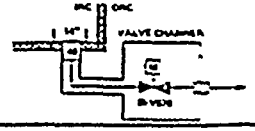
PENETRATION DATA							VALVE DATA																					
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS PATH LEAKAGE	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	VALVE POSITION: ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE	
33						SPARE																						
34						SPARE																						
	221	56	W	NO	NO	COMPONENT COOLING WATER - TO RCP	V171 V170	- B	1 2	CK GA	SA MO	- A	- RM	- 2	- -	- 10	0 0	0 0	C C	- AI	0 0	YES YES	NO NO	NO NO	1, 2, 3	5
	221	56	W	NO	NO	COMPONENT COOLING WATER FROM RCP	V51 V184 V183	- A B	3 1 2	CK GA GA	SA MO MO	- A A	- RM RM	- 2 2	- - -	- 10 10	C 0 0	C 0 0	C C C	- AI AI	C 0 0	YES YES YES	NO NO NO	NO NO NO	1, 2, 3	5
	221	57	W	NO	NO	COMPONENT COOLING WATER TO REACTOR COOLANT DRAIN TANK AND EXCESS LET-DOWN HEAT EXCHANGERS	V172 V182	B B	2 2	GA GA	MO MO	A A	RM RM	1 1	- -	10 10	0 0	0 C	0 C	AI AI	0 C	YES YES	NO NO	NO NO	1, 2	5
	221	56	W	NO	NO	COMPONENT COOLING WATER FROM RCP THERMAL BARRIERS	V50 V191 V190	- A B	3 1 1	CK GA GA	SA MO MO	- A A	- RM RM	- 2 2	- - -	- 10 10	C 0 0	C 0 0	C 0 0	- AI AI	C 0 0	YES YES YES	NO NO NO	NO NO NO	1, 2	5
	221	56	W	NO	YES	DEMIN WATER TO PRT	V525 D525	- B	2 2	CK DA	SA AO	- A	- RM	- 1	- -	- 10	C0 90	C C	C C	- C	C C	NO NO	YES YES	YES YES	7	5

TABLE 6.2.4-1

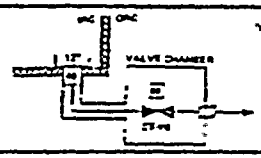
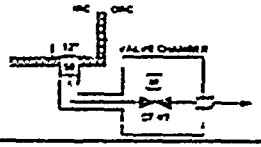
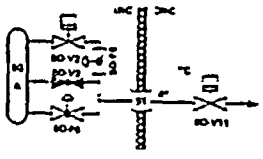
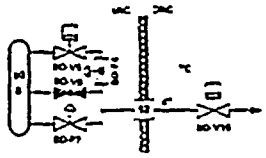
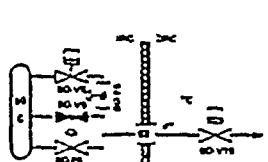
CONTAINMENT ISOLATION SYSTEM DATA

PENETRATION DATA							VALVE DATA																								
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS LEAKAGE PATH	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	VALVE POSITION				ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE	
																		SHUTDOWN	POST-ACCIDENT	POWER FAILURE	ILRT					
	300	54 56	A	NO	YES	SERVICE AIR	V15 V14	- -	1 2	CK GL	SA M	- M	-	-	-	-	C LC	C LC	C LC	-	C LC	NO NO	YES YES	YES YES	5	5
	813	54 56	W	NO	YES	RCDT PUMP DISCHARGE	D653 D654 D651 L600 D650	- - - A B	 3	DA DA DA GL DA	M M M AO AO	M M M A A	- - - RM RM	- - - 1 1	- - - - -	- - - 10 10	0 0 LC 0 0	0 0 LC 0 0	0 0 LC C C	- - - C C	0 0 C C C	NO NO NO NO NO	NO NO YES YES YES	NO NO YES YES YES		
43						SPARE																				
	061	54 56	W	NO	YES	REFUELING CAVITY CLEAN-UP	D164 D165	- -	1 1	DA DA	M M	M M	-	-	-	-	LC LC	LC LC	LC LC	-	LC LC	NO NO	YES YES	YES YES	5, 14	5
	061	54 56	W	NO	YES	REFUELING CAVITY CLEAN-UP	D25 D26	- -	2 1	DA DA	M M	M M	-	-	-	-	LC LC	LC LC	LC LC	-	LC LC	NO NO	YES YES	YES YES	5, 14	5
46						SPARE																				
	810	54 55 **	W	YES	NO	CONTAINMENT SUMP TO RHR PUMP	V571	A	20	GA	MO	A	RM	-	3,4	17.1	C	C	0	AI	C	YES	NO	NO	2	
	810	54 55 **	W	YES	NO	CONTAINMENT SUMP TO RHR PUMP	V570	B	20	GA	MO	A	RM	-	3,4	17.1	C	C	0	AI	C	YES	NO	NO	2	5

** Exception to GDC 54
See Section 6.2.4.2.4.3

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

PENETRATION DATA							VALVE DATA																							
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS PATH LEAKAGE	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	VALVE POSITION: ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE	
	052	54 56 57 **	W	YES	NO	CONTAINMENT SUMP TO CT PUMP	V6	A	20	GA	MO	A	RM	-	-	120	C	C	O	AI	C	YES	NO	NO	2	5
	050	54 56 57 **	W	YES	NO	CONTAINMENT SUMP TO CT PUMP	V7	B	20	GA	MO	A	RM	-	-	120	C	C	O	AI	C	YES	NO	NO	2	5
	051	54 57	W	YES	NO	STEAM GENERATOR 'A' BLOWDOWN	P6	B	51	GL	AO	A	RM	-	-	10	0	0	C	C	C	NO	NO	NO	1	5
							V2	B	63	GA	AO	A	RM	-	-	10	0	0	C	C	C	NO	NO	NO		
							V3	-	52	GL	M	M	-	-	-	-	C	C	C	-	C	NO	NO	NO		
							V11	A	6	GL	AO	A	RM	1	-	10	0	0	C	C	C	NO	YES	NO		
							F6	-	50	GL	AO	A	RM	-	-	10	0	0	C	C	C	NO	NO	NO		
	051	54 57	W	YES	NO	STEAM GENERATOR 'B' BLOWDOWN	P7	B	13	GL	AO	A	RM	-	-	10	0	0	C	C	C	NO	NO	NO	1	5
							V5	B	27	GA	AO	A	RM	-	-	10	0	0	C	C	C	NO	NO	NO		
							V6	-	44	GL	M	M	-	-	-	-	C	C	C	-	C	NO	NO	NO		
							V15	A	6	GL	AO	A	RM	1	-	10	0	0	C	C	C	NO	YES	NO		
							F4	-	20	GL	AO	A	RM	-	-	10	0	0	C	C	C	NO	NO	NO		
	051	54 57	W	YES	NO	STEAM GENERATOR 'C' BLOWDOWN	P8	B	51	GL	AO	A	RM	-	-	10	0	0	C	C	C	NO	NO	NO	1	5
							V8	B	63	GA	AO	A	RM	-	-	10	0	0	C	C	C	NO	NO	NO		
							V9	-	52	GL	M	M	-	-	-	-	C	C	C	-	C	NO	NO	NO		
							V19	A	6	GL	AO	A	RM	1	-	10	0	0	C	C	C	NO	YES	NO		
							F5	-	50	GL	AO	A	RM	-	-	10	0	0	C	C	C	NO	NO	NO		

** Exception to GDC 56
See Section 6.2.4.2.4.3

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

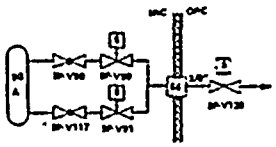
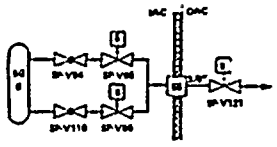
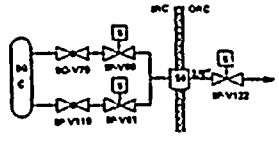
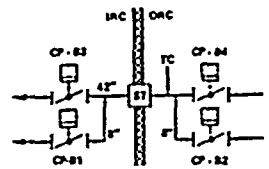
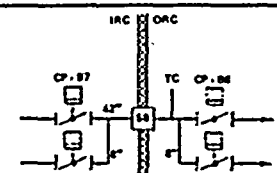
PENETRATION DATA							VALVE DATA																						
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS LEAKAGE PATH	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	VALVE POSITION: ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
	051	54 57	W	YES	NO	STEAM GENERATOR 'A' SAMPLE	V89	-	54	GL	M	M	-	-	-	-	0	0	0	-	0	NO	NO	NO	1	15
							V117	-	54	GL	M	M	-	-	-	-	0	0	0	-	0	NO	NO	NO		
							V90	B	53	GL	SO	A	RH	1,6,7	-	3	0	0	C	C	C	NO	NO	NO		
							V91	B	53	GL	SO	A	RH	1,6,7	-	3	0	0	C	C	C	NO	NO	NO		
							V120	A	1	GL	SO	A	RH	1,6,7	-	3	0	0	C	C	C	NO	YES	NO		
	051	54 57	W	YES	NO	STEAM GENERATOR 'B' SAMPLE	V84	-	34	GL	M	M	-	-	-	-	0	0	0	-	0	NO	NO	NO	1	15
							V118	-	34	GL	M	M	-	-	-	-	0	0	0	-	0	NO	NO	NO		
							V85	B	33	GL	SO	A	RH	1,6,7	-	3	0	0	C	C	C	NO	NO	NO		
							V86	B	33	GL	SO	A	RH	1,6,7	-	3	0	0	C	C	C	NO	NO	NO		
							V121	A	2	GL	SO	A	RH	1,6,7	-	3	0	0	C	C	C	NO	YES	NO		
	051	54 57	W	YES	NO	STEAM GENERATOR 'C' SAMPLE	V79	-	54	GL	M	M	-	-	-	-	0	0	0	-	0	NO	NO	NO	1	15
							V119	-	54	GL	M	M	-	-	-	-	0	0	0	-	0	NO	NO	NO		
							V80	B	53	GL	SO	A	RH	1,6,7	-	3	0	0	C	C	C	NO	NO	NO		
							V81	B	53	GL	SO	A	RH	1,6,7	-	3	0	0	C	C	C	NO	NO	NO		
							V122	A	1	GL	SO	A	RH	1,6,7	-	3	0	0	C	C	C	NO	YES	NO		
	517	54 56	A	NO	YES	CONTAINMENT ATMOSPHERE PURGE MAKE-UP	B1	A	2	BF	AO	A	RH	8	-	5	C	0	C	C	C	NO	YES	YES	11	15
							B3	A	2	BF	AO	A	RH	8	-	5	C	0	C	C	C	NO	YES	YES		
							B4	B	4	BF	AO	A	RH	8	-	5	C	0	C	C	C	NO	YES	YES		
							B2	B	6	BF	AO	A	RH	8	-	5	C	0	C	C	C	NO	YES	YES		
	517	54 56	A	NO	YES	CONTAINMENT ATMOSPHERE PURGE EXHAUST	B7	A	2	BF	AO	A	RH	8	-	5	C	0	C	C	C	NO	YES	YES	11	15
							B5	A	2	BF	AO	A	RH	8	-	5	C	0	C	C	C	NO	YES	YES		
							B8	B	6	BF	AO	A	RH	8	-	5	C	0	C	C	C	NO	YES	YES		
							B6	B	6	BF	AO	A	RH	8	-	5	C	0	C	C	C	NO	YES	YES		

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

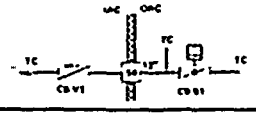
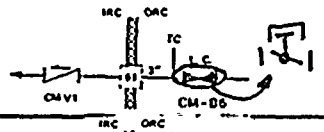
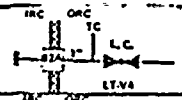
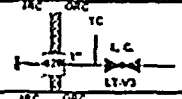
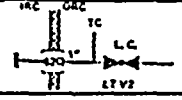
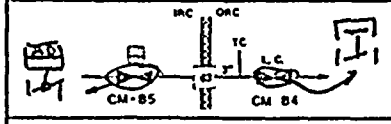
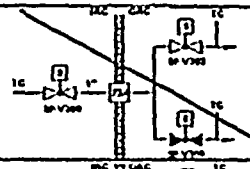
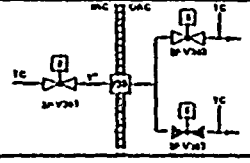
PENETRATION DATA							VALVE DATA																							
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS LEAKAGE PATH	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	I.L.R.T	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
	517	56	A	NO	YES	CONTAINMENT VACUUM RELIEF	V1 B1	- A	2 3	CK BF	SA AO	- A	- RM	- 8,10	- 9	- 5	C C	C C	C C	- -	C C	NO NO	YES YES	YES YES		
60						SPARE																				
	517	56	A	NO	YES	H_2 PURGE MAKE-UP	V1 B6	- -	1 4	CK XBF	SA M	- M	- -	- -	- -	- -	C LC	C LC	C LC	- -	C LC	NO NO	YES YES	YES YES	5	5
	416	56	A	NO	YES	ILRT	V4	-	1	G	M	M	-	-	-	-	LC	LC	LC	-	0	NO	YES	YES	5	5
	416	56	A	NO	YES	ILRT	V3	-	1	G	M	M	-	-	-	-	LC	LC	LC	-	0	NO	YES	YES	5	5
	416	56	A	NO	YES	ILRT	V2	-	1	G	M	M	-	-	-	-	LC	LC	LC	-	0	NO	YES	YES	5	5
	517	56	A	NO	YES	H_2 PURGE EXHAUST	B5 B4	A -	1 5	XBF XBF	AO M	RM M	M -	- -	- -	- -	C LC	C LC	C LC	C -	C LC	NO NO	YES YES	YES YES	5	5
64						SPARE																				
65						FUEL TRANSFER TUBE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TYPE B TEST	
66						SPARE																				
67						SPARE																				

TABLE -1

CONTAINMENT ISOLATION SYSTEM

PENETRATION DATA							VALVE DATA																								
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS PATH LEAKAGE	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	VALVE POSITION: ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
68						SPARE																									
69						CONTAINMENT PRESSURE SENSING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TYPE A TEST	
70						CONTAINMENT PRESSURE SENSING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TYPE A TEST	
71						CONTAINMENT PRESSURE SENSING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TYPE A TEST	
72						CONTAINMENT PRESSURE SENSING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TYPE A TEST	
	105	54 56	A	NO	NO	CONTAINMENT ATMOSPHERE RADIATION MONITOR	V300 V302 V306	A B B	10 10 10	GL GL GL	SO SO SO	A A A	RH RH RH	I I I	- - -	3 3 3	0 0 C	0 0 C	C C C	C C C	C C C	NO NO NO	YES YES YES	YES YES YES	
	105	54 56	A	NO	NO	CONTAINMENT ATMOSPHERE RADIATION MONITOR	V301 V303 V307	A B B	10 10 10	GL GL GL	SO SO SO	A A A	RH RH RH	I I I	- - -	3 3 3	0 0 C	0 0 C	C C C	C C C	C C C	NO NO NO	YES YES YES	YES YES YES	

See pg. 6.2.4-31b

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

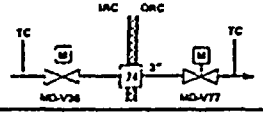
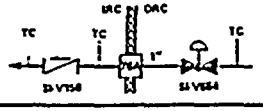
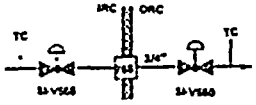
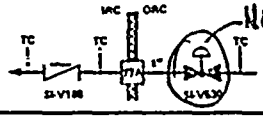
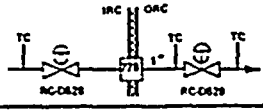
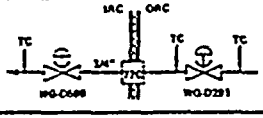
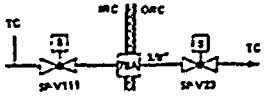
PENETRATION DATA							VALVE DATA																					
																			VALVE POSITION									
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS LEAKAGE PATH	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	SHUTDOWN	POST-ACCIDENT	POWER FAILURE	ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
	185	54 56	W	NO	YES	CONTAINMENT SUMP PUMP DISCHARGE	V36 V77	A B	1 4	GA GA	MO MO	A A	RM RM	1 1	- -	10 10	0 0	0 0	C C	AI AI	C C	NO NO	YES YES	YES YES		
75						SPARE																						
	809	54 56	W	YES	YES	ACCUMULATOR FILL FROM RWST	V150 V554	- B	2 1	CK GL	SA AO	- A	- RM	- 1	- -	- 10	C C	C C	C C	- C	C C	NO NO	YES YES	YES YES	8	5
	809	54 56	W	YES	YES	ACCUMULATOR TO RWST	V555 V550	A B	2 1	GL GL	AO AO	A A	RM RM	1 1	- -	10 10	C C	C C	C C	C C	C C	NO NO	YES YES	YES YES	9	5
	809	54 56	G	YES	YES	NITROGEN TO ACCUMULATORS	V188 V530	- B	3 1	CK GL	SA AO	- A	- RM	- 1	- -	- 10	LO LO	C C	C C	- C	C C	NO NO	YES YES	YES YES	10	5
	801	54 56	G	NO	YES	PRESSURIZER RELIEF TANK CONNECTION	D528 D529	A B	4 2	DA DA	AO AO	A A	RM RM	1 1	- -	10 10	0 0	C C	C C	C C	C C	NO NO	YES YES	YES YES		
	813	54 56	G	NO	YES	RCDT H_2 SUPPLY	D590 D291	A B	3 2	DA DA	AO AO	A A	RM RM	1 1	- -	10 10	0 0	C C	C C	C C	C C	NO NO	YES YES	YES YES		
	052	54 55	W	YES	YES	REACTOR COOLANT SAMPLE	V111 V23	B A	2 3	GL GL	SO SO	A A	RM RM	1 1	- -	10 10	C C	C C	C C	C C	C C	NO NO	YES YES	YES YES		

TABLE 6.2-1

CONTAINMENT ISOLATION SYSTEM DATA

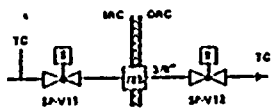
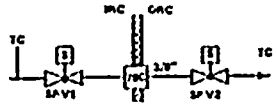
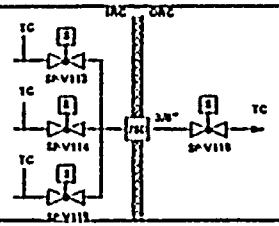
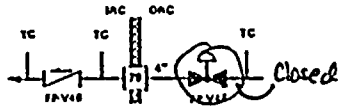
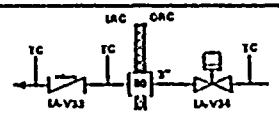
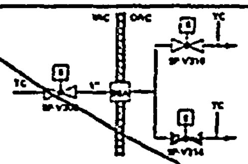
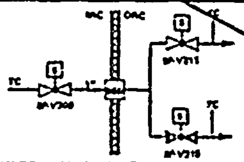
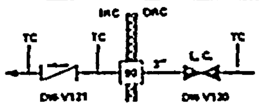
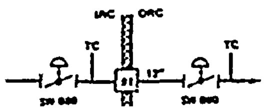
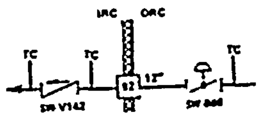
PENETRATION DATA							VALVE DATA																					
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS LEAKAGE PATH	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	VALVE POSITION: ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
	052	54 55	W	YES	YES	PRESSURIZER LIQUID SAMPLE	V11 V12	B A	4 6	GL GL	SO SO	A A	RH RH	1 1	-	3 3	0 0	C C	C C	C C	C C	NO NO	YES YES	YES YES	
	052	54 55	S	YES	YES	PRESSURIZER STEAM SAMPLE	V1 V2	B A	2 10	GL GL	SO SO	A A	RH RH	1 1	-	3 3	0 0	C C	C C	C C	C C	NO NO	YES YES	YES YES	
	052	54 55	W	YES	YES	ACCUMULATOR SAMPLE	V113 V114 V115 V116	B B B A	106 26 140 14	GL GL GL GL	SO SO SO SO	A A A A	RH RH RH RH	1 1 1 1	- - - -	3 3 3 3	0 0 0 0	C C C C	C C C C	C C C C	C C C C	NO NO NO NO	YES YES YES YES	YES YES YES YES	
	388	54 56	W	NO	YES	FIRE WATER STANDPIPE SUPPLY	V48 V44	- A	3 2	CK GL	SA AO	- A	- RH	- 1	- -	- 10	0C 9C	0 0	C C	- C	C C	NO NO	YES YES	YES YES	
	301	54 56	A	NO	YES	INSTRUMENT AIR SUPPLY	V33 V34	- A	3 5	CK GA	SA AO	- A	- RH	- 1	- -	- 10	0 0	0 0	C C	C C	C C	NO NO	YES YES	YES YES	
81						SPARE																			
82						SPARE																			
83						SPARE																			
84						SPARE																			

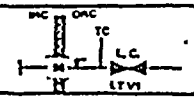
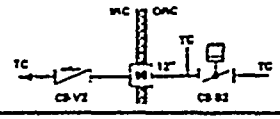
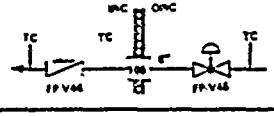
TABLE 6.2.4-1
CONTAINMENT ISOLATION SYSTEM DATA

PENETRATION DATA						VALVE DATA																			
																VALVE POSITION									
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS LEAKAGE PATH	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	SHUTDOWN	POST-ACCIDENT	POWER FAILURE	ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
85						SPARE																			
	105	54 5	A	NO	NO	CONTAINMENT ATMOSPHERE RADIATION MONITOR	V308 V310 V314	B A A	10 10 10	GL GL GL	SO SO SO	A A A	RM RM RM	1 1 1	- - -	3 3 3	O O C	O O C	C C C	C C C	C C C	NO NO NO	YES YES YES	YES YES YES	
	105	54 5	A	NO	NO	CONTAINMENT ATMOSPHERE RADIATION MONITOR	V309 V311 V315	B A A	10 10 10	GL GL GL	SO SO SO	A A A	RM RM RM	1 1 1	- - -	3 3 3	O O C	O O C	C C C	C C C	C C C	NO NO NO	YES YES YES	YES YES YES	
87						SPARE																			
88						SPARE																			
89						SPARE																			
	299	~~54~~ 56	W	NO	YES	DEMIN WATER SUPPLY	V121 V120	- -	1 2	CK GA	SA H	- H	- -	- -	- -	- -	C LC	C LC	C LC	- -	C LC	NO NO	YES YES	YES YES	5 15
	047	~~54~~ 56	W	NO	YES	SERVICE WATER FROM NNS FAN COILS	B89 B90	A B	2 1	BF BF	AO AO	A A	RM RM	1 1	- -	10 10	O O	C C	C C	C C	C C	NO NO	YES YES	YES YES	11
	047	~~54~~ 56	W	NO	YES	SERVICE WATER TO NNS FAN COILS	V142 B88	- AB	2 1	CK BF	SA AO	- A	- RM	- 1	- -	- 10	O O	C C	C C	C C	C C	NO NO	YES YES	YES YES	

See pg. 6.2.4-31b

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

PENETRATION DATA							VALVE DATA																						
																				VALVE POSITION									
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS PATH LEAKAGE	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	SHUTDOWN	POST-ACCIDENT	POWER FAILURE	ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
93						SPARE																				
9-						SPARE																				
93						SPARE																				
	216	56	A	NO	YES	ILRT	V1	-	1	G	M	M	-	-	-	-	LC	LC	LC	LC	-	0	NO	YES	YES	5
97						SPARE																				
	517	56	A	NO	YES	CONTAINMENT VACUUM RELIEF	V2 B2	- B	2 3	CK BF	SA AO	- A	- RH	- 8,10	- 9	- 5	C C	C C	C C	C C	- C	C C	NO NO	YES YES	YES YES	
99						SPARE																				
13.						SPARE																				
131						SPARE																				
1.3						SPARE																				
133						SPARE																				
13-						SPARE																				
	398	56	W	NO	YES	FIRE WATER SPRINKLER SUPPLY	V46 V45	- A	1 2	CK GL	SA AO	- A	- RH	- 1	- -	- 10	C0 0	C0 0	C C	- C	C C	NO NO	YES YES	YES YES	

6.2.4-30

Amendment No. 5

SHNPP FSAR

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

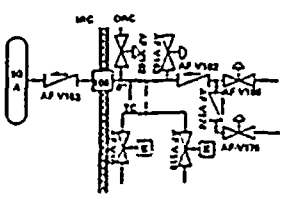
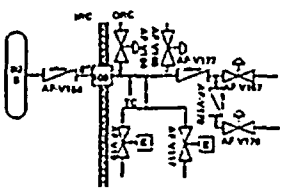
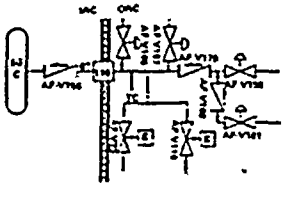
PENETRATION DATA							VALVE DATA																						
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS LEAKAGE PATH	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	VALVE POSITION: ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
106						SPARE																				
107						SPARE																				
CLOSED 	044	54 57	W	YES	NO	AUXILIARY FEEDWATER & TEMPERING	V162	A&B	5	GA	AO	A	RM	-		10	C	0	C	C	C	NO	YES	NO	1
							V163	A&B	5	GA	AO	A	RM	-		10	C	0	C	C	C	NO	YES	NO	
							V153	-	155	CK	SA	-	-	-	-	-	C	0	C	-	C	YES	NO	NO	
							V182	-	4	CK	SA	-	-	-	-	-	C	0	C	-	C	NO	NO	NO	
							V156	A&B	9	GA	AO	RM	M	14	-	10	C	C	C	C	C	NO	YES	NO	
							V174	-	9	CK	SA	-	-	-	-	-	C	0	C	C	C	NO	NO	NO	
							V175	A&B	10	GA	AO	A	RM	14	-	10	C	0	C	C	C	NO	YES	NO	
							V10	B	20	GA	MO	RM	M	15,16	-	10	O	0	O	AI	O	YES	NO	NO	
							V116	A	22	GA	MO	RM	M	15,16	-	10	O	0	O	AI	O	YES	NO	NO	
CLOSED 	044	54 57	W	YES	NO	AUXILIARY FEEDWATER & TEMPERING	V164	A&B	5	GA	AO	A	RM	-		10	C	0	C	C	C	NO	YES	NO	1
							V165	A&B	5	GA	AO	A	RM	-		10	C	0	C	C	C	NO	YES	NO	
							V154	-	70	CK	SA	-	-	-	-	-	C	0	C	-	C	YES	NO	NO	
							V177	-	4	CK	SA	-	-	-	-	-	C	0	C	-	C	NO	NO	NO	
							V178	-	9	CK	SA	-	-	-	-	-	C	0	C	-	C	NO	NO	NO	
							V157	A&B	9	GA	AO	RM	M	14	-	10	C	C	C	C	C	NO	YES	NO	
							V176	A&B	10	GA	AO	A	RM	14	-	10	C	0	C	C	C	NO	YES	NO	
							V19	B	20	GA	MO	RM	M	15,16	-	10	O	0	O	AI	O	YES	NO	NO	
							V117	A	22	GA	MO	RM	M	15,16	-	10	O	0	O	AI	O	YES	NO	NO	
CLOSED 	044	54 57	W	YES	NO	AUXILIARY FEEDWATER & TEMPERING	V166	A&B	5	GA	AO	A	RM	-		5	C	0	C	C	C	NO	YES	NO	1
							V167	A&B	5	GA	AO	A	RM	-		5	C	0	C	C	C	NO	YES	NO	
							V155	-	155	CK	SA	-	-	-	-	-	C	0	C	-	C	YES	NO	NO	
							V179	-	4	CK	SA	-	-	-	-	-	C	0	C	-	C	NO	NO	NO	
							V158	A&B	9	GA	AO	RM	M	14	-	10	C	C	C	C	C	NO	YES	NO	
							V180	-	9	CK	SA	-	-	-	-	-	C	0	C	C	C	NO	NO	NO	
							V181	A&B	10	GA	AO	A	RM	14	-	10	C	0	C	C	C	NO	YES	NO	
							V23	B	20	GA	MO	RM	M	15,16	-	10	O	0	O	AI	O	YES	NO	NO	
							V118	A	22	GA	MO	RM	M	15,16	-	10	O	0	O	AI	O	YES	NO	NO	

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

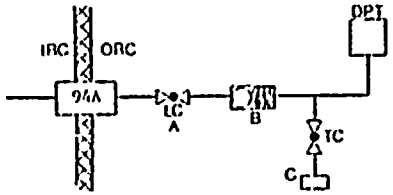
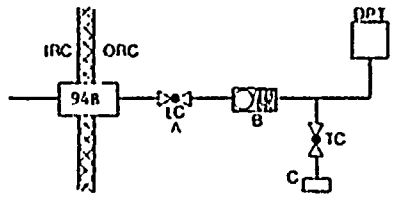
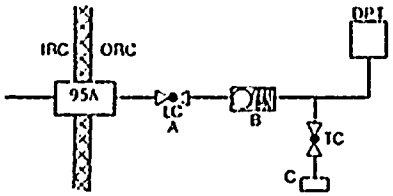
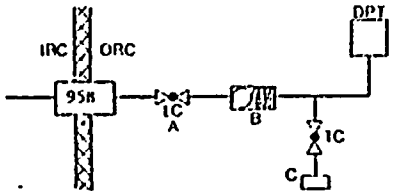
PENETRATION DATA							VALVE DATA																							
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS PATH LEAKAGE	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	VALVE POSITION: ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
	B-30 11.15	56	A	NO	NO	CONTAINMENT VACUUM RELIEF-SENSING B	A B C	— — —	—	GL XG GL	M SA M	M SA M	— — —	— — —	— — —	— — —	— — —	LO SA C	LO SA C	LO SA C	LO SA C	LO SA C	YES YES YES	YES YES NO	TYPE A TEST		
	B-30 11.18	56	A	NO	NO	CONTAINMENT VACUUM RELIEF-SENSING B	A B C	— — —	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		TYPE A TEST		
	B-30 11.17	56	A	NO	NO	CONTAINMENT VACUUM RELIEF-SENSING A	A B C	— — —	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	TYPE A TEST		
	B-30 11.17	56	A	NO	NO	CONTAINMENT VACUUM RELIEF-SENSING A	A B C	— —	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	TYPE A TEST		

TABLE 6.2.4-1

CONTAINMENT ISOLATION SYSTEM DATA

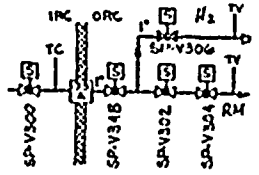
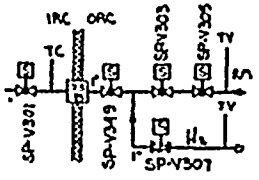
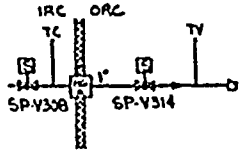
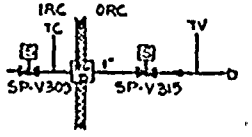
PENETRATION DATA							VALVE DATA																					
PENETRATION DETAIL	P&ID NUMBER	GENERAL DESIGN CRITERION	FLUID	HIGH ENERGY LINE	BYPASS PATH LEAKAGE	SYSTEM TITLE	VALVE NUMBER	POWER TRAIN	LENGTH of PIPE	VALVE TYPE	ACTUATOR	PRIMARY ACTUATION MODE	SECONDARY ACTUATION MODE	ISOLATION SIGNAL	ACCIDENT SIGNAL	RESPONSE TIME	NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST-ACCIDENT	VALVE POSITION: POWER FAILURE	ILRT	ENGINEERED SAFETY FEATURE	CONTAINMENT ISOLATION VALVE	TYPE C TEST	NOTE
	105	55 56	A	NO		RADIATION MONITOR AND HYDROGEN ANALYZER	V300	A	10	GL	SO	A	RM	1	-	3	0	0	0	C	C	NO	YES	YES	
							V302	B	10	GL	SO	A	RM	1	-	3	0	0	C	C	C	NO	YES	YES	
							V304	A	10	GL	SO	A	RM	1	-	3	0	0	C	C	C	NO	YES	YES	
							V306	A	10	GL	SO	A	RM	1	-	3	C	C	0	C	C	NO	YES	YES	
							V348	A	10	GL	SO	A	RM	1	-	3	0	0	0	C	C	NO	YES	YES	
	105	55 56	A	NO		RADIATION MONITOR AND HYDROGEN ANALYZER	V301	A	10	GL	SO	A	RM	1	-	3	0	0	0	C	C	NO	YES	YES	
							V303	B	10	GL	SO	A	RM	1	-	3	0	0	C	C	C	NO	YES	YES	
							V305	A	10	GL	SO	A	RM	1	-	3	0	0	C	C	C	NO	YES	YES	
							V307	A	10	GL	SO	A	RM	1	-	3	C	C	0	C	C	NO	YES	YES	
							V349	A	10	GL	SO	A	RM	1	-	3	0	0	0	C	C	NO	YES	YES	
	105	55 56	A	NO		HYDROGEN ANALYZER	V308	B	10	GL	SO	A	RM	1	-	3	C	C	0	C	C	NO	YES	YES	
							V314	B	10	GL	SO	A	RM	1	-	3	C	C	0	C	C	NO	YES	YES	
	105	55 56	A	NO		HYDROGEN ANALYZER	V309	B	10	GL	SO	A	RM	1	-	3	C	C	0	C	C	NO	YES	YES	
							V315	B	10	GL	SO	A	RM	1	-	3	C	C	0	C	C	NO	YES	YES	

TABLE 6.2.4-2

CONTAINMENT ISOLATION VALVE POSITION
FOLLOWING AN ACCIDENT

Penetration No.	Penetration Name	Essential or Non Essential[1][2]	Valve Position	
M1	MS-SG A	NE	CLOSED	
M2	MS-SG B	NE	CLOSED	
M3	MS-SG C	NE	CLOSED	
M4	FEEDWATER SG A	NE	CLOSED	
M5	FEEDWATER SG B	NE	CLOSED	
M6	FEEDWATER SG C	NE	CLOSED	
M7	NORMAL LETDOWN	NE	CLOSED	
M8	CHARGING	NE	CLOSED	
M9	SEAL INJECTION RC PUMP A	E	OPENED	
M10	SEAL INJECTION RC PUMP B	E	OPENED	
M11	SEAL INJECTION RC PUMP C	E	OPENED	
M12	RC PUMP SEAL INJECTION & LETDOWN EXCH OUTLET	NE	CLOSED	
M13	LOW HEAD SI TO COLD LEG	E	OPENED	
M14	LOW HEAD SI TO COLD LEG	E	OPENED	
M15	RHR LOOP 1 (NORMAL OPERATION MODE)	NE	CLOSED	
M16	RHR LOOP 2 (NORMAL OPERATION MODE)	NE	CLOSED	
M17	BORON INJECTION	E	OPENED	
M18	LOW HEAD SI TO HOT LEG	NE	CLOSED	OPENED BY OPERATOR
M19	SPARE		N/A	ACTION FOR LONG
M20	HIGH HEAD SI TO HOT LEG	NE	CLOSED	TERM COOLING
M21	HIGH HEAD SI TO HOT LEG	NE	CLOSED	
M22	HIGH HEAD SI TO COLD LEG	E	OPENED	
M23	CONTAINMENT SPRAY	E	OPENED**	
M24	CONTAINMENT SPRAY	E	OPENED**	

TABLE 6.2.4-2 (Cont'd)

CONTAINMENT ISOLATION VALVE POSITION
FOLLOWING AN ACCIDENT

Penetration No.	Penetration Name	Essential or Non Essential	Valve Position	
M25	CONTAINMENT FAN COOLER AH3-SW IN	E	OPENED	
M26	CONTAINMENT FAN COOLER AH2-SW IN	E	OPENED	
M27	CONTAINMENT FAN COOLER AH1-SW IN	E	OPENED	
M28	CONTAINMENT FAN COOLER AH4-SW IN	E	OPENED	
M29	CONTAINMENT FAN COOLER AH3-SW OUT	E	OPENED	
M30	CONTAINMENT FAN COOLER AH1-SW OUT	E	OPENED	
* M32 → M31	CONTAINMENT FAN COOLER AH1-SW OUT	E	OPENED	
M33	SPARE		N/A	
M34	SPARE		N/A	
M35	COMPONENT COOLING WATER - RC PUMP	E	OPENED (CLOSED ON "P" SIGNAL)***	
M36	COMPONENT COOLING WATER - RC PUMP	E	OPENED (CLOSED ON "P" SIGNAL)***	
M37	COMP COOLING WATER EXC LETDN & RCDT	NE	CLOSED	
M38	COMP COOLING WATER - EXC LETDN & RCDT	NE	CLOSED	
M39	COMP COOLING WATER - RC PUMP THERM BARR	E	OPENED (CLOSED ON "P" SIGNAL)***	
M40	MAKEUP WATER TO PRESSURIZER	NE	CLOSED	
M41	SERVICE AIR SUPPLY	NE	CLOSED	
M42	RCDT PUMP DISCHARGE	NE	CLOSED	
M43	SPARE		N/A	
M44	S F PURIFICATION PUMP TO REFUELING CAVITY	NE	CLOSED	
M45	REFUELING CAVITY WATER CLEANUP- OUT	NE	CLOSED	
M46	SPARE		N/A	
M47	SUMP RECIRC (RHR A)	E	OPENED	INITIALLY CLOSED
M48	SUMP RECIRC (RHR B)	E	OPENED	OPEN ON LOW WATER
M49	SUMP RECIRC (CONT SPRAY A)	E	OPENED	LEVEL IN RWST
M50	SUMP RECIRC (CONT SPRAY B)	E	OPENED	
M51	SG A BLOWDOWN	NE	CLOSED	
M52	SG B BLOWDOWN	NE	CLOSED	
M53	SG C BLOWDOWN	NE	CLOSED	
M54	SG A BLOWDOWN SAMPLE	NE	CLOSED	
M55	SG B BLOWDOWN SAMPLE	NE	CLOSED	
* M32	CONTAINMENT FAN COOLER AH4- SW OUT	E	OPPENED	

TABLE 6.2.4-2 (Cont'd)

CONTAINMENT ISOLATION VALVE POSITION
FOLLOWING AN ACCIDENT

Penetration No.	Penetration Name	Essential or Non Essential	Valve Position
M56	SG C BLOWDOWN SAMPLE	NE	CLOSED
M57	CONTAINMENT PURGE MAKEUP	NE	CLOSED
M58	CONTAINMENT PURGE EXHAUST	NE	CLOSED
M59	VACUUM RELIEF A	NE	CLOSED
M60	SPARE	~~NE~~	~~CLOSED~~ N/A
M61	H_2 PURGE MAKE-UP	NE	CLOSED
M62	CONTMT LEAK RATE TEST PRESS INDIC.	NE	CLOSED
M63	H_2 PURGE EXHAUST	NE	CLOSED
M64	SPARE		N/A
M65	FUEL TRANSFER TUBE	NE	CLOSED
M66-M68	SPARE		
M69	CONTAINMENT PRESSURE SENSING A	E	N/A
M70	CONTAINMENT PRESSURE SENSING B	E	N/A
M71	CONTAINMENT PRESSURE SENSING C	E	N/A
M72	CONTAINMENT PRESSURE SENSING D	E	N/A
M73A	CONTAINMENT ATM$_{H_2}$ RADIATION MONITOR	~~NE~~ E	CLOSED*
M73B	CONTAINMENT ATM$_{H_2}$ RADIATION MONITOR	~~NE~~ E	CLOSED*
M74	CONTAINMENT SUMP PUMP DISCHARGE	NE	CLOSED
M75	SPARE		N/A
M76A	ACCUMULATOR FILL	NE	CLOSED
M76B	ACCUMULATOR TO RWST	NE	CLOSED
M77A	N_2 TO ACCUMULATOR	NE	CLOSED
M77B	PRT N^2 & CDT CONNECTION	NE	CLOSED
M77C	RCDT H_2 SUPPLY & GAS SAMPLE	NE	CLOSED
M78A	RC LOOP 2 & 3 SAMPLE	NE	CLOSED
M78B	PRESS. LIQUID SAMPLE	NE	CLOSED
M78C	PRESS. STEAM SAMPLE	NE	CLOSED
M78D	ACCUMULATOR SAMPLE	NE	CLOSED
M79	FIRE PROTECTION-STANDPIPE SUPPLY	NE	CLOSED

TABLE 6.2.4-2 (Continued)

CONTAINMENT ISOLATION VALVE POSITION
FOLLOWING AN ACCIDENT

Penetration No.	Penetration Name	Essential or Non Essential	Valve Position
M80	INSTR AIR SUPPLY	NE	CLOSED
M81-M85	SPARES		N/A
M86A	CONTAINMENT ~~ATM RADIATION MONITOR~~ HYDROGEN ANALYZER	E	CLOSED*
M86B	CONTAINMENT ~~ATM RADIATION MONITOR~~	E	CLOSED*
M87-M89	SPARES		N/A
M90	DEMIN. WATER TO FUEL TRANSFER SYSTEM CONTR PANEL & REFUELING CAVITY DECON		CLOSED
M91	CONTAINMENT FAN COIL UNITS SW - OUT	NE	CLOSED
M92	CONTAINMENT FAN COIL UNITS SW - IN	NE	CLOSED
M93	SPARE		
M94A,B	CONTAINMENT VACUUM RELIEF SENSING LINES	E	OPEN
M95A,B	CONTAINMENT VACUUM RELIEF SENSING LINES	E	OPEN
M94C	CONTAINMENT WIDE RANGE PRESSURE MONITORING	E	OPEN
M95C	CONTAINMENT WIDE RANGE PRESSURE MONITORING	E	OPEN
M96	CONTAINMENT LEAK RATE TEST SUPPLY & EXHAUST	NE	CLOSED
M97	SPARE		N/A
M98	VACUUM RELIEF B	NE	CLOSED
M99-M104	SPARES		N/A
M105	FIRE PROTECTION SPRINKLER SYS HDR	NE	CLOSED
M106-M107	SPARE		N/A
M108	AUX FEEDWATER TO SG A	E	OPENED +
M109	AUX FEEDWATER TO SG B	E	OPENED +
M110	AUX FEEDWATER TO SG C	E	OPENED +

* ISOLATION VALVE CLOSED ON PHASE A CONTAINMENT ISOLATION SIGNAL. REOPEN MANUALLY FOR POST ACCIDENT H_2 SAMPLING.

** NORMALLY CLOSED. OPEN ON CONTAINMENT SPRAY ACTUATION SIGNAL.

*** A "P" SIGNAL IS DEFINED AS A CONTAINMENT PHASE B SIGNAL.

\+ WILL BE CLOSED TO ISOLATE FAULTED STEAM GENERATOR (Ie., LOSS OF SG PRESSURE BOUNDARY)

1) ESSENTIAL: LINES REQUIRED TO MITIGATE AN ACCIDENT, OR WHICH, IF UNAVAILABLE COULD INCREASE THE MAGNITUDE OF THE EVENT.

2) NON-ESSENTIAL: LINES WHICH ARE NOT REQUIRED TO MITIGATE AN ACCIDENT, AND WHICH IF REQUIRED AT ALL WOULD BE REQUIRED FOR LONG TERM RECOVERY ONLY; Ie., DAYS OR WEEKS FOLLOWING AN ACCIDENT.

Shearon Harris Nuclear Power Plant
Draft SER Open Item No. 94,
ICSB Question 420.5
Revised Response

Loss of Non-Class 1E Instrumentation and Control Power System Bus During Power Operation (IE Bulletin 79-27)

If reactor controls and vital instruments derive power from common electrical distribution systems, the failure of such electrical distribution systems may result in an event requiring operator action concurrent with failure of important instrumentation upon which these operator actions should be based. This concern was addressed in IE Bulletin No. 79-27. On November 30, 1979, IE Bulletin No. 79-27 was sent to Operating License (OL) holders, the near OL applicants (North Anna 2, Diablo Canyon, McGuire, Salem 2, Sequoyah, and Zimmer), and other holders of Construction Permits (CP). Of these recipients, the CP holders were not given explicit direction for making a submittal as part of the licensing review. However, they were informed that the issue would be addressed later.

You are requested to address these issues by taking IE Bulletin 79-27 Actions 1 through 3 under "Actions to be taken by Licensees." Complete the review and evaluation required by Actions 1 through 3 and provide a written response describing your review and actions. This report should be in the form of an amendment to your FSAR and submitted to the NRC office of Nuclear Reactor Regulation as a licensing submittal.

Response

For the response to IE Bulletin 79-27 refer to the response provided for ICSB Question 420.5.

Question No.

420.5 Loss of Non-Class 1E Instrumentation and Control Power System Bus During Power Operation (IE Bulletin 79-27).

NRC Request

1. Review the Class 1E and Non-Class 1E buses supplying power to the safety and non-safety related instrumentation and control systems which could affect the ability to achieve a cold shutdown condition using existing procedures or procedures developed under Item 2 below.

For each bus:

A. Identify and review the alarm and/or indication provided in the control room to alert the operator to the loss of power to the bus.

B. Identify the instrument and control system loads connected to the bus and evaluate the effects of loss of power to these loads including the ability to achieve a cold shutdown condition.

C. Describe any proposed design modifications resulting from these reviews and evaluations and your proposed schedule for implementing those modifications.

Response

1(A) The loss of power to Class 1E and Non-Class IE 120 V buses is alarmed in the Main Control Room. The alarms for each bus/panel are grouped into a single annunciator window to provide a system level alarm. The purpose of this alarm is to alert the control room operator to an electrical system problem. Also the Process Instrumentation Control Panels used to power equipment used for control interlock and indication are grouped in a single annunciator window.

The alarm message printouts are:

a) 120 V (NNS) UPS Trouble
b) 125 V DC (NNS) Trouble
c) 125 V DC EMER BUS A/B Trouble
d) CHANNEL I UPS Trouble
e) CHANNEL II UPS Trouble
f) CHANNEL III UPS Trouble
g) CHANNEL IV UPS Trouble
h) PIC 5-6-7-8-11-12-15-16 Power Failure
i) PIC 1,2,3,4,9,10,13,14 Power Failure

B. Loads connected to these buses which are necessary for the plant to achieve cold shutdown are, the auxiliary relay cabinets, process instrumentation cabinets, isolation cabinets, ESS cabinets and the solid state protection cabinets. During normal shutdown, several non-safety-related systems or portions of the safety systems with non-safety controls are utilized and therefore lacks redundancy. Examples are the Feedwater System, the Condenser Steam Dump System, the CVCS Letdown System and normal charging path of the CVCS system. A detailed analysis of these systems and the ability to take the plant shutdown in event of failure of the instrumentation and control loads are summarized in Attachment A. Non-safety inverter failure will prevent the operator from utilizing several of these systems. However an alternate means of achieving cold shutdown is available by utilizing the part redundant system and non-safety systems which are powered from diverse power panels as described in Appendix "R" analysis Table 9.5B.

C. No modifications are proposed as result of this review.

NRC Request

2. Prepare emergency procedures or review existing ones that will be used by control operators, including procedures required to achieve a cold shutdown condition upon loss of power to each Class IE and Non-Class IE bus supplying power to safety and non-safety related instrument and control systems. The emergency procedures should include:

A. The diagnostics/alarms/indicators/symptom resulting from the review and evaluation conducted per item 1 above.

B. The use of alternate indication and/or control circuits which may be powered from other Non-Class IE or Class IE instrumentation and control buses.

C. Methods for restoring power to the bus. Describe any proposed design modification or administrative controls to be implemented resulting from these procedures, and your proposed schedule for implementing the changes.

Response

Carolina Power & Light Company will prepare abnormal and emergency operating procedures that will be used by control room operators, including procedures required to achieve a cold shutdown condition, upon loss of instrument bus power to safety and non-safety related instrument and control systems. The procedures will include the diagnostics/alarms/indicators/ symptoms resulting from the review and evaluation conducted per IE Bulletin No. 79-27 action item No. 1. These procedures will also describe methods for restoring power to the bus. Procedures will be available prior to six months prior to fuel load.

To ensure subcomponents are operable following repair, administrative controls have been included in various plant programs. Maintenance administrative controls are specified in the plant's Corrective Maintenance Procedure. Operability of repaired safety system subcomponents is ensured by the Operational Work Permit (OWP).

When a safety system or one of its components is removed from service, an approved OWP is written to guarantee that the appropriate component and system retesting is completed prior to declaring the system operable. In addition, the OWP details any other systems that must be tested prior to taking the desired system out of service. After testing, the system lineup will be returned to normal service with an approved OWP, and it will be independently verified.

During normal operation the four 7.5 KVA inverters for the safety related instrumentation are powered from an AC source with the 125 V dc source assuming the load upon loss of ac voltage. Blocking diodes are provided to each input circuit to prevent voltage feedback. Low ac and dc input voltage, low ac output voltage and overcurrent are all alarmed as UPS trouble in the control room. There is no automatic transfer to bypass source. With regard to safety system operability after maintenance, refer to Action Item 2.

Based on the review of IE Circular No. 79-02 and evaluation discussed above, no design modifications are required.

(8232NLUccc)

NRC Request

3. Re-review IE Circular No. 79-02, Failure of 120 Volt Vital ac Power Supplies, dated January 11, 1979 to include both Class 1E and Non-Class 1E safety related power supply inverters. Based on a review of operating experience and your re-review of IE Circular 79-02, describe any proposed design modifications or administrative controls to be implemented as a result of the re-review.

Response

The non-safety Vital ac Power Supplies are fed from two Static Uninterruptible Power Supplies (SUPS). These are used to power non-safety instrumentation and controls circuits, fire detection and radiation monitoring systems. They are both rated 120 V, 60 Hz, single phase 60 KVA and 7.5 KVA.

The 60 KVA SUPS is powered from MCC 1D21 for the main feed and MCC 1E21 for the bypass feed. The dc is supplied from the 250 V dc bus DP-1-250. The 7.5 KVA SUPS is powered from MCC 1E21 for the main feed and dc provided from the 250 V bus DP-1-250 for backup. Bypass for the 60 KVA SUPS is provided through a stepdown regulating transformer.

Both SUPS are designed to provide power to their loads normally from the main feed through the rectifier/inverter. Failure of the main ac feed will cause the SUPS to be powered from the battery.

Circuitry is provided in the non-safety 60 KVA vital ac SUPS to shut down the inverter portion and transfer to an alternate ac source via a high speed static switch. Transfer is initiated on one of the following conditions: (1) inrush load exceeds 260 KVA for a duration of 1 sec at rated voltage, (2) output voltage drops 10 percent of instantaneous nominal voltage, (3) output frequency deviates more than $\pm$ 0.5 Hz from nominal value. Voltage sensing circuitry is provided which will respond when a preset voltage has been reached. The period of detection and completion of transfer does not exceed 8.3 milliseconds and the power interruption interval during transfer from the inverter ac supply to bypass source does not exceed 50 microseconds. Upon restoration of normal conditions retransfer is done manually. After a time delay, the unit will alarm whenever a transfer of the bypass source has taken place to prevent alarming on momentary transfers.

The safety related instruments for the Reactor Protection System and the Engineered Safety Features Actuation System are powered from four safety related SUPS (channels I, II, III and IV). They are rated 118 V ac, 60 Hz, single phase 7.5 KVA. Channels I and III are powered from MCC 1A21-SA and MCC 1A31-SA respectively for the main feeds and 125 V dc bus DP-1A-SA for backup. Channels II and IV are powered from MCC 1B21-SB and MCC 1B31-SB respectively for the main feeds and 125 V dc bus DP-1B-SB for backup. A manual switch is provided to power the 118 V ac bus in case the inverter is lost. These sources are from 120/208 V Power Panel 1A211-SA, 1A311-SA for channels I and III, respectively, and Power Panel 1B211-SB, 1B311-SB for channels II and IV, respectively.

During normal operation the four 7.5 KVA inverters for the safety related instrumentation is powered from an AC source with the 125 V dc source assuming the load upon loss of ac voltage. Blocking diodes are provided to each input circuit to prevent voltage feedback. Low ac and dc input voltage, low ac output voltage and overcurrent are all alarmed as UPS trouble in the control room. There is no automatic transfer to a bypass source.

Based on the review of IE Circular No. 79-02 and evaluation discussed above, no design modifications are required.

ATTACHMENT A BUS FAILURE ANALYSIS

UPP-1 VITAL

SYSTEM	COMPONENT	EFFECT OF FAILURE	ALTERNATE INDICATION/ EQUIPMENT AVAILABLE	DESIGN MODIFICATION TO BE EVALUATED
Protection System	Demultiplexer Power Supply	Loss of all indication on status panel pertaining to status trip logic	Back up information on ERFIS computer	None
	Turbine Pressure PS-4462	Loss of Power to PIC-C8	Back up Supply PP-1E212	None
Pressurizer System	PIC-C6 TE 450, 454, 453	Loss of Power to PIC-C6 and PREZR temp indication	Back up Supply PP-1E212	None
Chemical and Volume Control System	Charging Flow Control FCV 122	Valve fails open	Back up Supply PP-1E212	None
Main Steam	Condenser Steam dump valves PCV 408A, 408B, 408C	Valves fail closed	Atmos. Relief valves PCV 308A, 308B, 308C can be used	None
Residual Heat Removal System	RHR HX Out VLV HCV 603 A&B	Loss of Power to PIC-C5 & C6 No effect on System	Back up power panel PP-1E212	None
	RHR HX Out VLV FCV 605B	Loss of Power to PIC-C8 No effect on System	Back up power panel PP-1E212	None
	RHR Pump temp TE 604B	Loss of Power to PIC-C8 No effect on system	Back up power panel PP-1E212	None

Note: The instrument air compressors will trip upon loss of power, however they will be reconnected manually after 60 sec. on Diesel Generator power.

(8212NLU)

SYSTEM	COMPONENT	EFFECT OF FAILURE	ALTERNATE INDICATION/ EQUIPMENT AVAILABLE	DESIGN MODIFICATION TO BE EVALUATED
Protection System	Trip & Bypass status TSLB-1, BPLB	Loss of trip and bypass status indication on the MCB	Back up information on ERFIS computer and MCB annunciator	None
	MCB & AEP Annunicator system	Loss of Annunicator information	Switch to DC power DP-1A-1 and DP-1A-2	None
Chemical and Volume Control System	Demin. Valve HCV 387	Fails to boration position No effect on system	None, valve fails safe position	None

UPP-1B VITAL

SYSTEM	COMPONENT	EFFECT OF FAILURE	ALTERNATE INDICATION/ EQUIPMENT AVAILABLE	DESIGN MODIFICATION TO BE EVALUATED
Protection System	Differential amplifier NM 45A, 45B, and recorder TR 408	Loss of recorder information	Back up information on recorder NR41, 43 and ERFIS computer	None
Reactor Coolant System	Reactor makeup control circuit	Loss of pump control alarm of MCB.	Manual start of pump from MCB	None
Safety Injection	Accumulator vent valve HCV 936	Valve fails closed, no effect.	Not required for safe shutdown	None
Residual Heat Removal System	RHR HX out Vlv FCV 605A	Loss of Power to PIC-C7 No effect on system	Back up Supply PP-1D212	None
	RHR Pump Temp TE 604A	Loss of Power to PIC-C7	Back up Supply PP-1D212	

(8212NLU)

SYSTEM	COMPONENT	EFFECT OF FAILURE	ALTERNATE INDICATION/ EQUIPMENT AVAILABLE	DESIGN MODIFICATION TO BE EVALUATED
Chemical and Volume Control System	BA Flow valves FCV113A, 114A, 114B	Normal flow path closed.	Emergency flow path thru valve 1-8104 to charging pumps.	None
	Letdown valve to volume control tank LCV-115A	No flow to hold up tank. Flow to VCT.	MCB VCT level indication	None
	Letdown valve to volume control tank TCV-143	No flow to mix bed Demineralizers. Direct flow VCT Indication on MCB.	MCB VCT level indication	None
	Letdown valve to volume control tank TCV-381A	Valve fails closed, loss of BTRS control temp in Boron Mode.	Back up Supply PP-1E212	None
	RCP seal leakoff valves 1-8141A, 8141B, 8141C	Valves fail open, no effect on system. Indication on MCB.	Not required for safe shutdown.	None
Reactor Coolant System	Reactor Leakoff Isol. VLV 1-8032	Valve normally open, loss of indication only.	MCB temperature indication	None
Safety Injection	Annumulator fill line Isolation valve 8878A B. C.	Valves fail closed, no effect (normally closed).	Not required for safe shutdown.	None

SYSTEM	COMPONENT	EFFECT OF FAILURE	ALTERNATE INDICATION/ EQUIPMENT AVAILABLE	DESIGN MODIFICATION TO BE EVALUATED
Chemical and Volume Control System	Boric Acid VLV 2CS-V520SN	Valve fails open, loss of status indication only.	Boric acid flow FI110 on MCB and boric acid transfer pump status indication on MCB.	None
Rod Control System	DC Power to MG Set	Loss of power no effect of shutdown, loss of IND on local panel.	Back up power from DP-1A-2.	None

Shearon Harris Nuclear Power Plant
Power Systems Branch
Draft SER Open Item No. 112
Revised Response

The original response to Open Item 112 was provided by letter dated July 1, 1983. After reviewing the response, the reviewer requested some additional information. In particular, the reviewer requested that justification be provided for using a simplex strainer on the suction side of the fuel oil transfer pumps. The concern dealt with the amount of time available to change out the strainer if it should become clogged enough to prevent the proper amount of flow to be delivered to the day tank (> 90 % clogged). Will there always be a sufficient amount of fuel oil in the day tank to allow changing out of the strainer?

The response to this Open Item has been revised to reflect the aforementioned concern. The original question along with the revised response is given below.

Original Question

EDEFSS compliance with ANSI-N195.

The concern is with the tank overflow line. Provide details and electrical schematics of the control system design which prevents the pump from running continuously. Provide a statement that all floor drains in the diesel generator building are seismically designed or if they are not describe why they are not required to be seismically designed. Provide additional information on the return of fuel oil after it passes through the oil separators and whether the floor drains, pumps and separators will perform after a design bases accident. Describe the impact of drain line interconnection in regards to impact on connected diesel generator areas to a flooding diesel generator area. Provide justification for using a simplex strainer design rather than the recommended ANSI-N195-1976 duplex strainer. The concern on strainer type is the potential for clogging and maintenance problems.

Response

The emergency diesel engine fuel oil transfer control scheme from the main fuel oil storage tank to the emergency diesel generator day tank is presented on drawing CAR-2166-B-430 Sheets 19.3 and 19.5, Revision 6, Figure 7.3.1-26.

The control system shown on the Instrument Schematics and Logic Diagrams maintains the proper level of diesel oil in the day tank by the use of interlocks between the hi-hi, hi and lo level switches on the day tank. The pumps are automatically controlled through the use of level switches activated by the day tank fuel oil level. In the event the fuel oil transfer pump fails to stop upon receipt of a high day tank level signal, a solenoid operated valve, located in the inlet to the day tank will close on a hi-hi level signal thereby preventing overflow. With the day tank inlet valve closed, the fuel oil transfer pump will operate in a recirculation mode discharging oil into the main fuel oil storage tank as shown in Figure 9.5.4-1.

Each day tank is provided with two level transmitters, one is a non-nuclear safety grade, seismic Category I device for local level indication and hi, lo-lo alarm annunciation at the diesel engine control panel. This level transmitter also provides a hi, lo-lo alarm annunciation for the Control Room. The second level transmitter is a class 1E, seismic Category I device providing day tank level indication in the Control Room.

Each day tank has two class IE, seismic Category I level switches. One switch provides hi, low level signals and the other switch provides a hi-hi level signal. Day tank overfill will be prevented by either switch. The hi, low level switch will provide pump shutoff on a hi level signal and the day tank inlet valve will be closed on a hi-hi level signal from the hi-hi level switch.

Therefore, the safety grade day tank instrumentation will preclude the overfill event.

In the unlikely event the fuel oil transfer pump fails to stop on a day tank hi level signal and the solenoid valve at the day tank inlet fails to close on a hi-hi level signal, the fuel oil will exceed its design level and flow out of the day tank through a over flow line to the day tank cubicle.

In the event of a failure of the day tank or piping the day tank cubicle has been sized to hold approximately 3,650 gallons which exceeds the margin recommended by Regulatory Guide 1.120 (i.e. 110% of the tank volume) before reaching the cubicle access door level. Cubicle access is via stairs to a platform 3 feet above the finished floor as shown in Figure 1.2.2-87 thereby minimizing the potential for leakage.

The day tank cubicle has a drain system that includes a normally closed valve. Drainage of the day tank cubicle can occur via operation of the normally closed drain valve in conjunction with operation of the diesel generator sump drain system. Diesel generator sump pumps discharge to the oil separator. Fuel oil, separated from sludge and water, is not reused, but is disposed of as shown in Figure 9.5.5-2, (drawing 2165-133, Rev. 4).

Floor drains, sump pumps, and oil separators are not required to function after a design bases accident and are therefore designed as non-seismic Category I. In the event of a failure of the non-seismic Category I systems, safety systems will not be adversely affected and will function as designed.

As shown in Figure 9.5.5-2, Amendment No. 5, the diesel generator room sump pump discharge drain piping has valving and is physically arranged to minimize potential flooding in one diesel generator area from affecting the other areas. The sumps include Class IE seismic Category I level instrumentation to alert the Control Room operators of potential flooding.

The diesel fuel oil transfer pumps are provided with a single basket strainer in the pump suction line. The simplex strainer was conservatively sized so that even when the strainer is 90% clogged there is a negligible pressure drop across the strainer at the design flow rate. In addition, the suction line is provided with a flow switch to alarm on abnormal conditions. Since the fuel oil quality is periodically tested and monitored, the strainer is expected not

to clog during 7 days of operation without maintenance.

In the event that the diesel fuel oil usage exceeds the makeup to the day tank due to clogging of the pump suction strainer, the fuel oil line is provided with a valved bypass to maintain a sufficient amount of fuel oil in the day tank to ensure diesel generator operation for the time required to replace the clogged strainer.

The above procedure will performed as follows:

1) The flow switch on the suction line of the fuel oil will alarm due to low flow caused by the clogged simplex strainer. In addition to this alarm the day tank level indicator will show a decreasing tank level due to insufficient fuel oil makeup.

2) At this point in time, the operator after performing the proper administrative steps will dispatch maintenance to open the strainer by-pass to top-off the day tank.

3) The diesel fuel oil transfer pump will then be taken out of service at which point the strainer basket could be cleaned/replaced.

4) The diesel fuel oil transfer pump would then be put back into service in adequate time to ensure continued operation of the diesel generator.

(8200FXT)

Shearon Harris Nuclear Power Plant
Power Systems Branch
Draft Safety Evaluation Report Open Item 390

With regard to the diesel generator keep-warm system, do operating procedures ensure that this system is properly aligned following maintenance or testing.

Response

The response to NRC question 430.13 states that "all maintenance on the emergency diesel generator will be followed by a verified line-up and post-maintenance test in accordance with the surveillance requirements of Technical Specifications." The line-up procedure will verify that the keep-warm system is properly align. Testing of the diesel generator operation does not require realignment of this keep-warm system.

(8210PSAkjr)

Shearon Harris Nuclear Power Plant
Draft SER Open Item No. 201
Procedures and Systems Review Branch
Supplemental Information

The original response to Open Item 201 was given in a letter dated July 15, 1983. After reviewing the response, the reviewer has asked for some additional information. In particular, the reviewer requested that the applicant either (1) demonstrate that the actual flow capacities of the secondary relief valves are less than or equal to that assumed in the accident analysis for "Inadvertent Opening of a Steam Generator Relief or Safety Valve," FSAR Section 15.1.4 or (2) show that oversizing of the secondary relief valves is not a safety concern. The response to this concern is given below.

Response

The "Inadvertent Opening of a Steam Generator Relief or Safety Valve" accident, FSAR Section 15.1.4, is an ANS Condition II steamline break event. The Condition II criterion that must be met for this event is that the DNB criteria, as discussed in FSAR Section 4.4, is not violated. That is, the minimum calculated DNBR must be greater than or equal to the 95 x 95 DNBR limit ($\geq$ 1.30). This analysis was based on a steam flow of 268 pounds per second at 1200 psia.

The most limiting steamline break event is the double-ended rupture of a main steamline, FSAR Section 15.1.5, which is an ANS Condition IV event. Even though this is a Condition IV event, the analysis performed shows that the Condition II acceptance criteria, given above, is met (DNBR $\geq$ 1.30).

Since the double-ended steamline rupture is more than an order of magnitude larger than any secondary side relief valve and since the Condition IV event meets the Condition II criteria, flow in excess of the assumed maximum secondary relief valve flowrate will not result in violating the Condition II DNB criteria for the "Inadvertent Opening of a Stem Generator Relief or Safety Valve" event.

Thus, should the actual secondary relief valve capacity be in excess of that assumed in the accident analysis, no safety concern would exist.

(8206FXTccc)

Shearon Harris Nuclear Power Plant
Draft SER Open Item 170
Radiological Assessment Branch
Supplemental Information

Provide drawing showing the location of the containment high range radiation monitors.

Response

Attached is drawing CAR 2166 G-453, R6, showing the locations of the two monitors at 0° and 180°, elevation 350' in the containment.*

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* Due to the size of the drawing, only one copy is being submitted to the Radiological Assessment Branch reviewer.

CAROLINA POWER & LIGHT COMPANY

SHEARON HARRIS NUCLEAR POWER PLANT
UNITS 1 & 2

POINT BY POINT COMPARISON OF SHEARON HARRIS NUCLEAR POWER PLANT FIRE PROTECTION WITH NUREG-0800 (FORMERLY NUREG-75/087), BRANCH TECHNICAL POSITION CMEB 9.5-1 (Formerly BTP ASP 9.5-1) GUIDELINES FOR FIRE PROTECTION FOR NUCLEAR POWER PLANTS

October 6, 1983

NRC QUESTION: 280.1 Your fire protection program will be reviewed to the guidelines of BTP CMEB 9.5-1 (NUREG-0800), July 1981. Provide a comparison that shows conformance of the plant fire protection program to these guidelines. Deviations from the guidelines should be specifically identified. A technical basis should be provided for each deviation.

BRANCH TECHNICAL POSITION CMEB 9.5-1

(Formerly BTP ASB 9.5-1)

GUIDELINES FOR

FIRE PROTECTION FOR NUCLEAR POWER PLANTS

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NRC GUIDELINES: A. INTRODUCTION

General Design Criterion 3, "Fire Protection" of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Licensing of Production and Utilization Facilities," requires that structures, systems, and components important to safety be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions. Noncombustible and heat-resistant materials are required to be used wherever practical throughout the unit, particularly in locations such as the containment and control room. Criterion 3 also requires that fire detection and suppression systems of appropriate capacity and capability be provided and designed to minimize the adverse effect of fires on structures, systems, and components important to safety and that firefighting systems be designed to ensure that their failure, rupture or inadvertent operation does not significantly impair the safety capability of these structures, systems, and components.

This Branch Technical Position (BTP) presents guidelines acceptable to the NRC staff for implementing this criterion in the development of a fire protection program for nuclear power plants. These revised guidelines include the acceptance criteria listed in a number of documents, including Appendix R to 10 CFR Part 50 and 10 CFR Part 50, and 50.48. The purpose of the fire protection program is to ensure the capability to shut down the reactor and maintain it in a safe shutdown condition and to minimize radioactive releases to the environment in the event of a fire. It implements the philosophy of defense-in-depth protection against the hazards of fire and its associated effects on safety-related equipment. If designs or methods different from the guidelines recommended herein are used, they must provide equivalent fire protection. Suitable bases and justification should be provided for alternative approaches to establish acceptable implementation of General Design Criterion 3.

This BTP addresses fire protection programs for safety-related systems and equipment and for other plant areas containing fire hazards that could adversely affect safety-related systems. It does not give guidance for protecting the life or safety of the site personnel or for protection against economic or property loss. This document supplements Regulatory Guide 1.75, "Physical Independence of Electrical Systems," in determining the fire protection for redundant cable systems.

PROJECT CONFORMANCE: A. INTRODUCTION

General Design Criterion 3, "Fire Protection" of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Licensing of Production and Utilization Facilities," was followed in the design of SHNPP Structures, systems, and components important to safety were designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions. Noncombustible and heat-resistant materials were used wherever practical throughout the units, particularly in locations such as the containment and control room. Fire detection and suppression systems of appropriate capacity and capability were provided and designed to minimize the adverse

effect of fires on structures, systems, and components important to safety. Firefighting systems were designed to ensure that their failure, rupture or inadvertent operation will not significantly impair the safety capability of these structures, systems, and components.

The purpose of the fire protection program is to ensure the capability to shut down the reactor and maintain it in a safe shutdown condition and to minimize radioactive releases to the environment in the event of a fire. Defense-in-depth protection against the hazards of fire and its associated effects on safety-related equipment was implemented in the SHNPP fire protection design philosophy. Whenever Designs or methods different from the guidelines recommended herein were used, they are believed to provide equivalent fire protection. Suitable bases and justification were provided for alternative approaches to establish acceptable implementation of General Design Criterion 3.

This BTP was followed in the design of fire protection program for safety-related systems and equipment and for other plant areas containing fire hazards that could adversely affect safety-related systems. It is understood that it does not give guidance for protecting the life or safety of the site personnel or for protection against economic or property loss. Regulatory Guide 1.75, "Physical Independence of Electrical Systems," in determining the fire protection for redundant cable systems was followed in the Plant design. Redundant safety-related systems required for safe shutdown were separated in accordance with requirement of Section III.G.2 of Appendix R to 10CFR50 or an exemption was requested as detailed in Section 9.5B.3 of Safe Shutdown Analysis in Case of Fire.

NRC GUIDELINES: B. DISCUSSION

There have been numerous fires in operating U.S. nuclear power plants through December 1975 of which 32 were important enough to report. Of these, the fire on March 22, 1975 at Browns Ferry nuclear plant was the most severe. With approximately 250 operating reactor years of experience, one may infer a frequency on the order of one fire per 10 reactor years. Thus, on the average, a nuclear power plant may experience one or more fires of varying severity during its operating life. Although WASH-1400, "Reactor Safety Study - An assessment of Accident Risks in U.S. Commercial Nuclear Power Plants," dated October 1975, concluded that the Browns Ferry fire did not affect the validity of the overall risk assessment, the staff concluded that cost-effective fire protection measures should be instituted to significantly decrease the frequency and severity of fires and consequently initiated the development of this BTP. In this development, the staff made use of many national standards and other publications related to fire protection. The documents discussed below were particularly useful.

A document entitled "The International Guidelines for the Fire Protection of Nuclear Power Plants" (IGL), 1974 Edition, Second Reprint, published on behalf of the National Nuclear Risks Insurance Pools and Association, provides a step-by-step approach to assessing the fire risk in a nuclear power plant and describes protective measures to be taken as a part of the fire protection of these plants. It provides useful guidance in this important area. The Nuclear Energy Liability and Property Insurance Association (NELPIA) and the Mutual Atomic Energy Reinsurance Pool (MAERP) have prepared a document titled "Specifications for Fire Protection of New

Plants," which gives general conditions and valuable criteria. A special review group organized by NRC under Dr Stephen H Hanauer, Technical Advisor to the Executive Director for Operations, to study the Browns Ferry Fire, issued a report, NUREG-0050, "Recommendations Related to Browns Ferry Fire," in February 1976, which contains recommendations applicable to all nuclear power plants. This BTP uses the applicable information contained in these documents.

The fire protection program for a nuclear power plant presented in this BTP consists of design features, personnel, equipment, and procedures that provide the defense-in-depth protection of the public health and safety. The purpose of the program is to prevent significant fires, to ensure the capability to shut down the reactor and maintain it in a safe shutdown condition, and to minimize radioactive releases to the environment in the event of a significant fire. To meet these objectives, it is essential that management participation in the program begin with early design concepts and plant layout work and continue through plant operation and that a qualified staff be responsible for engineering and design of fire protection features that provide fire detection annunciation, confinement, and suppression for the plant. The staff should also be responsible for fire prevention activities, maintenance of fire protection systems, training, and manual firefighting activities. It is the combination of all these that provides the needed defense-in-depth protection of the public health and safety.

Project Conformance: B. DISCUSSION

It is understood that on the average, a nuclear power plant may experience one or more fires of varying severity during its operating life. Cost-effective fire protection measures were instituted to significantly decrease the potential of frequent and severe fires. National standards and other publications related to fire protection were used in developing the SHNPP Fire Protection Program.

The Shearon Harris Fire Protection Program considered the information found in "The International Guidelines for the Fire Protection of Nuclear Power Plants" (IGL), 1974 Edition, Second Reprint, published on behalf of the National Nuclear Risks Insurance Pools and Association, which provides step-by-step approach to assessing the fire risk in a nuclear power plant and describes protective measures to be taken as a part of the fire protection of these plants, the Nuclear Energy Liability and Property Insurance Association (NELPIA) and the Mutual Atomic Energy Reinsurance Pool (MAERP) "Specifications for Fire Protection of New Plants," and NUREG-0050, "Recommendations Related to Browns Ferry Fire," in February 1976.

The fire protection program for Shearon Harris Nuclear Power Plant consists of design features, personnel, equipment, and procedures that provide the defense-in-depth protection of the public health and safety. The purpose of the program was to prevent significant fires, to ensure the capability to shut down the reactor and maintain it in a safe shutdown condition, and to minimize radioactive releases to the environment in the

event of a significant fire. To meet these objectives, management participation in the program began with early design concepts and plant layout work and will continue through plant operation. A qualified staff was responsible for engineering and design of fire protection features that provide fire detection annunciation, confinement, and suppression for the plant. The staff was also be responsible for fire prevention activities, maintenance of fire protection systems, training, and manual firefighting activities. The combination of all these provide the needed defense-in-depth protection of the public health and safety.

NRC GUIDELINES: B. DISCUSSION (Cont'd)

Some of the major conclusions that emerged from the Browns Ferry fire investigations warrant emphasis and are disccussed below.

B.1. Defense-in-Depth

Nuclear Power plants use the concept of defense-in-depth to achieve the required high degree of safety by using echelons of safety systems. This concept is also applicable to fire safety in nuclear power plants. With respect to the fire protection program, the defense-in-depth principle is aimed at achieving an adequate balance in:

a. Preventing fires from starting;

b. Detecting fires quickly, suppressing those fires that occur, putting them out quickly, and limiting their damage; and

c. Designing plant safety systems so that a fire that starts in spite of the fire prevention program and burns for a considerable time in spite of fire protection activities will not prevent essential plant safety functions from being performed.

No one of these echelons can be perfect or complete by itself. Each echelon should meet certain minimum requirements; however, strengthening any one can compensate in some measure for weaknesses, known or unknown, in the others.

PROJECT CONFORMANCE: B. DISCUSSION (Cont'd)

Major conclusions that emerged from the Browns Ferry fire investigations and warrant emphasis as applicable for Shearon Harris are discussed below.

B.1. Defense-in-Depth

Shearon Harris Nuclear Power Plants considered the concept of defense-in-depth to achieve the required high degree of safety by using echelons of safety systems, applicable to fire safety. With respect to the fire protection program, the defense-in-depth principle was aimed at achieving an adequate balance in:

a. Preventing fires from starting;

b. Detecting fires quickly, suppressing those fires that occur, putting them out quickly, and limiting their damage; and

c. Designing plant safety systems so that a fire that starts in spite of the fire prevention program and burns for a considerable time in spite of fire protection activities will not prevent essential plant safety functions from being performed.

NRC GUIDELINES: B. DISCUSSION (Cont'd)

The primary objective of the fire protection program is to minimize both the probability and consequences of postulated fires. In spite of steps taken to reduce the probability of fire, fires are expected to occur. Therefore, means are needed to detect and suppress fires with particular emphasis on providing passive and active fire protection of appropriate capability and adequate capacity for the systems necessary to achieve and maintain safe plant shutdown with or without offsite power. For other safety-related systems, the fire protection should ensure that a fire will not cause the loss of function of such systems, even though loss of redundancy within a system may occur as a result of the fire. Generally, in plant areas where the potential fire damage may jeopardize safe plant shutdown, the primary means of fire protection should consist of fire barriers and fixed automatic fire detection and suppression systems. Also, a backup manual firefighting capability should be provided throughout the plant to limit the extent of fire damage. Portable equipment consisting of hoses, nozzles, portable extinguishers, complete personnel protective equipment, and air breathing equipment should be provided for use by properly trained firefighting personnel. Access for effective manual application of fire extinguishing agents to combustibles should be provided. The adequacy of fire protection for any particular plant safety system or area should be determined by analysis of the effects of the postulated fire relative to maintaining the ability to safely shutdown the plant and minimize radioactive releases to the environment in the event of a fire.

PROJECT CONFORMANCE: B. DISCUSSION (Cont'd)

The primary objective of the fire protection program was to minimize both the probability and consequences of postulated fires. In spite of steps taken to reduce the probability of fire, fires are expected to occur. Therefore, means to detect and suppress fires were provided, with particular emphasis on providing passive and active fire protection of appropriate capability and adequate capacity for the systems necessary to achieve and maintain safe plant shutdown with or without offsite power. For other safety-related systems, the fire protection was aimed to ensure that a fire will not cause the loss of function of such systems, even though loss of redundancy within a system might occur as a result of the fire. Generally, in plant areas where the potential fire damage might jeopardize safe plant shutdown, the primary means of fire protection consisted of fire barriers and fixed automatic fire detection and suppression systems, or combination thereof. Also, a backup manual firefighting capability was provided throughout the plant to limit the extent of fire damage. Portable equipment consisting of hoses, nozzles,

portable extinguishers, complete personnel protective equipment, and air breathing equipment were provided for use by properly trained firefighting personnel. Access for effective manual application of fire extinguishing agents to combustibles were provided to the extent practicable. The adequacy of fire protection for any particular plant safety system or area was determined by analysis of the effects of the postulated fire relative to maintaining the ability to safely shutdown the plant and minimize radioactive releases to the environment in the event of a fire.

NRC GUIDELINES: B. DISCUSSION (Cont'd)

Fire protection starts with design and must be carried through all phases of construction and operation. A quality assurance (QA) program is needed to identify and rectify errors in design, construction, and operation and is an essential part of defense-in-depth.

PROJECT CONFORMANCE: B. DISCUSSION (Cont'd)

Fire protection started with design and was carried through all phases of construction and operation. A quality assurance (QA) program to identify and rectify errors in design, construction, and operation was developed for fire protection.

As stated on page 9.5.1-48 of Subsection 9.5-1 of the FSAR, the Design Construction QA program is described in the PSAR and was approved by the NRC. However, for components of the fire protection system designed, specified, procured, manufactured, fabricated or installed prior to institution of the Fire Protection QA program (February 8, 1977) the program was followed to the extent practicable. The Engineering and Construction fire protection quality assurance program was approved by the NRC during construction permit review. The Operational Quality Assurance Program is described in Section 17.2 of the FSAR.

NRC GUIDELINES: B. DISCUSSION (Cont'd)

B.2. Use of Water on Electrical Cable Fires

Experience with major electrical cable fires shows that water will promptly extinguish such fires. Since prompt extinguishing of the fire is vital to reactor safety, fire and water damage to safety systems is reduced by the more efficient application of water from fixed systems spraying directly on the fire rather than by manual application with fire hoses. Appropriate firefighting procedures and fire training should provide the techniques, equipment, and skills for the use of water in fighting electrical cable fires in nuclear plants, particularly in areas containing a high concentration of electric cables with plastic insulation.

This is not to say that fixed water systems should be installed everywhere. Equipment that may be damaged by water should be shielded or relocated away from the fire hazard and the water. Drains should be provided to remove any water used for fire suppression and extinguishment to ensure that water accumulation does not incapacitate safety-related equipment.

PROJECT CONFORMANCE: B. DISCUSSION (Cont'd)

B.2. Use of Water on Electrical Cable Fires

Fixed automatic water systems discharging water on potential electrical cable fires were selected in most instances versus manual application of water with fire hoses, because of experience with major electrical cable fires showed that water promptly extinguished such fires, and prompt extinguishing of a fire is vital to reactor safety, more efficient application of water from fixed systems delivering water directly on the fire, fire and water damage to safety systems can be potentially reduced. Appropriate firefighting procedures and fire training will provide the techniques, equipment, and skills for the use of water in fighting electrical cable fires, particularly in areas containing a high concentration of electric cables. Use of cables with plastic insulation was minimized, and the places and amount used detailed in the fire hazards analysis.

Automatic fixed water suppression systems were not installed everywhere. Equipment that might be damaged by water was protected from the fire hazard and/or the water. Drains were provided to remove water used for fire suppression and extinguishment to ensure that water accumulation will not incapacitate safety-related equipment. (REFER TO PROJECT CONFORMANCE C.1.b FOR DESCRIPTION OF FIRE SUPPRESSION SYSTEMS)

NRC GUIDELINES: B. DISCUSSION (cont'd)

B.3. Establishment and Use of Fire Areas

Separate fire areas for each division of safety-related systems will reduce the possibility of fire-related damage to redundant safety-related equipment. Fire areas should be established to separate redundant safety divisions and isolate safety-related systems from fire hazards in nonsafety-related areas. Particular design attention to the use of separate isolated fire areas for redundant cables will help to avoid loss of redundant safety-related cables. Separate fire areas should also be employed to limit the spread of fires between components that are major fire hazards within a safety division. Where redundant systems cannot be separated by fire barriers, as in containment and the control room, it is necessary to employ other measures to prevent a fire from causing the loss of function of safety-related systems.

Within fire areas containing components of a safety-related system, special attention should be given to detecting and suppressing fires that may adversely affect the system. Measures that may be taken to reduce the effects of a postulated fire in a given fire area include limiting the amount of combustible materials, installing fire-resistant construction, providing fire rated barriers for cable trays, installing fire detection systems and fixed fire suppression systems, or providing other protection suitable to the installation. The fire hazard analysis will be the mechanism to determine the fire areas have been properly selected.

Suitable design of the ventilation systems can limit the consequences of a fire by preventing the spread of the products of combustion to other fire areas. It is important that means be provided to ventilate, exhaust, or

isolate the fire area as required and that consideration be given to the consequences of failure of ventilation systems due to fire causing loss of control for ventilating, exhausting, or isolating a given fire area. The capability to ventilate, exhaust, or isolate is particularly important to ensure the habitability of rooms or spaces that must be attended in an emergency. In the design, provision should be made for personnel access to and escape routes from each fire area.

PROJECT CONFORMANCE: B. DISCUSSION (Cont'd)

B.3. Establishment and Use of Fire Areas

As stated in the FSAR on page 9.5.1-1, separate fire areas, which reduce the possibility of fire related damage to redundant safety-related trains, were established to separate redundant safety divisions and to isolate safety related systems from hazards in non-safety related areas to the extent possible in the previously established plant design established prior to issuance of NUREG-0800 (See first paragraph on FSAR page 9.5.1-1). Where fire barriers could not be installed to separate redundant systems, alternate means, as permitted by Appendix A to Branch Technical Position APCSB 9.5-1 Rev 0 Guidelines for Fire Protection for Power Plants Docketed Prior to July 1, 1976, such as limitation of the amount of combustible materials through administrative procedures utilization of fire resistive construction, installation of automatic fire detection systems, automatic fire suppression systems or combination therof.

The fire hazards analysis, FSAR Section 9.5.1.3, and Appendix 9.5A and Safe Shutdown Analysis in case of fire (SSA). Appendix 9.5B were used to demonstrate the adequacy of the fire prevention and protection measures utilized. As a result of SSA, additional fire prevention and protection measures were prescribed, as detailed in the Safe Shutdown Analysis in Case of Fire.

Spread of the products of combustion to other fire areas was limited by provision of adequate means to ventilate, exhaust, or isolate the fire area as required. Consideration was given to the consequences of failure of ventilation systems due to fire causing loss of control for ventilating, exhausting, or isolating a given fire area. Provisions were made for personnel access to and escape routes from each fire area.

NRC GUIDELINES: DISCUSSION (Cont'd)

B.4. Definitions

For the user's convenience, some of the terms related to fire protection are presented below with their definitions as used in this BTP.

Approved - tested and accepted for a specific purpose or application by a nationally recognized testing laboratory.

Automatic - self-acting, operating by its own mechanism when actuated by some impersonal influence such as change in current, pressure, temperature, or mechanical configuration.

Combustible Material - material that does not meet the definition of noncombustible.

Control Room Complex - the zone served by the control room emergency ventilation system (see SRP Section 6.4, "Habitability Systems").

Exposure Fire - An exposure fire is a fire in a given area that involves either in situ or transient combustibles and is external to any structures, systems, or components located in or adjacent to that same area. The effects of such fire (e.g., smoke, heat, or ignition) can adversely effect those structures, systems, or components important to safety. Thus, a fire involving one train of safe shutdown equipment may constitute an exposure fire for the redundant train located in the same area, and a fire involving combustibles other than either redundant train may constitute an exposure fire to both redundant trains located in the same area.

Fire Area - that portion of a building or plant that is separated from other areas by boundary fire barriers.

Fire Barrier - those components of construction (walls, floors, and their supports), including beams, joists, columns, penetration seals or closures, fire doors, and fire dampers that are rated by approving laboratories in hours of resistance to fire and are used to prevent the spread of fire.

Fire Stop - a feature of construction that prevents fire propagation along the length of cables or prevents spreading of fire to nearby combustibles within a given fire area or fire zone.

Fire Brigade - the team of plant personnel assigned to firefighting and who are equipped for and trained in the fighting of fires.

Fire Detectors - a device designed to automatically detect the presence of fire and initiate an alarm system and other appropriate action (see NFPA 72E, "Automatic Fire Detectors"). Some typical fire detectors are classified as follows:

Heat Detector - a device that detects a predetermined (fixed) temperature or rate of temperature rise.

Smoke Detector - a device that detects the visible or invisible products of combustion.

Flame Detector - a device that detects the infrared, ultraviolet, or visible radiation produced by a fire.

Line-Type Detector - a device in which detection is continuous along a path, e.g., fixed-temperature, heat-sensitive cable and rate-of-rise pneumatic tubing detectors.

Fire Protection Program - the integrated effort involving components, procedures, and personnel utilized in carrying out all activities of fire

protection. It includes system and facility design, fire prevention, fire detection, annunciation, confinement, suppression, administrative controls, fire brigade organization, inspection and maintenance, training, quality assurance, and testing.

Fire Resistance Rating - The time that materials or assemblies have withstood a fire exposure as established in accordance with the test procedures of "Standard Methods of Fire Tests or Building Construction and Materials" (NFPA) 251).

Fire Suppression - control and extinguishing of fires (firefighting). Manual fire suppression is the use of hoses, portable extinguishers, or manually-actuated fixed systems by plant personnel. Automatic fire suppression is the use of automatically actuated fixed systems such as water, Halon, or carbon dioxide systems.

Fire Zones - the subdivision of fire areas in which the fire suppression systems are designed to combat particular types of fires.

Noncombustible Material

a. A material which in the form in which it is used and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat.

b. Material having a structural base of noncombustible material, as defined in a., above, with a surfacing not over 1/8-inch thick that has a flame spread rating not higher than 50 when measured using ASTM E-84 Test "Surface Burning Characteristics of Building Materials."

Raceway - refer to Regulatory Guide 1.75.

Restricted Area - any area to which access is controlled by the licensee for purposes of protecting individuals from exposure to radiation and radioactive materials.

Safety-Related Systems and Components - systems and components required to shutdown the reactor, mitigate the consequences of postulated accidents, or maintain the reactor in a safe shutdown condition.

Secondary Containment - a structure that completely encloses primary containment, used for controlling containment leakage.

Sprinkler System - a network of piping connected to a reliable water supply that will distribute the water throughout the area protected and will discharge the water through sprinklers in sufficient quantity either to extinguish the fire entirely or to prevent its spread. The system, usually activated by heat, includes a controlling valve and a device for actuating an alarm when the system is in operation. The following categories of sprinkler systems are defined in NFPA 13, "Standard for the Installation of Sprinkler Systems".

- Wet Pipe System
- Dry-Pipe System
- Preaction System
- Deluge System
- Combined Dry-Pipe and Preaction System
- On-Off System

Standpipe and Hose Systems - a fixed piping system with hose outlets, hose, and nozzles connected to a reliable water supply to provide effective fire hose streams to specific areas inside the building.

Water Spray System - a network of piping similar to a sprinkler system except that it utilizes open-head spray nozzles. NFPA 15, "Water-Spray Fixed Systems," provides guidance on these systems.

PROJECT CONFORMANCE: DISCUSSION (Cont'd)

B.4. Definitions

For the user's convenience, some of the terms related to fire protection are presented below with their definitions as used in the Shearon Harris Nuclear Power Plant.

Approved - tested and accepted for a specific purpose or application by a nationally recognized testing laboratory.

Automatic - self-acting, operating by its own mechanism when actuated by some impersonal influence such as change in current, pressure, temperature, or mechanical configuration.

Combustible Material - material that does not meet the definition of noncombustible.

Control Room Complex Fire Area - the fire area located west of the Control Room Fire Area, outside of the control room emergency ventilation system, and including the following fire zones: Non-Safety Computer Room, Rod Control Cabinets Room, Auxiliary Relay Panels Room, Process Instruments and Control Racks.

Control Room Fire Area - the fire area served by the control room emergency ventilation system (see SRP Section 6.4, "Habitability Systems").

Exposure Fire - An exposure fire is a fire in a given area that involves either in situ or transient combustibles and is external to any structures, systems, or components located in or adjacent to that same area. The effects of such fire (e.g., smoke, heat, or ignition) can adversely effect those structures, systems, or components important to safety. Thus, a fire involving one train of safe shutdown equipment may constitute an exposure fire for the redundant train located in the same area, and a fire involving combustibles other than either redundant train may constitute an exposure fire to both redundant trains located in the same area. (Note: the exposure fires were considered part of SSA)

Fire Area - that portion of a building or plant that is separated from other areas by boundary fire barriers, or 50 ft of open space to the atmosphere without any combustibles.

Fire Barrier - those components of construction (walls, floors, and their supports), including beams, joists, columns, penetration seals or closures, fire doors, and fire dampers that are rated by approving laboratories or certified by their manufacturers to be of rated construction in hours of resistance to fire and are used to prevent the spread of fire.

Fire Brigade - the team of plant personnel assigned to firefighting and who are equipped for and trained in the fighting of fires.

Fire Detectors - a device designed to automatically detect the presence of fire and initiate an alarm system and other appropriate action (in accordance with NFPA 72E, "Automatic Fire Detectors"). Some typical fire detectors are classified as follows:

Heat Detector - a device that detects a predetermined (fixed) temperature or rate of temperature rise.

Smoke Detector - a device that detects the visible or invisible products of combustion.

Flame Detector - a device that detects the infrared, ultraviolet, or visible radiation produced by a fire.

Line-Type Detector - a device in which detection is continuous along a path, e.g., fixed-temperature, heat-sensitive cable and rate-of-rise pneumatic tubing detectors.

Fire Protection Program - the integrated effort involving components, procedures, and personnel utilized in carrying out all activities of fire protection. It includes system and facility design, fire prevention, fire detection, annunciation, confinement, suppression, administrative controls, fire brigade organization, inspection and maintenance, training, quality assurance, and testing.

Fire Resistance Rating - The time that materials or assemblies have withstood a fire exposure as established in accordance with the test procedures of "Standard Methods of Fire Tests or Building Construction and Materials" (NFPA) 251).

Fire Suppression - control and extinguishing of fires (firefighting). Manual fire suppression is the use of hoses, portable extinguishers, or manually-actuated fixed systems by plant personnel. Automatic fire suppression is the use of automatically actuated fixed systems such as water, Halon, or carbon dioxide systems.

Fire Zones - the subdivision of fire areas in which the fire suppression systems are designed to combat particular types of fires.

Noncombustible Material

a. A material which in the form in which it is used and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat.

b. Material having a structural base of noncombustible material, as defined in a., above, with a surfacing not over 1/8-inch thick that has a flame spread rating not higher than 50 when measured using ASTM E-84 Test "Surface Burning Characteristics of Building Materials."

Raceway - refer to Regulatory Guide 1.75.

Restricted Area - any area to which access is controlled by the licensee for purposes of protecting individuals from exposure to radiation and radioactive materials.

Safety-Related Systems and Components - systems and components required to shutdown the reactor, mitigate the consequences of postulated accidents, or maintain the reactor in a safe shutdown condition.

Essential Systems and Components - safety and non-safety related systems required to shutdown the reactor and maintain it in a safe shutdown condition in case of a fire.

Secondary Containment - a structure that completely encloses primary containment, used for controlling containment leakage.

Sprinkler System - a network of piping connected to a reliable water supply that will distribute the water throughout the area protected and will discharge the water through sprinklers in sufficient quantity either to extinguish the fire entirely or to prevent its spread. The system, usually activated by heat, includes a controlling valve and a device for actuating an alarm when the system is in operation or water does not flow through the pre-action or multi-cycle valve. The following categories of sprinkler systems as defined in NFPA 13, "Standard for the Installation of Sprinkler Systems" and FSAR Subsection 9.5.1.2.3 are used:

- Wet Pipe System
- Pre-Action System
- Multi-Cycle (On-Off System)

Standpipe and Hose Systems - a fixed piping system with hose outlets, hose, and nozzles connected to a reliable water supply to provide effective fire hose streams to specific areas inside the building.

Water Spray System - a network of piping similar to a sprinkler system except that it utilizes open-head spray nozzles. NFPA 15, "Water Spray Fixed Systems," was followed for these systems.

NRC GUIDELINES: C. POSITION

1. Fire Protection Program Requirements

a. Fire Protection Program

A fire protection program should be established at each nuclear power plant. The program should establish the fire protection policy for the protection of structures, systems, and components important to safety at each plant and the procedures, equipment, and personnel required to implement the program at the plant site.

(1) The fire protection program should be under the direction of an individual who has been delegated authority commensurate with the responsibilities of the position and who has available staff personnel knowledgeable in both fire protection and nuclear safety.

PROJECT CONFORMANCE: C. POSITION

C.1.a(1) SHNPP will have a Fire Protection (FP) program which establishes the policy for protection of structures, components, and systems important to safety. Procedures will be prepared to implement the plant and the plant is staffed to implement the procedures. The Plant General Manager will direct the staff who is knowledgeable in FP and nuclear safety.

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.a(2) The fire protection program should extend the concept of a defense-in-depth to fire protection in fire areas important to safety, with the following objective:

- to prevent fire from starting;
- to detect rapidly, control, and extinguish promptly those fires that do occur;
- to provide protection for structures, systems, and components important to safety so that a fire that is not promptly extinguished by the fire suppression activities will not prevent the safe shutdown of the plant.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.a(2) The fire protection program utilizes the concept of defense-in-depth for fire protection in fire areas important to safety by preventing fires from starting and rapid detection, control and extinguishing of those fires that do occur.

Providing protection for structures, systems and components important to safety so that a fire which is not promptly extinguished by fire suppression activities will not prevent safe shutdown of the plant.

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.a(3) Responsibility for the overall fire protection program should be assigned to a person who has management control over all organizations involved in fire protection activities. Formulation and assurance of program implementation may be delegated to a staff composed of personnel prepared by training and experience in fire protection and personnel prepared by training and experience in nuclear plant safety to provide a balanced approach in directing the fire protection program for the nuclear power plant.

The staff should be responsible for:

a. Fire protection program requirements, including consideration of potential hazards associated with postulated fires, with knowledge of building layout and systems design.

b. Post-fire shutdown capability.

c. Design, maintenance, surveillance, and quality assurance of all fire protection features (e.g., detection systems, suppression systems, barriers, dampers, doors, penetration seals, and fire brigade equipment).

d. Fire prevention activities (administrative controls and training).

e. Fire brigade organization and training.

f. Prefire planning.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.a(3) SHNPP will provide a balanced approach to the nuclear fire protection situation by providing personnel who will be qualified in fire protection as well as the usual nuclear safety trained personnel.

The staff will be responsible for all areas of fire protection from planning to post-fire capability.

C.1.a(4) The organizational responsibilities will be defined in the program. Both the onsite and offsite positions will be included and responsibilities will be assigned for the complete defense-in-depth approach. The following positions/organizations should be designated:

a. The upper level offsite management position which has management responsibility for the formulation, implementation, and assessment of the effectiveness of the nuclear plant fire protection program.

b. The offsite management position(s) directly responsible for formulating, implementing, and periodically assessing the effectiveness of the fire protection program for the licensee's nuclear power plant including fire drills and training conducted by the fire brigade and plant personnel. The results of these assessments should be reported to the upper level management position responsible for fire protection with recommendations for improvements or corrective actions as deemed necessary.

c. The onsite management position responsible for the overall administration of the plant operations and emergency plans which include the fire protection and prevention program and which provide a single point of control and contact for all contingencies.

d. The onsite position(s) which:

i. Implements periodic inspections to: minimize the amount of combustibles in safety-related areas; determine the effectiveness of housekeeping practices; assure the availability and acceptable condition of all fire protection systems/equipment, emergency breathing apparatus, emergency lighting, communication equipment, fire stops, penetration seals, and fire retardant coatings; and assures the prompt and effective corrective actions are taken to correct conditions adverse to fire protection and preclude their recurrence.

ii. Is responsible for the fire fighting training for operating plant personnel and the plant's fire brigade; design and selection of equipment; periodic inspection and testing of fire protection systems and equipment in accordance with established procedures, and evaluate test results and determine the acceptability of the systems under test.

iii. Assists in the critique of all fire drills to determine how well the training objectives have been met.

iv. Reviews and evaluates proposed work activities to identify potential transient fire loads.

v. Implements a program for indoctrination of all plant contractor personnel in appropriate administrative procedures which implement the fire protection program, and the emergency procedures relative to fire protection.

vi. Implements a program for instruction of personnel on the proper handling of accidental events such as leaks or spills of flammable materials that are related to fire protection.

e. The onsite position responsible for fire protection quality assurance. This position should be responsible for assuring the effective implementation of the fire protection program by planned inspections, scheduled audits, and verification that the results of these inspections of audits are promptly reported to cognizant management personnel.

f. The positions which are part of the plant fire brigade.

i. The plant fire brigade positions should be responsible for fighting fires. The authority and responsibility of each fire brigade position relative to fire protection should be clearly defined.

ii. The responsibilities of each fire brigade position should correspond with the actions required by the fire fighting procedures.

iii. The responsibilities of the fire brigade members under normal plant conditions should not conflict with their responsibilities during a fire emergency.

iv. The minimum number of trained fire brigade members available onsite for each operating shift should be consistent with the activities required to combat the most significant fire. The size of the fire brigade should be based upon the functions required to fight fires with adequate allowance for injuries.

v. The recommendations for organization, training, and equipment of "Private Fire Brigades" as specified in NFPA No. 27-1975, including the applicable NFPA publications listed in the appendix to NFPA No. 27, are considered

appropriate criteria for organizing, training and operating a plant fire brigade.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.a(4) The organizational responsibilities will be defined in the Fire Protection program. Both the on-site and off-site positions are included and responsibilities are assigned for the complete defense-in-depth approach.

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.a(5) Personnel Qualifications

a. The position responsible for formulation and implementation of the fire protection program should have within his organization or as a consultant a fire protection engineer who is a graduate of an engineering curriculum of accepted standing and shall have completed not less than 6 years of engineering attainment indicative of growth in engineering competency and achievement, 3 years of which shall have been in responsible charge of fire protection engineering work. These requirements are the eligibility requirements as a Member in the Society of Fire Protection Engineers.

b. The fire brigade members' qualifications should include satisfactory completion of a physical examination for performing strenuous activity, and of the fire brigade training described in Position C.3.d.

c. The personnel responsible for the maintenance and testing of the fire protection systems should be qualified by training and experience for such work.

d. The personnel responsible for the training of the fire brigade should be qualified by training and experience for such work.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.a(5) a. Carolina Power & Light Company will comply.

b. A trained fire brigade meeting technical specification requirements will be provided.

c.& d. Personnel utilized for inspection, maintenance, and training will be qualified for such duties by training and experience.

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.a(6) The following NFPA publications should be used for guidance to develop the fire protection program:

No. 1201-1977 - "Organization for Fire Services"
No. 1202-1976 - "Organization of a Fire Department
No. 27 -1975 - "Private Fire Brigades"

PROJECT CONFORMANCE: C. POSITION (Cont'd)

CP&L will comply

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.a(7) On sites where there is an operating reactor and construction or modification of other units is underway, the superintendent of the operating plant should have the lead responsibility for site fire protection.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.a(7) Fire protection for Unit 2 will be under the jurisdiction of the Unit 1 fire protection staff.

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.b. Fire Hazards Analysis

The fire hazards analysis should demonstrate that the plant will maintain the ability to perform safe shutdown functions and minimize radioactive releases to the environment in the event of a fire.

The fire hazards analysis should be performed by qualified fire protection and reactor systems engineers to (1) consider potential in situ and transient fire hazards; (2) determine the consequences of fire in any location in the plant on the ability to safely shutdown the reactor or on the ability to minimize and control the release of radioactivity to the environment; and (3) specify measures for fire prevention, fire detection, fire suppression, and fire containment and alternative shutdown capability as required for each fire area containing structures, systems, and components important to safety that are in conformance with NRC guidelines and regulations.

"Worst case" fires need not be postulated to be simultaneous with nonfire-related failures in safety systems, plant accidents, or the most severe natural phenomena.

On multiple-reactor sites, unrelated fires in two or more units need not be postulated to occur simultaneously. Fires involving facilities shared between units and fires due to man-made site-related events that have a reasonable probability of occurring and affecting more than one reactor unit (such as an aircraft crash) should be considered.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.b Fire Hazards Analysis

The fire hazards analysis demonstrates that the plant will maintain the ability to perform safe shutdown functions and minimize radioactive releases to the environment in the event of a fire.

The fire hazards analysis was performed by qualified fire protection and reactor systems engineers. It considered potential in situ and transient fire hazards; it determined the consequences of a fire in any location in the plant on the ability to safely shutdown the reactor or on the ability to minimize and control the release of radioactivity to the environment; and it specified measures for fire prevention, fire detection, fire suppression, and fire containment and alternative shutdown capability as required for each fire area containing structures, systems, and components important to safety following NRC guidelines and regulations, showing conformance with the guidelines or demonstrating the equivalency of alternative approaches.

"Worst case" fires were not postulated to be simultaneous with nonfire-related failures in safety systems, plant accidents, or the most severe natural phenomena.

Unrelated fires in two units were not postulated to occur simultaneously. Fires involving shared facilities between units would involve the Waste Processing Building, Fuel Handling Building, Emergency Service Water Screening Structure and Reactor Auxiliary Building, Common to Units 1 and 2 which are separated from each other and other plant buildings by three hour fire rated barriers and doors. For details of Unit 1 and 2 Safety Related equipment located within the same fire area, refer to the Safe Shutdown Analysis in Case of Fire.

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.b. Fire Hazards Analysis (Cont'd)

Because fire may affect safe shutdown systems and because the loss of function of systems used to mitigate the consequences of design basis accidents under postfire conditions does not per se impact public safety, the need to limit fire damage to systems required to achieve and maintain safe shutdown conditions is greater than the need to limit fire damage to those systems required to mitigate the consequences of design basis accidents. Three levels of fire damage limits are established according to the safety function of the structure, system, or component.

Safety Function	Fire Damage Limits
Hot shutdown	One train of equipment necessary to achieve hot shutdown from either the control room or emergency control station(s) must be maintained free of fire damage by a single fire, including an exposure fire.
Cold shutdown	Both trains of equipment necessary to achieve cold shutdown may be damaged by a single fire, including an exposure fire, but damage must be limited so that at least one train can be repaired or made operable within 72 hours using onsite capability.
Design basis accident	Both trains of equipment necessary for mitigation of consequences following design basis accidents may be damaged by a single exposure fire.

The most stringent fire damage limit should apply for those systems that fall into more than one category. Redundant systems used to mitigate the consequences of other design basis accidents but not necessary for safe shutdown may be lost to a single exposure fire. However, protection shall be provided so that a fire within only one such system will not damage the redundant system.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.b. Fire Hazards Analysis

Three levels of fire damage limits were established according to the safety function of the structure, system, or component.

Safety Function	Fire Damage Limits
Hot standby	One train of equipment necessary to achieve hot standby from either the control room or emergency control station(s) must be maintained free of fire damage by a single fire, including an exposure fire.
Cold shutdown	Both trains of equipment necessary to achieve cold shutdown may be damaged by a single fire, including an exposure fire, but damage must be limited so that at least one train can be repaired or made operable within 72 hours using onsite capability.

Safety Function	Fire Damage Limits
Design basis accident	Both trains of equipment necessary for mitigation of consequences following design basis accidents may be damaged by a single exposure fire.

The most stringent fire damage limit was applied for those systems that fall into more than one category. Redundant systems used to mitigate the consequences of other design basis accidents but not necessary for safe shutdown were not protected from a single exposure fire. However, protection was provided so that a fire within only one such system will not damage the redundant system.

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.b Fire Hazards Analysis (Cont'd)

The fire hazards analysis should separately identify hazards and provide appropriate protection in locations where safety-related losses can occur as a result of :

(1) Concentrations of combustible contents, including transient fire load due to combustibles expected to be used in normal operations such as refueling, maintenance, and modifications;

(2) Continuity of combustible contents, furnishings, building materials, or combinations thereof in configurations conducive to fire spread;

(3) Exposure fire, heat, smoke, or water exposure, including those that may necessitate evacuation from areas that are required to be attended for safe shutdown;

(4) Fire in control rooms or other locations having critical safety-related functions;

(5) Lack of adequate access or smoke removal facilities that impede fire extinguishment in safety-related areas;

(6) Lack of explosion-prevention measures;

(7) Loss of electric power or control circuits;

(8) Inadvertent operation of fire suppression systems.

The fire hazards analysis should verify that the NRC fire protection program guidelines have been met. The analysis should list applicable elements of the program, with explanatory statements as needed to identify location, type of system, and design criteria. The analysis should identify and justify any deviations from the regulatory guidelines. Justification for deviations from the regulatory guidelines should show

that an equivalent level of protection will be achieved. Deletion of a protective feature without compensating alternative protection measures will not be acceptable, unless it is clearly demonstrated that the protective measure is not needed because of the design and arrangement of the particular plant.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.b Fire Hazards Analysis (Cont'd)

The fire hazard analysis separately identifies hazards and appropriate protection in locations where safety-related losses can result from:

(1) Concentrations of combustible contents, including transient fire load due to combustibles expected to be used in normal operation of the plant. During refueling, maintenance, and modifications of the plant transient fire loading is controlled through Fire Protection Procedure 001.

(2) Continuity of combustible contents, furnishings, building materials, or combinations thereof in configurations conducive to fire spread;

(3) Exposure fire, heat, smoke, or water exposure, including those that may necessitate evacuation from areas that are required to be attended for safe shutdown;

(4) Fire in control rooms or other locations having critical safety-related functions;

(5) Lack of adequate access or smoke removal facilities that impede fire extinguishment in safety-related areas;

(6) Lack of explosion-prevention measures;

(7) Loss of electric power or control circuits;

(8) Inadvertent operation of fire suppression systems.

As stated in FSAR Subsections 9.5.1.1.5 and 9.5.1.2.3 the evaluation of the consequences of inadvertant operation of the fire suppression system is addressed in the description of each system used in safety related areas. These systems require two steps for the release of water, thus preventing any potential misoperation, mechanical damage, or premature discharge of water. Further, as detailed in each fire hazard analysis Item 8, Fire Suppression System, equipment which could be adversely impacted by automatic water suppression system was provided with water tight enclosures, installed on pedestals and/or racks, motors were selected of totally enclosed construction, motor control centers and power centers are installed on pedestals. Water seals will be provided inside conduit entering power centers and motor control centers.

The fire hazards analysis was performed to meet the intent of Appendix A to BTP-APCSB 9.5-1 and identifies the location, type of system and design criteria. It describes the fire hazards for each fire area and the justifications for the protection provided. Alternate protection measures are provided where plant design and arrangement indicate the alternate offers, at a minimum, equivalent protection.

As described in FSAR Appendix 9.5B, Safe Shutdown Analysis in Case of Fire, Section 1, Chronology of Fire Protection Submittals the Shearon Harris fire protection program was based on the guidelines of Appendix A to USNRC Branch Technical Position (BTP) APCSB 9.5-1 dated August 23, 1976 for plants docketed prior to July 1, 1976, and the PSAR Fire Hazards Analysis (FHA) was performed in acordance with NRC letter of September 30, 1976 on the basis of the above listed criteria.

On June 26, 1980 CP&L submitted the SHNPP FSAR to the NRC, at which time the FHA was expanded following RG 1.70 Revision 3 - November 1978, Subsection 9.5.1.3 Safety Evaluation (Fire Hazards Analysis) however, the design cri- teria and design basis were the same as established in the PSAR Amendment 54.

The guidelines of an NRC BTP may be followed, or acceptable alternative my be provided by a Utility. Appendix A to BTP-APCSB 9.5-1 was not complied with as written by NRC. Alternatives to it were included in the SHNPP design and accepted by the NRC at the time when the Plant Construction Permit was issued.

The FHA presently filed with the NRC, FSAR Section 9.5-1 Appendix 9.5A did not address Appendix R or NUREG-0800 Criteria, because Appendix R was issued on November 19, 1980, becoming effective on February 17, 1981 and NUREG-0800 was issued on July 1, 1981. Both these documents were issued after the Plant FSAR Docketing.

The SHNPP FHA presently filed with the NRC did not verify that their NRC guidelines have been met. Further, we know that the intent was met.

SHNPP Safe Shutdown Analysis in Case of Fire (Appendix R), FSAR Appendix 9.5B, was performed in response to NRC Questions 280.13 and 280.14 and was submitted to the NRC. In this analysis either conformance to Appendix R was indicated or an exemption request was made for which justification is contained in the Safe Shutdown Analysis in case of fire.

NUREG-0800 BTP CMEB 9.5-1 was addressed in response to NRC Question 280.1 and this was submitted to the NRC. This comparison identifies and justifies deviations from these guidelines.

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.c. Fire Suppression System Design Basis

(1) Total reliance should not be placed on a single fire suppression system. Appropriate backup fire suppression capability should be provided.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.c. Fire Suppression System Design Basis

(1) Total reliance was not placed on a single fire suppression system. Appropriate backup fire suppression capability was provided. A full complement of appropriate hand fire extinguishers are installed throughout the plant to provide either initial fire-fighting capability or backup to any automatic or manual suppression systems. As a backup to hand fire extinguishers and/or automatic suppression systems, a system of 1-1/2 inch small hose connections are installed throughout so that all areas within each building will be reached with 100 feet of this hose, attached to a standpipe connection. As a final backup to all of the protection outlined above, outside hydrants and hose houses are also provided.

NRC GUIDELINES: POSITION (Cont'd)

C.1.c Fire Suppression Design Basis (Cont'd)

(2) A single active failure or a crack in a moderate-energy line (pipe) in the fire suppression system should not impair both the primary and backup fire suppression capability. For example, neither the failure of a fire pump, its power supply or controls nor a crack in a moderate-energy line in the fire suppression system, should result in loss of function of both sprinkler and hose standpipe systems in an area protected by such primary backup systems.

PROJECT CONFORMANCE: POSITION (Cont'd)

C.1.c(2) A single active failure or a crack in a moderate-energy line (pipe) in the fire suppression system will not impair both the primary and backup fire suppression capability. For example, neither the failure of a fire pump, its power supply or controls nor a crack in a moderate-energy line in the fire suppression system, will not result in loss of function of both sprinkler and hose standpipe systems in an area protected by such primary backup systems.

Where feasible, fire protection, detection and suppression system control circuitry are routed through areas not served by the systems and thus not exposed to failure by the fire incident.

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.c(3) As a minimum, the fire suppression system should be capable of delivering water to manual hose stations located within hose reach of areas containing equipment required for safe plant shutdown following the safe shutdown earthquake (SSE). In areas

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.c(3) of high seismic activity, the staff will consider on a case-by-case basis the need to design the fire detection and suppression systems to be functional following the SSE.

The fire suppression system is capable of delivering water to manual hose stations located within reach of areas containing equipment required for safe plant shutdown following the safe shutdown earthquake (SSE).

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.c(4) The fire protection systems should retain their original design capability for (a) natural phenomena of less severity and greater frequency than the most severe natural phenomena (approximately once in 10 years) such as tornadoes, hurricanes, floods, ice storms, or small-intensity earthquakes that are characteristic of the geographic region, and (b) potential man-made site-related events such as oil barge collisions or aircraft crashes that have a reasonable probability of occurring at a specific plant site. The effects of lightning strikes should be included in the overall plant fire protection.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.c(4) The fire protection systems were designed to retain their original design capability for (a) natural phenomena of less severity and greater frequency than the most severe natural phenomena (approximately once in 10 years) such as tornadoes, hurricanes, floods, ice storms, or small-intensity earthquakes that are characteristic of the geographic region. (b) For potential man-made site-related events refer to FSAR Section 2.2.3. Lihgtning protection is provided for the Plant.

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.c(5) The consequences of inadvertent operation of or a crack in a moderate energy line in the fire suppression system should meet the guidelines specified for moderate-energy systems outside containment in SRP Section 3.6.1.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.c(5) The consequences of a crack in a moderate energy line in the fire suppression system has been evaluated and meets the guidelines specified in SRP 3.6.1 as stated in FSAR Section 3.6.1 and 3.6.2. Inadvertant operation of an automatic suppression system is discussed in Project Conformance Item C.1.b, above.

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.d. Alternative or Dedicated Shutdown

Alternative or dedicated shutdown capability should be provided where the protection of systems whose functions are required for safe shutdown is not provided by established fire suppression methods or by Position C.5.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.d Alternative or dedicated shutdown is not contemplated at this time.

NRC GUIDELINES: C. POSITION (Cont'd)

C.1.e. Implementation of Fire Protection Programs

(1) The fire protection program (plans, personnel, and equipment) for buildings storing new reactor fuel and for adjacent fire areas that could affect the fuel storage area should be fully operational before fuel is received at the site. Such adjacent areas include those whose flames, hot gases, and fire-generated toxic and corrosive products may jeopardize safety and surveillance of the stored fuel.

(2) The fire protection program for an entire reactor unit should be fully operational prior to initial fuel loading in that reactor unit.

(3) On reactor sites where there is an operating reactor and construction or modification of other units is under way, the fire protection program should provide for continuing evaluation of fire hazards. Additional fire barriers, fire protection capability, and administrative controls should be provided as necessary to protect the operating unit from construction fire hazards.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.1.e CP&L will comply

NRC GUIDELINES: C. POSITION (Cont'd)

C.2. Administrative Controls

Administrative controls should be used to maintain the performance of the fire protection system and personnel. These controls should establish procedures to:

a. Prohibit bulk storage of combustible materials inside or adjacent to safety-related buildings or systems during operation or maintenance periods. Regulatory Guide 1.39 provides guidance on housekeeping, including the disposal of combustible materials.

b. Govern the handling and limitation of the use of ordinary combustible materials, combustible and flammable gases and liquids, high efficiency particulate air and charcoal filters, dry ion exchange resins, or other combustible supplies in safety-related areas.

c. Govern the handling of and limit transient fire loads such as combustible and flammable liquids, wood and plastic products, or other combustible materials in buildings containing safety-related systems or equipment during all phase of operating, and especially during maintenance, modification, or refueling operations.

d. Designate the onsite staff member responsible for the inplant fire protection review of proposed work activities to identify potential transient fire hazards and specify required additional fire protection work activity procedure.

e. Govern the use of ignition sources by use of a flame permit system control welding, flame cutting, brazing, or soldering operations. A separate permit should be issued for each area where work is to be done. If work continues over more than one shift, the permit should be valid for not more than 24 hours when the plant is operating or for the duration of a particular job during plant shutdown.

f. Control the removal from the area of all waste, debris, scrap, oil spills, or other combustibles resulting from the work activity immediately following completion of the activity, or at the end of each work shift, whichever comes first.

g. Govern leak testing; similar procedures such as airflow determination should use one of the commercially available techniques. Open flames or combustion-generated smoke should not be permitted.

h. Maintain the periodic housekeeping inspections to ensure continued compliance with these administrative controls.

i. Control the use of specific combustibles in safety-related areas. All wood used in safety-related areas during maintenance, modification, or refueling operation (such as lay-down blocks or scaffolding) should be treated with a flame retardant. Equipment or supplies (such as new fuel) shipped in untreated combustible packing containers may be unpacked in safety-related areas if required for valid operating reasons. However, all combustible materials should be removed from the area immediately following unpacking. Such transient combustible material, unless stored in approved containers, should not be left unattended during lunch breaks, shift changes, or other similar periods. Loose combustible packing material such as wood or paper excelsior, or polyethylene sheeting should be placed in metal containers with tight-fitting self-closing metal covers.

j. Disarming fire detection or fire suppression systems should be controlled by a permit system. Fire watches should be established in areas where systems are so disarmed.

k. Successful fire protection requires testing and maintenance of the fire protection equipment and the emergency lighting and communication. A test plan that lists the individuals and their responsibiliteis in connection with routine tests and inspections of the fire detection and protection systems should be developed. The test plan should contain the types, frequency, and detailed procedures for testing. Procedures should also contain instructions on maintaining fire protection during those periods when the fire protection system is impaired or during periods of plant maintenance, e.g., fire watches or temporary hose connections to water systems.

l. Control actions to be taken by an individual discovering a fire, for example, notification of control room, attempt to extinguish fire, and actuation of local fire suppression systems.

m. Control actions to be taken by the control room operaton to determine the need for brigade assistance upon report of a fire or receipt of alarm on control room annunciator panel, for example, announcing location of fire over PA system, sounding fire alarms, and notifying the shift supervisor and the fire brigade leader of the type, size, and location of the fire.

n. Control actions to be taken by the fire brigade after notification by the control room operator of a fire, for example, assembling in a designated location, receiving directions from the fire brigade leader, and discharging specific fire fighting responsibilities, including selection and transportation of fire fighting equipment to fire location, selection of protective equipment, operating instructions for use of fire suppression systems, and use of preplanned strategies for fighting fires in specfic areas.

o. Define the strategies for fighting fires in all safety-related areas and areas presenting a hazard to safety-related equipment. These strategies should designate.

(1) Fire hazards in each area covered by the specific prefire plans

(2) Fire extinguishants best suited for controlling the fires associated with the fire hazards in that area and the nearest location of these extinguishants.

(3) Most favorable direction from which to attack a fire in each area in view of the ventilation direction, access hallways, stairs, and doors that are most likely to be free of fire, and the best station or elevation for fighting the fire. All access and egress routes that involve locked doors should be specifically identified in the

procedure with the appropriate precautions and methods for access specified.

(4) Plant systems that should be managed to reduce the damage potential during a local fire and the location of local and remote controls for such management (e.g., any hydraulic or electrical systems in the zone covered by the specific fire fighting procedure that could increase the hazards in the area because of overpressurization or electrical hazards).

(5) Vital heat-sensitive system components that need to be kept cool while fighting a local fire. Particularly hazardous combustibles that need cooling should be designated.

(6) Organization of fire fighting brigades and the assignment of special duties according to job title so that all fire fighting functions are covered by any complete shift personnel complement. These duties include command control of the brigade, transporting fire suppression and support equipment to the fire scenes, applying the extinguishant to the fire, communication with the control room, and coordination with outside fire departments.

(7) Potential radiological and toxic hazards in fire zones.

(8) Ventilation system operation that ensures desired plant air distribution when the ventilation flow is modified for fire containment or smoke clearing operation.

(9) Operations requiring control room and shift engineer coordination of authorization.

(10) Instructions for plant operators and general plant personnel during fire.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.2 Administrative Controls

Procedures will be established to: control the use and storage of combustibles and flammables, control ignition sources through the use of a permit system, prohibit open flames or combustion-generated smoke for leak treating, provide for inspection programs to verify adherence to procedures, provide for periodic surveillance of fire protection systems, provide controls for disabling fire protection systems, post-fire watches when systems and/or barriers are degraded, provide for pre-fire plans, control storage of combustibles, hazardous chemicals, and resins. These procedures will comply with Section 2.a thru 2.o and will be reviewed and approved in accordance with the plant Procedures Administration Manual.

NRC GUIDELINES: C. POSITION (Cont'd)

C.3. Fire Brigade

a. The need for good organization, training, and equipping of fire brigades at nuclear power plant sites requires that effective measures be implemented to ensure proper discharge of these functions. The guidance in Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants," should be followed as applicable.

b. A site fire brigade trained and equipped for fire fighting should be established to ensure adequate manual fire fighting capability for all areas of the plant containing structures, systems, or components important to safety. The fire brigade should be at least five members on each shift. The brigade leader and at least two brigade members should have sufficient training in or knowledge of plant safety-related systems to understand the effects of fire and fire suppressants on safe shutdown capability. The qualification of fire brigade members should include an annual physical examination to determine their ability to perform strenuous fire fighting activities. The shift supervisor should not be a member of the fire brigade. The brigade leader shall be competent to assess the potential safety consequences of a fire and advise control room personnel. Such competence by the brigade leader may be evidenced by possession of an operator's license or equivalent knowledge of plant safety-related systems.

c. The minimum equipment provided for the brigade should consist of personal protective equipment such as turnout coats, boots, gloves, hard hats, emergency communications equipment, portable lights, portable ventilation equipment, and portable extinguishers. Self-contained breathing apparatus using full-face positive-pressure masks approved by NIOSH (National Institute for Occupational Safety and Health--approval formerly given by the U.S. Bureau of Mines) should be provided for fire brigade, damage control, and control room personnel. At least 10 masks shall be available for fire brigade personnel. Control room personnel may be furnished breathing air by a manifold system piped from a storage reservoir if practical. Service or rated operating life shall be a minimum of one-half hour for the self-contained units.

At least two extra air bottles should be located onsite for each self-contained breathing unit. In addition, an onsite 6-hour supply of reserve air should be provided and arranged to permit quick and complete replenishment of exhausted supply air bottles as they are returned. If compressors are used as a source of breathing air, only units approved for breathing air shall be used; compressors shall be operable assuming a loss of offsite power. Special care must be taken to locate the compressor in areas free of dust and contaminants.

d. The fire brigade training program shall ensure that the capability to fight potential fires is established and maintained. The program shall consist of an initial classroom instruction program followed by periodic classroom instruction, fire fighting practice, and fire drills.

(1) The initial classroom instruction should include:

(a) Indoctrination of the plant fire fighting plan with specific identification of each individual's responsibilities.

(b) Identification of the type and location of fire hazards and associated types of fires that could occur in the plant.

(c) The toxic and corrosive characteristics of expected products of combustion.

(d) Identification of the location of fire fighting equipment for each fire area and familiarization with the layout of the plant, including access and egress routes to each area.

(e) The proper use of available fire fighting equipment and the corrective method of fighting each type of fire. The types of fires covered should include fires in energized electrical equipment, fires in cables and cable trays, hydrogen fires, fires involving flammable and combustible liquids or hazardous process chemicals, fires resulting from construction or modification (welding), and record file fires.

(f) The proper use of communication, lighting, ventilation, and emergency breathing equipment.

(g) The proper method for fighting fires inside buildings and confined spaces.

(h) The direction and coordination of the fire fighting activities (fire brigade leaders only).

(i) Detailed review of fire fighting strategies and procedures.

(j) Review of the latest plant modifications and corresponding changes in fire fighting plans.

(k) Training of the plant fire brigade should be coordinated with the local fire department so that responsibilities and duties are delineated in advance. This coordination should be part of the training course and should be included in the training of the local fire department staff.

(1) Local fire departments should be provided training in operational precautions when fighting fires on nuclear power plant sites and should be made aware of the need for radiological protection of personnel and the special hazards associated with a nuclear power plant site.

Note: Items (i) and (j) may be deleted from the training of no more than two of the nonoperations personnel who may be assigned to the fire brigade.

(2) The instruction should be provided by qualified individuals who are knowledgeable experienced, and suitably trained in fighting the types of fires that could occur in the plant and in using the types of equipment available in the nuclear power plant.

(3) Instruction should be provided to all fire brigade members and fire brigade leaders.

(4) Regular planned meetings should be held at least every 3 months for all brigade members to review changes in the fire protection program and other subjects as necessary.

(5) Periodic refresher training sessions shall be held to repeat the classroom instruction program for all brigade members over a 2-year period. These sessions may be concurrent with the regular planned meetings.

(6) Practice

(a) Practice sessions should be held for each shift fire brigade on the proper method of fighting the various types of fires that could occur in a nuclear power plant. These sessions shall provide brigade members with experience in actual fire extinguishment and the use of emergency breathing apparatus under strenuous conditions encountered in fire fighting.

(b) These practice sessions should be provided at least once per year for each fire brigade member.

(7) Drills

(a) Fire brigade drills should be performed in the plant so that the fire brigade can practice as a team.

(b) Drills should be performed at regular intervals not to exceed 3 months for each shift fire brigade. Each fire brigade member should participate in each drill, but must participate in at least two drills per year.

A sufficient number of these drills, but not less than one for each shift fire brigade per year, should be unannounced to determine the fire fighting readiness of the plant fire brigade, brigade leader, and fire protection systems and equipment. Persons planning and authorizing an unannounced drill should ensure that the responding shift fire brigade members are not aware that a drill is being planned until it is begun. Unannounced drills should not be scheduled closer than 4 weeks.

At least one drill per year should be performed on a "back shift" for each shift fire brigade.

(c) The drills should be preplanned to establish the training objectives of the drill and should be critiqued to determine how well the training objectives have been met. Unannounced drills should be planned and critiqued by members of the management staff responsible for plant safety and fire protection. Performance deficiencies of a fire brigade or of individual fire brigade members should be remedied by scheduling additional training for the brigade or members.

Unsatisfactory drill performance should be followed by a repeat drill within 30 days.

(d) These drills should provide for local fire department participation periodically (at least annually).

(e) At 3-year intervals, a randomly selected unannounced drill should be critiqued by qualified individuals independent of the licensee's staff. A copy of the written report from such individuals should be available for NRC review.

(f) Drills should as a minimum include the following:

i. Assessment of fire alarm effectiveness, time required to notify and assembly fire brigade, and selection, placement, and use of equipment and fire fighting strategies.

ii. Assessment of each brigade member's knowledge of his or her role in the fire fighting strategy for the area assumed to contain the fire. Assessment of the brigade members' conformance with established plant fire fighting procedures and use of fire fighting equipment, including self-contained emergency breathing apparatus, communication equipment, and ventilation equipment, to the extent practicable.

iii. The simulated use of fire fighting equipment required to cope with the situation and type of fire selected for the drill. The area and type of fire chosen for the drill should differ from those used in the previous drills so that brigade members are trained in fighting fires in various plant areas. The situation

selected should simulate the size and arrangement of a fire that could reasonably occur in the area selected, allowing for fire development due to the time required to response, to obtain equipment, and organize for the fire, assuming loss of automatic suppression capability.

iv. Assessment of brigade leaders direction of the fire fighting efforting as to thoroughness, accuracy, and effectiveness.

(8) Records

Individual records of training provided to each fire brigade member, including drill critiques, should be maintained for at least 3 years to ensure that each member receives training in all parts of the training program. These records of training should be available for NRC review. Retraining or broadened training for fire fighting within buildings should be scheduled for all those brigade members whose performance records show deficiencies.

(9) Guidance Documents

NFPA 27, "Private Fire Brigade," should be followed in organization, training, and fire drills. This standard also is applicable for the inspection and maintenance of fire fighting equipment. Among the standards referenced in this document NFPA 197, "Training Standard on Initial Fire Attacks," should be utilized as applicable. NFPA booklets and pamphlets listed in NFPA 27 may be used as applicable for training references. In addition, courses in fire prevention and fire suppression that are recognized or sponsored by the fire protection industry should be utilized.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.3 Fire Brigade

The fire brigade will consist of five persons, three of which are knowledgeable in the effects of fire on plant operation and safe shutdown capability. The brigade leader possesses an operator's license or will demonstrate equivalent knowledge of safety-related systems.

Full protection clothing will be provided for the brigade including 10 SCBAs. Spare cylinders for one hours are supplied on site for each SCBA. An additional six-hour supply will be located on site for replenishment.

The team leader will have access to the key locker to gain access to locked fire doors. Fire doors will be monitored in accordance with technical specifications and/or one of the choices in C.5(a)(5).

See response to question 630.8 as transmitted on July 20, 1983.

NRC GUIDELINES: C. POSITION (Cont'd)

C.4. Quality Assurance Program

The quality assurance (QA) programs of applicants and contractors should ensure that the guidelines for design, procurement, installation, and testing and the administrative controls for the fire protection systems for safety-related areas are satisfied. The QA program should be under the management control of the QA organization. This control consists of (1) formulating a fire protection QA program that incorporates suitable requirements and is acceptable to the management responsible for fire protection or verifying that the program incorporates suitable requirements and is acceptable to the management responsible for fire protection, and (2) verifying the effectiveness of the QA program for fire protection through review, surveillance, and audits. Performance of other QA program functions for meeting the fire protection program requirements may be performed by personnel outside of the QA organization. The QA program for fire protection should be part of the overall plant QA program. It should satisfy the specific criteria listed below.

a. Design and Procurement Document Control

Measures should be established to ensure that the guidelines of the regulatory position of this guide are include in design and procurement documents and that deviations therefrom are controlled.

b. Instructions, Procedures, and Drawings

Inspecting, tests, administrative controls, fire drills, and training that govern the fire protection program should be prescribed by documented instructions, procedures, or drawings and should be accomplished in accordance with these documents.

c. Control of Purchased Material, Equipment, and Services

Measures should be established to ensure that purchased material, equipment, and services conform to the procurement documents.

d. Inspection

A program for independent inspection of activities affecting fire protection should be established and executed by or for the organization performing the activity to verify conformance with documented installation drawings and test procedures for accomplishing the activities.

e. Test and Test Control

A test program should be established and implemented to ensure that testing is performed and verified by inspection and audit to demonstrate conformance with design and system readiness requirements. The tests

should be performed in accordance with written test procedures; test results should be properly evaluated and acted on.

f. Inspection, Test, and Operating Status

Measures should be established to provide for the identification of items that have satisfactorily passed required tests and inspections.

g. Nonconforming Items

Measures should be established to control items that do not conform to specified requirements to prevent inadvertent use or installation.

h. Corrective Action

Measures should be established to ensure that conditions adverse to fire protection, such as failures, malfunctions, deficiencies, deviations, defective components, uncontrolled combustible material and nonconformances, are promptly identified, reported, and corrected.

i. Records

Records should be prepared and maintained to furnish evidence that the criteria enumerated above are being met for activities affecting the fire protection program.

j. Audits

Audits should be conducted to verify compliance with the fire protection program, including design and procurement documents, instructions, procedures and drawings, and inspection and test activities.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.4 Quality Assurance Program

The fire protection quality assurance program is described in FSAR Section 17.2.19. As Stated on page 9.5.1-48 of Subsection 9.5-1 of the FSAR a quality assurance program has been developed for fire protection. The Design Construction QA program is described in the PSAR and was approved by the NRC. However, for components of the fire protection system designed, specified, procured, manufactured, fabricated or installed prior to institution of the Fire Protection QA program (February 8, 1977) the program was followed to the extent practicable. The Engineering and Constructon fire protection quality assurance program was approved by the NRC during constructon permit review. The Operational Quality Assurance Program is described in Section 17.2 of the FSAR.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5. General Plant Guidelines

C.5a. Building Design

(1) Fire barriers with a minimum fire resistance rating of 3 hours should be provided to:

(a) Separate safety-related systems from any potential fires in nonsafety-related areas that could affect their ability to perform their safety function;

(b) Separate redundant divisions or trains of safety-related systems from each other so that both are not subject to damage from a single fire;

(c) Separate individual units on a multiple-unit site unless the requirements of General Design Criterion 5 are met with respect to fires.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5. General Plant Guidelines

C.5a. Building Design

(1) Fire barriers with a minimum fire resistance rating of 3 hours were provided to:

(a) Safety related systems were separated from non safety areas that could affect their ability to perform their safety functions. Turbine Building, Waste Processing Building, Water Treatment Building and Administration Building were separated by three hour rated fire barriers from buildings housing safety related equipment and systems. As stated in the FSAR, page 9.5.1-1, separate fire areas were established to separate redundant safety divisions and to isolate safety related systems from hazards in non safety related areas to the extent possible in the previously established plant design established prior to issuance of NUREG-0800.

(b) Redundant divisions or trains of safety-related systems were separated from each other so that both are not subject to damage from a single fire to the extent practical. However, a single train of ductwork provides air between redundant air handling units AH-15A and AH-15B and the Control Room. The same is true between the Electrical Equipment Protection Rooms and redundant air handling units AH-16A and AH-16B. Redundant safety related systems required for safe shutdown were separated in accordance with the requirements of Section III.G.2 of Appendix R to 10CFR50, or an exemption was requested, as detailed in the Safe Shutdown Analysis in Case

of Fire. For redundant safety related systems not required for Safe Shutdown, Regulatory Guide 1.75 separation criteria were followed, as described in the FSAR Section 8.3. In many cases the equipment was separated by distance in excess of that prescribed by R.G. 1.75, structural barriers, provision of automatic suppression and detection, or combination thereof.

(c) Separate individual units on a multiple-unit site. The requirements of General Design Criterion 5 with respect to fires was analyzed and it was determined that fires will not impair the ability of the other Unit to perform its safety functions.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(2) Appropriate fire barriers should be provided within a single safety division to separate components that present a fire hazard to other safety-related components or high concentrations of safety-related cables within that division.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5a.(2) Fire barriers were provided within a single safety division to separate components that present a fire hazard to other safety-related components or high concentrations of safety-related cables within that division.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(3) Openings through fire barriers for pipe, conduit, and cable trays which separate fire areas should be sealed or closed to provide a fire resistance rating at least equal to that required of the barrier itself. Openings inside conduit larger than 4 inches in diameter should be sealed at the fire barrier penetration. Openings inside conduit 4 inches or less in diameter should be sealed at the fire barrier unless the conduit extends at least 5 feet on each side of the fire barrier and is sealed either at both ends or at the fire barrier with noncombustible material to prevent the passage of smoke and hot gases. Fire barrier penetrations that must maintain environmental isolation or pressure differentials should be qualified by test to maintain the barrier integrity under such conditions.

Penetration designs should utilize only noncombustible materials and should be qualified by tests. The penetrations qualification tests should use the time-temperature exposure curve specified by ASTM E-119, "Fire Test of Building Construction and Materials." The acceptance criteria for the test should require that:

(a) The fire barrier penetration has withstood the fire endurance test without passage of flame or ignition of cables on the unexposed side for a period of time equivalent to the fire resistance rating required of the barrier.

(b) The temperature levels recorded for the unexposed side are analyzed and demonstrate that the maximum temperature does not exceed 325°F.

(c) The fire barrier penetration remains intact and does not allow projection of water beyond the unexposed surface during the hose stream test. The stream shall be delivered through a 1-1/2 inch nozzle set at a discharge angle of 30% with a nozzle pressure of 75 psi and a minimum discharge of 75 gpm with the tip of the nozzle a maximum of 6 ft from the exposed face; or the stream shall be delivered through a 1-1/2 inch nozzle set at a discharge angle of 15% with a nozzle pressure of 75 psi and a minimum discharge of 75 gpm with the tip of the nozzle a maximum of 10 ft from the exposed face; or the stream shall be delivered through a 2-1/2 inch national standard playpipe equipped with 1-1/2 inch tip, nozzle pressure of 30 psi, located 20 ft from the exposed face.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.a(3) Openings through fire barriers for pipe, conduit, and cable trays which separate fire areas will be sealed or closed to provide a fire resistance rating at least equal to that required of the barrier itself. Openings inside conduit larger than 4 inches in diameter will be sealed at the fire barrier penetration. Openings inside conduit 4 inches or less in diameter will be sealed at the fire barrier unless the conduit extends at least 5 feet on each side of the fire barrier and will be sealed either at both ends or at the fire barrier with noncombustible material to prevent the passage of smoke and hot gases. Fire barrier penetrations that must maintain environmental isolation or pressure differentials will be qualified by test to maintain the barrier integrity under such conditions.

Penetration designs will utilize only noncombustible materials and will be qualified by tests. The penetrations qualification tests will use the time-temperature exposure curve specified by ASTM E-119, "Fire Test of Building Construction and Materials." The acceptance criteria for the test will require that:

(a) The fire barrier penetration has withstood the fire endurance test without passage of flame or ignition of

cables on the unexposed side for a period of time equivalent to the fire resistance rating required of the barrier.

(b) The temperature levels recorded for the unexposed side are analyzed and demonstrate that the maximum temperature does not exceed an average of more than 250°F above its initial temperature; if any temperature readings on the unexposed surface exceed 250°F rise by greater than 30%, the reason shall be investigated and documented in the test report.

(c) The fire barrier penetration remains intact and does not allow projection of water beyond the unexposed surface during the hose stream test. The stream will be delivered through a 1-1/2 inch nozzle set at a discharge angle of 30% with a nozzle pressure of 75 psi and a minimum discharge of 75 gpm with the tip of the nozzle a maximum of 6 ft from the exposed face; or the stream will be delivered through a 1-1/2 inch nozzle set at a discharge angle of 15% with a nozzle pressure of 75 psi and a minimum discharge of 75 gpm with the tip of the nozzle a maximum of 10 ft from the exposed face; or the stream will be delivered through a 2-1/2 inch national standard playpipe equipped with 1-1/2 inch tip, nozzle pressure of 30 psi, located 20 ft from the exposed face; or the stream will be in accordance with Nuclear Mutual Limited Appendix A-14, which follows a modified IEEE 634.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(4) Penetration openings for ventilation systems should be protected by fire dampers having a rating equivalent to that required of the barrier (see NFPA-90A, "Air Conditioning and Ventilating Systems"). Flexible air duct coupling in ventilation and filter systems should be noncombustible.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.a(4) Penetration openings for ventilation systems will be protected by fire dampers having a rating equivalent to that required of the barrier per NFPA-90A, "Air Conditioning and Ventilating Systems" with the following exceptions

i) Exhaust and intakes at exterior walls, stacks and roofs. Because these walls are not contiguous with fire areas it was not necessary to provide fire dampers.

ii) Transfer air from RAB, HVAC equipment room to the tank area Elevation 286 because the tank area has negligible combustibles.

iii) Local cooler ductwork penetrating floors in RAB which are designated fire zone boundaries within fire areas 1-A-BAL and 12-A-BAL, and were upgraded to the equivalent of minimum 3-hour fire resistance rating.

The major part of flexible air duct coupling in ventilation and filter systems are metallic flexible connectors, which are noncombustible. The remainder are one of the following commercially available types, as manufactured by DuPont " Fairprene NN-0003 or DX-0002," or equal.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(5) Door openings in fire barriers should be protected with equivalently rated doors, frames, and hardware that have been tested and approved by a nationally recognized laboratory. Such doors should be self-closing or provided with closing mechanisms and should be inspected semiannually to verify that automatic hold-open, release, and closing mechanisms and latches are operable. (See NFPA 80, "Fire Doors and Windows.")

One of the following measures should be provided to ensure they will protect the opening as required in case of fire:

(a) Fire doors should be kept closed and electronically supervised at a continuously manned location;

(b) Fire doors should be locked closed and inspected weekly to verify that the doors are in the closed position;

(c) Fire doors should be provided with automatic hold-open and release mechanisms and inspected daily to verify that doorways are free of obstructions; or

(d) Fire doors should be kept closed and inspected daily to verify that they are in the closed position.

The fire brigade leader should have ready access to keys for any locked fire doors.

Areas protected by automatic total flooding gas suppression systems should have electrically supervised self-closing fire doors or should satisfy option (a) above.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.a(5) Door openings in fire barriers have fire resistant ratings equivalent to that of the fire barrier and are certified and guaranteed by the manufacturer to have fire resistant construction. Such doors will be self-closing or provided with

closing mechanisms and should be inspected semiannually to verify that automatic hold-open, release, and closing mechanisms and latches are operable, or normally secured closed.

One of the following measures will be provided to ensure they will protect the opening as required in case of fire:

(a) Fire doors will be kept closed and electronically supervised at a continuously manned location;

(b) Fire doors will be locked closed and inspected weekly to verify that the doors are in the closed position;

(c) Fire doors will be provided with automatic hold-open and release mechanisms and inspected daily to verify that doorways are free of obstructions; or

(d) Fire doors will be kept closed and inspected daily to verify that they are in the closed position.

The fire brigade leader will have ready access to keys for any locked fire doors.

Areas protected by automatic total flooding gas suppression systems will have electrically supervised self-closing fire doors or will satisfy option (a) above.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(6) Personnel access routes and escape routes should be provided for each fire area. Stairwells outside primary containment serving as escape routes, access routes for firefighting, or access routes to areas containing equipment necessary for safe shutdown should be enclosed in masonry or concrete towers with a minimum fire rating of 2 hours and self-closing Class B fire doors.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.a(6) Personnel access routes and escape routes are provided for each fire area. In most cases, more than one means of access or egress are provided, as detailed in the fire hazards analysis, for each fire area. Stairways outside the primary containment serving as escape routes, access routes for firefighting, or access routes to areas containing equipment necessary for safe shutdown are enclosed in masonry or concrete with a minimum fire resistive rating of 2 hours and provided with self-closing Class B type fire doors.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(7) Fire exit routes should be clearly marked.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.a(7) Fire exit routes are clearly marked.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(8) Each cable spreading room should contain only one redundant safety division. Cable spreading rooms should not be shared between reactors. Cable spreading rooms should be separated from each other and from other areas of the plant by barriers having a minimum fire resistance of 3 hours.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.a(8) Each cable spreading room should contain only one redundant safety division, except for Cable Spreading Room A, where as detailed in the Safe Shutdown Analysis in Case of Fire Sketch CAR-SH-SK-668S18, redundant B cables which run in the cable tray CC0078-SB and Conduits 16020G-SR2-2, 16020T-SR4-2, 10988B-SR4-2, 16106E-SR4-1, 10632H-SR4-1, 16020R-SR2-1. They will be enclosed in one hour fire resistance rated enclosure due to sprinkler system already existing in this area. Cable spreading rooms are not shared between reactors. Cable spreading rooms are be separated from each other and from other areas of the plant by barriers having a minimum fire resistance of 3 hours.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(9) Interior wall and structural components, thermal insulation materials, radiation shielding materials, and soundproofing should be noncombustible. Interior finishes should be non-combustible.

Materials that are acceptable for use as interior finish without evidence of test and listing by a nationally recognized laboratory are the following:

- Plaster, acoustic plaster, gypsum plasterboard (gypsum wallboard), either plain, wallpapered, or painted with oil- or water-base paint;
- Ceramic tile, ceramic panels;
- Glass, glass blocks;
- Brick, stone, concrete blocks, plain or painted;

- Steel and aluminum panels, plain, painted, or enameled;

- Vinyl tile, vinyl-asbestos tile, linoleum, or asphalt tile on concrete floors.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.a(9) Interior wall and structural components, thermal insulation materials, radiation shielding materials, and soundproofing are noncombustible. Interior finishes including thermal insulation radiaton shielding and sound proofing have a flame spread, smoke and fuel contribution of 50 or less as defined in ASTM E-84, "Surface Burning Characteristics of Building Materials".

Materials used as interior finish without evidence of test and listing by a nationally recognized laboratory are the following:

- Plaster, gypsum plasterboard (gypsum wallboard), or painted with oil- or water-base paint;

- Ceramic tile, ceramic panels;

- Glass;

- Concrete blocks, plain or painted;

- Steel panels, painted;

- Vinyl tile, vinyl-asbestos tile.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(10) Metal deck roof construction should be noncombustible and listed as "acceptable for fire" in the UL Building Materials Directory, or listed as Class I in the Factor Mutual System Approval Guide.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.a(10) Metal deck roof construction is not used on safety-related buildings.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(11) Suspended ceiling and their supports should be of noncombustible construction. Concealed spaces should be devoid of combustibles except as noted in Position C.7.b.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.a(11) Suspended ceilings and their supports are of non-combustible construction. Electrical wiring to lighting fixtures and HVAC systems in these spaces is in conduits to reduce the combustible loading.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(12) Transformers installed inside fire areas containing safety-related systems should be of the dry type or insulated and cooled with noncombustible liquid. Transformers filled with combustible fluid that are located indoors should be enclosed in a transformer vault (see Section 450(c) of NFPA 70, "National Electrical Code").

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.a(12) Transformers installed inside the buildings containing safety-related systems are dry type only. Transformers filled with combustible fluid are not located indoors.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(13) Outdoor oil-filled transformers should have oil spill confinement features or drainage away from the buildings. Such transformers should be located at least 50 feet distant from the building, or by ensuring that such building walls within 50 feet of oil-filled transformers are without openings and have a fire resistance rating of at least 3 hours.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.a(13) Outdoor oil filled transformers are located more than 50 feet from safety-related buildings and separated from the Turbine Building by two hour fire rated walls. Each transformer is installed over a gravel filled pit for oil spill confinement.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.a(14) Floor drains sized to remove expected firefighting waterflow without flooding safety-related equipment should be provided in those areas where fixed water fire suppression systems are installed. Floor drains should also be provided in other areas where hand hose lines may be used if such firefighting water could cause unacceptable damage to safety-related equipment in the area (see NFPA-92, "Waterproofing and Draining of Floors"). Where gas suppression systems are installed, the drains should be provided with adequate seals or the gas suppression system should be sized to compensate for the loss of the suppression

agent through the drains. Drains in areas containing combustible liquids should have provisions for preventing the backflow of combustible liquids to safety-related areas through the interconnected drain systems. Water drainage from areas that may contain radioactivity should be collected, sampled, and analyzed before discharge to the environment.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.a(14) Floor drains are provided in areas in which fixed water suppression systems and hoses are installed. Drainage requirements and impact on safety-related equipment will be considered before extending or adding water suppression systems. See Section 9.3.3 of the FSAR for a description of the drainage systems. Where gas suppression systems are installed the drains will be provided with adequate seals or the gas suppression systems will be sized to compensate for the loss of the suppression system agent through the drains. Equipment containing quantities of oil which may be of concern regarding backflow, such as the reactor coolant pumps, RHR pumps, chillers, the diesel generator, DG day tank and fuel oil storage, storage tank pumps, are remote from each other and are serviced by different drainage systems. In the containment any leakage would flow by gravity into the Containment Building sump where it would be pumped to the waste holdup tanks in the Waste Processing Building. In the RAB leakage would drain to the floor drain tanks, except at elevation 190 ft where it goes to the sump. From these points it would be pumped to the waste holdup tanks in the Waste Process Building. In the Diesel Generator Building any leakage from the diesel generator would be retained by curbs and flow into the Diesel Generator sump for transfer to the oil separator. In the DG Day Tank Room the spill would be retained by a 3 foot high dike before manually opening the drain valve to the Diesel Generator Building sump for transfer to the oil separator. The Diesel Generator F.O. transfer pumps have individual sumps from which oil is transferred to the oil separator. Water drained from areas having a potential for radioactive contamination is collected, sampled and analyzed before discharge to the environment. Areas with equipment controlling significant amounts of combustible liquids will have containment curbing to control inadvertant oil flows to surrounding areas and the drainage system. Where feasible, drains for these areas will be designed to minimize the possibility of combustible liquid fires spreading to other areas through the drains.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.b. Safe Shutdown Capability

(1) Fire protection features should be provided for structures, systems and components important to safe shutdown. These features should be capable of limiting fire damage so that:

(a) One train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station(s) is free of fire damage; and

(b) Systems necessary to achieve and maintain cold shutdown from either the control room or emergency control station(s) can be repaired within 72 hours.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.b Safe Shutdown Capability

(1) Fire protection features will be provided for structures, systems and components important to safe shutdown. These features will be capable of limiting fire damage so that:

(a) One train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station(s) is free of fire damage; and

(b) Systems necessary to achieve and maintain cold shutdown from either the control room or emergency control station(s) can be repaired within 72 hours.

For details refer to the Safe Shutdown Analysis in Case of Fire, FSAR Appendix 9.5B.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.b(2) To meet the guidelines of Position C5.b.1, one of the following means of ensuring that one of the redundant trains is free of fire damage should be provided;

(a) Separation of cables and equipment and associated circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers should be protected to provide fire resistance equivalent to that required of the barrier;

(b) Separation of cables and equipment and associated circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In

addition, fire detectors and an automatic fire suppression system should be installed in the fire area; or

(c) Enclosure of cable and equipment and associated circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system should be installed in the fire area.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.b(2) To meet the guidelines of Position C5.b.1, one of the following means of ensuring that one of the redundant trains is free of fire damage where cables or equipment including associated non-safety circuits that could prevent operation or cause maloperation due to hot shorts, open circuits, or short to ground, or redundant rains of systems necessary to achieve and maintain hot shutdown conditions are located within the same fire area outside of primary containment one of the following means of ensuring that one of the redundant trains is free of fire damage shall be provided.

(a) Separation of cables and equipment and associated circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers will be protected to provide fire resistance equivalent to that required of the barrier;

(b) Separation of cables and equipment and associated circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system will be installed in the fire area; or

(c) Enclosure of cable and equipment and associated circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system should be installed in the fire area;

Inside noninerted containments one of the fire protection means specified above or one of the following fire protection means will be provided:

(d) Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 50 feet with no intervening combustibles or fire hazards;

(e) Installation of fire detectors and an automatic fire suppression system in the fire area; or

(f) Separation of cables and equipment and associated non-safety circuits of redundant trains by a noncombustible radiant energy shield.

Generally complied with, as detailed in the Safe Shutdown Analysis in Case of Fire, with noted exceptions.

NRC GUIDELINES: POSITION (Cont'd)

C.5.b(3) If the guidelines of Positions C5.b.1 and C5.b.2 cannot be met, then alternative or dedicated shutdown capability and its associated circuits, independent of cables, systems or components in the area, room, or zone under consideration should be provided.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.b(3) Alternate or dedicated shutdown is not contemplated at this time, for details see FSAR Appendix 9.5B.

C.5.c. Alternative or Dedicated Shutdown Capability

(1) Alternative or dedicated shutdown capability provided for a specific fire area should be able to achieve and maintain subcritical reactivity conditions in the reactor, maintain reactor coolant inventory, achieve and maintain hot standby* conditions for a PWR (hot shutdown* for a BWR) and achieve cold shutdown* conditions within 72 hours and maintain cold shutdown conditions thereafter. During the post fire shutdown, the reactor coolant system process variables shall be maintained within those predicted for a loss of normal ac power, and the fission product boundary integrity shall not be affected; i.e., there shall be no fuel clad damage, rupture, or any primary coolant boundary, or rupture of the containment boundary.

(2) The performance goals for the shutdown functions should be:

(a) The reactivity control function should be capable of achieving and maintaining cold shutdown reactivity conditions.

(b) The reactor coolant makeup function should be capable of maintaining the reactor coolant level above the top of the core for BWRs and be within the level indication in the pressurizer for PWRs.

*As defined in the Standard Technical Specifications.

(c) The reactor heat removal function should be capable of achieving and maintaining decay heat removal.

(d) The process monitoring function should be capable of providing direct readings of the process variables necessary to perform and control the above functions.

(e) The supporting functions should be capable of providing the process cooling, lubrication, etc., necessary to permit the operation of the equipment used for safe shutdown functions.

(3) The shutdown capability for specific fire areas may be unique for each such area, or it may be one unique combination of systems for all such areas. In either case, the alternative shutdown capability shall be independent of the specific fire area(s) and shall accommodate postfire conditions where offsite power is available and where offsite power is not available for 72 hours. Procedures shall be in effect to implement this capability.

(4) If the capability to achieve and maintain cold shutdown will not be available because of fire damage, the equipment and systems comprising the means to achieve and maintain the hot standby or hot shutdown conditions shall be capable of maintaining such conditions until cold shutdown can be achieved. If such equipment and systems will not be capable of being powered by both onsite and offsite electric power systems because of fire damage, an independent onsite power system shall be provided. The number of operating shift personnel, exclusive of fire brigade members, required to operate such equipment and systems shall be onsite at all times.

(5) Equipment and systems comprising the means to achieve and maintain cold shutdown conditions should not be damaged by fire; or the fire damage to such equipment and systems should be limited so that the systems can be made operable and cold shutdown achieved within 72 hours. Materials for such repairs shall be readily available onsite and procedures shall be in effect to implement such repairs. If such equipment and systems used prior to 72 hours after the fire will not be capable of being powered by both onsite and offsite electric power systems because of fire damage, an independent onsite power system should be provided. Equipment and systems used after 72 hours may be powered by offsite power only.

(6) Shutdown systems installed to ensure postfire shutdown capability need not be designed to meet seismic Category I criteria, single failure criteria, or other design basis accident criteria, except where required for other reasons,

e.g., because of interface with or impact on existing safety systems, or because of adverse valve actions due to fire damage.

(7) The safe shutdown equipment and systems for each fire area should be known to be isolated from associated circuits in the fire area so that hot shorts, open circuits, or shorts to ground in the associated circuits will not prevent operation of the safe shutdown equipment. The separation and barriers between trays and conduits containing associated circuits of one safe shutdown division and trays and conduits containing associated circuits or safe shutdown cables from the redundant division, or the isolation of these associated circuits from the safe shutdown equipment, should be such that a postulated fire involving associated circuits will not prevent safe shutdown.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.c Safe Shutdown Capability

Alternate or Dedicated Shutdown Capability is not contemplated at this time.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.d. Control of Combustibles

(1) Safety-related systems should be isolated or separated from combustible materials. When this is not possible because of the nature of the safety system or the combustible material, special protection should be provided to prevent a fire from defeating the safety system function. Such protection may involve a combination of automatic fire suppression, and construction capable of withstanding and containing a fire that consumes all combustibles present. Examples of such combustible materials that may not be separable from the remainder of its system are:

(a) Emergency diesel generator fuel oil day tanks.

(b) Turbine-generator oil and hydraulic control fluid systems.

(c) Reactor coolant pump lube oil system.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.d Control of Combustibles

(1) Safety-related equipment and systems are isolated or protected against exposure from ignition sources or high combustible loading. This separation and protection consists of physical separation, fire rated barriers, fire suppression, fire control

or damage limitation systems or any combination of these which provides the degree of separation required by the fire hazard analysis.

Examples of typical combustible materials that may not be separable from the remainder of its system and the isolation or protection provided, are:

(a) Each emergency diesel fuel oil day tank is located within a concrete vault, which is separated from other plant areas by three hour fire barriers. An automatic, multi-cycle sprinkler system actuated by thermal detection is provided for each area, with hose station and yard hoseline equipment and portable extinguishers as backup.

(b) The turbine-generator lubricating oil system is located within the turbine building, away from all safety-related equipment. This area is provided with an automatic pre-action sprinkler system actuated by thermal detection for equipment and property protection. A fire in this area will not pose any hazard to safety-related equipment.

(c) The reactor coolant pump lube oil system is located within containment near the reactor coolant pumps and will be equipped with an oil collection system. The oil collection system will be designed, engineered and installed so that failure will not lead to fire during design basis accident conditions and that there will be reasonable assurance that the system will withstand the safe shutdown earthquake. A thermal automatic detection system is provided around each reactor coolant pump.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.d(2) Bulk gas storage (either compressed or cryogenic), should not be permitted inside structures housing safety-related equipment. Storage of flammable gas such as hydrogen should be located outdoors or in separate detached buildings so that a fire or explosion will not adversely affect any safety-related systems or equipment. (Refer to NFPA 50A, "Gaseous Hydrogen Systems.")

Care should be taken to locate high pressure gas storage containers with the long axis parallel to building walls. This will minimize the possibility of wall penetration in the event of a container failure. Use of compressed gases (especially flammable and fuel gases) inside buildings should be controlled. (Refer to NFPA 6, "Industrial Fire Loss Prevention.")

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.d(2) Bulk storage of compressed or cryogenic gases is not permitted within structures housing safety-related equipment. Flammable gases such as hydrogen are stored outdoors and will not expose safety-related equipment, systems or structures. Systems are designed to applicable codes.

Care will be taken to locate high pressure gas storage containers with the long axis parallel to building walls, to minimize the possibility of wall penetration in the event of a container failure. Use of compressed gases (especially flammable and fuel gases) inside buildings will be controlled.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.d(3) The use of plastic materials should be minimized. In particular, halogenated plastics such as polyvinyl chloride (PVC) and neoprene should be used only when substitute noncombustible materials are not available. All plastic materials, including flame and fire retardant materials, will burn with an intensity and BTU production in a range similar to that of ordinary hydrocarbons. When burning, they produce heavy smoke that obscures visibility and can plug air filters, especially charcoal and HEPA. The halogenated plastics also release free chlorine and hydrogen chloride when burning which are toxic to humans and corrosive to equipment.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.d(3) The use of plastic materials is minimized. Plastics are used only where required as essential equipment and to the minimum extent possible, as detailed in the fire hazards analysis. A small quantity of vinyl is used for trimming of non-seismic instrumentation cable tray cover cutouts for cable exits from those trays which are solid bottom with cover construction. Standard Products Quickedge Minitrim Part No. 75000341, which is a vinyl was the only material available to meet the installation requirements, and therefore was selected for this application. It's use is limited to a minimum 6 in. radius to a maximum of 12 in. by 13 in. rectangular cutout. The "Quickedge" vinyl is self-extinguishing passing Federal Specification FSS-302.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.d(4) Storage of flammable liquids should, as a minimum, comply with the requirements of NFPA 30, "Flammable and Combustible Liquids Code."

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.d(4) Storage and use of flammable and combustible liquids follows the intent and basic criteria of NFPA 30, "Flammable and Combustible Liquid Code" except that the requirements of NFPA-37 "Installation and Use of Stationary Combustion Engines and Gas Turbines" apply to the installation of the Diesel Generator Day Tank. Specific standard requirements are met where compatible with other design requirements.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.d(5) Hydrogen lines in safety-related areas should be either designed to seismic Class I requirements, or sleeve such that the water pipe is directly vented to the outside, or should be equipped with excess flow valves so that in case of a line break, the hydrogen concentration in the affected areas will not exceed 2%.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.d(5) Hydrogen lines do not pass through areas housing safety-related equipment.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.e. Electrical Cable Construction, Cable Trays, and Cable Penetrations

(1) Only metal should be used for cable trays. Only metallic tubing should be used for conduit. Thin-wall metallic tubing should not be used. Flexible metallic tubing should only be used in short lengths to connect components to equipment. Other raceways should be made of noncombustible material.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.e. Electrical Cable Construction, Cable Trays, and Cable Penetrations

(1) Cable trays and other raceways are constructed of non-combustible material. Metallic tubing is used for conduit and thin wall tubing is not used. Short lengths of flexible metallic tubing are used to connect components to equipment. A small quantity of vinyl is used for cable trays as described in Position C.5.d(3). PVC is used only for raceways embedded in concrete or underground applications.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.e(2) Redundant safety-related cable systems outside the cable spreading room should be separated from each other and from potential fire exposure hazards in nonsafety-related areas by

fire barriers with a minimum fire rating of 3 hours. These cable trays should be provided with continuous line-type heat detectors and should be accessible for manual firefighting. Cables should be designed to allow wetting down with fire suppression water without electrical faulting. Manual hose stations and portable hand extinguishers should be provided.

Safety-related cable trays of a single division that are separated from redundant divisions by a fire barrier with a minimum rating of 3 hours and are normally accessible for manual firefighting should be protected from the effects of a potential exposure fire by providing automatic water suppression in the area where such a fire could occur. Automatic area protection, where provided, should consider cable tray arrangements and possible transient combustibles to ensure adequate water coverage for areas that could present an exposure hazard to the cable system. Manual hose standpipe systems may be relied upon to provide the primary fire suppression (in lieu of automatic water suppression systems) for safety-related cable trays of a single division that are separated from redundant safety division by a fire barrier with a minimum rating of 3 hours and are normally accessible for manual firefighting if all of the following conditions are met:

(a) The number of equivalent* standard 24-inch-wide cable trays (both safety-related and nonsafety-related) in a given fire area is six or less;

(b) The cabling does not provide instrumentation, control or power to systems required to achieve and maintain hot shutdown; and

(c) Smoke detectors are provided in the area of these cable routings, and continuous line-type heat detectors are provided in the cable trays.

Safety-related cable trays that are not accessible for manual fire fighting should be protected by a zoned automatic water system with open-head deluge or open directional spray nozzles arranged so that adequate water coverage is provided for each cable tray. Such cable trays should also be protected from the effects of a potential exposure fire by providing automatic water suppression in the area where such a fire could occur.

* Trays exceeding 24 inches should be counted as two trays; trays exceeding 48 inches should be counted as three trays, regardless of tray fill.

In the other areas where it may not be possible because of other overriding design features necessary for reasons of nuclear safety to separate redundant safety-related cable systems by 3-hour-rated fire barriers, cable trays should be protected by an automatic water system with open-head deluge or open directional spray nozzles arranged so that adequate water coverage is provided for each cable tray. Such cable trays should also be protected from the effects of a potential exposure fire by providing automatic water suppression in the area where such a fire could occur. The capability to achieve and maintain safe shutdown considering the effects of a fire involving fixed and potential transient combustibles should be evaluated with and without actuation of the automatic suppression system and should be justified on a suitably defined basis.

PROJECT CONFORMANCE: C. POSITION (Cont"d)

C.5.e(2) Redundant safety related cable systems outside the cable spreading room are separated from potential fire exposure hazards in non-safety related areas by fire barriers having a minimum fire rating of 3 hours. Redundant safety related cable systems outside the cable spreading room are separated from each other and from potential fire exposure hazards by separation criteria given in Regulatory Guide 1.75 plus automatic smoke detection and/or preaction or multi-cycle sprinkler systems actuated by thermal detection. Redundant cable systems required for safe shutdown in case of fire were separated in accordance with Section III.G.2 of Appendix R to 10CFR50, as detailed in the Safe Shutdown Analysis in Case of Fire, with noted exceptions. Additional evaluation and identification of exceptions resulting from recent clarifications are ongoing. Spot type ionization smoke detectors and thermal detectors located above the cable trays are provided instead of line type thermal detection. These detectors are sensitive to products of combustion and provide early warning in the first stages of a fire. Cables are designed to allow wetting down with fire suppression water without electrical faulting. Manual hose stations and portable hand extinguishers are provided.

Safety-related cable trays separated by fire barriers with a mininum rating of three hours and accessible for manual fire fighting are protected by automatic suppression systems from the effects of an exposure fire. Where provided, automatic area protection considers cable tray arrangements and transient combustibles to assure adequate protection against exposure fires. Manual hose stations are not relied upon for primary fire suppression for redundant safety cables in lieu of automatic water suppression.

Locations where safety-related cable trays are not accessible for manual fire fighting are not present, except for Cable Spreading Area 1A-SA where SB cable trays are enclosed in three hour fire resistive barriers along the outside wall of the area north from column line 41B to 43B and west from 43B to 43E. In other areas where it may not be possible because of other overriding design features necessary for reasons of nuclear safety to separate safety-related cables systems by 3-hour-rated fire barriers, cable trays are protected by either pre-action or multicycle sprinkler systems equipped with closed sprinkler heads. Since the two step operation of closed sprinkler head systems requires activation of the sprinkler flow control valve by automatic detectors or manual fire alarm stations and fusing of the sprinkler heads by heat from the fire before water is discharged, unnecessary water damage resulting from premature discharge or inadvertent operation is avoided. Water is discharged only from sprinkler heads in the immediate area of the fire. The capability to achieve and maintain safe shutdown in case of fire is evaluated in the Safe Shutdown Analysis.

For the Safe Shutdown Analysis in Case of Fire, wherever 3-hour rated fire barriers could not be provided one of the separation criteria of Section III.G of Appendix R to to 10CFR50 were provided or an exemption request and the technical basis for it identified, as detailed in the FSAR Appendix 9.5B.3. The capability to achieve and maintain safe shutdown considering the effects of a fire involved fixed and potential transient combustibles were evaluated with and without actuation of the automatic system, as detailed in the Safe Shutdown Analysis, in Case of Fire, with noted exceptions. Additional evaluation and identification of exceptions resulting from recent clarifications are ongoing. Exposure fires were considered only for Safety Related Systems designated as required for Safe Shutdown Analysis in Case of Fire.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.e(3) Electric cable construction should, as a minimum, pass the flame test in the current IEEE Std 383. (This does not imply that cables passing this test will not require fire protection.)

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.e(3) The electric cable construction conforms to IEEE Std. 383 except communication cable which runs in conduit or underground.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.e(4) Cable raceways should be used only for cables.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

3.5.e(4) Cable raceways are only used for cables

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.e(5) Miscellaneous storage and piping for flammable or combustible liquids or gases should not create a potential exposure hazard to safety-related systems.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.e(5) Miscellaneous storage and piping for flammable or combustible liquids or gases will not create a potential exposure hazard to safety-related systems.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.f. Ventilation

(1) The products of combustion and the means by which they will be removed from each fire area should be established during the initial stages of plant design. Consideration should be given to the installation of automatic suppression systems as a means of limiting smoke and end heat generation. Smoke and corrosive gases should generally be discharged directly outside to an area that will not affect safety-related plant areas. The normal plant ventilation system may be used for this purpose if capable and available. To facilitate manual firefighting, separate smoke and heat vents should be provided in specific areas such as cable spreading rooms, diesel fuel oil storage areas, switchgear rooms, and other areas where the potential exists for heavy smoke conditions (see NFPA 204 for additional guidance on smoke control).

PROJECT CONFORMANCE: C. Position (Cont'd)

C.5.f. Ventilation

(1) Methods of removing the products of combustion from each fire area is specifically delineated in FSAR Appendix 9.5A. Smoke from the Containment, Reactor Auxiliary, Fuel Handling, Waste Processing and Turbine Buildings will be discharged through main plant stacks whose discharge points are well removed from safety-related plant areas. The Diesel Generator Building, Diesel Fuel Oil Tank Building and Emergency Service Water Intake Structure are remote from the main plant area and smoke discharged from these structures will not affect other safety-related plant areas. In all cases the outside air intakes were located in consideration of the possibility of short

circuiting of exhaust air and in turn any smoke discharge from reentering the building. See Section 9.4.0 of FSAR for discussion of plant effluent release points. As indicated in Appendix 9.5A the normal plant ventilation systems will be used for smoke venting. The Control Room and Electric Equipment Protection Rooms are provided with specially designed smoke purge systems. For the Cable Spreading Rooms and Switchgear Rooms specially designed smoke purge systems will be available for smoke venting in lieu of separate smoke and heat vents; architectural limitations precluded the utilization of smoke and heat vents.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.f(2) Release of smoke and gases containing radioactive materials to the environment should be monitored in accordance with emergency plans as described in the guidelines of Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants." Any ventilation system designed to exhaust potentially radioactive smoke or gases should be evaluated to ensure that inadvertent operation or single failures will not violate the radiologically controlled areas of the plant design. This requirement includes containment functions for protecting the public an maintaining habitability for operations personnel.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.f(2) The release of smoke that can potentially carry radioactive material is monitored at the stack discharge points. In addition, area radioactive monitors are provided in areas containing radioactive material. See Section 9.5.1.2.2 of FSAR for further discussion of this subject. Normal ventilation systems are used to exhaust smoke and products of combustion for most of the plant areas. FSAR Section 9.5.1.2.2 describes these systems operations.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.f(3) Special protection for ventilation power and control cables may be required. The power supply and controls for mechanical ventilation systems should be run outside the fire area served by the system where practical.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.f(3) Special protection was provided for cables and ventilation systems which were designated as being required for the safe shutdown of the plant in case of a fire. The separation criteria as described in 10CFR50 Appendix R Part III.G was used for ventilation and control cables required for Safe Shutdown. Refer to the Safe Shutdown Analysis in Case of Fire for details and /or exemptions requested. For the balance of the plant, the power

supply and controls for mechanical ventilation systems were run outside the fire areas served by the system to the extent practical.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.f(4) Engineered safety feature filters should be protected in accordance with the guidelines of Regulatory Guide 1.52. Any filter that includes combustible materials and is a potential exposure fire hazard that may affect safety-related components should be protected as determined by the fire hazards analysis.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.f(4) Engineered safety feature filters are protected in accordance with the guidelines of Regulatory Guide 1.52. Any filter that includes combustible materials and is a potential exposure fire hazard that may affect safety-related components was protected as determined by the fire hazards analysis, for details see Section 9.5A.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.f(5) The fresh air supply intakes to areas containing safety-related equipment or systems should be located remote from the exhaust air outlets and smoke vents of other fire areas to minimize the possibility of contaminating the intake air with the products of combustion.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.f(5) The fresh air supply intakes to areas containing safety-related equipment or systems were located remote from the exhaust air outlets and smoke vents of other fire areas to minimize the possibility of contaminating the intake air with the products of combustion, to the extend practical. See response to item C.5.f (1) above for discussion on this subject.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.f(6) Stairwells should be designed to minimize smoke infiltration during a fire.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.f(6) Stairwells are designed to minimize smoke infiltration during a fire.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.f(7) Where total flooding gas extinguishing systems are used, area intake and exhaust ventilation dampers should be controlled in accordance with NFPA 12, "Carbon Dioxide Systems," and NFPA 12A, "Halon 1301 Systems," to maintain the necessary gas concentration.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.f(7) Where total gas extinguishing systems are used, air intake and exhaust ventilation dampers will be controlled in accordance with NFPA 12 and and NFPA 12A in order to maintain the necessary gas concentration.

NRC GUIDELINES: POSITION C. (Cont'd)

C.5.g. Lighting and Communication

Lighting and two-way voice communication are vital to safe shutdown and emergency response in the event of fire. Suitable fixed and portable emergency lighting and communication devices should be provided as follows:

(1) Fixed self-contained lighting consisting of fluorescent or sealed-beam units with individual 8-hour minimum battery power supplies should be provided in areas that must be manned for safe shutdown and for access and egress routes to and from all fire areas. Safe shutdown areas include those required to be manned if the control room must be evacuated.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.g. Lighting and Communication

(1) Suitable fixed and portable emergency lighting and communication devices are provided as follows:

Except for the control, auxiliary control and computer rooms, fixed self-contained seal beam units with individual 8-hour minimum battery power supplies will be provided in areas that must be manned for safe shutdown and for access and egress routes to and from all fire areas. The DC Emergency Lighting System using the plant 125V battery provides emergency lighting for the control room, auxiliary control room, and computer room. See FSAR Section 9.5.3.2. The cable routing for the DC Emergency Lighting will be included in the Safe Shutdown Analysis in Case of Fire and separated or protected in accordance with Appendix R to 10CFR50 criteria.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.g(2) Suitable sealed-beam battery-powered portable hand lights should be provided for emergency use by the fire brigade and other operations personnel required to achieve safe plant shutdown.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.g(2) Suitable sealed-beam battery-powered portable hand lights will be provided for emergency use by the fire brigade and other operations personnel required to achieve safe plant shutdown.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.g(3) Fixed emergency communications independent of the normal plant communication system should be installed at preselected stations.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.g(3) Fixed emergency communications independent of the normal plant communication system will be installed at preselected stations.

NRC GUIDELINES: C. POSITION (Cont'd)

C.5.g(4) A portable radio communications system should be provided for use by the fire brigade and other operations personnel required to achieve safe plant shutdown. This system should not interfere with the communications capabilities of the plant security force. Fixed repeaters installed to permit use of portable radio communication units should be protected from exposure fire damage. Preoperational and periodic testing should demonstrate that the frequencies used for portable radio communication will not affect the actuation of protective relays.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.5.g(4) CP&L will comply

NRC GUIDELINES: C. POSITION (Cont'd)

C.6. Fire Detection and Suppression

a. Fire Detection

(1) Detection systems should be provided for all areas that contain or present a fire exposure to safety-related equipment.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6. Fire Detection and Suppression

a. Fire Detection

(1) Manual release capability and/or automatic detection systems will be provided for all areas that contain or present a fire exposure

to safety-related equipment, with exceptions detailed in the Safe Shutdown Analysis in Case of Fire.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.a(2) Fire detection systems should comply with the requirements of Class A systems as defined in NFPA 72D, "Standard for the Installation, Maintenance, and Use of Proprietary Protective Signaling Systems," and Class I circuits as defined in NFPA 70, "National Electrical Code."

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.a(2) For details on the Fire Detection System refer to FSAR Section 9.5.1. As stated in Section 9.5.1.2.3 of the FSAR the fire detection systems will be Class A systems in accordance with NFPA 72D "Standard for the Installation, Maintenance, and Use of Proprietary Protective Signaling Systems," and have Class 1 circuits as defined in NFPA 70, "National Electric Code."

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.a(3) Fire detectors should be selected and installed in accordance with NFPA 72E, "Automatic Fire Detectors." Preoperational and periodic testing of pulsed line-type heat detectors should demonstrate that the frequencies used will not affect the actuation of protective relays in other plant systems.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.a(3) Fire detectors are selected and installed in accordance with NFPA 72E, "Automatic Fire Detectors." Ionization detectors installed on an area basis for early warning and rate compensated thermal detectors are used to provide supplementary detection capability in lieu of relying solely on line type detectors.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.a(4) Fire detection systems should give audible and visual alarm and annunciation in the control room. Where zoned detection systems are used in a given fire area, local means should be provided to identify which detector zone has actuated. Local audible alarms should sound in the fire area.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.a(4) Fire detection systems give audible and visual alarm and annunciation in the control room. Where zoned detection systems are used in a given fire area, local means will be provided to identify which detector zone has actuated. Local audible alarms

sound in the fire area. For details refer to FSAR Section 9.5.1.2.3.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.a(5) Fire alarms should be distinctive and unique so they will not be confused with any other plant system alarms.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.a(5) Fire alarms are distinctive and unique so they will not be confused with any other plant system alarms.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.a(6) Primary and secondary power supplies should be provided for the fire detection system and for electrically operated control valves for automatic suppression systems. Such primary and secondary power supplies should satisfy provisions of Section 2220 of NFPA 72D. This can be accomplished by using normal offsite power as the primary supply with a 4-hour battery supply as secondlary supply; and by providing capability for manual connection to the Class 1E emergency power bus within 4 hours of loss of offsite power. Such connection should follow the applicable guidelines in Regulatory Guides 1.6, 1.32, and 1.75.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.a(6) Power for operation of fire detection systems and for actuation of fire suppression system is supplied from the balance of plant static uninterruptible power supply. The fire detection alarm panels are supplied from Uninterruptible Power Supply (UPS) Bus #1, which is supplied from the 60 kVa static UPS system. The UPS system in turn is supplied from non-Class 1E motor control centers (MCC). In the event of loss of offsite power, the station 250 volt DC battery which is capable of supplying the 60 kVa static UPS system. Bus DP-1-250 is also connected via battery chargers to the Class 1E emergency diesel generator manual load block. FSAR Figure 8.1.3-3 shows this configuration.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b. Fire Protection Water Supply Systems

(1) An underground yard fire main loop should be installed to furnish anticipated water requirements. NFPA 24, "Standard for Outside Protection," gives necessary guidance for such installation. It references other design codes and standards developed by such organizations as the American National Standards Institute (ANSI) and the American Water Works Association (AWWA). Type of pipe

and water treatment should be design considerations with tuberculation as one of the parameters. Means for inspecting and flushing the systems should be provided.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(1) An underground yard fire main loop is installed to furnish anticipated water requirements. NFPA 24, "Standard for Outside Protection," was followed for this installation. Ductile iron cement and bitumastic lining pipe and fresh water was used to prevent tuberculation. Means for inspecting and flushing the systems were provided.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(2) Approved visually indicating sectional control valves such as post-indicator valves should be provided to isolated portions of the main for maintenance or repair without shutting off the supply to primary and backup fire suppression systems serving areas that contain or expose safety-related equipment.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(2) Approved visually indicating sectional control valves such as post-indicator valves were provided to isolate portions of the main for maintenance or repair without shutting off the supply to primary and backup fire suppression systems serving areas that contain or expose safety-related equipment.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(3) Valves should be installed to permit isolation of outside hydrants from the fire main for maintenance or repair without interrupting the water supply to automatic or manual fire suppression systems in any area containing or presenting a fire hazard to safety-related or safe shutdown equipment.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(3) Valves were installed to permit isolation of outside hydrants from the fire main for maintenance or repair without interrupting the water supply to automatic or manual fire suppression systems in any area containing or presenting a fire hazard to safety-related or safe shutdown equipment.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(4) The fire main system piping should be separate from service or sanitary water system piping, except as described in Position C.6.c.(4).

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(4) The fire main system piping is separated from service or sanitary water system piping, except as described in Position C.6.c.(4).

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(5) A common yard fire main loop may serve multiunit nuclear power plant sites if cross-connected between units. Sectional control valves should permit maintaining independence of the individual loop around each unit. For such installations, common water supplies may also be utilized. For multiple-reactor sites with widely separated plants (approaching 1 mile or more). Separate yard fire main loops should be used.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(5) A common yard fire main loop serves Shearon Harris Units 1 and 2 nuclear power plant sites and is cross-connected between units. Sectional control valves permit maintaining independence of the individual loop around each unit. Common water supplies are utilized.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(6) If pumps are required to meet system pressure or flow requirements. A sufficient number of pumps should be provided to ensure that 100% capacity will be available assuming failure of the largest pump or loss of offsite power (e.g., three 50% pumps or two 100% pumps). This can be accomplished, for example, by providing either:

(a) Electric motor-driven fire pump(s) and diesel-driven fire pump(s); or

(b) Two or more seismic Category I Class 1E electric motor-driven fire pumps connected to redundant Class 1E emergency power buses (see Regulatory Guides 1.6, 1.32, and 1.75).

Individual fire pump connections to the yard fire main loop should be separated with sectionalizing valves between connections. Each pump and its driver and controls should be located in a room separated from the remaining fire pumps by a fire wall with a minimum rating of 3 hours. The fuel for the diesel fire pump(s) should be separated so that it does not provide a fire source exposing safety-related equipment. Alarms indicating pump running, driver availability, failure to start, and low fire-main pressure should be provided in the control room.

The fire pump installation should conform to NFPA 20, "Standard for the Installation of Centrifugal Fire Pumps."

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(6) Two 100% capacity fire pumps, one electric driven and one diesel driven, installed in accordance with NFPA 20, are provided. The electric driven fire pump is UL listed and the diesel driven fire pump is FM approved. Individual fire pump connections to the yard fire main are separated by sectional valves between connections. The pumps are installed at opposite ends of the emergency service water intake structure which provides spacial separation in lieu of a fire wall. The diesel fire pump fuel supply is located about 12 feet away from the emergency service water intake structure within one foot high curbs which direct the oil to the sump within the curbs. Alarms indicating pump running, driver availability and failure to start are provided in the control room. A low fire-main pressure alarm is not provided since a jockey pump maintains system pressure at about 100 psig. If system pressure is not maintained by the jockey pump the electric driven pump will start when the system pressure drops to about 90 psig. The cause of the start-up of the electric driven pump will be investigated by the operator.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(7) Outside manual hose installation should be sufficient to provide an effective hose stream to any onsite location where fixed or transient combustibles could jeopardize safety-related equipment. Hydrants should be installed approximately every 250 ft on the yard main system. A hose house equipped with hose and combination nozzle and other auxiliary equipment recommended in NFPA 24, "Outside Protection," should be provided as needed, but at least every 1,000 ft. Alternatively, mobile means of providing hose and associated equipment, such as hose carts or trucks, may be used. When provided, such mobile equipment should be equivalent to the equipment supplied by three hose houses.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(7) Hydrants are installed approximately every 250 feet on the yard fire main loop. Each hydrant is furnished with hose, combination nozzle and other auxiliary equipment as recommended by NFPA-24, "Outside Protection".

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(8) Threads compatible with those used by local fire departments should be provided on all hydrants, hose couplings, and standpipe risers.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(8) Threads for fire hose and equipment are NST in accordance with NFPA 1963. Each hose house is equipped with two adapters tagged "Raleigh Fire Department Adapter" and "Sanford Fire Department Adapter" which fit local fire department threads.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(9) Two separate, reliable freshwater supplies should be provided. Saltwater or brackish water should not be used unless all freshwater supplies have been exhausted. If tanks are used, two 100% (minimum of 300,000 gallons each) system capacity tanks should be installed. They should be so interconnected that pumps can take suction from either or both. However, a failure in one tank or its piping should not cause both tanks to drain. Water supply capacity should be capable of refilling either tank in 8 hours or less.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(9) The water supply is taken from the fresh water supply impounded by the Auxiliary Reservoir. Tanks are not used to store fire protection water supply.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(10) Common tanks are permitted for fire and sanitary or service water storage. When this is done, however, minimum fire water storage requirements should be dedicated by passive means, for example, use of a vertical standpipe for other water services. Administrative controls, including locks for tank outlet valves, are unacceptable as the only means to ensure minimum water volume.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(10) Common tanks permitted for fire and sanitary or service water storage are not applicable to Shearon Harris.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(11) The fire water supply should be calculated on the basis of the largest expected flow rate for a period of 2 hours, but not less

than 300,000 gallons. This flow rate should be based (conservatively) on 500 gpm for manual hose streams plus the largest design demand of any sprinkler or deluge system as determined in accordance with NFPA 13 or NFPA 15. The fire water supply should be capable of delivering this design demand over the longest route of the water supply system.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(11) The fire water supply, 360,000 gallons, is calculated on the basis of the greatest system demand, 2,000 gpm for the Turbine Building, plus a maximum hose stream demand of 1000 gpm for a duration of two hours. The fire pumps are sized in accordance with NFPA-20 and are rated at 2500 gpm at 125 psig. These pumps are capable of delivering 150% of rated capacity at not less than 65% of rated head capable of delivering the design demand over the largest route of the water supply system.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(12) Freshwater lakes or ponds of sufficient size may qualify as sole source of water for fire protection but require separate redundant suctions in one or more intake structures. These supplies should be separated so that a failure of one supply will not result in a failure of the other supply.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(12) The Auxiliary Reservoir supplies fresh water to the yard fire main. The electric and diesel vertical fire pumps are well separated by being installed at opposite ends of the emergency service water screening structure. Each pump takes suction from a separate wet pit and has independent discharge connections, about 40 feet apart, to the main fire protection loop. Failure of one supply source will not result in a failure of the other supply.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(13) When a common water supply is permitted for fire protection and the ultimate heat sink, the following conditions should also be satisfied:

(a) The additional fire protection water requirements are designed into the total storage capacity, and

(b) Failure of the fire protection system should not degrade the function of the ultimate heat sink.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(13) The water supply for fire protection and the ultimmate heat sink satisfies the following conditions:

(a) The additional fire protection water requirements are designed into the total storage capacity and

(b) Failure of the fire protection system will not degrade the function of the ultimate heat sink (see Section 9.2.5)

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.b(14) Other water systems that may be used as one of the two fire water supplies should be permanently connected to the fire main system and should be capable of automatic alignment to the fire main system. Pumps, controls, and power supplies in these systems should satisfy the requirements fro the main fire pumps. The use of other water systems for fire protection should not be incompatible with their functions required for safe plant shutdown. Failure of the other system should not degrade the fire main system.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.b(14) Other water systems are not used as one of the two fire water supplies.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.c. Water Sprinkler and Hose Standpipe Systems

(1) Sprinkler systems and manual hose station standpipes should have connections to the plant underground water main so that a single active failure or a crack in a moderate-energy line connot impair both the primary and backup fire suppression systems. Alternatively, headers fed from each end are permitted inside buildings to supply both sprinkler and standpipe systems, provided steel piping and fittings meeting the requirements of ANSI B31.1, "Power Piping," are used for the headers up to and including the first valve supplying the sprinkler systems where such headers are part of the seismically analyzed hose standpipe system. When provided, such headers are considered an extension of the yard main system. Each sprinkler and standpipe system should be equipped with OS&Y (outside screw and yoke) gate valve or other approved shutoff valve and waterflow alarm. Safety-related equipment that does not itself require sprinkler water fire protection but is subject to unacceptable damage if wet by sprinkler water discharge should be protected by water shields or baffles.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.b.c. Water Sprinkler and Hose Standpipe Systems

(1) Sprinkler systems and manual hose station standpipes have connections to the plant underground water main so that a single active failure or a crack in a moderate-energy line cannot impair both the primary and backup fire suppression systems. Headers fed from each end are used inside buildings to supply both sprinkler and standpipe systems, are in the Waste and Fuel Handling Buildings, the Turbine and Reactor Auxiliary Buildings are fabricated of carbon steel piping and fittings meeting the requirements of ANSI B31.1 "Power Piping". Each sprinkler and standpipe system is equipped with an OS&Y gate valve and water flow alarm except that in the RAB the header supplying the hose standpipes is arranged so that the OS&Y gate valves in the header on each side of a standpipe must be closed to isolate the standpipe. Since this header is fed from both ends the water supply to other standpipes served by this header is not interrupted. The Fire Hazards analysis describes the methods used to protect safety-related equipment in each fire area from water damage.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.c(2) Control and sectionalizing valves in the fire water systems should be electrically supervised or administratively controlled. The electrical supervision signal should indicate in the control room. All valves in the fire protection system should be periodically checked to verify position (see NFPA 26, "Supervision of Valves").

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.c(2) Control and sectionalizing valves in the fire water systems are electrically supervised. The electrical supervision signal indicates in the Main Fire Detection Control Panel.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.c(3) Fixed water extinguishing systems should conform to requirements of appropriate standards such as NFPA 13, "Standard for the Installation of Sprinkler Systems," and NFPA 15, "Standard for Water Spray Fixed Systems."

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.c(3) Fixed water extinguikshing systems conform to requirements of appropriate standards such as NFPA 13, "Standard for the

Installation of Sprinkler System," and NFPA 15, "Standard for Water Spray Fixed Systems."

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.c(4) Interior manual hose installation should be able to reach any location that contains, or could present a fire exposure hazard to, safety-related equipment with at least one effective hose stream. To accomplish this, standpipes with hose connections equipped with a maximum of 100 feet of 1-1/2 inch woven-jacket, lined fire hose and suitable nozzles should be provided in all buildings on all floors. Individual standpipes should be at least 4 inches in diameter for multiple hose connections and 2-1/2 inches in diameter for single hose connections. These systems should follow the requirements of NFPA 14, "Standpipe and Hose Systems," for sizing, spacing, and pipe support requirements.

Hose stations should be located as dictated by the fire hazard analysis to facilitate access and use for firefighting operations. Alternative hose stations should be provided for an area if the fire hazard could block access to a single hose station serving that area.

Provisions should be made to supply water at least to standpipes and hose connections for manual firefighting in areas containing equipment required for safe plant shutdown in the event of a safe shutdown earthquake. The piping system serving such hose stations should be analyzed for SSE loading and should be provided with supports to ensure system pressure integrity. The piping and valves for the portion of hose standpipe system affected by this functional requirement should, as a minimum, satisfy ANSI B31.1, "Power Piping". The water supply for this condition may be obtained by manual operator actuation of valves in a connection to the hose standpipe header from a normal seismic Category I water system such as the essential service water system. The cross connection should be (a) capable of providing flow to at least two hose stations (approximately 75 gpm per hose station), and (b) designed to the same standards as the seismic Category I water system; it should not degrade the performance of the seismic Category I water system.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.c(4) Interior manual hose stations are provided in each plant area so that all portions of the plant are protected with at least one effective hose stream, except the tank area and Diesel Fuel Oil Storage Tank and Transfer Pumps area, which are protected by yard hydrants. Each interior hose station is provided with 100 feet of 1-1/2 inches Angus "Red Chief" rubber-lined, rubber

coated hose and adjustable nozzles suitable for use on electrical equipment. Individual standpipes are 4 inches in diameter for multiple hose stations and 2-1/2 inches for single hose stations. These systems follow the requirements of NFPA 14 "Standpipe and Hose Systems" Class II, for sizing, spaces and pipe support requirements.

Hose stations are located as dictated by the fire hazard analysis to facilitate access and use for firefighting operations. Alternative hose stations are provided for an area if the fire hazard could block access to a single hose station serving that area.

Provisions were made to supply water at least to standpipes and hose connections for manual firefighting in areas containing equipment required for safe plant shutdown in the event of a safe shutdown earthquake, except for the Em. Diesel generator and Diesel Fuel Oil Buildings, where the redundant counterparts are well separated and yard backup is available. The piping system serving such hose stations were analyzed for SSE loading and provided with supports to ensure system pressure integrity. The piping and valves for the portion of hose standpipe system affected by this functional requirement, as a minimum, satisfy ANSI B31.1, "Power Piping". Following an SSE, the water supply is obtained by manual operator actuation of valves to connect to the seismic Category I Emergency Service Water System. The system cross connections are capable of supplying two 75 gpm hose stations. The cross connections were analyzed for seismic loadings and seismically supported to assure system integrity. They will not degrade the performance of the seismic Category I water system.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.c(5) The proper type of hose nozzle to be supplied to each area should be based on the fire hazard analysis. The usual combination spray/ straight-stream nozzle should not be used in areas where the straight stream can cause unacceptable mechanical damage. Fixed fog nozzles should be provided at locations where high-voltage shock hazards exist. All hose nozzles should have shutoff capability. (Guidance on safe distances for water application to live electrical equipment may be found in the "NFPA Fire Protection Handbook.")

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.c(5) The proper type of hose nozzle supplied to each area is based on the fire hazard analysis. The usual combination spray/ straight-stream nozzle are not used in areas where the straight stream can cause unacceptable mechanical damage. Adjustable

spray nozzles, approved for use on energized electrical equipment, are provided on standpipe hoselines available for discharge on electrical equipment and cabling.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.c(6) Fire hose should be hydrostatically tested in accordance with the recommendations of NFPA 1962, "Fire Hose - Care, Use, Maintenance." Hose stored in outside hose houses should be tested annually. Interior standpipe hose should be tested every 3 years.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.c(6) Fire hose will be hydrostatically tested in accordance with the recommendations of NFPA 1962, "Fire Hose - Care, Use, Maintenance". Hose stored in outside hose houses will be tested annually. Interior standpipe hose will be tested every 3 years.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.c(7) Certain fires, such as those involving flammable liquids, respond well to foam suppression. Consideration should be given to use of mechanical low-expansion foam systems, high-expansion foam generators, or aqueous film-forming foam (AFFF) systems, including the AFFF deluge system. These systems should comply with the requirements of NFPA 11, NFPA 11A, NFPA 11B, and NFPA 16, as applicable.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.c(7) Fixed foam systems will not be used to protect safety-related systems. Portable foam equipment will be available, if required.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.d. Halon Suppression Systems

Halon fire extinguishing systems should comply with the requirements of NFPA 12A and NFPA 12B, "Halogenated Fire Extinguishing Agent Systems - Halon 1301 and Halon 1211." Only UL-listed or FM-approved agents should be used. Provisions for locally disarming automatic Halon systems should be key locked and under strict administrative control. Automatic extinguishing systems should not be disarmed unless controls as described in Position C.2.j are provided.

In addition to the guidelines of NFPA 12A and 12B, preventive maintenance and testing of the systems, including check-weighing of the Halon cylinders, should be done at least quarterly.

Particular consideration should also be given to:

(1) Minimum required Halon consideration, distribution, soak time, and ventilation control;

(2) Toxicity of Halon;

(3) Toxicity and corrosive characteristics of the thermal decomposition products of Halon; and

(4) Location and selection of the activating detectors.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.d Halon Suppression Systems

The halon fire extinguishing systems used at SHNNP will comply with the requirements of NFPA 12A and 12B. Only UL-listed or FM-approved agents will be used. Provisions for locally disarming automatic Halon Systems will be under administrative control and key locked. Disarming of automatic extinguishing systems will be controlled by a permit system. Fire watches will be established in areas where the system is disarmed.

Preventive maintenance and testing will be performed semiannually in accordance with NFPA-12A.

These consideration will be incorporated, as applicable, into the design of the systems:

(1) Minimum required Halon consideration, distribution, soak time, and ventilation control;

(2) Toxicity of Halon;

(3) Toxicity and corrosive characteristics of the thermal decomposition products of Halon; and

(4) Location and selection of the activating detectors.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.e. Carbon Dioxide Suppression Systems

Carbon dioxide extinguishing systems should comply with the requirements of NFPA 12, "Carbon Dioxide Extinguishing Systems." Where automatic carbon dioxide systems are used, they should be equipped with a predischarge alarm system and a discharge delay to permit personnel egress. Provisions for locally disarming automatic carbon dioxide systems should be key locked and under strict administrative control. Automatic

carbon dioxide extinguishing systems should not be disarmed unless controls as described in Position C.2.c are provided.

Particular consideration should also be given to:

(1) Minimum required CO_2 concentration, distribution, soak time, and ventilation control;

(2) Anoxia and toxicity of CO_2;

(3) Possibility of secondary thermal shock (cooling) damage;

(4) Conflicting requirements for venting during CO_2 injection to prevent overpressurization versus sealing to prevent loss of agent; and

(5) Location and selection of the activating detectors.

Halon suppression system is used in the Records Storage areas located in the Administration Building.

Preventive maintenance and testing will be performed semiannually in accordance with NFPA-12A.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.e Carbon Dioxide Suppression Systems

Carbon Dioxide systems will not be used.

NRC GUIDELINES: C. POSITION (Cont'd)

C.6.f. Portable Extinguishers

Fire extinguishers should be provided in areas that contain, or could present a fire exposure hazard to, safety-related equipment in accordance with guidelines of NFPA 10, "portable Fire Extinguishers, Installation, Maintenance and Use." Dry chemical extinguishers should be installed with due consideration given to possible adverse effects on safety-related equipment installed in the area.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.6.f. Portable Extinguishers

Fire extinghishers are provided in areas that contain, or could present a fire exposure hazard to, safety-related equipment in accordance with guidelines of NFPA 10, "Portable Fire Extinguishers, Installation, Maintenance and Use." Dry chemical extinguishers are installed with due

consideration given to possible adverse effects on safety-related equipment installed in the area.

NRC GUIDELINES: C. POSITION (Cont'd)

C.7. Guidelines for Specific Plant Area

C.7.a Primary and Secondary Containment

(1) Normal Operation - Fire protection requirements for the primary and secondary containment areas should be provided for hazards identified by the fire hazards analysis.

Examples of such hazards include lubricating oil or hydraulic fluid system for the primary coolant pumps, cable tray arrangements and cable penetrations, and charcoal filters. Because of the general inaccessibility of primary containment during normal plant operation, protection should be provided by automatic fixed systems. The effects of postulated fires within the primary containment should be evaluated to ensure that the integrity of the primary coolant system and the containment is not jeopardized assuming no action is taken to fight the fire.

C.7.a(1)(a) Operation of the fire protection systems should not compromise the integrity of the containment or other safety-related systems. Fire protection activities in the containment areas should function in conjunction with total containment requirements such as ventilation and control of contaminated liquid and gaseous release.

C.7.a(1)(b) Inside noninerted containment one of the fire protections means stated in Positions C.5.b.1 and C.5.b.2 or the following fire protection means should be provided: separation of cables and equipment and associated nonsafety circuits of redundant trains by a noncombustible radiant energy shield having a minimum fire rating of one-half hour.

C.7.a(1)(c) In primary containment, fire detection systems should be provided for each fire hazard. The type of detection used and the location of the detectors should be the most suitable for the particular type of fire hazard identified by the fire hazard analysis.

A general area fire detection capability should be provided in the primary containment as backup for the above described hazard detection. To accomplish this, suitable smoke or heat detectors compatible with the radiation environment should be installed.

C.7.a(1)(d) Standpipe and hose stations should be inside PWR containments and BWR containments that are not inerted. Standpipe and hose stations inside containment may be connected to a high quality water supply of sufficient quantity and pressure other than the fire main loop if plant-specific features prevent extending the fire main supply inside containment. For BWR drywells, standpipe and hose stations should be placed outside the drywell with adequate lengths of hose, no longer than 100 ft, to reach any location inside the drywell with an effective hose stream.

The containment penetration of the standpipe system should meet the isolation requirements of General Design Criterion 56 and should be seismic Category I and Quality Group B.

C.7.a(1)(e) The reactor coolant pumps should be equipped with an oil collection system if the containment is not inerted during normal operation. The oil collection system should be so designed, engineered, and installed that failure will not lead to fire during normal or design basis accident conditions and that there is reasonable assurance that the system will withstand the safe shutdown earthquake.

Such collection systems should be capable of collecting lube oil from all potential pressurized and unpressurized leakage sites in the reactor coolant pump lube oil systems. Leakage should be collected and drained to a vented closed container that can hold the entire lube oil system inventory. A flame arrester is required in the vent if the flash point characteristics of the oil present the hazard of fire flashback. Leakage points to be protected should include lift pump and piping overflow lines, lube oil cooler, oil fill and drain lines and plugs, flanged connections on oil lines, and lube oil reservoirs where such features exist on the reactor coolant pumps. The drain line should be large enough to accommodate the largest potential oil leak.

C.7.a(1)(f) For secondary containment area, cable fire hazards that could affect safety should be protected as described in Position C.5.e(2). The type of detection system for other fire hazards identified by the fire hazards analysis should be the most suitable for the particular type of fire hazard.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7. Guidelines for Specific Plant Areas

C.7.a. Primary and Secondary Containment

(1) Normal Operation - Fire protection systems and equipment are provided in the containment areas as required for most effective fire control recognizing the different types of operations in the area, accessibility and available personnel usage.

The following hazards have been identified and protection is installed in each containment as follows:

Cable penetrations, and external surfaces of charcoal filter equipment are protected by an automatic multi-cycle sprinkler system, actuated by thermal rate compensated detectors. System will automatically shut off upon drop in temperature (i.e., fire extinguished) to reduce quantity of unborated water introduced into the containments. Closed sprinkler heads and supervisory air pressure provide adequate safeguards against inadvertent actuation. Valving and electrical equipment associated with the system are located outside the containment building for accessibility. A lube oil collection system will be provided for the reactor coolant pumps as detailed in Section C.5.d, and will be capable of collecting lube oil from all potential pressurized and unpressurized leakage sites in the reactor coolant pump lube oil systems.

The effects of postulated fires within the primary containment are discussed in the Fire Hazards Analysis, Section 9.5A, of the FSAR.

C.7.a(1)(a) Operation of the fire protection systems do not compromise the integrity of the containment or other safety-related systems. Fire protection activities in the containment areas function in conjunction with total containment requirements such as ventilation and control of contaminated liquid and gaseous release, as detailed in FSAR Section 9.5.1.2.4 and Appendix 9.5A-1.

C.7.a(1)(b) Within the containment, separation of cables and equipment and associated nonsafety circuits of redundant trains is achieved by spatial separation and/or structural barriers, or by provision of automatic multi-cycle sprinkler system actuated by thermal detection.

C.7.a(1)(c) In primary containment, fire detection systems were provided for each fire hazard. The type of detection used and the location of the detectors the most suitable for the particular type of fire hazard identified by the fire hazard analysis, Appendix 9.5A.1.

Backup detection on a general area basis is provided by ionization detectors installed in the HVAC recirculation system upstream of system filters.

C.7.a(1)(d) Standpipe and hose stations are provided inside the containment and are supplied from the yard fire main during normal operations. After a SSE, the standpipes are supplied from the Emergency Service Water System. See the response to Position (6.c(4) above.

The containment penetration of the standpipe system meet the isolation requirements of General Design Criterion 56 and are seismic Category I and Quality Group B.

C.7.a(1)(e) The reactor coolant pumps will be equipped with an oil collection system. The oil collection system will be so designed, engineered, and installed that failure will not lead to fire during normal or design basis accident conditions and that there will be reasonable assurance that the system will withstand the safe shutdown earthquake.

The collection systems will be capable of collecting lube oil from all potential pressurized and unpressurized leakage sites in the reactor coolant pump lube oil systems. Leakage will be collected and drained to a vented closed container that can hold the entire lube oil system inventory. A flame arrester will be provided in the vent if the flash point characteristics of the oil present the hazard of fire flashback. Leakage points to be protected will include lift pump and piping overflow lines, lube oil cooler, oil fill and drain lines and plugs, flanged connections on oil lines, and lube oil reservoirs where such features exist on the reactor coolant pumps. The drain line will be large enough to accommodate the largest potential oil leak.

C.7.a(1)(f) Cable fire hazards within the Secondary Containment Area are separated by structural barriers and physical separation. Automatic multi-cycle sprinkler systems are provided in the electrical cable trays, the electrical penetration areas and over the charcoal filter housings, actuated by thermal detectors. Ionization type smoke detectors are also provided over the major electrical cable trays.

NRC GUIDELINES: C. POSITION (Cont'd)

C.7.a(2) Refueling and Maintenance - Refueling and maintenance operations in containment may introduce additional hazards such as contamination control materials, decontamination supplies, wood planking, temporary wiring, welding, and flame cutting (with portable compressed-gas fuel supply). Possible fires would not necessarily be in the vicinity of fixed detection and suppression systems. Management procedures and controls necessary to ensure adequate fire protection for transient fire loads are discussed in Position C.2.

Adequate self-contained breathing apparatus should be provided near the containment entrances for firefighting and damage control personnel. These units should be independent of any breathing apparatus or air supply systems provided for general plant activities and should be clearly marked as emergency equipment.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7.a(2) Refueling and Maintenance

Management procedures and controls necessary to ensure adequate fire protection for transient fire loads during refueling and maintenance operations in containment are discussed in Project Conformance, Position C.2.

SCBA will be located near containment entrances and marked as emergency equipment. These may be used in emergencies in other plant locations, however. Two SCBA will be provided.

NRC GUIDELINES: C. POSITION (Cont'd)

C.7.b. Control Room Complex

The control room complex (including galleys, office spaces, etc.) should be protected against disabling fire damage and should be separated from other areas of the plant by floors, walls, and roof having minimum fire resistance ratings of 3 hours. Peripheral rooms in the control room complex should have automatic water suppression and should be separated from the control room by noncombustible construction with a fire resistance rating of 1 hour. Ventilation system openings between the control room and peripheral rooms should have automatic smoke dampers that close on operation of the fire detection or suppression system. If a halon flooding system is used for fire suppression, these dampers should be strong enough to support the pressure rise accompanying halon discharge and seal tightly against infiltration of halon into the control room. Carbon dioxide flooding systems are not acceptable for these areas.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7.b Control Room Fire Area

The Control Room Fire Area is separated from other areas of the plant by walls, floors and ceiling having minimum fire resistance rating of 3 hours. The Terminal Cabinet Room and Living Quarters are part of the Control Room Fire Area. Refer to the Safe Shutdown Analysis in Case of Fire for an exemption request and a detail justification for not providing automatic suppression throughout the fire area. A kitchen, office and the component cooling water tank are located within the Terminal Cabinet Room. Combustibles in the kitchen consists of limited amounts of ordinary Class A combustibles such as paper towels and napkins. The combustibles in the Terminal Cabinet Room are limited to cables within the panels which are considered negligible. A fire hose station and portable extinguisher

C.7.b Control Room Fire Area (Cont'd)

are located in this room. The Control Room Fire Area is served by AH-15 (1A-SA) backed up by AH-15(1B-SB). In case of fire, the ventilation to the Control Room Fire Zone is lost and ventilation to the Main Terminal Cabinet Fire Zone is provided by AH-97(1&2A-NNS) backed up by AH-97(1&2B-NNS) which are both loaded on the diesel as described in FSAR Section 9.4. An automatic Halon suppression system actuated by ionization type smoke detection will be installed in the Terminal Cabinet Room.

Manual firefighting capability should be provided for both:

(1) Fire originating within a cabinet, console, or connecting cables; and

(2) Exposure fires involving combustibles in the general room area.

Portable Class A and Class C fire extinguishers should be located in the control room. A hose station should be installed immediately outside the control room.

Nozzles that are compatible with the hazards and equipment in the control room should be provided for the manual hose station. The nozzles chosen should satisfy actual firefighting needs, satisfy electrical safety, and minimize physical damage to electrical equipment from hose stream impingement.

Smoke detectors should be provided in the control room, cabinets, and consoles. If redundant safe shutdown equipment is located in the same control room cabinet or console, additional fire protection measures should be provided. Alarm and local indication should be provided in the control room.

Breathing apparatus for control room operators should be readily available.

The outside air intake(s) for the control room ventilation system should be provided with smoke detection capability to alarm in the control room to enable manual isolation of the control room ventilation system and thus prevent smoke from entering the control room.

Venting of smoke produced by fire in the control room by means of the normal ventilaton system is acceptable; however, provision should be made to permit isolation of the recirculating portion of the normal ventilation system. Manually operated venting of the control room should be available to the operators.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7.b Control Room Fire Area (Cont'd)

Manual fire fighting capability is provided for fires (1) within cabinets, consoles or connecting cables and (2) exposure fires involving combustibles in the general room area by means of Class A and Class C fire extinguishers inside the control room and a hose located just outside the control room.

Adjustable nozzles, approved for use on electrical fires, will be provided for the hose station. The nozzle selected will also minimize physical damage to electrical equipment from hose stream impingement.

Ionization detectors will be provided in the control and peripheral rooms at the ceiling level. The Control Room cabinets, panels and consoles are of the self ventilating type permitting smoke to quickly migrate to the ceiling of the room. Rapid migration of combustion by-products and quick response by highly sensitive type of detector mitigates the need for detectors within control room cabinets or consoles. Alarm and local indication will be provided in the control room.

Self-Contained breathing apparatus will be available for use by the operators until the room ventilation system can evacuate smoke.

The Control Room is designed for a positive pressure minimum air leakage envelope (See FSAR Section 6.4 for details).

Smoke detectors are provided at the outside air makeup inlet so that smoke induction into the Control room can be minimized by manual switchover to other inlets following smoke alarms transmitted to the Control Room. The normally recirculating (with limited makeup air) Control Room Ventilation System is designed so that it may be switched manually to operate in a nonrecirculating mode. This is used only for clearing the Control Room of heavy smoke concentration.

NRC GUIDELINES: C. POSITION (Cont'd)

C.7.b Control Room Fire Area (Cont'd)

All cables that enter the control room should terminate in the control room. That is, no cabling should be routed through the control room from one area to another. Cables in underfloor and ceiling spaces should meet the separation criteria necessary for fire protection.

Air-handling functions should be ducted separately from cable runs in such spaces; i.e., if cables are routed inlunderfloor or ceiling spaces, these spaces should not be used as air plenums for ventilation of the control room. Fully enclosed electrical raceways located in such underfloor and ceiling spaces, if over 1 square foot in cross-sectional area, should have automatic fire suppression inside. Area automatic fire suppression should be provided for underfloor and ceiling spaces if used for cable runs

unless all cable is run in 4-inch or smaller steel conduit or the cables are in fully enclosed raceways internally protected by automatic fire suppression.

There should be no carpeting in the control room.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7.b Control Room Fire Area (Cont'd)

As stated in FSAR Section 9.5.1.2.4 all cables entering the control room terminate there. No cables are routed through the control room from one area to another. There are no raised floors in the control room. There is a trench under the HVAC Control which is about 11 feet long x 2 feet wide x 8 inches deep which contains only Train B cable, safety and nonsafety. The fire loading is low, less than 2000 BTU/sq. ft. No suppression system is provided. There are redundant safety related radiation monitoring cables, installed in conduits and in accordance with Regulatory Guide 1.75, located above the suspended ceiling. As stated in the Fire Hazards Analysis, Section 9.5A of the FSAR, the combustible loading in the Control Room is considered negligible. The 24 hour occupancy of the Control Room combined with the availability of fire extinguishers and hose stations mitigate the effects of an exposure fire.

The Control Room suspended ceiling is aluminum luminous louver type, egg crate construction. A perforated duct located above the hung ceiling introduces air into the control room. The space above the hung ceiling does not contain any cable tray, only conduits.

Conduits 4 inch and smaller in diameter run through this space. Smoke detectors will be provided on the south side of the Control Room reinforced concrete ceiling, as well as below the hung ceiling. The conduit will be sealed in accordance with NUREG-0800 criteria. Automatic suppression will not be provided, as there is no fire loading in the space between the hung ceiling and the concrete ceiling.

There is no carpeting in the control room.

NRC GUIDELINES: C. POSITION (Cont'd)

C.7.c. Cable Spreading Room

The primary fire suppression in the cable spreading room should be an automatic water system such as closed-head sprinklers, open-head deluge system, or open directional water spray system. Deluge and open spray systems should have provisions for manual operation at a remote station; however, there should be provisions to preclude inadvertent operation. Location of sprinkler heads or spray nozzles should consider cable tray arrangments and possible transient combustibles to ensure adequate water coverage for areas that could present exposure hazards to the cable system. Cables should be designed to allow wetting down with water supplied by the fire suppression system without electrical faulting.

Open-head deluge and open directional spray systems should be zoned.

The use of foam is acceptable.

Cable spreading rooms should have:

(1) At least two remote and separate entrances for access by fire brigade personnel;

(2) An aisle separation between tray stacks at least 3 feet wide and 8 feet high;

(3) Hose stations and portable extinguishers installed immediately outside the room;

(4) Area smoke detection; and

(5) Continuous line-type heat detectors for cable trays inside the cable spreading room.

Drains to remove firefighting water should be provided. When gas sytems are installed, drains should have adequate seals or the gas extinguishing systems should be sized to compensate for losses through the drains.

A separate cable spreading room should be provided for each redundant division. Cable spreading rooms should not be shared between reactors. Each cable spreading room should be separated from the others and from other areas of the plant by barriers with a minimum fire rating of 3 hours. If this is not possible, a dedicated system should be provided.

The ventilation system to each cable spreading room should be designed to isolate the area upon actuation of any gas extinguishing system in the area. Separate manually actuated smoke venting that is operable from outside the room should be provided for the cable spreading room.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7.c. Cable Spreading Room

The primary fire suppression system in the cable spreading rooms are automatic pre-action sprinkler systems actuated by thermal detection systems employing closed sprinkler heads, installed at the ceiling level. Cable tray arrangements were considered in the location of sprinkler heads to insure adequate water coverage. Since there are only cables in this room, the Fire Hazards Analysis postulates that transients such as oil, grease, rags or solvents normally associated with equipment maintenance or repair will not be brought into the area. The pre-action valve can be tripped mechanically at the valve or operation of pull stations located inside oroutside the room located at elevation 286' and 305'. Inadvertent operation is precluded by the two step discharge cycle of the pre-action system which requires both the operation of the pre-action valve and fusing of the sprinkler head. Cables are designed to allow wetting down by water from the fire protection system. Ionization type smoke detection

is provided for early warning of a fire condition and a visual display of the detectors location, as well as "first actuated" detector is provided at the local control panel.

Foam is not being used.

The cable spreading rooms have:

(1) More than two remote and separate entrances;

(2) Aisles to facilitate access in the cable spreading rooms have been provided, however, due to redesign to provide redundant cable spreading rooms, the aisles have been reduced in dimensions. Depending upon their location, they vary from 3 feet wide by 8 feet high to a minimum of 1-1/2 to 2 feet wide by 5 feet high. A number of access doors exist. A trained fire fighter can access the area with his equipment, provided that he is familiar with the layout through training.

A visual display of smoke detectors is provided at the local control panel. The fire fighter will be cognizant of the location of the fire and will use the proper aisle to facilitate fire attack strategy.

(3) Portable extinguishers located inside and outside the room and hoses located immediately outside each room;

(4) Area smoke detection; and

(5) Ionization detectors are used to provide early warning of incipient fires and permit early attack by manual means. Thermal detectors located at the ceiling actuate the automatic suppression system. The dual detection system provides supplementary means of fire detection in lieu of solely depending upon line-type temperature detection.

The flow drainage system is designed to handle the design sprinkler discharge. There is no gas system in the cable spreading rooms.

A separate cable spreading room is provided for each redundant division, except Cable Spreading Room 1A-SA, where, as detailed in the Safe Shutdown Analysis in Case of Fire, Sketch CAR-SH-SK-668S18, redundant B cables which run in the cable tray CC0078-SB and conduits 16020G-SR2-2, 16020T-SR4-2, 10988B-SR4-2, 16106E-SR4-1, 10632H-SR4-1, 16020R-SR2-1. They will be enclosed in one hour fire resistance rating enclosure due to sprinkler system already present in this fire area. Cable spreading rooms are not shared between reactors. Each cable spreading room is separated from the others and from other areas of the plant by barriers with a minimum fire rating of 3 hours, except as explained above.

There is no gas extinguishing system for the cable spreading rooms, therefore, ventilation system isolation is not required. Smoke venting is accomplished using the normal partially recirculating ventilation system, which is capable of once through purge operation.

NRC GUIDELINES: C. POSITION (Cont'd)

C.7.d. Plant Computer Rooms

Computer rooms for computers performing safety-related functions that are not part of the control room complex should be separated from other areas of the plant by barriers having a minimum fire resistance rating of 3 hours and should be protected by automatic detection and fixed automatic suppression. Computers that are part of the control room complex but not in the control room should be separated and protected as described in Position C.7.b. Computer cabinets located in the control room should be protected as other control room equipment and cable runs therein. Nonsafety-related computers outside the control room complex should be separated from safety-related areas by fire barriers with a minimum rating of 3 hours and should be prtected as needed to prevent fire and smoke damage to safety-related equipment.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7.d. Plant Computer Rooms

The SHNPP computer serving Units 1 and 2 is non-safety related and does not perform any safety function. The non-safety computer is located outside the Control Room and is provided with 3-hr fire resistance rated barriers on all sides except those separating it from the Auxiliary Relay Panels Room, Unit 1, and the Process Instruments and Control Racks Room, Unit 1. Automatic ionization type smoke detectors are provided in the room at the ceiling level, portable extinguisher and a hose station adjacent to the room is available. Due to a computer redesign an underfloor area was created. An automatic Halon fire suppression system will be provided for the underfloor and the Computer Room. Ionization detectors will be crosszoned and additional detectors will be provided under the Room raised floor.

NRC GUIDELINES: C. POSITION (Cont'd)

C.7.e. Switchgear Rooms

Switchgear rooms contaning safety-related equipment should be separated from the remainder of the plant by barriers with a minimum fire rating of 3 hours. Redundant switchgear safety divisions should be separated from each other by barriers with a 3-hour fire rating. Automatic fire detectors should alarm and annunciate in the control room and alarm locally. Cables entering the switchgear room that do not terminate or prform a function there should be kept at a minimum to minimize the combustible loading. These rooms should not be used for any other purpose. Fire hose stations and portable fire extinguishers should be readily available outside the area.

Equipment should be located to facilitate access for manual firefighting. Drains should be provided to prevent water accumulation from damaging safety-related equipment (see NFPA 92M, "Waterproofing and Draining of Floors"). Remote manually actuated ventilation should be provided for venting smoke when manual fire suppression effort is needed (see Position C.5.f).

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7.e Switchgear Rooms

Redundant switchgear rooms containing safety-related equipment are separated from each other and other plant areas by walls having, as a minimum, a fire resistance rating of three hours. Automatic ionization type smoke detectors are provided in each room alarm locally and in the control room. Cables passing through the switchgear rooms are held to a minimum. The rooms are used only for switchgear and battery chargers which connot be located in battery rooms for safety reasons. Carbon dioxide portable extinguishers are located in and adjacent to the rooms. Hose stations are adjacent to the rooms.

Equipment is arranged to facilitate access by firefighters. Equipment is mounted on 4 inch pedestals and floor drains are provided to handle wate discharged by hoses. Smoke is removed by the normal ventilation system for this area which is switched remote-manually to once through purge operation. The system used is AH-12 and 13 for supply and valved roof vents for exhaust. Refer to FSAR Appendix 9.5A.8 and 9.5A.9 in the FSAR for additional information.

NRC GUIDELINES: C. POSITION (Cont'd)

C.7.f. Remote Safety-Related Panels

Redundant safety-related panels remote from the control room complex should be separated from each other by barriers having a minimum fire rating of 3 hours. Panels providing remote shutdown capability should be separated from the control room complex by barriers having a minimum fire rating of 3 hours. Panels providing remote shutdown capability should be electrically isolated from the control room complex so that a fire in either area will not affect shutdown capability from the other area. The general area housing remote safety-related panels should be provided with automatic fire detectors that alarm locally and alarm and annunciate in the control room. Combustible materials should be controlled and limited to those required for operation. Portable extinguishers and manualhose stations should be readily available in the general area.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7.f Remote Safety-Related Panels

Areas remote from the control room, containing safety related panels, are provided with detectors which alarm locally and alarm and annunciate in the Control Room. Panels providing remote shutdown capability are located in the Auxilary Control Panel Room which is remote from the Control Room and separated from other plant areas by barriers having a fire resistance rating of 3 hours. Panels providing remote shutdown in the Auxiliary Control Panel Room and those in the Control Room are electrically isolated and are connected to redundant transfer panels each of which are located in separate fire areas. Ionization detectors in the Auxiliary Control Panel Room alarm locally and alarm and annunciate in the Control Room. Portable extinguishers and manual hose stations are available in the area. Redundant safety related panels required for Safe Shutdown are separated as described in the Safe Shutdown Analysis in Case of Fire.

NRC GUIDELINES: C. POSITION (Cont'd)

C.7.g. Safety-Related Battery Rooms

Safety-related battery rooms should be protected against fires and explosions. Battery rooms should be separated from each other and other areas of the plant by barriers having a minimum fire rating of 3 hours inclusive of all penetrations and openings. DC switchgear and inverters should not be located in these battery rooms. Automatic fire detection should be provided to alarm and annunciate in the control room and alarm locally. Ventilation systems in the battery rooms should be capable of maintaining the hydrogen concentration well below 2 vol-%. Loss of ventilation should be alarmed in the control room. Standpipe and hose and portable extinguishers should be readily available outside the room.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7.g. Safety-Related Battery Rooms

The battery rooms are cut off from each other and other plant areas by barriers having a minimum fire resistance rating of three hours including all penetrations and openings. DC switchgear and inverters are not located in the battery rooms. Automatic ionization type smoke detection is provided inside battery rooms, alarming locally and alarming and annunciating in the Control room via Communications Room. Battery charges are so regulated that overcharing with resultant liberation of free hydrogen gases is minimized. the rooms are provided with adequate ventilation (See FSAR Section 9.4.5.2.3) to maintain the concentration of hydrogen gas released into any room air below the specified limits. Air flow switches are provided for the battery rooms with alarm and annunciation in the Control Room, as shown in FSAR Figure 7.3.1-21, Sheets 1, 2, 9 and 10 of 11. Standpipe and hose and portable extinguishers are readily available outside the rooms.

NRC GUIDELINES: C. POSITION (Cont'd)

C.7.h. Turbine Building

The turbine building should be separated from adjacent structures containing safety-related equipment by a fire barrier with a minimum rating of 3 hours. The fire barriers should be designed so as to maintain structural integrity even in the event of a complete collapse of the turbine structure. Openings and penetrations in the fire barrier should be minimized and should not be located where the turbine oil system or generator hydrogen cooling system creates a direct fire exposure hazard to the barrier. Considering the severity of the fire hazards, defense in depth may dictate additional protection to ensure barrier integrity.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7.h Turbine Building

The turbine building is separated from adjacent structures containing safety-related equipment by a fire barrier with a minimum rating of 3 hours. The fire barriers are designed to maintain structural integrity even in the event of a complete collapse of the turbine structure. Openings and penetrations in the fire barriers are minimized and are not located where the turbine oil system or generator hydrogen cooling system creates a direct fire exposure hazard to the barrier. Automatic water spray systems actuated by thermal detection are provided over open oil hazards and hydrogen seal oil units. Preaction sprinkler systems actuated by thermal detector are installed under the operating and mezzanine floors. Early warning ionization type smoke detection is installed over major cable tray runs and in electrical equipment room.

NRC GUIDELINES: C. POSITION (Cont'd)

C.7.i. Diesel Generator Areas

Diesel generators should be separated from each other and from other areas of the plant by fire barriers having a minimum fire resistance rating of 3 hours.

Automatic fire suppression should be installed to combat any diesel generator or lubricating oil fires; such system should be designed for operation when the diesel is running without affecting the diesel. Automatic fire detection should be provided to alarm and annunciate in the control room and alarm locally. Hose stations and portable extinguishers should be readily available outside the area. Drainage for firefighting water and means for local manual venting of smoke should be provided.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7.i Diesel Generator Areas

The diesel generators are located within the diesel generator building separated from each other by barriers having a minimum fire resistance rating of three hours and the diesel generator building is about 175 feet from the other plant buildings. The East wall has an opening for the air intake which is considered equivalent to 3-hr. fire resistance rating, based on physical separation from other structures.

Automatic multicycle suppression systems are installed in the diesel generator rooms to protect against diesel generator or lubricating oil fires. These systems will not affect the diesel when it is running since combustion air intake is located outside the room. Automatic detection is provided to alarm locally and annunciate in the control room. Hose stations are provided in the corridor outside the diesel rooms portable extinguishers are available inside the rooms. Drainage for firefighting water is provided. The continuous use of the normal ventilation exhaust system provides smoke purging. The electrical equipment room employs a recirculating system which upon activation of smoke detectors in the space can be switched to a once through purge system. The system used for this function is described in FSAR Section 9.4.

NRC GUIDELINES: C. POSITION (Cont'd)

C.7.i Diesel Generator Areas (Cont'd)

Day tanks with total capacity up to 1100 gallons are permitted in the diesel generator area under the following conditions:

(1) The day tank is located in a separate enclosure with a minimum fire resistance rating of 3 hours, including doors or penetrations. These enclosures should be capable of containing the entire contents of the day tanks and should be protected by an automatic fire suppression system, or

(2) The day tank is located inside the diesel generator room in a diked enclosure that has sufficient capacity to hold 110% fo the contents of the day tank or is drained to a safe location.

PROJECT CONFORMANCE: C. POSITION (Cont'd)

C.7.i Diesel Generator Areas (Cont'd)

The day tank, capacity 3,000 gallons, for each diesel generator is contained within its individual enclosure having a minimum fire resistance rating of three hours. All penetration barriers and the door have the same fire resistance rating. There is a three foot high dike in the doorway which is able to contain 110% of the tank contents. The tank is also equipped with an automatic fill shutoff. The floor drain is equipped with a normally closed valve located outside the room which when opened

distinctive from other alarm systems, is activated locally at the fire zone. If there is any required automatic action to be initiated for fire suppression the LFDCP performs this function. In addition, the fire condition is indicated on the MFDCP located in the Unit 1 Communications Room. Any audible alarm can be silenced by means of a pushbutton. Further, any local audible alarm may be silenced without affecting the remote alarm on the MFDCP. All fire detection panels are also equipped with "lamp test" pushbuttons. A graphic display unit is provided for the various cable spreading rooms to operate in conjunction with the LFDCP. This unit gives the layout of the fire zone and the exact arrangement and location of fire detection therein. The unit operates on a "first-out" annunciation basis by lighting an indicating lamp representing the initially activated detector.

e) A supervisory system is provided for each detection, actuation and alarm circuit, in accordance with NFPA No. ~~26~~ 72D. The supervisory system is designed to actuate an audible alarm distinct from the fire alarm and an amber light at the LFDCP as well as an amber light on the MFDCP on the occurrence of any of the following:

1) Loss of electrical integrity in any detection circuit.

2) Loss of electrical integrity in any actuation circuit.

3) Loss of electrical integrity in any alarm circuit.

4) Failure of water to flow within five seconds after any deluge valve release is activated.

5) Operation of any isolation or sectionalizing valves in the Fire Protection System, upstream from deluge, pre-action, multi-cycle alarm valves and strainers away from their normal active position.

6) Availability of operational power to fire pumps.

7) Loss of air pressure in supervised suppression system (pre-action and multi-cycle sprinkler systems).

8) Operation of water flow detection devices.

9) Changes in distribution system water pressure.

f) In general, main loop cables connecting local panels with annunciator panel are carried in separate non-safety cable trays with connections to devices, panels or loop cross overs carried in conduit. Interconnecting cable to system devices generally are carried in conduit.

g) All detectors are readily removable to facilitate periodic testing and maintenance. Detectors are designed in a way that in-place testing can be accomplished by means of a portable testing kit or apparatus.

Fire detection systems (heat, smoke, or flame) are provided in all safety-related areas, or in areas that present potential fire exposure to

ENCLOSURE 2

Shearon Harris Nuclear Power Plant
Draft SER Open Item 312
Revised Response

Per discussions with the NRC during the meetings held September 26-27, 1983 in Bethesda, CP&L agreed to provide a revised safe shutdown analysis with exemptions and modifications.

Response

As agreed to in the September 26-27, 1983 meeting, attached is a revision to the safe shutdown analysis previously submitted as letter LAP-83-329 and LAP-83-330, dated July 22, 1983.

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1F 09/01/83 13.59.57

TABLE 9.5B -1 - SAFE SHUTDOWN PROCEDURES AND EQUIPMENT

HOT SHUTDOWN PROCEDURE - 100% POWER TO HOT STANDBY

TABLE 9.5B -1 LISTS ESSENTIAL, SUPPORT, CONTROL AND POWER EQUIPMENT REQUIRED TO MEET THE PERFORMANCE GOALS DURING HOT SHUTDOWN CONDITION.

THE TABLE IS DIVIDED INTO THE FOLLOWING SECTIONS:

- -TABLE 9.5B -1A LISTS THE SAFE SHUTDOWN PROCEDURE BY STEPS AND SUB-STEPS TO GO FROM 100% POWER TO HOT STANDBY , AND
- -TABLE 9.5B -1B LISTS, BY THE ABOVE PROCEDURAL STEPS, THE EQUIPMENT REQUIRED, GIVING THE IDENTIFICATION AND FIRE AREA LOCATION OF THE EQUIPMENT WITHIN THE SA AND SB TRAINS.

TABLE 9.5B - 1A

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1A 09/01/83 14.01.09

SHUTDOWN PROCEDURE BY NON-SEQUENTIAL TASKS, SUB-TASKS AND SYSTEMS

OPERATIONAL TASK: 1. : VERIFY AUTOMATIC SHUTDOWN OPERATIONS
- OPERATIONAL SUB-TASK: 1. 1 : VERIFY CONTROL ROOM LIGHTING - NO DIESEL GENERATOR BACKUP
  - SYSTEM: CRLT : CONTROL ROOM LIGHTING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)
- OPERATIONAL SUB-TASK: 1. 2 : VERIFY CONTROL ROOM LIGHTING - WITH DIESEL GENERATOR BACKUP
  - SYSTEM: CRLT : CONTROL ROOM LIGHTING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)
- OPERATIONAL SUB-TASK: 1. 3 : VERIFY CONTROL ROOM LIGHTING - WITH 8 HR BATTERY BACKUP
  - SYSTEM: CRLT : CONTROL ROOM LIGHTING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)
- OPERATIONAL SUB-TASK: 1. 4 : VERIFY AUTOMATIC REACTOR TRIP
  - SYSTEM: RSS : REACTOR SHUTDOWN SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)
- OPERATIONAL SUB-TASK: 1. 5 : VERIFY AUTOMATIC TURBINE TRIP
  - SYSTEM: TSS : TURBINE SHUTDOWN SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)

OPERATIONAL TASK: 2. : VERIFY AUTOMATIC DIESEL GENERATOR START-UP
- OPERATIONAL SUB-TASK: 2. 1 : VERIFY DIESEL GENERATOR OPERATING SIGNALS
  - SYSTEM: EDGS : EMERGENCY DIESEL GENERATOR SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)
  - SYSTEM: HFOB : HVAC SYSTEM - FUEL OIL STGE BLDG (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)
  - SYSTEM: EDGS : EMERGENCY DIESEL GENERATOR SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)
  - SYSTEM: HDGB : HVAC SYSTEM - DIESEL GEN BLDG (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL TASK: 3. : INITIATE AUXILIARY FEEDWATER SYSTEM
- OPERATIONAL SUB-TASK: 3. 1 : VERIFY AUTOMATIC START UP OF AUXILIARY FEEDWATER PUMPS
  - SYSTEM: AFW : AUXILIARY FEEDWATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)
  - SYSTEM: EEFW : ELECTRICAL EQUIPMENT - AFW (EQUIPMENT USED FOR HOT STANDBY ONLY)
- OPERATIONAL SUB-TASK: 3. 2 : VERIFY AUTOMATIC ACTUATION OF STEAM GEN NO. 1 AFW VALVES
  - SYSTEM: AFW : AUXILIARY FEEDWATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)
  - SYSTEM: EEFW : ELECTRICAL EQUIPMENT - AFW (EQUIPMENT USED FOR HOT STANDBY ONLY)
- OPERATIONAL SUB-TASK: 3. 3 : VERIFY AUTOMATIC ACTUATION OF STEAM GEN NO. 2 AFW VALVES
  - SYSTEM: AFW : AUXILIARY FEEDWATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)
  - SYSTEM: EEFW : ELECTRICAL EQUIPMENT - AFW (EQUIPMENT USED FOR HOT STANDBY ONLY)
- OPERATIONAL SUB-TASK: 3. 4 : VERIFY AUTOMATIC ACTUATION OF STEAM GEN NO. 3 AFW VALVES
  - SYSTEM: AFW : AUXILIARY FEEDWATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)
  - SYSTEM: EEFW : ELECTRICAL EQUIPMENT - AFW (EQUIPMENT USED FOR HOT STANDBY ONLY)

OPERATIONAL TASK: 4. : VERIFY OPERATION OF EMERGENCY SERVICE WATER SYSTEMS

TABLE 9.5B - 1A

EBASCO SERVICES INC. CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1A 09/01/83 14.01.09

SHUTDOWN PROCEDURE BY NON-SEQUENTIAL TASKS, SUB-TASKS AND SYSTEMS

OPERATIONAL SUB-TASK: 4. 1 : OPERATE EMERGENCY SERVICE WATER SYSTEM TRAINS
SYSTEM: ESWS : EMERGENCY SERVICE WATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 4. 2 : EMERGENCY SERVICE WATER INTAKE - HVAC EQUIPMENT
SYSTEM: HSWI : HVAC SYSTEM - EMERG SERV WATER INTAKE (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 4. 3 : EMERGENCY SERVICE WATER INTAKE - ELECTRICAL EQUIPMENT
SYSTEM: EESW : ELECTRICAL EQUIPMENT - SW (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL TASK: 5. : VERIFY OPERATION OF CHILLED WATER SYSTEM
OPERATIONAL SUB-TASK: 5. 1 : PROVIDE CHILLED WATER FOR HVAC UNITS
SYSTEM: CWS : CHILLED WATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL TASK: 6. : MAINTAIN STEAM GEN INVENTORY FOR REMOVAL OF RCS DECAY HEAT
OPERATIONAL SUB-TASK: 6. 1 : OPERATE MAIN STEAM SYSTEM PORV VALVES
SYSTEM: MSS : MAIN STEAM SUPPLY SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)

OPERATIONAL SUB-TASK: 6. 2 : OPERATE MAIN STEAM ISOLATION VALVES
SYSTEM: MSS : MAIN STEAM SUPPLY SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)

OPERATIONAL TASK: 7. : PROVIDE AIR-COND OR AIR CHANGE FOR KEY CONTAINMENT AREAS
OPERATIONAL SUB-TASK: 7. 1 : PROVIDE AIR COOLING TO CONTAINMENT FAN COOLERS
SYSTEM: HCFC : CONTAINMENT FAN COOLER SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

SYSTEM: ESWS : EMERGENCY SERVICE WATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL TASK: 8. : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 8. 1 : PROVIDE AIR COOLING TO ELECT PROTECTION AND H/V ROOMS
SYSTEM: HCRC : CONTROL ROOM COMPLEX COOLING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 8. 2 : PROVIDE AIR CONDITIONING FOR CONTROL ROOM
SYSTEM: HCRH : CONTROL ROOM COOLING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 8. 3 : PROVIDE AIR CONDITIONING FOR MCC AREAS
SYSTEM: HMCC : MCC AREAS COOLING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 8. 4 : PROVIDE AIR CONDITIONING UNIT FOR GENERATING AREA
SYSTEM: HMCC : MCC AREAS COOLING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 8. 5 : PROVIDE AIR CONDITIONING FOR SERVICE WATER INTAKE
SYSTEM: HSWIS : HVAC SYSTEM-SERVICE WATER INTAKE STRUCTURE (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 8. 6 : PROVIDE AIR COOLING TO VARIOUS SHUTDOWN SYSTEMS
SYSTEM: HRAS : HVAC SYSTEM-AUX BLDG SHUTDOWN SYSTEMS (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 8. 7 : PROVIDE AC TO BATT-SWGR-RCC-ACP ROOMS/CABLE VAULTS
SYSTEM: HRAA : HVAC SYSTEM-AUX BLDG SHUTDOWN AREAS (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

TABLE 9.5B - 1A

EBASCO SERVICES INC. CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHRIA 09/01/83 14.01.09

SHUTDOWN PROCEDURE BY NON-SEQUENTIAL TASKS, SUB-TASKS AND SYSTEMS

OPERATIONAL TASK: 9. : MAINTAIN PRESSURIZER PRESSURE
OPERATIONAL SUB-TASK: 9. 1 : MAINTAIN PRESSURIZER PRESSURE AND LEVEL
SYSTEM: PHBS : PRESSURIZER HEATER BANK SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : VERIFY AUTOMATIC SHUTDOWN OPERATIONS
OPERATIONAL SUB-TASK: 01 : VERIFY CONTROL ROOM LIGHTING - NO DIESEL GENERATOR BACKUP

EQUIPMENT NAME / TYPE:TAG NUMBER	PRIMARY EQUIPMENT (OR SA TRAIN RELATED) FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: CRLT : CONTROL ROOM LIGHTING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
CONTROL ROOM NORMAL LIGHTING - NORMALLY ON											
LP LP-116	1-A-BAL	286.00	C-23	____	2097	•	•		• •	•	•
TFMR LP-116	1-A-BAL	290.00	C-24	____	2096	•	•		• •	•	•
MCC 480V 1D21	1-A-BAL	286.00	E-15	____	1215	•	•		• •	•	•
CONTROL ROOM NORMAL LIGHTING - NORMALLY ON											
LP LP-124	1-A-BAL	309.00	C-41	____	2114	•	•		• •	•	•
TFMR LP-124	1-A-BAL	288.00	C-31	____	2112	•	•		• •	•	•
MCC 480V 1E21	1-A-BAL	286.00	E-38	____	1222	•	•		• •	•	•
CONTROL ROOM NORMAL LIGHTING - NORMALLY ON											
LP LP-125	1-A-BAL	309.00	F-43	____	2116	•	•		• •	•	•
TFMR LP-125	1-A-BAL	288.00	D-36	____	2115	•	•		• •	•	•
MCC 480V 1E21	1-A-BAL	286.00	E-38	____	1222	•	•		• •	•	•

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : VERIFY AUTOMATIC SHUTDOWN OPERATIONS
OPERATIONAL SUB-TASK: 02 : VERIFY CONTROL ROOM LIGHTING - WITH DIESEL GENERATOR BACKUP

PRIMARY EQUIPMENT (OR SA TRAIN RELATED) EQUIPMENT NAME						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: CRLT : CONTROL ROOM LIGHTING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
CONTROL ROOM NORMAL/EMERGENCY LIGHTING - NORMALLY ON											
LP LP-112	1-A-BAL	236.00	C-23	____	2089	LP LP-113	1-A-BAL	236.00	C-28	____	2091
TFHR LP-112	1-A-SWGRA	244.00	D-23	____	2088	TFHR LP-113	1-A-SWGRB	244.00	D-28	____	2090
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
CONTROL ROOM NORMAL/EMERGENCY LIGHTING - NORMALLY ON											
LP LP-118	1-A-BAL	261.00	D-42	____	2101	LP LP-119	1-A-BAL	261.00	FW-42	____	2103
TFHR LP-118	1-A-SWGRA	269.00	D-42	____	2100	TFHR LP-119	1-A-SWGRB	269.00	FW-42	____	2102
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
CONTROL ROOM NORMAL/EMERGENCY LIGHTING - NORMALLY ON											
LP LP-128	12-A-CR	309.00	C-42	____	2122	LP LP-127	12-A-CR	309.00	C-42	____	2120
TFHR LP-128	1-A-SWGRA	288.00	D-31	____	2121	TFHR LP-127	1-A-SWGRB	292.00	D-31	____	2119
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : VERIFY AUTOMATIC SHUTDOWN OPERATIONS
OPERATIONAL SUB-TASK: 03 : VERIFY CONTROL ROOM LIGHTING - WITH 8 HR BATTERY BACKUP

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: CRLT : CONTROL ROOM LIGHTING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)												
CONTROL ROOM DC EMERGENCY LIGHTING - ENERGIZED ON LOOP												
LP LP-140	12-A-CR	305.00	C-42	____	_____	•	•		•	•	•	•
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-16	____	1503	•	•		•	•	•	•
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8385	•	•		•	•	•	•
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-20	____	8386	•	•		•	•	•	•
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8391	•	•		•	•	•	•

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : VERIFY AUTOMATIC SHUTDOWN OPERATIONS
OPERATIONAL SUB-TASK: 04 : VERIFY AUTOMATIC REACTOR TRIP

PRIMARY EQUIPMENT (OR SA TRAIN RELATED) EQUIPMENT NAME					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)				
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD CARS
SYSTEM: RSS : REACTOR SHUTDOWN SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)									
_____	.00	_____	____	_____	_____	.00	_____	____	_____

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : VERIFY AUTOMATIC SHUTDOWN OPERATIONS
OPERATIONAL SUB-TASK: 05 : VERIFY AUTOMATIC TURBINE TRIP

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: TSS : TURBINE SHUTDOWN SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)											
_____	.00	_____	____	_____		_____	.00	_____	____	_____	

TABLE 9.5B -1B

EBASCO SERVICES, INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 002 : VERIFY AUTOMATIC DIESEL GENERATOR START-UP
OPERATIONAL SUB-TASK: 01 : VERIFY DIESEL GENERATOR OPERATING SIGNALS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: EDGS : EMERGENCY DIESEL GENERATOR SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)												
EMERGENCY DIESEL GENERATOR												
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	1702	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	1750	2007
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
STC (A)	12-A-CRC1	305.00	E-42	____	0152	STC (B)	12-A-CRC1	305.00	E-41	____	0158
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
ARP 1A-SA	12-A-CRC1	305.00	D-41	____	0049	ARP 1B-SB	12-A-CRC1	305.00	D-41	____	0050
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142	ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CRC1	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CRC1	305.00	C-42	____	_____
STARTING AIR TANK - EDG											
SAT 1A-SA	1-D-DGA	261.00	_____	1981	_____	SAT 1C-SB	1-D-DGB	261.00	_____	2001	_____
PS 9670A1-SA	1-D-DGA	270.00	B- 1	1981	2346	PS 9670B1-SB	1-D-DGB	270.00	B- 2	2001	2387
PS 9670A2-SA	1-D-DGA	265.00	B- 1	1981	3265	PS 9670B2-SB	1-D-DGB	265.00	B- 2	2001	2663
STARTER NO 1 DG SAT	1-D-DGA	.00	_____	____	_____	STARTER NO 1 DG SAT	1-D-DGA	.00	_____	____	_____
STARTER NO 2 DG SAT	1-D-DGA	.00	_____	____	_____	STARTER NO 2 DG SAT	1-D-DGA	.00	_____	____	_____
STARTING AIR TANK - EDG - RESERVE											
SAT 1B-SA	1-D-DGA	261.00	_____	1981	_____	SAT 1D-SB	1-D-DGB	261.00	_____	2001	_____
PS 9670A1-SA	1-D-DGA	270.00	B- 1	1981	2346	PS 9670B1-SB	1-D-DGB	270.00	B- 2	2001	2387
PS 9670A2-SA	1-D-DGA	265.00	B- 1	1981	3265	PS 9670B2-SB	1-D-DGB	265.00	B- 2	2001	2663
STARTER NO 1 DG SAT	1-D-DGA	.00	_____	____	_____	STARTER NO 1 DG SAT	1-D-DGA	.00	_____	____	_____
STARTER NO 2 DG SAT	1-D-DGA	.00	_____	____	_____	STARTER NO 2 DG SAT	1-D-DGA	.00	_____	____	_____
FUEL OIL STORAGE TANK											
TNK FO STG 1&2A	12-O-TA	242.25	C-12	2544	_____	TNK FO STG 1&2B	12-O-TB	242.25	C- 9	2544	_____
CP LOC OIL ST&U		.00	_____	____	_____	CP LOC OIL ST&U		.00	_____	____	_____
FUEL OIL TRANSFER PUMP											
PMP FOT 1A-SA	1-O-PA	242.25	TK 1A	2549	2513	PMP FOT 1B-SB	1-O-PB	242.25	TK 1B	2550	2514
LS 1FO-2463A-SA	1-D-DTA	275.00	C- 2	2553	2365	LS 1FO-2463B-SB	1-D-DTB	275.00	C- 3	2554	2662
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
FUEL OIL TRANSFER PUMP VALVE											
SOV 3FO-V27SA	1-D-DGA	280.00	D- 4	2553	4279	SOV 3FO-V28SB	1-D-DGB	280.00	D- 7	2554	4280

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 002 : VERIFY AUTOMATIC DIESEL GENERATOR START-UP
OPERATIONAL SUB-TASK: 01 : VERIFY DIESEL GENERATOR OPERATING SIGNALS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)				
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
FUEL OIL TRANSFER PUMP VALVE											
LS 1FO-2463A-SA	1-D-DTA	275.00	C- 2	2553	2365	LS 1FO-2463B-SB	1-D-DTB	275.00	C- 3	2554	2662
LS 1FO-2464A-SA	1-D-DTA	290.00	B- 1	2553	6485	LS 1FO-2464B-SB	1-D-DTB	290.00	B- 2	2554	6486
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
HCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	HCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
ADDITIONAL ELECTRICAL EQUIPMENT FOR SYSTEM DG											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
CP DIESEL ENG 1A-SA	1-D-DGA	261.00	B- 1	____	1296	CP DIESEL ENG 1B-SB	1-D-DGB	261.00	B- 2	____	2394
ARP 1A-SA	12-A-CRC1	305.00	D-41	____	0049	ARP 1B-SB	12-A-CRC1	305.00	D-41	____	0050
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
HTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	HTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007
DG DC LEADS 1A-SA	1-D-DGA	265.00	A- 1	____	1186	DG DC LEADS 1B-SB	1-D-DGB	265.00	A- 2	____	2668
SYSTEM: HFOB : HVAC SYSTEM - FUEL OIL STGE BLDG (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
EXHAUST FAN / ASSOC DUCTWORK - FO STG BLDG											
EXF E-85(1A-SA)	1-0-PA	242.25	FOP1A	3283	3504	EXF E-85(1A-SB)	1-0-PB	242.25	FOP1B	3285	3506
FS 6907-SA	5-0-BAL	253.00	FOT1A	3283	1980	FS 6907-SB	5-0-BAL	253.00	FOT1B	3285	1981
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 002 : VERIFY AUTOMATIC DIESEL GENERATOR START-UP
OPERATIONAL SUB-TASK: 01 : VERIFY DIESEL GENERATOR OPERATING SIGNALS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
EXHAUST FAN / ASSOC DUCTWORK - FO STG BLDG											
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
EXHAUST FAN / ASSOC DUCTWORK - FO STG BLDG											
EXF E-85(1B-SA)	5-O-BAL	253.00	FOP1A	3284	3505	EXF E-85(1B-SB)	5-O-BAL	253.00	FOP1B	3286	3507
FS 6907-SA	5-O-BAL	253.00	FOT1A	3283	1980	FS 6907-SB	5-O-BAL	253.00	FOT1B	3285	1981
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
ELECTRICAL EQUIPMENT FOR SYSTEM FO											
CP DIESEL ENG 1A-SA	1-D-DGA	261.00	B- 1	____	1296	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
SYSTEM: EDGS : EMERGENCY DIESEL GENERATOR SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
DIESEL GENERATOR DAY TANK											
TNK DG DAY 1A-SA	1-D-DTA	280.00	B- 4	2546	_____	TNK DG DAY 1B-SB	1-D-DTB	208.00	B- 8	2547	_____
LT 1FO-2461A-SA	1-D-DTA	271.00	C- 2	2546	7903	LT 1FO-2461B-SB	1-D-DTB	275.00	C- 3	2547	7904
LT 1FO-2462A-SA	1-D-DTA	275.00	C- 2	2546	2366	LT 1FO-2462B-SB	1-D-DTB	275.00	C- 3	2547	2682
LS 1FO-2463A-SA	1-D-DTA	275.00	C- 2	2553	2365	LS 1FO-2463B-SB	1-D-DTB	275.00	C- 3	2554	2662
LS 1FO-2464A-SA	1-D-DTA	290.00	B- 1	2553	6485	LS 1FO-2464B-SB	1-D-DTB	290.00	B- 2	2554	6486
PIC C9 SA	12-A-CRC1	305.00	F-42	2546	0099	PIC C10 SB	12-A-CRC1	305.00	F-41	2547	0100
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
ADDITIONAL ELECTRICAL EQUIPMENT FOR SYSTEM DG											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 002 : VERIFY AUTOMATIC DIESEL GENERATOR START-UP
OPERATIONAL SUB-TASK: 01 : VERIFY DIESEL GENERATOR OPERATING SIGNALS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ADDITIONAL ELECTRICAL EQUIPMENT FOR SYSTEM DG												
CP DIESEL ENG 1A-SA	1-D-DGA	261.00	B- 1	____	1296		CP DIESEL ENG 1B-SB	1-D-DGB	261.00	B- 2	____	2394
ARP 1A-SA	12-A-CRC1	305.00	D-41	____	0049		ARP 1B-SB	12-A-CRC1	305.00	D-41	____	0050
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053		ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314		TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126		MTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
IDP 1A S1	12-A-CR	305.00	B-36	____	0220		IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216		IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221		IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218		IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506		DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227		PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229		PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201		MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204		MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846		BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861		BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452		BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387		BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388		BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392		BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006		DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007
DG DC LEADS 1A-SA	1-D-DGA	265.00	A- 1	____	1186		DG DC LEADS 1B-SB	1-D-DGB	265.00	A- 2	____	2668
SYSTEM: HDGB : HVAC SYSTEM - DIESEL GEN BLDG (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)												
AIR HANDLING UNIT - DIESEL GEN AREA												
SOV 3SW-V649SA-1	1-D-DGA	292.00	A- 1	3263	5987		SOV 3SW-V652SB-1	1-D-DGB	292.00	A- 2	3274	5988
AHU AH-85 1A-SA	1-D-DGA	292.00	A- 1	3263	2355		AHU AH-85 1C-SB	1-D-DGB	292.00	A- 2	3274	2652
DPR DG D3(SA-1)	1-D-DGA	292.00	A- 1	3265	2356		DPR DG D3(SB-1)	1-D-DGB	292.00	A- 2	3276	2653
DPR DG D4(SA-1)	1-D-DGA	292.00	A- 1	3265	2357		DPR DG D4(SB-1)	1-D-DGB	292.00	A- 2	3276	2654
EHC 119(1A-SA)	1-D-DGA	292.00	A- 1	3266	2358		EHC 119(1B-SB)	1-D-DGB	292.00	A- 2	3277	2655
FS- 6905A-SA	1-D-DGA	303.00	A- 1	3263	2347		FS- 6905B-SB	1-D-DGB	303.00	A- 2	3274	2644
TE- 6904A-SA	1-D-DGA	268.00	B- 1	3266	1298		TE- 6902B-SB	1-D-DGB	287.00	A- 2	3273	2379
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103		PIC C14 SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160		ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053		ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
MCB HVAC	12-A-CR	305.00	C-42	____	0009		MCB HVAC	12-A-CR	305.00	C-42	____	0009
MCC 480V 1A23-SA	1-D-DGA	261.00	B- 1	____	1203		MCC 480V 1B23-SB	1-D-DGB	261.00	B- 2	____	1208
AIR HANDLING UNIT - DIESEL GEN AREA												
SOV 3SW-V649SA-1	1-D-DGA	292.00	A- 1	3263	5987		SOV 3SW-V652SB-1	1-D-DGB	292.00	A- 2	3274	5988

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 002 : VERIFY AUTOMATIC DIESEL GENERATOR START-UP
OPERATIONAL SUB-TASK: 01 : VERIFY DIESEL GENERATOR OPERATING SIGNALS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
AIR HANDLING UNIT - DIESEL GEN AREA												
AHU AH-85 1B-SA	1-D-DGA	292.00	A- 1	3264	2354		AHU AH-85 1D-SB	1-D-DGB	292.00	A- 2	3275	2651
DPR DG D3(SA-1)	1-D-DGA	292.00	A- 1	3265	2356		DPR DG D3(SB-1)	1-D-DGB	292.00	A- 2	3276	2653
DPR DG D4(SA-1)	1-D-DGA	292.00	A- 1	3265	2357		DPR DG D4(SB-1)	1-D-DGB	292.00	A- 2	3276	2654
EHC 119(1A-SA)	1-D-DGA	292.00	A- 1	3266	2358		EHC 119(1B-SB)	1-D-DGB	292.00	A- 2	3277	2655
FS- 6905A-SA	1-D-DGA	303.00	A- 1	3263	2347		FS- 6905B-SB	1-D-DGB	303.00	A- 2	3274	2644
TE- 6904A-SA	1-D-DGA	268.00	B- 1	3266	1298		TE- 6902B-SB	1-D-DGB	287.00	B- 2	3273	2379
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103		PIC C14 SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160		ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053		ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
MCB HVAC	12-A-CR	305.00	C-42	____	0009		MCB HVAC	12-A-CR	305.00	C-42	____	0009
MCC 480V 1A23-SA	1-D-DGA	261.00	B- 1	____	1203		MCC 480V 1B23-SB	1-D-DGB	261.00	B- 2	____	1208
DAMPER - RETURN DUCTWORK-AH85												
DPR DG D3(SA-1)	1-D-DGA	292.00	A- 1	3265	2356		DPR DG D3(SB-1)	1-D-DGB	292.00	A- 2	3276	2653
AHU AH-85 1A-SA	1-D-DGA	292.00	A- 1	3263	2355		AHU AH-85 1C-SB	1-D-DGB	292.00	A- 2	3274	2652
AHU AH-85 1B-SA	1-D-DGA	292.00	A- 1	3264	2354		AHU AH-85 1D-SB	1-D-DGB	292.00	A- 2	3275	2651
•	•	•	•	•	•		TE- 6904B-SB	1-D-DGB	268.00	B- 2	3277	2396
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103		PIC C14 SB	12-A-CRC1	305.00	F-42	____	0104
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053		ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126		MTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
MCB HVAC	12-A-CR	305.00	C-42	____	0009		MCB HVAC	12-A-CR	305.00	C-42	____	0009
•	•	•	•	•	•		MCC 480V 1B23-SB	1-D-DGB	261.00	B- 2	____	1208
DAMPER - RETURN DUCTWORK-AH85												
DPR DG D4(SA-1)	1-D-DGA	292.00	A- 1	3265	2357		DPR DG D4(SB-1)	1-D-DGB	292.00	A- 2	3276	2654
AHU AH-85 1A-SA	1-D-DGA	292.00	A- 1	3263	2355		AHU AH-85 1C-SB	1-D-DGB	292.00	A- 2	3274	2652
AHU AH-85 1B-SA	1-D-DGA	292.00	A- 1	3264	2354		AHU AH-85 1D-SB	1-D-DGB	292.00	A- 2	3275	2651
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103		PIC C14 SB	12-A-CRC1	305.00	F-42	____	0104
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053		ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126		MTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
MCB HVAC	12-A-CR	305.00	C-42	____	0009		MCB HVAC	12-A-CR	305.00	C-42	____	0009
•	•	•	•	•	•		MCC 480V 1B23-SB	1-D-DGB	261.00	B- 2	____	1208
ELECTRIC HEATING COIL-AH85												
EHC 119(1A-SA)	1-D-DGA	292.00	A- 1	3266	2358		EHC 119(1B-SB)	1-D-DGB	292.00	A- 2	3277	2655
AHU AH-85 1A-SA	1-D-DGA	292.00	A- 1	3263	2355		AHU AH-85 1C-SB	1-D-DGB	292.00	A- 2	3274	2652
AHU AH-85 1B-SA	1-D-DGA	292.00	A- 1	3264	2354		AHU AH-85 1D-SB	1-D-DGB	292.00	A- 2	3275	2651
TE- 6904A-SA	1-D-DGA	268.00	B- 1	3266	1298		TE- 6904B-SB	1-D-DGB	268.00	B- 2	3277	2396
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103		PIC C14 SB	12-A-CRC1	305.00	F-42	____	0104

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 002 : VERIFY AUTOMATIC DIESEL GENERATOR START-UP
OPERATIONAL SUB-TASK: 01 : VERIFY DIESEL GENERATOR OPERATING SIGNALS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ELECTRIC HEATING COIL-AH85											
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
MCC 480V 1A23-SA	1-D-DGA	261.00	B- 1	____	1203	MCC 480V 1B23-SB	1-D-DGB	261.00	B- 2	____	1208
EXHAUST FAN - DIESEL GEN BLDG											
EXF E-61(1A-SA)	1-D-DGA	292.00	A- 2	3268	2351	EXF E-61(1C-SB)	1-D-DGB	292.00	A- 3	3279	2648
DPR DG D1(SA-1)	1-D-DGA	292.00	A- 1	3270	2353	.	.	.	.	.	.
DPR DG D2(SA-1)	1-D-DGA	292.10	A- 1	3270	2352	.	.	.	.	.	.
FS- 6901A-SA	1-D-DGA	306.00	A- 1	3268	2348	FS- 6901B-SB	1-D-DGB	265.00	B- 1	3280	2345
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
MCB HVAC	12-A-CR	305.00	C-42	____	0009	MCB HVAC	12-A-CR	305.00	C-42	____	0009
MCC 480V 1A23-SA	1-D-DGA	261.00	B- 1	____	1203	MCC 480V 1B23-SB	1-D-DGB	261.00	B- 2	____	1208
EXHAUST FAN - DIESEL GEN BLDG											
EXF E-61(1B-SA)	1-D-DGA	292.00	A- 2	3269	2350	EXF E-61(1D-SB)	1-D-DGB	292.00	A- 3	3280	2647
DPR DG D1(SA-1)	1-D-DGA	292.00	A- 1	3270	2353	.	.	.	.	.	.
DPR DG D2(SA-1)	1-D-DGA	292.10	A- 1	3270	2352	.	.	.	.	.	.
TE- 6903A-SA	1-D-DGA	268.00	A- 1	3261	2337	.	.	.	.	.	.
FS- 6901A-SA	1-D-DGA	306.00	A- 1	3268	2348	FS- 6901B-SB	1-D-DGB	265.00	B- 1	3280	2645
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
MCB HVAC	12-A-CR	305.00	C-42	____	0009	MCB HVAC	12-A-CR	305.00	C-42	____	0009
MCC 480V 1A23-SA	1-D-DGA	261.00	B- 1	____	1203	MCC 480V 1B23-SB	1-D-DGB	261.00	B- 2	____	1208
EXHAUST FAN - DIESEL GEN BLDG											
EXF E-86(1A-SA)	1-D-DGA	280.00	C- 1	3261	2367	EXF E-86(1C-SB)	1-D-DGB	280.00	B- 2	3272	2683
AHU AH-85 1A-SA	1-D-DGA	292.00	A- 1	3263	2355	.	.	.	.	.	.
TE- 6903A-SA	1-D-DGA	268.00	A- 1	3261	2337	TE- 6903B-SB	1-D-DGB	268.00	A- 2	3272	2378
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14 SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
MCB HVAC	12-A-CR	305.00	C-42	____	0009	MCB HVAC	12-A-CR	305.00	C-42	____	0009
MCC 480V 1A23-SA	1-D-DGA	261.00	B- 1	____	1203	.	.	.	.	.	.
EXHAUST FAN - DIESEL GEN BLDG											
EXF E-86(1B-SA)	1-D-DGA	280.00	C- 1	3262	2368	EXF E-86(1D-SB)	1-D-DGB	280.00	B- 2	3273	2684
TE- 6902A-SA	1-D-DGA	287.00	A- 1	3262	2338	TE- 6902B-SB	1-D-DGB	287.00	A- 2	3273	2379
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14 SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161

TABLE 9.5B -1B

EBASCO SERVICES INC. CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 002 : VERIFY AUTOMATIC DIESEL GENERATOR START-UP
OPERATIONAL SUB-TASK: 01 : VERIFY DIESEL GENERATOR OPERATING SIGNALS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
EXHAUST FAN - DIESEL GEN BLDG											
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
MCB HVAC	12-A-CR	305.00	C-42	____	0009	MCB HVAC	12-A-CR	305.00	C-42	____	0009
MCC 480V 1A23-SA	1-D-DGA	261.00	B- 1	____	1203	•	•	•	•	•	•
DAMPERS-E-61 EXHAUST DUCTWORK											
DPR DG D2(SA-1)	1-D-DGA	292.10	A- 1	3270	2352	DPR DG D2(SB-1)	1-D-DGB	292.00	A- 2	3281	2649
EXF E-61(1A-SA)	1-D-DGA	292.00	A- 2	3268	2351	•	•	•	•	•	•
EXF E-61(1B-SA)	1-D-DGA	292.00	A- 2	3269	2350	•	•	•	•	•	•
CP DIESEL ENG 1A-SA	1-D-DGA	261.00	B- 1	____	1296	CP DIESEL ENG 1A-SA	1-D-DGA	261.00	B- 1	____	1296
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
HTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	HTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
MCB HVAC	12-A-CR	305.00	C-42	____	0009	MCB HVAC	12-A-CR	305.00	C-42	____	0009
DAMPERS-E-61 EXHAUST DUCTWORK											
DPR DG D1(SA-1)	1-D-DGA	292.00	A- 1	3270	2353	DPR DG D1(SB-1)	1-D-DGB	292.00	A- 2	3281	2650
EXF E-61(1A-SA)	1-D-DGA	292.00	A- 2	3268	2351	•	•	•	•	•	•
EXF E-61(1B-SA)	1-D-DGA	292.00	A- 2	3269	2350	•	•	•	•	•	•
CP DIESEL ENG 1A-SA	1-D-DGA	261.00	B- 1	____	1296	CP DIESEL ENG 1A-SA	1-D-DGA	261.00	B- 1	____	1296
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
HTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	HTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
MCB HVAC	12-A-CR	305.00	C-42	____	0009	MCB HVAC	12-A-CR	305.00	C-42	____	0009
DIESEL GEN HV RM SW VALVE											
SOV 3SW-V649SA	1-D-DGA	292.00	A- 1	3263	5987	SOV 3SW-V652SB	1-D-DGB	292.00	A- 2	3274	5988
•	•	•	•	•	•	AHU AH-85 1C-SB	1-D-DGB	292.00	A- 2	3274	2652
•	•	•	•	•	•	AHU AH-85 1D-SB	1-D-DGB	292.00	A- 2	3275	2651
TE- 6902A-SA	1-D-DGA	287.00	A- 2	3262	2338	TE- 6902B-SB	1-D-DGB	287.00	A- 2	3273	2379
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14 SB	12-A-CRC1	305.00	F-42	____	0104
•	•	•	•	•	•	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
MCC 480V 1A23-SA	1-D-DGA	261.00	B- 1	____	1203	MCC 480V 1B23-SB	1-D-DGB	261.00	B- 2	____	1208
ADDITIONAL ELECTRICAL EQUIPMENT FOR SYSTEM DG											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
CP DIESEL ENG 1A-SA	1-D-DGA	261.00	B- 1	____	1296	CP DIESEL ENG 1B-SB	1-D-DGB	261.00	B- 2	____	2394
ARP 1A-SA	12-A-CRC1	305.00	D-41	____	0049	ARP 1B-SB	12-A-CRC1	305.00	D-41	____	0050
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
HTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	HTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 002 : VERIFY AUTOMATIC DIESEL GENERATOR START-UP
OPERATIONAL SUB-TASK: 01 : VERIFY DIESEL GENERATOR OPERATING SIGNALS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ADDITIONAL ELECTRICAL EQUIPMENT FOR SYSTEM DG												
	IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
	IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
	IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
	DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
	PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
	PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
	HCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	HCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
	HCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	HCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
	BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
	BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
	BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
	BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
	BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
	BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
	DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007
	DG DC LEADS 1A-SA	1-D-DGA	265.00	A- 1	____	1186	DG DC LEADS 1B-SB	1-D-DGB	265.00	A- 2	____	2668

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 · REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 003 : INITIATE AUXILIARY FEEDWATER SYSTEH
OPERATIONAL SUB-TASK: 01 : VERIFY AUTOHATIC START UP OF AUXILIARY FEEDWATER PUHPS

EQUIPMENT NAME / TYPE:TAG NUMBER	PRIMARY EQUIPMENT (OR SA TRAIN RELATED) FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEH: AFW : AUXILIARY FEEDWATER SYSTEH (EQUIPHENT USED FOR HOT STANDBY ONLY)											
STEAH GENERATOR											
STH GEN 1A-SN	1-C	236.00	C-18			•	•		• •	•	•
LT- 1FW-0474(I)	1-C	240.00	C-18	993		•	•		• •	•	•
LT- 1FW-0475(II)	1-C	240.00	C-18	993		•	•		• •	•	•
LT- 1FW-0476(III)	1-C	240.00	C-19	994		•	•		• •	•	•
LT- 1FW-0477(I)	1-C	240.00	C-18	995		•	•		• •	•	•
RK- C1-R4 SR1	1-C	236.00	C-18		1866	RK- C1-R3 SR2	1-C	239.00	C-18		1865
RK- C1-R2 SR3	1-C	236.00	C-19		1864	•	•		• •	•	•
PIC P1	12-A-CRC1	305.00	F-41		0091	PIC P2	12-A-CRC1	305.00	F-41		0092
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	•	•		• •	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	•	•		• •	•	•
HCB HAIN CONTROL BD	12-A-CR	305.00	C-42			•	•		• •	•	•
STEAH GENERATOR											
STH GEN 1B-SN	1-C	236.00	C-11			•	•		• •	•	•
LT- 1FW-0484(I)	1-C	240.00	C-10	993		•	•		• •	•	•
LT- 1FW-0485(II)	1-C	240.00	C-11	993		•	•		• •	•	•
LT- 1FW-0486(III)	1-C	240.00	C-12	994		•	•		• •	•	•
LT- 1FW-0487(II)	1-C	240.00	C-11	995		•	•		• •	•	•
RK- C1-R10 SR1	1-C	240.00	C-10		1872	RK- C1-R9 SR2	1-C	236.00	C-11		1871
RK- C1-R8 SR3	1-C	236.00	C-12		1870	•	•		• •	•	•
PIC P1	12-A-CRC1	305.00	F-41		0091	PIC P2	12-A-CRC1	305.00	F-41		0092
PIC P3	12-A-CRC1	305.00	FW-42		0093	•	•		• •	•	•
TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315	•	•		• •	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	•	•		• •	•	•
HCB HAIN CONTROL BD	12-A-CR	305.00	C-42			•	•		• •	•	•
STEAH GENERATOR											
STH GEN 1C-SN	1-C	236.00	C- 3			•	•		• •	•	•
LT- 1FW-0494(I)	1-C	240.00	C- 2	993		•	•		• •	•	•
LT- 1FW-0495(II)	1-C	240.00	C- 2	993		•	•		• •	•	•
LT- 1FW-0496(III)	1-C	240.00	C- 3	994		•	•		• •	•	•
LT- 1FW-0497(III)	1-C	240.00	C- 3	995		•	•		• •	•	•
RK- C1-R15 SR1	1-C	236.00	C- 2		1876	RK- C1-R14 SR2	1-C	240.00	C- 2		1875
RK- C1-R13 SR3	1-C	236.00	C- 3		1874	•	•		• •	•	•
PIC P1	12-A-CRC1	305.00	F-41		0091	PIC P2	12-A-CRC1	305.00	F-41		0092
PIC P3	12-A-CRC1	305.00	FW-42		0093	•	•		• •	•	•
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	•	•		• •	•	•

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 003 : INITIATE AUXILIARY FEEDWATER SYSTEM
OPERATIONAL SUB-TASK: 01 : VERIFY AUTOMATIC START UP OF AUXILIARY FEEDWATER PUMPS

EQUIPMENT NAME / TYPE:TAG NUMBER	PRIMARY EQUIPMENT (OR SA TRAIN RELATED) FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
STEAM GENERATOR											
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	•	•	•	•	•	•
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			•	•	•	•	•	•
CONDENSATE STORAGE TANK											
TNK COND STG 1X-SAB	1-A-BAL	261.00	B- 8	2092		•	•	•	•	•	•
LT- 9010A-SA	1-A-BAL	240.00	E-10	2092		LT- 9010B-SB	1-A-BAL	240.00	E- 8	2092	
RK- A21-R17	1-A-BAL	236.00	E-10		1818	RK- A21-R15	1-A-BAL	236.00	E- 8		1816
PIC C9 SA	12-A-CRC1	305.00	F-42		0099	PIC C10 SB	12-A-CRC1	305.00	F-41	2547	0100
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			•	•	•	•	•	•
STM GEN AUX FEEDWATER PUMP											
PMP MOT DRVN 1A-SA	1-A-BAL	236.00	B-26	1921	2442	PMP MOT DRVN 1B-SB	1-A-BAL	236.00	B-27	1922	2443
PT- 2250A-SA	1-A-BAL	240.00	C-26	1957		PT- 2250B-SB	1-A-BAL	240.00	C-26	1957	
PT- 2150A-SA	1-A-BAL	240.00	C-23	1957		PT- 2150B-SB	1-A-BAL	236.00	C-26	1957	
RK- A1-R14	1-A-BAL	236.00	B-23		1815	RK- A1-R13	1-A-BAL	236.00	C-26		1814
PIC C9 SA	12-A-CRC1	305.00	F-42		0099	PIC C10 SB	12-A-CRC1	305.00	F-41	2547	0100
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23		0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28		0161
ARP 19A-SA	12-A-CRC1	305.00	D-41		0071	ARP 19B-SB	12-A-CRC1	305.00	D-41		0072
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			MCB MAIN CONTROL BD	12-A-CR	305.00	C-42		
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18		0452	•	•	•	•	•	•
STM GEN AUX FEEDWATER PUMP											
PMP STM TURB 1X-SAB	1-A-BAL	236.00	B-28	1976	2612	•	•	•	•	•	•
SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42		0156	•	•	•	•	•	•
CP AFWP TURB CNTRL	12-A-CRC1	305.00	D-42		0252	•	•	•	•	•	•
CP LOAD SEQ CAB SB	1-A-SWGRA	286.00	D-31			•	•	•	•	•	•
CP AFW TURB OVRSPD	1-A-BAL	236.00	B-28			•	•	•	•	•	•
ARP 1B-SB	12-A-CRC1	305.00	D-41		0050	•	•	•	•	•	•
TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315	•	•	•	•	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	•	•	•	•	•	•
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			•	•	•	•	•	•
THROTTLE VALVE - AFW TURBINE PUMP											
VLV TURB THRTL 1X-	1-A-BAL	236.00	B-28			•	•	•	•	•	•
GOVERNOR - AFW TURBINE PUMP											
GVNR TURB PMP 1X-	1-A-BAL	236.00	B-28			•	•	•	•	•	•

TABLE 9.5B -1B

EBASCO SERVICES INC. CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 003 : INITIATE AUXILIARY FEEDWATER SYSTEM
OPERATIONAL SUB-TASK: 01 : VERIFY AUTOMATIC START UP OF AUXILIARY FEEDWATER PUMPS

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
STM TURB AFW PUMP SHUTOFF VALVE											
MOV 2MS-V9SA	1-A-BAL	263.00	E-29	1975	3746	MOV 2MS-V8SB	1-A-BAL	263.00	E-27	1974	3745
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
SYSTEM: EEFW : ELECTRICAL EQUIPMENT - AFW (EQUIPMENT USED FOR HOT STANDBY ONLY)											
ELECTRICAL EQUIPMENT FOR SYSTEM FW											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
_____		.00	_____	____	_____	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
_____		.00	_____	____	_____	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0478
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 003 : INITIATE AUXILIARY FEEDWATER SYSTEM
OPERATIONAL SUB-TASK: 02 : VERIFY AUTOMATIC ACTUATION OF STEAM GEN NO. 1 AFW VALVES

EQUIPMENT NAME / TYPE:TAG NUMBER	PRIMARY EQUIPMENT (OR SA TRAIN RELATED) FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: AFW : AUXILIARY FEEDWATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)											
STM GEN NO. 1											
STM GEN 1A-SN	1-C	236.00	C-18			•	•	•	•	•	•
LT- 1FW-0474(I)	1-C	240.00	C-18	993		•	•	•	•	•	•
LT- 1FW-0475(II)	1-C	240.00	C-18	993		•	•	•	•	•	•
LT- 1FW-0476(III)	1-C	240.00	C-19	994		•	•	•	•	•	•
LT- 1FW0477(I)	1-C	240.00	C-18	995		•	•	•	•	•	•
RK- C1-R4 SR1	1-C	236.00	C-18		1866	RK- C1-R3 SR2	1-C	239.00	C-18		1865
RK- C1-R2 SR3	1-C	236.00	C-19		1864	•	•	•	•	•	•
PIC P1	12-A-CRC1	305.00	F-41		0091	PIC P2	12-A-CRC1	305.00	F-41		0092
TFP TRANSF.PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	•	•	•	•	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	•	•	•	•	•	•
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			•	•	•	•	•	•
ISOLATION VALVE - STM GEN NO. 1											
MOV 2AF-V116SA	1-A-BAL	263.00	E-25	1933	3888	MOV 2AF-V10SB	1-A-BAL	253.00	E-26	1930	3701
SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42		0156	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42		0156
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			MCB MAIN CONTROL BD	12-A-CR	305.00	C-42		
FLOW CONTROL VALVE - STM GEN NO. 1											
FCV 2051A 3AF-F1SA	1-A-BAL	261.00	B-26	1944	4105	FCV 2071A 3AF-F4SB	1-A-BAL	261.00	B-28	1950	4108
PIC C9 SA	12-A-CRC1	305.00	F-42		0099	PIC C10 SB	12-A-CRC1	305.00	F-41	2547	0100
SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42		0156	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42		0156
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			MCB MAIN CONTROL BD	12-A-CR	305.00	C-42		
PRESSURE CONTROL VALVE - STM GEN NO. 1											
PCV 2150A 3AF-P1SA	1-A-BAL	236.00	B-26	1941	4111	•	•	•	•	•	•
PT- 2150-SA	1-A-BAL	240.00	B-23	1957		•	•	•	•	•	•
RK- A1-R14	1-A-BAL	236.00	B-23		1815	•	•	•	•	•	•
PIC C9 SA	12-A-CRC1	305.00	F-42		0099	•	•	•	•	•	•
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	•	•	•	•	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	•	•	•	•	•	•
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			•	•	•	•	•	•
RECIRCULATION VALVE - STM GEN NO. 1											
MOV 3AF-V187SA	1-A-BAL	236.00	B-23	1923	5989	•	•	•	•	•	•

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-B AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 003 : INITIATE AUXILIARY FEEDWATER SYSTEM
OPERATIONAL SUB-TASK: 02 : VERIFY AUTOMATIC ACTUATION OF STEAM GEN NO. 1 AFW VALVES

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
RECIRCULATION VALVE - STM GEN NO. 1												
PIC C9 SA	12-A-CRC1	305.00	F-42	____	0099		•	•	•	•	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311		•	•	•	•	•	•
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____		•	•	•	•	•	•
FLOW TRANSMITTER - STM GEN NO. 1												
FT 2050A	1-A-BAL	265.00	E-23	1957	1832		•	•	•	•	•	•
RK- A1-R33	1-A-BAL	261.00	E-23	____	1832		•	•	•	•	•	•
PIC C9 SA	12-A-CRC1	305.00	F-42	____	0099		•	•	•	•	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311		•	•	•	•	•	•
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____		•	•	•	•	•	•
SYSTEM: EEFW : ELECTRICAL EQUIPMENT - AFW (EQUIPMENT USED FOR HOT STANDBY ONLY)												
ELECTRICAL EQUIPMENT FOR SYSTEM FW												
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389		CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
_____		.00	_____	____	_____		IDP 1B S2	12-A-CR	305.00	C-31	____	0222
_____		.00	_____	____	_____		IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221		IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218		IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506		DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227		PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229		PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201		MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204		MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846		BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861		BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452		BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0478
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387		BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388		BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392		BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 003 : INITIATE AUXILIARY FEEDWATER SYSTEM
OPERATIONAL SUB-TASK: 03 : VERIFY AUTOMATIC ACTUATION OF STEAM GEN NO. 2 AFW VALVES

EQUIPMENT NAME — PRIMARY EQUIPMENT (OR SA TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: AFW : AUXILIARY FEEDWATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)											
STM GEN NO. 2											
STM GEN 1B-SN	1-C	236.00	C-11	____	_____	•	•	•	•	•	•
LT- 1FW-0484(I)	1-C	240.00	C-10	993	_____	•	•	•	•	•	•
LT- 1FW-0485(II)	1-C	240.00	C-11	993	_____	•	•	•	•	•	•
LT- 1FW-0486(III)	1-C	240.00	C-12	994	_____	•	•	•	•	•	•
LT- 1FW-0487(II)	1-C	240.00	C-11	995	_____	•	•	•	•	•	•
RK- C1-R10 SR1	1-C	240.00	C-10	____	1872	RK- C1-R9 SR2	1-C	236.00	C-11	____	1871
RK- C1-R8 SR3	1-C	236.00	C-12	____	1870	•	•	•	•	•	•
PIC P1	12-A-CRC1	305.00	F-41	____	0091	PIC P2	12-A-CRC1	305.00	F-41	____	0092
PIC P3	12-A-CRC1	305.00	FW-42	____	0093	•	•	•	•	•	•
TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315	•	•	•	•	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	•	•	•	•	•	•
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	•	•	•	•	•	•
ISOLATION VALVE - STM GEN NO. 2											
MOV 2AF-V117SA	1-A-BAL	263.00	E-27	1934	3889	MOV 2AF-V19SB	1-A-BAL	263.00	E-27	1931	3702
SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42.	____	0156	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
FLOW CONTROL VALVE - STM GEN NO. 2											
FCV 2051B 3AF-F3SA	1-A-BAL	261.00	B-27	1945	4107	FCV 2071B 3AF-F6SB	1-A-BAL	261.00	B-28	1951	4110
PIC C9 SA	12-A-CRC1	305.00	F-42	____	0099	PIC C10 SB	12-A-CRC1	305.00	F-41	____	0100
SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
PRESSURE CONTROL VALVE - STM GEN NO. 2											
•	•	•	•	•	•	PCV 2150B 3AF-P2SB	1-A-BAL	236.00	B-27	1942	4112
•	•	•	•	•	•	PT- 2150-SB	1-A-BAL	236.00	C-26	1957	_____
•	•	•	•	•	•	RK- A1-R13	1-A-BAL	236.00	C-26	____	1814
•	•	•	•	•	•	PIC C10 SB	12-A-CRC1	305.00	F-41	____	0100
•	•	•	•	•	•	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
•	•	•	•	•	•	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
•	•	•	•	•	•	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
RECIRCULATION VALVE - STM GEN NO. 2											
•	•	•	•	•	•	MOV 3AF-V188SB	1-A-BAL	236.00	B-26	1924	5990

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 003 : INITIATE AUXILIARY FEEDWATER SYSTEM
OPERATIONAL SUB-TASK: 03 : VERIFY AUTOMATIC ACTUATION OF STEAM GEN NO. 2 AFW VALVES

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
RECIRCULATION VALVE - STM.GEN NO. 2												
	•	•		• •	•	•	PIC C10 SB	12-A-CRC1	305.00	F-41	____	0100
	•	•		• •	•	•	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
	•	•		• •	•	•	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	____
FLOW TRANSMITTER - STM GEN NO. 2												
	•	•		• •	•	•	FT 2050B	1-A-BAL	265.00	D-26	1957	____
	•	•		• •	•	•	RK- A1-R27	1-A-BAL	261.00	D-26	____	1826
	•	•		• •	•	•	PIC C10 SB	12-A-CRC1	305.00	F-41	____	0100
	•	•		• •	•	•	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
	•	•		• •	•	•	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	____

SYSTEM: EEFW : ELECTRICAL EQUIPMENT - AFW (EQUIPMENT USED FOR HOT STANDBY ONLY)

ELECTRICAL EQUIPMENT FOR SYSTEM FW												
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
____		.00	____	____	____	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
____		.00	____	____	____	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0478
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 003 : INITIATE AUXILIARY FEEDWATER SYSTEM
OPERATIONAL SUB-TASK: 04 : VERIFY AUTOMATIC ACTUATION OF STEAM GEN NO. 3 AFW VALVES

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: AFW : AUXILIARY FEEDWATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)												
STM GEN NO. 3												
	STM GEN 1C-SN	1-C	236.00	C- 3			•	•		•	•	
	LT- 1FW-0494(I)	1-C	240.00	C- 2	993		•	•		•	•	
	LT- 1FW-0495(II)	1-C	240.00	C- 2	993		•	•		•	•	
	LT- 1FW-0496(III)	1-C	240.00	C- 3	994		•	•		•	•	
	LT- 1FW-0497(III)	1-C	240.00	C- 3	995		•	•		•	•	
	RK- C1-R15 SR1	1-C	236.00	C- 2		1876	RK- C1-R14 SR2	1-C	240.00	C- 2		1875
	RK- C1-R13 SR3	1-C	236.00	C- 3		1874	•	•		•	•	
	PIC P1	12-A-CRC1	305.00	F-41		0091	PIC P2	12-A-CRC1	305.00	F-41		0092
	PIC P3	12-A-CRC1	305.00	FW-42		0093	•	•		•	•	
	TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	•	•		•	•	
	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	•	•		•	•	
	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			•	•		•	•	
ISOLATION VALVE - STM GEN NO. 3												
	MOV 2AF-V118SA	1-A-BAL	263.00	E-27	1935	3890	MOV 2AF-V23SB	1-A-BAL	263.00	E-27	1932	3703
	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42		0156	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42		0156
	TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315
	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311
	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			MCB MAIN CONTROL BD	12-A-CR	305.00	C-42		
FLOW CONTROL VALVE - STM GEN NO. 3												
	FCV 2051C 3AF-F2SA	1-A-BAL	261.00	B-27	1946	4106	FCV 2071C 3AF-F5SB	1-A-BAL	261.00	B-28	1952	4109
	PIC C9 SA	12-A-CRC1	305.00	F-42		0099	PIC C10 SB	12-A-CRC1	305.00	F-41	2547	0100
	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42		0156	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42		0156
	TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315
	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311
	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			MCB MAIN CONTROL BD	12-A-CR	305.00	C-42		
FLOW TRANSMITTER - STM GEN NO. 3												
	FT 2050C	1-A-BAL	265.00	D-28	1957		•	•		•	•	
	RK- A1-R18	1-A-BAL	261.00	C-41		1819	•	•		•	•	
	PIC C9 SA	12-A-CRC1	305.00	F-42		0099	•	•		•	•	
	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	•	•		•	•	
	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			•	•		•	•	
SYSTEM: EEFW : ELECTRICAL EQUIPMENT - AFW (EQUIPMENT USED FOR HOT STANDBY ONLY)												

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 003 : INITIATE AUXILIARY FEEDWATER SYSTEM
OPERATIONAL SUB-TASK: 04 : VERIFY AUTOMATIC ACTUATION OF STEAM GEN NO. 3 AFW VALVES

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ELECTRICAL EQUIPMENT FOR SYSTEM FW											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
_____		.00	_____	____	_____	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
_____		.00	_____	____	_____	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0478
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 004 : VERIFY OPERATION OF EMERGENCY SERVICE WATER SYSTEMS
OPERATIONAL SUB-TASK: 01 : OPERATE EMERGENCY SERVICE WATER SYSTEM TRAINS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: ESWS : EMERGENCY SERVICE WATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
EMERGENCY SERVICE WATER PUMP											
PMP ESW 1A-SA	12-I-ESWPA	262.00	EMIS	2211	2460	PMP ESW 1B-SB	12-I-ESWPB	262.00	EMIS	2212	2461
PT- 9101A-SA		266.00				PT- 9101B-SB		266.00			
PIC C9 SA	12-A-CRC1	305.00	F-42	2546	0099	PIC C10 SB	12-A-CRC1	305.00	F-41	2547	0100
IC- Y21-C7	12-I-ESWPA	262.00	EMIS		8649	IC- Y21-C8	12-I-ESWPB	262.00	EMIS		8650
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23		0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28		0161
ARP 19A-SA	12-A-CRC1	305.00	E-41		0071	ARP 19B-SB	12-A-CRC1	305.00	D-41		0072
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315
MTC 10A-SA	12-A-CRC1	305.00	D-44		0124	MTC 10B-SB	12-A-CRC1	305.00	E-44		0125
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			MCB MAIN CONTROL BD	12-A-CR	305.00	C-42		
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-23		0459	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-26		0476
EMERG SERVICE WATER CONTROL VALVE											
MOV ESW 3SW-B1SA	12-I-ESWPA	262.00	EMIS	2217	3778	MOV ESW 3SW-B2SB	12-I-ESWPB	262.00	EMIS	2218	3779
VLV INLET 3SW-B3SA-1	12-I-ESWPA	262.00	EMIS		3799	VLV INLET 3SW-B4SB-1	12-I-ESWPB	262.00	EMIS		3800
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			MCB MAIN CONTROL BD	12-A-CR	305.00	C-42		
MCC 480V 1A32-SA	12-I-ESWPA	261.00	EMIS		1205	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS		1210
SERVICE WATER VALVES											
MOV 3SW-B70SA	1-A-BAL	236.00	C-26	2257	3801	MOV 3SW-B72SB	1-A-BAL	236.00	C-28	2260	3803
SERVICE WATER VALVES											
MOV 3SW-B71SA	1-A-BAL	236.00	C-28	2258	3802	MOV 3SW-B73SB	1-A-BAL	236.00	C-28	2259	3804
SERVICE WATER VALVES											
MOV 3SW-B74SA	1-A-BAL	236.00	C-26	2262	3805	MOV 3SW-B76SB	1-A-BAL	236.00	C-28	2264	3807
SERVICE WATER VALVES											
MOV 3SW-B75SA	1-A-BAL	236.00	C-26	2261	3806	MOV 3SW-B77SB	1-A-BAL	236.00	C-28	2263	3808
SERVICE WATER VALVES											
SOV 3SW-V646SA-1	12-I-ESWPA	270.00	EMIS	3295	8094	SOV 3SW-V647SB-1	12-I-ESWPB	270.00	EMIS	3295	8095
PIC C13 SA	12-A-CRC1	305.00	F-42		0103	PIC C14 SB	12-A-CRC1	305.00	F-42		0104
ARP 3A-SA	12-A-CRC1	305.00	D-41		0053	ARP 3B-SB	12-A-CRC1	305.00	D-41		0054
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18		0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-26		0476

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 004 : VERIFY OPERATION OF EMERGENCY SERVICE WATER SYSTEMS
OPERATIONAL SUB-TASK: 01 : OPERATE EMERGENCY SERVICE WATER SYSTEM TRAINS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SERVICE WATER VALVES											
MOV 3SW-B15SA	1-A-BAL	236.00	CZ75X	2286	3786	MOV 3SW-B16SB	1-A-BAL	236.00	CZ75X	2287	3787
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
ARP 19A-SA	12-A-CRC1	305.00	E-41	____	0071	ARP 19B-SB	12-A-CRC1	305.00	D-41	____	0072
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MTC 10A-SA	12-A-CRC1	305.00	D-44	____	0124	MTC 10B-SB	12-A-CRC1	305.00	E-44	____	0125
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
SELF-CLEANING STRAINERS											
STR 3SW S21-SA	12-I-ESWPA	246.00	EMIS	____	5934	STR 3SW S22-SB	12-I-ESWPB	246.00	EMIS	____	5935

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 004 : VERIFY OPERATION OF EMERGENCY SERVICE WATER SYSTEMS
OPERATIONAL SUB-TASK: 02 : EMERGENCY SERVICE WATER INTAKE - HVAC EQUIPMENT

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)				
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: HSWI : HVAC SYSTEM - EMERG SERV WATER INTAKE (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
AIR HANDLING UNIT -SW INTAKE											
SOV 3SW-V646SA-1	12-I-ESWPA	270.00	EMIS	3295	8094	SOV 3SW-V647SB-1	12-I-ESWPB	270.00	EMIS	3295	8095
SOV 3HP-V217SA-1	12-I-ESWPA	270.00	EMIS	3295	8096	SOV 3HP-V218SB-1	12-I-ESWPB	270.00	EMIS	3295	8177
AHU AH-86(1A-SA)	12-I-ESWPA	262.00	BAY 8	3288	3225	AHU AH-86(1B-SB)	12-I-ESWPB	262.00	BAY 6	3290	3226
DPR EV-D1SA-1	12-I-ESWPA	275.00	EMIS	3289	8178	DPR EV-D1SB-1	12-I-ESWPB	275.00	EMIS	3291	8180
DPR EV-D2SA-1	12-I-ESWPA	275.00	EMIS	3289	8179	DPR EV-D2SB-2	12-I-ESWPB	275.00	EMIS	3291	8181
EHC 120(1A-SA)	12-I-ESWPA	271.00	EMIS	3293	8182	EHC 120(1B-SB)	12-I-ESWPB	271.00	EMIS	3294	8183
TE- 6588A-SA	12-I-ESWPA	268.00	EMIS	3298	8086	TE- 6588B-SB	12-I-ESWPB	268.00	EMIS	3298	8087
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14 SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A32-SA	12-I-ESWPA	261.00	EMIS	____	1205	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS	____	1210
DAMPER - AH-86 DUCTWORK											
DPR EV D1-SA-1		262.00	BAY 8	3289	8178	DPR EV D1-SB-1		262.00	BAY 6	3291	8180
AHU AH86(1A-SA)		.00	_____	____	_____	AHU AH86(1B-SB)		.00	_____	____	_____
TE- 6588A-SA		.00	_____	3298	8086	TE- 6588B-SB		.00	_____	3298	8087
TE- 6589A-SA		.00	_____	____	_____	TE- 6589B-SB		.00	_____	____	_____
PIC C13 SA		.00	_____	____	0103	PIC C14 SB		.00	_____	____	0104
ARP 3A-SA		.00	_____	____	0053	ARP 3B-SB		.00	_____	____	0054
MTC 11A-SA		.00	_____	____	0126	MTC 11B-SB		.00	_____	____	0127
.		.	.	.	.	AEP 1-NS		.00	_____	____	0078
MCC 480V 1A32-SA		.00	_____	____	1205	MCC 480V 1B32-SB		.00	_____	____	1210
DAMPER - AH-81 DUCTWORK											
DPR EV D2-SA-1		262.00	BAY 8	3289	8179	DPR EV D2-SB-1		262.00	BAY 6	3291	8181
AHU AH86(1A-SA)		.00	_____	____	_____	AHU AH86(1B-SB)		.00	_____	____	_____
TE- 6588A-SA		.00	_____	3298	8086	TE- 6588B-SB		.00	_____	3298	8087
TE- 6589A-SA		.00	_____	____	_____	TE- 6589B-SB		.00	_____	____	_____
PIC C13 SA		.00	_____	____	0103	PIC C14 SB		.00	_____	____	0104
ARP 3A-SA		.00	_____	____	0053	ARP 3B-SB		.00	_____	____	0054
MTC 11A-SA		.00	_____	____	0126	MTC 11B-SB		.00	_____	____	0127
AEP 1-NS		.00	_____	____	0078	AEP 1-NS		.00	_____	____	0078
MCC 480V 1A32-SA		.00	_____	____	1205	MCC 480V 1B32-SB		.00	_____	____	1210
EXHAUST FAN E-88 - SW INTAKE											
EXF E-88(1A-SA)		262.00	BAY 8	3288	_____	EXF E-88(1B-SB)		262.00	BAY 6	3297	_____

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 004 : VERIFY OPERATION OF EMERGENCY SERVICE WATER SYSTEMS
OPERATIONAL SUB-TASK: 02 : EMERGENCY SERVICE WATER INTAKE - HVAC EQUIPMENT

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)				
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
EXHAUST FAN E-88 - SW INTAKE											
TE- 6591A-SA		.00	_____	3298	8090	TE- 6591B-SB		.00	_____	3298	8091
TE- 6592A-SA		.00	_____	3298	8092	TE- 6592B-SB		.00	_____	3298	8093
PIC C13 SA		.00	_____	____	0103	PIC C14 SB		.00	_____	____	0104
ESS CAB 1A-SA		.00	_____	____	0160	ESS CAB 1B-SB		.00	_____	____	0161
ARP 3A-SA		.00	_____	____	0053	ARP 3B-SB		.00	_____	____	0054
•	•	•	•	•	•	AEP 1-NS		.00	_____	____	0078
HCC 480V 1A32-SA		.00	_____	____	1205	HCC 480V 1B32-SB		.00	_____	____	1210

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 004 : VERIFY OPERATION OF EMERGENCY SERVICE WATER SYSTEMS
OPERATIONAL SUB-TASK: 03 : EMERGENCY SERVICE WATER INTAKE - ELECTRICAL EQUIPMENT

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: EESW : ELECTRICAL EQUIPMENT - SW (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
ELECTRICAL EQUIPMENT FOR SYSTEM SW											
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
MCC 480V 1A32-SA	12-I-ESWPA	262.00	EMIS	____	1205	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS	____	1210
MCC 480V 1A34-SA	1-A-BAL	286.00	FZ-22	____	1262	MCC 480V 1B34-SB	1-A-BAL	286.00	FZ-29	____	1263
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	316.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-26	____	0476
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BAL	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BAL	286.00	D-28	____	8393
DG DC LEADS 1A-SA	1-D-DGA	265.00	A- 1	____	1186	DG DC LEADS 1B-SB	1-D-DGB	265.00	A- 2	____	2008
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 005 : VERIFY OPERATION OF CHILLED WATER SYSTEM
OPERATIONAL SUB-TASK: 01 : PROVIDE CHILLED WATER FOR HVAC UNITS

EQUIPMENT NAME / TYPE:TAG NUMBER	PRIMARY EQUIPMENT (OR SA TRAIN RELATED) FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: CWS : CHILLED WATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
WATER CHILLER - CHILLED WATER SYSTEM											
WCU WC-2(1A-SA)	1-A-BAL	261.00	B-24	2601	3203	WCU WC-2 (1B-SB)	1-A-BAL	261.00	B-36	2631	3204
VLV 3SW-B300SA-1	1-A-BAL	261.00	B-18	2612	3975	VLV 3SW-B303SB-1	1-A-BAL	261.00	B-36	2642	3976
FT- 9429A-SA	1-A-BAL	266.00	B-15	2598	6235	FT- 9429B-SB	1-A-BAL	266.00	B-36	2599	6400
FT- 9209A-SA	1-A-BAL	265.00	B-15	2598	6231	FT- 9209B-SB	1-A-BAL	265.00	B-36	2599	6233
PT- 9209A-SA	1-A-BAL	261.00	B-15	2598	6010	PT- 9209B-SB	1-A-BAL	263.00	B-36	2599	6011
TE- 9205A-SA	1-A-BAL	216.00	D-15	2598	6825	TE- 9205B-SB	1-A-BAL	216.00	D-28	2599	6826
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14 SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
CP WC-2 MFG 1A-SA	1-A-BAL	261.00	B-24	2601	1422	CP WC-2 MFG 1B-SB	1-A-BAL	263.00	B-36	2631	1423
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
MCC 480V 1D12	1-A-BAL	261.00	D-15	____	1214	MCC 480V 1E12	1-A-BAL	261.00	D-36	____	1221
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-23	____	0461	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-28	____	0484
CONDENSER WATER RECIRCULATING PUMP											
PMP P7(1A-SA)		.00	_____	2605	3213	PMP P7(1B-SB)		.00	_____	2635	3214
WCU WC-2(1A-SA		.00	_____	____	_____	WCU WC-2(1B-SB		.00	_____	____	_____
TE- 9205A-SA		.00	_____	____	_____	TE- 9205B-SB		.00	_____	____	_____
PIC C13-SA		.00	_____	____	_____	PIC C13-SB		.00	_____	____	_____
MCC 480V 1A31-SA		.00	_____	____	_____	MCC 480V 1B31-SB		.00	_____	____	_____
BUS 6.9KV EMERG 1A-SA		.00	_____	____	_____	BUS 6.9KV EMERG 1B-SB		.00	_____	____	_____
CHILLER WATER PUMP											
PMP P4(1A-SA)		.00	_____	2604	3207	PMP P4(1B-SB)		.00	_____	2634	3208
WCU WC-2(1A-SA)		.00	_____	____	_____	WCU WC-2(1B-SB)		.00	_____	____	_____
ESS CAB 1A-SA		.00	_____	____	_____	ESS CAB 1B-SB		.00	_____	____	_____
TFP 1A-SA		.00	_____	____	_____	TFP 1B-SB		.00	_____	____	_____
ACP		.00	_____	____	_____	ACP		.00	_____	____	_____
AEP 1 NS		.00	_____	____	_____	AEP 1 NS		.00	_____	____	_____
BUS 480V EMERG 1A2-SA		.00	_____	____	_____	BUS 480V EMERG 1B2-SB		.00	_____	____	_____
CHILLED WATER DISTRIBUTION VALVE											
VLV 3CX W1SA-1	1-A-BAL	190.00	E-16	2618	3704	VLV 3CX W3SB-1	1-A-BAL	190.00	E-36	2649	4619
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 005 : VERIFY OPERATION OF CHILLED WATER SYSTEM
OPERATIONAL SUB-TASK: 01 : PROVIDE CHILLED WATER FOR HVAC UNITS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)				
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
CHILLED WATER DISTRIBUTION VALVE											
VLV 3CX W7SA-1	1-A-BAL	236.00	C-15	2618	4718	VLV 3CX W10SB-1	1-A-BAL	236.00	C-18	2649	4694
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
CHILLED WATER DISTRIBUTION VALVE											
VLV 3CX W9SA-1	1-A-BAL	236.00	C-28	2618	4719	VLV 3CX W14SB-1	1-A-BAL	240.00	C-31	2649	5048
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
CHILLED WATER DISTRIBUTION VALVE											
VLV 3CX W8SA-1	1-A-BAL	236.00	D-27	2618	4720	VLV 3CX W12SB-1	1-A-BAL	236.00	F-28	2649	4656
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
CHILLED WATER DISTRIBUTION VALVE											
VLV 3CX W5SA-1	1-A-BAL	236.00	F-18	2618	4721	VLV 3CX W13SB-1	1-A-BAL	236.00	F-27	2650	4697
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
CHILLED WATER DISTRIBUTION VALVE											
VLV 3CX W15SA-1	1-A-BAL	286.00	FZ-20	2629	5014	VLV 3CX W22SB-1	1-A-BAL	286.00	FZ-22	2629	5016
I/P 6634	1-A-BAL	286.00	FV-18	2630	9983	I/P 6633	1-A-BAL	286.00	FZ-22	2629	9984
TE- 6630-S	1-A-BAL	298.00	E-16	3023	6724	TE- 6630-S	1-A-BAL	298.00	E-16	3023	6724
PIC C12	12-A-CRC1	305.00	F-42	____	0102	PIC C12	12-A-CRC1	305.00	F-42	____	0102
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ISOL CAB 3	12-A-CRC1	305.00	E-44	____	0144	ISOL CAB 3	12-A-CRC1	305.00	E-44	____	0144
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
CHILLED WATER DISTRIBUTION VALVE											
VLV 3CX W16SA-1	1-A-BAL	286.00	FZ-32	2630	5015	VLV 3CX W23SB-1	1-A-BAL	286.00	FZ-34	2630	5017
I/P 6644	1-A-BAL	286.00	FZ-34	2630	9985	I/P 6643	1-A-BAL	286.00	FZ-32	2630	9986
TE- 6640	1-A-BAL	290.00	F-43	3033	6766	TE- 6640	1-A-BAL	290.00	F-43	3033	6766
PIC C12	12-A-CRC1	305.00	F-42	____	0102	PIC C12	12-A-CRC1	305.00	F-42	____	0102
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ISOL CAB 3	12-A-CRC1	305.00	E-44	____	0144	ISOL CAB 3	12-A-CRC1	305.00	E-44	____	0144
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
CHILLED WATER DISTRIBUTION VALVE											
VLV 3CX W17SA-1	12-A-HV:IR	305.00	GZ-42	2945	5049	VLV 3CX W24SB-1	12-A-HV:IR	305.00	GZ-42	2945	5050

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 005 : VERIFY OPERATION OF CHILLED WATER SYSTEM
OPERATIONAL SUB-TASK: 01 : PROVIDE CHILLED WATER FOR HVAC UNITS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
CHILLED WATER DISTRIBUTION VALVE												
TE- 7837A-SA	12-A-CRC1	305.00	D-41	2991	6818		TE- 7837B-SB	12-A-CRC1	305.00	D-41	2991	6821
ME- 7832A	12-A-CR	305.00	B-41	2945	6913		ME- 7832B	12-A-CR	305.00	C-42	2945	6914
MT- 7832A	12-A-CR	310.00	B-41	2945	8025		MT- 7832B	12-A-CR	310.00	C-42	2945	8024
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103		PIC C14 SB	12-A-CRC1	305.00	F-41	____	0104
ARP 4A-SA	12-A-CRC1	305.00	D-41	____	0055		ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314		TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267		MCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
CHILLED WATER DISTRIBUTION VALVE												
VLV 3CX W18SA-1	12-A-HV:IR	305.00	GZ-43	2660	5018		VLV 3CX W25SB-1	12-A-HV:IR	305.00	H-41	2660	5019
TE- 6612	12-A-HV:IR	311.00	FW-42	2660	7034		TE- 6612	12-A-HV:IR	311.00	FW-42	2660	7034
I/P 6612A	12-A-HV:IR	308.00	GZ-42	2660	6104		I/P 6612B		.00	____	2660	____
PIC C12	12-A-CRC1	305.00	F-42	____	0102		PIC C12	12-A-CRC1	305.00	F-42	____	0102
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051		ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
MCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267		MCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
CHILLED WATER DISTRIBUTION VALVE												
VLV 3CX W20SA-1	1-A-BAL	236.00	B-18	2619	4717		VLV 3CX W27SB-1	1-A-BAL	236.00	C-18	2650	4707
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051		ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202		MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
CHILLED WATER DISTRIBUTION VALVE												
VLV 3CX W21SA-1	1-A-BAL	261.00	C-28	2619	4706		VLV 3CX W28SB-1	1-A-BAL	261.00	B-28	2650	4708
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051		ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202		MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
CHILLED WATER DISTRIBUTION VALVE												
VLV 3CX W2SA-1	1-A-BAL	261.00	C-28	2620	4680		VLV 3CX W4SB-1	1-A-BAL	216.00	FZ-36	2651	4709
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051		ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204		MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
CHILLED WATER DISTRIBUTION VALVE												
VLV 3CX W32SA-1	12-A-BAL	286.00	FV-42	2619	5981		VLV 3CX W33SB-1	12-A-BAL	286.00	FW-42	2650	5977
AHU AH-92(1A-SA)	12-A-BAL	286.00	GZ-42	2776	5971		AHU AH-92(1B-SB)	12-A-BAL	286.00	FW-42	2777	5972
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051		ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202		MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
CHILLED WATER DISTRIBUTION VALVE												
VLV 3CX W34SA-1	12-A-CRC1	305.00	E-36	2619	5978		•		•		•	•

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 005 : VERIFY OPERATION OF CHILLED WATER SYSTEM
OPERATIONAL SUB-TASK: 01 : PROVIDE CHILLED WATER FOR HVAC UNITS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
CHILLED WATER DISTRIBUTION VALVE											
AHU AH-93(1X-SA)	12-A-BAL	305.00	E-36	2778	5982	.	.		. .	.	.
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	.	.		. .	.	.
HCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	.	.		. .	.	.
CHILLED WATER DISTRIBUTION VALVE											
VLV 7CX W1002-1	1-A-BAL	236.00	B-42	2773	8643	.	.		. .	.	.
TIS 1AV-6584	12-A-CR	240.00	B-42	2773	8640	.	.		. .	.	.
ARP 13	12-A-CRC1	305.00	D-41	____	0065	.	.		. .	.	.
HCC 480V 1E12	1-A-BAL	261.00	D-36	____	1221	.	.		. .	.	.
ADDITIONAL ELECTRICAL EQUIPMENT FOR SYSTEM CWS											
CP WC-2 MFG 1A-SA	1-A-BAL	261.00	B-24	2601	1422	CP WC-2 MFG 1B-SB	1-A-BAL	263.00	B-36	2631	1423
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0886
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 006 : MAINTAIN STEAM GEN INVENTORY FOR REMOVAL OF RCS DECAY HEAT
OPERATIONAL SUB-TASK: 01 : OPERATE MAIN STEAM SYSTEM PORV VALVES

EQUIPMENT NAME / TYPE:TAG NUMBER	PRIMARY EQUIPMENT (OR SA TRAIN RELATED) FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: HSS : MAIN STEAM SUPPLY SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)											
STEAM GENERATOR											
STM GEN 1A-SN	1-C	236.00	C-18	990		•	•		• •	•	•
FT 0474(III)	1-C	240.00	C-19	990		FT 0475(IV)	1-C	240.00	C-20	991	
RK- C1-R2 SR3	1-C	236.00	C-19		1864	RK- C1-R7	1-C	236.00	C-20		1869
PIC P3	12-A-CRC1	305.00	FW-42		0093	PIC P4	12-A-CRC1	305.00	F-42		0094
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			•	•		• •	•	•
STEAM GENERATOR											
STM GEN 1B-SN	1-C	236.00	C-11	990		•	•		• •	•	•
FT 0484(III)	1-C	240.00	C-12	990		FT 0485(IV)	1-C	236.00	C-12	991	6204
RK- C1-R8 SR3	1-C	236.00	C-12		1870	•	•		• •	•	•
PIC P3	12-A-CRC1	305.00	FW-42		0093	PIC P4	12-A-CRC1	305.00	F-42		0094
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			•	•		• •	•	•
STEAM GENERATOR											
STM GEN 1C-SN	1-C	236.00	C- 3			•	•		• •	•	•
FT 0494(III)	1-C	240.00	C- 3	990		FT 0495(IV)	1-C	236.00	C- 4	991	6206
RK- C1-R13 SR3	1-C	236.00	C- 3		1874	•	•		• •	•	•
PIC P3	12-A-CRC1	305.00	FW-42		0093	PIC P4	12-A-CRC1	305.00	F-42		0094
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			•	•		• •	•	•
STEAM GENERATOR POWER OPERATED RELIEF VALVE											
PORV 2MS-P18SA	1-A-BAL	263.00	E-27	1254	4367	•	•		• •	•	•
PT 0308A SA	1-A-BAL	265.00	D-23	1254		•	•		• •	•	•
RK- A1-R33	1-A-BAL	261.00	D-23		1832	•	•		• •	•	•
PIC C9 SA	12-A-CRC1	305.00	F-42	2546	0099	•	•		• •	•	•
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	•	•		• •	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	•	•		• •	•	•
MCB MAIN CONTROL BD	12-A-CRC1	305.00	C-42			•	•		• •	•	•
STEAM GENERATOR POWER OPERATED RELIEF VALVE											
•	•	•	•	•	•	PORV 2MS-P19SB	1-A-BAL	263.00	E-27	1255	4368
•	•	•	•	•	•	PT 0308B SB	1-A-BAL	265.00	D-26	1255	
•	•	•	•	•	•	RK- A1-R27	1-A-BAL	261.00	D-26		1826
•	•	•	•	•	•	PIC C10 SB	12-A-CRC1	305.00	F-41		0100
•	•	•	•	•	•	ISOL CAB 3	12-A-CRC1	305.00	E-44		0144
•	•	•	•	•	•	TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314
•	•	•	•	•	•	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 006 : MAINTAIN STEAM GEN INVENTORY FOR REMOVAL OF RCS DECAY HEAT
OPERATIONAL SUB-TASK: 01 : OPERATE MAIN STEAM SYSTEM PORV VALVES

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)				
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
STEAM GENERATOR POWER OPERATED RELIEF VALVE											
•	•			•	•	MCB MAIN CONTROL BD	12-A-CRC1	305.00	C-42	____	_____
STEAM GENERATOR POWER OPERATED RELIEF VALVE											
PORV 2MS-P20SA	1-A-BAL	263.00	E-27	1256	4369	•	•		• •	•	•
PT 0308C SA	1-A-BAL	265.00	D-28	1256	_____	•	•		• •	•	•
RK- A1-R28	1-A-BAL	261.00	D-28	____	1828	•	•		• •	•	•
PIC C9 SA	12-A-CRC1	305.00	F-42	2546	0099	•	•		• •	•	•
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	•	•		• •	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	•	•		• •	•	•
MCB MAIN CONTROL BD	12-A-CRC1	305.00	C-42	____	_____	•	•		• •	•	•

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 006 : MAINTAIN STEAM GEN INVENTORY FOR REMOVAL OF RCS DECAY HEAT
OPERATIONAL SUB-TASK: 02 : OPERATE MAIN STEAM ISOLATION VALVES

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)				
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: MSS : MAIN STEAM SUPPLY SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)											
MAIN STEAM ISOLATION VALVE											
MSIV 2MS-V1SAB	1-A-BAL	263.00	E-27	1001	4933	•	•	•	• •	•	•
STC (A)	12-A-CRC1	305.00	E-42	____	0152	•	•	•	• •	•	•
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	•	•	•	• •	•	•
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	•	•	•	• •	•	•
MTC MN TRM CB-3A-SA	12-A-BAL	305.00	C-39	____	0114	•	•	•	• •	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	•	•	•	• •	•	•
MCB MAIN CONTROL BD	12-A-CRC1	305.00	C-42	____	_____	•	•	•	• •	•	•
MAIN STEAM ISOLATION VALVE											
MSIV 2MS-V2SAB	1-A-BAL	263.00	E-27	1003	4934	•	•	•	• •	•	•
STC (A)	12-A-CRC1	305.00	E-42	____	0152	•	•	•	• •	•	•
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	•	•	•	• •	•	•
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	•	•	•	• •	•	•
MTC MN TRM CB-3A-SA	12-A-BAL	305.00	C-39	____	0114	•	•	•	• •	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	•	•	•	• •	•	•
MCB MAIN CONTROL BD	12-A-CRC1	305.00	C-42	____	_____	•	•	•	• •	•	•
MAIN STEAM ISOLATION VALVE											
MSIV 2MS-V3SAB	1-A-BAL	263.00	E-27	1005	4935	•	•	•	• •	•	•
STC (A)	12-A-CRC1	305.00	E-42	____	0152	•	•	•	• •	•	•
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	•	•	•	• •	•	•
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	•	•	•	• •	•	•
MTC MN TRM CB-3A-SA	12-A-BAL	305.00	C-39	____	0114	•	•	•	• •	•	•
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	•	•	•	• •	•	•
MCB MAIN CONTROL BD	12-A-CRC1	305.00	C-42	____	_____	•	•	•	• •	•	•
ADDITIONAL ELECTRICAL EQUIPMENT FOR SYSTEM MS											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
•	•	•	•	•	•	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 006 : MAINTAIN STEAM GEN INVENTORY FOR REMOVAL OF RCS DECAY HEAT
OPERATIONAL SUB-TASK: 02 : OPERATE MAIN STEAM ISOLATION VALVES

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ADDITIONAL ELECTRICAL EQUIPMENT FOR SYSTEM MS											
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
•	•	•	•	•	•	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007
DG DC LEADS 1A-SA	1-D-DGA	265.00	A- 1	____	1186	DG DC LEADS 1B-SB	1-D-DGB	265.00	A- 2	____	2008

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 007 : PROVIDE AIR-COND OR AIR CHANGE FOR KEY CONTAINMENT AREAS
OPERATIONAL SUB-TASK: 01 : PROVIDE AIR COOLING TO CONTAINMENT FAN COOLERS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: HCFC : CONTAINMENT FAN COOLER SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
AIR HANDLING UNIT - CONTAINMENT FAN COOLING											
AHU AH-2(1A-SA)	1-C	236.00	120	2673	3003	AHU AH-4(1A-SB)	1-C	286.50	120	2745	3007
DPR CV-D4SA-1	1-C	228.33	120	2674	9320	DPR CV-D7SB-1	1-C	283.50	120	2746	5347
DPR CV-D3SA-1	1-C	231.33	120	2674	9319	DPR CV-D8SB-1	1-C	276.17	120	2746	5348
FE- 1CV-7572AS	1-C	221.00	CT221	3083	1950	FE- 1CV-7574AS		261.00		3085	2698
FS- 1CV-7572AS	1-A-BAL	236.00	I-27	3083	6623	FS- 1CV-7574AS		261.00	I-33	3085	6627
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23		0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28		0161
ARP 4A-SA	12-A-CRC1	305.00	D-42		0055	ARP 4B-SB	12-A-CRC1	305.00	D-41		0056
		.00				TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			MCB MAIN CONTROL BD	12-A-CR	305.00	C-42		
MCC 480V 1A22-SA	1-A-BAL	236.00	KZ-31		1260	MCC 480V 1B34-SB	1-A-BAL	286.00	FZ-22		1263
AIR HANDLING UNIT - CONTAINMENT FAN COOLING											
AHU AH-2(1B-SA)	1-C	236.00	120	2675	3004	AHU AH-4(1B-SB)	1-C	286.50	120	2747	3008
DPR CV-D4SA-1	1-C	228.33	120	2674	9320	DPR CV-D7SB-1	1-C	283.50	120	2746	5347
DPR CV-D3SA-1	1-C	231.33	120	2674	9319	DPR CV-D8SB-1	1-C	276.17	120	2746	5348
FE- 1CV-7572BS	1-C	221.00	CT221	3083	1951	FE- 1CV-7574BS		261.00		3085	2699
FS- 1CV-7572BS	1-A-BAL	236.00	I-27	3083	6624	FS- 1CV-7574BS	1-A-BAL	261.00	JV-33	3085	6628
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23		0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28		0161
ARP 4A-SA	12-A-CRC1	305.00	D-42		0055	ARP 4B-SB	12-A-CRC1	305.00	D-41		0056
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315
AEP 1 NS	12-A-CR	305.00	B-42		0078	AEP 1 NS	12-A-CR	305.00	B-42		0078
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42			MCB MAIN CONTROL BD	12-A-CR	305.00	C-42		
MCC 480V 1A22-SA	1-A-BAL	236.00	KZ-31		1260	MCC 480V 1B34-SB	1-A-BAL	286.00	FZ-22		1263
AIR HANDLING UNIT - CONTAINMENT FAN COOLING											
AHU AH-3(1A-SA)	1-C	286.50	60	2741	3005	AHU AH-1(1A-SB)	1-C	236.00	60	2669	3001
DPR CV-D5SA-1	1-C	283.00	60	2742	5345	DPR CV-D1SB-1	1-C	******	60	2670	9317
DPR CV-D6SA-1	1-C	******	60	2742	5346	DPR CV-D2SB-1	1-C	******	60	2670	9318
FE- 1CV-7573AS		261.00		3084	2696	FE- 1CV-7571AS	1-C	221.00	CT221	3082	1948
FS- 1CV-7573AS	1-A-BAL	261.00	I-33	3084	6625	FS- 1CV-7571AS		236.00	I-27	3082	6621
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23		0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28		0161
ARP 4A-SA	12-A-CRC1	305.00	D-42		0055	ARP 4B-SB	12-A-CRC1	305.00	D-41		0056
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315
AEP 1 NS	12-A-CR	305.00	B-42		0078	AEP 1 NS	12-A-CR	305.00	B-42		0078
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 007 : PROVIDE AIR-COND OR AIR CHANGE FOR KEY CONTAINMENT AREAS
OPERATIONAL SUB-TASK: 01 : PROVIDE AIR COOLING TO CONTAINMENT FAN COOLERS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
AIR HANDLING UNIT - CONTAINMENT FAN COOLING												
	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
	MCC 480V 1A34-SA	1-A-BAL	286.00	FZ-22	____	1262	MCC 480V 1B22-SB	1-A-BAL	236.00	KZ-21	____	1261
AIR HANDLING UNIT - CONTAINMENT FAN COOLING												
	AHU AH-3(1B-SA)	1-C	286.50	60	2743	3006	AHU AH-1(1B-SB)	1-C	236.00	60	2671	3002
	DPR CV-D5SA-1	1-C	283.00	60	2742	5345	DPR CV-D1SB-1	1-C	******	60	2670	9317
	DPR CV-D6SA-1	1-C	******	60	2742	5346	DPR CV-D2SB-1	1-C	******	60	2670	9318
	FE- 1CV-7573BS		261.00	_____	3084	2697	FE- 1CV-7571BS	1-C	221.00	CT221	3082	1949
	FS- 1CV-7573BS	1-A-BAL	261.00	JV-33	3084	6626	FS- 1CV-7571BS		236.00	I-27	3082	6622
	ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
	ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
	TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
	AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
	MCC 480V 1A34-SA	1-A-BAL	286.00	FZ-22	____	1262	MCC 480V 1B22-SB	1-A-BAL	236.00	KZ-21	____	1261
ELECTRICAL EQUIPMENT FOR SYSTEM CFC												
	•	•	•	•	•	•	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
	ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
	ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142	ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
	MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	MTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
	IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
	IDP 1A-S3 75KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S2 75KVA UPS	12-A-CR	305.00	C-31	____	0217
	DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
	PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	IDP 1B-S4 75KVA UPS	12-A-CR	305.00	C-31	____	0219
	PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
	•	•	•	•	•	•	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
	•	•	•	•	•	•	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
	MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
	MCC 480V 1A22-SA	1-A-BAL	236.00	KZ-31	____	1260	MCC 480V 1B22-SB	1-A-BAL	236.00	KZ-21	____	1261
	MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
	MCC 480V 1A34-SA	1-A-BAL	286.00	FZ-22	____	1262	MCC 480V 1B34-SB	1-A-BAL	286.00	FZ-29	____	1263
	BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
	BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
	BUS 69KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 69KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
	BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
	BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
	BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 007 : PROVIDE AIR-COND OR AIR CHANGE FOR KEY CONTAINMENT AREAS
OPERATIONAL SUB-TASK: 01 : PROVIDE AIR COOLING TO CONTAINMENT FAN COOLERS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ELECTRICAL EQUIPMENT FOR SYSTEM CFC											
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007
SYSTEM: ESWS : EMERGENCY SERVICE WATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
SERVICE WATER VALVES											
MOV 2SW-B45SA	1-A-BAL	216.00	FX-32	2247	3791	MOV 2SW-B51SB	1-A-BAL	216.00	FV-34	2251	3797
MTC 5	12-A-BAL	305.00	C-36	____	0117	MTC 8B-SB	12-A-BAL	305.00	C-31	____	0121
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
SERVICE WATER VALVES											
MOV 2SW-B46SA	1-A-BAL	216.00	FV-20	2246	3792	MOV 2SW-B52SB	1-A-BAL	216.00	FV-20	2249	3798
MTC 8A-SA	12-A-BAL	305.00	B-39	____	0120	MTC 8B-SB	12-A-BAL	305.00	C-31	____	0121
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
SERVICE WATER VALVES											
MOV 2SW-B47SA	1-A-BAL	216.00	FX-22	2246	3793	MOV 2SW-B48SB	1-A-BAL	216.00	FV-20	2250	3794
MTC 8A-SA	12-A-BAL	305.00	B-39	____	0120	MTC 8B-SB	12-A-BAL	305.00	C-31	____	0121
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
SERVICE WATER VALVES											
MOV 2SW-B49SA	1-A-BAL	216.00	FX-32	2248	3795	MOV 2SW-B50SB	1-A-BAL	216.00	FV-34	2252	3796
MTC 8A-SA	12-A-BAL	305.00	B-39	____	0120	MTC 8B-SB	12-A-BAL	305.00	C-31	____	0121
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
DUCTWORK DAMPER - CONTAINMENT FAN COOLING											
DPR CV-D4SA-1	1-C	228.33	120	2674	9320	DPR CV-D8SB-1	1-C	276.17	120	2746	5348
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	MTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB HVAC	12-A-CR	305.00	C-42	____	0009
MCC 480V 1A22-SA	1-A-BAL	236.00	KZ-31	____	1260	MCC 480V 1B34-SB	1-A-BAL	286.00	FZ-22	____	1263
DUCTWORK DAMPER - CONTAINMENT FAN COOLING											
DPR CV-D3SA-1	1-C	231.33	120	2674	9319	DPR CV-D7SB-1	1-C	283.50	120	2746	5347
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	MTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 007 : PROVIDE AIR-COND OR AIR CHANGE FOR KEY CONTAINMENT AREAS
OPERATIONAL SUB-TASK: 01 : PROVIDE AIR COOLING TO CONTAINMENT FAN COOLERS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
DUCTWORK DAMPER - CONTAINMENT FAN COOLING											
MCB HVAC	12-A-CR	305.00	C-42	____	0009	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A22-SA	1-A-BAL	236.00	KZ-31	____	1260	MCC 480V 1B34-SB	1-A-BAL	286.00	FZ-22	____	1263
DUCTWORK DAMPER - CONTAINMENT FAN COOLING											
DPR CV-D6SA-1	1-C	******	60	2742	5346	DPR CV-D2SB-1	1-C	228.33	60	2670	9318
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	MTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A34-SA	1-A-BAL	286.00	FZ-22	____	1262	MCC 480V 1B22-SB	1-A-BAL	236.00	KZ-21	____	1261
DUCTWORK DAMPER - CONTAINMENT FAN COOLING											
DPR CV-D5SA-1	1-C	283.00	60	2742	5345	DPR CV-D1SB-1	1-C	******	60	2670	9317
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	MTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A34-SA	1-A-BAL	286.00	FZ-22	____	1262	MCC 480V 1B22-SB	1-A-BAL	236.00	KZ-21	____	1261
SUPPLY DUCTWORK - CONTAINMENT FAN COOLING											
DWS AH-1(1A-SA)	1-C	.00	*DWGS	____	_____	DWS AH-2(1B-SB)	1-C	.00	*DWGS	____	_____
SUPPLY DUCTWORK - CONTAINMENT FAN COOLING											
DWS AH-2(1A-SA)	1-C	.00	*DWGS	____	_____	DWS AH-3(1B-SB)	1-C	.00	*DWGS	____	_____
SUPPLY DUCTWORK - CONTAINMENT FAN COOLING											
DWS AH-3(1A-SA)	1-C	.00	*DWGS	____	_____	DWS AH-1(1B-SB)	1-C	.00	*DWGS	____	_____
SUPPLY DUCTWORK - CONTAINMENT FAN COOLING											
DWS AH-4(1A-SA)	1-C	.00	*DWGS	____	_____	DWS AH-4(1B-SB)	1-C	.00	*DWGS	____	_____
ELECTRICAL EQUIPMENT FOR SYSTEM SW											
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 75KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 75KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 75KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 75KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 007 : PROVIDE AIR-COND OR AIR CHANGE FOR KEY CONTAINMENT AREAS
OPERATIONAL SUB-TASK: 01 : PROVIDE AIR COOLING TO CONTAINMENT FAN COOLERS

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ELECTRICAL EQUIPMENT FOR SYSTEM SW											
•	•		• •	•	•	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS	____	1210
•	•		• •	•	•	MCC 480V 1B34-SB	1-A-BAL	286.00	FZ-29	____	1263
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 69KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 69KV 1B-SB	1-A-SWGRB	286.00	C-26	____	0476
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG DC LEADS 1A-SA	1-D-DGA	265.00	A- 1	____	1186	DG DC LEADS 1B-SB	1-D-DGB	265.00	A- 2	____	2008
•	•		• •	•	•	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 01 : PROVIDE AIR COOLING TO ELECT PROTECTION AND H/V ROOMS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: HCRC : CONTROL ROOM COMPLEX COOLING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
BUTTERFLY VALVE-OUTSIDE AIR INTAKE - H/V RMS											
BFV 3CZ-B5SA-1	12-A-HV:IR	305.00	H-41	2827	3901	BFV 3CZ-B6SB-1	12-A-HV:IR	305.00	H-41	2828	3902
AE- 1CZ-7829A-SA	12-A-HV:IR	308.00	GZ-41	____	5963	AE- 1CZ-7829B-SB	12-A-HV:IR	309.00	GZ-41	____	5964
AS- 1CZ-7829A-SA	12-A-HV:IR	310.00	GZ-42	2972	7081	AS- 1CZ-7829B-SB	12-A-HV:IR	310.00	GZ-41	2973	7082
AS- 1CZ-7828A-SA		.00	_____	2972	5967	AS- 1CZ-7828B-SB		.00	_____	2973	5968
AE- 1CZ-7828A-SA		.00	_____	____	5965	AE- 1CZ-7828B-SB		.00	_____	____	5966
RE- 1CZ-3504A-SA	12-A-HV:IR	309.00	GZ-41	786	5969	RE- 1CZ-3504B-SB		.00	_____	788	5970
RH- 1CZ-3504A-SA	12-A-HV:IR	309.00	GZ-41	2972	7565	RH- 1CZ-3504B-SB	12-A-HV:IR	309.00	GZ-41	2973	7566
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
HCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	HCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267	MCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
DAMPER AH INTAKE-PARALLEL- H/V RMS											
DPR CZ-D9SA-1	12-A-HV:IR	305.00	GZ-43	2823	5375	DPR CZ-D10SB-1	12-A-HV:IR	305.00	GZ-43	2823	5376
PDT 6615	12-A-CRC1	305.00	D-42	2823	8636	PDT 6615	12-A-CRC1	305.00	D-42	2823	8636
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103
PIC C12	12-A-CRC1	305.00	F-42	____	0102	PIC C12	12-A-CRC1	305.00	F-42	____	0102
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	MTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
HCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	HCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267	MCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
AHU-SUPPLY: H/V AND ELECT PROTECT ROOMS											
VLV 3CX-W18SA-1	12-A-HV:IR	305.00	GZ-43	2660	5018	VLV 3CX-W25SB-1	12-A-HV:IR	305.00	H-41	2660	5019
AHU AH-16(1A-SA)	12-A-HV:IR	305.00	GZ-43	2821	3025	AHU AH-16(1B-SB)	12-A-HV:IR	305.00	GZ-43	2822	3026
DPR CZ-D23SA-1	12-A-HV:IR	305.00	FW-42	2818	5582	DPR CZ-D24SB-1	12-A-HV:IR	305.00	GZ-43	2819	5583
DPR CZ-D9SA-1	12-A-HV:IR	305.00	GZ-43	2823	5375	DPR CZ-D10SB-1	12-A-HV:IR	305.00	GZ-43	2823	5376
FS- 1AV-6613A	12-A-HV:IR	315.00	GZ-42	2821	6366	FS- 1AV-6613B	12-A-HV:IR	315.00	FW-42	2821	6367
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ARP 13	12-A-CRC1	305.00	D-41	____	0065	ARP 13	12-A-CRC1	305.00	D-41	____	0065
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142	ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267	MCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
DAMPER-DIRECT RETURN-H/V ROOM-PARALLEL											
DPR CZ-D25SA-1	12-A-HV:IR	305.00	H-42	2838	5294	DPR CZ-D26SB-1	12-A-HV:IR	305.00	H-42	2838	5295

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 01 : PROVIDE AIR COOLING TO ELECT PROTECTION AND H/V ROOMS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
DAMPER-DIRECT RETURN-H/V ROOM-PARALLEL												
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051		ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ARP 13	12-A-CRC1	305.00	D-41	____	0065		ARP 13	12-A-CRC1	305.00	D-41	____	0065
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142		ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126		MTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
AEP 1 NS	12-A-CR	305.00	B-42	____	0078		AEP 1 NS	12-A-CR	305.00	B-42	____	0078
HCC 480V 1D21	12-I-ESWPB	286.00	E-15	____	1215		HCC 480V 1D21	12-I-ESWPB	286.00	E-15	____	1215
HCC 480V 1E21	12-I-ESWPB	286.00	E-15	____	1222		HCC 480V 1E21	12-I-ESWPB	286.00	E-15	____	1222
DAMPER-ALTERNATIVE RETURN-H/V ROOM												
DPR CZ-D17SA-1	12-A-HV:IR	305.00	FW-42	2826	5484		DPR CZ-D18SB-1	12-A-HV:IR	305.00	FW-42	2820	5485
RE- 1CZ-3504A-SA	12-A-HV:IR	309.00	GZ-41	786	5969		RE- 1CZ-3504B-SB		.00	_____	788	5970
RM- 1CZ-3504A-SA	12-A-HV:IR	309.00	GZ-41	2972	7565		RM- 1CZ-3504B-SB	12-A-HV:IR	309.00	GZ-41	2973	7566
AE- 1CZ-7828A-SA		.00	_____	____	5965		AE- 1CZ-7828B-SB		.00	_____	____	5966
AS- 1CZ-7828A-SA		.00	_____	2972	5967		AS- 1CZ-7828B-SB		.00	_____	2973	5968
AE- 1CZ-7829A-SA	12-A-HV:IR	308.00	GZ-41	____	5963		AE- 1CZ-7829B-SB	12-A-HV:IR	309.00	FW-41	____	5964
AS- 1CZ-7829A-SA	12-A-HV:IR	310.00	GZ-42	2972	7081		AS- 1CZ-7829B-SB	12-A-HV:IR	310.00	GZ-41	2973	7082
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150		SSP (B) OUTPUT 2	12-A-CRC1	305.00	E-41	____	0157
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055		ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051		ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
AEP 1 NS	12-A-CR	305.00	B-42	____	0078		AEP 1 NS	12-A-CR	305.00	B-42	____	0078
DAMPER-ALTERNATIVE RETURN-H/V ROOM												
DPR CZ-D23SA-1	12-A-HV:IR	305.00	FW-42	2818	5582		DPR CZ-D24SB-1	12-A-HV:IR	305.00	GZ-43	2819	5583
ARP 13	12-A-CRC1	305.00	D-41	____	0065		ARP 13	12-A-CRC1	305.00	D-41	____	0065
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051		ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142		ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
AEP 1 NS	12-A-CR	305.00	B-42	____	0078		AEP 1 NS	12-A-CR	305.00	B-42	____	0078
HCC 480V 1D21	12-I-ESWPB	286.00	E-15	____	1215		HCC 480V 1D21	12-I-ESWPB	286.00	E-15	____	1215
HCC 480V 1E21	1-A-BAL	286.00	E-38	____	1222		HCC 480V 1E21	1-A-BAL	286.00	E-38	____	1222
HCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267		•	•	•	•	•	•
SUPPLY DUCTWORK - CONTROL ROOM AREAS												
DWS AH-16(1A-SA)	12-A-HV:IR	305.00	*DWGS	____	_____		DWS AH-16(1B-SB)	12-A-HV:IR	305.00	*DWGS	____	_____
SUPPLY DUCTWORK - CONTROL ROOM AREAS												
DWS AH-16(1A-SA)	12-A-CRC1	305.00	*DWGS	____	_____		DWS AH-16(1B-SB)	12-A-CRC1	305.00	*DWGS	____	_____
SUPPLY DUCTWORK - CONTROL ROOM AREAS												
DWS AH-16(1A-SA)	12-A-CR	305.00	*DWGS	____	_____		DWS AH-16(1B-SB)	12-A-CR	305.00	*DWGS	____	_____

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 01 : PROVIDE AIR COOLING TO ELECT PROTECTION AND H/V ROOMS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
EXHAUST FAN- H/V ROOM											
EXF E-10(1A-SA)	12-A-HV:IR	305.00	GZ-41	2834	3083	EXF E-10(1B-SB)	12-A-HV:IR	305.00	GZ-41	2835	3084
FS- 1AV-6615	12-A-HV:IR	321.00	FW-41	2834	6241	FS- 1AV-6615	12-A-HV:IR	321.00	FW-41	2834	6241
RE- 1CZ-3504A-SA	12-A-HV:IR	309.00	GZ-41	786	5969	RE- 1CZ-3504B-SB		.00	_____	788	5970
RH- 1CZ-3504A-SA	12-A-HV:IR	309.00	GZ-41	2972	7565	RH- 1CZ-3504B-SB	12-A-HV:IR	309.00	GZ-41	2973	7566
AE- 1CZ-7829A-SA	12-A-HV:IR	308.00	GZ-41	____	5963	AE- 1CZ-7829B-SB	12-A-HV:IR	309.00	FW-41	____	5964
AS- 1CZ-7829A-SA	12-A-HV:IR	310.00	GZ-42	2972	7081	AS- 1CZ-7829B-SB	12-A-HV:IR	310.00	GZ-41	2973	7082
AE- 1CZ-7828A-SA		.00	_____	____	5965	AE- 1CZ-7828B-SB		.00	_____	____	5966
AS- 1CZ-7828A-SA		.00	_____	2972	5967	AS- 1CZ-7828B-SB		.00	_____	2973	5968
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	SSP (B) OUTPUT 2	12-A-CRC1	305.00	E-41	____	0157
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ARP 13	12-A-CRC1	305.00	D-41	____	0065	ARP 13	12-A-CRC1	305.00	D-41	____	0065
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142	ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
HCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267	HCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
BUTTERFLY VALVE-EXHAUST-H/V ROOM TO OUTSIDE											
BFV 3CZ-B7SA-1	12-A-HV:IR	305.00	FW-41	2836	3903	BFV 3CZ-B8SB-1	12-A-HV:IR	305.00	FW-41	2837	3904
RE- 1CZ-3504A-SA	12-A-HV:IR	309.00	GZ-41	786	5969	RE- 1CZ-3504B-SB		.00	_____	788	5970
RH- 1CZ-3504A-SA	12-A-HV:IR	309.00	GZ-41	2972	7565	RH- 1CZ-3504B-SB	12-A-HV:IR	309.00	GZ-41	2973	7566
AE- 1CZ-7829A-SA	12-A-HV:IR	308.00	GZ-41	____	5963	AE- 1CZ-7829B-SB	12-A-HV:IR	309.00	FW-41	____	5964
AS- 1CZ-7829A-SA	12-A-HV:IR	310.00	GZ-42	2972	7081	AS- 1CZ-7829B-SB	12-A-HV:IR	310.00	GZ-41	2973	7082
AE- 1CZ-7828A-SA		.00	_____	____	5965	AE- 1CZ-7828B-SB		.00	_____	____	5966
AS- 1CZ-7828A-SA		.00	_____	2972	5967	AS- 1CZ-7828B-SB		.00	_____	2973	5968
SSP (A) OUTPUT 2	12-A-CRC1	305.00	E-42	____	0151	SSP (B) OUTPUT 2	12-A-CRC1	305.00	E-41	____	0157
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
HCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267	HCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
EXHAUST DUCTWORK - H/V ROOMS											
DWX E-10(1A-SA)	12-A-HV:IR	305.00	*DWGS	____	_____	DWX E-10(1B-SB)	12-A-HV:IR	305.00	*DWGS	____	_____
ELECTRICAL EQUIPMENT FOR SYSTEM CRE											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
.	.	.	.	.	.	IDP 1B-S2 75KVA UPS	12-A-CR	305.00	C-31	____	0217
.	.	.	.	.	.	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 01 : PROVIDE AIR COOLING TO ELECT PROTECTION AND H/V ROOMS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ELECTRICAL EQUIPMENT FOR SYSTEM CRE											
PP 1B-211SB	1-A-BAL	286.00	E-22	____	1201	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0862	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 69KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0456	BUS 69KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
ELECTRICAL EQUIPMENT FOR SYSTEM CRS											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 75KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 75KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 75KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 75KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
MCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267	MCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 69KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 69KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 02 : PROVIDE AIR CONDITIONING FOR CONTROL ROOM

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: HCRH : CONTROL ROOM COOLING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)												
BUTTERFLY VALVE-AC AH INTAKE-SERIAL												
BFV 3CZ-B1SA-1	12-A-HV:IR	305.00	GZ-41	2942	3897		BFV 3CZ-B2SB-1	12-A-HV:IR	305.00	GZ-41	2943	3898
RE- 1CZ-3504A-SA	12-A-HV:IR	309.00	GZ-41	786	5969		RE- 1CZ-3504B-SB		.00		788	5970
RH- 1CZ-3504A-SA	12-A-HV:IR	309.00	GZ-41	2972	7565		RH- 1CZ-3504B-SB	12-A-HV:IR	309.00	GZ-41	2973	7566
AE- 1CZ-7828A-SA		.00			5965		AE- 1CZ-7828B-SB		.00			5966
AS- 1CZ-7828A-SA		.00		2972	5967		AS- 1CZ-7828B-SB		.00		2973	5968
AE- 1CZ-7829A-SA	12-A-HV:IR	308.00	GZ-41		5963		AE- 1CZ-7829B-SB	12-A-HV:IR	309.00	GZ-41		5964
AS- 1CZ-7829A-SA	12-A-HV:IR	310.00	GZ-42	2972	7081		AS- 1CZ-7829B-SB	12-A-HV:IR	310.00	GZ-41	2973	7082
SSP (A) OUTPUT 2	12-A-CRC1	305.00	E-42		0151		SSP (B) OUTPUT 2	12-A-CRC1	305.00	E-41		0157
ARP 4A-SA	12-A-CRC1	305.00	D-42		0055		ARP 4B-SB	12-A-CRC1	305.00	D-41		0056
ARP 4B-SB	12-A-CRC1	305.00	D-41		0056		ARP 4A-SA	12-A-CRC1	305.00	D-42		0055
ISOL CAB 3	12-A-CRC1	305.00	E-44		0144		ISOL CAB 3	12-A-CRC1	305.00	E-44		0144
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314		TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314
TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-29		0315		TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-29		0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311		ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311
HCB HVAC	12-A-CR	305.00	C-42		0009		HCB HVAC	12-A-CR	305.00	C-42		0009
HCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42		1267		HCC 480V 1B36-SB	12-A-HV:IR	309.00	FW-41		1268
HCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41		1268		HCC 480V 1A36-SA	12-A-HV:IR	309.00	GZ-42		1267
DAMPER-AIR HANDLER INTAKE-CONTROL RM AC SYS												
DPR CZ-D1SA-1	12-A-HV:IR	305.00	GZ-42	2944	5367		DPR CZ-D2SB-1	12-A-HV:IR	305.00	GZ-41	2944	5368
ARP 4A-SA	12-A-CRC1	305.00	D-42		0055		ARP 4B-SB	12-A-CRC1	305.00	D-41		0056
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314		TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315
HTC 11A-SA	12-A-CRC1	305.00	D-42		0126		HTC 11B-SB	12-A-CRC1	305.00	D-42		0127
HCB HVAC	12-A-CR	305.00	C-42		0009		HCB HVAC	12-A-CR	305.00	C-42		0009
HCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42		1267		HCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41		1268
AIR HANDLING UNIT-CONTROL RM AC SYS												
VLV 3CX W-17(SA-1)	12-A-HV:IR	305.00	GZ-42	2945	5049		VLV 3CX W24-SB-1	12-A-HV:IR	305.00	GZ-42	2945	5050
AHU AH-15(1A-SA)	12-A-HV:IR	305.00	GZ-42	2946	3023		AHU AH-15(1B-SB)	12-A-HV:IR	305.00	GZ-42	2947	3024
BFV 3CZ-B2SB-1	12-A-HV:IR	305.00	GZ-41	2943	3898		BFV 3CZ-B2SB-1	12-A-HV:IR	305.00	GZ-41	2943	3898
BFV 3CZ-B25SA-1	12-A-HV:IR	305.00	GZ-42	2950	3956		BFV 3CZ B26SB-1	12-A-HV:IR	305.00	GZ-42	2951	3958
DPR CZ-D1SA-1	12-A-HV:IR	305.00	GZ-42	2944	5367		DPR CZ-D2-SB-1	12-A-HV:IR	305.00	GZ-41	2944	5368
•	•	•	•	•	•		3CZ B1-SA-1	12-A-HV:IR	305.00	GZ-41	2942	3897
3CZ B1SA-1	12-A-HV:IR	305.00	GZ-41	2942	3897		DPR CZ-D20SB-1	12-A-HV:IR	305.00	GZ-42	2961	5581
DPR CZ-D19SA-1	12-A-HV:IR	305.00	FW-42	2960	5580		•	•	•	•	•	•
FS- 1CZ-7836S		.00		2946			•	•	•	•	•	•
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23		0160		ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28		0161

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 02 : PROVIDE AIR CONDITIONING FOR CONTROL ROOM

EQUIPMENT NAME / PRIMARY EQUIPMENT (OR SA TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
AIR HANDLING UNIT-CONTROL RM AC SYS											
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
ARP 13	12-A-CRC1	305.00	D-41	____	0065	ARP 13	12-A-CRC1	305.00	D-41	____	0065
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142	ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
.	.	.	.	.	.	HCB HVAC	12-A-CR	305.00	C-42	____	0009
HCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267	HCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
BUTTERFLY VALVE-AC AH DISCHARGE											
BFV 3CZ-B25SA-1	12-A-HV:IR	305.00	GZ-42	2950	3956	BFV 3CZ-B26SB-1	12-A-HV:IR	305.00	GZ-42	2951	3958
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
HTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	.	.	.	.	.	.
HCB HVAC	12-A-CR	305.00	C-42	____	0009	HCB HVAC	12-A-CR	305.00	C-42	____	0009
HCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267	HCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
DAMPER-AIR HANDLER RETURN-CONTROL RM AC SYS											
DPR CZ-D19SA-1	12-A-HV:IR	305.00	FW-42	2960	5580	DPR CZ-D20SB-1	12-A-HV:IR	305.00	GZ-42	2961	5581
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
ARP 13	12-A-CRC1	305.00	D-41	____	0065	ARP 13	12-A-CRC1	305.00	D-41	____	0065
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142	ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
HCB HVAC	12-A-CR	305.00	C-42	____	0009	HCB HVAC	12-A-CR	305.00	C-42	____	0009
HCC 480V 1E21	1-A-BAL	286.00	E-38	____	1222	HCC 480V 1D21	12-I-ESWPB	286.00	E-15	____	1215
HCC 480V 1D21	12-I-ESWPB	286.00	E-15	____	1215	HCC 480V 1E21	1-A-BAL	286.00	E-38	____	1222
HCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267	HCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
DUCTWORK-SUPPLY-CONTROL ROOM											
DWS AH-15(1A-SA)	12-A-CRC1	305.00	*DWGS	____	_____	DWS AH-15(1B-SB)	12-A-CRC1	305.00	*DWGS	____	_____
DUCTWORK-SUPPLY-CONTROL ROOM											
DWS AH-15(1A-SA)	12-A-CR	305.00	*DWGS	____	_____	DWS AH-15(1B-SB)	12-A-CR	305.00	*DWGS	____	_____
DUCTWORK-SUPPLY-CONTROL ROOM											
DWS AH-15(1A-SA)	12-A-HV:IR	305.00	*DWGS	____	_____	DWS AH-15(1B-SB)	12-A-HV:IR	305.00	*DWGS	____	_____
DUCTWORK-RETURN-CONTROL ROOM											
DWR AH-15(1A-SA)	12-A-CRC1	305.00	*DWGS	____	_____	DWR AH-15(1B-SB)	12-A-CRC1	305.00	*DWGS	____	_____

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-0 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 02 : PROVIDE AIR CONDITIONING FOR CONTROL ROOM

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
DUCTWORK-RETURN-CONTROL ROOM											
DWR AH-15(1A-SA)	12-A-CR	305.00	*DWGS	____	_____	DWR AH-15(1B-SB)	12-A-CR	305.00	*DWGS	____	_____
DUCTWORK-RETURN-CONTROL ROOM											
DWR AH-15(1A-SA)	12-A-HV:IR	305.00	*DWGS	____	_____	DWR AH-15(1B-SB)	12-A-HV:IR	305.00	*DWGS	____	_____
ELECTRICAL EQUIPMENT FOR SYSTEM CRE											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
•	•	•	•	•	•	IDP 1B-S2 75KVA UPS	12-A-CR	305.00	C-31	____	0217
•	•	•	•	•	•	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
•	•	•	•	•	•	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0862	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 69KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0456	BUS 69KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
ELECTRICAL EQUIPMENT FOR SYSTEM CRS											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 75KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 75KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 75KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 75KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
MCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267	MCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 69KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 69KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 03 : PROVIDE AIR CONDITIONING FOR MCC AREAS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: HMCC : MCC AREAS COOLING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
AIR HANDLING UNIT-RAB MCC AREAS											
VLV 3CX W32SA-1	12-A-BAL	286.00	FV-42	2619	5981	VLV 3CX W33SB-1	12-A-BAL	386.00	FW-42	2650	5977
AHU AH-92(1A-SA)	12-A-BAL	286.00	GZ-42	2776	5971	AHU AH-92(1B-SB)	12-A-BAL	286.00	FW-42	2777	5972
TE- 6574A-SA		.00	_____	2776	5985	TE- 6474B-SB		.00	_____	2777	5986
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ISOL CAB 1A-SA	12-A-CRC1	305.00	E-42	____	0140	ISOL CAB 1B-SB	12-A-CRC1	305.00	E-41	____	0141
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
DUCTWORK-AH-92 SUPPLY											
DWS AH-92(1A-SA)	12-A-BAL	286.00	*DWGS	____	_____	DWS AH-92(1B-SB)	1-A-BAL	286.00	*DWGS	____	_____
DUCTWORK-AH-92 RETURN											
DWR AH-92(1A-SA)	12-A-BAL	261.00	*DWGS	____	_____	DWR AH-92(1B-SB)	1-A-BAL	261.00	*DWGS	____	_____
ELECTRICAL EQUIPMENT FOR RAB											
.	.	.	.	.	.	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
_____		.00	_____	____	_____	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
_____		.00	_____	____	_____	IDP 1B-S2 75KVA UPS	12-A-CR	305.00	C-31	____	0217
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
.	.	.	.	.	.	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
.	.	.	.	.	.	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 69KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0456	BUS 69KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
.	.	.	.	.	.	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 04 : PROVIDE AIR CONDITIONING UNIT FOR GENERATING AREA

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: HHCC : HCC AREAS COOLING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
AIR HANDLING UNIT-MECH/ELECT PEN AREA											
VLV 3CX V121-SA-1		241.00	I-27	2615	4651	VLV 3CX V247-SB-1		236.00	I-18Z	2647	8729
AHU AH-23(1X-SA)	1-A-BAL	236.00	JV-31	3045	3288	AHU AH-29(1X-SB)	1-A-BAL	236.00	L-31	3057	3383
TE- 6552-SA	1-A-BAL	236.00	KZ-29	3045	7024	TE- 6582-SB	1-A-BAL	236.00	I-18Z	3057	7033
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
DUCTWORK-AH-23-29 SUPPLY											
DWS AH-23(1X-SA)	1-A-BAL	236.00	*DWGS	____	_____	DWS AH-29(1X-SB)	1-A-BAL	236.00	*DWGS	____	_____
AIR HANDLING UNIT-MECHANICAL PEN AREA											
VLV 3CX V83SA-1	1-A-BAL	240.00	E-22	2615	4650	VLV 3CX V63SB-1	1-A-BAL	239.00	E-25	2645	4687
AHU AH-11(1A-SA)	1-A-BAL	236.00	E-25	2774	3282	AHU AH-11(1B-SB)	1-A-BAL	236.00	E-25	2775	3283
TE- 6532A-SA	1-A-BAL	236.00	E-22	2774	7016	TE- 6532B-SB	1-A-BAL	236.00	E-25	2775	7017
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
•	•	•	•	•	•	HTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
DUCTWORK-AH-11 SUPPLY											
DWS AH-11(1A-SA)	1-A-BAL	236.00	*DWGS	____	_____	DWS AH-11(1B-SB)	1-A-BAL	236.00	*DWGS	____	_____
AIR HANDLING UNIT-ELECTRICAL PEN AREA											
VLV 3CX V122SA-1	1-A-EPA	264.00	FZ-20	2616	4678	VLV 3CX V244-SB-1	1-A-EPB	263.00	FZ-32	2646	4615
AHU AH-24(1X-SA)	1-A-EPA	261.00	FZ-22	3046	3289	AHU AH-25(1X-SB)	1-A-EPB	261.00	FZ-34	3047	3290
TE- 6557X-SA	1-A-EPA	266.00	E-20	3046	7025	TE- 6562X-SB	1-A-EPB	261.00	E-32	3047	8614
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
DUCTWORK-AH-24/25 SUPPLY											
DWS AH-24(1X-SA)	1-A-EPA	261.00	*DWGS	____	_____	DWS AH-25(1X-SB)	1-A-EPB	261.00	*DWGS	____	_____

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 04 : PROVIDE AIR CONDITIONING UNIT FOR GENERATING AREA

PRIMARY EQUIPMENT (OR SA TRAIN RELATED) EQUIPMENT NAME						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ELECTRICAL EQUIPMENT FOR RAB											
•	•	•	•	•	•	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
_____		.00	_____	____	_____	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
_____		.00	_____	____	_____	IDP 1B-S2 75KVA UPS	12-A-CR	305.00	C-31	____	0217
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
•	•	•	•	•	•	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
•	•	•	•	•	•	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 69KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0456	BUS 69KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
•	•	•	•	•	•	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -18

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 05 : PROVIDE AIR CONDITIONING FOR SERVICE WATER INTAKE

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: HSWIS : HVAC SYSTEM-SERVICE WATER INTAKE STRUCTURE (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
AIR HANDLING UNIT- SW INTAKE STRUCT											
SOV 3SW V646SA-1	12-I-ESWPA	270.00	EMIS	3295	8094	SOV 3SW-V647SB-1	12-I-ESWPB	270.00	EMIS	3295	8095
AHU AH-86(1A-SA)	12-I-ESWPA	262.00	BAY 8	3288	3225	AHU AH-86(1B-SB)	12-I-ESWPB	262.00	BAY 6	3290	3226
DPR EV-D1SA-1	12-I-ESWPA	275.00	EMIS	3289	8178	DPR EV-D1SB-1	12-I-ESWPB	275.00	EMIS	3291	8180
DPR EV-D2SA-1	12-I-ESWPA	275.00	EMIS	3289	8179	DPR EV-D2SB-2	12-I-ESWPB	275.00	EMIS	3291	8181
EHC 120(1A-SA)	12-I-ESWPA	271.00	EMIS	3293	8182	EHC 120(1B-SB)	12-I-ESWPB	271.00	EMIS	3294	8183
TE- 6588A-SA	12-I-ESWPA	268.00	EMIS	3298	8086	TE- 6588B-SB	12-I-ESWPB	268.00	EMIS	3298	8087
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A32-SA	12-I-ESWPA	262.00	EMIS	____	1205	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS	____	1210
EXHAUST FAN- SW INTAKE STRUCT											
EXF E-88(1A-SA)	12-I-ESWPA	262.00	BAY 8	3296	3227	EXF E-88(1B-SB)	12-I-ESWPB	262.00	BAY 6	3297	3228
TE- 6591A-SA	12-I-ESWPA	268.00	EMIS	3298	8090	TE- 6591B-SB	12-I-ESWPB	268.00	EMIS	3298	8091
TE- 6592A-SA	12-I-ESWPA	268.00	EMIS	3298	8092	TE- 6592B-SB	12-I-ESWPB	268.00	EMIS	3298	8093
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A32-SA	12-I-ESWPA	262.00	EMIS	____	1205	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS	____	1210
ELECTRIC HEATING COIL- SW INTAKE STRUCT											
EHC 120(1A-SA)	12-I-ESWPA	271.00	EMIS	3293	8182	EHC 120(1B-SB)	12-I-ESWPB	271.00	EMIS	3294	8183
AHU AH-86(1A-SA)	12-I-ESWPA	262.00	BAY 8	3288	3225	AHU AH-86(1B-SB)	12-I-ESWPB	262.00	BAY 6	3290	3226
TE- 6588A-SA	12-I-ESWPA	268.00	EMIS	3298	8086	TE- 6588B-SB	12-I-ESWPB	268.00	EMIS	3298	8087
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
MCC 480V 1A32-SA	12-I-ESWPA	262.00	EMIS	____	1205	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS	____	1210
DAMPER- SW INTAKE STRUCT											
DPR EV-D1SA-1	12-I-ESWPA	275.00	EMIS	3289	8178	DPR EV-D1SB-1	12-I-ESWPB	275.00	EMIS	3291	8180
AHU AH-86(1A-SA)	12-I-ESWPA	262.00	BAY 8	3288	3225	AHU AH-86(1B-SB)	12-I-ESWPB	262.00	BAY 6	3290	3226
TE- 6588A-SA	12-I-ESWPA	268.00	EMIS	3298	8086	TE- 6588B-SB	12-I-ESWPB	268.00	EMIS	3298	8087
TE- 6589A-SA	12-I-ESWPA	268.00	EMIS	3298	8088	TE- 6589B-SB	12-I-ESWPB	268.00	EMIS	3298	8089
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 05 : PROVIDE AIR CONDITIONING FOR SERVICE WATER INTAKE

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
DAMPER- SW INTAKE STRUCT												
	HTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	HTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
	AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
	MCC 480V 1A32-SA	12-I-ESWPA	262.00	EMIS	____	1205	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS	____	1210
DAMPER- SW INTAKE STRUCT												
	DPR EV-D2SA-1	12-I-ESWPA	275.00	EMIS	3289	8179	DPR EV-D2SB-1	12-I-ESWPB	275.00	EMIS	3291	8181
	AHU AH-86(1A-SA)	12-I-ESWPA	262.00	BAY 8	3288	3225	AHU AH-86(1B-SB)	12-I-ESWPB	262.00	BAY 6	3290	3226
	TE- 6588A-SA	12-I-ESWPA	268.00	EMIS	3298	8086	TE- 6588B-SB	12-I-ESWPB	268.00	EMIS	3298	8087
	TE- 6589A-SA	12-I-ESWPA	268.00	EMIS	3298	8088	TE- 6589B-SB	12-I-ESWPB	268.00	EMIS	3298	8089
	PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
	ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
	HTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	HTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
	AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
	MCC 480V 1A32-SA	12-I-ESWPA	262.00	EMIS	____	1205	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS	____	1210
ELECTRICAL EQUIPMENT FOR SYSTEM SW												
	IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
	IDP 1A-S1 75KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 75KVA UPS	12-A-CR	305.00	C-31	____	0217
	IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
	IDP 1A-S3 75KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 75KVA UPS	12-A-CR	305.00	C-31	____	0219
	DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
	PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
	PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
	MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
	MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
	•	•	•	•	•	•	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS	____	1210
	•	•	•	•	•	•	MCC 480V 1B34-SB	1-A-BAL	286.00	FZ-29	____	1263
	BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
	BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
	BUS 69KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 69KV 1B-SB	1-A-SWGRB	286.00	C-26	____	0476
	BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
	BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
	BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
	DG DC LEADS 1A-SA	1-D-DGA	265.00	A- 1	____	1186	DG DC LEADS 1B-SB	1-D-DGB	265.00	A- 2	____	2008
	•	•	•	•	•	•	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -1B

EBASCO SERVICES INC. CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 06 : PROVIDE AIR COOLING TO VARIOUS SHUTDOWN SYSTEMS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)				
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: HRAS : HVAC SYSTEM-AUX BLDG SHUTDOWN SYSTEMS (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
AIR HANDLING UNIT-AUX BLDG SD SYSTEMS											
VLV 3CX W1SA-1	1-A-BAL	190.00	E-16	2614	3704	VLV 3CX W3SB-1	1-A-BAL	190.00	E-36	2649	4619
AHU AH-5(1A-SA)	1-A-BAL	190.00	E-16	2758	3009	AHU AH-5(1B-SB)	1-A-BAL	190.00	E-36	2759	3010
TE- 6502A-SA	1-A-BAL	197.00	E-20	2758	6868	TE- 6502B-SB	1-A-BAL	197.00	E-32	2759	6849
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
AIR HANDLING UNIT-AUX BLDG SD SYSTEMS											
VLV 3CX W7-SA-1	1-A-BAL	236.00	C-15	2618	4718	VLV 3CX W10SB-1	1-A-BAL	236.00	C-18	2649	4694
AHU AH-6(1A-SA)	1-A-BAL	236.00	C-15	2760	3280	AHU AH-6(1B-SB)	1-A-BAL	236.00	C-18	2768	3281
TE- 6507A-SA		236.00	B-13	2760	6850	TE- 6507B-SB	1-A-BAL	236.00	B-18	2761	6851
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
AIR HANDLING UNIT-AUX BLDG SD SYSTEMS											
VLV 3CX W9-SA-1	1-A-BAL	236.00	C-28	2618	4719	VLV 3CX W14-SB-1	1-A-BAL	240.00	C-31	2649	5048
AHU AH-7(1A-SA)	1-A-BAL	236.00	C-28	2762	3011	AHU AH-7(1B-SB)	1-A-BAL	236.00	C-31	2763	3012
TE- 6512A-SA	1-A-BAL	236.00	B-31	2762	6852	TE- 6512B-SB	1-A-BAL	236.00	B-36	2763	6946
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
AIR HANDLING UNIT-AUX BLDG SD SYSTEMS											
VLV 3CX W8SA-1	1-A-BAL	236.00	D-27	2618	4720	VLV 3CX W12SB-1	1-A-BAL	236.00	F-28	2649	4656
AHU AH-9(1A-SA)	1-A-BAL	236.00	D-27	2765	3014	AHU AH-9(1B-SB)	1-A-BAL	236.00	F-28	2766	3015
TE- 6522A-SA	1-A-BAL	242.00	D-23	2765	6948	TE- 6522B-SB	1-A-BAL	242.00	D-31	2766	6949
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078

TABLE 9.5B -18

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 06 : PROVIDE AIR COOLING TO VARIOUS SHUTDOWN SYSTEMS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
AIR HANDLING UNIT-AUX BLDG SD SYSTEMS											
HCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	HCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
AIR HANDLING UNIT-AUX BLDG SD SYSTEMS											
VLV 3CX W5SA-1	1-A-BAL	236.00	F-18	2618	4721	VLV 3CX W13SB-1	1-A-BAL	236.00	F-27	2650	4697
AHU AH-10(1A-SA)	1-A-BAL	236.00	F-18	2767	3016	AHU AH-10(1B-SB)	1-A-BAL	236.00	F-27	2768	3017
TE- 6527A-SA	1-A-BAL	242.00	D-23	2767	6707	TE- 6527B-SB	1-A-BAL	242.00	D-27	2763	6708
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
HCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	HCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
AIR HANDLING UNIT-AUX BLDG SD SYSTEMS											
VLV 3CX V83SA-1	1-A-BAL	240.00	E-22	2615	4650	VLV 3CX V63SB-1	1-A-BAL	239.00	E-25	2645	4687
AHU AH-11(1A-SA)	1-A-BAL	236.00	E-25	2774	3282	AHU AH-11(1B-SB)	1-A-BAL	236.00	E-25	2775	3283
TE- 6532A-SA		236.00	E-22	2774	7016	TE- 6532B-SB		236.00	L-42	2775	7017
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
HCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	HCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
AIR HANDLING UNIT-AUX BLDG SD SYSTEMS											
VLV 3CX W8SA-1	1-A-BAL	236.00	D-27	2618	4720	VLV 3CX W27SB-1	1-A-BAL	236.00	B-18	2650	4707
AHU AH-19(1A-SA)	1-A-BAL	261.00	B-18	3041	3284	AHU AH-19(1B-SB)	1-A-BAL	261.00	C-18	3042	3285
TE- 6542A-SA	1-A-BAL	267.00	D-15	3041	7020	TE- 6542B-SB	1-A-BAL	267.00	D-23	3042	7021
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
HCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	HCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
AIR HANDLING UNIT-AUX BLDG SD SYSTEMS											
VLV 3CX W21SA-1	1-A-BAL	261.00	C-28	2619	4706	VLV 3CX W28SB-1	1-A-BAL	261.00	B-28	2650	4708
AHU AH-20(1A-SA)	1-A-BAL	261.00	C-28	3043	3286	AHU AH-20(1B-SB)	1-A-BAL	261.00	B-28	3044	3287
TE- 6547A-SA	1-A-BAL	261.00	B-28	3043	7022	TE- 6547B-SB	1-A-BAL	261.00	B-31	3044	7023
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 06 : PROVIDE AIR COOLING TO VARIOUS SHUTDOWN SYSTEMS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
AIR HANDLING UNIT-AUX BLDG SD SYSTEMS											
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
AIR HANDLING UNIT-AUX BLDG SD SYSTEMS											
VLV 3CX W2SA-1	1-A-BAL	261.00	C-28	2620	4680	VLV 3CX W4SB-1	1-A-BAL	216.00	FZ-36	2651	4709
AHU AH-28(1A-SA)	1-A-BAL	216.00	FZ-15	3052	3295	AHU AH-28(1B-SB)	1-A-BAL	216.00	FZ-36	3053	3296
TE- 6577A-SA	1-A-BAL	220.00	FZ-25	3052	7031	TE- 6577B-SB	1-A-BAL	220.00	FZ-29	3052	7032
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
AIR SUPPLY UNIT-AUX BLDG SD SYSTEMS											
ASU S-64(1X-SA)	1-A-BAL	305.00	FZ-25	2751	3496	ASU S-65(1X-SB)	1-A-BAL	305.00	FZ-29	2753	3497
TE- 4870A	1-A-BAL	313.00	FZ-22	2752	6916	TE- 4870A	1-A-BAL	313.00	FZ-22	2752	6916
TE- 4870B	1-A-BAL	320.00	FZ-27	2752	6917	TE- 4870B	1-A-BAL	320.00	FZ-27	2752	6917
PIC C12	12-A-CRC1	305.00	F-42	____	0102	PIC C12	12-A-CRC1	305.00	F-42	____	0102
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ARP 15	12-A-CRC1	305.00	D-41	____	0067	•	•	•	•	•	•
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	•	•	•	•	•	•
•	•	•	•	•	•	HCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
ELECTRICAL EQUIPMENT FOR SYSTEM CWS											
•	•	•	•	•	•	CP WC-2 MFG 1B-SB	1-A-BAL	263.00	B-36	2361	1423
_____		.00	_____	____	_____	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
_____		.00	_____	____	_____	IDP 1B-S2 75KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 75KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 75KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0886
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 06 : PROVIDE AIR COOLING TO VARIOUS SHUTDOWN SYSTEMS

PRIMARY EQUIPMENT (OR SA TRAIN RELATED) EQUIPMENT NAME						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ELECTRICAL EQUIPMENT FOR SYSTEM CWS											
BUS 69KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 69KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 07 : PROVIDE AC TO BATT-SWGR-RCC-ACP ROOMS/CABLE VAULTS

EQUIPMENT NAME — PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: HRAA : HVAC SYSTEM-AUX BLDG SHUTDOWN AREAS (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
AIR HANDLING UNIT-AUX BLDG SD EQUIP AREAS											
VLV 3CX W15SA-1	1-A-BAL	286.00	FZ-20	2629	5014	VLV 3CX W23SB-1	1-A-BAL	286.00	FZ-32	2630	5017
AHU AH-12(1A-SA)	1-A-BAL	286.00	FZ-20	3021	3018	AHU AH-13(1A-SB)	1-A-BAL	286.00	FZ-32	3031	3020
DPR AC-D3SA-1	1-A-SWGRA	286.00	E-18	3024	5358	DPR AC-D5SB-1	1-A-BAL	286.00	GY-27	3034	5360
DPR AC-D7SA-1	1-A-BAL	286.00	FZ-20	3027	5476	DPR AC-D10SB-1	1-A-BAL	286.00	FZ-34	3039	5479
FS- 6632-SA	1-A-SWGRA	295.00	C-18	3021	8641	FS- 6642-SB	1-A-SWGRB	298.00	D-31	3031	8028
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142	ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
AIR HANDLING UNIT-AUX BLDG SD EQUIP AREAS											
VLV 3CX W22SB-1	1-A-BAL	286.00	FZ-20	2629	5016	VLV 3CX W16SA-1	1-A-BAL	286.00	FZ-32	2630	5015
AHU AH-12(1B-SA)	1-A-BAL	286.00	FZ-22	3022	3022	AHU AH-13(1B-SB)	1-A-BAL	286.00	FZ-34	3032	3021
DPR AC-D3SA-1	1-A-SWGRA	286.00	E-18	3024	5358	DPR AC-D3SB-1	1-A-SWGRA	286.00	E-18	3024	____
DPR AC-D8SA-1	1-A-BAL	286.00	FZ-22	3027	5477	DPR AC-D9SB-1	1-A-BAL	286.00	FZ-32	3037	5478
FS- 6632-SA	1-A-SWGRA	295.00	C-18	3021	8641	FS- 6642-SB	1-A-SWGRB	298.00	D-31	3031	8028
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
•	•	•	•	•	•	ISOL CAB 2B-SB	12-A-BAL	305.00	E-41	____	0143
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
AIR HANDLING UNIT-AUX BLDG SD EQUIP AREAS											
VLV 3CX W34SA-1	12-A-CRC1	305.00	E-36	2619	5978	•	•	•	•	•	•
AHU AH-93(1X-SA)	12-A-BAL	305.00	E-36	2778	5982	•	•	•	•	•	•
TE- 6575X-SA	12-A-CRC1	305.00	E-36	2778	5979	•	•	•	•	•	•
PICC13 SA	12-A-CRC1	305.00	F-42	____	0103	•	•	•	•	•	•
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	•	•	•	•	•	•
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	•	•	•	•	•	•
ISOL CAB 1A-SA	12-A-CRC1	305.00	E-42	____	0140	•	•	•	•	•	•
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	•	•	•	•	•	•
MCC480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	•	•	•	•	•	•
DAMPER-DUCTWORK-AUX BLDG SD EQUIP AREAS											
DPR AC-D3SA-1	1-A-SWGRA	286.00	E-18	3024	5358	•	•	•	•	•	•
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	•	•	•	•	•	•

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 07 : PROVIDE AC TO BATT-SWGR-RCC-ACP ROOMS/CABLE VAULTS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
DAMPER-DUCTWORK-AUX BLDG SD EQUIP AREAS	MTC11A-SA	12-A-CRC1	305.00	D-42	____	0126						
	AEP 1 NS	12-A-CR	305.00	B-42	____	0078						
	MCC480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204						
DAMPER-DUCTWORK-AUX BLDG SD EQUIP AREAS	DPR AC-D17SA-1	1-A-BAL	286.00	E-16	3056	5352						
	3ACB1SA-1		307.00	D-23	3055	3602						
	ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051						
	MTC11A-SA	12-A-CRC1	305.00	D-42	____	0126						
	AEP 1 NS	12-A-CR	305.00	B-42	____	0078						
DAMPER-DUCTWORK-AUX BLDG SD EQUIP AREAS	DPR AC-D7SA-1	1-A-BAL	286.00	FZ-20	3027	5476						
	ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051						
	MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126						
	AEP 1 NS	12-A-CR	305.00	B-42	____	0078						
	MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204						
DAMPER-DUCTWORK-AUX BLDG SD EQUIP AREAS	DPR AC-D8SA-1	1-A-BAL	286.00	FZ-22	3027	5477						
	ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051						
	MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126						
	AEP 1 NS	12-A-CR	305.00	B-42	____	0078						
	MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204						
DAMPER-DUCTWORK-AUX BLDG SD EQUIP AREAS	DPR AC-D21SA-1	1-A-SWGRB	286.00	D-31	____	5291						
	DPR AC-D22SA-1	1-A-SWGRB	286.00	D-29	____	5292						
	ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051						
	ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051						
	AEP 1 NS	12-A-CR	305.00	B-42	____	0078						
	AEP 1 NS	12-A-CR	305.00	B-42	____	0078						
DAMPER-DUCTWORK-AUX BLDG SD EQUIP AREAS							DPR AC-D5SB-1	1-A-BAL	286.00	GY-27	3034	5360
							ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
							MTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
							AEP 1 NS	12-A-CR	305.00	B-42	____	0078
							MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
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OPERATIONAL SUB-TASK: 07 : PROVIDE AC TO BATT-SWGR-RCC-ACP ROOMS/CABLE VAULTS

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME / TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
DAMPER-DUCTWORK-AUX BLDG SD EQUIP AREAS											
						DPR AC-D9SB-1	1-A-BAL	286.00	FZ-32	3037	5478
						ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
						HTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
						AEP 1 NS	12-A-CR	305.00	B-42	____	0078
						MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
DAMPER-DUCTWORK-AUX BLDG SD EQUIP AREAS											
						DPR AC-D10SB-1	1-A-BAL	286.00	FZ-34	3039	5479
						ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
						HTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
						AEP 1 NS	12-A-CR	305.00	B-42	____	0078
						MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
DAMPER-DUCTWORK-AUX BLDG SD EQUIP AREAS											
						DPR AC-D6SB-1	1-A-SWGRB	286.00	D-36	____	5361
						SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
						ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
						AEP 1 NS	12-A-CR	305.00	B-42	____	0078
						MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
DAMPER-DUCTWORK-AUX BLDG SD EQUIP AREAS											
						DPR AC-D14SB-1	12-A-BAL	286.00	FV-42	____	5589
						DPR AC-D12-1	1-A-BAL	295.00	E-38	3016	5586
						ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
						ARP 13	12-A-CRC1	305.00	D-41	____	0065
						ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
						HTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
						AEP 1 NS	12-A-CR	305.00	B-42	____	0078
DAMPER-DUCTWORK-AUX BLDG SD EQUIP AREAS											
						DPR AC-D19SB-1	1-A-BAL	286.00	FZ-36	____	5306
						3AC B2SB-1		317.00	E-36	3058	3603
						3AC B3SB-1		307.00	D-28	3059	3604
						ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
						HTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
						AEP 1 NS	12-A-CR	305.00	B-42	____	0078
EXHAUST FAN-RCCR-BATA											
EXF E-28(1A-SA)	1-A-SWGRA	286.00	E-23	____	3094						

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 07 : PROVIDE AC TO BATT-SWGR-RCC-ACP ROOMS/CABLE VAULTS

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME / TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
EXHAUST FAN-RCCR-BATA											
FS- 6635-SA	1-A-BAL	290.00	D-23	3025	6245						
LCD LCL CHLORINE DET		.00	_____	3030	_____						
RCD REM CHLORINE DET		.00	_____	3030	_____						
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160						
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150						
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051						
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142						
AEP 1 NS	12-A-CR	305.00	B-42	____	0078						
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204						
EXHAUST FAN-RCCR-BATA											
EXF E-28(1B-SA)	1-A-SWGRA	286.00	E-23	____	3095						
FS- 6635-SA	1-A-BAL	290.00	D-23	3025	6245						
LCD LCL CHLORINE DET		.00	_____	3030	_____						
RCD REM CHLORINE DET		.00	_____	3030	_____						
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160						
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150						
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051						
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142						
AEP 1 NS	12-A-CR	305.00	B-42	____	0078						
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204						
EXHAUST FAN-RCCR-BATA											
						EXF E-29(1B-SB)	1-A-SWGRB	286.00	E-21	____	3097
						FS- 6645-SB	1-A-BATB	290.00	D-28	3035	6247
						LCD LCL CHLORINE DET		.00	_____	3030	_____
						RCD REM CHLORINE DET		.00	_____	3030	_____
						ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
						SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
						ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
						AEP 1 NS	12-A-CR	305.00	B-42	____	0078
						MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
EXHAUST FAN-RCCR-BATA											
						EXF E-29(1A-SB)	1-A-SWGRB	286.00	D-31	____	3096
						FS- 6645-SB	1-A-BATB	290.00	D-28	3035	6247
						LCD LCL CHLORINE DET		.00	_____	3030	_____
						RCD REM CHLORINE DET		.00	_____	3030	_____
						ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161

TABLE 9.5B -1B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 008 : PROVIDE AIR CONDITIONING TO KEY AUXILIARY BUILDING AREAS
OPERATIONAL SUB-TASK: 07 : PROVIDE AC TO BATT-SWGR-RCC-ACP ROOMS/CABLE VAULTS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
EXHAUST FAN-RCCR-BATA												
.	.		. .	.	.		SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
.	.		. .	.	.		ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
.	.		. .	.	.		AEP 1 NS	12-A-CR	305.00	B-42	____	0078
.	.		. .	.	.		MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
DUCTWORK-SUPPLY / RETURN-AH12-AH13												
DWS AH-12(1 A/B-SA)	1-A-BAL	286.00	*DWGS	____	_____		DWS AH-12(1 A/B-SB)	1-A-BAL	286.00	*DWGS	____	_____
DUCTWORK-SUPPLY / RETURN-AH12-AH13												
DWS AH-12(1 A/B-SA)	1-A-SWGRA	286.00	*DWGS	____	_____		DWS AH-12(1 A/B-SB)	1-A-SWGRB	286.00	*DWGS	____	_____
DUCTWORK-SUPPLY / RETURN-AH12-AH13												
DWS AH-12(1 A/B-SA)	12-A-BAL	286.00	*DWGS	____	_____		DWS AH-12(1 A/B-SB)	12-A-BAL	286.00	*DWGS	____	_____
DUCTWORK-EXHAUST-E29-E28												
DWX E-28(1 A/B-SA)	1-A-SWGRA	286.00	*DWGS	____	_____		DWX E-29(1 A/B-SB)	1-A-SWGRB	286.00	*DWGS	____	_____
DUCTWORK-EXHAUST-E29-E28												
DWX E-28(1 A/B-SA)	1-A-BAL	305.00	*DWGS	____	_____		DWX E-29(1 A/B-SB)	1-A-BAL	305.00	*DWGS	____	_____
ELECTRICAL EQUIPMENT FOR SYSTEM CWS												
.	.		. .	.	.		CP WC-2 MFG 1B-SB	1-A-BAL	263.00	B-36	2361	1423
IDP 1A S3	12-A-CR	305.00	B-31	____	0221		IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S3 75KVA UPS	12-A-CR	305.00	B-31	____	0218		IDP 1B-S2 75KVA UPS	12-A-CR	305.00	C-31	____	0217
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506		IDP 1B S4	12-A-CR	305.00	C-31	____	0223
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227		IDP 1B-S4 75KVA UPS	12-A-CR	305.00	C-31	____	0219
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229		DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
.	.		. .	.	.		PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
.	.		. .	.	.		PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201		MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204		MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846		BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0886
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0061		BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 69KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452		BUS 69KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387		BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388		BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392		BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006		DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007
ELECTRICAL EQUIPMENT FOR SYSTEM BHVRE												
IDP 1A S3	12-A-CR	305.00	B-31	____	0221		.	.		. .	.	.

TABLE 9.5B -18

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
100% POWER TO HOT STANDBY

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

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OPERATIONAL SUB-TASK: 07 : PROVIDE AC TO BATT-SWGR-RCC-ACP ROOMS/CABLE VAULTS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ELECTRICAL EQUIPMENT FOR SYSTEM BHVRE											
IDP 1A-S3 75KVA UPS	12-A-CR	305.00	B-31	____	0218	.	.		. .	.	.
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	.	.		. .	.	.
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	.	.		. .	.	.
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	.	.		. .	.	.
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	.	.		. .	.	.
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	.	.		. .	.	.
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	.	.		. .	.	.
BUS 69KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0456	.	.		. .	.	.
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	.	.		. .	.	.
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	.	.		. .	.	.
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	.	.		. .	.	.

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 009 : MAINTAIN PRESSURIZER PRESSURE
OPERATIONAL SUB-TASK: 01 : MAINTAIN PRESSURIZER PRESSURE AND LEVEL

PRIMARY EQUIPMENT (OR SA TRAIN RELATED) EQUIPMENT NAME / TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: PHBS : PRESSURIZER HEATER BANK SYSTEM (EQUIPMENT USED FOR HOT STANDBY ONLY)											
PRESSURIZER / HEATER BANK SYSTEM CONTROL											
PRZR PRESSRIZR 1X-SN	1-C	286.00	C-13	148	_____						
PT- 455(I)		.00	_____	0148	_____						
PT- 456(II)		.00	_____	0148	_____						
PT- 457(III)		.00	_____	0148	_____						
PT- 444-GR4-1		.00	_____	0149	6066						
PT- 445-GR3-S		.00	_____	0149	6067						
LT- 459(I)		.00	_____	0145	_____						
LT- 460(II)		.00	_____	0145	_____						
LT- 461(III)		.00	_____	0145	_____						
LT- 462-GR4-1		.00	_____	0147	7919						
TE- 454-S		267.20	CT261	0150	6998						
TE- 453-S	1-C	267.10	CT261	0144	6997						
PRESSURIZER / HEATER BANK SYSTEM CONTROL											
HTR PRZR HEATR 1X-SN	1-C	261.00	C-13	0148	_____						
PT- 455(I)		.00	_____	0148	_____						
PT- 456(II)		.00	_____	0148	_____						
PT- 457(III)		.00	_____	0148	_____						
PT- 444-GR4-1		.00	_____	0149	6066						
PT- 445-GR3-S		.00	_____	0149	6067						
LT- 459(I)		.00	_____	0145	_____						
LT- 460(II)		.00	_____	0145	_____						
LT- 461(III)		.00	_____	0145	_____						
LT- 462-GR4-1		.00	_____	0147	7919						
TE- 454-S	1-C	267.20	CT261	0150	6998						
TE- 453-S		267.10	CT261	0144	6997						
PRESSURIZER / HEATER BANK SYSTEM CONTROL											
						PCV 444B 1RC-P524SN	1-C	286.00	C-14	0149	4424
						AR- 2	12-A-CRC1	305.00	E-42	_____	0034
						SSP (B) OUTPUT 2	12-A-CRC1	305.00	E-41	_____	0157
						TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	_____	0315
						HTC 6	12-A-BAL	305.00	C-36	_____	0118
						ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	_____	0311
						MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	_____	_____
PRESSURIZER / HEATER BANK SYSTEM CONTROL											
PCV 445A 1RC-P527SN	1-C	286.00	C-14	0149	4427	PCV 445B 1RC-P528SN	1-C	286.00	C-14	0149	4428

TABLE 9.5B -1B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
100% POWER TO HOT STANDBY — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR1B 09/01/83 14.03.11

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 009 : MAINTAIN PRESSURIZER PRESSURE
OPERATIONAL SUB-TASK: 01 : MAINTAIN PRESSURIZER PRESSURE AND LEVEL

PRIMARY EQUIPMENT (OR SA TRAIN RELATED) EQUIPMENT NAME						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
PRESSURIZER / HEATER BANK SYSTEM CONTROL											
AR- 1	12-A-CRC1	305.00	E-42	____	0033	AR- 1	12-A-CRC1	305.00	E-42	____	0033
SSP (A) OUTPUT 2	12-A-CRC1	305.00	E-42	____	0151	SSP (B) OUTPUT 2	12-A-CRC1	305.00	E-41	____	0157
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MTC 4	12-A-BAL	305.00	C-36	____	0117	MTC 5	12-A-BAL	305.00	C-36	____	0117
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
ELECTRICAL EQUIPMENT FOR SYSTEM RCS											
•	•	•	•	•	•	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
•	•	•	•	•	•	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
•	•	•	•	•	•	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
•	•	•	•	•	•	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2F 09/01/83 14.08.32

TABLE 9.5B -2 - SAFE SHUTDOWN PROCEDURES AND EQUIPMENT

COLD SHUTDOWN PROCEDURE - HOT STANDBY TO COLD SHUTDOWN

TABLE 9.5B -2 LISTS ESSENTIAL, SUPPORT, CONTROL AND POWER EQUIPMENT REQUIRED TO MEET THE PERFORMANCE GOALS DURING COLD SHUTDOWN CONDITION.

THE TABLE IS DIVIDED INTO THE FOLLOWING SECTIONS:

-TABLE 9.5B -2A LISTS THE SAFE SHUTDOWN PROCEDURE BY STEPS AND SUB-STEPS TO GO FROM HOT STANDBY TO COLD SHUTDOWN , AND

-TABLE 9.5B -2B LISTS, BY THE ABOVE PROCEDURAL STEPS, THE EQUIPMENT REQUIRED, GIVING THE IDENTIFICATION AND FIRE AREA LOCATION OF THE EQUIPMENT WITHIN THE SA AND SB TRAINS.

TABLE 9.5B - 2A

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2A 09/01/83 14.10.02

SHUTDOWN PROCEDURE BY NON-SEQUENTIAL TASKS, SUB-TASKS AND SYSTEMS

OPERATIONAL TASK: 1. : COLD SHUTDOWN STEPS

OPERATIONAL SUB-TASK: 1. 1 : DE-ENERGIZE PRESSURIZER HEATERS
SYSTEM: PHBS : PRESSURIZER CONTROL SYSTEMS (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

OPERATIONAL SUB-TASK: 1. 2 : BORATE RCS TO COLD SHUTDOWN CONDITIONS
SYSTEM: CVCS : CHEMICAL VOLUME AND CONTROL SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

OPERATIONAL SUB-TASK: 1. 3 : COOLDOWN TO SHUTDOWN COOLING SYSTEM TEMP/PRES WINDOW
SYSTEM: AFW : AUXILIARY FEEDWATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 1. 4 : BLOCK EFAS SIGNALS
SYSTEM: EFAS : EMERGENCY FEATURE ACTUATION SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

OPERATIONAL SUB-TASK: 1. 5 : ISOLATE ACCUMULATOR TANKS
SYSTEM: SIS : SAFETY INJECTION SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

OPERATIONAL SUB-TASK: 1. 6 : OPERATE COMPONENT COOLING WATER SYSTEM
SYSTEM: CCW : COMPONENT COOLING WATER SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

OPERATIONAL SUB-TASK: 1. 7 : INITIATE CCW FLOW TO RHR HEAT EXCHANGER
SYSTEM: CCW : COMPONENT COOLING WATER SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

OPERATIONAL SUB-TASK: 1. 8 : START RESIDUAL HEAT REMOVAL SYS AT RCS AVG. TEMP OF 350F
SYSTEM: RHRS : RESIDUAL HEAT REMOVAL SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

OPERATIONAL SUB-TASK: 1. 9 : CONTINUE HVAC SYSTEM
SYSTEM: HCFC : CONTAINMENT FAN COOLER SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

SYSTEM: HCRC : CONTROL ROOM COMPLEX COOLING SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

SYSTEM: HCRH : CONTROL ROOM COOLING SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

SYSTEM: HSWIS : HVAC SYSTEM-SERVICE WATER INTAKE STRUCTURE (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

SYSTEM: HRAS : HVAC SYSTEM-AUX BLDG SHUTDOWN SYSTEMS (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

SYSTEM: HRAA : HVAC SYSTEM-AUX BLDG SHUTDOWN AREAS (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)

OPERATIONAL SUB-TASK: 1.10 : CONTINUE OPERATION OF EMERGENCY SERVICE WATER SYSTEMS
SYSTEM: ESWS : EMERGENCY SERVICE WATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 1.11 : CONTINUE DIESEL GENERATOR OPERATION
SYSTEM: EDGS : EMERGENCY DIESEL GENERATOR SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 1.12 : VERIFY BATTERY CHARGER PERFORMANCE
SYSTEM: PDS : 125V DC POWER DISTRIBUTION SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 1.13 : MAINTAIN CONTROL ROOM LIGHTING - NO DIESEL GENERATOR BACKUP

TABLE 9.5B - 2A

EBASCO SERVICES INC. CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2A 09/01/83 14.10.02

SHUTDOWN PROCEDURE BY NON-SEQUENTIAL TASKS, SUB-TASKS AND SYSTEMS

SYSTEM: CRLT : CONTROL ROOM LIGHTING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 1.14 : MAINTAIN CONTROL ROOM LIGHTING - WITH DIESEL GENERATOR BACKUP
SYSTEM: CRLT : CONTROL ROOM LIGHTING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

OPERATIONAL SUB-TASK: 1.15 : MAINTAIN CONTROL ROOM LIGHTING - WITH 8 HR BATTERY BACKUP
SYSTEM: CRLT : CONTROL ROOM LIGHTING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)

TABLE 9.5B -2B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 01 : DE-ENERGIZE PRESSURIZER HEATERS

PRIMARY EQUIPMENT (OR SA TRAIN RELATED) EQUIPMENT NAME / TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: PHBS : PRESSURIZER CONTROL SYSTEMS (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)											
PRESSURIZER / HEATER BANK SYSTEM CONTROL											
PRZR PRESSRIZR 1X-SN	1-C	286.00	C-13	148	_____						
PT- 455(I)		.00	_____	0148	_____						
PT- 456(II)		.00	_____	0148	_____						
PT- 457(III)		.00	_____	0148	_____						
PT- 444-GR4-1		.00	_____	0149	6066						
PT- 445-GR3-S		.00	_____	0149	6067						
LT- 459(I)		.00	_____	0145	_____						
LT- 460(II)		.00	_____	0145	_____						
LT- 461(III)		.00	_____	0145	_____						
LT- 462-GR4-1		.00	_____	0147	7919						
TE- 454-S		267.20	CT261	0150	6998						
TE- 453-S	1-C	267.10	CT261	0144	6997						
PRESSURIZER / HEATER BANK SYSTEM CONTROL											
HTR PRZR HEATR 1X-SN	1-C	261.00	C-13	0148	_____						
PT- 455(I)		.00	_____	0148	_____						
PT- 456(II)		.00	_____	0148	_____						
PT- 457(III)		.00	_____	0148	_____						
PT- 444-GR4-1		.00	_____	0149	6066						
PT- 445-GR3-S		.00	_____	0149	6067						
LT- 459(I)		.00	_____	0145	_____						
LT- 460(II)		.00	_____	0145	_____						
LT- 461(III)		.00	_____	0145	_____						
LT- 462-GR4-1		.00	_____	0147	7919						
TE- 454-S	1-C	267.20	CT261	0150	6998						
TE- 453-S		267.10	CT261	0144	6997						
VALVES FOR RCS DEPRESSURIZATION (ALTERNATIVE TO VALVE 2CS-V501SN)											
						PCV 444B 1RC-P524SN	1-C	286.00	C-14	0149	4424
						AR- 2	12-A-CRC1	305.00	E-42	_____	0034
						SSP (B) OUTPUT 2	12-A-CRC1	305.00	E-41	_____	0157
						TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	_____	0315
						MTC 6	12-A-BAL	305.00	C-36	_____	0118
						ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	_____	0311
						MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	_____	_____
VALVES FOR RCS DEPRESSURIZATION (ALTERNATIVE TO VALVE 2CS-V501SN)											
PCV 445A 1RC-P527SN	1-C	286.00	C-14	0149	4427	PCV 445B 1RC-P528SN	1-C	286.00	C-14	0149	4428

TABLE 9.5B -2B

EBASCO SERVICES INC. CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 01 : DE-ENERGIZE PRESSURIZER HEATERS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
VALVES FOR RCS DEPRESSURIZATION (ALTERNATIVE TO VALVE 2CS-V501SN)												
	AR- 1	12-A-CRC1	305.00	E-42	____	0033	AR- 1	12-A-CRC1	305.00	E-42	____	0033
	SSP (A) OUTPUT 2	12-A-CRC1	305.00	E-42	____	0151	SSP (B) OUTPUT 2	12-A-CRC1	305.00	E-41	____	0157
	TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
	HTC 4	12-A-BAL	305.00	C-36	____	0117	HTC 5	12-A-BAL	305.00	C-36	____	0117
	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
	HCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	HCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
ELECTRICAL EQUIPMENT FOR SYSTEM RCS												
	•	•	•	•	•	•	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
	IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
	IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
	DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
	PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
	•	•	•	•	•	•	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
	•	•	•	•	•	•	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
	BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
	BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
	BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
	BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
	BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
	BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
	•	•	•	•	•	•	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -2B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 02 : BORATE RCS TO COLD SHUTDOWN CONDITIONS

EQUIPMENT NAME / PRIMARY EQUIPMENT (OR SA TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: CVCS : CHEMICAL VOLUME AND CONTROL SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)											
BORIC ACID TANK											
TNK 1X-SN	1-A-BAL	261.00	E-41	0222	_____	•	•		• •	•	•
CHARGING PUMP											
PMP CH 1A-SA	1-A-BAL	236.00	D-26	0221	2407	PMP CH 1B-SB	1-A-BAL	236.00	D-28	0222	2408
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
BUS 6.9KV 1A-SA	1-A-SWGRB	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0479
CHARGING PUMP											
PMP CH 1C-SAB	1-A-BAL	236.00	D-28	223	_____	•	•		• •	•	•
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
BUS 6.9KV 1A-SA	1-A-SWGRB	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0479
CHARGING PUMP COOLER											
CLR PMP CH 1A-SA	1-A-BAL	236.00	D-26	0221	2407	CLR PMP CH 1B-SB	1-A-BAL	236.00	D-31	0222	2408
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
BUS 6.9KV 1A-SA	1-A-SWGRB	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0479
CHARGING PUMP COOLER											
CLR PMP CH 1C-SAB	1-A-BAL	236.00	D-28	223	_____	•	•		• •	•	•
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
BUS 6.9KV 1A-SA	1-A-SWGRB	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0479

TABLE 9.5B -2B

EBASCO SERVICES INC. CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 02 : BORATE RCS TO COLD SHUTDOWN CONDITIONS

EQUIPMENT NAME / TYPE:TAG NUMBER	PRIMARY EQUIPMENT (OR SA TRAIN RELATED) FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
TRANSFER PUMP											
PMP TFR 1A-SA	1-A-BAL	236.00	E-41	0229	2413	PMP TFR 1B-SB	1-A-BAL	236.00	E-41	230	2414
AR- 1	12-A-CRC1	305.00	E-42	____	0033	AR- 2	12-A-CRC1	305.00	E-42	____	0034
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142	ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
BORIC ACID VALVE											
VLV 3CS-G5SN	1-A-BAL	261.00	E-41	4291	2997	.	.	.	.	.	.
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	.	.	.	.	.	.
BORIC ACID VALVE											
VLV 3CS-G6SN	1-A-BAL	261.00	E-41	4291	2998	.	.	.	.	.	.
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	.	.	.	.	.	.
BORIC ACID VALVE											
VLV 2CS-V502SN	1-C	236.00	C-12	0282	4201	.	.	.	.	.	.
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	.	.	.	.	.	.
MTC 5	12-A-BAL	305.00	C-36	____	0117	.	.	.	.	.	.
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	.	.	.	.	.	.
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	.	.	.	.	.	.
DCP DC POWER		.00	_____	____	_____	.	.	.	.	.	.
CHARGING PUMP VALVE											
MOV 2CS-V589SA	1-A-BAL	236.00	E-28	0295	3824	MOV 2CS-V590SB	1-A-BAL	236.00	E-28	0296	3825
MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
CHARGING PUMP VALVE											
MOV 2CS-V587SA	1-A-BAL	236.00	E-27	0293	3822	MOV 2CS-V588SB	1-A-BAL	236.00	E-27	0294	3823
MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
CHARGING PUMP VALVE											
MOV 2CS-V603SA	1-A-BAL	236.00	D-27	0297	3829	MOV 2CS-V604SB	1-A-BAL	236.00	D-27	0298	3830

TABLE 9.5B -2B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 02 : BORATE RCS TO COLD SHUTDOWN CONDITIONS

EQUIPMENT NAME / PRIMARY EQUIPMENT (OR SA TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
CHARGING PUMP VALVE											
MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
CHARGING PUMP VALVE											
MOV 2CS-V605SA	1-A-BAL	236.00	D-28	0299	3831	MOV 2CS-V606SB	1-A-BAL	236.00	D-28	0300	3832
MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
CHARGING PUMP VALVE											
FCV 2CS-F524SN	1-A-BAL	236.00	FX-22	0310	4178	.	.	.	.	.	.
FT- 0122	1-A-BAL	240.00	FZ-27	310	_____	.	.	.	.	.	.
I/P ICS 0122	1-A-BAL	252.00	FZ-22	____	8124	.	.	.	.	.	.
PIC C6	12-A-CRC1	305.00	F-41	____	0096	.	.	.	.	.	.
TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315	.	.	.	.	.	.
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	.	.	.	.	.	.
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	.	.	.	.	.	.
CHARGING PUMP VALVE											
MOV 2CS-V610SA	1-A-BAL	236.00	FX-22	0271	3834	MOV 2CS-V609SB	1-A-BAL	236.00	FX-22	0272	3833
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
CHARGING PUMP VALVE											
MOV 2CS-V585SA	1-A-BAL	236.00	E-42	0270	3820	.	.	.	.	.	.
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	.	.	.	.	.	.
MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	.	.	.	.	.	.
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	.	.	.	.	.	.
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	.	.	.	.	.	.
CHARGING PUMP VALVE											
.	.	.	.	.	.	MOV 2CS-V600SB	1-A-BAL	236.00	E-26	____	3826
.	.	.	.	.	.	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
.	.	.	.	.	.	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
.	.	.	.	.	.	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
.	.	.	.	.	.	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207

TABLE 9.5B -2B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 02 : BORATE RCS TO COLD SHUTDOWN CONDITIONS

EQUIPMENT NAME / PRIMARY EQUIPMENT (OR SA TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
CHARGING PUMP VALVE											
•	•	•	•	•	•	MOV 2CS-V601SB	1-A-BAL	236.00	E-26	275	3827
•	•	•	•	•	•	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
•	•	•	•	•	•	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
•	•	•	•	•	•	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	____
•	•	•	•	•	•	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
CHARGING PUMP VALVE											
•	•	•	•	•	•	MOV 2CS-V602SB	1-A-BAL	236.00	E-26	274	3828
•	•	•	•	•	•	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
•	•	•	•	•	•	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
•	•	•	•	•	•	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	____
•	•	•	•	•	•	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
ELECTRICAL EQUIPMENT FOR SYSTEM CVCS											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0479
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -2B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 03 : COOLDOWN TO SHUTDOWN COOLING SYSTEM TEMP/PRES.WINDOW

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: AFW : AUXILIARY FEEDWATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)												
BORIC ACID VALVE USED TO DEPRESSURIZE RCS AS WELL AS TO BORATE RCS												
VLV 2CS-V501SN	1-C	236.00	C-12	0281	4200		•	•	•	•	•	•
MTC 4	12-A-BAL	305.00	C-36	____	0116		•	•	•	•	•	•
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____		•	•	•	•	•	•
DCP DC POWER		.00	_____	____	_____		•	•	•	•	•	•
ELECTRICAL EQUIPMENT FOR SYSTEM FW												
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389		CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
IDP 1A S3	12-A-CR	305.00	B-31	____	0221		IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218		IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506		IDP 1B S4	12-A-CR	305.00	C-31	____	0223
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227		IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229		DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
•	•	•	•	•	•		PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
•	•	•	•	•	•		PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22		1201		MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204		MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846		BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861		BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452		BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0478
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387		BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388		BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392		BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393

TABLE 9.5B -2B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 04 : BLOCK EFAS SIGNALS

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)				
EQUIPMENT NAME TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD CARS
SYSTEM: EFAS : EMERGENCY FEATURE ACTUATION SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)									
_____	.00	____	____	_____	_____	.00	_____	____	_____

TABLE 9.5B -2B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 05 : ISOLATE ACCUMULATOR TANKS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: SIS : SAFETY INJECTION SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)												
RHR ACCUMULATOR ISOL VALVE												
ISV VA2SI-V535SA	1-C	236.00	C-2	0413	3874		.	.	.	.	.	.
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150		.	.	.	.	.	.
MTC 2A-SA	12-A-BAL	305.00	B-36	____	0112		.	.	.	.	.	.
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	____		.	.	.	.	.	.
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201		.	.	.	.	.	.
RHR ACCUMULATOR ISOL VALVE												
.	.	.	.	.	.		ISV VA2SI-V536SB	1-C	236.00	C-10	0412	3875
.	.	.	.	.	.		SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
.	.	.	.	.	.		MTC 2B-SB	12-A-BAL	305.00	C-31	____	0113
.	.	.	.	.	.		MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	____
.	.	.	.	.	.		MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
RHR ACCUMULATOR ISOL VALVE												
ISV VA2SI-V537SA	1-C	236.00	C-18	0411	3876		.	.	.	.	.	.
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150		.	.	.	.	.	.
MTC 2A-SA	12-A-BAL	305.00	B-36	____	0112		.	.	.	.	.	.
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	____		.	.	.	.	.	.
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201		.	.	.	.	.	.
ELECTRICAL EQUIPMENT FOR SYSTEM SIS												
.	.	.	.	.	.		CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
IDP 1A S3	12-A-CR	305.00	B-31	____	0221		IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218		IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506		IDP 1B S4	12-A-CR	305.00	C-31	____	0223
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227		IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229		DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
.	.	.	.	.	.		PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
.	.	.	.	.	.		PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201		MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204		MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846		BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861		BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452		BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387		BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388		BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392		BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393

TABLE 9.5B -2B

EBASCO SERVICES INC. CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 05 : ISOLATE ACCUMULATOR TANKS

PRIMARY EQUIPMENT (OR SA TRAIN RELATED) EQUIPMENT NAME						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ELECTRICAL EQUIPMENT FOR SYSTEM SIS											
						DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -2B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 06 : OPERATE COMPONENT COOLING WATER SYSTEM

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)					SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: CCW : COMPONENT COOLING WATER SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)											
CCW HEAT EXCHANGER											
HXR CCW 1A-SA	1-A-BAL	236.00	C-15	970	_____	HXR CCW 1B-SB	1-A-BAL	236.00	C-36	970	_____
FT- 652	1-A-BAL	236.00	C-23	970	6221	FT- 653		.00	_____	970	_____
TE- 674-SR1	1-A-BAL	250.00	B-18	968	6983	TE- 675-SR4	1-A-BAL	250.00	B-28	968	6984
ELECTRICAL EQUIPMENT FOR SYSTEM CCW											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-26	____	0477
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -2B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 07 : INITIATE CCW FLOW TO RHR HEAT EXCHANGER

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: CCW : COMPONENT COOLING WATER SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)											
_____		.00	_____	____	_____	_____		.00	_____	____	_____
ELECTRICAL EQUIPMENT FOR SYSTEM CCW											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-26	____	0477
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -2B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 08 : START RESIDUAL HEAT REMOVAL SYS AT RCS AVG. TEMP OF 350F

EQUIPMENT NAME / PRIMARY EQUIPMENT (OR SA TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: RHRS : RESIDUAL HEAT REMOVAL SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)											
RESIDUAL HEAT REMOVAL PUMP											
PMP RHR 1A-SA	1-A-BAL	190.00	FZ-20	0321	2417	PMP RHR 1B-SB	1-A-BAL	190.00	FZ-34	0322	2418
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
HTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	HTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
BUS 480V 1A2-SA		286.00	C-18	____	0846	BUS 480V 1B2-SB		286.00	C-31	____	0887
RESIDUAL HEAT REMOVAL PUMP COOLER											
CLR PMP RHR 1A-SA	1-A-BAL	190.00	FZ-20	0321	2417	CLR PMP RHR 1B-SB	1-A-BAL	190.00	FZ-34	0322	2418
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1A-SA	1-A-SWGRB	286.00	D-28	____	0161
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
HTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	HTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
BUS 480V 1A2-SA		286.00	C-18	____	0846	BUS 480V 1B2-SB		286.00	C-31	____	0887
RHR RECIRCULATION VALVE											
VLV 2RH-F513SA	1-A-BAL	236.00	FZ-16	324	3860	VLV 2RH-F512SB	1-A-BAL	236.00	FZ-38	323	3859
FIS 602A-SA	1-A-BAL	220.00	E-15	____	_____	FIS 602B-SB	1-A-BAL	220.00	E-39	____	_____
RK- A1-R31	1-A-BAL	216.00	E-15	____	1830	RK- A1-R32	1-A-BAL	216.00	E-39	____	1831
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
HTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	HTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
RHR HEAT EXCHANGER											
HXR RHR 1A-SA	1-A-BAL	236.00	E-18	0331	_____	HXR RHR 1B-SB	1-A-BAL	236.00	E-36	331	_____
FT- 1CC-688	1-A-BAL	236.00	C-18	971	6226	FT- 1CC-689		.00	_____	971	_____
RHR HEAT EXCHANGER VALVE											
HOV RHRHX 3CC-V165SA	1-A-BAL	236.00	D-18	952	3763	HOV RHRHX 3CC-V167SB	1-A-BAL	236.00	D-31	953	3764
HTC 2A-SA	12-A-BAL	305.00	B-36	____	0112	HTC 2B-SB	12-A-BAL	305.00	C-31	____	0113
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
RHR FLOW CONTROL VALVE											
VLV 2SI-V579SA	1-A-BAL	236.00	FZ-29	0444	3886	VLV 2SI-V578SB	1-A-BAL	236.00	G-36	0445	3885

TABLE 9.5B -28

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 08 : START RESIDUAL HEAT REMOVAL SYS AT RCS AVG. TEMP OF 350F

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
RHR FLOW CONTROL VALVE												
	TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
	MTC 2A-SA	12-A-BAL	305.00	B-36	____	0112	MTC 2B-SB	12-A-BAL	305.00	C-31	____	0113
	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
	MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
RHR FLOW CONTROL VALVE												
	FCV RHR 2RH-F500SN	1-A-BAL	236.00	E-18	0333	4435	FCV RHR 2RH-F501SN	1-A-BAL	236.00	E-36	0333	4436
	FT- 605A	1-A-BAL	240.00	FZ-27	0333	_____	FT- 605B	1-A-BAL	240.00	FZ-27	0333	_____
	I/P 2RH-605A	1-A-BAL	240.00	EZ-18	0333	9786	I/P 2RH-605B	1-A-BAL	240.00	D-36	____	9787
	RK- A1-R7	1-A-BAL	236.00	FZ-27	____	1808	RK- A1-R6	1-A-BAL	236.00	FZ-38	____	1807
	PIC C7	12-A-CRC1	305.00	F-42	____	0097	PIC C8	12-A-CRC1	305.00	F-42	____	0098
	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
RHR FLOW CONTROL VALVE												
	HCV RHR 2RH-B501SN	1-A-BAL	236.00	E-18	0331	4434	HCV RHR 2RH-B500SN	1-A-BAL	236.00	E-36	0331	4433
	I/P 2RH-603A	1-A-BAL	240.00	E-18	331	9785	I/P 2RH-603B		.00	_____	____	_____
	PIC C5	12-A-CRC1	305.00	FW-41	____	0095	PIC C6	12-A-CRC1	305.00	F-41	____	0096
	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
RHR ISOLATION VALVE												
	ISV RHR 1RH-V503SA	1-C	221.00	C-16	0325	3864	ISV RHR 1RH-V502SB	1-C	236.00	_____	0327	3861
	VLV 2SI-V575SA	1-A-BAL	190.00	FZ-22	____	_____	VLV 2SI-V575SB	1-A-BAL	190.00	FZ-22	____	_____
	PT- 403(IV)	1-C	240.00	C-20	0197	_____	PT- 403(IV)	1-C	240.00	C-20	0197	_____
	SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
	TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
	MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
	MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
RHR ISOLATION VALVE												
	ISV RHR 1RH-V501SA	1-C	221.00	C-6	0326	3862	ISV RHR 1RH-V500SB	1-C	236.00	_____	0328	3861
	VLV 2SI-V574SA	1-A-BAL	190.00	FZ-32	____	_____	VLV 2SI-V574SB	1-A-BAL	190.00	FZ-32	____	_____
	PT- 402(I)	1-C	240.00	C-01	0197	_____	PT- 402(I)	1-C	240.00	C-01	0197	_____
	SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
	TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315

TABLE 9.5B -2B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 08 : START RESIDUAL HEAT REMOVAL SYS AT RCS AVG. TEMP OF 350F

EQUIPMENT NAME / TYPE:TAG NUMBER	PRIMARY EQUIPMENT (OR SA TRAIN RELATED) FIRE AREA	ELEV	COLS	CWD	CARS	SECONDARY EQUIPMENT (OR SB TRAIN RELATED) TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
RHR ISOLATION VALVE											
MTC 1A-SA	12-A-BAL	305.00	C-36	____	0110	MTC 1B-SB	12-A-BAL	305.00	C-36	____	0111
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
COMPONENT COOLING WATER PUMP											
PMP CCW 1A-SA	1-A-BAL	236.00	B-15	0941	2422	PMP CCW 1B-SB	1-A-BAL	236.00	B-31	0942	2423
PT-649		.00	_____	____	_____	PT- 650		.00	_____	____	_____
PIC P1	12-A-CRC1	305.00	F-41	____	0091	PIC P4	12-A-CRC1	305.00	F-42	____	0094
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MTC 2A-SA	12-A-BAL	305.00	B-36	____	0112	MTC 2B-SB	12-A-BAL	305.00	C-31	____	0113
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
BUS 6.9KV EMERG		.00	_____	____	_____	BUS 6.9KV EMERG		.00	_____	____	_____
COMPONENT COOLING WATER PUMP											
PMP CCW 1C-SAB	1-A-BAL	236.00	B-18	0943	2424	•	•	•	•	•	•
PT-649		.00	_____	969	_____	PT- 650		.00	_____	970	_____
PIC P1	12-A-CRC1	305.00	F-41	____	0091	PIC P4	12-A-CRC1	305.00	F-42	____	0094
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MTC 2A-SA	12-A-BAL	305.00	B-36	____	0112	MTC 2B-SB	12-A-BAL	305.00	C-31	____	0113
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
BUS 6.9KV EMERG		.00	_____	____	_____	BUS 6.9KV EMERG		.00	_____	____	_____
COMPONENT COOLING WATER HEAT EXCHANGER											
HXR CCW 1A-SA	1-A-BAL	236.00	C-15	970	_____	HXR CCW 1B-SB	1-A-BAL	236.00	C-36	968	_____
FT- 652		.00	_____	____	_____	FT- 653		.00	_____	____	_____
TE- 674		.00	_____	____	_____	TE- 675		.00	_____	____	_____
COMPONENT COOLING WATER MOTOR OPERATED VALVE											
MOV 3CC-B5SA	1-A-BAL	236.00	C-15	0948	3758	MOV 3CC-B6SB	1-A-BAL	236.00	C-36	0949	3759
MTC 2A-SA	12-A-BAL	305.00	B-36	____	0112	MTC 2B-SB	12-A-BAL	305.00	C-31	____	0113
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207

TABLE 9.5B -2B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 08 : START RESIDUAL HEAT REMOVAL SYS AT RCS AVG. TEMP OF 350F

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME / TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
COMPONENT COOLING WATER MOTOR OPERATED VALVE											
MOV 3CC-B19SA	1-A-BAL	236.00	C-26	0950	3760	MOV 3CC-B20SB	1-A-BAL	236.00	C-26	0951	3761
HTC 2A-SA	12-A-BAL	305.00	B-36	____	0112	HTC 3B-SB	12-A-BAL	305.00	C-31	____	0115
HCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	HCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
MCC 480V 1A35-SA	1-A-BAL	261.00	FW-43	2549	1202	MCC 480V 1B35-SB	1-A-BAL	261.00	FW-43	2550	1207
COMPONENT COOLING SURGE TANK											
TNK SURGE CCW 1X-SAB	1-A-BAL	305.00	B-31	967	_____	•	•	•	•	•	•
LT- 670(I)		.00	_____	967	_____	•	•	•	•	•	•
LT- 676(IV)		.00	_____	967	_____	•	•	•	•	•	•
COMPONENT COOLING WATER ISOLATION VALVE											
ISV 3CC-D276SN	1-A-BAL	236.00	C-36	0963	4138	•	•	•	•	•	•
HTC 5	12-A-BAL	305.00	C-36	____	0117	•	•	•	•	•	•
HCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	•	•	•	•	•	•
PDP DP-1A 125V DC		286.00	D-18	____	1503	•	•	•	•	•	•
ELECTRICAL EQUIPMENT FOR SYSTEM RHR											
•	•	•	•	•	•	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
•	•	•	•	•	•	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -2B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 09 : CONTINUE HVAC SYSTEM

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CABLES	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CABLES
SYSTEM: HCFC : CONTAINMENT FAN COOLER SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)											
AIR HANDLING UNIT - CONTAINMENT FAN COOLING											
AHU AH-2(1A-SA)	1-C	236.00	120	2673	_____	AHU AH-4(1A-SB)	1-C	286.00	120	2745	_____
AHU AH-2(1B-SA)	1-C	236.00	120	2675	_____	AHU AH-4(1B-SB)	1-C	286.00	120	2747	_____
CV- DG D4-SA-1	1-C	228.33	120	2674	_____	CV- DG D7-SB-1	1-C	283.50	120	2746	_____
CV- DG D3-SA-1	1-C	231.33	120	2674	_____	CV- DG D8-SB-1	1-C	276.17	120	2746	_____
FE- 1CV-7572BS	1-C	221.00	CT221	3083	1950	FE- 1CV-7574AS		261.00	_____	3085	2698
FS- 1CV-7E572BS	1-A-BAL	236.00	I-27	3083	6624	FS- 1CV-7574AS		261.00	I-33	3085	6627
FE- 7572A		.00	_____	3083	1951	FE- 1CV-7574BS		261.00	_____	3085	2699
FS- 1CV-7572AS	1-A-BAL	236.00	I-27	3083	6623	FS- 1CV-7574BS	1-A-BAL	261.00	JV-33	3085	6628
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A22-SA	1-A-BAL	236.00	KZ-31	____	1260	MCC 480V 1B34-SB	1-A-BAL	286.00	FZ-22	____	1263
ELECTRICAL EQUIPMENT FOR SYSTEMCFC											
•	•	•	•	•	•	ESS CAB 1B-SB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 4A-SA	12-A-CRC1	305.00	D-42	____	0055	ARP 4B-SB	12-A-CRC1	305.00	D-41	____	0056
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142	ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	MTC 11B-SB	12-A-CRC1	305.00	D-42	____	0127
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
•	•	•	•	•	•	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
•	•	•	•	•	•	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A22-SA	1-A-BAL	236.00	KZ-31	____	1260	MCC 480V 1B22-SB	1-A-BAL	236.00	KZ-21	____	1261
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
MCC 480V 1A34-SA	1-A-BAL	286.00	FZ-22	____	1262	MCC 480V 1B34-SB	1-A-BAL	286.00	FZ-29	____	1263
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393

TABLE 9.5B -2B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 09 : CONTINUE HVAC SYSTEM

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ELECTRICAL EQUIPMENT FOR SYSTEMCFC												
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006		DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007
SYSTEM: HCRC : CONTROL ROOM COMPLEX COOLING SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)												
AHU-SUPPLY : H/V AND ELECT PROTECT ROOMS												
VLV 3CX-W18SA-1	12-A-HV:IR	305.00	GZ-43	2660	5018		VLV 3CX-W25SB-1	12-A-HV:IR	305.00	H-41	2660	5019
AHU AH-16(1A-SA)	12-A-HV:IR	305.00	GZ-43	2821	_____		AHU AH-16(1B-SB)	12-A-HV:IR	305.00	GZ-43	2822	_____
DPR CZ- D9SA-1	12-A-HV:IR	305.00	GZ-43	2823	_____		DPR CZ- D10SB-1	12-A-HV:IR	305.00	GZ-43	2923	_____
DPR CZ- D23SA-1	12-A-HV:IR	305.00	GZ-43	2818	_____		DPR CZ- D24SB-1	12-A-HV:IR	305.00	GZ-43	2819	_____
FS- 1AV-6613A	12-A-HV:IR	315.00	FW-42	2821	6366		FS- 1AV-6613B	12-A-HV:IR	315.00	FW-42	2821	6367
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160		ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051		ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ARP 13	12-A-CRC1	305.00	D-41	____	0065		ARP 13	12-A-CRC1	305.00	D-41	____	0065
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142		ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
AEP 1 NS	12-A-CR	305.00	B-42	____	0078		AEP 1 NS	12-A-CR	305.00	B-42	____	0078
HCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267		HCC 480V 1B36-SB	12-A-HV:IR	.00	____	____	1268
ELECTRICAL EQUIPMENT FOR SYSTEM CRS												
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389		CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
IDP 1A S1	12-A-CR	305.00	B-36	____	0220		IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216		IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221		IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218		IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506		DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227		PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229		PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
HCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201		HCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
HCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204		HCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
HCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42	____	1267		HCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41	____	1268
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846		BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861		BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452		BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387		BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388		BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392		BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006		DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007
SYSTEM: :												

TABLE 9.5B -2B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 09 : CONTINUE HVAC SYSTEM

PRIMARY EQUIPMENT (OR SA TRAIN RELATED) EQUIPMENT NAME						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
AIR HANDLING UNIT - CONTROL ROOM AC SYSTEM											
.	.	.	.	.	.	VLV 3CX W24SB-1	12-A-HV:IR	305.00	GZ-42	2945	
AHU AH-15(1A-SA)	12-A-HV:IR	305.00	GZ-42	2946		AHU AH-15(1B-SB)	12-A-HV:IR	305.00	GZ-42	2947	
DPR CZ- D19SA-1	12-A-HV:IR	305.00	FW-42	2960		DPR CZ- D20SB-1	12-A-HV:IR	305.00	GZ-42	2961	
3CX-W17SA-1	12-A-HV:IR	305.00	GZ-42	2945		.	.	.	.	.	.
3CZ B2SB-1	12-A-HV:IR	305.00	GZ-41	2943		.	.	.	.	.	.
3CZ B25SA-1	12-A-HV:IR	305.00	GZ-42	2950		.	.	.	.	.	.
3CZ D1SA-1	12-A-HV:IR	305.00	GZ-42	2944		.	.	.	.	.	.
3CZ B1SA-1	12-A-HV:IR	305.00	GZ-41	2942		.	.	.	.	.	.
.	.	.	.	.	.	DPR CZ- D2SB-1	12-A-HV:IR	305.00	GZ-41	2944	
.	.	.	.	.	.	3CZ B26SB-1	12-A-HV:IR	305.00	GZ-42	2951	
.	.	.	.	.	.	3CZ B2SB-1	12-A-HV:IR	305.00	GZ-41	2943	
.	.	.	.	.	.	3CZ B1SA-1	12-A-HV:IR	305.00	GZ-41	2942	
FS-17836		.00		2946	7057	.	.	.	.	.	.
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23		0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28		0161
ARP 4A-SA	12-A-CRC1	305.00	D-42		0055	ARP 4B-SB	12-A-CRC1	305.00	D-41		0056
ARP 13	12-A-CRC1	305.00	D-41		0065	ARP 13	12-A-CRC1	305.00	D-41		0065
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42		0142	ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41		0143
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18		0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31		0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36		0311
MCB HVAC 101	12-A-CR	305.00	C-42			MCB HVAC 101	12-A-CR	305.00	C-42		
MCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42		1267	MCC 480V 1B36-SB	12-A-HV:IR	.00			1268
ELECTRICAL EQUIPMENT FOR SYSTEM CRS											
CP DG 1A-SA	1-D-DGA	261.00	B- 1		1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2		1390
IDP 1A S1	12-A-CR	305.00	B-36		0220	IDP 1B S2	12-A-CR	305.00	C-31		0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31		0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31		0217
IDP 1A S3	12-A-CR	305.00	B-31		0221	IDP 1B S4	12-A-CR	305.00	C-31		0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31		0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31		0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23		1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31		1507
PP 1A-211SA	1-A-BAL	286.00	E-22		2227	PP 1B-211SB	1-A-BAL	286.00	E-29		2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22		2229	PP 1B-311SB	1-A-BAL	286.00	E-27		2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22		1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29		1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22		1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29		1209
MCC 480V 1A36-SA	12-A-HV:IR	305.00	GZ-42		1267	MCC 480V 1B36-SB	12-A-HV:IR	305.00	FW-41		1268
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18		0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31		0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23		0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28		0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18		0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27		0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18		8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28		8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18		8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28		8390

TABLE 9.5B -28

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 09 : CONTINUE HVAC SYSTEM

PRIMARY EQUIPMENT (OR SA TRAIN RELATED) EQUIPMENT NAME						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
ELECTRICAL EQUIPMENT FOR SYSTEM CRS											
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007
SYSTEM: HSWIS : HVAC SYSTEM-SERVICE WATER INTAKE STRUCTURE (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)											
AIR HANDLING UNIT - SW INTAKE STRUCTURE											
SOV 3SW V646SA-1	12-I-ESWPA	270.00	EMIS	3295	8094	SOV 3SW-V647SB-1	12-I-ESWPB	270.00	EMIS	3295	8095
AHU AH-86(1A-SA)		262.00	BAY 8	3288	_____	AHU AH-86(1B-SB)		262.00	BAY 6	3290	_____
DPR EV-D1SA-1	12-I-ESWPA	275.00	EMIS	3289	8178	DPR EV-D1SB-1	12-I-ESWPB	275.00	EMIS	3291	8180
DPR EV-D2SA-1	12-I-ESWPA	275.00	EMIS	3289	8179	DPR EV-D2SB-1	12-I-ESWPB	275.00	EMIS	3291	8181
EHC 120(1A-SA)	12-I-ESWPA	271.00	EMIS	3293	8182	EHC 120(1B-SB)	12-I-ESWPB	271.00	EMIS	3294	8183
TE- 6588A-SA	12-I-ESWPA	268.00	EMIS	3298	8086	TE- 6588B-SB	12-I-ESWPB	268.00	EMIS	3298	8087
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A32-SA	12-I-ESWPA	262.00	EMIS	____	1205	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS	____	1210
ELECTRICAL EQUIPMENT FOR SYSTEM SW											
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
•	•	•	•	•	•	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS	____	1210
•	•	•	•	•	•	MCC 480V 1B34-SB	1-A-BAL	286.00	FZ-29	____	1263
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-26	____	0476
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG DC LEADS 1A-SA	1-D-DGA	265.00	A- 1	____	1186	DG DC LEADS 1B-SB	1-D-DGB	265.00	A- 2	____	2008
•	•	•	•	•	•	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -28

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 09 : CONTINUE HVAC SYSTEM

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: HRAS : HVAC SYSTEM-AUX BLDG SHUTDOWN SYSTEMS (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)											
AIR HANDLING UNIT - AUX BLDG SD SYSTEMS											
VLV 3CX W1SA-1	1-A-BAL	190.00	E-16	2614	3704	VLV 3CX W3SB-1	1-A-BAL	190.00	E-36	2649	4619
AHU AH-5(1A-SA)	1-A-BAL	190.00	E-16	2758	3009	AHU AH-5(1B-SB)	1-A-BAL	190.00	E-36	2759	3010
TE- 6502A-SA		.00	_____	2758	6868	TE- 6502B-SB	1-A-BAL	197.00	E-32	2759	6849
PIC C13 SA	12-A-CRC1	305.00	F-42	____	0103	PIC C14-SB	12-A-CRC1	305.00	F-42	____	0104
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
SYSTEM: HRAA : HVAC SYSTEM-AUX BLDG SHUTDOWN AREAS (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)											
AIR HANDLING UNIT - AUX BLDG SD EQUIP AREAS											
VLV 3CX W15SA-1	1-A-BAL	286.00	FZ-20	2629	5014	VLV 3CX W23SB-1	1-A-BAL	286.00	FZ-42	2630	5017
AHU AH-12(1A-SA)	1-A-BAL	286.00	FZ-20	3021	3018	AHU AH-13(1B-SB)		286.00	FZ-32	3032	3021
DPR AC-D3SA-1	1-A-SWGRA	286.00	E-18	3024	5358	AC- D5SB-1	1-A-BAL	286.00	EY-38	____	3034
AC- D7SA-1	1-A-BAL	286.00	FZ-20	____	3027	AC- D10SB-1	1-A-BAL	286.00	FZ-34	____	3037
FS- 6632-SA	1-A-SWGRA	295.00	C-18	3021	8641	FS- 6642-SB	1-A-SWGRB	298.00	D-31	3031	8028
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 2A-SA	12-A-CRC1	305.00	D-41	____	0051	ARP 2B-SB	12-A-CRC1	305.00	D-41	____	0052
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142	ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
AEP 1 NS	12-A-CR	305.00	B-42	____	0078	AEP 1 NS	12-A-CR	305.00	B-42	____	0078
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209

TABLE 9.5B -2B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSM DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 10 : CONTINUE OPERATION OF EMERGENCY SERVICE WATER SYSTEMS

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: ESWS : EMERGENCY SERVICE WATER SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
EMERGENCY SERVICE WATER PUMP											
PUMP ESW(1A-SA)		262.00	BAY 8	2211	_____	PUMP ESW(1B-SB)		262.00	BAY 6	2212	_____
PT- 9101A-SA		266.00	_____	_____	_____	PT- 9101B-SB		266.00	_____	_____	_____
PIC C9 SA	12-A-CRC1	305.00	F-42	2546	0099	PIC C10 SB	12-A-CRC1	305.00	F-41	2547	0100
IC- Y21-C7	12-I-ESWPA	262.00	EMIS	____	8649	IC- Y21-C8	12-I-ESWPB	262.00	EMIS	____	8650
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
ARP 19A-SA	12-A-CRC1	305.00	E-41	____	0071	ARP 19B-SB	12-A-CRC1	305.00	D-41	____	0072
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MTC 10A-SA	12-A-CRC1	305.00	D-44	____	0124	MTC 10B-SB	12-A-CRC1	305.00	E-44	____	0125
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
BUS 6.9KV 1A-SA	1-A-SWGRB	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0479
ELECTRICAL EQUIPMENT FOR SYSTEM SW											
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
•	•	•	•	•	•	MCC 480V 1B32-SB	12-I-ESWPB	262.00	EMIS	____	1210
•	•	•	•	•	•	MCC 480V 1B34-SB	1-A-BAL	286.00	FZ-29	____	1263
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-26	____	0476
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG DC LEADS 1A-SA	1-D-DGA	265.00	A- 1	____	1186	DG DC LEADS 1B-SB	1-D-DGB	265.00	A- 2	____	2008
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007

TABLE 9.5B -2B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 11 : CONTINUE DIESEL GENERATOR OPERATION

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: EDGS : EMERGENCY DIESEL GENERATOR SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
EMERGENCY DIESEL GENERATOR											
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	1702	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	1750	2007
ESS CAB 1A-SA	1-A-SWGRA	286.00	D-23	____	0160	ESS CAB 1B-SB	1-A-SWGRB	286.00	D-28	____	0161
STC (A)	12-A-CRC1	305.00	E-42	____	0152	STC (B)	12-A-CRC1	305.00	E-41	____	0158
SSP (A) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0150	SSP (B) OUTPUT 1	12-A-CRC1	305.00	E-42	____	0156
CP DG 1A-SA	1-D-DGA	261.00	B-1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
ARP 1A-SA	12-A-CRC1	305.00	D-41	____	0049	ARP 1B-SB	12-A-BAL	305.00	D-41	____	0050
ISOL CAB 2A-SA	12-A-CRC1	305.00	E-42	____	0142	ISOL CAB 2B-SB	12-A-CRC1	305.00	E-41	____	0143
TFP TRANSF PNL 1A-SA	1-A-SWGRA	286.00	D-18	____	0314	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311	ACP AUX CONTROL PNL	1-A-ACP	286.00	D-36	____	0311
MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____	MCB MAIN CONTROL BD	12-A-CR	305.00	C-42	____	_____
ELECTRICAL EQUIPMENT FOR SYSTEM DG											
CP DG 1A-SA	1-D-DGA	261.00	B- 1	____	1389	CP DG 1B-SB	1-D-DGB	261.00	B- 2	____	1390
CP DIESEL ENG 1A-SA	1-D-DGA	261.00	B- 1	____	1296	•	•	•	•	•	•
ARP 1A-SA	12-A-CRC1	305.00	D-41	____	0049	ARP 1B-SB	12-A-CRC1	305.00	D-41	____	0050
ARP 3A-SA	12-A-CRC1	305.00	D-41	____	0053	ARP 3B-SB	12-A-CRC1	305.00	D-41	____	0054
•	•	•	•	•	•	TFP TRANSF PNL 1B-SB	1-A-SWGRB	286.00	D-31	____	0315
MTC 11A-SA	12-A-CRC1	305.00	D-42	____	0126	•	•	•	•	•	•
IDP 1A S1	12-A-CR	305.00	B-36	____	0220	IDP 1B S2	12-A-CR	305.00	C-31	____	0222
IDP 1A-S1 7.5KVA UPS	12-A-CR	305.00	B-31	____	0216	IDP 1B-S2 7.5KVA UPS	12-A-CR	305.00	C-31	____	0217
IDP 1A S3	12-A-CR	305.00	B-31	____	0221	IDP 1B S4	12-A-CR	305.00	C-31	____	0223
IDP 1A-S3 7.5KVA UPS	12-A-CR	305.00	B-31	____	0218	IDP 1B-S4 7.5KVA UPS	12-A-CR	305.00	C-31	____	0219
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
PP 1A-211SA	1-A-BAL	286.00	E-22	____	2227	PP 1B-211SB	1-A-BAL	286.00	E-29	____	2228
PP 1A-311SA	1-A-BAL	286.00	FZ-22	____	2229	PP 1B-311SB	1-A-BAL	286.00	E-27	____	2240
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A2-SA	1-A-SWGRA	286.00	C-18	____	0846	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
DG EMERG 1A-SA	1-D-DGA	261.00	A- 1	____	2006	DG EMERG 1B-SB	1-D-DGB	261.00	A- 2	____	2007
DG DC LEADS 1A-SA	1-D-DGA	265.00	A- 1	____	1186	•	•	•	•	•	•
DG ST AC STRTR 1A-SA	1-D-DGA	265.00	B- 1	____	2340	•	•	•	•	•	•

TABLE 9.5B -2B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 12 : VERIFY BATTERY CHARGER PERFORMANCE

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: PDS : 125V DC POWER DISTRIBUTION SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
BATTERY AND CHARGERS											
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393
ELECTRICAL EQUIPMENT FOR SYSTEM BC											
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-23	____	1506	DP 1B-SB 125VDC	1-A-SWGRB	286.00	D-31	____	1507
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
MCC 480V 1A31-SA	1-A-BAL	286.00	E-22	____	1204	MCC 480V 1B31-SB	1-A-BAL	286.00	E-29	____	1209
BUS 480V 1A3-SA	1-A-SWGRA	286.00	C-23	____	0861	BUS 480V 1B2-SB	1-A-SWGRB	286.00	C-31	____	0887
.	.	.	.	.	.	BUS 480V 1B3-SB	1-A-SWGRB	286.00	C-28	____	0901
BUS 6.9KV 1A-SA	1-A-SWGRA	286.00	C-18	____	0452	BUS 6.9KV 1B-SB	1-A-SWGRB	286.00	C-27	____	0481
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8387	BAT CHGR 1A-SB RAB	1-A-SWGRB	286.00	D-28	____	8389
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-18	____	8388	BAT CHGR 1B-SB RAB	1-A-SWGRB	286.00	D-28	____	8390
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8392	BATTERY 1B-SB RAB	1-A-BATB	286.00	D-28	____	8393

TABLE 9.5B -2B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 13 : MAINTAIN CONTROL ROOM LIGHTING - NO DIESEL GENERATOR BACKUP

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: CRLT : CONTROL ROOM LIGHTING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)												
CONTROL ROOM NORMAL LIGHTING - NORMALLY ON												
LP LP-116	1-A-BAL	286.00	C-23	____	2097	•	•					
TFMR LP-116	1-A-BAL	290.00	C-24	____	2096	•	•					
MCC 480V 1D21	1-A-BAL	286.00	E-15	____	1215	•	•					
CONTROL ROOM NORMAL LIGHTING - NORMALLY ON												
LP LP-124	1-A-BAL	309.00	C-41	____	2114	•	•					
TFMR LP-124	1-A-BAL	288.00	C-31	____	2112	•	•					
MCC 480V 1E21	1-A-BAL	286.00	E-38	____	1222	•	•					
CONTROL ROOM NORMAL LIGHTING - NORMALLY ON												
LP LP-125	1-A-BAL	309.00	F-43	____	2116	•	•					
TFMR LP-125	1-A-BAL	288.00	D-36	____	2115	•	•					
MCC 480V 1E21	1-A-BAL	286.00	E-38	____	1222	•	•					

TABLE 9.5B -2B

EBASCO SERVICES INC. — CAROLINA POWER & LIGHT CO.
SAFE SHUTDOWN EQUIPMENT ANALYSIS — SHEARON HARRIS NUCLEAR POWER PLANT
HOT STANDBY TO COLD SHUTDOWN — (OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 14 : MAINTAIN CONTROL ROOM LIGHTING - WITH DIESEL GENERATOR BACKUP

PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
EQUIPMENT NAME TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS	TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: CRLT : CONTROL ROOM LIGHTING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)											
CONTROL ROOM NORMAL/EMERGENCY LIGHTING - NORMALLY ON											
LP LP-112	1-A-BAL	236.00	C-23	____	2089	LP LP-113	1-A-BAL	236.00	C-28	____	2091
TFMR LP-112	1-A-SWGRA	244.00	D-23	____	2088	TFMR LP-113	1-A-SWGRB	244.00	D-28	____	2090
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
CONTROL ROOM NORMAL/EMERGENCY LIGHTING - NORMALLY ON											
LP LP-118	1-A-BAL	261.00	D-42	____	2101	LP LP-119	1-A-BAL	261.00	FW-42	____	2103
TFMR LP-118	1-A-SWGRA	269.00	D-42	____	2100	TFMR LP-119	1-A-SWGRB	269.00	FW-42	____	2102
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206
CONTROL ROOM NORMAL/EMERGENCY LIGHTING - NORMALLY ON											
LP LP-128	12-A-CR	309.00	C-42	____	2122	LP LP-127	12-A-CR	309.00	C-42	____	2120
TFMR LP-128	1-A-SWGRA	288.00	D-31	____	2121	TFMR LP-127	1-A-SWGRB	292.00	D-31	____	2119
MCC 480V 1A21-SA	1-A-BAL	286.00	E-22	____	1201	MCC 480V 1B21-SB	1-A-BAL	286.00	E-29	____	1206

TABLE 9.5B -2B

EBASCO SERVICES INC.
SAFE SHUTDOWN EQUIPMENT ANALYSIS
HOT STANDBY TO COLD SHUTDOWN

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR POWER PLANT
(OFF-SITE POWER NOT AVAILABLE)

FILE: SHSDEPSH DATA123 : REV1-8 AUG 30 83 REPORT: SDESHR2B 09/01/83 14.11.19

LOCATION OF SHUTDOWN TRAIN EQUIPMENT BY NON-SEQUENTIAL SAFE SHUTDOWN PROCEDURE TASKS
OPERATIONAL TASK: 001 : COLD SHUTDOWN STEPS
OPERATIONAL SUB-TASK: 15 : MAINTAIN CONTROL ROOM LIGHTING - WITH 8 HR BATTERY BACKUP

EQUIPMENT NAME	PRIMARY EQUIPMENT (OR SA TRAIN RELATED)						SECONDARY EQUIPMENT (OR SB TRAIN RELATED)					
TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS		TYPE:TAG NUMBER	FIRE AREA	ELEV	COLS	CWD	CARS
SYSTEM: CRLT : CONTROL ROOM LIGHTING SYSTEM (EQUIPMENT USED FOR HOT STANDBY AND COLD SHUTDOWN)												
CONTROL ROOM DC EMERGENCY LIGHTING - ENERGIZED ON LOOP												
LP LP-140	12-A-CR	305.00	C-42	____	_____	•		•		•	•	•
DP 1A-SA 125VDC	1-A-SWGRA	286.00	D-16	____	1503	•		•		•	•	•
BAT CHGR 1A-SA RAB	1-A-SWGRA	286.00	D-18	____	8385	•		•		•	•	•
BAT CHGR 1B-SA RAB	1-A-SWGRA	286.00	D-20	____	8386	•		•		•	•	•
BATTERY 1A-SA RAB	1-A-BATA	286.00	D-23	____	8391	•		•		•	•	•

TABLE 3.5-2

EBASCO SERVICES INCORPORATED
SHEARON HARRIS NUCLEAR POWER PLANT
SAFE SHUTDOWN ANALYSIS IN CASE OF FIRE
CABLE FUNCTION REPORT

CONDUIT/ TRAY	CABLE	FUNCTION	CONSEQUENCES OF LOSS	COMMENTS
11775A-SA-4	11775B	Feed To MCC 1A-32SA	Loss of Power to MCC 1A-32SA	Required
11775B-SA-4	11775C	Feed To MCC 1A-32SA	Loss of Power to MCC 1A-32SA	Required
11779B-SB-4	11779C	Feed To MCC 1B-32SB	Loss of Power to MCC 1b-32SB	Required
12211A-SA-4	12211A	Power Feed to ESWP 1A-SA Motor	Loss of ESWP 1A-SA	Required
12212A-SB-4	12212A	Power Feed to ESWP 1B-SB	Loss of ESWP 1B-SB	Required
15400A-SB-4	11779A	Feed To MCC 1B-32SB	Loss of Power to MCC 1B-32SB	Required
15401A-SA-4	11775A	Feed To MCC 1A-32SA	Loss of Power to MCC 1A-32SA	Required
16000B-SB-4	12212Q	Motor Space Htr Control ESWP 1B-SB	Loss of Space Htr	Not Required
	13290B	ESWIS All-86 Ctrl	Stop Fan	Required
	13290G	Alarm	Loss of Alarm Ind	Not Required
	13297B	ESWIS E-88 Fan Ctrl	Stop Fan	Required
16001B-SA-4	12211Q	Motor Space Htr. Control ESWP 1A-SA	Loss of Space Htr	Not Required
	12217C	ESWP 1A-SA Inlet VA 3SW-B1-SA Ctrl	Burn out: VA in Last Pos Short: VA May Change Pos	Required
	13288B	ESWIS All-86 Ctrl	Stop Fan	Required
	13288G	Alarm	Loss of Alarm Ind	Not Required
	13296B	ESWIS E-88 Fan Ctrl	Stop Fan	Required
	13296G	Alarm	Loss of Alarm Ind	Not Required
16041S-SA-3	12207B	NSW Sup Hdr VA 3SW-B5-SA L.S. Ctrl	VA Remain in Last Position	Not Required
	12231B	3SW-B5-SA L.S. Alarm	Affect 3SW-B8SA & 3SW-B5SA	Required
	12223D	ESWP 1A-SA Disch VA 3SW-B-105-SA L.S Ctrl	Loss of Ind &/or 3SW-B7-SA	Not Required

EBASCO SERVICES INCORPORATED
SHEARON HARRIS NUCLEAR POWER PLANT
SAFE SHUTDOWN ANALYSIS IN CASE OF FIRE
CABLE FUNCTION REPORT

CONDUIT/ TRAY	CABLE	FUNCTION	CONSEQUENCES OF LOSS	COMMENTS
16041W-SA-2	--			No Cable Identified
16046K-SB-3	12208B	NSW Sup Hdr VA 3SW-B6SB L.S Contrl	VA Remain in Last Position	Not Required
	12224D	ESWP 1B-SB Disch Va 3SW-B106 SB-1	Loss of Ind or Erroneous Ind.	Required
16046P-SB-2	--			No Cable Identified
17022C-SB-2	12092C	CST LT-9010B-SB	Loss of PIC Input. False Ind LI-9010B-SB	Required
17022E-SB-2	12092C	CST LT-9010B-SB	Loss of PIC Input. False Ind LI-9010B-SB	Required
17023H-SA-3	12092A	CST LT-9010A-SA	Loss of PIC Input. False Ind LI-9010A-SA	Required
17023J-SA-2	12092A	CST LT-9010A-SA	Loss of PIC Input. False Ind LI-9010A-SA	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
10631B-SA-2	10323F	RHR Pump 1A-SA, Mini Flow Valve 2RH-F513 SA-1 Interlock from Hi and Lo Flow Switch FIS-602A-SA	Improper Opening and Closing of Valve	Valve Normally Open. Valve either Open or Closed is Acceptable
10721B-SA-2(L)	11041C	Containment Spray Pump A Discharge Pressure, PT-7131A-SA PIC Input	Loss of PIC, MCB Indication, Alarm and Computer Input	Containment Spray Pump Not Required
10721B-SA-2(L)	12598A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
12237A-SA-1-1/2	12237A	Containment SW Return Orifice Bypass Valve 3SW-B64SA-1 Sol Leads	Valve Closes - Cannot Open	Valve Closes on Loss of Air due to Loop. Flow Through Orifice
12237C-SB-1-1/2	12237C	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
12241F-SA-1	12241F	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
12241F-SA-1	12241G	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
12242E-SB-1-1/2	12242E	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
12245A-SA-1-1/2	12245A	SW to Containment Fan Clrs AH-3 Inlet Valve 2SW-B46SA-1 Motor Power Feeder	MCB Control Lost, Indication Lost or Improper	Valve in its Normal Position (Open). No Need to Close
12245B-SA-2	10589F	SW to Containment Fan Clrs AH-3 Inlet Valve 2SW-B46SA-1 Lim Switch to ESF-A	Loss of Input to ESF-A or Improper Input	ESF Alarm Indication Not Required
12245B-SA-2	12245B	SW to Containment Fan Clrs AH-3 Inlet Valve 2SW-B46SA-1 Limit Switch Cable	MCB Control Lost, Indication Lost or Improper	Valve in its Normal Position (Open). No Need to Close
12246A-SA-1-1/2	12246A	SW from Containment Fan Clrs AH-3 Outlet Valve 2SW-B47SA-1 Motor Power Feeder	Valve Inoperable	Valve in its Normal Position (Open). No Need to Close
12246B-SA-2	10589G	SW from Containment Fan Clrs AH-3 Outlet Valve 2SW-B47SA-1 Limit Switch to ESF-A	Loss of Input to ESF-A or Improper Input	ESF Alarm Indication Not Required
12246B-SA-2	12246B	SW from Containment Fan Clrs AH-3 Outlet Valve 2SW-B47SA-1 Limit Switch Cable	MCB Control Lost, Indication Lost or Improper	Valve in its Normal Position (Open). No Need to Close
12247A-SA-1-1/2	12247A	SW to Containment Fan Cooling Unit AH-2 Inlet Valve 2SW-B45SA-1 Motor Power Feeder	Valve Inoperable	Valve in its Normal Position (Open). No Need to Close

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12247B-SA-2	10589H	SW to Containment Fan Cooling Unit AH-2 Inlet Valve 2SW-B45SA-1 Limit Switch to ESF-A	Loss of Input to ESF-A or Improper Input	ESF Alarm Indication Not Required
12247B-SA-2	12247B	SW to Containment Fan Cooling Unit AH-2 Inlet Valve-2SW-B45SA-1 Limit Switch Cable	MCB Control Lost, Indication Lost or Improper	Valve in its Normal Position (Open). No Need to Close
12248A-SA-1	12248A	SW from Containment Fan Cooling Unit AH-2 Outlet Valve 2SW-B49SA-1 Motor Power Feeder	Valve Inoperable	Valve in its Normal Position (Open). No Need to Close
12248B-SA-2	12248B	SW from Containment Fan Cooling Unit AH-2 Outlet Valve 2SW-B49SA-1 Limit Switch Cable	MCB Control Lost, Indication Lost or Improper	Valve in its Normal Position (Open). No Need to Close
12249A-SA-1-1/2	12249A	SW to Containment Fan Clrs AH-1 Inlet Valve 2SW-B52SB-1 Motor Power Feeder	Valve Inoperable	Valve in its Normal Position (Open). No Need to Close
12249B-SB-2	12249B	SW to Containment Fan Clrs AH-1 Inlet Valve 2SW-B52SB-1 Limit Switch Cable	MCB Control Lost, Indication Lost or Improper	Valve in its Normal Position (Open). No Need to Close
12250A-SB-1-1/2	12250A	SW from Containment Fan Clrs AH-1 Outlet Valve 2SW-B48SB-1 Motor Power Feeder	Valve Inoperable	Valve in its Normal Position (Open). No Need to Close
12250B-SB-2	12250B	SW from Containment Fan Clrs AH-1 Outlet Valve 2SW-B48SB-1 Limit Switch Cable	MCB Control Lost, Indication Lost or Improper	Valve in its Normal Position (Open). No Need to Close
12251A-SB-1	12251A	SW to Containment Fan Cooling Unit AH-4 Inlet Valve 2SW-B51SB-1 Motor Power Feeder	Loss of Power	Valve in its Normal Position (Open). No Need to Close
12251B-SB-2	10607H	SW to Containment Fan Cooling Unit AH-4 Inlet Valve 2SW-B51SB-1 Limit Switch to ESF-B	Loss of Input to ESF-B or Improper Input	ESF Alarm Indication Not Required
12251B-SB-2	12251B	SW to Containment Fan Cooling Unit AH-4 Inlet Valve 2SW-B51SB-1 Limit Switch Cable	MCB Control Lost, Indication Lost or Improper	Valve in its Normal Position (Open). No Need to Close
12252A-SB-1	12252A	SW from Containment Fan Cooling Unit AH-4 Outlet Valve 2SW-B50SB-1 Motor Power Feeder	Loss of Power	Valve in its Normal Position (Open). No Need to Close
12252B-SB-2	10607J	SW from Containment Fan Cooling Unit AH-4 Outlet Valve 2SW-B50SB-1 Limit Switch to ESF-B	Loss of Input to ESF-B or Improper Input	ESF Alarm Indication Not Required
12252B-SB-2	12252B	SW from Containment Fan Cooling Unit AH-4 Outlet Valve 2SW-B50SB-1 Limit Switch Cable	MCB Control Lost, Indication Lost or Improper	Valve in its Normal Position (Open). No Need to Close
12598A-SA-1	12598A	WC-2 (1A-SA) Chld Water Temperature TE-9205A-SA Cable to PIC	Lose Temperature Input, Improper Alarm	Not Required for System Operation

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12599A-5B-1	12299A	WC-2 (1B-SB) Chld Water Temperature TE9205 B-SB Cable to PIC	Loss Temperature Input, improper alarm	Not Required for System operation
12620C-SA-1-1/2(C)	12620C	Cooling Unit AH-28(1A SA) Chilled Water Valve 2CX-W2SA-1 Sol Leads	Valve Opens - Cannot Shut	Valve Fails Safe
12651C-SA-1-1/2	12651C	Cooling Unit AH-28(1B-SB) Chilled Water Valve 3CX-W4-SB1 Sol Leads	Valve Opens - Cannot Shut	Valve Fails Safe
13052E-SA-1	13052E	Mechanical Penetration Area AH-28 (1A-SA) Temp. Input (TE-6577A-SA) to PIC	Erroneous Input to PIC May Start AH Unit Fan in Auto Position	TE Control of Fans By-Passed on Loop. Fans Run Constantly.
13053A-SB-2	13053A	Boron Injection Pump and Tank Area Cooling Unit AH-28(1B-SB) Motor Power Feeder	AH-28 Inoperable	Required
15423A-SA-3(P)	12245A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
15423A-SA-3(P)	12246A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
15423A-SA-3(P)	12247A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
15423A-SA-3(P)	12248A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
15424C-SB-2	12249A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
15424C-SB-2	12250A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
15424D-SB-3	12249A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
15424D-SB-3	12250A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
15424F-SB-3(P)	12249A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
15424F-SB-3(P)	12250A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15424J-SB-4(P)	12251A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
15424J-SB-4(P)	12252A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16028A-SB-2				No cables identified.
16028B-SB-2	10324F	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
16038G-SB2	12249B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16038G-SB2	12250B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16038K-SB-4(C)	12249B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16038K-SB-4(C)	12250B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16038L-SB-4(C)	12251B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16038L-SB-4(C)	12252B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16038M-SB-2	10324F	Rhr Pump 1B-SB, Mini Flow Valve-2RH-F512SB-1 Intlk from Flow Switch FIS-602B-SB	Improper Opening and Closing of Valve	
16038M-SB-2	12651C	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
16038N-SB-3(G)	12237C	Containment SW Return Orifice Bypass Valve 3SW-B65SB-1 Sol Leads	Valve Closes - Cannot Open	Valve Closes on Loss of Air due to Loop. Flow Through Orifice
16038V-SB-4	12249B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16038V-SB-4	12250B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16039G-SA-4(C)	12248B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16039H-SA-3	12247A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
16039H-SA-3	12248A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16039J-SA-3	12248B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16039K-SA-4	12237A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
16039Q-SA-2(C)	10323F	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
17014A-SB-2	12242G	SW Return from Containment Fan Cooler AH-4(SB), FT9725D(SB) PIC Input	Loss of PIC, LOC Indication and Computer Input, Loss of MCB Hi/Lo Flow Indication	
17014B-SB-2				Cables not Identified
17015B-SA-2				Cables not Identified
17020A-SB-2	12242G	See Identical Cable This Sheet	See Identical Cable This Sheet	See Identical Cable This Sheet
17041W-SA-2	12241F	SW Return from Containment Fan Cooler AH-2 (SA), FT 9275B (SA) PIC Input	Loss of PIC, Local Indication and Computer Input. Loss of MCB Hi/Lo Flow Indication	Not Required for System Operation.
17041W-SA-2	12241G	SW Return from Containment Fan Cooler AH-3 (SA), FT 9275C (SA) PIC Input	Loss of PIC, Local Indication and Computer Input. Loss of MCB Hi/Lo Flow Indication	Not Required for System Operation.
17042L-SB-2	12242E	SW Return from Containment Fan Cooler AH-1 (SB), FT 9275A (SB) PIC Input	Loss of PIC, Local Indication and Computer Input. Loss of MCB Hi/Lo Flow Indication	Not Required for System Operation.
C1301	10323F	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
C1301	12237A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1301	12248B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1301	12620C	Cooling Unit AH-28(1A-SA) Chilled Water Valve 3CX-W2SA-1 Sol Leads	Valve Opens - Cannot Shut	Valve Fails Safe
C1802	10324F	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
C1802	12237C	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
C1802	12249B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1802	12250B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1802	12251B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1802	12252B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1802	12651C	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
L1301	12241F	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
L1301	12241G	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
L1301	13052E	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
L1802	12242C	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
L1802	12242G	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
P1301				No Cables Identified

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
P1306	12245A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
P1306	12246A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
P1306	12247A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
P1306	12248A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
P1802				No Cables Identified
P1806	12249A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
P1806	12250A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
P1806	12251A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
P1806	12252A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
P1806	12766A	Charging Pump SB Area Cooling Unit AH-5(1B-SB) Motor Power Feeder	AH-5 Inoperable	Required
P1806	12768A	Charging Pump SB Area Cooling Unit AH-10(1B-SB) Motor Power Feeder	AH-10 Inoperable	Required
P1806	12775A	Mech Penetration Area Cooling Unit AH-11(1B-SB) Motor Power Feeder	AH-11 Inoperable	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
10271A-SA-1	10271A	Charging/SI Pumps to Reactor Cooling System/ Sol Valve 2CS-V610SA-1 Power Feeder	Valve Inoperable	Valve Normally Open. Open is Required Position.
10271B-SA-1-1/2	10271B	Charging/SI Pumps to Reactor Cooling System/ Sol Valve 2CS-V610SA-1 Limit Switch Cable	Lose Control and Indication	Valve Normally Open. Open is Required Position.
10272A-SB-1-1/2	10272A	Charging/SI Pumps to Reactor Cooling System/ Sol Valve 2CS-V609SB-1 Power Feeder	Valve Inoperable	Valve Normally Open. Open is Required Position.
10272B-SB-1-1/2	10272B	Charging/SI Pumps to Reactor Cooling System/ Sol Valve 2CS-V609SB-1 Limit Switch Cable	Lose Control and Indication	Valve Normally Open. Open is Required Position.
10323A-SA-1	10323A	RHR Pump 1A-SA Miniflow Valve 2RH-F513SA-1 Power Feeder	Valve Inoperable	Valve Normally Open. Open is Required Position.
10323B-SA-1	10323B	RHR Pump 1A-SA Miniflow Valve 2RH-F513SA-1 Limit Switch Cable	Lose Control and Indication	Valve Normally Open. Open is Required Position.
10324A-SB-1	10324A	RHR Pump 1B-SB Mini Flow Valve 2RH-F512SB-1 Power Feeder	Valve Inoperable	Valve Normally Open. Open is Required Position.
10324B-SB-1-1/2	10324B	RHR Pump 1B-SB Mini Flow Valve 2RH-F512SB-1 Limit Switch Cable	Lose Control and Indication	Valve Normally Open.
10444A-SA-1-1/2	10444A	Low Head SI to RCS Cold Leg Valve 2SI-V579SA-1 Power Feeder	Valve Inoperable	Valve Normally Open. Open is Required Position.
10444B-SA-2	10444B	Low Head SI to RCS Cold Leg Valve 2SI-V579SA-1 Limit Switch Cable	Lose Control and Indication	Valve Normally Open. Open is Required Position.
10444B-SA-2	10444G	Low Head SI to RCS Cold Leg Valve 2SI-V579SA-1 Limit Switch Cable	Valve Closed Indication Lost	Required
10444B-SA-2	10444H	Low Head SI to RCS Cold Leg Valve 2SI-V579SA-1 Limit Switch Cable	Valve Closed Indication Lost	Required
10445A-SB-1	10445A	Low Head SI to RCS Cold Leg Valve 2SI-V578SB-1 Power Feeder	Valve Inoperable	Valve Normally Open. Open is Required Position.
10445B-SB-2	10445B	Low Head SI to RCS Cold Leg Valve 2SI-V578SB-1 Limit Switch Cable	Lose Control and Indication	Valve Normally Open. Open is Required Position.
10445B-SB-2	10445G	Low Head SI to RCS Cold Leg Valve 2SI-V578SB-1 Limit Switch Cable	Valve Closed Indication Lost	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
10445B-SB-2	10445H	Low Head SI to RCS Cold Leg Valve 2SI-V578SB-1 Limit Switch Cable	Valve Closed Indication Lost	Required
10445B-SB-2	10457D	Low Head SI to RCS Cold Leg Valve 2SI-V578SB-1 Redundant Indication	Lose Redundant MCB Indication Lights	Required
10445B-SB-2	10457H	Low Head SI to RCS Cold Leg Valve 2SI-V578SB-1 Redundant Indication	Lose Redundant ACP Indication Lights	Required
11775A-SA-4	11775B	480V Emergency Bus 1A3-SA to MCC 1A32-SA Power Feeder	Lose MCC 1A32-SA	Required
11775B-SA-4	11775C	480V Emergency Bus 1A3-SA to MCC 1A32-SA Power Feeder	Lose MCC 1A32-SA	Required
11779B-SB-4	11779C	Feed to MCC-1B32SB	Lose Power to MCC-1B32SB	Required
12211A-SA-4	12211A	Emergency SW Pump 1A-SA Power Feeder	Pump Inoperable	Required
12212A-SB-4	12212A	Power Feed to ESWP 1B-SB	Lose ESWP 1B-SB	Required
12274E-SA-1				Cables not Identified.
12615A-SA-1-1/2	12615A	AH Coolers (SA) Chilled Water Supp. Shutoff Valve 3CX-V83SA-1 Solenoid Cable	Valve Opens	Valve Fails Safe.
12615A-SA-1-1/2	12615C	AH Coolers (SA) Chilled Water Supp. Shutoff Valve 3CX-V83SA-1 Limit Switch Cable	AEP Valve Indication Lost	Not required
12618E-SA-1-1/2	12618E	AH Coolers (SA) Chilled Water Valve 3CX-W5SA-1 Solenoid Cable	Valve Opens	Valve Fails Safe.
12645B-SB-1-1/2	12645B	AH Clrs (SB) Chilled Water Sup Valve FSE 3CX-V63-SB-1 Solenoid 120V AC	Valve Opens - Cannot Shut	Valve Fails Safe
12645B-SB-1-1/2	12645D	AH Clrs (SB) Chilled Water Sup Valve FSE 3CX-V63-SB-1 Limit Switch	Loss of Indication	Not Required
12649E-SB-1-1/2	12649E	AH Coolers (SB) Chilled Water Valve 3CX-W12SB-1 Solenoid Cable	Valve Opens	Valve Fails Safe.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12650A-SB-1-1/2	12650A	AH Coolers (SB) Chilled Water Valve 3CX-W28SB-1 Solenoid Cable	Valve Opens	Valve Fails Safe.
12766A-SB-1-1/2	12766A	Charging Pump SB Area Cooling Unit AH-9(1B-SB) Power Feeder	AH Unit Inoperable	Required
12767A-SA-1-1/2	12767A	Charging Pump SAB Area Cooling Unit AH-10 (1A-SA) Power Feeder	AH Unit Inoperable	Required
12768A-SB-1-1/2	12768A	Charging Pump SAB Area Cooling Unit AH-10 (1B-SB) Power Feeder	AH Unit Inoperable	Required
12774A-SA-1-1/2	12774A	Mechanical Penetration Area Cooling Unit AH-11 (1A-SA) Power Feeder	AH Unit Inoperable	Required
12775A-SB-1	12775A	Mech Penet Area Cooling Unit AH-11(1B-SB) Power Feeder	Stop Fan or Block Stopping of Fan	Required
13057A-SB-2	13057A	Evap Access Aisle Unit No. 1 & 4 Area Cooling Unit AH-29 (1X-SB) Power Feeder	AH Unit Inoperable	Required
15400A-58-4	11779A	Feed to MCC-1B32SB	Lose Power to MCC-1B32SB	Required
15401A-SA-4	11775A	480V Emergency Bus 1A3-SA to MCC 1A32-SA Power Feeder	Lose MCC 1A32-SA	Required
15417N-SA-3	12760A	CC Pumps Area Cooling Unit AH-6(1A-SA) Power Feeder	AH Unit Inoperable	Required
15417N-SA-3	12767A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15420M-SB-4	11770A	480V Emergency Bus 1B3-SB to MCC 1B22-SB Power Feeder	Lose MCC 1B22-SB	Required
15420N-SB-4	11770D	480V Emergency Bus 1B3-SB to MCC 1B22-SB Power Feeder	Lose MCC 1B22-SB	Required
15433W-SA-3	10271A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
15433Y-SA-3	10440A	High Head SI to RCS Cold Leg Valve 2SI-V502SA-1 Power Feeder	Valve Inoperable. Loss of Power will not open the valve.	Non-essential Valve Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15433Y-SA-3	10442A	Low Head SI to RCS Hot Leg Crossover Valve 2SI-V577SA-1 Power Feeder	Valve Inoperable. Loss of Power will not shut the valve.	Non-essential Valve Not Required
15433Y-SA-3	10444A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
15433Y-SA-3	10955A	RCP CCW Supply Isolation Valve 2CC-V169SA-1 Power Feeder	Valve Inoperable	Non-essential Valve Not Required
15433Z-SA-3	10440A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
15433Z-SA-3	10442A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15433Z-SA-3	10444A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
15433Z-SA-3	10955A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15434V-SB-2	13057A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
15434W-SB-3	10272A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
15434W-SB-3	13057A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
15434X-SB-3	10272A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
15434X-SB-3	13057A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
15436C-SB-4	11770A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
15436D-SB-4	11770D	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
15436G-SB-4	12766A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15436G-SB-4	12768A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
15436G-SB-4	12775A	Mechanical Penetration Area Cooling Unit AH-11 (1B-SB) Power Feeder	AH Unit Inoperable	Required
15436H-SB-4	10203A	RCP-C Seal Injection Isolation Valve 2CS-V524SB-1 Power Feeder	Valve Inoperable	Non-essential Valve. Not Required
15436H-SB-4	10265A	RC Pumps Seal Water Rtn Isolation Valve 2CS-V517SB-1 Power Feeder	Valve Inoperable	Non-essential Valve. Not Required
15436H-SB-4	10445A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
15436H-SB-4	10956A	RCP CCW Supply Isolation Valve 2CC-V170SB-1 Power Feeder	Valve Inoperable	Non-essential Valve. Not Required
15436H-SB-4	10958A	RCP Oil Heat Exchanger Containment Isolation Valve 2CC-V183SB-1 Power Feeder	Valve Inoperable	Non-essential Valve. Not Required
15449R-SA-3	12767A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
15449R-SA-3	12774A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
16000B-SB-4	12212Q	ESWP Motor Space Heater Control	Space Heater Inoperable	Not Required
16000B-SB-4	13290B	ESWIS Sup. Fan AH-86 Control	Stop Fan	Required
16000B-SB-4	13290G	Alarm	Lose Alarm Indication	Not Required
16000B-SB-4	13297B	ESWIS Exh Fan E-88 Control	Stop Fan	Required
16001B-SA-4	12211Q	Emergency SW Pump 1A-SA Motor Space Heater Relay	Lose Space Heater	Not Required
16001B-SA-4	12217C	Emergency SW Pump 1A-SA Inlet Valve to Auxiliary Reservoir 3SW-B15A-1 Control Cable	Lose Control and Indication Valve May Open or Close	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16001B-SA-4	13288B	Emergency SW Intake Struct Electrical Equipment Room Supply Fan AH-86 (1A-SA) Control Cable	Lose Control and Indication Stop Fan	Required
16001B-SA-4	13288G	Emergency SW Intake Struct Electrical Equipment Room Supply Fan AH-86 (1A-SA) Overload Alarm Intlk	Lose Alarm	Not Required
16001B-SA-4	13296B	Emergency SW Intake Struct Pump Room Exhaust Fan E-88 (1A-SA) Control Cable	Lose Control and Indication Stop Fan	Required
16001B-SA-4	13296G	Emergency SW Intake Struct Pump Room Exhaust Fan E-88 (1A-SA) Overload Alarm Intlk	Lose Alarm	Not Required
16032M-SB-3	12669F	Containment Fan Cooler AH-1 (1A-SB) Motor Space Heater 120VAC	Space Heater Inoperable	Not Required
16032M-SB-3	12669X	Containment Fan Cooler AH-1 (1A-SB) Lo Speed Alarm Cable	Affects Alarm Only	Not Required
16032N-SB-3	13082B	Containment Fan Cooler AH-1 (1A-SB) Overload Alarms	Lose Alarms	Not Required
16032P-SB-3	12669G	Containment Fan Cooler AH-1 (1A-SB) Motor Space Heater 120VAC	Space Heater Inoperable	Not Required
16032P-SB-3	12669J	Containment Fan Cooler AH-1 (1A-SB) Control Cable	Lose Control and Indication Fan will not run at Either Hi or Lo Speed	Required
16032P-SB-3	12669K	Containment Fan Cooler AH-1 (1A-SB) Lo Speed Indication	Lose Lo Speed Indication at MCB and ACP	Not Required
16032P-SB-3	12670N	Containment Fan Cooler AH-1 Shaft and Nozzle Dampers Intlk Fan Cooler AH-1 (1B-SB) Running	Dampers CV-D1SB-1 and CV-D2SB-1 May go to Wrong Position	Required
16032P-SB-3	12671G	Containment Fan Cooler AH-1 (1B-SB) Motor Space Heater 120VAC	Space Heater Inoperable	Not Required
16032P-SB-3	13082C	Containment Fan Cooler AH-1 (1B-SB) Overload Alarms	Lose Alarms	Not Required
16032Q-SB-3	12669Y	Containment Fan Cooler AH-1 (1B-SB) Lo Speed Alarm Cable	Affects Alarm Only	Not Required
16032Q-SB-3	12670H	Containment Fan Cooler AH-1 Shaft and Nozzle Dampers Intlk Fan AH-1 (1A-SB) Running	Dampers CV-D1SB-1 and CV-D2SB-1. May go to Wrong Position	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16046T-SB-3	12669G	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046T-SB-3	12671F	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16046T-SB-3	12671G	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046T-SB-3	13082C	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046U-SB-3	12669J	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046U-SB-3	12669K	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046U-SB-3	12669Y	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046U-SB-3	12670H	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046U-SB-3	12670N	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046U-SB-3	12671K	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16046V-SB-3	12669F	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046V-SB-3	12669X	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046V-SB-3	12671J	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16046W-SB-3	13082B	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046X-SB-3	13082B	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16046Y-SB-3	12669F	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046Y-SB-3	12669X	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046Z-SB-3	12669G	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046Z-SB-3	12669J	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046Z-SB-3	12669K	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046Z-SB-3	12671G	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16046Z-SB-3	12671K	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16046Z-SB-3	13082C	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16047B-SA-4	12615A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16047B-SA-4	12618E	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16047C-SA-4	10442B	Low Head SI to RCS Hot Leg Crossover Valve 2SI-V577SA-1 Limit Switch Cable	Lose Control and Indication	Non-essential Valve
16047C-SA-4	10442G	Low Head SI to RCS Hot Leg Crossover Valve 2SI-V577SA-1 Limit Switch Cable	Valve Closed Indication Lost	Non-essential Valve Not Required
16047C-SA-4	10442H	Low Head SI to RCS Hot Leg Crossover Valve 2SI-V577SA-1 Limit Switch Cable	Valve Closed Alarm Lost	Non-essential Valve Not Required
16047C-SA-4	10444B	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
16047C-SA-4	10444G	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16047C-SA-4	10444H	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
16047C-SA-4	10955B	RCP CCW Supply Isolation Valve 2CC-V169SA-1 Limit Switch Cable	Lose Control and Indication	Non-essential Valve
16047E-SA-3	10271B	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
16048A-SB-3	12669Y	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16048A-SB-3	12670M	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
16048C-SB-4	10272B	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
16048D-SB-4	10272B	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
16048D-SB-4	12647A	AH Coolers (SB) Chilled Water Supply Shutoff Valve 3CX-V247SB-1 Solenoid Cable	Valve Opens	Valve Fails Safe.
16048L-SB-3	12645B	AH Coolers (SB) Chilled Water Supply Shutoff Valve 3CX-V63SB-1 Solenoid Cable	Valve Opens	Valve Fails Safe.
16048L-SB-3	12645D	AH Coolers (SB) Chilled Water Supply Shutoff Valve 3CX-V63SB-1 Limit Switch Cable	Lose Indicating Lights at AEP	Not Required
16048M-SB-3	12650A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
16048N-SB-3	12645B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16048N-SB-3	12645D	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16048N-SB-3	12649E	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16048N-SB-3	12650A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16048U-SB-4	10445B	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
16048U-SB-4	10445G	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
16048U-SB-4	10445H	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16048U-SB-4	10457D	Low Head SI to RCS Cold Leg Valve 2SI-V578SB-1 Redundant Indication	Lose Redundant MCB Indication Lights	Required
16048U-SB-4	10457H	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16048U-SB-4	10956B	RCP CCW Supply Isolation Valve 2CC-V170SB-1 Limit Switch Cable	Lose Control and Indication	Non-essential Valve
16048U-SB-4	10956F	RCP CCW Supply Isolation Valve 2CC-V170SB-1 Limit Switch Cable	Lose Valve Closed Monitor Lights	Non-essential Valve. Not Required
16048U-SB-4	10958B	RCP Oil Heat Exchanger Valve 2CC-V183SB-1 Limit Switch Cable	Lose Control and Indication	Non-essential Valve. Not Required
16048U-SB-4	10958F	RCP Oil Heat Exchanger Valve 2CC-V183SB-1 Limit Switch Cable	Lose Valve Closed Monitor Lights	Non-essential Valve. Not Required
16050X-SB-2	12647A	Air Coolers (SB) Chilled Water Supply Shutoff Valve 3CX-V247SB-1 Solenoid Cable	Valve Opens	Valve Fails Safe.
16074X-SB-2	12647A	AH Clrs (SB) Chilled Water Sup Valve FSE 3CX-V247-SB-1 Solenoid 120V AC	Valve Opens - Cannot Shut	Valve Fails Safe
16074Y-SB-3	12647A	AH Clrs (SB) Chilled Water Sup Valve FSE 3CX-V247-SB-1 Solenoid 120V AC	Valve Opens - Cannot Shut	Valve Fails Safe
17018A-SR4-3	10991E	Steam Flow Transmitters Loops 1,2 and 3 and Reactor Coolant Flow to PIC	Lose Inputs to PIC and MCB Indicators for FT-0475, FT-0485, FT-0495 & PT0403	Required
17022H-SR4-3	10991E	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
17022L-SR4-3	10991E	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
17022P-SR4-3	10991E	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10
17048T-SB-1	12775E	Mech Penet Area TC TE - TE-65 32B-SB Input to PIC	Erroneous Input to PIC - May Start AH-11 in Auto	TE Control By-passed on Loop AH Unit Oper. Continuously. Not Required
6032Q-SB-3	12671F	Containment Fan Cooler AH-1 (1B-SB) Motor Space Heater 120VAC	Space Heater Inoperable	Not Required
6032Q-SB-3	12671J	Containment Fan Cooler AH-1 (1B-SB) Control Cable	Lose Control and Indication, Fan will not run at either Hi or Lo Speed	Required
6032Q-SB-3	12671K	Containment Fan Cooler AH-1 (1B-SB) Lo Speed Indication	Lose Lo Speed Indication, At MCB and ACP	Not Required
C1301SA	10271B	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
C1301SA	10323B	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
C1301SA	12615A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1301SA	12615C	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1301SA	12618E	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1802SB	10272B	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
C1802SB	10324B	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
C1802SB	12645B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1802SB	12645D	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1802SB	12647A	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1802SB	12649E	AH Coolers(SB) Chilled Water Control Valve 3CX-W12SB-1 Solenoid Cable	Valve Opens	Valve Fails Safe
C1802SB	12650A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
L1301SA	12774E	Mechanical Penetration Area Cooling Unit AH-11 (1A-SA) Temp Input to PIC	Lose Input to PIC, Lose Alarm, Lose Auto Start	Required
L1802SB	12775E	Mechanical Penetration Area Cooling Unit AH-11 (1B-SB) Temperature Input to PIC	Lose Input to PIC, Lose Alarm Lose Auto Start	Required
P1301SA				No SSA Cables
P1306SA	10271A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
P1306SA	10323A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
P1306SA	12760A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
P1306SA	12774A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
P1802SB				No Cables Identified
P1806SB	10272A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
P1806SB	10324A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
P1806SB	13057A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
P1813SB	11770A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
P1813SB	11770D	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
10223A-SA-4	10223A	See Identical Cable - Sheet 8	See Identical Cable - Sheet 8	See Identical Cable - Sheet 8
10224A-SB-4	10224A	Charging/SI Pump 1C-SAB Power Feeder	Pump Inoperable	Required
10326G-SA-1	10326G	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
10327G-SB-1	10327G	RHRS Inl Isolation Valve RH-V502SB-1 Intlk from Valve 2RH-V507SA-1	May prevent opening of valve	Required
10329A-SA-1-1/2	10329A	RHRS to CVCS Charging Pump Suction Valve 2RH-V507SA1 Power Feeder	Valve Inoperable	Valve Normally Closed Not Required
10329B-SA-2	10325G	RHRS Inlet Isolation Valve 1RH-V503A-1 Intlk in Opening Circuit	Valve cannot be opened	Required
10329B-SA-2	10329B	RHRS to CVCS Charging Pump Suction Valve 2RH-V507SA1 Limit Switch Cable	Lose control and indication	Not Required
10330A-SB-1	10330A	RHRS to CVCS Charging Pump Suction Valve 2RH-V506 SB Motor Power Feeder	Valve inoperable	Not Required
10330B-SB-1-1/2	10328G	RHRS Inlet Isolation Valve IRH-V506SB-1 Intlk	Prevents opening of valve	Required
10941A-SA-3	10941A	Component Cooling Pump 1A-SA Power Feeder	Stop pump - may trip bus differential 6.9 kV bus 1A-SA	Required.
10942A-SB-3	10942A	CC Pump 1B-SB Motor Power Feeder	Will lose motor, may lose bus 6.9kV 1B-SB	Required
10943A-SB-4	10943A	CC Pump 1C-5AB Motor Power Feeder	Lose Motor - May lose 6.9kV Emergency Bus 1B-SB on Bus Differential	Required
10944A-SB-4	10944A	CC Pump 1C-5AB Motor Power Feeder	Lose Motor - May lose 6.9kV Emergency Bus 1B-SB on Bus Differential	Required
10948A-SA-1-1/2	10948A	CCS Nonessential Return Isolation Valve 3CC-B5SA-1 Power Feeder	Valve Inoperable	Valve Normally Open. Not Required
10948B-SA-1-1/2	10948B	CCS Nonessential Return Isolation Valve 3CC-B5SA-1 Limit Switch Cable	Lose control and indication	Valve Normally Open. Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
10948B-SA-1-1/2	10948F	CCS Nonessential Return Isolation Valve 3CC-B5SA-1 Limit Switch Cable	Lose monitor lights	Not Required
10949A-SB-1	10949A	CCS non Essential Return ISOL Valve 3CC-B6SB-1 Power Feeder	Valve Inoperable	Valve Normally Open. Not Required to Close.
10949B-SB-1	10949B	CCS non Essential Return ISOL Valve 3CC-B6SB-1 Limit Switch Cable	Lose Control & Indication	Valve Normally Open. Not Required to Close.
10949B-SB-1	10949E	CCS non Essential Return ISOL Valve 3CC-B6SB-1 Limit Switch Cable	Lose Monitor Light	Not Required
10950A-SA-1	10950A	CCS Nonessential Supply Isolation Valve 3CC-B19SA-1 Power Feeder	Valve Inoperable	Valve Normally Open. Not Required to close.
10950B-SA-1-1/2	10950B	CCS Nonessential Supply Isolation Valve 3CC-B19SA-1 Limit Switch Cable	Lose control and indication	Valve Normally Open. Not Required to close.
10951A-SB-1	10951A	CCS Nonessential Supply Isol Valve 3CC-B20SB-1 Power Feeder	Valve Inoperable	Valve Normally Open. Not required to close
10951B-SB-1-1/2	10951B	CCS Nonessential Supply Isol Valve 3CC-B20SB-1 Limit Switch Cable	Lose control and indication	Valve Normally Open. Not required to close
10951B-SB-1-1/2	10951E	CCS Nonessential Supply Isol Valve 3CC-B20SB-1 Limit Switch Cable	Lose monitor lights	Not Required
10951B-SB-1-1/2	10951F	CCS Nonessential Supply Isol Valve 3CC-B20SB-1 Limit Switch Cable	Lose alarm	Not Required
10952A-SA-1-1/2	10952A	RHRS Cooling Water Isolation Valve 3CC-V165SA-1 Power Feeder	Valve Inoperable	Valve Normally Closed. Required to open.
10952B-SA-1-1/2	10952B	RHRS Cooling Water Isolation Valve 3CC-V165SA-1 Limit Switch Cable	Lose control and indication	Valve Normally Closed. Required to open.
10952B-SA-1-1/2	10952F	RHRS Cooling Water Isolation Valve 3CC-V165SA-1 Limit Switch Cable	Lose monitor lights	Valve Normally Closed. Required to open.
11942B-SB-1 1/2				No Cable Identified
11942B-SB-1-1/2				No Cable Identified

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
11976A-SB-2	11976A	Auxiliary FW Turbine 1X-NNS Stop Valve Motor Arm Power Feeder	Valve Motor Inoperable	Required
11976A-SB-2	11976C	Auxiliary FW Turbine 1X-NNS Stop Valve Limit Switch Control	Valve Control and Indication Loss	Required
11976A-SB-2	11976N	Auxiliary FW Turbine 1X-NNS Stop Valve Motor Field Power Feeder	Valve Motor Inoperable	Required
11976B-SB-4	11976D	Auxiliary FW Turbine 1X-NNS Stop Valve SB 125V dc Power Feeder	Valve Inoperable, No Indication	Required
11976B-SB-4	11976E	Auxiliary FW Turbine 1X-NNS Stop Valve SB Control and Indication	Lose Valve Control and Indication with Possible False Operation	Required
11976B-SB-4	11976F	Auxiliary FW Turbine 1X-NNS Stop Valve SB Indication	Lose Valve Position Indication May Possibly Lose Control	Required
11976B-SB-4	11976K	Auxiliary FW Turbine 1X-NNS Stop Valve SB Control	Lose Automatic Control	Required
11976L-SB2	11976L	Auxiliary FW Turbine 1X-NNS Stop Valve SB-Overspeed Limit Switch Cable	Prevent Opening of Stop Valve	Required
11976L-SB2	11978G	Aux FW Turbine 1X-NNS Stop Valve SB-Not Open Lmt Swtch in Governor Ctrllr & Ramp Conv & Alarm	Will Affect Operation of Governor Indication and Alarm	Required
11976M-SB-2	11976M	Auxiliary FW Turbine 1X-NNS Stop Valve SB Mech Overspeed Trip Alarm and Indication	Lose of Alarm and Indication	Required
11976M-SB-2	11977C	Auxiliary FW Turbine 1X-NNS Stop Valve Solenoid Trip Coil and Limit Switch	Lose Ability to trip Stop Valve. Lose Indication	Required
11977-B-SB-1-1/2				No Cable Identified
11978B-SB-2	11978B	Auxiliary FW Turbine 1X-NNS Tachomemoter Leads	Lose Speed Indication at MCB and a FWT Contr. Panel	Not Required
11978B-SB-2	11978C	Auxiliary FW Turbine 1X-NNS Ramp Gen Signal from PIC	Lose Signal	Not Required
11978D-SB-2	11978D	Auxiliary FW Turbine 1X-NNS Overspeed Trip Mon Pickup	Lose Overspeed Input to OS Monitor & Indication at a FWT Cont Pnl and MCB	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
11978D-SB-2	11978E	Auxiliary FW Turbine 1X-NNS Governor Monitor Pickup	Lose Governor Input to Governor Controller	Required
11978D-SB-2	11978F	Auxiliary FW Turbine 1X-NNS Hydraulic Actuator Signal	Lose Signal from Governor to Hydraulic Actuator "EGR"	Required
12069C-SB-1	12069C	Condensate Pump 1A Disch Temp TE-2330A TC Leads to Alarm & Trip Relay	Lose Alarm and Lose HI Disch Temp Pump Trip	Condensate Pump Not Required for Safe Shutdown
12233A-SA-4	12233A	SW Booster Pump 1A-SA Power Feeder	Pump Inoperable	Required.
12235A-SA-2	12235A	SW Booster Pump A Transmitters Discharge Press. PT-9112A-SA & Dschrge Flow FT-9112A-SA PIC Inputs	Lose PIC inputs, MCB indicators and alarm	Not required for system operation.
12235A-SA-2	12267E	Service Water Flow Through CCW Heat Exchanger Transmitter FT-7050A-SA to PIC	Lose PIC input, indication lights on MCB and local indicator.	Not required for system operation.
12235A-SA-2	12269A	Srvce Water Flow from HVAC Chiller Through Heat Exchanger, Transmitter FT-9205SA PIC Input	Lose PIC input, MCB indicating lights, computer and local indicator	Not required for system operation.
12257A-SA-1	12257A	Header "A" SW Backup AFW Pump 1X-SAB Supply Valve 3SW-B70SA-1 Power Feeder	Valve Inoperable	Valve required to open if hot standby greater than 16 hours.
12257B-SA-1	12257B	Header "A" SW Backup AFW Pump 1X-SAB Supply Valve 3SW-B70SA-1 Limit Switch Cable	Lose control and indication	Valve required to open if hot standby greater than 16 hours.
12258A-SA-1	12258A	Header "A" SW Backup to AFW Pump 1X-SAB Supply Valve 3SW-B71SA-1 Power Feeder	Valve Inoperable	Valve Required to Open if Hot Standby greater than 16 Hrs
12258B-SA-1	12258B	Header "A" SW Backup to AFW Pump 1X-SAB Supply Valve 3SW-B71SA-1 Limit Switch Cable	Lose Control & Indication	Valve Required to Open if Hot Standby greater than 16 Hrs
12259-B-SB-1	12259B	Header "B" SW Backup to AFWP 1X-SAB Supp Valve 3SW-B73SB-1 Limit Switch Control	Lose Valve Control and Indication	Valve Normally Closed. Not Required. Valve can be opened manually.
12259A-SB-1	12259A	Header "B" SW Backup to AFWP 1X-SAB Supp Valve 3SW-B73SB-1 Motor Power Feeder	Valve Inoperable	Valve Normally Closed. Not Required. Valve can be opened manually.
12260A-SB-1	12260A	Header "B" SW Backup to AFWP 1-XSAB Supp Valve 3SW-B72SB-1 Valve Motor Power Feeder	Valve inoperable	Not Required. Valve can be opened manually
12260B-SB-1	12260B	Header "B" SW Backup to AFWP 1-XSAB Supp Valve 3SW-B72SB-1 Limit Switch Cable	Lose control and indication	Not Required. Valve can be opened manually

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12261A-SA-1-1/2	12261A	SW Backup to AFW Pump 1A-SA Supply Valve 3SW-B75SA-1 Power Feeder	Valve Inoperable	Valve required to open if hot standby greater than 16 hours.
12261B-SA-1	12261B	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15
12262A-SA-1-1/2	12262A	SW Backup to AFW Pump 1A-SA Supply Valve 3SW-B74SA-1 Power Feeder	Valve Inoperable	Valve required to open if hot standby greater than 16 hours.
12262B-SA-1	12262B	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15
12263A-SB-1-1/2	12263A	SW Backup to AFWP 1B-SB Supp Valve 3SW-B77SB-1 Valve Motor Power Feeder	Valve Cannot be Operated	Valve Normally Closed. Required to Open if Hot Standby 16 Hrs
12263B-SA-1	12263B	SW Backup to AFWP 1B-SB Supp Valve 3SW-B77SB-1 Limit Switch Cable	Lose control and indication	Valve Normlly Closed. Required to open if hot standby greater than 16 hours.
12264A-SB-1-1/2	12264A	SW Backup to AFWP 1B-SB Supp Valve 3SW-B76SB-1 Valve Motor Power Feeder	Valve Cannot be Operated	Valve Normally Closed. Required to Open if Hot Standby 16 Hrs
12264B-SB-1	12264B	SW Backup to AFWP 1B-SB Supp Valve 3SW-B76SB-1 Limit Switch Cable	Lose Control and Indication	Required
12269C-SB-1	12269C	SW from HVAC Chiller WC2 Flow FT9205B (SB) to PIC	Lose indication, computer and other PIC functions	Not Required
12608C-SA-1	12608C	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21
12610C-SA-1	12610C	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21
12611C-SB-1	12611C	Chiller WC-2 (1A-SA) AH Units (NNS) Chilled Water ISOL Valve 3CX-B3SB-1 Solenoid & Lmt Switch Cable	Valve Shuts, Lose MCB Control & Indication	Not Required
12618B-SA-1	12618B	AH-6 (1A-SA) Cooling Unit Chilled Water Control Valve 3CX-W7SA-1 Solenoid Cable	Valve opens	Valve fails safe.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12618D-SA-1 1/2	12618D	Cooling Unit AH-9 (1A-SA) Chilled Water Control Valve 3CX-W8SA-1 Solenoid Cable	Valve Opens	Valve Fails Safe
1261BC-SB-1 1/2	12618C	AH-7 (IA-SA) Cooling Unit Chilled Water Control Valve 3CX-W9SA-1 Solenoid Cable	Valve Opens	Valve Fails Safe
12638C-SB-1	12638C	Chiller WC-2(1B-SB) AH Units (NNS) Chilled Water Isol Valve 3CH-B-1SB-1 Solenoid & Lmt Switch Cable	Valve Shuts, Lose MCB	Not Required Control & Indication
12639C-SA-1	12639C	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21
12640C-SB-1	12640C	Chiller WC-2(IB-SB) AH Units (NNS) Chilled Water ISOL Valve 3CX-BISB-1 Solenoid & Lmt Switch Cable	Valve Shuts, Lose MCB Control & Indication	Not Required
12641C-SA-1	12641C	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21
12649B-SB-1-1/2	12649B	Cooling Unit AH-6 (1B-SB) Chilled Water Control Valve 3CX-W10SB-1 Solenoid Cable	Valve opens	Valve fails safe.
12649C-SB-1 1/2	12649C	AH-7 (IB-SB) Cooling Unit Chilled Water Control Valve 3CX-W14SB-1 Solenoid Cable	Valve Opens	Valve Fails Safe
12760A-SA-2	12760A	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
12760E-SA-1	12760E	CC Pumps Area Cooling Unit AH-6 (1A-SA) Temperature TE-6507A-SA Input to PIC	Lose PIC input, auto start on Hi-Temp and alarm	TE control of fans bypassed on LOOP. Fan runs constantly.
12761A-SB-2	12761A	CC Pump Area Cooling Unit AH-6 (1B-SB) Motor Power Feeder	Stop AH Unit	Required
12761E-SB-1	12761E	CC Pump Area Cooling Unit AH-6 (1B-SB) Temp - TE-6507-SB to PIC TC-leads	Lose HT Temp Alarm and prevent auto-start on Hi-Temp	Not Required. TE Control bypassed on LOOP
12762A-SA-2	12762A	Component Cooling Pumps Area Cooling Unit AH-7 (1A-SA) Power Feeder	AH Unit Inoperable	Required
12762E-SA-1	12762E	Component Cooling Pumps Area Cooling Unit AH-7 (1A-SA) Power Feeder Temp TE-6512 AI-SA to PIC	Lose PIC Input, Alarm and Hi-Temp Auto Start	TE Control By-Passed on LOOP Fan Runs Constantly.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12763A-SB-3	12763A	CC Pumps Area Cooling Unit AH-7 (1B-SB) Motor Power Feeder	AH Unit Inoperable	Required
12763E-SB-1	12763E	CC Pumps Area Cooling Unit AH-7 (1B-SB) TE-6512B-SB to PIC	Block auto start on Hi-Temp, alarms.	TE control of fans bypassed on LOOP. Fan runs constantly.
12765A-SA-1 1/2	12765A	Charging Pump "SA" Area Cooling Unit AH-9 (1A-SA) Power Feeder	AH Unit Inoperable	Required
12765E-SA-1	12765E	Charging Pumps "SA" Area Cooling Unit AH-9 (1A-SA) Temperature TE-6522A-SA Input to PIC	Lose auto start on Hi-Temp and alarm	TE control of fans bypassed on LOOP. Fan runs constantly.
12766E-SB-1	12766E	Charging Pump SB Area Cooling Unit AH-9 (1B-SB) Temp TE-6522B-SB to PIC	Lose PIC Input, Alarm and HI-Temp Auto Start	TE Control By-Passed on LOOP Fan Runs Constantly
15000A-SB-3	10222A	Charging/SI Pump 1B-SB Motor Power Feeder	Lose motor - may lose bus 6.9kV 1B-SB	Required
15000E-SB-3	11922A	Auxiliary FW Pump 1B-SB Motor Power Feeder	Stop Pump-If Breaker does not Trip Pump will still show as Running	Required
15000U-SB-3	10222A	Charging/SI Pump 1B-SB Power Feeder	Pump Inoperable	Required
15002A-SB-4	10944A	CCW Pump 1C-SAB Motor Power Feeder	Pump Inoperable	Required
15002A-SB-4	10944A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
15002B-SB-4	10224A	Charging/SI Pump 1C-SAB Power Feeder	Pump Inoperable	Required
15002F-SB-4	10944A	CCW Pump 1C-SAB Motor Power Feeder	Lose Motor. May lose 6.9KV Emergency bus 1B-SB on Bus Differential	Required
15002G-SB-4	10224A	Charging/SI Pump 1C-SAB Motor Power Feeder	Motor wont run - may trip bus on bus differential	Required
15003Q-SB-4	10943A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
15003R-SA-4	10223A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15005K-SA-3	11921A	Auxiliary Feedwater Pump 1A-SA Power Feeder	Stop pump - bus differential may trip 6.9 KV bus 1A-SA	Required.
15005L-SA-3	10221A	Charging/SI Pump 1A-SA Power Feeder	Stop pump - bus differential may trip 6.9 kV bus 1A-SA	Required.
15007E-SA-3	10221A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15007F-SA-4	10223A	Charging SI Pump IC-SAB Power Feeder	Stop Pump-Bus Diff May Trip 6.9K Bus 1A-SA	Required
15013B-SA-3	11921A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15402X-SB-2	11755A	480V Emergency Bus 1B3-SB to 480V Emergency MCC-1B35-SB Power Feeder	Lose MCC-1B35-SB	Required
15408Z-SB-4	11755B	480V Emergency Bus 1B3-SB to 480V Emergency MCC-1B35-SB Power Feeder	Lose MCC-1B35-SB	Required
15411A-SA-2	10293A	Charging SI Pump Suction Header ISOL VA 2CS-V5875SA-1 Power Feeder	Valve Inoperable	Valve Normally Open. Not Required to close.
15411M-SA-2	10297A	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
15411N-SA-2	10299A	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
15411P-SA-2	10295A	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
15412J-SB-2	10298A	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10
15412K-SB-2	10273A	Charging SI Pump A Miniflow ISOL Valve 2CS-V600 SB-1 Power Feeder	Valve Inoperable	Valve Normally Open. Not Required to close.
15412L-SB-2	10294A	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10
15412M-SB-2	10275A	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15412N-SB-2	10300A	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
15412P-SB-2	10296A	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
15412Q-SB-2	10274A	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
15412R-SB-2	10953A	RHRS CW Isolation Valve 3CC-V167SB-1 Motor Power Feeder	Valve inoperable	Valve Normally Closed. Required.
15412S-SB-2	10268A	Boric Acid Tank to Charging Pump Valve 2CS-V586SB-1 Power Feeder	Valve Inoperable	Valve Normally Closed. Required
15417N-SA-3	12760A	CC Pumps Area Cooling Unit AH-6 (1A-SA) Power Feeder	AH Unit Inoperable	Required
15417N-SA-3	12767A	Charging Pump SAB Area Cooling Unit AH Unit-10 (1A-SA) Power Feeder	AH Unit Inoperable	Required
15432P-SB-3	10330A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
15432Q-SB-3	10330A	RHRS to CVCS Charging Pump Suction Valve 2RH-V506SB-1 Power Feeder	Valve inoperable	Not Required
15433D-SA-3	10293A	Charging/SI Pump Suction Header/Isol Valve 2CS-V587SA-1 Power Feeder	Valve Inoperable	Valve Normally Open. Not required to close.
15433D-SA-3	10297A	Charging/SI Pump Discharge Header/Isol Valve 2CS-V630SA-1 Power Feeder	Valve Inoperable	Valve Normally Open. Not required to close.
15433D-SA-3	12765A	Charging Pumps "SA" Area Cooling Unit AH-9 (1A-SA) Power Feeder	AH Unit Inoperable	Required.
15433E-SA-3	10295A	Charging SI Pump Suction Header ISOL VA 2CS-V589SA-1 Power Feeder	Valve Inoperable	Valve N.O. Not Required to Close
15433E-SA-3	10299A	Charging SI Pump Discharge Header ISOL VA 2CS-V605SA-1 Power Feeder	Valve Inoperable	Valve N.O. Not Required to Close
15433F-SA-2	10329A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15433G-SA-3	12261A	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
15433G-SA-3	12262A	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
15433H-SA-3	12261A	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
15433H-SA-3	12262A	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
15434B-SB-3	10273A	Charging/SI Pump A Isolation Valve 2CS-V600SB-1 Motor Power Feeder	Valve Inoperable	Valve Normally Open. Not Required
15434B-SB-3	10275A	Charging/SI Pump A Isolation Valve 2CS-V601SB-1 Motor Power Feeder	Valve Inoperable	Valve Normally Open. Not Required
15434B-SB-3	10294A	Charging/SI Pump Suction Header Isolation Valve 2CS-V588SB-1 Power Feeder	Valve Inoperable	Valve Normally Open. Not Required
15434B-SB-3	10298A	Charging/SI Pump Discharge Header Isolation Valve 2CS-V604SB-1 Power Feeder	Valve Inoperable	Valve Normally Open. Not Required
15434C-SB-3	10273A	Charging/SI Pump A Isolation Valve 2CS-V600SB-1 Power Feeder	Valves Inoperable	Valves Normally Open. Not Required
15434D-SB-3	10275A	Charging/SI Pump C Isolation Valve 2CS-V601SB-1 Power Feeder	Valves Inoperable	Valves Normally Open. Not Required
15434D-SB-3	10294A	Charging/SI Pump Suction Header Valve 2CS-V588SB-1 Power Feeder	Valves Inoperable	Valves Normally Open. Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15434D-SB-3	10298A	Charging/SI Pump Discharge Header Valve 2CS-V604SB-1 Power Feeder	Valves Inoperable	Valves Normally Open. Not Required
15434E-SB-3	10274A	Charging/SI Pump Isolation Valve 2CS-V602SB-1 Motor Power Feeder	Valve inoperable	Valve Normally Open. Not Required
15434E-SB-3	10296A	Charging/SI Pump Suction Header Isolation Valve 2CS-V590SB-1 Motor Power Feeder	Valve inoperable	Valve Normally Open. Not Required
15434E-SB-3	10300A	Charging/SI Pump Discharge Header Isolation Valve 2CS-V606SB-1 Motor Power Feeder	Valve Inoperable	Valve Normally Open. Not Required
15434F-SB-3	10274A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15434F-SB-3	10296A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15434F-SB-3	10300A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15434G-SB-3	10274A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15434G-SB-3	10296A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15434G-SB-3	10300A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15434H-SB-2	12263A	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
15434H-SB-2	12264A	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
15434J-SB-3	10268A	Boric Acid Tank to Charging Pump Valve 2CS-V586SB-1 Motor Power Feeder	Valve inoperable	Valve Normally Closed. Required to open.
15434J-SB-3	10953A	See Identical Cable - Sheet 32	See Identical Cable - Sheet 32	See Identical Cable - Sheet 32
15434P-SB-4	11770A	480V Emergency Bus 1B3-SB Power Feeder to 480V Emergency MCC 1B22-SB	No Power to MCC	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15434Q-SB-4	11770A	480V Emergency Bus 1B3-SB to Emergency MCC 1B22-SB Power Feeder	Lose MCC-1B22-SB	Required
15438V-SB-4	11770D	480V Emergency Bus 1B3-SB Power Feeder to 480V Emergency MCC 1B22-SB	No Power to MCC	Required
15438W-SB-4	11770D	480V Emergency Bus 1B3-SB to Emergency MCC 1B22-SB Power Feeder	Lose MCC-1B22-SB	Required
16028J-SB-2	10298B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
16028K-SB-2	10273B	Charging SI Pump A Miniflow ISOL Valve 2CS-V600SB-1 Limit Switch Cable	Lose Control & Indication	Not Required
16028L-SB-2	10294B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
16028M-SB-2	10275B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
16028S-SB-2	10300B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
16028T-SB-2	10298B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
16028U-SB-2	10274B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
16030D-SB-2	10953B	RHRS CW Isolation Valve 3CC-V167SB-1 Limit Switch Cable	Lose control and indication	Valve Normally closed. Required
16030D-SB-2	10953E	RHRS CW Isolation Valve 3CC-V167SB-1 Limit Switch Cable	Lose monitor lights	Not Required
16030D-SB-2	10953F	RHRS CW Isolation Valve 3CC-V167SB-1 Limit Switch Cable	Lose Alarm	Not Required
16030E-SB-2	10268B	Boric Acid Tank to Charging Pump Valve 2CS-V586SB-1, Limit Switch Cable	Lose control and indication	Valve Normally Closed. Required
16031M-SA-2	10293B	Charging SI Pump Suction Header ISOL VA 2CS-V587SA Limit Switch Cable	Lose Control & Indication	Valve Normally Open. Not Required to close.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16031N-SA-2	10297B	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
16031P-SA-2	10299B	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
16031Q-SA-2	10295B	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
16031Q-SA-2	10295E	Charging/SI Pump Suction Header ISOL VA 2CS-V589 SA-1 Limit Switch Cable	Lose Monitor Light	Not Required
16031Q-SA-2	10295F	Charging/SI Pump Suction Header ISOL VA 2CS-V589 SA-1 Limit Switch Cable	Lose Alarm	Not Required
16031X-SA-2				Cables not identified.
16035Q-SA-4	10326G	RHRS Inlet Isolation Valve 1RH-V501SA-1 Opening, Interlock	Valve cannot open	Required.
16035Q-SA-4	12286C	SW Return Header A Shutoff Valve to Auxiliary Reservoir 3SW-B15SA-1 Control	Lose control and indication Valve may open or shut	Required.
16035Q-SA-4	12673J	Containment Fan Cooler AH-2 (1A-SA) Start-up Cable	Fan Will Not Start	Required
16035Q-SA-4	12673K	Containment Fan Cooler AH-2 (1A-SA) Lo-speed Indication	Lose MCB and ACP Lo-Speed indication	Not Required.
16035R-SA-4	10221B	Charging SI Pump 1A-SA Motor Space Heater	Space Heater Inoperable	Not Required.
16035R-SA-4	10223B	Charging SI Pump 1C-SAB Motor Space Heater	Space Heater Inoperable	Not Required.
16035R-SA-4	10941B	Component Cooling Pump 1A-SA Motor Space Heater	Space Heater Inoperable	Not Required.
16035R-SA-4	12233A	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
16035Y-SA-4	10325G	RHRS Inlet Isolation Valve 1RH-V503SA-1 Opening Interlock	Valve cannot open	Required.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16035Y-SA-4	12673F	Containment Fan Cooler AH-2 (1A-SA) Motor Space Heater	Space Heater Inoperable	Not Required
16035Y-SA-4	12673G	Containment Fan Cooler AH-2 (1A-SA) Motor Space Heater	Space Heater Inoperable	Not Required.
16035Y-SA-4	12675F	Containment Fan Cooler AH-2 (1B-SA) Motor Space Heater	Space Heater Inoperable	Not Required.
16035Y-SA-4	12675G	Containment Fan Cooler AH-2 (1B-SA) Motor Space Heater	Space Heater Inoperable	Not Required.
16035Y-SA-4	12675J	Containment Fan Cooler AH-2 (1B-SA) Control	Lose control and indication, stop fan	Required.
16035Y-SA-4	12675K	Containment Fan Cooler AH-2 (1B-SA) Lo-Speed Indication	Lose MCB and ACP Lo-Speed indication	Not Required
16040X-SB-3	10330B	RHRS to CVCS Charging Pump Suction Valve 2RH-V506SB Limit Switch Cable	Lose control and indication	Not Required
16040Y-SB-3	10328G	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
16040Y-SB-3	10330B	RHRS to CVCS Charging Pump Suction Valve 2RH-V506SB-1 Limit Switch Cable	Lose control and indication	Not Required
16041F-SA-4	10293B	Charging/SI Pump Suction Header Isolation Valve 2CS-V587SA-1 Limit Switch Cable	Lose control and indication	Valve Normally Open. Not required to close.
16041F-SA-4	10297B	Charging/SI Pump Discharge Header Isolation Valve 2CS-V603SA-1 Limit Switch Cable	Lose control and indication	Valve Normally Open. Not required to close.
16041F-SA-4	12618D	AH-9 (1A-SA) Cooling Unit Chilled Water Control Valve 3CX-W8SA-1 Solenoid Cable	Valve opens	Valve fails safe.
16041G-SA-3	10295B	Charging SI Pump Suction Header ISOL VA 2CS-V589SA-1 Limit Switch Cable	Lose Control & Indication	Valve N.O. Not Required to Close
16041G-SA-3	10299B	Charging SI Pump Discharge Header ISOL VA 2CS-V605SA-1 Limit Switch Cable	Lose Control & Indication	Valve N.O. Not Required to Close
16041K-SA-3	10325G	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16041K-SA-3	10329B	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
16041L-SA-2				Cables not identified.
16041M-SA-3	11921B	Auxiliary Feed Water Pump 1A-SA Motor Space Heater	Space Heater Inoperable	Not Required.
16041M-SA-3	12261B	SW Backup to AFW Pump 1A-SA Supply Valve 3SW-B75SA-1 Limit Switch Cable	Lose control and indication	Valve required to open if hot standby is greater than 16 hours.
16041M-SA-3	12262B	SW Backup to AFW Pump 1A-SA Supply Valve 3SW-B74 SA-1 Limit Switch Cable	Lose control and indication	Valve required to open if hot standby is greater than 16 hours.
16041N-SA-3	11921B	Auxiliary Feedwater Pump 1A-SA Motor Space Heater	Space Heater Inoperable	Not Required.
16041N-SA-3	12261B	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
16041N-SA-3	12262B	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
16041S-SA-3	12207B	Normal Service Water Supply Header "A" Isolation Valve 3SW-B5SA-1 Limit Switch	Lose control and indication. Valve may open or shut Cable	Required
16041S-SA-3	12223D	Emergency SW Pump 1A-SA Discharge Valve 3SW-B105SA-1	Lose MCB indication	Not Required
16041S-SA-3	12231B	Normal Service Water Supply Header "A" Isol Valve 3SW-B5SA-1 Valve Open Limit Switch Cable	Lose alarm	Not Required
16044K-SB-3	10273B	Charging/SI Pump A Isolation Valve 2CS-V600SB-1, Limit Switch Cable	Lose Control and Indication	Valve Normally Open. Not Required
16044L-SB-3	10275B	Charging/SI Pump C Isolation Valve 2CS-V601SB-1 Limit Switch Cable	Lose Control and Indication	Valves Normally Open. Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16044L-SB-3	10294B	Charging/SI Pump Suction Header Valve 2CS-V588SB-1 Limit Switch Cable	Lose Control and Indication	Valves Normally Open. Not Required
16044M-SB-3	10273B	Charging/SI Pump A Isolation Valve 2CS-V600SB-1, Limit Switch Cable	Lose Control and Indication	Valve Normally Open. Not Required
16044N-SB-3	10275B	Charging/SI Pump C Isolation Valve 2CS-V601SB-1 Limit Switch Cable	Lose Control and Indication	Valves Normally Open. Not Required
16044N-SB-3	10294B	Charging/SI Pump Suction Header Valve 2CS-V588SB-1 Limit Switch Cable	Lose Control and Indication	Valves Normally Open. Not Required
16044P-SB-4	10298B	Charging/SI Pump Suction Header Isolation Valve 2CS-V588SB-1 Limit Switch Cable	Lose Control and Indication	Valve Normally Open. Not Required
16044Q-SB-3	10275B	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
16044Q-SB-3	10294B	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
16044S-SB-3	10274B	Charging/SI Injection Pump B Isolation Valve 2CS-V602SB Limit Switch Cable	Lose Control and Indication	Valves Normally Open. Not Required
16044S-SB-3	10296B	Charging/SI Pump Suction Header Isolation Valve 2CS-V590SB-1 Limit Switch Cable	Lose Control and Indication	Valves Normally Open. Not Required
16044S-SB-3	10300B	Charging/SI Pump Discharge Header Isolation Valve 2CS-V606SB-1 Limit Switch Cable	Lose Control and Indication	Valves Normally Open. Not Required
16044T-SB-3	10224B	Charging/SI Pump 1C-SAB Motor Space Heater	Space Heater Inoperable	Not Required
16044T-SB-3	10274B	Charging/SI Pump B Isolation Valve 2CS-V602SB Limit Switch Cable	Lose Control and Indication	Valve Normally Open. Not Required
16044T-SB-3	10296B	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
16044U-SB-4	10222B	Charging/SI Pump 1B-SB Motor Space Heater	Space Heater Inoperable	Not Required
16044U-SB-4	10224B	Charging/SI Pump 1C-SAB Motor Space Heater	Space Heater Inoperable	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16044W-SB-2	10327G	RHRS INL Isolation Valve IRH-V502SB-1 Intlk from Chrg Pump Suction Valve 2RH-V507SA-1 Fully Open	Permissive Contact-Valve Opening Blocked if Cable Open Circuits	Required
16044X-SB-3	10327G	RHRS INL Isolation Valve IRH-V502SB-1 Intlk from Chrg Pump Suction Valve 2RH-V507SA-1 Fully Open	Permissive Contact-Valve Opening Blocked if Cable Open Circuits	Required
16044Y-SB-3	10327G	RHRS Inl Isolation Valve-IRH-V502SB-1 Intlk from Charging Pump Suction Valve	Prevent opening of valve	Required
16044Z-SB-3	11922B	Auxiliary FW Pump 1B-SB Motor Space Heater	Space Heater Inoperable	Not Required
16044Z-SB-3	12263B	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
16044Z-SB-3	12264B	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
16046B-SB-3	10268B	Boric Acid Tank to Charging Pump Valve 2CS-V586SB-1 Limit Switch Cable	Lose control and indication	Valve Normally Closed. Required to open.
16046B-SB-3	10953B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet.12
16046B-SB-3	10953F	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16046C-SB3	12671F	Containment Fan Cooler AH-1 (1B-SB) Motor Space Heater	Space Heater Inoperable	Not Required
16046C-SB3	12671G	Containment Fan Cooler AH-1 (1B-SB) Motor Space Heater	Space Heater Inoperable	Not Required
16046C-SB3	13082C	AH-1 (1B-SB) Overload Alarm	Lose Alarm	Not Required
16046D-SB-3	12669K	Containment Fan Cooler AH-1 (1A-SB) Alarm	Lose Alarm	Not Required
16046D-SB-3	12669Y	Containment Fan Cooler AH-1 (1A-SB) Alarm	Lose Alarm	Not Required
16046D-SB-3	12670M	Containment Fan Cooler AH-1 Shaft and Nozzle Damper CV-D2SB-1 Control	Damper Position Improper Open Damper on Fused Wires	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16046D-SB-3	12670N	Containment Fan Cooler AH-1 Shaft and Nozzle Damper CV-D2SB-1 Control	Damper Position Improper Open Damper on Fused Wires	Required
16046D-SB-3	12671K	Containment Fan Cooler AH-1 (1B-SB) Alarm	Lose Alarm	Not Required
16046E-SB-3	12671J	Containment Fan Cooler AH-1 (1B-SB) Control	Stop Motor and Lose Indication and Control	Required
16046F-SB-3	10944B	CC Pump 1C-SAB 120V Motor Space Heater Leads	Space Heater Inoperable	Not Required
16046F-SB-3	11173B	Emergency Load Sequencer 1B-SB Control Input	Lose hi-speed running input from Containment Fan Cooler AH-1(1A-SB) for Sequencer	Required
16046F-SB-3	11173C	Emergency Load Sequencer 1B-SB Control Input	Lose hi-speed running input from Containment Fan Cooler AH-1(1B-SB) for Sequencer	Required
16046F-SB-3	12669G	AH-1 (1A-SB) Motor Space Heater	Space Heater Inoperable	Not Required
16046F-SB-3	12669J	AH-1 (1A-SB) Control	Stop motor and lose indication and control	Required
16046F-SB-3	12669K	AH-1 (1A-SB) Alarm	Lose Alarm	Not Required
16046F-SB-3	12671G	AH-1 (1A-SB) Motor Space Heater	Space Heater Inoperable	Not Required
16046F-SB-3	12671K	AH-1 (1B-SB) Alarm	Lose Alarm	Not Required
16046F-SB-3	13082C	AH-1 (1B-SB) Alarm	Lose Alarm	Not Required
16046G-SB-3	12669Y	Containment Fan Cooler AH-1 (1B-SB) Alarm	Lose Alarm	Not Required
16046G-SB-3	12670M	Containment Fan Cooler AH-1 (1A-SB) Shaft and Nozzle Damper	Damper position improper	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16046G-SB-3	12670N	Containment Fan Cooler AH-1 (1A-SB) Shaft and Nozzle Damper	Damper position improper	Required
16046G-SB-3	12671F	Containment Fan Cooler AH-1 (1B-SB) Motor Space Heater	Space Heater Inoperable	Not Required
16046G-SB-3	12671J	Containment Fan Cooler AH-1 (1B-SB) Control	Stop motor and lose indication and control	Required
16046H-SB-3	12669F	Containment Fan Cooler AH-1 (1A-SB) Motor Space Heater	Space Heater Inoperable	Not Required
16046H-SB-3	12669X	Containment Fan Cooler AH-1 (1A-SB) Alarm	Lose Alarm	Not Required
16046J-SB-3	12208B	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
16046J-SB-3	12614A	WC2 (1A-SA) Exp Tank Isolation Valve 3SA-V302SB-1 Power and Control	Valve will fail closed Indication Lights Lost	Not Required
16046J-SB-3	12621A	WC2 (1A-SA) Exp Tank Isolation Valve 3FP-V120SB-1 Power and Control	Valve will fail closed Indication Lights Lost	Not Required
16046K-SB-3	12208B	Normal Service Water Header "B" Isolation Valve - 3SW-B6SB-1 Limit Switch Cable	Lose Control and Indication	Required
16046K-SB-3	12224D	Emergency SW Pump 1B-Discharge Valve 3SW-B106SB-1 Limit Switch	Lose Indication	Not Required
16046L-SB-3	12208B	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
16046L-SB-3	12224D	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
16046L-SB-3	13115A	RAB Emergency Exh System Br Damper AV-D89SB-1 Power Feeder	Damper will stay open	Not Required
16046L-SB-3	13115B	RAB Emergency Exh System Br Damper AV-D89SB-1 Limit Switch	Indicating Lights Lost	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16046L-SB-3	13116B	RAB Emergency Exh System Br Damper AV-93SB-1 Power Feeder	Damper will stay open	Not Required
16046L-SB-3	13116D	RAB Emergency Exh System Br Damper AV-93SB-1 Limit Switch	Indicating Lights Lost	Not Required
16046T-SB-3	12669G	Containment Fan Cooler AH-1 (1A-SB) Motor Space Heater	Space Heater Inoperable	Not Required
16046U-SB-3	12669J	Containment Fan Cooler AH-1 (1A-SB) Control	Stop Motor and Lose Indication and Control	Required
16046V-SB-3	12669F	Containment Fan Cooler AH-1 (1A-SB) Motor Space Heater	Space Heater Inoperable	Not Required
16046V-SB-3	12669X	Containment Fan Cooler AH-1 (1A-SB) Low Speed Alarm	Lose Alarm	Not Required
16046W-SB-3	13082B	AH-1 (1A-SB) Overload Alarm	Lose Alarm	Not Required
16054B-SB-2	12614A	WC2 (1A-SA) Exp Tank Isolation Valve 3SA-V302SB-1, Power and Control	Valve will close, failed position	Not Required
16054B-SB-2	12621A	WC2 (1A-SA) Exp Tank Isolation Valve 3FP-V120SB-1, Power and Control	Valve will close, failed position	Not Required
16054B-SB-2	12650C	AH Cooling Unit AH-19 (1B-SB) CW Solenoid Valve 3CX-W27SB-1	Valve stays open, cannot shut	Not Required
16074Z-SB-3				No Cable Identified
16083H-SA-4	10229C	Boric Acid Transfer Pump 1A-SA Control	Stop pump, lose MCB and ACP control and indication	Required.
16083H-SA-4	10329C	RHRS to CVCS Charging Pump Suction Valve 2RH-V507SA-1 Control	Lose MCB and ACP control and indication, valve may open or shut	Valve required to remain open.
16084G-SB-2	13153A	RAB Nor Exh System Br Damper AV-D8SB-1 Power Feeder	Damper will stay closed	Not Required
16084G-SB-2	13153C	RAB Nor Exh System Br Damper AV-D8SB-1 Limit Switch	Indicating lights lost	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16084G-SB-2	13167E	RAB Nor Exh System Br Damper AV-D8SD-1 Limit Switch Alarm only	Lose Alarm	Not Required
16084Q-SB-3	13082B	AH-1 (1A-SB) Overload Alarm	Lose Alarm	Not Required
16084R-SB-3	13082B	AH-1 (1A-SB) Overload Alarm.	Lose Alarm	Not Required
16084R-SB-3	13082B	Containment Fan Cooler AH-1 (1A-SB) Alarm	Lose alarm	Not Required.
16094A-SB-3	10245D	VCT Outlet Isolation Valve 1CV-115E, Intlk SI Signal, and VCT Lo Level	Would Prevent Auto-Opening of Valve on SI - Might Interfere with Non Closing	Not Required
16094A-SB-3	10269B	Seal Water Injection Valve 2CS-V611SB-1 Limit Switch Control	Lose Control and Indication	
16094A-SB-3	10269B	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
16094A-SB-3	10300F	Charging/SI Pump Discharge Isolation Valve 2CS-V606SB-1 Limit Switch Alarm	Lose Alarm	Valves 2CS-L521SB(1-LCV-115E) and 2CS-V6112SB Not Required for Shutdown.
16095K-SA-4	12608C	Chiller WC-2 (1A-SA)AH Units (NNS) Chilled Water ISOL Valve 3CH-B3SA-1	Valve Shuts, Lose MCB Control & Indication	Not Required
16095K-SA-4	12610C	Chiller WC-2 (1A-SA) AH Units (NNS) Chilled Water ISOL Valve 3CX-B4SA-1 Solenoid & Limit Switch Cable	Valve Shuts, Lose MCB Control & Indication	Not Required
16095K-SA-4	12639C	Chiller WC-2 (1B-SB) AH Units (NNS) Chilled Water Isol Valve 3CH-B2SA-1 Solenoid & Lmt Switch Cable	Valve Shuts, Lose MCB Control & Indication	Not Required
16095K-SA-4	12641C	Chiller WC-2 (1B-SB) AH Units (NNS) Chilled Water Isol Valve 3CX-B2SA-1 Solenoid & Lmt Switch Cable	Valve Shuts, Lose MCB Control & Indication	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
17013V-SA-4	11957A	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23
17013V-SA-4	12092A	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23
17013V-SA-4	12235A	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
17013V-SA-4	12267E	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
17013V-SA-4	12269A	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
17013V-SA-4	12760E	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
17014Y-SB-2	12766E	Charging Pump SB Area Cooling Unit AH-9 (1B-SB) TE-6522B-SB to PIC	Prevents auto start on Hi-Temp affects alarm	Not Required. TE bypassed on LOOP
17014Z-SB-2	12766E	Charging Pump SB Area Cooling Unit AH-9 (1B-SB) TE-6522B to PIC	Block auto start on Hi-Temp, alarms	TE control of fans bypassed on LOOP. Fan runs constantly
17015D-SA-2	11957A	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23
17022B-SB-3	12092C	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
17022C-SB-3	12092C	Condensate Storage Tank 1X-SAB Level Transmitter LT-9010B-SB to PIC	Lose PIC Input, Alarm, Computer and MCB and ACP Indicators	Required
17022C-SB-3	12213C	SW Header "B" Flow FT-9101B-SB Input to PIC	Lose Flow Indication and Computer Input, MCB and ACP Indicators	Not Required
17022C-SB-3	12383C	Reactor MU Water Storage Tank Level LT-8901B(SB) to PIC	Lose Indication, Alarm, Computer, MCB and ACP Indicators	Not Required
17022D-SB-3	12092C	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
17022D-SB-3	12213C	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
17022D-SB-3	12383C	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
17023D-SA-2	11957A	Aux Feedwater Pump 1A-SA Suction & Discharge Press Transmitters PT-2250A-SA & PT-2150A-SA Input to PIC	Lose input to PIC, MCB and ACP indicators	Not Required
17023E-SA-2	12760E	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
17023H-SA-3	12092A	Condensate Storage Tank Level Transmitter LT-9010A-SA Input to PIC	Lose input to PIC, MCB and ACP indicators	Required
17023H-SA-3	12213A	Emergency SW Header "A" Flow Transmitter FT-9101A-SA Input to PIC	Lose MCB and ACP indicators, computer input and PIC input	Required
17023H-SA-3	12383B	Reactor Makeup Water Storage Tank Level Transmitter to PIC	Lose MCB Indicator and Alarm	
17048U-SB-1	12768E	Charging Pump SAB Area Cooling Unit AH-10 (1B-SB) Temp TE-6527B-SB to PIC	Lose Auto Start on Hi-Temp and Alarm	Not Required. TE Control Bypassed on LOOP
17053Y-5A-1				
C1303SA	10221B	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
C1303SA	10223B	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
C1303SA	10229C	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20
C1303SA	10293B	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
C1303SA	10295B	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
C1303SA	10297B	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
C1303SA	10299B	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1303SA	10325G	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
C1303SA	10326G	RHRS Inlet ISOL VA IRH-V501SA-1 Opening Intlk	Valve Cannot be Opened	Required
C1303SA	10329B	RHRS to CVCS Charging Pump Suction VA 2RH-V507SA-1 Limit Switch Cable	Lose Control & Indication	Not Required
C1303SA	10329C	RHRS to CVCS Charging Pump Suct VA 2RH-V507SA-1 Control	Lose MCB & ACP Control & Indication Valve may open or shut	Not Required
C1303SA	10941B	Component Cooling Pump 1A-SA Motor Space Heater	Space Heater Inoperable	Not Required
C1303SA	10948B	CCS Non Essential Return ISOL Valve 3CC-B5SA-1 Limit Switch Cable	Lose Control & Indication	Valve N.C. Required to Open
C1303SA	10948F	CCS Non Essential Return ISOL Valve 3CC-B5SA-1 Limit Switch Cable	Lose Alarm	Not Required
C1303SA	10950B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1303SA	10952B	RHRS Cooling Water ISOL Valve 3CC-V165SA-1 Limit Switch Cable	Lose Control & Indication	Valve N.O. Not Required to Open
C1303SA	10952F	RHRS Cooling Water ISOL Valve 3CC-V165SA-1 Limit Switch Cable	Lose Alarm	Not Required
C1303SA	12207B	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15
C1303SA	12233B	Service Water Booster Pump 1A-SA Motor Space Heater 120VAC	Space Heater Inoperable	Not Required
C1303SA	12257B	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
C1303SA	12258B	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
C1303SA	12260B	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1303SA	12286C	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
C1303SA	12608C	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21
C1303SA	12610C	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21
C1303SA	12618B	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
C1303SA	12618C	AH-7 (1A-SA) Cooling Unit Chilled Water Control Valve 3CX-W9SA-1 Solenoid Cable	Valve Opens	Valve Fails Safe
C1303SA	12618D	AH-9 (1A-SA) Cooling Unit Chilled Water Control Valve 3CX-W8SA-1 Solenoid Cable	Valve Opens	Valve Fails Safe
C1303SA	12675F	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
C1303SA	12675G	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
C1303SA	12675J	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
C1303SA	12675K	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
C1808SB	10222B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1808SB	10224B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1808SB	10268B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
C1808SB	10273B	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15
C1808SB	10274B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1808SB	10275B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1808SB	10294B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1808SB	10296B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1808SB	10298B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1808SB	10300B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1808SB	10327G	See Identical Cable - Sheet 7	See Identical Cable - Sheet 7	See Identical Cable - Sheet 7
C1808SB	10328G	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
C1808SB	10330B	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
C1808SB	10942B	Component Cooling Pump 1B-SB Motor Space Heater	Space Heater Inoperable	Not Required
C1808SB	10949B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1808SB	10949F	CCS Non Essential Return ISOL Valve 3CC-B6SB1 Limit Switch Cable	Lose Alarm	Not Required
C1808SB	10951B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1808SB	10953B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
C1808SB	10953F	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
C1808SB	11173B	See Identical Cable - Sheet 18	See Identical Cable - Sheet 18	See Identical Cable - Sheet 18

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1808SB	11173C	See Identical Cable - Sheet 18	See Identical Cable - Sheet 18	See Identical Cable - Sheet 18
C1808SB	11922B	Auxiliary Feedwater Pump 1B-SB Motor Space Heater	Space Heater Inoperable	Not Required
C1808SB	11975C	AUX FW Trubine IX-SAB Steam C ISOL. VA 2MS-V9SA-1 Control	Lose MCB & ACP Control & Indication Valve may open or shut	Required
C1808SB	11976D	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
C1808SB	11976E	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
C1808SB	11976F	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
C1808SB	11976K	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
C1808SB	11976L	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
C1808SB	12208B	See Identical Cable - Sheet 19	See Identical Cable - Sheet 19	See Identical Cable - Sheet 19
C1808SB	12259B	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
C1808SB	12260B	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
C1808SB	12263B	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
C1808SB	12264B	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
C1808SB	12609C	WC-2 (1A-SA) AH Units (NNS) Chilled Water ISOL Valve 3CH-B4SB-1 Solenoid & Limit Sw Cable	Valve Shuts, Lose Control & Indication	Not Required
C1808SB	12611C	WC-2 (1A-SA) AH Units (NNS) Chilled Water ISOL Valve 3CX-B3SB-1 Solenoid & Limit Switch Cable	Valve Shuts, Lose Control & Indication	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1808SB	12614C			No Identified Cables
C1808SB	12621C			No Identified Cables
C1808SB	12649B	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
C1808SB	12649C	AH-7 (1B-SB) Cooling Unit Chilled Water Control Valve 3CX-W14SB-1 Solenoid Cable	Valve Opens	Valve Fails Safe
C1808SB	12650C	AH-19 (1B-SB) Cooling Unit Chilled Water Control Valve 3CX-W27SB-1 Solenoid Cable	Valve Opens	Valve Fails Safe
C1808SB	12669F	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20
C1808SB	12669G	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20
C1808SB	12669J	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20
C1808SB	12669K	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
C1808SB	12669X	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20
C1808SB	12669Y	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
C1808SB	12670M	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
C1808SB	12670N	See Identical Cable - Sheet 18	See Identical Cable - Sheet 18	See Identical Cable - Sheet 18
C1808SB	12671F	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
C1808SB	12671G	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1808SB	12671J	See Identical Cable - Sheet 18	See Identical Cable - Sheet 18	See Identical Cable - Sheet 18
C1808SB	12671K	See Identical Cable - Sheet 18	See Identical Cable - Sheet 18	See Identical Cable - Sheet 18
C1808SB	13082B	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21
C1808SB	13082C	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
L1303SA	11957A	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23
L1303SA	12092A	Condensate Storage Tank Level LT-9010 SA to PIC	Lose Input to PIC, Alarm, Computer and MCB Indicator	Not Required
L1303SA	12235A	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
L1303SA	12267E	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
L1303SA	12269A	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
L1303SA	12760E	Component Cooling Pumps Area Cooling Unit AH-6 (1A-SA), TE-6507A-SA to PIC	Lose Input to PIC, Alarm and Hi-Temp Auto Pump Start	TE Control By-Passed on LOOP
L1303SA	12762E	Component Cooling Pumps Area Cooling Unit AH-7 (1A-SA) TE-6512A Input to PIC	Lose Input to PIC, Alarm and HI-Temp Auto Pump Start	TE Control By-Passed on LOOP
L1303SA	12765E	Charging Pump "SA" Area Cooling Unit AH-9 (1A-SA) TE-6522A Input to PIC	Lose Input to PIC, Alarm and HI-Temp Auto Pump Start	TE Control By-Passed on LOOP
L1303SA	12767E	Charging Pump "SAB" Area Cooling Unit AH-10 (1ASA) TE-6527A1-SA Input to PIC	Lose Input to PIC, Alarm and HI-Temp Auto Pump Start	TE Control By-Passed on LOOP
L1801SB	12092C	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
L1801SB	12268E	Service Water Thru CCW Heat Exchanger "B" Flow Transmitter FT-7050B-SB Input to PIC	Lose PIC Input, Local Indicator & MCB Indicating Lights	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
L1801SB	12269C	Service Water Thru HVAC Chiller WC-2 Flow Transmitter FT-9205B (SB) Input to PIC	Lose PIC Input, Local Indicator & MCB Indicating Lights	Not Required
L1801SB	12761E	Component Cooling Pumps Area Cooling Unit AH-6 (1B-SB), TE-6507B-SB Input to PIC	Lose PIC Input, Alarm & Hi-Temp Auto Start	TE Control By-Passed on LOOP
L1801SB	12763E	Component Cooling Pumps Area Cooling Unit AH-7 (1B-SB), TE-6512B1-SB Input to PIC	Lose PIC Input, Alarm & Hi-Temp Auto Start	TE Control By-Passed on LOOP
L1801SB	12766E	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
L1801SB	12768E	Charging Pump SAB Area Cooling Unit AH-10 (1B-SB) TE-6527B-SB to PIC	Lose PIC Input, Alarm & Hi-Temp Auto Start	TE Control By-Passed on LOOP
P1300SA	10293A	See Identical Cable - Sheet 8	See Identical Cable - Sheet 8	See Identical Cable - Sheet 8
P1300SA	10295A	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
P1300SA	10297A	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
P1300SA	10299A	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
P1300SA	10329A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
P1300SA	10948A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
P1300SA	10950A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
P1300SA	10952A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
P1300SA	12233A	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
P1300SA	12257A	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
P1300SA	12258A	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
P1300SA	12261A	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
P1300SA	12262A	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
P1300SA	12673F	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
P1300SA	12673G	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
P1300SA	12673J	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
P1300SA	12673K	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
P1300SA	12760A	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
P1300SA	12762A	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6	See Identical Cable - Sheet 6
P1300SA	12765A	See Identical Cable - Sheet 7	See Identical Cable - Sheet 7	See Identical Cable - Sheet 7
P1300SA	12767A	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
P1803SB	10268A	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
P1803SB	10273A	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10
P1803SB	10274A	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
P1803SB	10275A	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
P1803SB	10294A	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10
P1803SB	10296A	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
P1803SB	10298A	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10	See Identical Cable - Sheet 10
P1803SB	10300A	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
P1803SB	10330A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
P1803SB	10949A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
P1803SB	10951A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
P1803SB	10953A	RIRS Cooling Water ISOL Valve 3CC-V167SB-1 Power Feeder	Valve Inoperable	Valve N.C. Required to Open
P1803SB	11755A	480V Emergency Bus 1B3-SB to MCC 1B35-SB Power Feeder	Lose MCC 1B35-SB	Required
P1803SB	11755B	480V Emergency Bus 1B3-SB to MCC 1B35-SB Power Feeder	Lose MCC 1B35-SB	Required
P1803SB	12259A	Header "B" SW Backup to AFW Pump 1X-SAB Supply Valve 3SW-B73SB-1 Power Feeder	Valve Inoperable	Valve Required to Open if Hot Standby is Greater than 16 Hrs
P1803SB	12260A	Header "B" SW Backup to AFW Pump 1X-SAB Supply Valve 3SW-B72SB-1 Power Feeder	Valve Inoperable	Valve Required to Open if Hot Standby is Greater than 16 Hrs
P1803SB	12263A	SW Backup to AFW Pump 1B-SB Supply Valve 3SW-B77SB-1 Power Feeder	Valve Inoperable	Valve Required to Open if Hot Standby is Greater than 16 Hrs
P1803SB	12264A	SW Backup to AFW Pump 1B-SB Supply Valve 3SW-B76SB-1 Power Feeder	Valve Inoperable	Valve Required to Open if Hot Standby is Greater than 16 Hrs
P1803SB	12761A	Component Cooling Pumps Area Cooling Unit AH-6 (1B-SB) Power Feeder	AH Unit Inoperable	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
P1803SB	12763A	Component Cooling Pumps Area Cooling Unit AH-7 (1B-SB) Power Feeder	All Unit Inoperable	Required
X1300SA	10221A	See Identical Cable - Sheet 8	See Identical Cable - Sheet 8	See Identical Cable - Sheet 8
X1300SA	10941A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
X1300SA	11921A	See Identical Cable - Sheet 8	See Identical Cable - Sheet 8	See Identical Cable - Sheet 8
X1803SB	10222A	See Identical Cable - Sheet 7	See Identical Cable - Sheet 7	See Identical Cable - Sheet 7
X1803SB	10942A	Component Cooling Pump 1B-SB Power Feeder	Stop Pump - Bus Diff May Trip 6.9KV Bus 1B-SB	Required
X1803SB	11922A	Auxiliary Feed Water Pump 1B-SB Power Feeder	Stop Pump - Bus Diff May Trip 6.9KV Bus 1B-SB	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
17022S-SR4-3	10991E	Steam Flow Input to PIC FT-0475, FT-0485, FT-0495 and Reactor Coolant Wide Range Press PT-0403	Loss of All Listed Inputs to PIC	Required during MSLB only. AFW valve controls. Permissive RHR Suction Valve.
C 1808	10230B	Boric Acid Transfer P-1B-SB Thermal Cutout	Will Stop Pump	Required
C 1808	10268B	BA Tank to Charging Pump Valve 2CS-V586SB Limit Switch	Lose Indication and Control	Valve Normally Closed. Must Open
C 1808	10273B	Charging Pump Isolation Valve 2CS-V600SB-1 Limit Switch	Lose Indication and Control	Valve Normally Open. Open is Required Position
C 1808	10274B	2CS-V602SB Limit Switch Cable	Lose Control and Indication. Affects Alarm	Valve Normally Open. Open is Required Position
C 1808	10275B	Charging Pump C Isolation Valve 2CS-V601SB-1 Limit Switch Control	Lose Control and Indication	Valve Normally Open. Open is Required Position
C 1808	10294B	Charging Pump Suction Header Valve 2CS-V588SB-1 Limit Switch Control	Lose Control, Indication. Affects Alarm	Valve Normally Open. Open is Required Position
C 1808	10296B	2CS-V590 SB-1 Limit Switch Control	Valve remains in Last Position. No Indication or Control	Valve Normally Open. Open is Required Position
C 1808	10298B	2CS-V604 SB-1 Limit Switch Control	Valve remains in Last Position. No Indication or Control	Valve Normally Open. Open is Required Position
C 1808	10300B	2CS-V606SB-1 Limit Switch Cont.	Valve remains in Last Position. No Indication or Control	Valve Normally Open. Open is Required Position
C 1808	10330B	RHRS to CVCS Charging Pump Suction Valve 2RH-V506SB-1 Limit Switch Control	Lose Control and Indication	Valve Normally Closed. Must Open
C 1808	10949B	CCWS Non-Essential Retn Isolation Valve 3CC-B6SB-1 Limit Switch - Control	Lose Indication and Control	Valve Normally Open. Open is Required Position
C 1808	10949F	CCWS Non-Essential Retn Isolation Valve 3CC-B6SB-1 Limit Switch - Control Alarm	Loss of Cable (short) will give ESF Alarm	Valve Normally Open. Not Required
C 1808	10951B	CCWS Non-Essential Supp Isolation Valve 3CC-B20SB-1	Lose Indication and Control	Valve Normally Open. Open is Required Position

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C 1808	10953B	RHRS CW Isolation Valve 3CC-V167 SB-1 Limit Switch - Control	Lose Indication and Control	Valve Normally Closed. Must Open
C 1808	10953F	RHRS CW Isolation Valve 3CC-V167 SB-1 Limit Switch - Alarm	Loss of Cable (short) will give ESF Alarm	Valve Normally Open. Not Required
C1303 SA	10229B	Boric Acid XFMR Pump temp SW int control cable	Loss of cable will not start the pump	Required
C1303 SA	10229C	Boric Acid XFMR pump control cable	Loss of cable will not start the pump	Required
C1303 SA	10270B	CSIP Miniflow valve CS-V585SA control cable	Loss of cable will not change the position	Valve Normally Open. Not Required
C1303 SA	10293B	CSIP Suction Valve CS-V587SA control cable	Valve stays in its previous condition i.e. open position	Valve Normally Open. Not Required
C1303 SA	10295B	CSIP Suction Valve CS-589SA control cable	Valve stays in its previous condition i.e. open position	Valve Normally Open. Not Required
C1303 SA	10297B	CSIP Suction Valve CS-V603SA control cable	Valve stays in its previous condition i.e. open position	Valve Normally Open. Not Required
C1303 SA	10299B	CSIP Discharge Valve CS-V605SA control cable	Valve stays in its previous condition i.e. open position	Valve Normally Open. Not Required
C1303 SA	10329B	RHR to CSIP Suction Valve RH-V507SA control cable	Not required to open during safe shutdown	Valve Normally Closed. Not Required
C1303 SA	10329C	RHR to CSIP Suction Valve RH-V507SA control cable	Not required to open during safe shutdown	Valve Normally Closed. Not Required
C1303 SA	10948B	CCW non essential return valve CC-B5SA control cable	Loss of cable will not change the previous position	Valve Normally Open. Not Required
C1303 SA	10948F	CCW non essential return valve CC-B5SA control cable	Loss of cable will lose ESF function	Valve Normally Open. Not Required
C1303 SA	10950B	CCW non essential supply valve CC-B19SA control cable	Loss of cable will not change the previous position	Valve Normally Open. Not Required
C1303 SA	10952B	RHR HX-A CCW outlet valve CC-V165SA control cable	Loss of cable loss capability to open the valve	Valve Normally Closed. Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1303 SA	10952F	RHR HX-A CCW outlet valve CC-V165SA control cable	Loss of cable will lose ESF function	Valve Normally Closed. Not Required
C1303 SA	12286C	SW Rtn HDR-A to Aux RSVR valve SW-B15SA control valve	Loss of cable will not open the valve	Valve Normally Closed. Required
C1303 SA	12673F	AH-2(1A-SA) Motor Htr control cable	When fan starts HTR not needed	Not Required
C1303 SA	12673G	AH-2(1A-SA) Motor Htr Power Cable	When fan starts Htr not needed	Not Required
C1303 SA	12673J	AH-2(1A-SA) Control Cable	Loss of cable will not start the fan	Required
C1303 SA	12673K	AH-2(1A-SA) Status Indicating Ltg Cable	Cable short will not lose indication. Cable open will lose indication	Not Required
C1303 SA	12673X	AH-2(1A-SA) Low Speed Alarm Cable	Low speed not required for safe shutdown	Not Required
C1303 SA	12673Y	AH-2(1B-SA) Low Speed Alarm Cable	Low speed not required for safe shutdown	Not Required
C1303 SA	12674H	AH-2(1A-SA) Permissive Interlock Dmpr-CV-D4SA	On Hi-speed CV-D4 should open Loss of cable will not open the damper	Required
C1303 SA	12674N	AH-2(1B-SA) Permissive Interlock Dmpr-CV-D4SA	On Hi-speed CV-D4 should open Loss of cable will not open the damper	Required
C1303 SA	12675F	AH-2(1B-SA) Motor Htr Control Cable	When fan starts HTR not required	Not Required
C1303 SA	12675G	AH-2(1B-SA) Motor Htr Power Cable	When fan start HTR not required	Not Required
C1303 SA	12675J	AH-2(1B-SA) Control Cable	Loss of cable will not start the fan	Required
C1303 SA	12675K	AH-2(1B-SA) Status Indicating Ltg Cable	Cable short will not lose indication Cable open will lose indication	Not Required
C1303 SA	13083B	AH-2(1A-SA) Control Voltage Alarm Cable	Cable short will activate alarm	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1303 SA	13083C	AH-2(1B-SA) Control Voltage Alarm Cable	Cable short will activate alarm	Not Required
C1304 SA				No Cables Identified
L1303 SA	13045E	AH-23(1X-SA) Thermocouple Input Cable	Temp control bypassed during LOOP	Not Required
L1401 SA	10990B	Steam Flow Measurement Signal Cable	Lose Indication	
L1401 SA	10994A	Steam Gen A,B,C (protech 3) level signal cable	Lose indication and RX Trip Actuation	Required
P 1803	10230A	Boric Acid Transfer Pump 1B-SB Power Feed	Lose Boric Acid	Required
P 1803	10268A	Boric Acid Tank to Charging Pump Valve 1-B104 Motor Power Feed	Valve Left in Last Position (Normally Closed)	Required. Valve must be open
P 1803	10273A	Charging P-A Mini Flow 1-8109A Motor Power Feed	Valve Left in Last Position Normally Open	Not Required. Valve not required to close
P 1803	10274A	Charging P-B Mini Flow 1-8109B Motor Power Feed	Valve Left in Last Position Normally Open	Not Required. Valve not required to close
P 1803	10275A	Charging P-C Mini Flow 1-8109C Motor Power Feed	Valve Left in Last Position Normally Open	Not Required. Valve not required to close
P 1803	10294A	Charging P Suction Header Valve 1-8130B Motor Power Feed	Valve Left in Last Position Normally Open	Not Required. Valve not required to close
P 1803	10296A	Charging P Suction Header Valve 1-8131B Motor Power Feed	Valve Left in Last Position Normally Open	Not Required. Valve not required to close
P 1803	10298A	Charging P Discharge Header Valve 1-8132B Motor Power Feed	Valve Left in Last Position Normally Open	Not Required. Valve not required to close
P 1803	10300A	Charging P Discharge Header Valve 1-8133B Motor Power Feed	Valve Left in Last Position Normally Open	Not Required. Valve not required to close
P 1803	10330A	RHRS to CVCS Charging Pump Suct Valve 2RH-V506 SB-1 Power Feed	Loss of Cable will not open the valve. Valve is (N.C.) required to open during CL recirculation	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
P 1803	10949A	CCWS Non-Essential Return Isolation Valve 1-9371 Power Feed	Valve in Last Position (Normally Open)	Not Required
P 1803	10951A	CCWS Non-Essential Sup Isolation Valve 1-9385 Power Feed	Valve in Last Position (Normally Open)	Not Required
P 1803	10953A	RHRS Cooling Water Isolation Valve 1-9431B Power Feed	Valve in Last Position (Normally Closed)	Normally Closed Required to Open
P 1803	11755A	480V Emergency MCC-1B35-SB Power Feed	Lose Power to MCC	Required
P 1803	11755B	480V Emergency MCC-1B35-SB Power Feed	Lose Power to MCC	Required
P 1803	12259A	Header "B" SW Back-up to AFWP 1X-SAB Supp Valve 35W-B73SB-1 Power Feeder	Valve Left in Last Position	Valve Normally Closed Required to Open if Hot Standby is greater than 16 hrs.
P 1803	12260A	Header "B" SW Back-up to AFWP 1X-SAB Supp Valve 35W-B72SB-1 Power Feeder	Valve Left in Last Position	Valve Normally Closed Required to Open if Hot Standby is greater than 16 hrs.
P 1803	12263A	SW Back-up to AFWP 1B-SB Supp Valve 35W-B77SB-1 Power Feeder	Valve Left in Last Position	Valve Normally Closed Required to Open if Hot Standby is greater than 16 hrs.
P 1803	12264A	SW Back-up to AFWP 1B-SB Supp Valve 35W-282SB-1 Power Feeder	Valve Left in Last Position	Valve Normally Closed Required to Open if Hot Standby is greater than 16 hrs.
P 1803	12751A	RAB Stm Tunnel Vent Supp Fan S-64 (1X-SA) Power Feeder	Fan Stop	Required
P 1803	12761A	AH-6 (1B-SB) Power Cable	Lose of Cable will not Start Fan	Required
P 1803	12763A	CCW Pump Area Cooling Unit AH-7 (1B-SB) Power Feeder	AH Unit Inoperable	Required
P1300 SA	10229A	Boric Acid XFMR IMP Power Cable	Pump Inoperable	Required
P1300 SA	10270A	CSIP Miniflow Valve CS-V585 PWR Cable	Valve Inoperable	Valve Normally Open. Not Required
P1300 SA	10293A	CSIP Suction Valve CS-V587SA Power Cable	Valve Inoperable	Valve Normally Open. Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
P1300 SA	10295A	CSIP Suction Valve CS-V589SA Power Cable	Valve Inoperable	Valve Normally Open. Not Required
P1300 SA	10297A	CSIP Discharge Valve CS-V603SA Power Cable	Valve Inoperable	Valve Normally Open. Not Required
P1300 SA	10299A	CSIP Discharge Valve CS-605SA Power Cable	Valve Inoperable	Valve Normally Open. Not Required
P1300 SA	10329A	RHR to CSIP Suction Valve RH-V507SA Power Cable	Valve Inoperable	Valve Normally Closed. Not Required
P1300 SA	10948A	CCW non essential return valve CC-B5SA Power Cable	Loss of Cable Will Not Change Its Previous Position	Valve Normally Open. Not Required
P1300 SA	10950A	CCW non essential return valve CC-B19SA Power Cable	Loss of Cable Will Not Change Its Previous Position	Valve Normally Open. Not Required
P1300 SA	10952A	RHRH A Cooling out valve CC-V165SA Power Cable	Loss of Cable Will Not Open the Valve to Circulate CCW to HX	Valve Normally Closed. Not Required
P1300 SA	12257A	AFWP Back-up SW Supply Valve SW-B70SA Cable	Loss of cable will not open the valve	Valve Normally Closed. Not Required
P1300 SA	12258A	AFWP Back-up SW Supply Valve SW-B71SA Cable	Loss of cable will not open the valve	Valve Normally Closed. Not Required
P1300 SA	12261A	AFWP Back-up SW Supply Valve SW-B75SA Cable	Loss of cable will not open the valve	Valve Normally Closed. Not Required
P1300 SA	12262A	AFWP Back-up SW Supply Valve SW-B74SA Cable	Loss of cable will not open the valve	Valve Normally Closed. Not Required
P1300 SA	12762A	AH-7 (1A-SA) Power Cable	Loss of Cable will not start the fan	Required
P1300 SA	12765A	AH-9 (1A-SA) Power Cable	Loss of Cable will not start the fan	Required
P1300 SA	12767A	AH-10 (1A-SA) Power Cable	Loss of Cable will not start the fan	Required
P1305 SA	11765A	Power Feed Cable to MCC A22-SA	Loss of Power to MCC	Required
P1305 SA	11765D	Power Feed Cable to MCC A22-SA	Loss of Power to MCC	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
10229A-SA-2	10229A	Power Cable to Boric Acid Transfer Pump 1A-SA	Pump 1A-1A - STOP	Required.
10229B-SA-2	10229B	Power Cable for Thermal Overload for Boric Acid Transfer Pump 1A-SA	Pump 1A-SA - STOP	Required.
10644H-SB-4	10230B	BA Transfer Pmp 1B-SB Therm. Cut-out Ctrl	Open Ckt. Will Stop Pump	Required
12235B-SB-2	12235B	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
15411U-SA-2	10270A	Power Cable to Charg/Saf Inj Isol. Valve 1-8106	Valve Inoperable	Valve Normally Open. Not Required
15412X-SB-2	10230A	Power Feeder BA Transfer Pmp 1B-SB	Pump Inoperable	Required
15429Y-SA-4	10229A	See Identical Cable-This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet
15432S-SB-4	12234A	SW Booster Pump 1B-SB Power Feeder	Pump Inoperable	Required
15432T-SB-4	10230A	See Identical Cable-This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet
15432U-SB-4	12234A	SW Booster Pump 1B-SB Power Feeder	Pump Inoperable	Required
15432V-SB-4	10230A	Power Feeder BA Transfer Pmp 1B-SB	Pump Inoperable	Required
16030K-SB-2	10230B	BA Transfer Pmp 1B-SB Therm. Cut-out Ctrl	Open Ckt. Will Stop Pump	Required
16033C-SA-2	10270B	Control Cable to Isol. Valve 1-1806	Valve Remain Open	Not Required.
16033X-SA-2	10229B	See Identical Cable-This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet
16034N-SB-4	11976D	Aux Fw Turb IX-NNS Stop Valve SB 125V DC Power	Stop Valve Inoperable	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16034N-SB-4	12611C	Chiller WC-2 (1A-SA) AH Units (NNS) Chill Water Isol Valve 3CX-B3SB-1 Solenoid & Lmt Swtch Cntrl	Closes Valve 3CX-B3SB-1	Not Required
16034N-SB-4	12669F	120V AC Sup Mot AH-1 (1A-SB) Sp Htr	Lose Motor Sp Htr.	Not Required
16034P-SB-4	12649B	Cooling Unit AH-6 (1B-SB) Sol Valve 3CX-W10 SB-1 Feeder	Open Ckt Opens Valve, Fused Wires Closes Valve	Not Required
16034P-SB-4	12649C	Cooling Unit AH-7 (1B-SB) Sol Valve 3CX-W14 SB-1 Feeder	Open Ckt Opens Valve, Fused Wires Closes Valve	Not Required
16034P-SB-4	12650C	Cooling Unit AH-19 (1B-SB) Sol Valve 3CX-W27 SB-1 Feeder	Open Ckt Opens Valve, Fused Wires Closes Valve	NotRequired
16034P-SB-4	12669G	120 V AC Sup Mot AH-1 (1A-SB) Sp Htr	Lose Motor Sp Htr	Not Required
16034P-SB-4	12669J	Contain Fan Cooler AH-1 (1A-SB) Remote Control and Indication	Lose Manual and Auto Control	Required
16034P-SB-4	12669K	Containment Fan Cooler AH-1 Normally Closed Hi Speed Contact	Affects Alarm	Required
16034P-SB-4	12669Y	Containment Fan Cooler AH-1 (1B-SB) Normally Closed Contact	Affects Alarm	Not Required
16034P-SB-4	12670M	Containment Fan Cooler AH-1 (1A-SB) Normally Open Hi and Lo Spd Contact	Affects Control of Damper CV-DS2B-1)	Required
16034P-SB-4	12671G	120V AC Sup Mot AH-1 (1B-SB) Sp Htr	Lose Motor Sp Htr	Not Required
16034P-SB-4	12761K	Containment Fan Cooler AH-1 (1B-SB) Normally Closed Hi-Speed Contact	Affects Alarm	Required
16040Z-SB-4	10230B	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1
16044A-SB-4	10230B	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1
17008N-SB-4	12235B	Signal Cable from PT-9112B-SB and FT-9112B-SB	Loss of Entire SW Booster	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
17028N-SB-4	12235B	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
C1303 SA	10229B	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1
C1303 SA	10229C	Control Cable to 480V MCC-1A35-SA for Boric Acid Transfer Pump 1A-SA	Pump 1A-SA - STOP	Required
C1303 SA	10270B	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1
C1303 SA	10293B	Control Cable to Charg/Saf Inj Pump Suct Hdr Isol. Valve 1-8130A	Valve Remains in Open Position	Not Required.
C1303 SA	10295B	Control Cable to Charg/Saf Inj Pump Suction Hdr Isol Valve 1-8131A	Valve Remains in Open Position	Not Required.
C1303 SA	10297B	Control Cable to Charg/Saf Inj Pump Discharge Hdr Isol Valve 1-8132A	Valve Remains in Open Position	Not Required.
C1303 SA	10299B	Control Cable to Charg/Saf Inj Pump Discharge Hdr Isol Valve 1-8133A	Valve Remains in Open Position	Not Required.
C1303 SA	10329B	Control Cable to Charge Pump Suction Valve 1-8706A	Valve Remain in Closed Position	Not Required.
C1303 SA	10329C	Control Cable to Charge Pump Suction Valve 1-8706A	Valve May Open	Required.
C1303 SA	12207B	Normal SW Supply Hdr A Isol Valve 3SW B5SA-1 Valve Limit Switch Cable	Lose Control and Indication. Valve May Open or Shut.	Required.
C1303 SA	12257B	Hdr A SW Backup AFW Pump 1X-SAB Supply Valve 3SW-B70-SA-1 Limit Switch Cable	Lose Control and Indication.	Valve Required if Hot Standby is Greater than 16 hours.
C1303 SA	12258B	Hdr A SW Backup AFW Pump 1X-SAB Supply Valve 3SW-B71-SA-1 Limit Switch Cable	Lose Control and Indication.	Valve Required if Hot Standby is Greater than 16 hours.
C1303 SA	12261B	SW Backup to AFW Pump 1A-SA Supply Valve 3SW-B75-SA-1 Limit Switch Cable	Loss of Control and Indication	Valve Required if Hot Standby is Greater than 16 hours.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1303 SA	12262B	SW Backup to AFW Pump 1A-SA Supply Valve 3SW-B74SA-1 Limit Switch Cable	Loss of Control and Indication	Valve Required if Hot Standby is Greater than 16 hours.
C1303 SA	12286C	Control Cable to 480V MCC-1A35 SA for Shutoff Valve 3SW-B15SA-1	Valve Failure in any Mode	Required.
C1303 SA	12608C	Control Cable to Chilled Water Isol. Valve 3CH-B3SA-1	Valve Fails Closed	Not Required.
C1303 SA	12610C	Control Cable to Chilled Water Isol. Valve 3CX-B4SA-1	Valve Fails Closed	Not Required.
C1303 SA	12618B	Control Cable to 3CX-W7SA-1	Valve Fails Open	Not Required.
C1303 SA	12618C	Control Cable to 3CX-W9SA-1	Valve Fails Open	Not Required.
C1303 SA	12618D	Control Cable to 3CX-W8SA-1	Valve Fails Open	Valve Fails Safe.
C1303 SA	12673F	Control Cable to Containment Fan Cooler AH-2 (1A-SA) Heater	Heater Fails	Not Required.
C1303 SA	12673G	Power Cable to 480V MCC-1A22SA for AH-2 (1A-SA) Heater	Heater Fails	Not Required.
C1303 SA	12673J	Control Cable to 480V MCC-1A22SA for Containment Fan Cooler AH-2 (1A-SA)	AH-2 (1A-SA) - STOP	Required.
C1303 SA	12673K	Containment Fan Cooler AH-2 (1A-SA) Control Cable Lo-speed Indication	Loss of MCB and ACP Lo-speed Indication.	Not Required.
C1303 SA	12673X	Control Cable for Low Speed Alarm for AH-2 (1A-SA)	Loss of Alarm	Not Required.
C1303 SA	12673Y	Control Cable for Low Speed Alarm for AH-2 (1A-SA)	Loss of Alarm	Not Required.
C1303 SA	12674M	Control Cable HI/LO Alarm for Containment Fan Cooler AH-2 (1A-SA)	Loss of Alarm	Not Required.
C1303 SA	12674N	Control Cable HI/LO Alarm for Containment Fan Cooler AH-2 (1B-SA)	Loss of Alarm	Not Required.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1303 SA	12675F	Control Cable to Containment Fan Cooler AH-2 (1B-SA) Heater	Heater Fails	Not Required.
C1303 SA	12675G	Power Cable to 480 MCC-1A22SA for AH-2 (1B-SA) Heater	Heater Fails	Not Required.
C1303 SA	12675J	Control Cable to 480V MCC-1A22SA for AH-2 (1B-SA) Heater	AH-2 (1B-SA) - STOP	Required.
C1303 SA	12675K	Containment Fan Cooler AH-2 (1B-SA) Control Cable Lo-speed Indication	Loss of MCB and ACP Lo-speed Indication	Not Required.
C1303 SA	13083B	Control Cable to Alarm for Containment Fan Cooler AH-2 (1A-SA) on Loss of Power	Cable Short Activates Alarm.	Not Required.
C1303 SA	13083C	Control Cable to Alarm for Containment Fan Cooler AH-2 (1B-SA) on Loss of Power	Cable Short Activates Alarm.	Not Required.
C1303 SA	13083K	Containment Fan Cooler AH-2 (1A-SA) Alarm on Power Loss	Loss of Ability to Alarm on Power Loss for AH-2	Not Required.
C1304 SA				No Identified Cables
C1808 SB	10222B	Control Cable to Charg/Saf Inj Pump 1B-SB Heater	Heater Loss	Not Required.
C1808 SB	10224B	Power Cable from Emergency Bus 1B-SB for Charg/SAf Inj Pump 1C SAB Heater	Possible Heater Loss	Not Required.
C1808 SB	10230B	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1
C1808 SB	10268B	Control Cable to Boric Acid to Charg Pump Valve 1-8104	Lose Control Ability	Required. Valve Must Open.
C1808 SB	10273B	Control Cable to Charg/Saf Inj Pump A Miniflow Isol. Valve 1-8109A	Valve Remain in Open Position	Not Required.
C1808 SB	10274B	Control Cable to Charg/Saf Inj Pump B Miniflow Isol. Valve 1-8109B	Valve Remain in Open Position	Not Required.
C1808 SB	10275B	Control Cable to Charg/Saf Inj Pump C Miniflow Isol. Valve 1-8109C	Valve Remain in Open Position	Not Required.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1808 SB	10294B	Control Cable to Charg/Saf Inj Pump Suction Hdr Isol. Valve 1-8130B	Valve Remain in Open Position	Not Required.
C1808 SB	10296B	Control Cable to Charg/Saf Inj Pump Suction Hdr Isol. Valve 1-8131B	Valve Remain in Open Position	Not Required.
C1808 SB	10298B	Control Cable to Charg/Saf Inj Pump Discharge Hdr Isol. Valve 1-8132B	Valve Remain in Open Position	Not Required.
C1808 SB	10300B	Control Cable to Charg/Saf Inj Pump Discharge Hdr Isol. Valve 1-8133B	Valve Remain in Open Position	Not Required.
C1808 SB	10327G	Control Cable Intlk 1-8702A and 1-8706A Limit Switch	Valve 1-8702A Will Remain Shut	Required.
C1808 SB	10328G	Control Cable Intlk 1-8702B and 1-8706B Limit Switch	Valve 1-8702 Will Remain Shut	Required.
C1808 SB	10330B	Control Cable to Charg Pump Suction Valve 1-8706B	Valve Remain in Open Position	Not Required.
C1808 SB	10942B	CC Pump 1B-Sb Mtr Sp Htr 120V AC	Lose Motor Space Htr	Not Required
C1808 SB	10949B	CCS Non-Essential Ret Isolation Valve 3CC-B6SB-1 Limit Switch Control	Lose Control and Indication	
C1808 SB	10949F	CSS Non-Essential Ret Isolation Valve 3CC-B6SB-1 Limit Switch Alarm	Lose Alarm	Not Required
C1808 SB	10951B	CSS Non-Essential Supp Isolation Valve 3CC-B20SB-1 Limit Switch Control	Lose Control and Indication	Valve Normally Open Not Required to Close
C1808 SB	10953B	RHRS CW Isolation Valve 3CC-V167SB-1 Limit Switch Control	Loss Control and Indication	Valve Normally Closed Required to open.
C1808 SB	10953F	RHRS CW Isolation Valve 3CC-V167SB-1 Limit Switch Alarm	Lose Control and Indication	Valve Normally Closed Required to Open
C1808 SB	11173B	Emergency Load Sequencer 1A-SA Control Input	Loss of Hi-Speed Running Input to to Containment Fan Cooler AH-1 (1A-SA) for Sequencer	Required.
C1808 SB	11173C	Emergency Load Sequencer 1B-SB Control Input	Loss of Hi-Speed Running Input to Containment Fan Cooler AH-1 (1B-SB) for Sequencer	Required.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1808 SB	11922B	Control Cable to Aux FW Pump 1B-SB (Motor Driven) Heater	Loss of Heater	Not Required.
C1808 SB	11976E	Control Cable Aux Fw Tubrine 1X-NNS Stop Valve SB	Loss of Stop Valve	Required.
C1808 SB	11976F	Control Cable for Aux FWP Turbine Stop Valve Indicating Lights	Loss of Indication	Not Required.
C1808 SB	11976K	Control Cable for Aux FW Turbine 1X-NNS Stop Valve SB From SSP Output 1	Loss of SSP to Stop Valve	Required.
C1808 SB	11976L	Control Cable Aux FWP Turbine Mechanical Overspeed Trip	Loss of Aux FW Turbine Stop Valve	Required.
C1808 SB	11978G	Aux FW Turbine 1X-NNS Stop Valve SB-Open Lmt Swtch in Governor Controller & Ramp Cond & Alarm	Will Affect Operation of Governor, Indication and Alarm	Required.
C1808 SB	12208B	Normal Service Water Header "B" Isol Valve 3SW-B76-SB-1 Limit Switch Cable	Lose Control and Indication	Required.
C1808 SB	12259B	SW Backup to AFW Pump 1B-SB Supply Valve 3SW-B73-SB-1 Limit Switch Cable	Loss Control and Indication	Required. Valve Must Open if Hot Standby Is Greater Than 16 Hours
C1808 SB	12260B	SW Backup to AFW Pump 1B-SB Supply Valve 3SW-B72-SB-1 Limit Switch Cable	Loss Control and Indication	Required. Valve Must Open if Hot Standby Is Greater Than 16 Hours
C1808 SB	12263B	SW Backup to AFW Pump 1B-SB Supply Valve 3SW-B77-SB-1 Limit Switch Cable	Loss Control and Indication	Required. Valve Must Open if Hot Standby Is Greater Than 16 Hours
C1808 SB	12264B	SW Backup to AFW Pump 1B-SB Supply Valve 3SW-B76-SB-1 Limit Switch Cable	Loss Control and Indication	Required. Valve Must Open if Hot Standby Is Greater Than 16 Hours
C1808 SB	12609C	Control Cable to Chilled Water Isol. Valve 3CH-B4SB-1	Valve Fails Shut	Not Required.
C1808 SB	12611C	Control Cable to Chilled Water Isol. Valve 3CX-B3SB-1	Valve Fails Shut	Not Required.
C1808 SB	12614A	Control Cable to 3SA-V302 SB-1 Chiller WC-2 (1A-SA) Exp TK Isol.	Valve Fails Shut	Not Required
C1808 SB	12621A	Control Cable to 3FP-V120 SB-1 Chiller WC-2 (1A-SA) Exp TK Isol.	Valve Fails Shut	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1808 SB	12649B	See identical Cable-Sheet 2	See identical Cable-Sheet 2	See identical Cable-Sheet 2
C1808 SB	12649B	Cooling Unit AH-6 (1B-SB) Sol Valve 3CX-W10 SB-1 Feeder	Open Ckt Opens Valve, Fused Wires Closes Valve	Not Required
C1808 SB	12649C	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
C1808 SB	12650C	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
C1808 SB	12669F	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
C1808 SB	12669G	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
C1808 SB	12669J	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
C1808 SB	12669K	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
C1808 SB	12669X	Control Cable to Alarm on Containment Fan Cooler AH-1 (1A-SB) Low Speed	Loss of Low Speed Alarm	Not Required.
C1808 SB	12669Y	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
C1808 SB	12670M	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
C1808 SB	12670N	Control Cable to Alarm and Open Damper CV-D1SB-1 on AH-1 HI/LO Speed	Loss of Alarm and CV-D1 SB-1 Open	Required.
C1808 SB	12671G	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
C1808 SB	12671J	Control Cable to Containment Fan Cooler AH-1 (1B-SB)	AH-1 (1B-SB) - STOP	Required.
C1808 SB	12671K	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1808 SB	13082B	Control Cable to Alarm for Containment Fan Cooler AH-1 (1A-SB) on Loss of Power	Lose Alarm	Not Required.
C1808 SB	13082C	Control Cable to Alarm for Containment Fan Cooler AH-1 (1B-SB) on Loss of Power	Lose Alarm	Not Required.
L1303 SA	12762E	Component Cooling Pumps Area Cooling Unit AH-7 (1A-SA) TE-6512A Input to PIC	Lose Input to PIC Alarm and Hi-temp Auto Pump Start	TE Control Bypassed on LOOP
L1303 SA	12765E	Charging Pump "SA" Area Cooling Unit AH-9 (1A-SA) TE-6522A Input to PIC	Lose Input to PIC Alarm and Hi-temp Auto Pump Start	TE Control Bypassed on LOOP
L1303 SA	12767E	Signal Cable from TE-6527A SA to PIC-C13(SA) INTLK AH-10 (1A-SA)		Not Required.
L1303 SA	13045E	AH-23 (1X-SA) Thermocouple Input Cable	Temperature Control Bypassed During Loop.	Not Required
L1401 SA	10990B	Signal Cable Steam Generators 1A, 1B, 1C, FT-0474, FT-0484, FT-0494 to PIC-P3	Loss of Flow Indication of Steam Gen's at MCB & Reactor Trip Actuation	Required
L1401 SA	10994A	Signal Cable from Steam Generators 1A, 1B, 1C, LT-0476, LT-0486, LT-0496 to PIC-P3	Loss of Level Indication of Steam Gen's at MCB and Reactor Actuation	Required
L1801 SB	12092C	Signal Cable from LT-9010B - SB to PIC-C10 (SB)	Loss of Level Indication at ACP, MCB	
L1801 SB	12235B	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
L1801 SB	12268E	Signal Cable from FT-7050B - SB to PIC-C10 (SB)	Loss of SW Flow Thru Heat Exchange for Alarm & Indication	Not Required.
L1801 SB	12269C	Signal Cable from FT-9205B (SB) to PIC-C10 (SB)	Loss SW Flow Thru Chiller WC-2 (1A-SA) Indication	Not Required.
L1801 SB	12761E	Signal Cable from TE-6507B SB to PIC-C14 (SB) INTLK AH-6 (1B-SB)		Not Required.
L1801 SB	12763E	Signal Cable from TE-6512B SB to PIC-C14 (SB) INTLK AH-7 (1B-SB)		Not Required.
L1801 SB	12766E	Signal Cable from TE-6522B SB to PIC-C14 (SB) INTLK AH-9 (1B-SB)		Not Required.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
L1801 SB	12768E	Signal Cable from TE-6527B SB to PIC-C14 (SB) INTLK AH-10 (1B-SB)		Not Required.
P1300 SA	10229A	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1
P1300 SA	10270A	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1
P1300 SA	10293A	Power Cable to Charg/Saf Inj Pump Suction Hdr Isol Valve 1-8130A	Valve Inoperable	Valve Normally Open. Not Required.
P1300 SA	10295A	Power Cable to Charg/Saf Inj Pump Suction Hdr Isol Valve 1-8131A	Valve Inoperable	Valve Normally Open. Not Required
P1300 SA	10297A	Power Cable to Charg/Saf Inj Pump Suction Hdr Isol Valve 1-8132A	Valve Inoperable	Valve Normally Open. Not Required
P1300 SA	10299A	Power Cable to Charg/Saf Inj Pump Suction Hdr Isol Valve 1-8133A	Valve Inoperable	Valve Normally Open. Not Required
P1300 SA	10329A	Power Cable to Charg Pump Suction Valve 1-8706A	Valve Inoperable	Not Required. Valve N.O. and Must Remain Closed.
P1300 SA	10948A	Power Cable to CCS-Non Essential RTN Isol Valve 1-9370	Valve Inoperable	Valve Normally Open. Not Required.
P1300 SA	10950A	Power Cable to CCS-Non Essential Supply Isol. Valve 1-9384	Valve Inoperable	Valve Normally Open. Not Required.
P1300 SA	10952A	Power Cable to RHRS Cooling Water Isol. Valve 1-9431A	Valve Inoperable	Valve Normally Open. Not Required.
P1300 SA	12257A	Power Cable to SW AFWP IX-SAB Supply VA 3 SW - B70SA-1	Valve Inoperable	Valve N.C. Required to Open if Hot Standby Greater Than 16 Hours
P1300 SA	12258A	Power Cable to SW AFWP IX-SAB Supply VA 3 SW - B71SA-1	Valve Inoperable	Valve N.C. Required to Open if Hot Standby Greater Than 16 Hours
P1300 SA	12261A	Power Cable to SW AFWP IA-SA Supply Valve 3 SW - B75SA-1	Valve Inoperable	Valve N.C. Required to Open if Hot Standby Greater Than 16 Hours
P1300 SA	12262A	Power Cable to SW AFWP Supply Valve 3 SW - B74SA-1	Valve Inoperable	Valve N.C. Required to open if Hot Standby Greater Than 16 Hours

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
P1300 SA	12762A	Power Cable to CC Pump Area AH-7 (1A-SA)	AH-7 (1A-SA) - STOP	Required
P1300 SA	12765A	Power Cable to Charging Pump SA Area AH-9 (1A-SA)	AH-9 (1A-SA) - STOP	Required
P1300 SA	12767A	Pwr Cable to Charging Pump Area AH-10)1A-SA)	AH-10 (1A-SA) - STOP	Required
P1305 SA	11765A	Power Cable to 480V Emergency MCC-1A22-SA	Possible Loss of Entire Power to 480V Emergency MCC-1A22-SA	Required
P1305 SA	11765D	Power Cable to 480V Emergency MCC-1A22-SA	Possible Loss of Entire Power to 480V Emergency MCC-1A22-SA	Required
P1803 SB	10230A	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1
P1803 SB	10268A	Power Cable to Boric Acid TK to Charging Pump Valve 1-8104	Valve Inoperable	Required. Valve Must Open.
P1803 SB	10273A	Power Cable to Charg/Saf Inj Pump A Miniflow Isol. Valve 1-8109A	Valve Inoperable	Valve Normally Open. Not Required.
P1803 SB	10275A	Power Cable to Charg/Saf Inj Pump C Miniflow Isol. Valve 1-8109C	Valve Inoperable	Valve Normally Open. Not Required.
P1803 SB	10294A	Power Cable to Charg/Saf Inj Pump B Suct. Hdr Isol. Valve 1-8130B	Valve Inoperable	Valve Normally Open. Not Required.
P1803 SB	10296A	Power Cable to Charg/Saf Inj Pump Suct. Hdr Isol. Valve 1-8131B	Valve Inoperable	Valve Normally Open. Not Required.
P1803 SB	10298A	Power Cable to Charg/Saf Inj Pump Discharge Hdr Isol. Valve 1-8132B	Valve Inoperable	Valve Normally Open. Not Required.
P1803 SB	10300A	Power Cable to Charg/Saf Inj Pump Discharge Hdr. Isol. Valve 1-8133B	Valve Inoperable	Valve Normally Open. Not Required.
P1803 SB	10330A	Power Cable to Charg Pump Suction Valve 1-8706B	Valve Inoperable	Valve Normally Closed. Not Required.
P1803 SB	10949A	Power Cable to CCS-Non Essential RTN Isol. Valve 1-9371	Valve Inoperable	Valve Normally Open. Not Required.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
P1803 SB	10951A	Power Cable to CCS Non-Essential Supply Isol. Valve 1-9385	Valve Inoperable	Valve Normally Open. Not Required.
P1803 SB	10953A	Power Cable to RHRS Cooling Water Isol. Valve 1-9431B	Valve Inoperable	Required. Valve Must Open.
P1803 SB	11755A	Power Feed Cable From 480V Emergency Bus-1B3-SB to 480V Emergency MCC-1B35-SB	Power Loss to MCC-1A35-SB	Required.
P1803 SB	11755B	Power Feed Cable From 480V Emergency Bus-1B3-SB to 480V Emergency MCC-1B35-SB	Power Loss to MCC-1A35-SB	Required.
P1803 SB	12259A	Power Cable AFWP 1X-SAB Supply Valve 3SW-B73SB-1	Valve Inoperable	Required. Valve Must Open if Hot Standby Is Greater Than 16 Hours
P1803 SB	12260A	Power Cable to AFWP 1X-SAB Supply Valve 3SW-B72SB-1	Valve Inoperable	Required. Valve Must Open if Hot Standby Is Greater Than 16 Hours
P1803 SB	12263A	Power Cable to AFWP 1B-SB Supply Valve 3SW-B77SB-1	Valve Inoperable	Required. Valve Must Open if Hot Standby Is Greater Than 16 Hours
P1803 SB	12264A	Power Cable to AFWP Supply Valve 3SW-B76SB-1	Valve Inoperable	Required. Valve Must Open if Hot Standby Is Greater Than 16 Hours
P1803 SB	12761A	Power Cable to CC Pump Area AH-6 (1B-SB)	AH-6 1B-SB - STOP	Required
P1803 SB	12763A	Power Cable to CC Pump Area AH-7 (1B-SB)	AH-7 1B-SB - STOP	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
10223J-SA-1	10223J	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36
10321S-SA-1	10321S	See Identical Cable - Sheet 37	See Identical Cable - Sheet 37	See Identical Cable - Sheet 37
10988B-SR4-2	10988B	Steam Line Pressure, Loops 1, 2 & 3, PT-0476, PT-0486 & PT-0496 Inputs to PIC	Lose Input to PIC & Pressure Indicators on MCB & ACP	Required
10989A-SR2-2	10989A	Steam Line Pressure, Loops 1, 2, & 3, PT-0474, PT-0484 & PT-0494 Inputs to PIC	Lose PIC Inputs & Indicators on MCB & ACP	Required
11720B-SA-3	11753C	480 V Emerg Bus 1A3-SA MCB Tripping Control and Bkr, Indic of Bkr Feeding MCC-1A35-SA	Bkr Trips - Lose MCC-1A35-SA, Lose Breaker Indic and Tripping Control from MCB	Required
11720B-SA-3	11753E	480 V Emerg Bus 1A3-SA MCB Closing Control of Bkr Feeding MCC-1A35-SA	Lose Bkr closing Control at MCB for MCC-1A35-SA	Not Required (Bkr normally closed)
11720B-SA-3	11754C	480 V Emerg Bus 1A3-SA MCB Tripping Control and Bkr, Indic of Bkr Feeding MCC-1A36-SA	Bkr Trips - Lose MCC-1A36-SA, Lose Bkr Indic and Tripping Control at MCB	Required
11720B-SA-3	11754E	480 V Emerg Bus 1A3-SA MCB Closing Control of Bkr Feeding MCC-1A36-SA	Lose Bkr Closing Control at MCB for MCC-1A36-SA	Not Required (Bkr normally closed)
11720B-SA-3	11774C	480 V Emerg Bus 1A3-SA MCB Tripping Control and Bkr Indic of Bkr Feeding MCC-1A31-SA	Bkr Trips, Lose MCC-1A31-SA, Lose Bkr Indic and Tripping Control at MCB	Required
11720B-SA-3	11774E	480 V Emerg Bus 1A3-SA MCB Closing Control of Bkr Feeding MCC-1A31-SA	Lose Bkr Closing Control at MCB for MCC-1A31-SA	Not Required (Bkr normally closed)
12598B-SA-1	12598B	See Identical Cable - Sheet 19	See Identical Cable - Sheet 19	See Identical Cable - Sheet 19
12598C-SA-1	12598C	See Identical Cable - Sheet 19	See Identical Cable - Sheet 19	See Identical Cable - Sheet 19
12598D-SA-1	12598D	See Identical Cable - Sheet 19	See Identical Cable - Sheet 19	See Identical Cable - Sheet 19
12599B-SB-1	12599B	WC-2 (1B-SB) Chilled Water Flow FT-9209B-SB Input to PIC	Lose Input to PIC & Alarm	Required
12599C-SB-1	12599C	WC-2 (1B-SB) Chilled Water Flow FT-9249B-SB Input to PIC	Lose Input to PIC & Alarm	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12599D-SB-1	12599D	WC-2 (1B-SB) Chilled Water Press PT-9209B-SB Input to PIC	Lose Input to PIC & Alarm	Required
12601B-SA-1				No Cables Identified
12603A-SA-2	12603A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
12604B-SA-1	12604B	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20
12613A-SA-1 1/2	12613A	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
12614A-SB-1 1/2	12614A	WC-2 (1A-SA) Expansion Tank Isol VA 3SA-V302-SB-1 Solenoid and Limit Switches	Valve Closes, AEP Control and Indication Lost	Not Required
12617A-SA-1 1/2	12617A	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23
12619B-SA-1-1/2	12619B	Cooling Unit AH-19 (1A-SA) Chilled Water Control VA 3CX-W20 SA-1 Solenoid Cable	Valve Opens	Valve Fails Safe
12619C-SA-1-1/2	12619C	Cooling Unit AH-20 (1A-SA) Chilled Water Valve 3CX-W21SA-1 Solenoid Cable	Valve opens	Valve Fails Safe
12621A-SB-1 1/2	12621A	WC-2 (1A-SA) Expansion Tank Isol VA 3FP-V120-SB-1 Solenoid and Limit Switches	Valve Closes, AEP Control and Indication Lost	Not Required
12622A-SA-1 1/2	12622A	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23
12633A-SB-2	12633A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
12634B-SB-1	12634B	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
12642A-SB-1	12642A	WC-2 (1B-SB) Compresser Condenser Water Supply Valve 3 SW-B303 SB-1 PIC Input - PC-9209B	Lose Modulating Input to Valve	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12643A-SB-1-1/2	12643A	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
12644A-SA-1-1/2	12644A	WC-2 (1B-SB) Expansion Tank Isol Valve 35A-V307SA-1 Solenoid Power & Limit Switches	Valve shuts, lose control & indication	Not Required
12648A-SB-1-1/2	12648A	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
12650C-SB-2	12650C	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
12650D-SB-2	12650D	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
12658A-SB-1-1/2	12658A	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39
12659A-SA-1-1/2	12659A	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23	See Identical Cable - Sheet 23
13041E-SA-1	13041E	See Identical Cable - Sheet 38	See Identical Cable - Sheet 38	See Identical Cable - Sheet 38
13042E-SB-1	13042E	HVAC Chillers & Pumps Area Cooling Unit AH-19 (1B-SB) Temp TE-6542B-SB PIC Input	Lose PIC Input, Hi-Temp Alarm & Hi-Temp Auto Start	Required
13043E-SA-1	13043E	See Identical Cable - Sheet 38	See Identical Cable - Sheet 38	See Identical Cable - Sheet 38
13044E-SB-1	13044E	HVAC Chillers & Pumps Area Cooling Units AH-20 (1B-SB) Temp TE-6547B-SB Input to PIC	Lose Temp Input to PIC Hi-Temp Alarm & Auto Start Hi-Temp	TE Control Bypassed on LOOP Fans Run Constantly
15000V-SB-3	12631A	WC-2 (1B-3B) Compressor Power Feeder	Compressor inoperable	Required
15002F-SB-4	11944A	Component cooling Pump IC-SAB Power Feeder	Stop Pump - Bus diff may trip 6.9 Bus, IB-SB Pump may be operated from Bus 1A-SA via Cable 10943A	Required
15002G-SB-4	10224A	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4	See Identical Cable - Sheet 4
15002H-SB-4	11944A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15002J-SB-4	11944A	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
15002K-SB-4	10224A	CHG/SI Pump IC-SAB Power Feeder	Loss 1 of 2 Power Feeder Cables Bkr can be moved to Emerg Bus 1A-SA, Pump can run on Cable 10223A	Required
15003Q-SA-4	10943A	Component Cooling Pump IC-SAB Power Feeder	Stop Pump - Bus diff may trip 6.9 KV Bus IA-SA, Pump may be operated from Bus 1B-SB by cable 10944A	Required
15003R-SA-4	10223A	Chg/SI Pump IC-SAB Power Feeder	Loss 1 of 2 Power Feeder Cables Bkr can be moved to Emerg Bus IB-SB Pump can run on Cable 10224A	Required.
15005N-SA-3	12601A	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41
15009A-SA-4	12211A	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41
15009F-SA-4	11921A	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41
15009G-SA-4	10221A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
15009H-SA-4	10941A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
15009J-SA-4	12601A	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41
15009K-SA-4	11701A	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41
15009L-SA-4	11701B	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41
15009M-SA-4	11701C	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41
15013A-SA-4	12211A	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41	See Identical Cable - Sheet 41

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15402X-SB-4	11755A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
15405R-SA-3	12605A	WC-2 (1A-SA) Condenser Water Recirculator Pump P7 (1a-SA) Power Feeder	Pump Inoperable	Required
15405S-SB-3	12635A	WC-2 (1B-SB) Condenser Water Recirculating Pump P7 (1B-SB) Power Feedor	Pump inoperable	Required
15407L-SA-1 1/2	13041A	HVAC Chillers and Pumps Area Cooling Unit AH-19 (1A-SA) Power Feeder	Cooling Unit Inoperable	Required
15408Z-SB-4	11755B	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
15413T-SA-4	10321A	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39
15417C-SA-4	12604A	WC-2 (1A-SA) Chilled Water Pump P4(1A-SA) Power Feeder	Pump Inoperable	Required
15418Q-SB-2	13042A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
15418R-SB-2	13044A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
15418S-SB-1	12634A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
15434Q-SB-4	11770A	480 V EMERG Bus 1B3-SB Power Feeder to MCC 1B22-SB	Lose MCC 1B22-SB	Required
15436W-SB-4	12634A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
15437T-SA-4	13041A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15437U-SA-1-1/2	13043A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
15437V-SA-3	12603A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15438W-SB-4	11770D	480 V EMERG Bus 1B3-SB Power Feeder to MCC 1B22-SB	Lose MCC 1B22-SB	Required
15438Y-SB-4	13042A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
15438Y-SB-4	13044A	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
15473W-SA-4	11766A	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39
15473X-SA-4	11766B	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39
15473Y-SA-4	11766C	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39
15475D-SA-4	11775A	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39
15475E-SA-4	11775B	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39
15475F-SA-4	11775C	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40	See Identical Cable - Sheet 40
15475S-SA-4	11765D	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39
15475T-SA-4	11765A	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39
15475U-SA-4	11753A	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39
15475V-SA-4	11753B	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39
15477N-SA-4	12233A	Service Water Booster Pump 1A-SA Power Feeder	Pump Inoperable	Required
15477P-SA-4	12604A	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16015Y-SA-4	10321C	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20
16015Y-SA-4	12233B	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16015Y-SA-4	12604C	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16030R-SB-2				No Cable Identified
16030S-SB-2				No Cable Identified
16030T-SB-2				No Cable Identified
16033W-SA-3	11944D	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
16033W-SA-3	11945A	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
16033W-SA-3	11945B	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
16033W-SA-3	11945D	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
16035Q-SA-4	10326G	See Identical Cable - Sheet 30	See Identical Cable - Sheet 30	See Identical Cable - Sheet 30
16035Q-SA-4	12286C	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31
16035Q-SA-4	12673J	See Identical Cable - Sheet 32	See Identical Cable - Sheet 32	See Identical Cable - Sheet 32
16035Q-SA-4	12673K	See Identical Cable - Sheet 32	See Identical Cable - Sheet 32	See Identical Cable - Sheet 32
16035R-SA-4	10221B	Chg/SI Pump 1C-SAB Motor Space Heater	Lose Space Heater	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16035R-SA-4	10223B	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15
16035R-SA-4	10941B	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20
16035R-SA-4	12233B	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16035Y-SA-4	10325G	See Identical Cable - Sheet 27	See Identical Cable - Sheet 27	See Identical Cable - Sheet 27
16035Y-SA-4	12673F	See Identical Cable - Sheet 28	See Identical Cable - Sheet 28	See Identical Cable - Sheet 28
16040R-SB-3				No Cable Identified
16045Y-SA-1-1/2	12612C	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20
16047Y-SA-4	11001A	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31
16047Y-SA-4	11001H	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31
16047Y-SA-4	11003A	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31
16047Y-SA-4	11005A	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31
16047Y-SA-4	11005H	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31
16051S-SA-4	12630F	Swgr Room "B" A/C Unit Chilled Water Control Valve 3CX-W16SA-1 Solenoid Cable	Solenoid Degenerized to Modulate VA.	Not Required
16051T-SA-4	11795D	See Identical Cable - Sheet 32	See Identical Cable - Sheet 32	See Identical Cable - Sheet 32
16052Y-SB-4	12609C	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16052Y-SB-4	12643A	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16052Y-SB-4	12670H	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36
16052Z-SB-4	11976L	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16052Z-SB-4	12642C	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16052Z-SB-4	12649B	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16052Z-SB-4	12649C	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16052Z-SB-4	12650C	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16052Z-SB-4	12650D	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16052Z-SB-4	12658A	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39	See Identical Cable - Sheet 39
16052Z-SB-4	12669K	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36
16052Z-SB-4	12763B	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36
16054B-SB-2	12614A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16054B-SB-2	12621A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
16054B-SB-2	12650C	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054C-SB-4	12631G	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16054C-SB-4	12631J	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054C-SB-4	12631N	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054C-SB-4	12631P	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054C-SB-4	12631Q	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054C-SB-4	12631R	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054C-SB-4	12631S	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054C-SB-4	12634B	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054C-SB-4	12642C	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054C-SB-4	12643A	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054C-SB-4	12650D	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054M-SB-4	12631G	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054M-SB-4	12631J	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054M-SB-4	12631N	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054M-SB-4	12631P	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054M-SB-4	12631Q	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16054M-SB-4	12631R	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054M-SB-4	12631S	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16054N-SB-1-1/2	12642C	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16061Z-SA-2	13021D	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25
16061Z-SA-2	13024A	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25
16061Z-SA-2	13024B	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25
16061Z-SA-2	13025D	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25
16061Z-SA-2	13030A	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25
16063W-SA-4	12601G	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16063W-SA-4	12601J	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16063W-SA-4	12601P	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16063W-SA-4	12601Q	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16063W-SA-4	12601R	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16063W-SA-4	12601S	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16074T-SB-4	10222B	See Identical Cable - Sheet 33	See Identical Cable - Sheet 33	See Identical Cable - Sheet 33

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16074T-SB-4	10224B	See Identical Cable - Sheet 33	See Identical Cable - Sheet 33	See Identical Cable - Sheet 33
16074T-SB-4	11976D	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16074T-SB-4	11976P	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16074T-SB-4	13042B	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36
16074W-SB-4	11922B	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16074W-SB-4	12631G	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16074W-SB-4	12631Q	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16074W-SB-4	12648A	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16074W-SB-4	12669Y	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36
16074W-SB-4	13044B	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36
16075E-SA-4	12823P	See Identical Cable - Sheet 24	See Identical Cable - Sheet 24	See Identical Cable - Sheet 24
16083H-SA-4	10229C	See Identical Cable - Sheet 30	See Identical Cable - Sheet 30	See Identical Cable - Sheet 30
16083H-SA-4	10329C	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31	See Identical Cable - Sheet 31
16088L-SB-4	11976K	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16088L-SB-4	12554G	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16088L-SB-4	12611C	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16088L-SB-4	12631J	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16088L-SB-4	12631R	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16088L-SB-4	12631S	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16088L-SB-4	12669F	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36
16088L-SB-4	12669J	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36
16088L-SB-4	12671K	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36
16088L-SB-4	13285B	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36
16090H-SB-4	12634B	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16090J-SB-4	11750B	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16090J-SB-4	11976E	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16090J-SB-4	12001M	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16090J-SB-4	12001S	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16090J-SB-4	12554H	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16090J-SB-4	12631N	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16097D-SA-4	11729F	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21
16114Z-SB-4	10942B	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16114Z-SB-4	12550G	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34	See Identical Cable - Sheet 34
16114Z-SB-4	12631P	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35	See Identical Cable - Sheet 35
16125X-SA-4	11702B	See Identical Cable - Sheet 33	See Identical Cable - Sheet 33	See Identical Cable - Sheet 33
16125X-SA-4	12549H	See Identical Cable - Sheet 32	See Identical Cable - Sheet 32	See Identical Cable - Sheet 32
16131T-SA-4	12601G	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16131T-SA-4	12776D	See Identical Cable - Sheet 24	See Identical Cable - Sheet 24	See Identical Cable - Sheet 24
16131T-SA-4	13025H	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25
16131T-SA-4	13026H	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25	See Identical Cable - Sheet 25
16131V-SA-3	11981M	See Identical Cable - Sheet 33	See Identical Cable - Sheet 33	See Identical Cable - Sheet 33
16131V-SA-3	11981S	See Identical Cable - Sheet 33	See Identical Cable - Sheet 33	See Identical Cable - Sheet 33
16133A-SA-4	12601C	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16133A-SA-4	12601P	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16133A-SA-4	12605K	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16133A-SA-4	12611J	WC-2 (1A-SA) All Units (NNS) Chilled Water Isol VA-3CX-B3SB-1 Compressor Interlock	Shuts Valve with Compresser Running	Not Required
16133A-SA-4	12612C	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20
16133A-SA-4	12612D	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22	See Identical Cable - Sheet 22
16133B-SA-4	12211G	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21
16133B-SA-4	12211Q	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21
16133B-SA-4	12211S	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21	See Identical Cable - Sheet 21
16133B-SA-4	13295D	See Identical Cable - Sheet 26	See Identical Cable - Sheet 26	See Identical Cable - Sheet 26
16133B-SA-4	13296J	See Identical Cable - Sheet 27	See Identical Cable - Sheet 27	See Identical Cable - Sheet 27
16133L-SA-4	10941B	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20
16133V-SA-4	10225B	Chg/SI Pump IC-SAB ESS Alarm	Lose ESS Alarm	Not Required
16133V-SA-4	11724A	6.9 KV Emerg Bus 1A-SA Various Alarms	Lose Alarms From 6.9 KV Emerg Bus 1A-SA Swgr	Not Required
16133V-SA-4	11731C	6.9 KV Emerg Bus 1A-SA UnderVoltage Trip Computer Input	Lose Under Volatage Trip Computer Input	Not Required
16133V-SA-4	12227F	6.9 KV Emerg Bus 1A-SA Various Alarms	Lose Alarms From 6.9 KV Emerg Bus 1A-SA Swgr	Not Required
16139B-SA-3	10223B	Chg/SI Pump IC-SAB Motor Space Heater	Lose Space Heater	Not Required
16143B-SA-3	11775D	480 V Emerg Bus 1A3-SA MCB Tripping Control and Indic for Bkr Feeding MCC-1A32-SA	Bkr Trips, Lose MCC-1A32-SA Lose Bkr Tripping Control and Indic at MCB	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16143B-SA-3	11776C	480 V Emerg Bus 1A3-SA MCB Tripping Control and Bkr Indic for Bkr Feeding MCC-1A33-SA	Bkr Trips, Lose MCC-1A33-SA Lose Bkr Tripping Control and Indic at MCB	Required
16143C-SA-3	11764C	480 V Emerg Bus 1A3-SA MCB Tripping Control and Bkr Indic for Bkr Feeding MCC-1A21-SA	Bkr Trips - Lose MCC-1A21-SA, Lose Breaker Tripping Control and Indic at MCB	Required
16143C-SA-3	11764E	480 V Emerg Bus 1A3-SA MCB Closing Control for Bkr Feeding MCC-1A21-SA	Lose Closing Control of Bkr Feed MCC-1A21-SA	Not Required (Bkr normally closed)
16143C-SA-3	11766D	480 V Emerg Bus 1A3-SA MCB Tripping Control and Bkr Indic for Bkr Feeding MCC-1A23-SA	Bkr Trips, Lose MCC-1A31-SA, Lose Bkr Control and Indic at MCB	Required
16143C-SA-3	11766F	480 V Emerg Bus 1A3-SA MCB Closing Control for Bkr Feeding MCC-1A23-SA	Lose Bkr Closing control for Bkr Feeding MCC-1A23-SA	Not Required (Bkr normally closed)
16143D-SA-3	11765B	480 V Emerg Bus 1A3-SA MCB Tripping Control and Indic for Bkr Feeding MCC-1A22-SA	Trip Bkr, Lose MCC-1A22-SA, Lose Tripping Control and Indic at MCB	Required
16143D-SA-3	11765E	480 V Emerg Bus 1A3-SA MCB Closing Control for Bkr Feeding MCC-1A22-SA	Lose Closing Control for Bkr Feeding MCC-1A22-SA	Not Required (Bkr normally closed)
16143D-SA-3	11777B	480 V Emerg Bus 1A3-SA MCB Tripping Control and Indic for Bkr Feeding MCC-1A34-SA	Trip Bkr, Lose MCC-1A34-SA, Lose Tripping Control and Indic at MCB	Required
16143D-SA-3	11777E	480 V Emerg Bus 1A3-SA MCB Closing Control for Bkr Feeding MCC-1A34-SA	Lose Closing control for Bkr Feeding MCC-1A34-SA	Not Required (Bkr normally closed)
16143E-SA-3	11759A	480 V Emerg Bus 1A3-SA Incoming Bkr From STA Service Transformer 1A3-SA Bkr Tripping Control & Indication	Bkr Trips - Lose 480 V Bus 1A3-SA, Lose Bkr Indic and Tripping from MCB	Required
16143E-SA-3	11775F	480 V Emerg Bus 1A3-SA MCB Closing Control for Bkr Feeding MCC-1A32-SA	Lose Closing Control of Bkr Feeding MCC-1A32-SA	Not Required (Bkr normally closed)
16143E-SA-3	11776E	480 V Emerg Bus 1A3-SA MCB Closing Control for Bkr Feeding MCC-1A33-SA	Lose Closing Control for Bkr Feeding MCC-1A33-SA	Not Required (Bkr normally closed)
16143P-SA-4	12604B	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20	See Identical Cable - Sheet 20
16147G-SA-3	11758A	480 V Emerg Bus 1A2-SA Incoming Bkr from STA Serv Transformer 1A2-SA Tripping Control and Bkr Indication	Trip Breaker, Lose 480 V Bus 1A2-SA, Lose Tripping Control and Bkr Indic from MCB	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16147G-SA-3	11758C	480 V Emerg Bus 1A2-SA Incoming Bkr from STA Serv Transformer 1A2-SA Closing Control	Lose Breaker Closing Control	Required
16151A-SA-2	11944D	Aux FW Regulator VA FC-2051A-SA Limit Cable Switch	Lose MCB Indication	Required
16151B-SA-2				No Cable Identified
16151C-SA-2	11945A	Aux FW Regulator VA FC-2051B-SA Control Cable	Valve Opens	Required, Valve Fails Open. However, ability to modulate valve is lost
16151C-SA-2	11945B	Aux 4W Regulator VA FC-2051B-SA Limit Cable Switch	Lose MCB Indication	Required
16151C-SAC	11945D	Aux 4W Regulator VA FC-2051B-SA Limit Cable Switch	Lose MCB Indication	Required
16151M-SA-2	13056A	See Identical Cable - Sheet 26	See Identical Cable - Sheet 26	See Identical Cable - Sheet 26
16151M-SA-2	13056C	See Identical Cable - Sheet 26	See Identical Cable - Sheet 26	See Identical Cable - Sheet 26
16151M-SA-2	13056E	See Identical Cable - Sheet 26	See Identical Cable - Sheet 26	See Identical Cable - Sheet 26
17013V-SA-4	11957A	See Identical Cable - Sheet 37	See Identical Cable - Sheet 37	See Identical Cable - Sheet 37
17013V-SA-4	12092A	See Identical Cable - Sheet 37	See Identical Cable - Sheet 37	See Identical Cable - Sheet 37
17013V-SA-4	12235A	See Identical Cable - Sheet 37	See Identical Cable - Sheet 37	See Identical Cable - Sheet 37
17013V-SA-4	12267E	See Identical Cable - Sheet 37	See Identical Cable - Sheet 37	See Identical Cable - Sheet 37
17013V-SA-4	12269A	See Identical Cable - Sheet 37	See Identical Cable - Sheet 37	See Identical Cable - Sheet 37
17013V-SA-4	12760E	See Identical Cable - Sheet 38	See Identical Cable - Sheet 38	See Identical Cable - Sheet 38
17014N-SR3-2	10988A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
17015H-SR3-2	10988A	Steam Line Pressure, Loops 1, 2, & 3 PT-0475, PT-0485 & PT-0495 Inputs to PIC	Lose PIC Inputs & Indicators on MCB & ACP	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
17023N-SA-3	11254C	Steam Gen A Atmospheric Relief Valve 2MS-P18SA-1 Control Signal From PIC	Valve Control Signal Lost	Required
17024U-SB-1	12652A	WC-2 (1B-SB) Compressor Load Signal to Water Chiller Control Panel	Lose Compressor Load Signal	Required
17025Q-SA-1	12623A	WC-2 (1A-SA) Compressor Load Signal to Water Chiller Control Panel	Lose Compressor Load Signal	Required
17026G-SB-2	13042E	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3	See Identical Cable - Sheet 3
17026H-SB-3	12599B	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
17026H-SB-3	12599C	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
17026H-SB-3	12599D	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
17026H-SB-3	12642A	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
17027G-SA-2	11834C	FW to Stm Gen 1C Press PT-2001C-SA, Stm Gen 1C Stm Press PT-0308C-SA & FW Flow To Stm Gen 1C FT-2050C-SA Inputs to PI	Lose PIC Inputs & corresponding Indicators on MCB & ACP	Required
17029R-SA-4	10145J	See Identical cable - Sheet 36	See Identical Cable - Sheet 36	See Identical Cable - Sheet 36
17033Z-SA-2	11834A	FW to Stm Gen 1A Press PT-2001A-SA, Steam Gen 1A Stm Press PT-0308A-SA & FW Flow to Stm Gen 1A FT-2050A-SA Inputs	Lose PIC Inputs & corresponding Indicators on MCB & ACP	Required
17045A-SA-1	12612A	WC-2 (1A-SA) Condenser Water Supply Valve 3 SW-B3000 3A-1 PIC-Input to Valve	Lose Modulating Signal To Valve	Required
17052G-SB-2	11834E	FW to Stm Gen 1B Press PT-2001 B-SB, Stm Gen 1B Stm Press PT-0308B-SB & FW Flow to Stm Gen 1B FT-2050B-SB In	Lose PIC Inputs & corresponding Indicators on MCB & ACP	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
17066W-SR2-2	10989A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
17085H-SA-2	12598B	WC-2 (1A-SA) Chilled Water Flow FT-9209 A-SA to PIC	Lose PIC Input and Alarm	Required
17085H-SA-2	12598C	WC-2 (1A-SA) Chilled Water Flow FT-9249 A-SA to PIC	Lose PIC Input and Alarm	Required
17085H-SA-2	12598D	WC-2 (1A-SA) Chilled Water Press PT-9209 A-SA to PIC	Lose PIC Input and Alarm	Required
C1300 SA	11753C	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
C1300 SA	11754C	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
C1300 SA	11758A	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1300 SA	11758C	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
C1300 SA	11759A	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1300 SA	11764C	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1300 SA	11765B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1300 SA	11766D	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1300 SA	11774C	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
C1300 SA	11775D	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15
C1300 SA	11776C	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1300 SA	11777B	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16	See Identical Cable - Sheet 16
C1300 SA	11944D	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
C1300 SA	11945A	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
C1300 SA	11945B	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
C1300 SA	11945D	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17	See Identical Cable - Sheet 17
C1300 SA	12604B	WC-2 (1A-SA) Chill'd Water Pump P4 (1A-SA) Motor Space Heater	Space Heater Inoperable	Not Required
C1300 SA	12612C	WC-2 (1A-SA) Cndsr Water Supp VA-PCV-9209A, Control	Lose Capability of Modulating Valve Lose Control & Indication	Required
C1300 SA	12619B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
C1301 SA	10321C	RSH Pump 1A-SA 120VAC Motor SP Htr	Space Heater Inoperable	Not Required
C1301 SA	10321E	RHR Pump 1A-SA ESS Starting Intlk	Lose ESS Intlk & Pump Start	Required
C1301 SA	10323F	RHR Pump 1A-SA VA 2RH-F513SA-1, FIS-60Z-SA Hi & Lo Flow Intlks	Improper Valve Opening & Closing	Required
C1301 SA	10941B	CC Pump 1A-SA 120V AC Motor SP Htr	Space Heater Inoperable	Not Required
C1301 SA	11003D	Main Stm Isol VA SG 1B 2MS V2 SAB-1 SSP & STC Intlks	Open Valve - May Stay Open or Closed	Required
C1301 SA	11326D	Extraction Line Shutoff VA 6ES-V7-1 MCB-1B2 Indication Lts	Lose Indication	Not Required
C1301 SA	11471C	ARP-1A(SA) 120V AC Control Power	Lose Part of ARP	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1301 SA	11471D	ARP-2A (SA) 120V AC Control Power	Lose Part of ARP	Required
C1301 SA	11471E	ARP-2A (SA) 120V AC Control Power	Lose Part of ARP	Required
C1301 SA	11471G	ARP-3A (SA) 120VAC Control Power	Lose Part of ARP	Required
C1301 SA	11471H	ARP-3A (SA) 120VAC Control Power	Lose Part of ARP	Required
C1301 SA	11473A	ARP-4A(SA) 120V AC Control Power	Lose Part of ARP	Required
C1301 SA	11473C	ARP-4A(SA) 120V AC Control Power	Lose Part of ARP	Required
C1301 SA	11702K	Emerg Diesel Gen 1A-SA Bkr 106 SA Closing Intlk	May Initiate a Bkr Close on Short - or Block a Bkr Close - On Open	Required
C1301 SA	11729F	6.9KV Emerg Bus 1A-SA 125V DC Feeder	Lose All 125V DC For This SWGR	Required
C1301 SA	11795D	120V AC IDP-1A Alternate Power Supply	Lose of Alternate Power Supply	Not Required
C1301 SA	11944F	Transfers Control of Aux FW Reg VA's FCV-2051A-SA 2051B-SA & 2051C-SA From HCB to ACP	Improper Transfer of Control	Required
C1301 SA	12211G	Emerg SW Pump 1A - Intlk Relays	Affects ESW Pump 1A Running Intlks With Closing SW Booster Pump 1A, Opening	Required
C1301 SA	12211Q	Emerg SW Pump 1A Motor Sp Htr Relay	Space Heater Inoperable	Not Required
C1301 SA	12211R	Emerg SW Pump 1A-SA, Input To ESS	Lose Input to ESS	Required
C1301 SA	12211S	Emerg SW Pump 1A-SA, Indication	Lose Monitor Lts	Not Required
C1301 SA	12217C	Emerg SW Pmp 1A-SA Inlet VLV SW - B1SA control Cable	Loss of indication and capabilty to shut when VLV SW B3 is open.	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1301 SA	12233B	Service Water Booster Pump 1A-SA 120VAC Motor Sp Htr	Space Heater Inoperable	Not Required
C1301 SA	12237A	Containment SW "A" Retn Orifice Bypass VA 3SW-B64SA1 Power	Valve Closes	Valve Fails Safe
C1301 SA	12237E	Containment SW "A" Retn Orifice Bypass VA 3SW-B64SA1 Control	Valve May Open or Close	Either Position is Acceptable
C1301 SA	12601C	Chlr WC-2 (1A-SA) Compr Control	Lose Auto & Manual Control & Indication	Required
C1301 SA	12601G	Chlr WC-2 (1A-SA) Compr Control ESS - Control	Lose Auto Control	Required
C1301 SA	12601J	Chlr WC-2 (1A-SA) Compr - FS-9429A1 & FS-9209A1 Control	Lose Auto Control Relative To Chld Water Flow & Cnds Water Flow	Required
C1301 SA	12601P	Chlr WC-2 (1A-SA) Compr - FS-9429A1 & FS-9209A1 Control	Will Trip Compressor	Required
C1301 SA	12601Q	Chlr WC-2 (1A-SA) Compr Control	Lose Auto & Manual Control	Required
C1301 SA	12601R	Chlr WC-2 (1A-SA) Compr 120 V AC Htr Supp, Ckt For WC-2 Control Pnl	Not Involved with Control	Required
C1301 SA	12601S	Chlr WC-2 (1A-SA) Compr 120 V AC Power Fail Ckt	Alt Control Power Supply Lost	Required
C1301 SA	12604C	Chl WC-2 (1A-SA) Chl Water Pump P4(1A-SA) Control	Lose Control & Indication & May Trip Bkr	Required
C1301 SA	12605K	Chl WC-2 (1A-SA) Cnds Water Circ Pump P7 (1A-SA) Control Intlock	Pump Will Stop on Open Cable	Required
C1301 SA	12605L	Chl WC-2 (1A-SA) Cnds Water Circ Pump P7 (1A-SA) Control Intlock	Pump Will Stop on Open Cable	Required
C1301 SA	12612D	Chl WC-2 (1A-SA) Cnds Water Supp VA-3SW-B300SA-1 Control	Valve Loses Modulation Signal	Required
C1301 SA	12613A	Chlr WC-2 (1A-SA) Exp Tank Isol VA-3SA-V301SA1 Power Feeder & Control	Valve Fails Shut - Control & Indication Lost	Valve Fails Safe

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1301 SA	12615A	AH Clr(SA) Chld Water Supp Shutoff Valve 3CX-83 SA-1 Power Feeder	Valve Opens	Valve Fails Safe
C1301 SA	12615C	AH Clrs (SA) Chld Water Supp Shut Off VA 3CX-V83SA-1 Control	Lose Indication Lts	Not Required
C1301 SA	12616A	AH Clr (SA) Chld Water Supply Shutoff VA-3CX-V122 SA-1 Power Feeder	VA Fails Open	Valve Fails Safe
C1301 SA	12617A	Chlr WC-2 (1A-SA) Emerg Mu Water Supply VA-3SW-V868SA-1	Valve Fails Shut - Control & Indication Lost	Valve Fails Safe
C1301 SA	12618A	AH-5 (1A-SA) Cooling Unit Valve 3CX-W1-SA1 Power Feeder	Valve Opens	Valve Fails Safe
C1301 SA	12618E	AH-10 (1A-SA) Clg Unit Valve 3CX-W5SA-1 Power Feeder	Valve Opens	Valve Fails Safe
C1301 SA	12620C	AH Clrs (SA) Chld Water Control Valve 3CX-W2SA-1 Power	Valve Fails Open	Valve Fails Safe
C1301 SA	12622A	Chl WC-2 (1A-SA) Exp Tank Isol VA 3FP-V121 SA-1 Power & Control	Valve Fails in Closed Position Lose Power & Control	Valve Fails Safe
C1301 SA	12659A	WC-2 Exp Tank Sol VA 3FP-V133SA-1 Power & Control	Lose Power & Control & Indication Valve Fails Shut	Not Required
C1301 SA	12665J	Primary Shield Clg Fan S2 (1A-SA) Control	Lose Alarm	Not Required
C1301 SA	12681J	Reactor Support Clg Fan S-4 (1A-SA) Control	Lose Alarm	Not Required
C1301 SA	12681S	Reactor Support Clg Fan S-4 (1A-SA) Control	Lose Alarm	Not Required
C1301 SA	12741X	Containment Fan Clr AH-3 (1A-SA), Control	Lose Alarm	Not Required
C1301 SA	12741Y	Containment Fan Clr AH-3 (1A-SA), Control	Lose Alarm	Not Required
C1301 SA	12742M	Containment Fan Clr AH3 Shaft & Nozzle Dampers Control	Damper CV-D6SA-1 Fails Closed Damper CV-D5SA-1 Fails Open	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1301 SA	12742N	Containment Fan Clr AH3 Shaft & Nozzle Dampers Control	Damper CV-D6SA-1 Fails Closed Damper CV-D5SA-1 Fails Open	Required
C1301 SA	12751B	RAB STM Tunnel Vent Supp Fan S-64 (1X-SA) Control	Lose Control & Indication, Fan Stops	Required
C1301 SA	12758B	Containment Spray & RHR Pumps SA Area Cooling Unit AH-5 (1A-SA) Control	Lose Control & Indication, Stop Unit Valve 3CX-W15SA-1 Fails Open	Required
C1301 SA	12758D	Containment Spray & RHR Pumps SA Area Cooling Unit AH-5 (1A-SA) Control	Lose ESS Control, Stop Fan Valve 3CX-W7SA-1 Fails Open	Required
C1301 SA	12760B	CC Pumps Area Cooling Unit AH-6 (1A-SA) Control	Lose Control & Indication, Stop Unit	Required
C1301 SA	12760C	CC Pumps Area Clg Unit AH-6 (1A-SA) Control	Lose Alarm	Not Required
C1301 SA	12767D	Mech Penet Area Clg Unit AH-11 ESS CAB	Lose ESS Cabinet	Required
C1301 SA	12774B	Mech Penet Area Clg Unit AH-11 (1A-SA) Control & Indication	Lose Control & Indication, Unit will Probably Not Run - Valve-3CX-V83SA-1 May Be Open or Closed	Required
C1301 SA	12774H	Mech Penet Area Clg Unit AH-11 Alarm Relay	Lose Alarm	Not Required
C1301 SA	12776D	MCC-1A35 & 1B35 Clg Unit AH-92 (1A-SA) ESS Cab	Lose ESS	Required
C1301 SA	12778B	Rod Control Cab Rm Area Clg Unit AH-93 (1X-SA) Control & Indication	Lose control & Indication, Unit Will Probably Not Run, VA 3CX-W34 SA-1 May Open or Close	Required
C1301 SA	12778C	Rod Control Cab Rm Area Clg Unit AH-93 (1X-SA) Alarm Relay	Lose Alarm	Not Required
C1301 SA	12823P	Various RAB Damper Indication - 125VDC Feeder	Lose Various RAB Dapr Indicating Lts	Required
C1301 SA	13021B	RAB SWGR Rm "A" Supp Fan AH-12 (1A-SA) Control	Lose Control & Indication, Stop Fan	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1301 SA	13021D	RAB SWGR Rm "A" Supp Fan AH-12 (1A-SA) Control	Will Stop This Fan and Also Fan AH-12 (1B-SA)	Required
C1301 SA	13022B	RAB SWGR Rm "A" Supp Fan AH-12 (1B-SA) Control	Lose Control & Indication, Stop Fan	Required
C1301 SA	13024A	RAB SWGR Rm "A" Outside Air Dmpr AC-D3SA-1 Power & Control	Fails Closed, Lose Power & Indication	Required
C1301 SA	13024B	RAB SWGR Rm "A" Outside Air Dmpr AC-D3SA-1 Control	Lose Indicating Lts	Not Required
C1301 SA	13025B	RAB SWGR Rm "A" Exh Fan E-28(1A-SA) Control	Lose Control & Indication, Stop Fan	Required
C1301 SA	13025D	RAB SWGR Rm "A" Exh Fan E-28(1A-SA) Control	Will Stop This Fan, And Also Fan E-28 (1B-SA)	Required
C1301 SA	13025H	RAB SWGR Rm "A" Exh Fan E-28(1A-SA) Control	Will Stop Fan	Required
C1301 SA	13026B	RAB SWGR Rm "A" Exh Fan E28 (1B-SA) Control	Lose Control & Indication, Stop Fan	Required
C1301 SA	13026H	RAB SWGR Rm "A" Exh Fan E28 (1B-SA) Control	Will Stop Fan	Required
C1301 SA	13030A	RAB SWGR Rm "A" Ret Air Dmpr AC-D4SA-1 Power & Control	Lose Control & Indication Damper Fails Closed	Not Required
C1301 SA	13041B	HVAC Chlrs & Pump Area Cooling Unit AH-19 (1A-SA) Control & Damper 3CX-W20SA-1 Control	Lose Control & Indication, Stops Fan Dmpr May Open or Close	Required
C1301 SA	13041H	HVAC Chlrs & Pump Area Clg Unit AH-19 (1A-SA) Alarm	Lose Alarm	Not Required
C1301 SA	13046B	Elect Penet SA Area Clg Unit AH-24 (1X-SA) Ontrol	Lose Control & Indication; Stop Unit, Shut Off VA 3CX-V122SA-1 Fails Open	Required
C1301 SA	13052B	Mech Penet Area Clg Unit AH-28 (1A-SA) Control	Lose Control and Indication, Stop Unit VA 3CX-W2 SA-1 May Open or Close	Required
C1301 SA	13052D	Mech Penet Area Clg Unit AH-28 (1A-SA) Control	Stops Unit	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1301 SA	13052H	Mech Penet Area Clg Unit AH-28 (1A-SA) Control	Lose Alarm	Not Required
C1301 SA	13055C	RAB SWGR Rm "A" Exh Valve 3AC-B15A-1, AEP	Lose Control & Indication, Valve May Open or Shut	Required
C1301 SA	13056A	RAB SWGR Rm "A" Recirc & Outside Air Damper AC-D17SA-1 Power Feeder	Dmpr Fails Open, Dmpr AC-D18SA-1 May Also Fail Open	Required
C1301 SA	13056C	RAB SWGR Rm "A" Recirc & Outside Air Damper AC-D17SA-1 Lim Switch	Lose Indication Lts on ACP	Required
C1301 SA	13056E	RAB SWGR Rm "A" Dmpr AC-D17SA-1 & AC D18SA-1	Dmpr AC-D17SA-1 Fails Open, Dmpr AC-D18SA-1 May Open or Shut	Required
C1301 SA	13084B	Containment Fan Clrs AH-3 (1A-SA)	Lose Alarms	Not Required
C1301 SA	13084C	Containment Fan Clrs AH-3 (1A-SA)	Lose Alarms	Not Required
C1301 SA	13262D	DG Exh Fan E-86 (1B-SA) Sequencer Control Cable	Loss of cable will lose starting during manual mode.	Required
C1301 SA	13283D	Diesel Pump House Exh Fan E-85 (1A-SA) ESS Cab & (1B-SA) ESS Cab	Starts Up a Stopped Fan	Required
C1301 SA	13288B	Emerg SW Intk Struct EE Rm Supp Fan AH-86 (1A-SA) Control & Indication	Lose Control & Indication Stop Fan	Required
C1301 SA	13288D	Emerg SW Intk Struct EE Rm Supp Fan AH-86 (1A-SA) ESS Intlk	Stop Fan	Required
C1301 SA	13288G	Emerg SW Intk Struct EE Rm Supp Fan AH-86 (1A-SA) Alarm Relay	Lose Alarm	Not Required
C1301 SA	13295D	Emerg SW Intk Struct EE Rm Clg Water Valve Intlk From 6.9 KV Emerg SWGR	Improper Status of Valve 3 SW-V646 SA-1 & 3HP-V217 SA-1	Required
C1301 SA	13296B	Emerg SW Intk Struct EE Rm Pump Room Exh Fan E-88 (1A-SA) Control & Indication	Lose Control & Indication, Stop Fan	Required
C1301 SA	13296D	Emerg SW Intk Struct EE Rm Exh Fan E-88 (1A-SA) Control & Indication ESS - Intlk	Stop Fan	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1301 SA	13296G	Emerg SW Intk Struct EE Rm Exh Fan E-88 (1A-SA) Control & Indication Alarm Relay	Lose Alarm	Not Required
C1301 SA	13296J	Emerg SW Intk Struct EE Rm Exh Fan E88 (1A-SA) Auto Start Intlk	Lose Auto Start Intlk From Emerg Serv Water Pump 1A-SA	Required
C1302 SA	10325E	RHR System Inlet Isol Valve 1RH-V503A-1, Control & Indication To Transfer PNL 1A	Lose Control & Indication at MCB-1A1 & ACP A Shorted Cable May Cause Spurious Valve Operation	Required
C1302 SA	10325G	RHR System Inlet Isol Valve 1RH-V503A-1, Intlk From VA-2RH-V507SA-1	Open Ckt Will Prevent Opening Valve	Required
C1302 SA	10326E	RHR System Inlet Isol Va 1RH-V501SA-1, Control & Indication To Transfer Panel 1A	Lose Control & Indication at MCB-1A1 & ACP A Shorted Cable May Cause Spurious Valve Operation	Required
C1302 SA	10329D	RHR to CVCS Suction Valve RH-V507SA Interlock Cable	Loss of Cable, lose protection from Reactor Coolant-Ibt Leg Valve to RHR	Required
C1302 SA	10411E	Accumulator 1A-SA Disch VA 2SI-V537SA-1 MCB-1AA Control & Indication	Lose Control & Indication, A Shorted Cable May Cause Spurious Valve Operation	Required
C1302 SA	10413E	Accumulator 1C-SA Disch Va 2SI-V535 SA-1 MCB-1A1 Control & Indication	Lose Control & Indication, A Shorted Cable May Cause Spurious Valve Operation	Required
C1302 SA	10444D	Low Head SI to RCS Cold Leg VA 2SI-V579SA-1 Control to MCB-1A1	Lose Control & Indication At MCB, Shorted Cable May Cause Spurious Valve Oper	Required
C1302 SA	10444K	Low Head SI to RCS Cold Leg VA 2SI-V579SA-1 Indication to MCB-1A1	Lose Indication at MCB	Required
C1302 SA	10941D	CC Pump 1A-SA - Control & Indication MCB 1A1	Lose MCB Control & Indication - Open Cable Pump Status Unchanged - Shorted Cable	Required
C1302 SA	10943D	CC Pump 1B-SB - Control & Indication MCB 1A1	Lose MCB Control & Indication - Open Cable Pump Status Unchanged - Shorted Cable	Required
C1302 SA	11001B	Containment Spray Actuation Signal to ESS	Cable Short will change the sequencer program from A to B.	Required
C1302 SA	11005B	Main Steam Isol Valve MS-V3SAB, Control Cable	Loss of cable, Valve shut	Required, N O Valve

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1302 SA	12248C	SW From Containment Fan Clrs AH-2 Outlet VA-2SW-B49SA-1 MCB-1A1 Control	Open Cable Lose Control & Indication Shorted Cable - May Cause False Opening and Closing	Required
C1302 SA	12612H	Sequencer Interlock to WC-2 Vlv 3SW B300	Loss of cable (short) will not de-energize the valve.	Required
C1302 SA	12629A	Chilled Water Control VLV 3CX-W15SA Power Cable	During accident, Vlv to de-energize Loss of Cable has no effect.	Not Required
C1302 SA	12665C	Primary Shield Fan S2(1A-SA) Control Cable	Loss of cable will not start the fan in LOOP.	Required
C1302 SA	12673F	CC Fan Clr AH-2 (1A-SA) 120V Hot Sp Htr	Space Heater Inoperable	Not Required
C1302 SA	12673G	CC Fan Clr AH-2 (1A-SA) 120V Hot Sp Htr	Space Heater Inoperable	Not Required
C1302 SA	12674A	CC Fan Clr AH-2 Shaft & Nozzle Dmprs Power & Control	Dmpr to Shaft CV-D4-SA1 Stays Shut Dmpr to Nozzle CV-D3-SA-1 Stays Open	Required
C1302 SA	12674L	CC Fan Clr AH-2 Shaft & Nozzle Dmpr Indication	Indication Lts - Off or Improper	Not Required
C1302 SA	12675F	CC Fan Clr AH-2 (1B-SA) 120V Hot Sp Htr	Space Heater Inoperable	Not Required
C1302 SA	12675G	CC Fan Clr AH-2 (1B-SA) 120V Hot Sp Htr	Space Heater Inoperable	Not Required
C1302 SA	12675J	CC Fan Clr AH-2 (1B-SA) Control & Indication	Lose All Control & Indication - AH-2 Will Most Likely Not Run In Either Speed	Required
C1302 SA	12675K	CC Fan Clr AH-2 (1B-SA) Indication	Lose Lo-Speed Indication Lts - If Cable Shorts on Lo-Speed Will Stop Unit	Required
C1302 SA	12681C	Reactor Support Fan S4 (1A-SA) Control Cable	Loss of cable will not start the fan in LOOP.	Required
C1302 SA	12742A	Containment Fan Clr AH-3 Shaft & Nozzle Dmprs Power & Control	Shaft Damper CV-D6SA-1 Will Close Nozzle Damper CV-D5SA-1 Will Open	Required
C1302 SA	12742L	Containment Fan Clr AH-3 Shaft & Nozzle Dmprs Indication	Lose Indication or Improper Status of Indication Lts	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1302 SA	12751D	RAB Stm Tunnel Vent Supp Fan S-64 (1X-SA) ESS Cab	Lose ESS	Required
C1302 SA	12760D	CC Pumps Area Clg Unit AH-6 (1A-SA) ESS Cab	Lose ESS	Required
C1302 SA	12762D	CC Pumps Area Clg Unit AH-6 (1A-SA) ESS Cab	Lose ESS	Required
C1302 SA	12765D	Chg Pumps "A" Area Clg Unit AH-9 (1A-SA) ESS Cab	Lose ESS	Required
C1302 SA	12774D	Mech Penet Area Clg Unit AH-11 (1A-SA) ESS Cab	Lose ESS	Required
C1302 SA	12821H	Sequencer Interlock to Fan AH-16 (1A-SA)	Loss of cable will not start the fan.	Required
C1302 SA	12834G	Seq Interlock to Fan E-10 (1A-SA)	Lose of Cable will not start the fan.	Required
C1302 SA	12958B	CNTL RM Exh Fan Vlv 3CZ-B3SA Control Cable	Loss of cable will not shut the Va.	Not Required (N O)
C1302 SA	12958C	Cntl Rm Exh Vlv CZ-B3SA Exh Fan Interlock	Loss of cable (Short) will open the Vlv.	Not Required
C1302 SA	12958D	Control Rm Normal Exhaust Valve 3CZB3SA Control Cable	Valve N O short may cause valve to close.	Not Required
C1302 SA	12958K	CNTL RM Exh Fan Vlv 3CZ-B3SA Control Pwr Cable	Loss of cable will not shut the Va.	Not Required (N O)
C1302 SA	12960D	Cntl Rm Recirc Dmpr CZ-D19SA Pwr Feed	Loss of cable will not open the dmpr.	Not Required
C1302 SA	13027A	SWGR RM-A Sup Fan Inlet Dmpr AC-D7SA Power Cable	Loss of cable will not open dmpr.	Required
C1302 SA	13027B	SWGR RM-A Sup Fan AC-D7SA Status Light Cable	Lose Indication	Not Required
C1302 SA	13027D	SWGR RM-A Sup Fan Damper AC-D8SA Power Cable	Loss of cable will not open dmpr.	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1302 SA	13041D	HVAC Chlrs & Pumps Area Clg Unit AH-19 (1A-SA) Intlk With ESS Cab	Stops Clg Unit	Required
C1302 SA	13043D	HVAC Chlrs & Pumps Area Clg Unit AH-20 (1A-SA) Intlk With ESS Cab	Stops Clg Unit	Required
C1302 SA	13045D	AH-23 Seq Interlock Cable	Loss of cable will not start the fan.	Required
C1302 SA	13046D	AH-24 Seq Interlock Cable	Loss of cable will not start the fan.	Required
C1302 SA	13261D	DG Exh Fan E-86 (1A-SA) Seq Int Lk Cable	Loss of cable will not start the fan.	Required
C1309 SA	10221D	Chg/SI Pump 1A-SA, MCB-1A2 Control & Indication	Lose control & indication at MCB, shorted cable may stop or start pump.	Required
C1309 SA	10223D	Chg/SI Pump 1C-SAB MCB-1A2 Control & Indication	Lose control & indication at MCB, shorted cable may stop or start pump.	Required
C1309 SA	10229C	Boric Acid Transfer Pump 1A-SA, Control & Indication to Transfer Panel	Lose control & indication at MCB-1A2 & ACP Pump will stop on broken cable.	Required
C1309 SA	10229E	Boric Acid Transfer Pump 1A-SA, Control & Indication to Transfer Panel	Lose control & indication from MCB-1A-2 stopped pump can be run from ACP.	Required
C1309 SA	10271C	Chg/SI Pumps to Reactor Clg System Isol VA-2CS-V610SA-1	Lose control & indication at MCB, shorted cable may cause spurious valve Oper.	Required
C1309 SA	10321D	RHR Pump 1A-SA, MCB-1A1 Control	Lose Control & Indication vrom MCB-1A1 May trip pump during dailure, Control available from ACP	Required
C1309 SA	10323G	RHR Pump 1A-SA, VA-PCV602A, MCB-1A Control	Lose Control & Indication from MCB-1A1 Control available from ACP	Required
C1309 SA	10325K	RHR System Inl Isol VA-1RHV503A-1, MCB-1A1 Control	Lose Control & Indication from MCB-1A1 Valve may open or shut	Required
C1309 SA	10326G	RHR System Inl Isol VA-1RH-V501SA-1, Intlk From VA-2RH-V506 SB-1	Will prevent opening valve	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1309 SA	10326K	RHR System Inl Isol VA-1RH-V501SA-1, MCB-1A1 Control	Lose Control & Indication from MCB-1A1 Valve may open or shut	Required
C1309 SA	10329C	RHRS To CVCS Chg Pump Suct VA 2RH-V507SA-1, Control	Lose Control & Indication Valve may open or shut	Required
C1309 SA	10329G	RHRS To CVCS Chg Pump Suct VA 2RH-V507SA-1, MCB-1A1 Control	Lose Control & Indication from MCB-1A1 Valve may open or shut	Required
C1309 SA	11001A	Main Stm Isol VA SG 1A Train A, 2MS-V1SAB-1 Control & Indication	Lose Indication at MCB-1B2 & ACP Valve will close	Required
C1309 SA	11001D	Main Stm Isol VA SG 1A Train A, 2 MS-V1SAB-1 SSP & STC Control	If Valve is open, it may stay open or close - SSP & STC Intlk inoperative	Required
C1309 SA	11001H	Main Stm Isol VA SG 1A Train A, 2 MS-V1SAB-1 Power to Valve	Valve will close	Required
C1309 SA	11003A	Main Steam Isol Valve SG 1B Train A, 2MS-V2SAB-1 Control & Indication	Lose Indication at MCB-1B2 & ACP Valve will close	Required
C1309 SA	11005A	Main Stm Isol Valve SG 1C Train A, 2MS-V3SAB-1 Control & Indication	Lose Indication at MCB-1B2 & ACP Valve will close	Required
C1309 SA	11005D	Main Stm Isol Valve SG 1C Train A, 2MS-V3SAB-1 SSP & STC & Control	If Valve is open, it may stay open or close - SSP & STC Intlk inoperative	Required
C1309 SA	11005H	Main Stm Isol Valve SG 1C Train A, 2MS-V3SAB-1 Power to Valve	Valve will close	Required
C1309 SA	11702D	Emerg Diesel Gen 1A-SA Bkr 106 SA Intlks With ESS & SSP	Affects Intlks with Bkrs 101, 102, 104 & 105 & Turb Trip -	Required
C1309 SA	11702H	Emerg Diesel Gen 1A-SA Bkr 106 SA Intlks With ESS & SSP	Affects Intlks with Bkrs 101, 102, 104 & 105 & Turb Trip -	Required
C1309 SA	12286C	Serv water Return Header-A Shutoff Valve To Aux Reservoir VA-3 SW-B15-SA-1, Control	Lose Control & Indication, Valve in last position	Valve Normally Closed Required To Open
C1309 SA	12612E	WC-2 (1A-SA) Chilled Water Valve PCV-9209A Control Cable	Loss of cable will shut valve. Required to Shut on LOOP	Not Required
C1309 SA	12630F	SWGR RM-A Chilled Water Valve CX-W16SA	Loss of cable will not have any effect. Valve to modulate when fan runs.	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1309 SA	12673J	Containment Fan Clr AH-2 (1A-SA) Control & Indication	Lose All Control & Indication, AH-2 will most likely not run in either speed	Required
C1309 SA	12673K	Containment Fan Clr AH-2 (1A-SA) Indication	Lose Lo-Speed Indication Lts - If Cable Shorts on Lo-Speed will stop unit	Required
C1310 SA	10221F	Chg/SI Pump 1A-SA Control & Indication ACP to Transfer PNL	Lose ACP Control & Indication	Required
C1310 SA	10223F	Chg/SI Pump 1C-SAB Control & Indication ACP to Transfer PNL	Lose ACP Control & Indication	Required
C1310 SA	10229G	Boric Acid Transfer Pump 1A- Control & Indication ACP to Transfer PNL	Lose ACP Control & Indication	Required
C1310 SA	10325J	RHR System Inlet Isol Va 1RH-V503A-1 SSP-RCS Opening & Closing Intlks	Could lose RCS permissive valve opening and initiate improper closing.	Required
C1310 SA	10326J	RHR System Inlet Isol Va 1RH-V501SA-1 SSP-RCS Opening & Closing Intlks	Could lose RCS permissive valve opening and initiate improver valve closing	Required
C1310 SA	11003B	Main Stm Isol VA SG 1B Train A - 2MS-V2SAB-1 MCB Control & Indication	Lose Control & Indication at MCB Valve may open or shut.	Required
C1310 SA	11702C	Emerg Diesel Gen 1A-SA Bkr 106 SA-Control	Lose Bkr Indication Lts on ACP	Not Required
C1310 SA	11795D	120 V AC 1DP-1A-S III Alternate Feed Cable	Loss of inverter will require this power feed to 120 V AC panel	Required
C1310 SA	11975G	Aux FWT IX-SAB Steam & Isol Valve MS-V9SA SSP- Opening, Intlk	Shorted cable will open valve.	Not Required
C1310 SA	12549G	FO Transf Pump 1A-SA Control	Lose Control & Indication from diesel eng Pnl will stop pump if running	Required
C1310 SA	12549H	FO Transf Pump 1A-SA Control	Lose auto control	Required
C1310 SA	12553G	D G Day Tank 1A-SA Inl Valve 3 FO-V27SA-1, DG Control PNL 1A-SA Control & Indication	Lose Control & Indication from this Pnl	Required
C1310 SA	12553H	D G Day Tank 1A-SA Inl Valve 3 FO-V27SA-1, LS-2464A-SA HI-HI LVL Intlk	Could close valve before level reaches HI-HI	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1310 SA	12601D	Chiller WC-2(1A-SA) Compressor AEP-1 Control	Loss of cable, lose compressor	Required
C1310 SA	12601E	Chiller WC-2 (1A-SA) Compressor ACP Control	Loss of CR control will require ACP control.	Required
C1310 SA	12604D	Chiller WC-2(1A-SA) Chilled Wtr PMP P4 AEP-1 Control	Loss of cable, lose compressor	Required
C1310 SA	12604N	Chiller WC-2 (1A-SA) Chilled WTR PMP P4 (1A-SA) Control	Loss of CR control will require ACP control.	Required
C1310 SA	12612F	Chiller WC-2(1A-SA) VLV 3SW-B300 ACP Control	Loss of CR control will require ACP control.	Required
C1310 SA	12612G	Chiller WC-2(1A-SA) VLV 3SW-B300 AEP-1 Control	Loss of cable, lose compressor	Required
C1310 SA	12942F	From MCB to Cable Vault Room - continued to Transfer Panel		Required
C1310 SA	12946D	From MCB to Cable Vault Room - continued to Transfer Panel		Required
C1310 SA	12958F	From MCB to Cable Vault Room - continued to Transfer Panel		Required
C1310 SA	12960E	CR Recirc Dmpr CZ-D19SA MCB Control Cable	Lose MCB control	Required
C1311 SA	11702B	Emerg Diesel Gen 1A-SA Bkr 106 (SA) Control	Lose Control & Indication at Diesel Gen Control Pnl	Required
C1311 SA	11981M	Diesel Gen 1A- Starting Air Compr 1 ESS Intlk	Stops Compressor	Not Required
C1311 SA	11981S	Diesel Gen 1A- Starting Air Compr 2 ESS Intlk	Stops Compressor	Not Required
C1812 SB	10222B	Chg/SI Pump 1B-SB, 120VAC Htr Sp Htr	Space Heater inoperable	Not Required
C1812 SB	10224B	Chg/SI Pump 1C-SAB 120VAC Htr Sp Htr	Space Heater inoperable	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1812 SB	10942B	CC Pump 1B-SB 120VAC Motor Sp Htr	Space heater inoperable	Not Required
C1812 SB	11750B	Emerg Diesel Gen 1B-SB Bkr 126 (SB) Control	Lose Indication Lts at ACP	Required
C1812 SB	11922B	Aux FW Pump 1B-SB 120VAC Motor Sp Htr	Space Heater Inoperable	Not Required
C1812 SB	11976D	Aux FW Turb 1X-MNS Stop VA SB 125VDC Power Feeder	Lose all power & control to valve	Required
C1812 SB	11976E	Aux FW Turb 1X-MNS Stop VA Control to Transf Pnl For MCB & ACP	Lose valve control	Required
C1812 SB	11976F	Aux FW Turb 1X-MNS Stop VA Indication Lts MCB & ACP	Lose Indication Lts May blow fuses and lose valve control	Required
C1812 SB	11976K	Aux FW Turb 1X-MNS Stop VA Indication Lts SSP & ARP Intlks	Improper control	Required
C1812 SB	11976L	Aux FW Turb 1X-MNS Stop Valve SB Mech Overspeed Trip SW Intlk	Trip Turbine	Required
C1812 SB	12001M	Diesel Gen 1B-SB No 1 Starting Air Compr ESS Intlk	Stop Compressor	Not Required
C1812 SB	12001S	Diesel Gen 1B-SB No 2 Starting Air Compr ESS Intlk	Stop Compressor	Not Required
C1812 SB	12550G	FO Transfer Pump 1B-SB Control	Will stop pump	Required
C1812 SB	12554G	Diesel Gen F.O. Day Tank 1B-SB Inl Valve 3FO-V28SB-1 Control	Lose alternate control from diesel gen control pnl	Required
C1812 SB	12554H	Diesel Gen FO Day Tank 1B-SB Inl VA 3 FO-V28SB-1 Intl With LS2464B-SB	May close Valve - & Stop Fuel Oil Transf Pump 1B-SB	Required
C1812 SB	12609C	Chlr WC-2 (1A-SA) All Units (NNS) Chld Water Isol Valve 3CH-B4SB-1 Power & Control	Valve fails closed, lose control & Indication	Not Required
C1812 SB	12611C	Chlr WC-2 (1A-SA) All Units (NNS) Chld Water Isol Valve 3CX-B35B-1 Power & Control	Valve fails closed, lose control & Indication	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1812 SB	12631G	Ch1 WC-2 (1B-SB) Compr ESS Control	Lose auto control	Required
C1812 SB	12631J	Ch1 WC-2 (1B-SB) Compr FS9429B1-SB & FS9209B1-SB Control	Lose auto control relative to chld water flow & cnds water flow	Required
C1812 SB	12631N	Ch1 WC-2 (1B-SB) Compr 120 V AC Control Power	Lose compressor control	Required
C1812 SB	12631P	Ch1 WC-2 (1B-SB) Compr Control	Will trip compressor	Required
C1812 SB	12631Q	Ch1 WC-2 (1B-SB) Compr Control	Lose auto & manual control	Required
C1812 SB	12631R	Ch1 WC-2 (1B-SB) Compr 120 V AC Motor Supp Ckt	Not involved with control	Required
C1812 SB	12631S	Ch1 WC-2 (1B-SB) Compr 120 V AC Power Fail Ckt	Alt control power supply lose	Required
C1812 SB	12634B	Ch1 WC-2 (1B-SB) Chld Water Pump P4 (1B-SB) Hot Sp Htr Power	Space heater inoperable	Not Required
C1812 SB	12642C	WC-2 (1B-SB) Cndsr Water Supp VA-3SW-B303SB-1 Control & Indication	Lose indication & valve modulation	Required
C1812 SB	12643A	WC-2 Expansion Tank Valve 3SA-V 306SB	Loss of cable will shut the valve.	Required
C1812 SB	12648A	WC-2 (1B-SB) Emerg MU Water Supp Valve 3SW-V869SB-1, Power & Control	Lose control & indication - Valve closes indication Lts improper status	Not Required
C1812 SB	12649B	AH Clr (SB) Chld Water Control VA -3CX-W10SB-1 Sol Leads	Valve opens	Valve Fails Safe
C1812 SB	12649C	AH Clr (SB) Chld Water Control VA -3CX-W14SB-1 Sol Leads	Valve opens	Valve Fails Safe
C1812 SB	12650C	AH Clr (SB) Chld Water Control VA -3CX-W27SB-1 Sol Leads	Valve opens	Valve Fails Safe
C1812 SB	12650D	AH-20 (1B-SB) Chld Water VA-3CX-W28SB-1, Power	Valve opens	Valve Fails Safe

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1812 SB	12658A	WC-2 (1B-SB) Exp Tank Sol Valve 3FP-V132SB-1 Power & Control	Lose control & indication, Valve closes indication Lts improper status	Not Required
C1812 SB	12669F	Containment Fan Clr AH-1(1A-SB) 120V Motor Sp Htr	Space Heater Inoperable	Not Required
C1812 SB	12669J	Containment Fan Clr AH-1(1A-SB) Control & Indication	Lose all Control & Indication, AH-1 will most likely not run in either speed.	Required
C1812 SB	12669K	Containment Fan Clr AH-1(1A-SB) Indication	Lose Lo-Speed Indication Lts - If cable shorts on Lo-Speed will stop unit.	Required
C1812 SB	12669Y	Containment Fan Clr AH-1 (1B-SB) Alarm	Lose Alarm	Not Required
C1812 SB	12670M	Containment Fan Clr AH-1 Shaft Damper Control	Damper CV-D2SB-1 may close if AH-1 (1B-SB) is not running.	Required
C1812 SB	12671K	Containment Fan Clr AH-1 (1B-SB) Indication	Lose Lo-Speed Indication - If cable shorts on Lo-Speed will stop unit.	Required
C1812 SB	12763B	CC Pumps Area Clg Unit AH-7 (1B-SB) Control & Indication	Lose Control & Indication, Stop fan chld water VA 3CX-W14-SB-1 opens or shuts.	Required
C1812 SB	13042B	HVAC Chlrs & Pumps Area Clg Unit AH-19 (1B-SB) Control & Indication	Lose Control & Indication, Stop fan chld water VA 3CX-W27SB-1 opens or shuts.	Required
C1812 SB	13044B	HVAC Chlrs & Pumps Area Clg Unit AH-20 (1B-SB) Control & Indication	lose Control & Indication, Stop fan chld water VA 3CX-W28SB-1 opens or Shuts.	Required
C1812 SB	13279B	Diesel Gen Day Tank & Silencer Rm Exh Fans E-61 (1A-SB)	Lose control & indication, stop fan	Required
C1812 SB	13285B	Diesel Pump House Exh Fan E-85 (1A-SB) Control & Indication	Lose control & indication, stop fan	Required
L1301 SA	10145J	PRE Water Level Indication on ACP LT-461	Loss of MCB will require ACP indication.	Required
L1301 SA	10221J	Chg/SI Pump 1A-SA Ammeter Leads	Lose MCB-1A 2 Ammeter	Required
L1301 SA	10223J	Chg/SI Pump 1C-SAB Ammeter Leads	Lose MCB-1A 2 Ammeter	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
L1301 SA	10321S	Residual Heat Removal Pump 1A-SA Ammeter Leads	Lose Ammeters on MCB-1A1 & ACP	Not Required
L1301 SA	11254C	See Identical Cable - Sheet 18	See Identical Cable - Sheet 18	See Identical Cable - Sheet 18
L1301 SA	11957A	FW Pump 1A-SA Suct Press PT-2250A-SA & Disch Press PT-2150A-SA To PIC	Affects indication etc	Not Required
L1301 SA	12092A	Cndsate Stor Tank Lvl Lt-9010A-SA to PIC	Affects indication etc	Required
L1301 SA	12235A	SW Booster Pump A Disch Press & Flow Inst to PIC	Affects alarms, indicators & many other PIC functions	Not Required
L1301 SA	12241F	SW From Containment Fan Clr AH-2(SA) FT-9275B (SA) to PIC	Lose Indic, Computer, Output to Rad, Monitors etc	Not Required
L1301 SA	12241G	SW From Containment Fan Clr AH-3(SA) FT-9275C (SA) to PIC	Lose Indic, Computer, Output to Rad, Monitors etc	Not Required
L1301 SA	12267E	SW Thru HT Xchgr A - FT-7050A-SA to PIC	Lose Indic & other PIC functions	Not Required
L1301 SA	12269A	SW From WC-2 FT-9205A(SA) to PIC	Lose Indic, Computer etc	Not Required
L1301 SA	12598B	WC-2 FT-9209A SA Signal Cable	Loss of cable, lose annunciator	Not Required
L1301 SA	12598C	WC-2 FT-9429A SA Signal Cable	Loss of cable, lose annunciator	Not Required
L1301 SA	12598D	WC-2 FT-9209A SA Signal Cable	Loss of cable, lose annunciator	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
L1301 SA	12612A	WC-2 Supply VLV SW-B300 SA Pressure PT-9209A SA Interlock Cable	When chiller is started vlv interlock is bypassed	Not Required
L1301 SA	12750E	Containment Spray & RHR Pumps SA Area Clg Unit AH-5 (1A-SA) TE-6502A-SA to PIC	Lose auto control & Hi-Temp alarm - Unit can be restarted & run manually.	TE Control Bypassed on LOOP
L1301 SA	12760E	CC Pump Area Clg Unit AH-6 (1A-SA) Temp TE-6507A-SA to PIC	Lose auto control & Hi-Temp alarm Unit can be restarted & run manually	TE Control Bypassed on LOOP
L1301 SA	12760E	CC Pumps Area Clg Unit AH-6 (1A-SA) TE-6507A-SA to PIC	Lose auto control & Hi-Temp alarm - Unit can be restarted & run manually.	Not Required
L1301 SA	12774E	Mech Penet Area Clg Unit AH-11 (1A-SA) Temp TE-6532A-SA to PIC	Lose auto control, Lose Hi-Temp-alarm Fan starts - can run manually	TE Control Bypassed on LOOP
L1301 SA	12991L	Control Rm Instrumentation TI-7837A1 & TI-7835A1 Signal Cable	Lose indication in CR	Required
L1301 SA	12991M	Control Rm Instrumentation TI-7837A1 & TI-7835A1 Signal Cable	Lose indication in the CR/ACP	Required
L1301 SA	13041E	HVAC Chlrs & Pumps Area Clg Unit AH-19 (1A-SA) Temp TE-6542A-SA to PIC	Lose auto control & Hi-Temp alarm Unit can be restarted & run manually	TE Control Bypassed on LOOP
L1301 SA	13043E	HVAC Chlrs & Pumps Area Clg Unit AH-20 (1A-SA) Temp TE-6547A-SA to PIC	Lose auto control & Hi-Temp alarm Unit can be restarted & run manually	TE Control Bypassed on LOOP
L1301 SA	13046E	Control Rm to Cable Vault to Control Rm		Required
L1301 SA	13052E	Mech Penet Area Clg Unit AH-28 (1A-SA) Temp TE-6577A-SA to PIC	Stops fan, lose alarm	Required
L1400 SR1	10145E	Press'r Water Lvl, LT-0459 & Press PT-0455 Inst Conns to PIC	Lose Inputs to PIC, Indic Etc, Lose Ability to Trip Reactor	Required
L1400 SR1	10222A	Chg/SI Pump 1B-SB Motor Power Feeder	Lose Motor - May Lose 6.9kV Bus 1B-SB	Required
L1400 SR1	10993A	Steam Gen Lvl, LT-474,484 and 494 Indication Signal Cable	Lose indication in CR	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
L1400 SR1	11922A	Aux FWP 1B-SB Motor Power Feeder	Stop Pump - Bus Diff May Trip 6.5kV Bus 1B-SB	Required
P1300 SA	12233A	Service Water Booster Pump 1A-SA Power Feeder	Pump Inoperable	Required
P1300 SA	12604A	WC-2 (1A-SA) Chill'd Water Pump P4 (1A-SA) Power Feeder	Pump Inoperable	Required
P1301 SA	10321A	Residual Heat Removal P 1A-SA Motor Power Feeder	Pump Inoperable	Required
P1303 SA	12958A	Control Room Norm Exh VA 3CE-B3SA-1, Motor Power Feeder	Valve in Last Position, Inoperable	Not Required
P1303 SA	13041A	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
P1304 SA	11766A	480V Emerg MCC-1A23-SA Incoming Power Feeder From 480V Emerg Bus 1A3-SA	Lose Emerg MCC Power	Required
P1304 SA	11766B	480V Emerg MCC-1A23-SA Incoming Power Feeder From 480V Emerg Bus 1A3-SA	Lose Emerg MCC Power	Required
P1304 SA	11766C	480V Emerg MCC-1A23-SA Incoming Power Feeder From 480V Emerg Bus 1A3-SA	Lose Emerg MCC Power	Required
P1304 SA	12958A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
P1305 SA	11753A	480V Emerg MCC-1A35-SA Incoming Power Feeder From 480V Emerg Bus 1A3-SA	Lose Emerg MCC Power	Required
P1305 SA	11753B	480V Emerg MCC-1A35-SA Incoming Power Feeder From 480V Emerg Bus 1A3-SA	Lose Emerg MCC Power	Required
P1305 SA	11765A	480V Emerg MCC-1A22-SA Incoming Power Feeder From 480V Emerg Bus 1A3-SA	Lose Emerg MCC Power	Required
P1305 SA	11765D	480V Emerg MCC 1A22-SA Incoming Power Feeder From 480V Emerg Bus 1A3-SA	Lose Emerg MCC Power	Required
P1305 SA	11775A	480V Emerg MCC-1A32-SA Incoming Power Feeder From 480V Emerg Bus 1A3-SA	Lose Emerg MCC Power	Required
P1305 SA	11775B	480V Emerg MCC-1A32-SA Incoming Power Feeder From 480V Emerg Bus 1A3-SA	Lose Emerg MCC Power	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
P1305 SA	11775C	480V Emerg MCC-1A32-SA Incoming Power Feeder From 480V Emerg Bus 1A3-SA	Lose Emerg MCC Power	Required
P1305 SA	12603A	Chiller WC-2 (1A-SA) Oil Pump Motor Power Feeder	Pump Inoperable	Required
P1305 SA	13043A	HVAC Chlrs & Pumps Area Cooling Unit AH-20(1A-SA) Motor Power Feeder	AH Unit Inoperable	Required
P1816 SB	11755A	480V Emerg MCC-1B35-SB Incoming Power Feeder From 480V Emerg Bus 1B3-SB	Lose Emerg MCC Power	Required
P1816 SB	11755B	480V Emerg MCC-1B35-SB Incoming Power Feeder From 480V Emerg Bus-1B3-SB	Lose Emerg MCC Power	Required
P1816 SB	11771A	480V Emerg MCC-1B23-SB Incoming Power Feeder From 480V Emerg Bus 1B3-SB	Lose Emerg MCC Power	Required
P1816 SB	11771B	480V Emerg MCC-1B23-SB Incoming Power Feeder From 480V Emerg Bus 1B3-SB	Lose Emerg MCC Power	Required
P1816 SB	11771C	480V Emerg MCC-1B23-SB Incoming Power Feeder From 480V Emerg Bus 1B3-SB	Lose Emerg MCC Power	Required
P1816 SB	12234A	Service Water Booster Pump 1B-SB Motor Power Feeder	Pump Inoperable	Required
P1816 SB	12633A	WC-2 (1B-SB) Oil Pump Power Feeder	Pump Inoperable	Required
P1816 SB	12634A	WC-2 (1B-SB) Chld Water Pump P4(1B-SB) Motor Power Feeder	Pump Inoperable	Required
P1816 SB	13042A	HVAC Chlrs & Pumps Area Cooling Unit AH-19 (1B-SB) Motor Power Feeder	AH Unit Inoperable	Required
P1816 SB	13044A	HVAC Chlrs & Pumps Area Cooling Unit AH-20 (1B-SB) Motor Power Feeder	AH Unit Inoperable	Required
X1300 SA	10221A	Chg/SI Pump 1A-SA Power Feeder	Pump Inoperable	Required
X1300 SA	10941A	CC Pump 1A-SA Power Feeder	Pump Inoperable	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
X1300 SA	11921A	Aux FW Pump 1A-SA Power Feeder	Pump inoperable	Required
X1300 SA	12211A	Emerg SW Pump 1A-SA Power Feeder	Pump inoperable	Required
X1300 SA	12601A	WC-2 (1A-SA) Compressor Power Feeder	Compressor inoperable	Required
X1303 SA	11701A	Emerg Diesel Gen 1A-SA Breaker 106, (SA), Power Feeder to DG 1A Control PNL	Lose Emerg Power Connection	Required
X1303 SA	11701B	Emerg Diesel Gen 1A-SA Breaker 106, (SA), Power Feeder to DG 1A Control PNL	Lose Emerg Power Connection	Required
X1303 SA	11701C	Emerg Diesel Gen 1A-SA Breaker 106, (SA), Power Feeder to DG 1A Control PNL	Lose Emerg Power Connection	Required
X1803 SB	10942A	Comp Cooling Pump 1B-SB Power Feeder	Stop Pump - Bus Diff May Trip 6.9kV Bus 1B-SB	Required
X1806 SB	11749A	Emerg Diesel Gen 1B-SB Breaker 126(SB) Power Feeder to DG 1B Control Pnl	Lose Emerg Power Connection	Required
X1806 SB	11749B	Emerg Diesel Gen 1B-SB Breaker 126(SB) Power Feeder to DG 1B Control Pnl	Lose Emerg Power Connection	Required
X1806 SB	11749C	Emerg Diesel Gen 1B-SB Breaker 126(SB) Power Feeder to DG 1B Control Pnl	Lose Emerg Power Connection	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12776A-SA-1				No Cables Identified
12777A-SA-1				No Cables Identified
16034Q-SB-4	10230C	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
16034Q-SB-4	10268C	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
16034Q-SB-4	10330C	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
16034Q-SB-4	12635K	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5
16034Q-SB-4	12669G	Control Cable for AH-1 Heater	Heater Inoperable	Not Required.
16034Q-SB-4	12671G	Control Cable for AH-1 (1B-SB) Heater	Heater Inoperable	Not Required.
16034R-SB-4	12287C	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
16034U-SB-4	10230C	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
16034U-SB-4	10268C	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
16034U-SB-4	10330C	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
16034U-SB-4	12635K	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5
16034V-SB-4	12287C	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
16034Y-SB-4	12669G	See Identical Cable-This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16034Y-SB-4	12671G	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1
16034Z-SB-4				No Cables Identified
17012P-SB-4	12235B	See Identical Cable-This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet
17012Q-SB-4				No Cables Identified
17012R-SB-4	12235B	Signal Cable from Inst. Rack A1-R35 for	Loss of Disch. Press. & Flow PT-9112B-SB & FT-9112B-SB to PIC-C10SB	Required Indication and Annunciation at MCB
17022S-SR4-3	10991E	See Identical Cable-This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet
17022V-SR4-3	10991E	Steam Flow Transmitter Loops 1,2 and 3 and Reactor Coolant Flow to PIC	Lose Inputs to PIC & MCB Indicators for FT-0475, FT-0485 and PT-0403	Required
C1300 SA	10293C	Cable Between MTC-1A(SA) & 480V MCC-1A35-SA for Charg/Safety Inj Pump Isolation VA 1-8130A	May Change Status	Required. Valve Must Stay Open.
C1300 SA	10295C	Cable Between MTC-1A(SA) & 480V MCC-1A35-SA for Charg/Safety Inj Pump Isolation VA 1-8131A	May Change Status	Required. Valve Must Stay Open.
C1300 SA	10297C	Cable Between MTC-1A(SA) & 480V MCC-1A35-SA for Charg/Safety Inj Pump Isolation VA 1-8132A	May Change Status	Required. Valve Must Stay Open.
C1300 SA	10299C	Cable Between MTC-1A(SA) & 480V MCC-1A35-SA for Charg/Safety Inj Pump Isolation VA 1-8133A	May Change Status	Required. Valve Must Stay Open.
C1300 SA	10948C	Cable Between MTC-1A(SA) & 480V MCC-1A35-SA for CC Non Essential Return ISOL Valve 1-9370	May Change Status	Required. Valve Must Stay Open.
C1300 SA	10950C	Cable Between MTC-2A(SA) & 480V MCC-1A35-SA for CCS Non-Essential Isol. Valve 1-9384	May Change Status	Required. Valve Must Stay Open.
C1300 SA	10952C	Control Cable to 480V MCC-1A35-SA from MTC-2A SA for RHRS Cooling Water Valve 1-9431A	Valve may change position	Required.
C1300 SA	12549L	Cable Between 480V Emer MCC-1A35-SA & 115V Space Heater at Motor of F.O. Transf. Pump	Loss of Heater at Motor	Not Required.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1300 SA	12615B	Cable Between ARP-2A-SA& FSE-3CX-V121SA-1	Loss of Cable, 3CX-V121SA-1 Will go to Open Mode	Not Required.
C1300 SA	12762B	Cable Between ARP-2A(SA) & 480V MCC-1A35 SA for CC Pmp Area AH-7 (1A-SA)	Stop AH-7 1A-SA	Required.
C1300 SA	12762H	Cable Between ISOL. CAB 2A-2A1 & 480 V MCC 1A35-SA for AH-7 (1A-SA)	With Loss Of Power, Loss of Annunciation for AH-7 (1A-SA)	Not Required.
C1300 SA	12765B	Cable Between ARP-2A-SA & 480 V MCC 1A35-SA for AH-9 (1A-SA)	Stop AH-9 (1A-SA)	Required.
C1300 SA	12765H	Cable Between 480V MCC 1A35-SA & ISOL. Cab 2A(2A1) for AH-9 (1A-SA)	With Loss Of Power, Loss of Annunciation for AH-7 (1A-SA)	Not Required.
C1300 SA	12767B	Cable Between ARP 2A(SA) & 480V MCC 1A35-SA for AH-10 (1A-SA)	Stop AH-10 (1A-SA)	Required.
C1300 SA	12767H	Cable Between 480V MCC 1A35-SA & ISOL. Cab 2A(2A1) for AH-10 (1A-SA)	With Loss of Power, Loss of Annunciator for AH-10 (1A-SA).	Required.
C1300 SA	12776B	Control Cable to 480V MCC 1A35-SA for Cooling Unit AH-92 (1A-SA)	Stop - AH-92 (1A-SA)	Required.
C1300 SA	12776G	Control Cable to Annunciation for AH-92 (1A-SA) on Power Loss	Loss of Annunciator	Not Required.
C1300 SA	13043B	Cable Between ARP-2A (SA) & 480V MCC 1A35-SA for AH-20 1A-SA	Stop AH-20 1A-SA	Required.
C1300 SA	13043H	Cable Between 480V MCC 1A35-SA & ISOL. Cab 2A (2A1) for AH-20 (1A-SA)	Loss of Power, Loss of Annunciation for AH-20 (1A-SA)	Not Required.
C1300 SA	13283B	Cable Between 480V MCC 1A35-SA & ARP-3A (SA) for E-85 1A-SA	Stop E-85 1A-SA	Required.
C1300 SA	13283E	Cable Between FS-6907A-SA & ARP-3A (SA)	Loss of Low Flow Annunciation & Fan E-85 1A-SA INTCK	Required.
C1300 SA	13284B	Cable Between ARP-3A-(SA) & 480V MCC-1A35 - SA for E-85 (1B-SA)	Stop E-85 (1B-SA) 1B-SA	Required.
C1300-SA	10270C	Cable Between MTC-1A(SA) & 480V MCC-1A35-SA for Charg/Safety Inj Pump Miniflow Isolation Valve 1-8106	May Change Status	Required. Valve must stay open.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1810 SB	10230C	Control Cable for Boric Acid XFER PMP	Loss of Cable, Will Not Start The Pump.	Required
C1810 SB	10268C	Boric Acid TK to CSIP Suct VLV V586SB	Loss of Cable, Will be unable to Open to Valve. Valve needed During Emergency.	Valve normally closed. Required
C1810 SB	10273C	CSIP-A Miniflow Valve V600SB	Loss of Control Cable May Change the Position of Valve.	Valve normally open. Required
C1810 SB	10274C	CSIP-B Miniflow Valve V602SB	Loss of Control Cable May Change the Position of Valve.	Valve normally open. Required
C1810 SB	10275C	CSIP-C Miniflow Valve V601SB	Loss of Control Cable May Change the Position of Valve.	Valve normally open. Required
C1810 SB	10294C	CSIP Suct Valve V588SB	Loss of Control Cable May Change Position of Valve.	Valve normally open. Required
C1810 SB	10296C	CSIP Suct Valve V590SB	Loss of Control Cable May Change Position of Valve.	Valve normally open. Required
C1810 SB	10298C	CSIP Hdr Discharge Valve V604SB	Loss of Control Cable May Change Position of Valve.	Valve normally open. Required
C1810 SB	10300C	CSIP Hdr Discharge Valve V606SB	Loss of Control Cable May Change Position of Valve.	Valve normally open. Required
C1810 SB	10330C	RHR Hx to CSIP Suct Valve V506SB	Loss of Control Cable May Change Position of Valve.	Valve normally closed. Required
C1810 SB	10949C	CCS Non Essential RTN VLV B6SB	Loss of Control Cable May Change Position of Valve.	Valve normally open. Required
C1810 SB	10951C	CCS Non Essential Sup VLV B20 SB	Loss of Control Cable May Change Position of Valve.	Valve normally open. Required
C1810 SB	10953C	RHR-HX Cooling Water ISOL VLV V167SB	Loss of Control Cable Will Lose the Capability of Opening Valve.	Valve normally closed. Required
C1810 SB	12287C	SW RTN HDR-B Shut Off Valve to Aux RSVR B162B	Lose of Control Cable Will Not Change the Position of Valve	Valve normally closed. Required
C1810 SB	12287H	Cable Between MTC-10B (SB) & 480V MCC 1B35-SB for 35W-B16 SB-1	Lose Indicating Lights	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1810 SB	12287J	Safety Inj. Signal to SW RTN HDR Shutoff Valve 3SW-B16 SB-1	Loss of Safety Inj. Signal to 3SW-B16 SB	Not Required. Valve Opening Interlocked With Start of ESW Pump.
C1810 SB	12550L	Cable to 115V Space Heater for F.O. Transfer Pump 1B-SB from 480V Emergency MCC 1B35-SB	Space Heater Inoperable	Not Required
C1810 SB	12635K	Power Cable to 480V Emerg MCC 1B35-SB from 6.9kV Emergency Bus 1B-SB	Loss of Emergency Bus 1B-SB to MCC for Recirc. Pump P7 1B-SB	Required
C1810 SB	12635L	Control Cable from PIC-C14 (SB) to 480V MCC 1B35-SB for Recirc MP P7 1B-SB	MP Control Loss	Required
C1810 SB	12761B	Control Cable to 480V MCC-1B35SB for AH-6 (1B-SB)	Stop CC Pmp Area Cooling Unit AH-6 (1B-SB)	Required
C1810 SB	12761H	Control Cable to Alarm for AH-6 (1B-SB) on Power Loss	Lose Alarm	Not Required
C1810 SB	12763B	Control Cable to 480V MCC 1A35-SB for AH-7 (1B-SB)	Stop AH-7 (1B-SB)	Required
C1810 SB	12763H	Control Cable to Alarm for AH-7 (1B-SB) on Power Loss	Lose Alarm	Not Required.
C1810 SB	12777B	Control Cable to 480V MCC 1B35-SB for Cooling Unit AH-92 (1B-SB)	Stop AH-92 (1B-SB)	Required
C1810 SB	12777G	Control Cable to Alarm for AH-92 (1B-SB) on Power Loss	Lose Alarm	Not Required
C1810 SB	13042B	Cable from ARP-2B-SB (F3) to 480V MCC 1B35-SB for AH-19 (1B-SB)	Stop AH-19 (1B-SB)	Required
C1810 SB	13042H	Cable Between 480V MCC 1B35-SB & ISOL. Cab 2B (2B1) for AH-19 (1B-SB)	Loss of Power, Loss of Annunciation for AH-19 (1B-SB)	Not Required
C1810 SB	13044B	Cable from ARP-2B-SB to 480V MCC 1B35-SB for AH-20 (1B-SB)		Required
C1810 SB	13044H	Cable to ISOL. Cab 2B (2B1) from 480V MCC 1B35 SB for AH-20 (1B-SB)	Loss of Annunciation on Power Loss	Not Required.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1810 SB	13285B	Control Cable to 480V MCC 1B35-SB from ARP-3B(SB) for Diesel F.O. Transfer Pump Fan E-85 (1C-SB)	Stop Fan E-85 (1C-SB)	Required.
C1810 SB	13285E	Signal Cable from FS-6907B-SB to ARP-3B (SB) for E-85 (1A-SB)	Loss of E-85 (1C-SB) INTCK with Low Flow	Required
C1810 SB	13286B	Control Cable to 480V MCC 1B35-SB from ARP-3B-SB for E-85 (1D-SB)	Stop E-85 (1D-SB)	Required
L1300 SA				No cables identified.
L1810 SB				No Cables Identified
P1305-SA	11753A	480V Emergency MCC 1A35-SA Incoming feeder from 480V Emergency Bus 1A3-SA	Lose MCC Power	Required.
P1305-SA	11753B	480V Emergency MCC 1A35-SA Incoming feeder from 480V Emergency Bus 1A3-SA	Lose MCC Power	Required.
P1305-SA	12549A	Fuel Oil Transf Pmp Incoming Power Feeder from 480V Emergency MCC-1A35-SA	Loss of Cable will stop fuel oil transfer pump	Required.
P1305-SA	12603A	Chiller WC-2 (1A-SA) Oil Pump Motor Power Feeder	Pump Inoperable	Required.
P1305-SA	13043A	HVAC Chlrs & Pumps Area Cooling Unit AH-20 (1A-SA) Motor Power Feeder	AH Unit Inoperable	Required.
P1305-SA	13045A	AH-23 (1X-SA) Power Feed Cable	Loss of Cable will lose Fan	Required.
P1305-SA	13283A	Diesel Pump House Exh. Fan E-85 (1A-SA) Incoming Pwr Fdr from 480VMCC - 1A35-SA	Loss of Cable will stop Exh. Fan E-85 (1A-SA)	Required.
P1305-SA	13284A	Diesel Pump House Exh. Fan E-85 (1A-SA) Incoming Pwr Fdr from 480VMCC - 1A35-SA	Loss of Cable will stop Exh. Fan E-85 (1A-SA)	Required.
P1808 SB	12550A	Power Cable FDR to F O Transfer Pump 1B-SB from 480V Emergency MCC-1B35-SB	Pump Inoperable	Required
P1808 SB	13042A	Power Cable FDR to AH-19 1B-SB from 480V MCC-1B35 SB	AH Unit Inoperable	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
P1808 SB	13044A	Power Cable to CLR AH-20 (1B-SB)	Loss of Cable, Will not Start the Fan.	Required
P1808 SB	13285A	DG Fuel Oil Transfer Pump E85 (1C-SB) Power	Loss of Cable, Will not Start the Fan.	Required
P1808 SB	13286A	DG Fuel Oil XFER PMP E85 (1D-SB) Power Cable	Loss of Cable, Will not Start the Fan.	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15432U-SB-4	12234A	SW Batr Pump 1B-SB Power Feed	Loss of cable, will not start the pump on LOOP.	Required
15449L-SB-4	12633A	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15
15449L-SB-4	13042A	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15
15449L-SB-4	13044A	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15
16034N-SB-4	11976D	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16034N-SB-4	12611C	Chlr WC-2(1A-SA) AH Units (NNS) Chld Water Isol Valve 3CH-B45-SB1 Power & Control	Valve fails closed Lose Control & Indication	Not Required
16034N-SB-4	12669F	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16034P-SB-4	12649B	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16034P-SB-4	12649C	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16034P-SB-4	12650C	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16034P-SB-4	12669G	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16034P-SB-4	12669J	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16034P-SB-4	12669K	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16034P-SB-4	12669Y	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16034P-SB-4	12670H	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16034P-SB-4	12671G	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16034P-SB-4	12671K	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16056S-SB-4	10942B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16056S-SB-4	12609C	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5	See Identical Cable - Sheet 5
16056S-SB-4	12649B	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
16056S-SB-4	12649C	See Identical Cable - Sheet 13	See Identical Calbe - Sheet 13	See Identical Cable - Sheet 13
16056S-SB-4	12650C	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
16056S-SB-4	12763B	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
16074S-SB-4	10222B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16074S-SB-4	10224B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16074S-SB-4	11976F	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
16074S-SB-4	12669Y	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16074S-SB-4	13042B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16074V-SB-4	11922B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16074V-SB-4	12670M	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16074V-SB-4	13044B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16076W-SB-4	11976E	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
16076W-SB-4	12287J	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
16076W-SB-4	13285E	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
16076W-SB-4	13286B	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
16078F-SB-4	12001J	DG B Compressor Starter 1 Control Cable	Loss of cable will lose dryer. However on LOOP, there will be no power to dryer.	Not Required
16078F-SB-4	12001K	DG B Compressor Starter 2 Control Cable	Loss of cable will lose dryer. However on LOOP, there will be no power to dryer.	Not Required
16078F-SB-4	13274D	DG AH-85 (1C-SB) Flow Interlock Cable	Loss of cable will lose fan protection	Required
16087L-SA-4	13261B	DG Room Exh Fan E-86 1A-SA Control Cable	Lose Fan	Required
16087L-SA-4	13262B	DG Room Exh Fan E-86 1B-SA Control Cable	Lose Fan	Required
16087L-SA-4	13263B	DG Room Sup Fan A1-85 1A-SA Control Cable	Lose Fan	Required
16087L-SA-4	13270B	DG Room Silencer Damper DG-D2	Lose Damper	Required
16087M-SA-4	11981J	DGA Compressor Starter 1 Control Cable	Loss of cable will lose dryer however on LOOP, there will not be any power to the dryer.	Not Required
16087M-SA-4	11981K	DGA Compressor Starter 2 Control Cable	Loss of cable will lose dryer however on LOOP, there will not be any power to the dryer.	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16087M-SA-4	13263D	DG Room Supply Fan AH-85 1A-SA flow switch int	Loss of cable will lose fan protection	Required
16087M-SA-4	13264B	DG Room Supply Fan AH-85 1B-SB. Control Cable	Loss of cable will lose fan	Required
16087M-SA-4	13265A	DG Room Damper DG D3-SA Control Cable	Loss of cable will lose damper	Required
16087M-SA-4	13265B	DG Room Damper DG D4-SA Control Cable	Loss of cable will lose damper	Required
16087M-SA-4	13265C	DG Room Damper DG D3-SA Indication	Loss of cable will lose Indication	Not Required
16087M-SA-4	13265D	DG Room Damper DG D4-SA Indication	Loss of cable will lose Indication	Not Required
16087M-SA-4	13268B	DG Room Day Tank Silencer Room E-61 1A-SA Control Cable	Loss of cable will lose fan	Required
16087M-SA-4	13268D	DG Room Day Tank Silencer Room E-61 1A-SA Flow Switch Int Cable	Loss of cable will lose fan protection	Required
16087M-SA-4	13270A	DG Silencer Room Dmpr DG D1-SA Control Cable	Lose Damper	Required
16087M-SA-4	13270C	DG Silencer Damper DG-D1 Indication Cable	Lose Indication	Not Required
16087M-SA-4	13270D	DG Silencer Damper DG-D2 Indication Cable	Lose Indication	Not Required
16087M-SA-4	13270E	DG Engine PS-33B3 Interlock Cable	Lose Dampers DG-D1 and D2	Required
16088M-SB-4	11976D	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16088M-SB-4	11976E	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
16088M-SB-4	11976K	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16088M-SB-4	11976L	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
16088M-SB-4	12611C	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
16088M-SB-4	12669F	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16088M-SB-4	12669J	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16088M-SB-4	12669K	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16088M-SB-4	12671K	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16088M-SB-4	13285B	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
16090G-SB-4	10222B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16090G-SB-4	10224B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16090G-SB-4	10942B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16090G-SB-4	11922B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16090G-SB-4	11976F	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
16090G-SB-4	11976K	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
16090G-SB-4	11976L	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
16090G-SB-4	12609C	Chlr WC-2(1A-SA) All Units (NNS) Chld Wtr Isol Valve 3CH-B45B-1 Power & Control	Valve fails closed. Lose Control & Indication	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16092K-SB-4	12761H	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16092K-SB-4	12763H	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
16092K-SB-4	13042H	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
16092K-SB-4	13044H	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
17008N-SB-4	12235B	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
17014N-SR3-2	10988A	Steam Line Pressure Loops 1, 2, and 3 PT-0475, PT-0485 and PT-0495 Inputs to PIC	Lose PIC inputs and Indications on MCB and ACP	Required
17042X-SB-4	12547A	DG Day Tank LT-2461B-SB Inst Cable	Lose Indication	Required
17042X-SB-4	13272B	DG Exh Fan E-86 (1C-SB) Control Cable	Lose Fan	Required
17042X-SB-4	13272F	DG Exh Fan E-86 (1C-SB) Temp Interlock	Fan start automtaically on LOOP	Not Required
17042X-SB-4	13273B	DG Exh Fan E-86 (1D-SB) Control Cable	Lose Fan	Required
17042X-SB-4	13273F	DG Exh Fan E-86 (1D-SB) Temp Interlock	Loss of cable will not start fan automatically	Required
17042X-SB-4	13274B	DG Supply Fan AH-85 (1C-SB) Control Cable	Lose Fan	Required
17042X-SB-4	13275B	DG Supply Fan AH-85 (1D-SB) Control Cable	Lose Fan	Required
17042X-SB-4	13280B	DG Daytank Silencer Exh Fan E-61 (1D-SB) Control Cable	Lose Fan	Required
17045H-SA-4	12546A	DG Tankl Level LT-2461A-SA Inst Cable	Lose Indication	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
17045H-SA-4	13261F	DG Exh Fan E-86 (1A-SA) Temp Interlock	Fan Starts Automatically on LOOP	Not Required
17045H-SA-4	13262F	DG Exh Fan E-86 (1B-SA) Temp Interlock	Loss of cable will not start fan automatically	Required
C1300 SA	10270C	Control Cable to 480V MCC-1A35-SA from MTC-1A SA for Charg/SAF Inj. Val. 1-8106	Valve May Change Position	Required
C1300 SA	10293C	Control Cable to 480V MCC-1A35-SA from MTC-1A SA for Charg/SAF Inj. Val. 1-8130A	Valve May Change Position	Required
C1300 SA	10295C	Control Cable to 480V MCC-1A35-SA from MTC-1A SA for Charg/SAF Inj. Val. 1-8131A	Valve May Change Position	Required
C1300 SA	10297C	Control Cable to 480V MCC-1A35-SA from MTC-1A SA for Charg/Saf Inj. Val. 1-8132A	Valve May Change Position	Required
C1300 SA	10299C	Control Cable to 480V MCC-1A35-SA from MTC-1A SA for Charg/Saf Inj. Val. 1-8133A	Valve May Change Position	Required
C1300 SA	10948C	Control Cable to 480V MCC-1A35-SA from MTC-2A SA for CCS - Non-Essential Val 1-9370	Valve May Change Position	Required
C1300 SA	10950C	Control Cable to 480V MCC-1A35-SA from MTC-2A SA for CCS - Non-Essential Val 1-9384	Valve May Change Position	Required
C1300 SA	10952C	Control Cable to 480V MCC-1A35-SA from MTC-2A SA for RHRS Cooling Water Val 1-9431A	Valve May Change Position	Required
C1300 SA	12615B	Cable Between ARP-2A SA and FSE 3CX-V121 SA-1	Loss of CAble, 3CS-V121 SA-1 will go into open mode	
C1300 SA	12762B	Control Cable to 480V MCC-1A35-SA for CC Pmp Area Cooling Unit AH-7 (1A-SA)	Stop AH-7 (1A-SA)	Required
C1300 SA	12762H	Control Cable to Annunciator of CC Pmp Area Unit AH-7 (1A-SA) on Loss Offsite Power	Loss of Annunciator	Not Required
C1300 SA	12765B	Control Cable to 480V MCC-1A35-SA for Charging Pmp Area Cooling Unit AH-9 (1A-SA)	Stop AH-9 (1A-SA)	Required
C1300 SA	12765H	Clr AH-9 Loss of Power Alarm Cable	Loss of Cable Will Lose Alarm in the CR	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1300 SA	12767B	Clr AH-10 Control Cable	Loss of Cable Will Not Start Clr AH-10	Required
C1300 SA	12767H	Clr AH-10 Control Cable	Loss of Cable Will Lose Alarm in the CR	Not Required
C1300 SA	12776B	Control Cable for 480V MCC-1A35-SA for Cooling Unit AH-92 (1A-SA)	Stop AH-92 (1A-SA)	Required
C1300 SA	13043B	Clr AH-20 Control Cable	Loss of Cable Will Not Start Clr AH-20	Required
C1300 SA	13283B	DG Pump House Exh Fan E-85 1A Control Cable	Loss of Cable Will Not Start Fan E-851A	Required
C1300 SA	13283E	DG Pump Exh Fan Low Flow Int-Lock with Standby Fan E-85 1B Cable	Loss of Cable Will Not Start Auto Standby Fan E-85-1B	Required
C1300 SA	13284B	DG Pump House Exh Fan E-851B Control Cable	Loss of Cable Will Not Start Fan E-85 1B	Required
C1303 SA				No Identified Cables
C1304 SA				No Identified Cables
C1311 SA	11702B	DG Local Control Cable	Loss of this Cable Will Lose the DG Control if Control Room is Evacuated.	Required
C1311 SA	12549G	DG Fuel Oil XFER Pmp Local Control	Loss of this Cable Will Lose the Pump Control if Control Room is Evacuated.	Required
C1311 SA	12549H	Fuel Oil XFER Pmp Day Tank Level Interlock Cable	Loss of Cable Will Lose Capability to Run the Pump	Required
C1311 SA	12553G	DG Fuel Oil Inlet Valve FO-V27 Local Control Cable	Loss of Cable Will Lose Local Control if Control Room is Evacuated.	Required
C1311 SA	12553H	DG Fuel Oil Day Tank HI-HI Level Int. With Inlet Valve FO-V27 (FO)	Loss of Cable will not Shut the Valve Automatically	Required
C1800 SB	10222B	See Identical Cable - Sheet 12	See Identical Cable Sheet 12	See Identical Cable - Sheet 12

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1800 SB	10224B	See Identical Cable - Sheet 12	See Identical Cable Sheet 12	See Identical Cable - Sheet 12
C1800 SB	11976L	See Identical Cable - Sheet 13	See Identical Cable Sheet 13	See Identical Cable - Sheet 13
C1800 SB	12287J	Control Cable for Safety Inst Signal to 35W-B16 SB-1	Loss of Capability to Open Valve on safety Ins Signal	Not Required
C1800 SB	12761H	Control Cable to Annunciation for CC Pmp Area Cooling Unit AH-6 1B-SB on Pwr	Loss of Annunciator	Not Required
C1800 SB	12763H	Control Cable to Annunciation for AH-7 1B-SB on Offsite Pwr Loss	Loss of Annunciator	Not Required
C1800 SB	13042H	Cable for Annunciator For AH-19 1B-SB With Loss of Pwr	Loss of Annunciator	Not Required
C1800 SB	13044H	Cable for Annunciator For AH-20 1B-SB With Loss of Pwr		Not Required
C1800 SB	13285E	Control Cable from FS-6907B-SB to ARP-3B-SB	Low Flow Intlk for Diesel Pmp House Fan E-85 (1A-SB)	Required
C1800 SB	13286B	Control Cable to 480V MCC-1B35-SB For Diesel Pmp House Fan E-85 (1B-SB)	Stopo - E-85 (1B-SB)	Required
C1810 SB	10222B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
C1810 SB	10224B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
C1810 SB	10273C	CSIP - Miniflow V 600SB Control Cable	Valve May Close	Valve Normally Open. Required
C1810 SB	10274C	CSIP - Miniflow V 602SB Control Cable	Valve May Close	Valve Normally Open. Required
C1810 SB	10275C	CSIP - Miniflow V 601SB Control Cable	Valve May Close	Valve Normally Open. Required
C1810 SB	10294C	CSIP Suct Hdr Valve V588SB	Short: Valve May Shut Blown Fuse: Valve Stays Open.	Required. Valve Must Remain Open.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1810 SB	10296C	CSIP Suct Hdr Valve V590SB	Short: Valve May Shut Blown Fuse: Valve Stays Open.	Required. Valve Must Remain Open.
C1810 SB	10298C	CSIP Disch Hdr Valve V604SB	Short: Valve May Shut Blown Fuse: Valve Stays Open.	Required. Valve Must Remain Open.
C1810 SB	10300C	CSIP Disch Hdr Valve V606SB	Short: Valve May Shut Blown Fuse: Valve Stays Open.	Required. Valve Must Remain Open.
C1810 SB	10949C	CCS Non-Essential Return Valve B6-SB	Loss of Control Cable May Change Valve Position	Required. Valve Must Remain Open.
C1810 SB	10951C	CCS Non-Essential Supply Valve B20-SB	Loss of Control Cable May Change Valve Position	Required. Valve Must Remain Open.
C1810 SB	10953C	RHR Hx Cooling Water Isol Valve V167-SB	Lose Ability to Open Valve	Required Valve N.C. Must Be Opened.
C1810 SB	11976D	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
C1810 SB	11976E	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
C1810 SB	11976L	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13	See Identical Cable - Sheet 13
C1810 SB	12234A	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1
C1810 SB	12235B	Signal Cable from Inst Rack A1-R35 for PT-9112B-SB and FT 9112B-SB to PIC-C10 SB	Loss of Disch Pressure and Flow Indication and Annunciation at MCB	
C1810 SB	12287H	SW HDR-B Shutoff off Valve to Aux RSVR B16SB	Status Indication on Monitor Open Loss of cable will lose indication.	Not Required
C1810 SB	12287J	Safety Inj Signal to 480V MCC-1B35-SB For SW Rtr HDR-B Valve 3SW-B16 SB-1	Loss of Safety Inj Signal To 3SW-B16SB-1	Not Required. Valve Opening Interlocked with Start of ESW pump
C1810 SB	12633A	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15
C1810 SB	12635L	Control Cable from PIC-C14 (SB) to 480V MCC 1B35-SB for Recirc Pump P7 1B-SB	Pmp Control Loss	

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1810 SB	12649B	Control Cable From ARP-2B-SB to FSE-3CX-W10SB-1	Chiller Control Valve 3CX-W10SB-1 Fails Open	Not Required
C1810 SB	12649C	Control Cable From ARP-2B-SB To FSE-3CX-W14SB-1	Chiller Wtr Control Valve 3CX-W14 SB-1 Opens	Not Required
C1810 SB	12650C	Control Cable From ARP-2B-SB To FSE-3CX-W27SB-1	Chiller Wtr Control Valve 3CX-W27SB-1 Opens	Not Required
C1810 SB	12669F	Control Cable for AH-1 Heater	Heater Inoperable	Not Required
C1810 SB	12669G	Control Cable for AH-1 Heater	Heater Inoperable	Not Required
C1810 SB	12669J	Control Cable For AH-1 1A-SB	Stop-AH-1 A-SB	Required
C1810 SB	12669K	Cable to Provide Status Indication For AH-1 1A-SB	Loss of Cont Fan Cooler AH-1 1A-SB Status Indication	Not Required
C1810 SB	12669Y	AH-1 (1B-SB) Low Speed Alarm	Loss of Low Speed Annunciation For AH-1 1A-SB	Not Required. Low Speed required Only During SI Condition.
C1810 SB	12670H	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
C1810 SB	12671G	Control Cable For AH-1 1B-SB Heater	Heater Inoperable	Not Required
C1810 SB	12671K	Control Cable to Provide Status Indication for AH-1 1B-SB	Loss of Cont. Fan Cooler AH-1 1B-SB Status Indication	Not Required
C1810 SB	12761B	Control Cable to 480V MCC-1B35 SB For CC Pump Area AH-6 1B-SB	Stop-AH-6 1B-SB	Required
C1810 SB	12761H	AH-6 1B-SB Indication to Annunciator at Offsite Pwr Loss	Loss of Offsite Pwr to AH-6 1B-SB To Annunciator will not be Intact	Not Required
C1810 SB	12763B	Control Cable to 480V MCC-1B35 SB For CC Pmp Area AH-7 (1B-SB)	Stop-AH-7 (1B-SB)	Required
C1810 SB	12763H	AH-7 1B-SB Indication to Alarm at Pwr Loss	Loss of Offsite Pwr to AH-7 To Annunciator will not be intact	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1810 SB	12777B	Control Cable to 480V MCC 1B35-SB for Cooling Unit AH-92 (1B-SB)	Stop AH-92 (1B-SB)	Required
C1810 SB	13042A	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15
C1810 SB	13042B	AH-19 1B Control Cable	Loss of cable will not start the fan	Required
C1810 SB	13042H	Loss of Power or Hi Temp Alarm Cable	Loss of alarm	Not Required
C1810 SB	13044A	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15	See Identical Cable - Sheet 15
C1810 SB	13044B	AH-20 (1B-SB) Control Cable	Loss of Cable will not Start Fan	Required
C1810 SB	13044H	AH-20 (1B-SB) Control Pwr Cable	Loss of Annunciator	Not Required
C1810 SB	13285B	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14	See Identical Cable - Sheet 14
C1810 SB	13285E	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9	See Identical Cable - Sheet 9
C1812 SB	10222B	Charging Pump Control Cable	Loss will not Start the pump	Required
C1812 SB	10224B	Charging Pump Control Cable	Loss will not Start the pump	Required
C1812 SB	10942B	Control Cable to CC Pmp 1B-SB Heater From 6.9 kV Emer Bus 1B-SB		Not Required
C1812 SB	11750B	DG Local Control Cable	Loss of This Cable will Lose the DG if Control Rm is Evacuated	Required
C1812 SB	11922B	AFW Motor Pump Heater Cable		Not Required
C1812 SB	11976D	125V DC Feed to Aux Fw Turb T&T Valve (Normally Open)	Loss of Power Cable will not Change the Position but Lost Closing if Required for Protection on HI Speed.	Required for Valve Protection

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1812 SB	11976E	Control Cable to Aux FWP Turbine Control Pnl	Failure to Control Position of Aux FW Turb 1X-NNS Stop Val SB	Required
C1812 SB	11976F	Control Cable for Aux FW Turb Stop Valve Status	Loss of Aux FW Turb 1X-NNS Stop Valve SB Status at MCB, ACP	Not Required
C1812 SB	11976K	Aux FW T&T Valve Stm Gen 2/3 Lo-lo Interlock		Not Required
C1812 SB	11976L	Aux FW Turb Mech OS Protection	Loss of Cable Will not open T&T Valve	Required
C1812 SB	12550G	FO XFER Pmp Local Control Cable	Loss of cable will lose the control capability if Control Rm is evacuated.	Required
C1812 SB	12554G	FO Day Tank Inlet Valve FO V28SB Local Control Cable	Loss of cable will lose the control capability if Control Rm is evacuated.	Required
C1812 SB	12554H	FO Day Tank Inlet Valve FO V28SB Hi-Hi Level Interlock	Loss of Cable will not Shut the Valve Automatically	Required
C1812 SB	12649B	AH-6-1B Water Inlet Valve CX-W10SB	Loss of Cable will Lose Capability to Shut. However During AH-6 Operation, Valve Must Remain Open	Not Required
C1812 SB	12649C	AH-7-1B Water Inlet Valve CX-W14SB	Loss of Cable will Lose Capability to Shut. However During AH-7 Operation, Valve Must Remain Open	Not Required
C1812 SB	12650C	AH-19-1B Water Inlet Valve CX-W27SB	Loss of Cable will Lose Capability to Shut. However During AH-19 Operation, Valve Must Remain Open	Not Required
C1812 SB	12669F	AH-1 1A-SB Heater Cable	Not Required During AH-1 Operation	Not Required
C1812 SB	12669J	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable Sheet 11
C1812 SB	12669K	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable Sheet 11
C1812 SB	12669Y	AH-1 1A-SB Low Speed Alarm Cable	Alarm is for SI	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1812 SB	12670M	Shaft and Nozzle Damper CV-D7SB & CV-D8SB Interlock	Loss of cable will Lose Control	Required
C1812 SB	12671K	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11
C1812 SB	12763B	See Identical Cable - Sheet 11	See Identical Cable - Sheet 11 Start the Fan	See Identical Cable - Sheet 11
C1812 SB	13042B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12 Start the Fan	See Identical Cable - Sheet 12
C1812 SB	13044B	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12	See Identical Cable - Sheet 12
C1812 SB	13279B	Control Cable to 480V MCC 1B23-SB for Diesel Gen Day Tank Exhaust Fan E-61 1A-SB	Stop - E-61 1A-SB	Required
C1812 SB	13285B	Control Cable to 480V MCC-1B35-SB for Diesel Pmp House Exh Fan E-85 (1A-SB)	Stop - E-85 1A-SB	Required
L1300 SA				No Identified Cables
L1303 SA				No Identified Cables
L1401 SR3	10988A	Signal Cable to PIC-P3		Required
L1801 SB				No Identified Cables
L1810 SB	12235B	Signal Cable From Inst. Rack A1-R35 For PT-9112B-SB & FT-9112B-SB To PIC-C10 (1A-SB)	Low of Disch Press, & Flow Indication & Annunciation at MCB	Required
P1304 SA	11766A	Power Cables to Safety MCC A23-SA	Loss of Cable Will Lose Power to the MCC A23-SA	Required
P1304 SA	11766B	Power Cables to Safety MCC A23-SA	Loss of Cable Will Lose Power to the MCC A23-SA	Required
P1304 SA	11766C	Power Cables to Safety MCC A23-SA	Loss of Cable Will Lose Power to the MCC A23-SA	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
P1305 SA	11753A	480V Emergency MCC-1A35-SA Cable from 480V Emergency Bus 1A3 - SA	Loss of 480V Emergency MCC-1A35 - SA	Required
P1305 SA	11753B	480V Emergency MCC-1A35-SA Cable from 480V Emergency Bus 1A3 - SA	Loss of 480V Emergency MCC-1A35-SA	Required
P1305 SA	11765A	480V Emergency MCC-1A22-SA Cable from 480V Emergency Bus 1A3 - SA FDR	Loss of 480V Emergency MCC-1A22-SA	Required
P1305 SA	11765D	480V Emergency MCC-1A22-SA Cable from 480V Emergency Bus 1A3 - SA FDR	Loss of 480V Emergency MCC-1A22-SA	Required
P1305 SA	12603A	Fdr Cable for Wtr Chiller WC-2 (1A-SA) Starter for Oil Pump	Loss of Power to Water Chiller Control PNL for Oil Pump	Required
P1305 SA	13043A	Power Fdr Cable to AH-20 1A-SA from 480V MCC-1A 35SA	Stop AH20 (1A-SA)	Required
P1808 SB	12633A	Power Feed to Water Chiller WC-2	Loss of Cable will Lose Chiller	Required
P1808 SB	13042A	Power Feed to Cooler AH-19 1B	Loss of Cable will not Start the Fan	Required
P1808 SB	13044A	Power Feed to Cooler AH20-1B	Loss of Cable will not Start the Fan	Required
P1816 SB	11771A	Pwr Fdr to 480V Emer MCC-1B23-SB From 480V Emer Bus 1B3-SB	Loss of 480V Emer. MCC-1B23-SB	Required
P1816 SB	11771B	Pwr Fdr to 480V Emer MCC-1B23-SB From 480V Emer Bus 1B3-SB	Loss of 480V Emer. MCC-1B23-SB	Required
P1816 SB	11771C	Pwr Fdr to 480V Emer MCC-1B23-SB From 480V Emer Bus 1B3-SB	Loss of 480V Emer. MCC-1B23-SB	Required
X1303 SA	11701A	DG Power Output Cable	6.9 KV Power to Emergency Bus 1A-SA	Required
X1303 SA	11701B	DG Power Output Cable	6.9 KV Power to Emergency Bus	Required
X1303 SA	11701C	DG Power Output Cable	6.9 KV Power to Emergency Bus	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
X1806 SB	11749A	Pwr Cable To Diesel Gen Cntl Pnl 1B-SB from 6.9kV Emer Bus 1B-SB	Loss of Diesel Gen Control	Required
X1806 SB	11749B	Pwr Cable To Diesel Gen Cntl Pnl 1B-SB from 6.9kV Emer Bus 1B-SB	Loss of Diesel Gen Control	Required
X1806 SB	11749C	Pwr Cable To Diesel Gen Cntl Pnl 1B-SB from 6.9kV Emer Bus 1B-SB	Loss of Diesel Gen Control	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16159N-SA-1-1/2	11795D	Alternate Power Feed to Dist Panel IDP 1A-SA	Lose of Power to Dist Panel	Main Power Feed to IDP 1A-SA Located in Different Fire Area
16159X-SA-2	13054A	Power & Control AC-D21SA-1 All 12 and 13	Damper Fails Closed - No cooling to ACP	MCB Available for Shutdown
16159X-SA-2	13054B	Power & Control AC-D22SA-1 All 12 and 13	Damper Fails Closed - No cooling to ACP	MCB Available for Shutdown

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
10632H - SR4-1	10632H	Powerfeed to SSP	Lose SSP	Required.
10988B - SR4-2	10988B	PT0476 (MS Pressure) to PIC	Lose Ability to Isolate MS line via MSIV.	Required.
160207 - SR4-2	10632D	Powerfeed to SSP	Lose SSP	Required.
160207 - SR4-2	10632E	Powerfeed to SSP	Lose SSP	Required.
160207 - SR4-2	10632H	Powerfeed to SSP	Lose SSP	Required.
16020Q - SR2-2	10626A	Powerfeed to SSP	Lose SSP	Required.
16020Q - SR2-2	10626B	Powerfeed to SSP	Lose SSP	Required.
16020R - SR2-2 1/2	10626B	Powerfeed to SSP	Lose SSP	Required.
16020S - SR2-2 1/2	10626A	Powerfeed to SSP	Lose SSP	Required.
16106D - SR4-1	10632D	Powerfeed to SSP	Lose SSP	Required.
16106E - SR4-4 1/2	10632B	Powerfeed to SSP	Lose SSP	Required.
CC0078	12634D	WC-2 (1B-SB) Chilled Wtr Pump P4 (1B-SB), Cntl	Lose Cntl & Indic from AEP-1 Cntl Available from ACP	Required
CC0078	12642G	WC-2 (1B-SB) Cndsr/Wtr Supp VA-3SW-B303 SB-1	Lose Cntl & Indic from AEP-1 Cntl Available from ACP	Not Required
CC0078	12643E	WC-2 (1B-SB) Exp TK Sol VA 3SA-V306 SB-1	Lose Cntl & Indic from AEP-1	Required
CC0078	12645H	Indic for Various HVAC Valves & Dampers	Cntl Available from ACP Valve Fails Closed, Cannot be Opened	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
CC0078	12648B	WC-2 (1B-SB) Emerg MU Wtr Supp VA 3SW-V869 SB-1 Cntl	Lose Cntl & Indic, Valve Fails Closed, Cannot Be Opened	Required
CC0078	12658B	WC-2 (1B-SB) EXP TK Isol VA-3FP-V132 SB-1 Cntl	Lose Cntl & Indic, Valve Fails Closed, Cannot Be Opened	Not Required
CC0078	12753C	RAB Stm Tunnel Vent Supp Fan S-65(IX-SB),Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	12759C	Containment Spray & RHR Pumps SB Area CLG Unit AH5-(1B-SB) Cntl	Lose Cntl & Indic, Stops Unit	Required
CC0078	12761C	CC Pumps Area Clg Unit AH-6 (1B-SB) Cntl	Lose Cntl & Indic, Stops Unit	Required
CC0078	12763C	CC Pumps Area Clg Unit AH-7 (1B-SB) Cntl	Lose Cntl & Indic, Stops Unit	Required
CC0078	12766C	Chg Pump SB Area Clg Unit AH-9 (1B-SB) Cntl	Lose Cntl & Indic, Stops Unit	Required
CC0078	12768C	Chg Pump SAB Area Clg Unit AH-10 (1B-SB) Cntl	Lose Cntl & Indic, Stops Unit	Required
CC0078	12775C	Mech Penet Area Clg Unit AH-11 (1B-SB) Cntl	Lose Cntl & Indic, Stops Unit	Required
CC0078	12777C	MCC-1A35/1B35 Area Clg Unit AH-92 (1B-SB) Cntl	Lose Cntl & Indic, Stops Unit	Required
CC0078	12835C	RAB Elec Equip Prot Rooms Exc Fan E-10 (1B-SB) Cntl	Lose Cntl & Indic, Stops Unit	Required
CC0078	12837D	RAB Elec Equip Prot Rm Exh Isol Va 3CZ-B85SB-1 Cntl	Lose Cntl & Indic	Not Required
CC0078	13031C	RAB Swgr Room "B" Supp Fan AH-13 (1A-SB) Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	13032C	RAB Swgr Room "B" Supp Fan AH-13 (1B-SB) Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	13035C	RAB Swgr Room "B" Supp Fan E-29 (1A-SB) Cntl	Lose Cntl & Indic, Stops Fan	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
CC0078	13036C	RAB Swgr Room "B" Supp Fan E-29 (1B-SB) Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	13042C	HVAC Chillers & Pumps Area Clg Unit AH-19 (1B-SB) Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	13044C	HVAC Chillers & Pumps Area Clg Unit AH-20 (1B-SB) Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	13047C	Elect Penet SB Area Clg Unit AH-25 (IX-SB), Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	13049C	H&V Equip Rm No. 1 SB Area Clg Unit AH-26 (1B-SB), Cntl	Lose Cntl & Indic, Stops Fan	Not Required
CC0078	13053C	Boron Inject Pump & TK Area Clg Unit AH-28 (1B-SB) Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	13057C	Evap Access Aisle Unit 1&4 Area Clg Unit AX-29 (1X-SB) Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	13285C	Diesel Pump House Exh Fan E-85 (1A-SB), Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	13286C	Diesel Pump House Exh Fan E-85 (1B-SB), Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	13290C	ESW Intk Struc Elec Equip Rm Supp Fan AH-86 (1B-SB) Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	13291E	ESW Intk Struc Elec Equip Rm Dampers EV-D1 (SB-1) & EV-D2 (SB-1) Cntl	Dampers Fail Closed, Lose Control	Not Required
CC0078	13297C	ESW Intk Struc Pump Rm Exh Fan E88 (1B-SB), Cntl	Lose Cntl & Indic, Stops Fan	Required
CC0078	WC-2 (1B-S Compr, Control		Lose Cntl & Indic from AEP-1 Cntl Available from ACP	Required
CC0078 - SB	11200D	SG 1C-SN Steam Sample VA 2SP-V80 SB-1, Cntl	Lose Cntl & Indic, Valve Fails Close, Cannot Be Opened	Not Required.
CC0078 - SB	11201D	SG 1A-SN Tube Sheet Sample VA 2SP-V91 SB-1, Cntl	Lose Cntl & Indic, Valve Fails Close, Cannot Be Opened	Not Required.

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
CC0078 - SB	11202D	SG IB-SN Tube Sheet Sample VA 2SP-V86 SB-1, Cntl	Lose Cntl & Indic, Valve Fails Close, Cannot Be Opened	Not Required.
CC0078 - SB	11203D	SG IC-SN Tube Sheet Sample VA 2SP-V81 SB-1, Cntl	Lose Cntl & Indic, Valve Fails Close, Cannot Be Opened	Not Required
CC0078 - SB	12609D	WC-2 (1A-SA) AH Units (NNS) Chld Water Isol VA. 3CH-B4SB-1, Cntl	Lose Cntl & Indic, Valve Fails Close, Cannot Be Opened	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
112619D-SA-1				No Identified Cables
12650E-SB-1				No Identified Cables
12776A-SA-1	12776A	MCC 1A35 & 1B35 Area Cooling Unit AH-92 (1A-SA) Power Feeder	Unit Inoperable	Required
13017A-SB-1 1/2	13017E	RAB Swgr Room "B" Return Damper AC-D14SB-1 Limit Switch Cable	Lose AEP Indication	Not Required
13017A-SB-1 1/2	13017F	RAB Swgr Room "B" Return Damper AC-D14SB-1 Motor Cable	Damper Shuts	Required
15426W-SB-4	11756A	480V Emerg Bus 1B3-SB to MCC 1B36-SB Power Feeder	Lose MCC 1B36-SB	Required
15426X-SB-4	11756D	480V Emerg Bus 1B3-SB to MCC 1B36-SB Power Feeder	Lose MCC 1B36-SB	Required
15429G-SA-4	11754A	480V Emerg Bus 1A3-SA to MCC 1A36-SA Power Feeder	Lose MCC 1A36-SA	Required
15429H-SA-4	11754B	480V Emerg Bus 1A3-SA to MCC 1A36-SA Power Feeder	Lose MCC 1A36-SA	Required
15429Q-SA-4	11754A	480V Emerg Bus 1A3-SA to MCC 1A36-SA Power Feeder	Lose MCC 1A36-SA	Required
15429R-SA-4	11754B	480V Emerg Bus 1A3-SA to MCC 1A36-SA Power Feeder	Lose MCC 1A36-SA	Required
16030V-SB-3	12835F	RAB Elect Eqpt Protection Rooms Exhaust Fan E 10 (1B-SB) Alarm Relays	Lose Alarm	Not Required
16030V-SB-3	12951C	Control Room Normal Supply Disch VA 3CZ - B26 SB-1 Control	Valve May Open or Close	Valve Normally Closed
16030V-SB-3	12972S	Control Room Normal Supply Fan AH-15 (1B-SB) Alarm Relays	Lose Alarms	Not Required
16030X-SB-3	12837C	RAB Elect Eqpt Protection Rooms Exhaust Isol Valve 3CZ-B8SB-1 control	Lose Control & Indication Valve May Open or Shut	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16030X-SB-3	12943D	Control Room Normal Supply Intake Valve 3CZ-B2SB-1 Control	Lose Control at MCB and ACP	Not Required
16030X-SB-3	12943J	Control Room Normal Supply Intake Valve 3CZ-B2SB-1 Control	Lose Control at MCB and ACP	Not Required
16030X-SB-3	12947B	Control Room Normal Supply Fan AH-15 (1B-SB) Control	Stop Fan, Lose MCB and ACP Control and Indication	Not Required
16030Z-SB-3	12835B	RAB Elect Eqpt Protection Rooms Exhaust Fan E 10 (1B-SB) Control	Stop Fan, Lose Control & Indication	Not Required
16033k-SA-1 1/2	13015E	RAB Swgr Room "A" Return Damper AC-D11SA-1 Limit Switch Cable	Lose AEP Indication	Not Required
16033k-SA-1 1/2	13015F	RAB Swgr Room "A" Return Damper AC-D11SA-1 Motor Cable	Damper Closes	Required
16038W-SB-3	12823C	RAB Elect Eqpt Protection Rooms Inlet Damper CZ-D10SB-1 Limit Switch Cable	Lose AEP Indication	Not Required
16038W-SB-3	12949F	Control Room Normal Supply Electric Unit Heater EHC-26 (1X-SB) Supply Fan Intlk	Shut Unit Heater	Required
16066H-SB-4	10789D	Control Room Emerg Outside Air Intake 11A Radiation Monitor RM-1CZ-3505 B2-SB 120V AC Pwr Cable	Lose Radiation Monitor	This Monitor is Temporarily Located at Normal Air Intake of Unit 2
16066H-SB-4	12628A	WC-2 (1A-SA) Control Room #2 Chilled Water Isol Valve 3CX-V115SB-1 Limt Sw & Solenoid Cable	Valve Shuts, Lose AEP Control and Indication	Not Required
16066H-SB-4	12655A	WC-2 (1B-SB) Control Room #2 Chilled Water Isol Valve 3CH-V85SB-1 Limt Switch & Solenoid Cable	Valve Shuts, Lose Control and Indication	Not Required
16066H-SB-4	12657A	WC-2 (1B-SB) Control Room #2 Chilled Water Isol Valve 3CX-V110 SB-1 Limt Switch & Solenoid Cable	Valve Shuts, Lose Control and Indication	Not Required
16072L-SB-3	12838C	RAB Elect Eqpt Rooms Return Damper CZ-D26SB-1 Limit Switch Cable	Lose AEP Indication	Not Required
16072L-SB-3	12943K	Control Room Normal Supply Intake Valve 3CZ-B2SB-1 HI-RAD INTLK	Valve Status Unchanged Valve Can Shut Automatically	Not Required
16072L-SB-3	12944D	Control Room Normal Supply AH-15(1B-SB) Inlet Damper C2-D2SB-1 Motor Cable	Damper Shuts	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16072L-SB-3	12944F	Control Room Normal Supply AH-15(1B-SB) Inlet Damper C2-D2SB-1 Limit Switch Cable	Lose HCB Indication	Not Required
16072L-SB-3	12945D	Control Room Normal Supply Chilled Water Valve 3CX-W24SB-1 Motor Cable	Deenergizes. Shuts Chilled Water to Cooling Coil	Not Required
16072L-SB-3	12951D	Control Room Normal Supply Disch VA 3CZ-B26SB-1 Limit Switch Cable	Lose HCB Indication	Not Required
16099N-SA-4	12865J	Fuel Handling Building Open Floor SA Isol Dampers FL-D4SA & FL-D8SA Limit Switch Cables	Lose AEP Indication	Not Required
16099N-SA-4	12865L	Fuel Handling Building Oper Floor SA Isol Dampers FL-D4SA & FL-D8SA Solenoid Cable	Dampers Close	Not Required
16099N-SA-4	12880E	Fuel Handling Bldg Oper Floor SA Isol Dampers FL-D21SA & FL-D11 - SA Limit Sw Cable	Lose AEP Indication	Not Required
16099N-SA-4	12880K	Fuel Handling Bldg Oper Floor SA Isol Dampers FL-D21 SA & FL-D11 - SA Solenoid Cable	Dampers Shut	Not Required
16099N-SA-4	12967L	Control Room Purge System Exhaust Valve 3CZ-B13SA-1 HI Rad Intlk	Valve Status Unchanged Valve Can Shut Automatically.	Not Required
17042Q-SB-3	12823J	RAB Elect Eqpt Protection Rooms Inlet Damper CZ-D10 SB-1, PIC Modulation Signal	Lose Modulation Signal to Damper	Not Required due to dedicated system
17042Q-SB-3	12945E	Control Room Normal Supply Chilled Water Valve 3CX-W24SB-1 Temp Signal From PIC	Lose Temp Control for Chilled Water	Not Required
17042Q-SB-3	12949G	Control Room Normal Supply Electric Unit Heater EHC-26 (1X-SB) Temp Signal From PIC	Lose Unit Heater Temp Control	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12991C-SA-1	12991C	See Identical Cable Above-Sheet 3	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3
12991F-SB-1	12991F	Control Room Return Air TE-7837B Cable	Loss of indication & EHC-26 control	Not Required
16049J-SA-4				No Cables Identified
16049K-SA-4	12660A	Chilled Water Valve CX-W18 Control Cable	Loss of Cable will keep valve modulating	Not Required
16049K-SA-4	12818A	Elec Protection Return DMPR CZ-D23 Control Cable	Loss of Cable, shut the DMPR	Not Required
16049K-SA-4	12823A	Elec Protection Inlet DMPR CZ-D19SA Control Cable	Loss of Cable, shut the DMPR	Not Required
16049K-SA-4	12823B	Elec Protection Inlet DMPR CZ-D10SB Control Cable	Loss of Cable, shut the DMPR	Not Required
16049K-SA-4	12826A	Elec Protection Branch DMPR CZ-D17SA Control Cable	Loss of Cable, open the DMPR	Not Required
16049K-SA-4	12942K	Control Room Supply Intake Valve CZ-B1SA HIRAD/SI	Valve Stays in its open position	Not Required (NO)
16049K-SA-4	12944A	Control Room Inlet DMPR CZ-D1SA Control Cable	Loss of Cable will not open the Damper	Not Required
16049K-SA-4	12944C	Damper CZ-D1SA Indicating Position Control Cable	Loss of indication	Not Required
16049K-SA-4	12945A	Chilled Water to Norm Air Supply System Inlet Valve CX-W17SA	Lose chilled water to cooling coil	Required (NC)
16049K-SA-4	12948F	AH-15(1A-SA) EHC-24 Interlock Cable	EHC-24 will not work	Not Required
16049K-SA-4	12950D	Control Room Discharge Valve CZ-B25SA Ind Light Control Cable	Loss Valve Indication	Not Required
16049K-SA-4	13015E	SWGR-RM-A Diversion DMPR AC-D11SA Indication Cable	Loss of indication	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16049K-SA-4	13015F	SWGR-RM-A Diversion DMPR AC-D11SA Control Cable	Loss of Cable will shut the Damper	Required
16115J-SA-1				NOT ON CONDUIT LIST
16115J-SA-1 1/2				NOT ON CONDUIT LIST
16118T-SB-4	12611F	WC-2 Chilled Water Valve CX-B3SB "SI" Interlock	Loss of Cable (open) shut the valve	Required
16118T-SB-4	13039E	SW-RM B Return Air DMPR AC-D6SB SI Cable	Loss of Cable (short) will open DMPR AC-D6SB	Required since there is no SI
16124L-SB-4	11170A	Containment ISOL Signal to Sequencer 1A-SA for Bypassing Overload & Torque Switch	Cable open or shut will haveno impact since sequence energize on LOOP.	Not Required
16124L-SB-4	11974G	Steam Generator Lo Lo Interlock with Aux FW Turb Steam Inlet Valve MS-V8SB	Valve open on LOOP (Appendix R) Loss of Cable will not change the position of the valve	Not Required
16124L-SB-4	12008F	D G Engine Start on Input	Loss of Cable (short) will provide the D G engine start signal	Required
16124L-SB-4	12008Q	D G Engine Start on Input	Loss of Cable (short) will provide the D G engine start signal	Required
16124U-SB-4	12609G	Chilled Water WC-2 valve CH-B4SB "SI" Cable	Loss of Cable (open) shut the valve	Required
16124U-SB-4	12614F	Chilled Water Expansion Tank Valve SA-V302 "SI" Interlock	Loss of Cable (open) shut the valve	Required
16124U-SB-4	12643F	Chilled Water Expansion Tank Valve SA-V306 "SI" Interlock	Loss of Cable (open) shut the valve	Required
16153K-SA-2				NOT ON CONDUIT LIST
17017K-SR3-4	10988A	Steam Gen A,B,C Press Signal to PIC Cable	Loss of Cable, Loss indication and Steam Break Inspection	Required
17023R-SA-4	12823G	RAB Elec Protection Inlet Damper CZ-D9 PDT 6615 Interlock	On LOOP fan AH-16 start & Damper full open, Bypassing PDT	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
17023R-SA-4	12945B	Chilled Water VA CX-W175A Modulating Signal came from PIC-13	On LOOP supply fan AH-15 start, open the valve CX-W17SA.	Not Required
17023R-SA-4	12948G	EHC-24(1X-SA) Modulating Signal from PIC	Loss of Cable, lose signal to SCR	Not Required
17043P-SA-2	12991C	Control Room Return Air Thermocouple Cable TE-7837A	Loss of indication & EHC-24 Control	Not Required
17044X-SB-2	12991F	Control Room Return Air TE-7837B Cable	Loss of indication & EHC-26 control	Not Required
17050Z-SB-3	10788B	Control Room RAD Monitor Input Signal	Loss Signal from module A1 to RM Cab 80	Not Required
17050Z-SB-3	10789F	Control Room RAD Monitor Recorder Input	Loss Signal to recorder	Not Required
17058P-SB-4	12007D	6.9KV Aux Bus E breaker 124 Input to D G Govr	Loss D G Govr Control	Required
17065M-SA-3				NOT ON CONDUIT LIST
17085M-SA-3	10786B	Control Room RAD Monitors Input Signal	Lose Signal from module A1 to RM Cab 80	Not Required
17085M-SA-3	10786B	See Identical Cable-This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet
17085M-SA-3	10786C	Control Room RAD Monitor Recorder Input	Loss Signal to recorder	Not Required
17085M-SA-3	10786C	See Identical Cable-This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet
17085N-SA-3	10786B	See Identical Cable-This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet
17085N-SA-3	10786C	See Identical Cable-This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet
17085N-SA-3	10787B	Control Room RAD Monitor Recorder Input	Loss signal to recorder	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1807-SB	10272D	CSIP to RCS Valve CS-V609 "SI" Input	Loss of cable will shut the Valve in LOOP	Required
C1807-SB	10273D	CSIP Miniflow Valve CS-V600SB "SI" Input	Loss of cable will shut the Valve in LOOP	Required
C1807-SB	10274D	CSIP Miniflow Valve CS-V602SB "SI" Input CS-V601SB	Loss of cable will shut the Valve in LOOP	Required
C1807-SB	10275D	CSIP Miniflow Valve CS-V603SB "SI" Input	Loss of cable will shut the Valve in LOOP	Required
C1807-SB	10412F	Accumulator Discharge Valve SI-V536SB	Power is locked out after valve is fully open. Loss of cable will have no impact	Not Required
C1807-SB	11750D	D G Start Circuit Cable	Loss of cable, lose D G	Required
C1807-SB	11750E	D G Start Circuit Cable	Loss of cable, lose D G	Required
C1807-SB	11750F	D G Start Circuit Cable	Loss of cable, lose D G	Required
C1807-SB	11750G	D G Start Circuit Cable	Loss of cable, lose D G	Required
C1807-SB	12212N	SW Header Low Press PS-9101B Int to Emergency SW Pump	Loss of cable will not start the pump	Required
C1807-SB	12287J	SW to Aux RSVR Valve-3SW-B16 "SI" Interlock	Loss of cable will not effect the valve	Not Required
C1807-SB	12609G	WC-2 Valve CH-B4SB "SI" Interlock	Loss of cable (open) shut the valve	Required
C1807-SB	12611F	WC-2 Valve CX-B3SB "SI" Interlock	Loss of cable (open) shut the valve	Required
C1807-SB	12611H	WC-2 Start Interlock to CX-B3SB Valve	Loss of cable (open) shut the valve	Required
C1807-SB	12614F	WC-2 Expansion Tank SA-V302 Valve "SI" Int	Loss of cable (open) shut the valve	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1807-SB	12629J	SWGR RM AH-12(1B-SA) Start to Chilled Water Valve 3CX-W22SB	Loss of cable (open) will not open the valve	Required
C1807-SB	12630G	SWGR RM AH-12(1A-SA) Start to Chilled Water Valve	Loss of cable (open) will not open the valve	Required
C1807-SB	12642B	WC-2 Not Running Input to Valve SW B303 to Module	Valve to shut when WC-2 start if cable short, Valve modulate	Required
C1807-SB	12643F	Chiller WC-2(1B-SB) Valve SA-V306SB "S1" Signal Cable	Loss of cable (open) will shut the valve	Required (NO)
C1807-SB	12682J	Reactor Support CLG Fan S-4(1B-SB) Overload	Loss of annunciator	Not Required
C1807-SB	12761H	AH-6(1B-SB) Overload Alarm Cable	Loss of annunciator	Not Required
C1807-SB	12763H	AH-7(1B-SB) Overload Alarm Cable	Loss of annunciator	Not Required
C1807-SB	12766H	AH-9(1B-SB) Overload Alarm Cable	Loss of annunciator	Not Required
C1807-SB	12768H	AH-10(1B-SB) Overload Alarm Cable	Loss of annunciator	Not Required
C1807-SB	12775H	AH-11(1B-SB) Overload Alarm Cable	Loss of annunciator	Not Required
C1807-SB	12777F	AH-92 Temp Interlock Cable	Temp interlock bypassed during LOOP	Not Required
C1807-SB	12777J	AH-92 TE-6574B HI-HI Temp Alarm Cable	Loss of annunciator	Not Required
C1807-SB	12942C	Control Room AH-15(1B-SB) Interlock to Valve CZ-B15A	Loss of cable will not change the valve position	Not Required (NO)
C1807-SB	12947L	AH-15(1B-SB) Start Interlock to EHC-21(NNS) Alarm & Purge Fan Cable	Loss of cable will not start heater or fan since no power to MCC on LOOP	Not Required
C1807-SB	12956J	AH-15(1B-SB) Start Interlock with Exh Fan E-9 (1B-NNS)	Loss of cable will not start the fan since no power to MCC on LOOP	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1807-SB	12972S	AH-15(1B-SB) Loss of Power Alarm	Loss of alarm	Not Required
C1807-SB	12973K	Control Room SI or HI Chlorine Int Cable to E8 & E9 Fan	Loss of cable (ie shortout) will stop purge & Exhaust fan. On Loop, fan will stop since no power	Not Required
C1807-SB	13039E	(SI) Interlock with SWGR-B E29 Fan Cable	Loss of cable (ie shortout) will stop the fan	Required
C1807-SB	13042H	AH-19 Loss of Power Alarm Cable	Loss of cable, lose Alarm	Not Required
C1807-SB	13044H	AH-20 Loss of Power Alarm Cable	Loss of cable, lose Alarm	Not Required
C1807-SB	13053F	AH-28 1B Temp Interlock Cable	Temp interlock bypassed during emergency condition	Not Required
C1807-SB	13053H	AH-28 Loss of Power Alarm Cable	Loss of cable, lose alarm	Not Required
C1807-SB	13059D	SWGR B Exhaust Valve AC-B3SB Int with Damper AC-D12 & AC-D16	Loss of cable will shut or open the valve	Required (NC)
C1807-SB	13082A	Control Fan AH-1(1A-SB), 1B-SB Alarm Cable	Lose annunciator	Not Required
C1807-SB	13082B	Control Fan AH-1(1A-SB), 1B-SB Alarm Cable	Lose annunciator	Not Required
C1807-SB	13082C	Control Fan AH-1(1A-SB), 1B-SB Alarm Cable	Lose annunciator	Not Required
C1807-SB	13085A	Control Fan AH-4(1A-SB), 1B-SB Alarm Cable	Lose annunciator	Not Required
C1807-SB	13085B	Control Fan AH-4(1A-SB), 1B-SB Alarm Cable	Lose annunciator	Not Required
C1807-SB	13085C	Control Fan AH-4(1A-SB), 1B-SB Alarm Cable	Lose annunciator	Not Required
C1807-SB	13272E	D G Space Room TE-6903B Cable to ARP	Lose of Cable will lose capability to start D G standby E86(1D-SB) fan	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1807-SB	13273E	D G Outside Air Temp TE-6902B Cable to ARP	Lose of Cable will lose capability to start D G standby E86(1D-SB) fan	Required
C1807-SB	13274G	Chilled Water to D G Fan AH-85 Valve SW-V652SB	Lose of cable will not open the valve	Required (NC)
C1807-SB	13276F	D G Equipment Room EMPR D G-D3 SB & D4 SB Temperature Interlock Cable	Lose of cable will not open the damper	Required
C1807-SB	13290E	TE-6588B1 Interlock to ESW AH-86 1B-SB	Lose of cable will not start the fan when temp is high	Required
C1807-SB	13290F	24 Hour Timer Auto Start AH-86(1B-SB)	Cable (open) fan will not start cable (short) fan runs, since its interlock with temp can be stopped	Not Required
C1807-SB	13291F	Control Cable from PIC-C14(SB) to Open Dampers EV-D1(SB-1), EV-D2(SB-1)	Lose of control to dampers	Required
C1807-SB	13295G	Control Cable from PIC-C14(SB) to Shut 3SW-V647SB-1, Open 3HP-V218SB-1	Lose of control to dampers	Required
C1807-SB	13297E	Control Cable From PIC-C14(SB) to ARP 3B	Lose Fan E-88	Required
C1807-SB	13297F	EH SW Intake Structure Exh FAn E-88(1B-SB) Timer Interlock Cable	Cable open or short will not have any impact since fan starts automatically when ESW-B starts	Not Required
C1810-SB	10327J	RCS Pressure Interlock with LP Inlet Valve RH-V502SB	Valve may go shut w/o pressure. However valve remains shut but required to open for recirculation if Cable shorts valve can't be opened	Required
C1810-SB	10328J	RCS Pressure Interlock with LP Inlet Valve RH-V500SB	Valve may go shut w/o pressure. However valve remains shut but required to open for recirculation if Cable shorts valve can't be opened	Required
C1810-SB	10638A	Power Feed to Safeguard Test Cabinet	Loss STC control	Not Required
C1810-SB	11750K	Breaker 124 Open Signal to D G Control	Cable open circuit will lose the D G Input	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1810-SB	11931G	AFW Gen B ISOL Valve AF-V19SB	Loss of Cable (short) will close the valve	Required
C1810-SB	11974G	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
C1810-SB	12001J	D G Starter #1 Interlock with Air Dryer	Loss of Cable (open) will not start the air dryer	Required
C1810-SB	12001K	D G Starter #2 Interlock with Air Dryer	Loss of Cable (open) will not start the air dryer	Required
C1810-SB	12631J	WC-2 Permissive Interlock Cable	Loss of Cable lose chiller	Required
C1810-SB	12635L	Start of Chiller WC-2(1B-SB) Recirc Pump	Pump will not start	Required
C1810-SB	12759F	AH-5 Temp Input Cable	Temp Input bypassed in emergency	Not Required
C1810-SB	12761F	AH-6 Temp Input Cable	Temp Input bypassed in emergency	Not Required
C1810-SB	12763F	AH-7 Temp Input Cable	Temp Input bypassed in emergency	Not Required
C1810-SB	12766F	AH-9 Temp Input Cable	Temp Input bypassed in emergency	Not Required
C1810-SB	12768F	AH-10 Temp Input Cable	Temp Input bypassed in emergency	Not Required
C1810-SB	12775F	AH-11 Temp Input Cable	Temp Input bypassed in emergency	Not Required
C1810-SB	12777G	AH-92 Temp Input Cable	Temp Input bypassed in emergency	Not Required
C1810-SB	12943H	Supply Fan AH-15 Interlock with Valve CZ-B2SB Control Cable	Loss of cable will not open the valve automatically when fan AH-15 starts	Required
C1810-SB	12957C	Exhaust Fan E-9 Interlock with Valve CZ-B4SB Control Cable	On LOOP Exh fan stops & valve closes automatically	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1810-SB	12961D	Control Room Recirculation DMPR CZ-D20SB Purge Fan Interlock	Loss of cable will not open the Damper	Required
C1810-SB	13031F	SWGR-B AH-13 (1A-SB) Annunciator Cable	Loss of Annunciator	Not Required
C1810-SB	13032F	SWGR-B AH-13 (1B-SB) Annunciator Cable	Loss of Annunciator	Not Required
C1810-SB	13035F	SWGR-B Exh Fan E-29 1A-SB Annunciator Cable	Loss of Annunciator	Not Required
C1810-SB	13036F	SWGR-B Exh Fan E-29 1B-SB Annunciator Cable	Loss of Annunciator	Not Required
C1810-SB	13042F	AH-19 (1B-SB) Temp Interlock Cable	TE Bypassed during emergency	Not Required
C1810-SB	13044F	AH-20 (1B-SB) Temp Interlock Cable	TE Bypassed during emergency	Not Required
C1810-SB	13047F	AH-25 (1X-SB) Temp Interlock Cable	TE Bypassed during emergency	Not Required
C1810-SB	13290G	Emergency SW Intake Struct AH-86 Alarm Cable	Loss of Annunciator	Not Required
C1810-SB	13297G	Emergency SW Intake Struct Fan E-88 Alarm Cable	Loss of Annunciator	Not Required
L1801-SB	11255C	S G B ATM Relief Valve PCV-0308B Signal Cable	Lose PCV-0308B signal	Required
L1801-SB	12092C	Condensate Stg Tk Lvl Transmitter LT-9010B-SB Signal Cable	Lose of cable lose tank level which is required to monitor the water	Required
L1801-SB	12235B	SW BSTR PMP Discharge Press/Flow Signal Cable	Lose indication in CR since SW BSTR PMP provide SW to containment fan Clrs. Monitoring of flow	Required
L1801-SB	12242E	SW from Containment Fan Clr AH-1(SB) Flow FT-9275A-SB Cable	Lose status indication in CR	Not Required
L1801-SB	12242G	SW from Containment Fan Clr AH-4(SB) Flow FT-9275D-SB Cable	Lose status indication in CR	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
L1801-SB	12242J	SW From Containment Fan Clr Flow Status Indication	Lose CR indication	Not Required
L1801-SB	12269C	Signal Cable from FT-9205B(SB) to PIC-C10(SB)	Lose SW Flow Thru Chiller WC-2(1A-SA) Indication	Not Required
L1801-SB	12547A	Signal Cable From LT-2461B-SB to PIC-C10(SB) for Diesel Gen Day TK Lvl Indication @ MCB	Loss of Level indication for Diesel Gen Day TK 1B-SB	Required
L1801-SB	12599B	WC-2(1B-SB) FT-9209B SB Signal Cable to PIC-C14	Lose alarm & protection to chiller on low flow	Required
L1801-SB	12599C	WC-2(1B-SB) FT-9429B SB Signal Cable to PIC-C14	Lose alarm & protection to chiller on low flow	Required
L1801-SB	12599D	WC-2(1B-SB) PT-9209B SB Signal Cable to PIC-C14	Lose alarm	Not Required
L1801-SB	12642A	Singal Cable to WC-2(1B-SB) Valve PCV-9209B from PIC-C14	On LOOP WC-2 start, open the valve lose of cable has no effect	Not Required
L1801-SB	12759E	AH-5(1B-SB) TE-6502B-SB Signal Cable to PIC-C14	TE bypassed during LOOP	Not Required
L1801-SB	12761E	AH-6(1B-SB) TE-6507B-SB Signal Cable to PIC-C14	TE bypassed during LOOP	Not Required
L1801-SB	12763E	AH-7(1B-SB) TE-6512B-SB Signal Cable to PIC-C14	TE bypassed during LOOP	Not Required
L1801-SB	12766E	AH-9(1B-SB) TE-6522B-SB Signal Cable to PIC-C14	TE bypassed during LOOP	Not Required
L1801-SB	12768E	AH-10(1B-SB) TE-6527B-SB Signal Cable to PIC-C14	TE bypassed during LOOP	Not Required
L1801-SB	12775E	AH-11(1B-SB) TE-6532B-SB Signal Cable to PIC-C14	TE bypassed during LOOP	Not Required
L1801-SB	12945E	Chilled Water Valve CX-W24SB Modulating Signal from PIC	On "LOOP" fan AH-15(1B-SB) start, open the valve CX-W24SB. Lose of signal cable will not effect	Not Required
L1801-SB	12949G	EHC-26(1X-SB) Modulating Signal to SCR from PIC	Lose signal to SCR	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
L1801-SB	12991F	Control Room Duct Temp TE-7837B Signal Cable to PIC		Not Required
L1801-SB	12991J	Control Room Temp Indicator Signal Cable	Lose indication	Not Required
L1801-SB	13042E	AH-19(1B-SB) TE-6542B Signal Cable to PIC-C14	Temp bypassed during LOOP	Not Required
L1801-SB	13044E	AH-20(1B-SB) TE-6547B Signal Cable to PIC-C14	Temp bypassed during LOOP	Not Required
L1801-SB	13047E	AH-25(1X-SB) TE-6562X Signal Cable to PIC-C14	Temp bypassed during LOOP	Not Required
L1801-SB	13272F	D G Room Space Temp TE-6903B-SB Signal to PIC	Loss of cable will lose capability to start standby fan automatically if temp rises above 105°F.	Required
L1801-SB	13273F	D G Room Outside Air Temp TE-6902B-SB Signal to PIC	Loss of cable, will lose ability to start standby fan automatically if temp rises above 105°F.	Required
L1801-SB	13823J	NOT ON CWD (WPB)		
L1900-SR2	10993B	Steam Gen Level Protection	Lose indication & RX trip actuation	Required
L1901-SR4	10991E	Steam Generator Steam Flow Measurement FT-0475, FT-0485 and FT-0495	Loss of Indication	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
10734C-SA-2	10786B	Control Room Normal Outside Air Intake RAD Monitor RM-1CZ-3504-SA Input to RM-23	Lose Input to RM-23 on RAD Mon, Panel	Not Required
10734C-SA-2	10786C	Control Room Normal Outside Air Intake RAD Monitor RM-1CZ-3504A-SA Input to Recordor	Lose Recorders on RAD Mon Panel	Not Required
10737A-SB-2	10737B	Radiation Monitoring Units 1 & 2 Loop 5 (SB)	Lose Radiation Monitor Communication Loop 5	Not Required
10737A-SB-2	10737N	Radiation Monitoring Units 1 & 2 Loop 5 (SB)	Lose Radiation Monitor Communication Loop 5	Not Required
10737A-SB-2	10788B	Control Room Normal Outside Air Intake RAD Monitor RM-1CZ-3504B-SB Input to RM-23	Lose RM-23 Input on RAD Monitor Panel	Not Required
10786A-SA-1 1/2				No Cables Identified
10788A-SB-1				No Cables Identified
12660A-SA-1 1/2	12660A	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7
12660F-SB-1	12660F	Protection & Repair Shop Area Chilled Water VA 3CX-W35SB-1 Solenoid Cable	Solenoid De-energizes to Modulate	The valve will fail in a position to allow flow thru the coil. Not Required
12818A-SA-1 1/2	12818A	See Identical Cable-Sheet 10	See Identical Cable-Sheet 10	See Identical Cable-Sheet 10
12819A-SB-1 1/2	12819A	See Identical Cable-Sheet 8	See Identical Cable-Sheet 8	See Identical Cable-Sheet 8
12820A-SB-1 1/2	12820A	RAB Elect Equipment Protection Rooms Return Damper CZ-D18SB-1 Motor & Limit Switch	Damper Opens, Lose AEP Control & Incitions	Damper deleted due to system redesign. Not Required
12823A-SA-1 1/2	12823A	RAB Elect Equipment Protection Rooms Inlet Damper CZ-D9SA-1 Motor Cable	Damper Shuts	Required
12823A-SA-1 1/2	12823B	RAB Elect Equipment Protection Rooms Inlet Damper CZ-D9SA-1 Limit Switch Cable	Lose AEP Indicator	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12823D-SB-1 1/2	12823C	RAB Elect Equip Protection Rooms Inlet Damper CZ-D10SB-1 Limit Switch Cable	Lose Indication at AEP	Not Required
12823G-SA-1	12823G	RAB Elect Eqpt Protection Rooms Inlet Damper CZ-D9SA-1 PIC Input to Damper	Lose Modulation Control Damper CZ-D9SA-1	Not Required
12823J-SB-1	12823J	RAB Elect Equipment Protection Rooms Inlet Damper CZ-D10SB-1 PIC Singal to Damper	Lose Modulation Control of Damper CZ-D10SB-1	Required
12826A-SA-1 1/2	12826A	RAB Elect Equipment Protection Rooms Branch Dampers CZ-D17SA-1 Motor & Limit Switches	Damper opens, Lose ACP Control & Indication	Damper Deleted due to system redesign. Not Required
12827A-SA-1	12827A	RAB Elect Equipment Protection Room Air Inlet Isol Valve 3CZ-B5SA-1 Power Feeder	Valve Inoperable	Valve will remain in a desired open position. Not Required.
12827B-SA-1 1/2	12827B	RAB Elect Equipment Protection Rooms Isol Valve 3CZ-B5SA-1 Limit Switch Cable	Lose All Control & Indication	Valve will remain in a desired open position. Not Required
12828A-SB-1	12828A	See Identical Cable-Sheet 6	See Identical Cable-Sheet 6	See Identical Cable-Sheet 6
12834A-SA-1 1/2	12834A	See Identical Cable-Sheet 6	See Identical Cable-Sheet 6	See Identical Cable-Sheet 6
12835A-SB-1 1/2	12836A	See Identical Cable-Sheet 6	See Identical Cable-Sheet 6	See Identical Cable-Sheet 6
12836A-SA-2	12836A	See Identical Cable-Sheet 6	See Identical Cable-Sheet 6	See Identical Cable-Sheet 6
12836B-SA-2	12836B	RAB Elect Equipment Protection Rooms Exhaust ISOL-VA-SCE-B7SA-1 Limit Switch Cable	Lose all Control and Indication	Valve will remain in open position. Not Required
12837B-SB-1	12837B	See Identical Cable-Sheet 8	See Identical Cable-Sheet 8	See Identical Cable-Sheet 8
12838A-SA-1 1/2	12838A	RAB Elect Equipment Rooms Return Damper CZ-D25SA-1 Motor Cable	Damper Shuts	Damper deleted due to System redesign. Not Required
12838A-SA-1 1/2	12838B	RAB Elect Equipment Rooms Return Damper CZ-D25SA-1 Limit Switch Cable	Lose MCB Indication	Damper deleted due to System redesign. Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12838C-SB-1 1/2	12838C	See Identical Cable-Sheet 12	See Identical Cable-Sheet 12	See Identical Cable-Sheet 12
12838C-SB-1 1/2	12838D	See Identical Cable-Sheet 12	See Identical Cable-Sheet 12	See Identical Cable-Sheet 12
12838D-SB-1 1/2				No Cables Identified
12873A-SB-1-1/2	12837A	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7
12942A-SA-1	12942A	Control Room Normal Supply Intake Valve 3CZ-B1SA-1 Power Feeder	Valve Inoperable	Will remain in open position. Not Required
12942B-SA-2	12942B	Control Room Normal Supply Intake Valve 3CZ-B1SA-1 Limit Switch Cable	Lose All Control & Indication	Valve Will Remain in Open Position Not Required
12943A-SB-1	12943A	Control Room Nromal Supply Intake Valve 3CZ-B2SB-1 Power Feeder	Valve Inoperable	Valve will remain in desired open position. Not Required
12943B-SB-1 1/2	12943B	Control Room Normal Supply Intake Valve 3CZ-B2SB-1 Limit Switch Cable	Lose all Control Indication	Emergency Filtration Not Required
12943B-SB-1 1/2	12943K	Control Room Normal Supply Intake Valve 3CZ-B23B-1 HI-RAD Intlk	Lose MCB & AEP Control	Emergency Filtration Not Required
12944A-SA1 1/2	12944A	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
12944A-SA1 1/2	12944C	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
12944D-SB-1 1/2	12944D	Control Room Normal Supply Inlet Damper CZ-D2SB-1 Motor Cable	Damper Shuts	Not Required
12944D-SB-1 1/2	12944F	Control Room Normal Supply Inlet Damper CZ-D2SB-1 Limit Switch Cable	Lose MCB Indication	Not Required
12945A-SA-1 1/2	12945A	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7
12945B-SA-1	12945B	Control Room Normal Supply Chilled Water VA 3CX-W17SA-1 PIC Modulation Input	Lose Modulation Signal to Valve	If Modulation signal is lost the valve will remain as it is. Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12945D-SB-1	12945D	Control Room Normal Supply Chilled Water Valve 36X-W24SB-1 Motor Cable	Shuts Valve	Valve will remain in position. Not Required
12945E-SB-1	12945E	See Identical Cable-Sheet 13	See Identical Cable-Sheet 13	See Identical Cable-Sheet 13
12946A-SA-3	12846A	Fuel Handling Bldg Spent Fuel Ventilation Fan AH-17 (1A-SA) Power Feeder	Fan Inoperable	Not Required
12948A-SA-3	12948A	Control Room Normal Supply Electric Heating Coil EHC-24(1X-SA) Power Feeder	Lose Electric Heating Coil	Not Required
12948B-SA-3	12948B	Control Room Normal Supply Electric Heating Coil EHC-24(1X-SA) Power Feeder	Lose Electric Heating Coil	Control Room Temperature will be Lower During Winter - Not Required
12948B-SA-3	12948C	Control Room Normal Supply Electric Heating Coil EHC-24(1X-SA) Power Feeder	Lose Electric Heating Coil	Control Room Temperature will be Lower During Winter - Not Required
12948D-SA-1 1/2	12948D	Control Room Normal Supply Electric Heating Coil EHC-24(1X-SA) Interlock	Lose Electric Heating Coil	Control Room Temperature will be Lower During Winter - Not Required
12948F-SA-2	12944A	Control Room Normal Supply Inlet Damper CZ-D1SA-1 Motor Cable	Damper Shuts	Not Required
12948F-SA-2	12944C	Control Room Normal Supply Inlet Damper Limit Switch Cable	Lose MCB Indication	Not Required
12948G-SA-1 1/2	12948G	Control Room Normal Supply Electric Unit Heater EHC-24(1X-SA) Temperature Control	Lose Temperature Control of Heater	Not Required
12949B-SB-3	12949B	Control Room Normal Supply Heating Coil EHC-26(1X-SB) Power Feeder	Lose Electric Heating Coil	Control Room Temp will be lower during winter. Not Required
12949B-SB-3	12949C	Control Room Normal Supply Electric Unit Htr EHC-26(1X-SB) Power Feeder	Lose Electric Heating Coil	Control Room Temp will be lower during winter. Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12949D-SB-1	12949D	Control Room Normal Supply Electric Unit Htr EHC-26(1X-SB) Interlock	Lose Electric Heating Coil	Control Room Temp will be lower during winter. Not Required
12949F-SB-1	12949F	Control Room Normal Supply Electric Unit Htr EHC-26(1X-SB) Interlock	Lose Electric Heating Coil	Control Room Temp will be lower during winter. Not Required
12949G-SB-1	12949G	See Identical Cable-Sheet 13	See Identical Cable-Sheet 13	See Identical Cable-Sheet 13
12950A-SA-1	12950A	Control Room Normal Supply Discharge Valve 3CZ-B25SB-1 Power Feeder	Valve Inoperable	Valve will remain in a position as it is. Not Required
12950B-SA-1 1/2	12950B	Control Room Normal Supply Discharge Valve 3CZ-B25SA-1 Limit Switch Cable	Lose Control	Valve will remain in a position as it is. Not Required
12950B-SA-1 1/2	12950D	Control Room Normal Supply Discharge Valve 3CZ-B25SA-1 Limit Switch Cable	Lose Indication at MCB	Valve will remain in a position as it is. Not Required
12951A-SB-1 1/2	12951A	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7
12951B-SB-1	12951B	See Identical Cable-Sheet 8	See Identical Cable-Sheet 8	See Identical Cable-Sheet 8
12951B-SB-1	12951D	Control Room Normal Supply Discharge Valve 3CZ-B26SB-1 Limit Switch Cable	Lose Indication at MCB	Not Required
12960A-SA-1 1/2	12960A	Control Room Recirc System Damper CZ-D19SA-1 Motor & Limit Switches	Damper Shuts, MCB & ACP Control & Indication Lost	Required
12961A-SB-1 1/2	12961A	Control Room Recirc System Damper CZ-D20 SB-1 Motor & Limit Switches	Damper Shuts, MCB & ACP Control and Indication Lost	Required
12972E-SA-1 1/2				No Cables Identified
12973E-SB-1 1/2				No Cables Identified

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15413G-SA-3	12834A	RAD Elect Equipment Rooms Exhaust Fan E-10(1A-SA) Power Feeder	Fan Inoperable	Required
15413G-SA-3	12836A	RAD Electric Equipment Protection Rooms Exhaust Isol Valve 3CZ-B7SA-1 Power Feeder	Valve Inoperable	Valve will remain in desired open position. Not Required
15413G-SA-3	12942A	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3
15413G-SA-3	12964A	Control Purge System Make up Valve 3CZ-B17SA-1 Power Feeder	Valve Inoperable	Not Required for Shutdown. Not Required
15413L-SA-3	12821A	RAB Elect Eqpt Protection Rooms Supply Fan AH-16 (1A-SA) Power Feeder	Fan Inoperable	Not Required
15417H-SA-3	12950A	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5
15429G-SA-4	11754A	480V Emerg Bus 1A3SA Pwr FDR to MCC 1A36SA	Lose MCC 1A36SA	Required
15429H-SA-4	11754B	480V Emerg Bus 1A3SA Pwr FDR to MCC 1A36SA -	Lose MCC 1A36SA	Required
15430D-SR-4	12828A	RAB Electric Equipment Protection Rooms Air Inlet Isol Valve 3CZ-B6SB-1 Power Feeder	Valve Inoperable	Not Required
15433R-SA-3	12827A	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
15438P-SB-3	12822A	RAB Electric Equipment Protection Rooms Supply Fan AH-16(1B-SB) Power Feeder	Fan Inoperable	Not Required
15438P-SB-3	12943A	Control Room Normal Supply Intake Valve 3CZ-B2SB-1 Power Feeder	Valve Inoperable	Valve will remain in desired open position. Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15438Q-SB-3	12837A	RAB Electric Equipment Protection Rooms Exhaust Isol Valve 3CZ-B8SB-1 Power Feeder	Valve Inoperable	Valve will remain in desired open position. Not Required
15438Q-SB-3	12951A	Control Room Normal Supply Discharge Valve 3CZ-B26SB-1 Power Feeder	Valve Inoperable	Valve will remain in desired open position. Not Required
15438R-SB-2	12949A	Control Room Normal Supply Electric Heating Coil EHC-26(1X-SB) Power Feeder	Lose Electric Heating Coil	Control Room Temp will be lower during winter. Not Required
16031R-SA-3	12827B	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
16033K-SA-1 1/2	13015E	RAB Switchgear Room "A" Diversion Damper AC-D11SA-1 Limit Switch Cable	Lose Indication at AEP	If Damper shuts there will be loss of ventilation for cable vault. Required
16033K-SA-1 1/2	13015F	RAB Switchgear Room "A" Diversion Damper AC-D11SA-1 Motor Cable	Damper Shuts	If Damper shuts there will be loss of ventilation for cable vault. Required
16033N-SA-3	12625A	WC-2 (1A-SA) Control Room #2 Chilled Water Isol Valve 3CH-V128SA-1 Solenoid & Limit Switch Cable Protection	Valve Shuts, Lose Control & Indication at AEP Solenoid Deenergizes to Modulate	Not Required
16033N-SA-3	12627A	WC-2 (1A-SA) Control Room #2 Chilled Water Isol Valve 3CX-V14SA-1 Solenoid & Limit Switch	Valve Shuts, Lose Control & Indication at AEP	Not Required
16033N-SA-3	12660A	Chilled Water Cont VA-3CX-W18-SA1 Solenoid		
16033N-SA-3	12945A	Control Room Normal Supply Chilled Water Valve 3CX-W17SA-1	Valves Shuts	Not Required
16035T-SA-3	12836B	RAB Elect Eqpt Protection Rooms Exhaust Isol Valve 3CZ-B7SA-1 Limit Switch Cable	Lose All Control & Indication	Not Required
16035T-SA-3	12942B	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16035V-SA-3	12950B	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5
16038S-SB-3	12943B	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3
16038T-SB-3	12837B	RAB Electric Equipment Protection Rooms Exhaust Isol Valve 3CZ-B8SB-1 Limit Switch Cable	Lose All Control & Indication	Valve will remain in desired open position. Not Required
16038T-SB-3	12951B	Control Room Normal Supply Discharge Valve 3CZ-B26SB-1 Limit Switch Cable	Lose all Control	Valve will remain in desired open position. Not Required
16038W-SB-3	12819A	RAB Elect Eqpt Protection Rooms Return Damper CZ-D24SB-1 Motor & Limit Switch	Damper Shuts, Lose AEP Control & Indication	Not Required
16038W-SB-3	12823D	RAB Elect Eqpt Protection Rooms Inlet Damper CZ-D10 SB-1 Damper Power	Damper Shuts	Not Required
16038W-SB-3	12949F	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5
16038W-SB-3	12986B	Control Room Emerg Filtration Electric Heating Coil EHC-72 (1B-SB) Fan R2 Intlk	Lose Elect Heating Coil	Not Required
16040D-SB-4	12982B	Control Room Emerg Filtration Inlet Valve 3CZ-B24SB-1 Limit Switch Cable	Lose Valve Control	Not Required
16040D-SB-4	12984B	Control Room Emerg Filtration Discharge Valve 3CZ-B22SB-1 Limit Switch Cable	Lose Valve Control	Not Required
16040D-SB-4	12990B	Control Room Emerg Filtration Discharge Valve 3CZ-B20SB-1 Limit Switch Cable	Lose Valve Control & Indication	Not Required
16043J-SA-4	13848A	Floor Drain Storage & Treatment System Valve 7WL-D444-1 & 2 Solenoid & Limit Switch	Valve Shuts, Lose WPCB Control & Indication	Not Required
16043J-SA-4	13848C	Floor Drain Storage & Treatment System Valve 7WL-D444-1 & 2 Computer Input	Computer Input Lost	Not Required
16043J-SA-4	13850A	Floor Drain Storage & Treatment System Valve 7WL-D355-1 & 2 Solenoid & Limit Switch	Valve Shuts, Lose WPCS Control Indication, VA-7WLD-D444 1 & 2 Shuts	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16043J-SA-4	13850F	Floor Drain Storage & Treatment System Valve 7WL-D355-1 & 2 Computer Input	Lose Computer Input	Not Required
16043J-SA-4	13852A	Floor Drain Storage & Treatment System 1&2 Pump A Disch VA-7WL-D354-1&2 Solenoid Limit Switches	Valve Shuts, WPCB Control & Indication Lost	Not Required
16043J-SA-4	13852C	Floor Drain Storage & Treatment System 1 & 2 Pump A Disch VA-7WL-D354-1 & 2 Input Computer	Lose Computer Input	Not Required
16043J-SA-4	13854B	Floor Drain Storage & Treatment System Valve 7WL-D428-1 & 2 Solenoid & Limit Switch	Valve Shuts, Lose WPCB Control & Indication	Not Required
16043J-SA-4	13889D	Floor Drain Storage & Treatment Areas System Valves 7WL-D321-1 & 7WLD321-2 Computer Inputs	Lose Computer Inputs	Not Required
16049F-SA-4	12821B	RAB Elect Equipment Protection Rooms Supply Fan AH-16 (1A-SA) Control	Stop Fan, Lose MCB Control and Indication	Required
16049F-SA-4	12834B	RAB Elect Equipment Protection Rooms Exhaust Fan E-10 (1A-SA) Control	Stops Fan, Lose all Control and Indication	Required
16049F-SA-4	12834F	RAB Elect Equipment Protection Rooms Exhaust Fan E-10 (1A-SA) Overload Alarm	Lose Overload Alarm	Not Required
16049F-SA-4	12950C	Control Room Normal Supply Discharge Valve 3CZ-B25SA-1 Control	Valve may Open or Shut	Required
16049G-SA-4	12827C	RAB Elect Equipment Protection Rooms Air Inlet Isol Valve 3CZ-B5SA-1 Control	Lose MCB Control & Indication Lose Intks From ARP	Valve will remain in position. Not Required
16049G-SA-4	12836C	RAB Elect Equipment Protection Rooms Exhaust Isol Valve 3CZ-B7SA-1 Control	Lose Control & Indic From MCB. Valve Fan Open or Shut.	Valve will remain in position. Not Required
16049G-SA-4	12972N	Control Room Normal Supply Fan AH-15(1A-SA) Overload Alarm	Lose Alarm	Not Required
16049H-SA-4	12942D	Control Room Normal Supple Intake Valve 3CZ-B1SA-1 Control	Valve may Open or Close, Lose MCB & ACP Control	Valve will remain in position. Not Required
16049H-SA-4	12942J	Control Room Normal Supply Intake Valve 3CZ-B1SA-1 Limit Switch Cable	Lose Indication at MCB & ACP	Valve will remain in position. Not Required
16049H-SA-4	12946B	Control Room Normal Supply Fan AH-15(1A-SA) Control	Stop Fan, Lose Control from MCB & ACP	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16049K-SA-4	12660A	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7
16049K-SA-4	12818A	RAB Electr Eqpt Protection Rooms Return Damper CZ-D23SA-1 Motor & Limit Switches	Damper Shuts, Lose AEP Control and Indication	Not Required
16049K-SA-4	12823A	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1
16049K-SA-4	12823B	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1
16049K-SA-4	12826A	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
16049K-SA-4	12942K	See Identical Cable-Sheet 12	See Identical Cable-Sheet 12	See Identical Cable-Sheet 12
16049K-SA-4	12944A	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
16049K-SA-4	12944C	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
16049K-SA-4	12945A	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7
16049K-SA-4	12948C	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4
16049K-SA-4	12950D	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5
16049K-SA-4	13015E	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7
16049K-SA-4	13015F	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7	See Identical Cable-Sheet 7
16051E-SA-2	10590G	EHC-72(1A-SA) Htr Control Overload Alarm	Lose Alarm	Not Required
16051E-SA-2	12838A	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16051E-SA-2	12838B	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
16051E-SA-2	12979D	Control Room Emergency Filtration Inlet Valve 3CZ-B23SA-1 Limit Switch Cable	Lose Indication at MCB	Not Required
16051E-SA-2	12981D	Control Room Emergency Filtration Discharge Valve 3CZ-B21SA-1 Limit Switch Cable	Lose Indication at MCB	Not Required
16051E-SA-2	12985B	Control Room Emergency Filtration Electric Unit Heater EHC-72(1A-SA) Interlock	Lose Unit Heater	Not Required
16060D-SB-4	12828B	RAB Electric Equipment Protection Rooms Air Inlet Isol Valve 3CZ-B66B-1 Limit Switch Cable	Lose all Control & Indication	Valve will remain in a desired open position. Not Required
16066H-SB-4	10789D	Control Room Emerg Outside Air Intake Valve Rad Monitor RM-1CZ-3505 B2-SB Power Feeder	Lose Radiation Monitor	Not Required
16066H-SB-4	12628A	WC-2 (1A-SA) Control Room No. 2 Chilled Water Isol VA 3CX-V115SB-1 Solenoid & Limit Switch	Valve Shuts - AEP Control and Indication Lost	Not Required
16066H-SB-4	12655A	WC-2 (1B-SB) Control Room No. 2 Chilled Water Isol VA 3CH-V85SB-1 Solenoid & Limit Switch	Valve Shuts - AEP Control and Indication Lost	Not Required
16066H-SB-4	12657A	WC-2 (1B-SB) Control Room No. 2 Chilled Water Isol VA 3CX-V110SB-1 Solenoid & Limit Switch	Valve Shuts - AEP Control and Indication Lost	Not Required
16072L-SB-3	12838C	See Identical Cable-Sheet 12	See Identical Cable-Sheet 12	See Identical Cable-Sheet 12
16072L-SB-3	12943K	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3
16072L-SB-3	12944D	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3
16072L-SB-3	12944F	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3
16072L-SB-3	12945D	Control Room Normal Supply Chilled Water Valve 3CX-W24SB-1 Motor Cable	Shuts Valve	The valve will remain in position. Not Required
16072L-SB-3	12951D	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5

CONDUIT OR TRAY	CABLE	FUNCTION	COISEQUENCE OF LOSS	COMMENTS
16074L-SB-2	12982D	Control Room Emerg Filtration Inlet Valve 3CZ-B24 SB-1 Limit Switch Cable	Lose Indication at MCB	Not Required
16074L-SB-2	12984D	Control Room Emerg Filtration Disch Valve 3CZ-B22 SB-1 Limit Switch Cable	Lose Indication at MCB	Not Required
16115J-SA-1 1/2				No Identified Cable
16134V-SB-1 1/2	12838C	RAB Electric EQPT Rooms Return Damper CZ-D26SB-1 Limit Switch Cable	Lose MCB Indication	Damper Deleted Because of System Redesign. Not Required
16134V-SB-1 1/2	12838D	RAB Electric EQPT Rooms Return Damper CZ-D26SB-1 Motor Cable	Valve Shuts	Damper Deleted Because of System Redesign. Not Required
16134V-SB-1 1/2	12965K	Control Room Purge System Make up Valve 3CZ-B18B-1 Hi-Rad Intlk.	Lose Control of Valve from MCB & ACP	Valve Not Required - Not Required
16134W-SB-2	12838C	See Identical Cable- This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet
16134W-SB-2	12943K	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3
16134W-SB-2	12951D	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5	See Identical Cable-Sheet 5
16134X-SB-2	12838C	See Identical Cable-This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet
16134X-SB-2	12943K	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3
16151K-SA-1 1/2	12942K	Control Room Normal Supply Intake Valve 3CZ-B1SA-1 Hi-RAD Intlk.	Lose Control of Valve From MCB& ACP	Valve Will Remain in Open Position Not Required
17023R-SA-4	12823G	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
17023R-SA-4	12945B	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3
17023R-SA-4	12948G	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4	See Identical Cable-Sheet 4

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
17042Q-SB-3	12823J	RAB Elect Equipment Protection Unit Inlet Damper CZ-D105B-1 PIC Input to Damper	Lose Diff Pressure Signal to Modulate Damper	Not Required
17042Q-SB-3	12945E	Control Room Normal Supply Chilled Water Valve 3CX-W24SB-1 PIC Input	Lose Modulation Signal to Valve	Valve will remain in position. Not Required
17042Q-SB-3	12949G	Control Room Normal Supply Electric Unit Heater EHC-26(1X-SB) PIC Input to Htr Control	Lose Temp Modulating Signal	Control Room Temp will be lower during winter. Not Required
17042Q-SB-3	12986C	Control Room Emerg Filtration Electric Unit Heater EHC-72(1B-SB) PIC Input to Htr Unit	Lose Temperature Modulation Signal	Not Required
17042Q-SB-3	12991E	EHC-26(1X-SB) Elect Htr Outlet Duct Temp TE-7895B-SB Input to PIC	Lose PIC, Input, MCB & ACP Temp Indictors etc.	Control Room Temp will be lower during winter. Not Required
17042Q-SB-3	12994A	EHC-72(1B-SB) Duct Temp Emerg Filter Inlet TE-7821B-SB Input to PIC	Lose PIC Input, MCB Indicator etc.	Not Required
17042Q-SB-3	12994B	Duct Temp Emergency Filter Inlet Charcoal Filter TE-7824B-SB to PIC	Lose PIC Input, MCB Indicator etc.	Not Required
17042Q-SB-3	12994C	Diff Press. Across HEPA Filter PDT-7823B-SB Input to PIC	Lose PIC Input, Indicator at MCB & ACP Alarm.	Not Required
17042Q-SB-3	12994D	Post Accident OAI Flow Transmitter FT-7817B-SB to PIC	Lose PIC Input, Indicator at MCB etc.	Not Required
17042Q-SB-3	12994E	Overall Diff Pressure PDT-7827B-SB Input to PIC	Lose PIC Input, Indicator on MCB & AEP etc.	Not Required
17042Q-SB-3	12994F	Emergency Filter Fan R-2(1B-SB) Discharge Flow FT-7819B-SB Input to PIC	Lose PIC Input, Indicator on MCB & AEP etc.	Not Required
17055J-SA-3	12945B	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3
17055K-SA-2	12945B	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3	See Identical Cable-Sheet 3
17055K-SA-2	12991B	EHC-24(1X-SA) Elect Htr Outlet Duct Temp TE-789SA-3 Input to PIC	Lose Input to PIC, Idicators on MCB & AEP, etc.	Not Required
17055K-SA-2	12993B	Duct Temp Emerg Filtration Inlet Charcoal Filter TE-7824AS Input to PIC	Lose Input to PIC, MCB Indicators etc.	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
17055K-SA-2	12993C	Press Diff Across HEPA Filter PDT-7823A-S Input to PIC	Lose Input to PIC MCB & AEP Indicators etc.	Not Required
17055K-SA-2	12993F	Emergency Filtration Fan R-2 (1A-SA) Discharge Flow FT-7819A-SA to PIC	Lose PIC Input, MCB Indicator etc.	Not Required
17058M-SA-3	10737J	Radiation Monitoring Units 1 & 2 Loop 5(SB)	Interrupt Radiation Monitoring Communication Loops	Not Required
19050E-SB-3	10788B	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1	See Identical Cable-Sheet 1
19050E-SB-3	10789F	Control Room Emerg Outside Air Intake 11A RAD Monitor RM-1CZ-3505B2-SB Input RAD Monitor Panel	Lose Recorders Recorders	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1808 SB	--			No Cables Identified
L1801 SB	--			No Cables Identified
P1803 SB	--			No Cables Identified

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
15421N-SA-4	12549A	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
15421N-SA-4	13283A	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
15421N-SA-4	13284A	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
15422L-SB-4	12550A	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
15422L-SB-4	13285A	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
15422L-SB-4	13286A	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
15431D-SA-2	13045A	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
15431E-SA-2	13045A	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
16036J-SB-4	12550L	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
16036J-SB-4	13285E	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
16037E-SA-4	12549L	See Identical Cable-This Sheet	See Identical Cable-This Sheet	See Identical Cable-This Sheet
16037E-SA-4	13283E	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
16037N-SA-2	12615B	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
16037P-SA-2	12615B	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2	See Identical Cable-Sheet 2
C1300 SA	12549L	Control Cable for F.O. Transf. Pump 1A-SA Motor Heater	Loss of Heater at Motor	Not Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
C1300 SA	12615B	Control Cable to FSE-3CX - V121SA-1 From ARP-2A (SA)	Chiller Water Supply Shutoff Valve 3CX-V121 SA-1 Fails Open	Not Required
C1300 SA	13283E	D.G. Exch Fan E-85 Low Flow Interlock	Lose of Cable will Not Trip the Fan	Required
C1810 SB	12550L	Control Cable for F.O. Tranf. Pump 1B-SB Space Heater	Space Heater Inoperable	Not Required
C1810 SB	13285E	D.G. Pump House Exh Fans Low Flow Interlock	Lose of Cable Will Not Trip the Fan	Required
L1300 SA				No Cables Identified
L1810 SB	--			No Cables Identified
P1305 SA	12549A	Power Feeder Cable to F.O. Transf Pump 1A-SA From 480V Emergency MCC-1A35-SA	Stop - F.O. Transf. Pump 1A-SA	Required
P1305 SA	13045A	AH-23 (1X-SA) Power Feed Cable	Lose of Cable Will Lose Fan	Required
P1305 SA	13283A	D.G. Pump House E-85 Fan Power Cable	Lose of Cable Will Lose Fan	Required
P1305 SA	13284A	D.G. Pump House E-85 1B Fan Power Cable	Lose of Cable Will Lose Fan	Required
P1808 SB	12550A	Power Feeder Cable to F.O. Transf. Pump 1B-SB From 480V Emergency MCC-1B35-SB	Stop - F.O. Transf. Pump 1B-SB	Required
P1808 SB	13285A	D.G. Pump House Exh Fan E-85 1A Power Cable	Lose of Cable will not Start the Fan	Required
P1808 SB	13286A	D.G. Pump House Exh Fan E-85 1B-SB Power Cable	Lose of Cable will not Start the Fan	Required

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
13283E-SA-1	13283E	Diesel Pump House Exhaust Fan E-85 (1A-SA) & (1B-SA) Low Flow Interlock	Lose Auto Start For Either Fan on Low Flow	Required
13284A-SA-1-1/2	13284A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
13285E-SB-1	13285E	Diesel Pump House Exhaust Fan E-85 (1A-SB) & (1B-SB) Low Flow Interlock	Lose Auto Start For Either Fan on Low Flow	Required
13286A-SB-1-1/2	13286A	Diesel Pump House Exhaust Fan E-85 (1B-SB)	Power Feeder Fan Inoperable	Required
15435F-SA-3	12549A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15435F-SA-3	13283A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15435G-SA-1	12549A	Fuel Oil Transfer Pump 1A-SA Power Feeder	Pump Inoperable	Required
15435G-SA-1	13283A	Diesel Pump House Exhaust Fan E-85 (1A-SA) Power Feeder	Fan Inoperable	Required
15435G-SA-1	13284A	Diesel Pump House Exhaust Fan E-85 (1B-SA) Power Feeder	Fan Inoperable	Required
15438G-SB-3	12550A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15438G-SB-3	13285A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15438H-SB-4	12550A	Fuel Oil Transfer Pump 1B-SB Power Feeder	Pump Inoperable	Required
15438H-SB-4	13285A	Diesel Pump House Exhaust Fan E-85 (1A-SB) Power Feeder	Fan Inoperable	Required
16004S-SB-4	12550L	Fuel Oil Transfer Pump 1B-SB Motor Space Heater	Space Heater Inoperable	Not Required
16004S-SB-4	13285E	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16009D-SA-4	12549L	Fuel Oil Transfer Pump 1A-SA Motor Space Heater	Space Heater Inoperable	Not Required
16009D-SA-4	13283E	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1	See Identical Cable - Sheet 1

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
12217A-SA-1-1/2	12217A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
12217B-SA-3	12215D	Emerg Service Water Pump Inlet Valve Main Res 3SW-B3SA-1 Intlk From Aux Reservoir Inlet Valve Fully Open.	Lose Capability of Shutting This Valve	Valve Normally Closed. No Need to Switch to Main RES is Assumed
12217B-SA-3	12217B	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2	See Identical Cable - Sheet 2
12217B-SA-3	12231F	Emerg Service Water Pump Inlet Valve Main Res 3SW-B3SA-1 & Aux Reservoir 3SW-1SA1 Lmt Switch Cables	Lose Alarm	
12217B-SA-3	12231G	SW valve SW-B3SB Alarm	Loss of Alarm	Not Required
12218A-SB-1-1/2	12218A	Emerg Service Water Pump 1B-SB Inlet Valve Aux Reservoir 3SW-B2SB-1 Power Feeder	Valve Inoperable	Valve Normally Open
12218B-SB-3	12216D	Emerg Service Water Pump 1B-SB Inlet Valve Main Reservoir 3SW-B4SB-1 Interlock From Aux Rsvr Inlet Valve Fully Open	Lose Capability of Shutting this Valve	Valve Normally Closed. No Need to Switch to Main Res is Assumed.
12218B-SB-3	12218B	Emerg Service Water Pump 1B-SB Inlet Valve Aux Reservoir 3SW-B2SB-1 Limit Switch Cable	Lose Control, Indication & Alarm	Valve Normally Open. No Need to Switch to Main Res is Assumed
12218B-SB-3	12232F	Emerg Service Water Pump 1B-SB Inlet Valve Main Rsrvr 3SW-B4SB-1, Aux Rsrvr 3SW-B2SB-2 Lmt Switch Cables	Lose Alarm	
12218B-SB-3	12232G	SW-B1VE SW-B4SB Alarm	Loss of Alarm	Not Required
15461D-SA-3	12217A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15472A-SB-1-1/2	12218A	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
15483A-SA-1-1/2	12217A	Emerg Service Water pump 1A-SA Inlet Valve Aux Reservoir 3SW-B1SA-1 Power Feeder	Valve Inoperable	Valve Normally Open. No Need To Switch to Main Res is Assumed

CONDUIT OR TRAY	CABLE	FUNCTION	CONSEQUENCE OF LOSS	COMMENTS
16091G-SA-3	12217B	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
16132V-SB-3	12218B	See Identical Cable - This Sheet	See Identical Cable - This Sheet	See Identical Cable - This Sheet
16149J-SA-3	12217B	Emerg Service Water Pump 1A-SA Inlet Valve Aux Reservoir 3SW-B1SA-1 Limit Switch Cable	Lose Control, Indication & Alarm	Valve Normally Open. No Need To Switch to Main Res is Assumed

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSCAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 3,196,639 MBTUS
COVERING 134,850 SQ FT TO GIVE A FIRE LOADING OF 23,845 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .3 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DOOR-CL B-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS- NON-SAFETY HVAC DUCTS
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-MULTICYCLE
: PROVIDED OVER CHARCOAL FILTER HOUSINGS
FIRE EXTINGUISHER(S)
INTERIOR AREA HOSE STATION(S)
IONIZATION AREA DETECTION - PARTIAL
THERMAL SUPPRESSION SYSTEM ACTUATION
: ACTUATION OF AUTOMATIC MULTICYCLE SPRINKLER SYSTEMS

FIRE MITIGATION FEATURES
PENETRATION FIRE STOP(S)
REDUNDANT TRAIN PARTIAL SEPARATION BARRIERS
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)

EXPOSED TO COMMON FIRE
REDUNDANT TRAIN CABLES AND CONDUITS
REDUNDANT TRAIN EQUIPMENT - DUCTWORK IN AREAS

MODIFICATIONS INDICATED
ADD DETECTION SYSTEM - THERMAL
: ADDITIONS AND EXTENSIONS TO EXISTING SYSTEMS
ADD SUPPRESSION SYSTEM
: ADDITIONS AND EXTENSIONS TO EXISTING SYSTEMS
ENCLOSE ONE OR MORE TRAIN CABLE TRAYS
ADD CLASS A FIRE DOOR(S) TO FIRE BARRIER
DIVIDE AREA WITH 3 HOUR RATED BARRIERS
DIVIDE AREA WITH 1 HOUR RATED BARRIERS
ENCLOSE ONE OR MORE TRAIN CONDUITS
ENCLOSE ONE OR MORE TRAIN EQUIPMENT

GENERAL COMMENTS
:

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

FOR THIS FIRE AREA, WHICH ENCOMPASSES MANY OPERATIONAL AREAS ON VARIOUS LEVELS OF THE REACTOR AUXILIARY BUILDING, MODIFICATIONS INDICATED AND GENERAL COMMENTS WILL BE DETAILED UNDER THE APPLICABLE SHEET NUMBER OF FIRE PROTECTION FIGURE DWG SK-668.

========== DWG: CAR-SH SK-668-S05 ELEV. 236.00 ==========

MODIFICATIONS INDICATED:

1. PROVIDE 3-HOUR FIRE-RATED ENCLOSURES FOR THE ENTIRE LENGTH OF THE FOLLOWING CONDUITS:
   12212A-SB-4, 15400A-SB-4, 11779B-SB-4, 16000B-SB-4.

EXEMPTION REQUEST/JUSTIFICATION:

1. REQUEST EXEMPTION FROM INSTALLATION OF FIRE DETECTION AND AUTOMATIC SPRINKLER SYSTEMS THROUGHOUT THE ENTIRE FIRE AREA. NO AUTOMATIC SUPPRESSION OR AUTOMATIC DETECTION IS PROVIDED IN TANK AREA FIRE ZONE 1-A-3-TA (FAABL3-3-TA), BASED ON NEGLIGIBLE COMBUSTIBLE LOADING (LESS THAN 1,000 BTU PER SQ FT OF FIRE AREA), FROM LOW TRANSIENT COMBUSTIBLE LOADING AND CABLES IN CONDUIT. MANUAL FIRE ALARM STATIONS ARE PROVIDED IN STAIRWAY AND HOSELINE BACKUP FROM THE RAB STATIONS OR FROM THE YARD HYDRANTS IS AVAILABLE.

COMMENTS:

1. INSTRUMENT RACK A21-R17-ESF-A AND ASSOCIATED
   CONDUITS 16041S-SA-3 AND 17023H-SA-3 AND
   JUNCTION BOXES B1519-SA AND B1520-SA
   WERE NOT PROTECTED FROM THEIR REDUNDANT COUNTERPARTS. ALTHOUGH THESE INSTRUMENT RACKS CONTAIN INSTRUMENTS ASSOCIATED WITH ESSENTIAL SYSTEMS, LOSS OF THE INSTRUMENTS WILL NOT JEOPARDIZE OPERATION OF RESPECTIVE SYSTEMS BECAUSE LOCAL INDICATION IS AVAILABLE.

========== DWG: CAR-SH SK-668-S06 ELEV. 190.00 ==========

MODIFICATIONS INDICATED:

1. DESIGNATED THE WALL FROM COL E-27 TO FZ-27 AS A 3-HR RATED FIRE WALL TO MAINTAIN SEPARATION OF REDUNDANT EQUIPMENT AND SYSTEMS ASSOCIATED WITH AH-5(1A-SA), AH-5(1B-SB), RHR PUMP 1A-SA AND RHR PUMP 1B-SB.

EXEMPTION REQUEST/JUSTIFICATION:

1. REQUEST EXEMPTION FROM INSTALLATION OF FIRE DETECTION AND

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV:-VARIES COLS: (SEE DWGS)

(F) SHSCAFF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

: AUTOMATIC SPRINKLER SYSTEMS THROUGHOUT THE ENTIRE FIRE AREA.
: AUTOMATIC MULTI-CYCLE SPRIKLER SYSTEMS, ACTUATED BY THERMAL
: DETECTION, ARE PROVIDED IN THE RHR PUMP AND AH-5 ROOMS.
: THE ENTIRE ROOMS ARE SPRINKLERED TO SUPPRESS OIL SPILL FIRES.
: NO AUTOMATIC SUPPRESSION SYSTEM IS PROVIDED IN THE EQUIPMENT
: DRAIN TRANSFER PUMP AND TANK ROOM, FIRE ZONE 1-A-1-ED
: (FAABL1-1-ED), BASED ON NEGLIGIBLE COMBUSTIBLE LOADING
: (LESS THAN 1,000 BTU PER SQ FT), LOW TRANSIENT COMBUSTIBLES,
: AND THE PLACEMENT OF CABLES IN CONDUIT. ONLY IONIZATION TYPE
: SMOKE DETECTORS ARE PROVIDED.
: NO AUTOMATIC SUPPRESSION SYSTEM IS PROVIDED IN THE FLOOR
: DRAIN TRANSFER TANK ROOM, FIRE ZONE 1-A-1-FD (FAABL1-1-FD),
: BASED ON NEGLIGIBLE COMBUSTIBLE LOADING (LESS THAN 1,000
: BTU PER SQ FT), LOW TRANSIENT LOADING, AND THE ROUTING OF
: CABLES IN CONDUIT. ONLY IONIZATION TYPE SMOKE DETECTORS ARE
: PROVIDED IN THIS AREA.
:
: ========== DWG: CAR-SH SK-668-SG7 ELEV. 216.00 ==========
: MODIFICATIONS INDICATED:
: 1. PROVIDED MULTICYCLE SPRINKLER SYSTEM ACTUATED BY
: THERMAL DETECTION TO PROTECT ALL EQUIPMENT AND RELATED
: CONTROLS REQUIRED FOR SAFE SHUTDOWN.
: EXEMPTION REQUEST/JUSTIFICATION:
: 1. REQUEST EXEMPTION FROM INSTALLATION OF FIRE DETECTION AND
: AUTOMATIC SPRINKLER SYSTEMS THROUGHOUT THE ENTIRE FIRE AREA.
: EARLY WARNING IONIZATION TYPE SMOKE DETECTORS ARE
: PROVIDED COVERING THE ENTIRE MECHANICAL PENETRATION FIRE
: ZONE 1-A-2-MP (FAABL2-2-MP). A MULTI-CYCLE SPRINKLER SYSTEM,
: ACTUATED BY THERMAL DETECTION, IS PROVIDED IN FIRE
: ZONE 1-A-2-MP, COVERING AREAS WHERE COMBUSTIBLES ARE PRESENT
: OR REASONABLY MIGHT BE FOUND OR BROUGHT INTO THE ZONE.
: THE EXTREMITIES OF FIRE ZONE 1-A-2-MP, THE PIPE TUNNEL
: LOCATED EASTWARD (FIRE ZONE 1-A-2-PT), AND THE CORRIDOR
: SOUTHWARD (FIRE ZONE 1-A-2-COR) ARE NOT SPRINKLERED DUE TO
: NEGLIGIBLE FIRE LOADINGS. NO AUTOMATIC DETECTION OR SUPRESSION
: CAPABILITY IS PROVIDED, HOWEVER, MANUAL ALARM STATIONS ARE
: INSTALLED. A HOSE STATION IS LOCATED IN THE CORRIDOR.
: 2. REQUEST EXEMPTION FROM PROVIDING FIRE DAMPERS IN HVAC DUCTS
: PENETRATING THE FLOOR AT ELEVATION 216.00 IN FIRE ZONE
: 1-A-2-MP (FAABL2-2-MP). THIS FLOOR IS 3-HOUR RATED AND
: MECHANICAL, ELECTRICAL AND HVAC PENETRATIONS ARE SEALED
: WITH 3-HOUR FIRE RESISTIVE MATERIAL. THE DUCT PENETRATIONS

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

INVOLVED ARE AS FOLLOWS:
4 - 10" DIAM, 3 - 10 1/2" X 6 1/2", 1 - 8 1/2" X 8 1/2",
1 - 26" X 20", 1 - 26" X 22", 1 - 30" X 14", AND
1 - 30" X 18".

FIRE LOADING IN THIS FIRE ZONE IS LOW AT 3,800 BTU/SQ FT.
FIRE ZONES 1-A-1-PA (FAABL1-1-PA), 1-A-1-FD (FAABL1-1-FD),
1-A-1-ED (FAABL1-1-ED), AND 1-A-1-PB (FAABL1-1-PB),
LOCATED BELOW, HAVE LOW FIRE LOADINGS. THE LOADS ARE:
1-A-1-PA, 12,800 BTU/SQ FT; 1-A-1-FD, NEGLIGIBLE;
1-A-1-ED, NEGLIGIBLE; AND 1-A-1-PB, 12,500 BTU/SQ FT.

MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTION,
IS PROVIDED IN FIRE ZONE 1-A-2-MP (FAABL2-2-MP) WITH
IONIZATION DETECTION FOR EARLY WARNING. (SEE EXEMPT 1. ABOVE)
THE THICKNESS OF HVAC DUCTWORK VARIES BETWEEN 16 AND 22 GAUGE.

3. REQUEST EXEMPTION FROM CONSIDERATION OF ANALYSIS OF FIRE AREA
1-A-BAL AS A SINGLE MULTI-FLOOR FIRE AREA IN SAFE SHUTDOWN
ANALYSIS IN CASE OF FIRE.
EACH ELEVATION WILL BE ANALYZED AS A SEPARATE FIRE AREA.
FLOORS BETWEEN ELEVATIONS ARE 3-HOUR FIRE-RATED AND ALL
MECHANICAL, ELECTRICAL, AND HVAC PENETRATIONS ARE SEALED
WITH 3-HOUR FIRE RESISTIVE MATERIAL.
FIRE LOADINGS OF CONTIGUOUS FIRE AREAS OR ZONES ARE:
1-A-2-MP (FAABL2-2-MP) 3,800 BTU/SQ FT
1-A-1-PA (FAABL1-1-PA) 12,800 BTU/SQ FT
1-A-1-FD (FAABL1-1-FD) NEGLIGIBLE
1-A-1-ED (FAABL1-1-ED) NEGLIGIBLE
1-A-1-PB (FAABL1-1-PB) 12,500 BTU/SQ FT

COMMENTS:

1. VALVES MOV-2SW-B45SA-1, MOV-2SW-B48SB-1, MOV-2SW-B49SA-1,
AND MOV-2SW-B52SB-1 ARE NORMALLY OPEN DURING PLANT OPERATION
AND ARE ALSO REQUIRED TO BE OPEN DURING SAFE SHUTDOWN.
CLOSING OF THESE VALVES IS NOT REQUIRED . POSTULATION OF
FIRE WITH RESULTING LOSS OF POWER TO THESE VALVES WILL NOT
AFFECT THEIR FUNCTION. THESE VALVES WILL FAIL OPEN.
2. INSTRUMENT RACKS A1-R1-ESF-A, A1-R2-ESF-B AND ASSOCIATED
CONDUITS AND JUNCTION BOXES WERE NOT PROTECTED.
ALTHOUGH THESE INSTRUMENT RACKS CONTAIN INSTRUMENTS ASSOCIATED
WITH ESSENTIAL SYSTEMS, LOSS OF THE INSTRUMENTS WILL NOT
JEOPARDIZE OPERATION OF RESPECTIVE SYSTEMS BECAUSE LOCAL
INDICATION IS AVAILABLE.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

: ========== DWG: CAR-SH SK-668-S08 ELEV. 236.00 ==========
: MODIFICATIONS INDICATED:
: 1. PROVIDE MULTICYCLE SPRINKLER SYSTEM ACTUATED BY THERMAL DETECTION TO PROTECT ALL EQUIPMENT AND RELATED CONTROLS REQUIRED FOR SAFE SHUTDOWN.
: 2. PROVIDE CURB BETWEEN AIR HANDLING UNITS AH-11 (1B-SB) AND AH-11 (1A-SA).
: 3. PROVIDE 1-HR RATED ENCLOSURE FOR THE FOLLOWING:
: JUNCTION BOXES B-1453-SB, B-1452-SB.
: CONDUITS 12775A-SB-1 1/2, 12768A-SB-1 1/2, 15436G-SB-4, 12774A-SA-1 1/2, 12767A-SA-1 1/2, 15449R-SA-3, 12212A-SB-4, 15400-A-SB-4, 11779B-SB-4, 16000B-SB-4.
: CABLE TRAYS P1806-SB, P1306-SA.
: EXEMPTION REQUEST/JUSTIFICATION
: 1. REQUEST EXEMPTION FROM PROVIDING 1-HR RATED FIRE BARRIER BETWEEN AIR HANDLER AH-11(1B-SB) AND AH-11(1A-SA).
: THIS EXEMPTION REQUEST IS BASED ON NEGLIGIBLE IN-SITU AND TRANSIENT COMBUSTIBLES IN FIRE ZONE 1-A-3-MP (FAABL3-3-MP).
: ALSO, THERE IS NO REASON TO BRING LARGE AMOUNTS OF TRANSIENT COMBUSTIBLES INTO THIS FIRE ZONE. THE REDUNDANT COUNTERPARTS ARE 9 FT APART AND A SIX INCH CURB WAS PROPOSED TO PREVENT OIL SPILLS FROM EXPOSING BOTH UNITS TO THE SAME FIRE.
: A MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS, WAS ADDED IN THIS FIRE ZONE BECAUSE OF OTHER REDUNDANT AIR HANDLING UNITS LOCATED MORE THAN 20 FT APART.
: THE FIRE LOADING IN FIRE ZONE 1-A-3-MP (FAABL3-3-MP) IS 2,500 BTU/SQ FT.
: MANUAL ALARM STATIONS, HOSE STATIONS AND EXTINGUISHERS ARE PROVIDED IN AND ADJACENT TO THE FIRE ZONE.
: 2. REQUEST EXEMPTION FROM INSTALLATION OF FIRE DETECTORS AND AUTOMATIC SPRINKLERS THROUGHOUT THE ENTIRE FIRE AREA.
: A MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS, IS INSTALLED IN FIRE ZONE 1-A-3-MP (FAABL3-3-MP), ALMOST COMPLETELY COVERING THE ENTIRE FIRE ZONE. APPROXIMATELY HALF OF THE CORRIDOR, FIRE ZONE 1-A-3-COR (FAABL3-3-COR), IS SPRINKLERED.
: THE FIRE LOADING IN FIRE ZONE 1-A-3-MP (FAABL3-3-MP) IS 2,500 BTU/SQ FT AND IN FIRE ZONE 1-A-3-COR (FAABL3-3-COR) IS 7,000 BTU/SQ FT.
: MANUAL ALARM STATIONS, HOSE STATIONS AND EXTINGUISHERS ARE AVAILABLE IN AND ADJACENT TO THESE FIRE ZONES.
: 3. REQUEST EXEMPTION FROM PROVIDING FIRE DAMPERS IN HVAC DUCTS

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

PENETRATING ELEVATION 236 IN FIRE ZONE 1-A-3-MP (FAABL3-3-MP) AND IN FIRE ZONE 1-A-2-COR (FAABL3-3-COR).
THIS FLOOR IS 3-HOUR RATED AND ALL MECHANICAL, ELECTRICAL, AND HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL. THE DUCT PENETRATIONS INVOLVED IN 1-A-3-MP ARE:
4 - 10" DIAM, 2 - 14 1/2" X 12 1/2", 1 - 24 1/2" X 16 1/2", 1 - 36" X 32", AND 1 - 18" X 32". IN 1-A-3-COR, DUCT PENETRATION IS 1 - 22" X 20".
FIRE LOADINGS IN CONTIGUOUS AREAS OR ZONES ARE:
1-A-3-MP (FAABL3-3-MP) LOW AT 2,500 BTU/SQ FT
1-A-3-COR (FAABL3-3-COR) 7,000 BTU/SQ FT
1-A-2-MP (FAABL2-2-MP) LOW 3,800 BTU/SQ FT
1-A-2-COR (FAABL2-2-COR) NEGLIGIBLE
A MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS, IS PROVIDED IN FIRE ZONE 1-A-3MP (FAABL3-3-MP) WITH EARLY WARNING IONIZATION SMOKE DETECTION.
THE THICKNESS OF HVAC DUCTWORK VARIES BETWEEN 16 AND 22 GAUGE.
4. REQUEST EXEMPTION FROM CONSIDERATION OF ANALYSIS OF FIRE AREA 1-A-BAL AS A SINGLE MULTI-FLOOR FIRE AREA IN SAFE SHUTDOWN ANALYSIS IN CASE OF FIRE.
EACH ELEVATION WILL BE ANALYZED AS A SEPARATE FIRE AREA.
FLOORS BETWEEN ELEVATIONS ARE 3-HOUR FIRE-RATED AND ALL MECHANICAL, ELECTRICAL, AND HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL.
FIRE LOADINGS OF CONTIGUOUS FIRE AREAS OR ZONES ARE:
1-A-3-MP (FAABL3-3-MP) LOW AT 2,500 BTU/SQ FT
1-A-3-COR (FAABL3-3-COR) 7,000 BTU/SQ FT
1-A-2-MP (FAABL2-2-MP) LOW 3,800 BTU/SQ FT
1-A-2-COR (FAABL2-2-COR) NEGLIGIBLE

COMMENTS:

1. VALVES MOV-2SI-579SA, MOV-2SI-578SB, MOV-2CS-V609SB, AND MCV-2CS-V610SA ARE NORMALLY OPEN DURING PLANT OPERATION AND ARE ALSO REQUIRED TO BE OPEN DURING SAFE SHUTDOWN. CLOSING OF VALVES IS NOT REQUIRED. POSTULATION OF FIRE WITH RESULTING LOSS OF POWER TO THESE VALVES WILL NOT AFFECT THEIR FUNCTION.
2. AIR HANDLING UNITS AH-9(1B-SB), AH-10, AND AH-11 PROVIDE LOCAL COOLING FOR THE EQUIPMENT IN THE AREA. LOSS OF THESE UNITS WILL RESULT IN AN INCREASE IN THE AMBIENT TEMPERATURE TO ABOVE 120 DEG F.

========== DWG: CAR-SH SK-668-S09 ELEV. 236.00 ==========

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

MODIFICATIONS INDICATED:

1. PROVIDE 1-HR RATED ENCLOSURE FOR THE FOLLOWING EQUIPMENT:
   VALVE OPERATOR MOV-3CC-V167SB.
2. PROVIDE 1-HR RATED ENCLOSURE FOR FOLLOWING CONDUIT/BOXES:
   JUNCT BOXES B1455-SB, B1414-SB, B1457-SB,
   B1492-SB, B1483-SB, B1593-SB.
   CONDUITS 16044W-SB-2, 16044X-SB-3,
   12761A-SB-2, 16046L-SB-3, 16046G-SB-3, 16046F-SB-3,
   16044Y-SB-3, 16040Y-SB-3, 16046B-SB-3,
   15434J-SB-3, 12763A-SB-2.
3. THE FOLLOWING CABLES WILL BE REMOVED FROM CABLE TRAYS AND EXISTING CONDUIT AND BE REROUTED IN DEDICATED CONDUITS:
   10953A, 10953B, 12208B, 12259A, 12260A, 12260B,
   12263A, 12264A, 12761A, 12763A.

EXEMPTION REQUEST/JUSTIFICATION

1. REQUEST EXEMPTION FROM PROVIDING AUTOMATIC DETECTION AND SUPPRESSION SYSTEM IN THE ENTIRE FIRE AREA.
   MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS, IS INSTALLED THROUGHOUT MOST OF THE FIRE ZONE 1-A-3-PB (FAABL3-3-PB), EXCEPT FOR TWO SMALL ROOMS ALONG THE WEST WALL AND A PLATFORM AT ELEVATION 247.00. IONIZATION DETECTORS ARE PROVIDED THROUGHOUT THE ENTIRE FIRE ZONE. FIRE LOADING IN FIRE ZONE 1-A-3-PB IS LOW AT 12,500 BTU/SQ FT. FIRE ZONE 1-A-34-RHXA (FAABL3-34RHXA) HAS A LOW FIRE LOADING OF 8,000 BTU/SQ FT. FIRE ZONE 1-A-34-RHXB (FAABL3-34RHXB) HAS NEGLIGIBLE FIRE LOADING (LESS THAN 1,000 BTU/SQ FT). EACH FIRE ZONE IS PROVIDED WITH IONIZATION DETECTION. MANUAL HOSE STATIONS, FIRE EXTINGUISHERS AND ALARM STATIONS ARE AVAILABLE IN AND ADJACENT TO THE FIRE ZONE.
2. REQUEST EXEMPTION FROM PROVIDING 1-HOUR RATED FIRE ENCLOSURE TO SEPARATE REDUNDANT AIR HANDLING UNITS AH-6(1B-SB) AND AH-7(1B-SB) FROM AH-6(1A-SA) AND AH-7(1A-SA) LOCATED TOO CLOSE TO MEET SEPARATION CRITERIA IN SPRINKLERED AREAS. THESE AIR HANDLING UNITS ARE LOCATED APPROXIMATELY 10 FT APART FROM THEIR REDUNDANT COUNTERPARTS AH-6 (1A-SA) AND AH-7 (1A-SA) RESPECTIVELY. THERE ARE INTERVENING COMBUSTIBLES. A MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS, IS INSTALLED IN THE FIRE ZONE. IONIZATION SMOKE DETECTION IS PROVIDED. FIRE LOADING IN FIRE ZONE 1-A-3-PB (FAABL3-3-PB) IS 12,500 BTU/SQ FT. MANUAL ALARM STATIONS, HOSE STATIONS, AND FIRE EXTINGUISHERS ARE AVAILABLE IN AND ADJACENT TO THE FIRE ZONE. FLOOR DRAINS WILL DRAIN ANY OIL SPILL FROM

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-6 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

: THESE UNITS.
: 3. REQUEST EXEMPTION FROM CONSIDERATION OF INTERVENING COMBUSTIBLES IN THE CASE OF IEEE-383 QUALIFIED CABLE INSULATION RUNNING IN LADDER TYPE OPEN CABLE TRAYS NEAR CEILING LEVEL BETWEEN AUXILIARY FEEDWATER PUMPS P1A-SA, P1B-SB AND P1X-SAB IN EXCESS OF 20 FT VERTICAL DISTANCE FROM THE PUMPS. THESE PUMPS ARE PRESENTLY LOCATED 10 TO 20 FT APART AND ARE SEPARATED BY 10 FT HIGH PARTIAL HEIGHT WALLS. THESE PARTIAL HEIGHT WALLS EXTEND 16' - 3" AND 18' - 3" PERPENDICULAR FROM WEST WALL AT COL. B. CABLE TRAYS RUN NEAR CEILING LEVEL APPROXIMATELY 5 TO 7 FT WEST OF THE PUMPS.
: A MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS IS INSTALLED IN THE FIRE ZONE. IONIZATION SMOKE DETECTION IS PROVIDED. FIRE LOADING IN FIRE ZONE 1-A-3-PB (FAABL3-3-PB) IS 12,500 BTU/SQ FT. MANUAL ALARM STATIONS, HOSE STATIONS, AND PORTABLE EXTINGUISHERS ARE AVAILABLE IN AND ADJACENT TO THE FIRE ZONE. FLOOR DRAINS ARE INSTALLED.
: 4. REQUEST EXEMPTION FROM CONSIDERATION OF INTERVENING COMBUSTIBLES IN THE CASE OF IEEE-383 QUALIFIED CABLE INSULATION RUNNING IN LADDER TYPE OPEN CABLE TRAYS NEAR CEILING LEVEL BETWEEN COMPONENT COOLING WATER PUMPS 1A-SA AND 1C-SAB IN EXCESS OF 20 FT VERTICAL SEPARATION. PUMP 1C-SAB IS REQUIRED TO OPERATE DURING MAINTENANCE OUTAGE OF PUMP 1B-SB. THESE PUMPS ARE PRESENTLY LOCATED ABOUT 10 TO 12 FT APART HORIZONTALLY. TRAIN B CABLE TRAYS X1808, P1803, C1808 AND L1801 ARE LOCATED APPROXIMATELY 10 FT HORIZONTALLY TO THE WEST AND OVER 20 FT ABOVE CCW PUMP 1C-SAB. ALL OTHER CABLES ARE RUN IN CONDUIT.
: A MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS IS INSTALLED IN THE FIRE ZONE. IONIZATION SMOKE DETECTION IS PROVIDED. FIRE LOADING IN FIRE ZONE 1-A-3-PB (FAABL3-3-PB) IS 12,500 BTU/SQ FT. MANUAL ALARM STATIONS, HOSE STATIONS, AND PORTABLE EXTINGUISHERS ARE AVAILABLE IN AND ADJACENT TO THE FIRE ZONE. FLOOR DRAINS ARE INSTALLED.
: 5. REQUEST EXEMPTION FROM CONSIDERATION OF INTERVENING COMBUSTIBLES IN THE CASE OF IEEE-383 QUALIFIED CABLE INSULATION RUNNING IN LADDER TYPE OPEN CABLE TRAYS NEAR CEILING LEVEL BETWEEN COMPONENT COOLING WATER PUMPS 1B-SB AND 1C-SAB IN EXCESS OF 20 FT VERTICAL SEPARATION. PUMP 1C-SAB IS REQUIRED TO OPERATE DURING MAINTENANCE OUTAGE OF PUMP 1A-SA. THESE PUMPS ARE PRESENTLY LOCATED ABOUT 100

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF.DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

: FT APART HORIZONTALLY. TRAIN B CABLE TRAYS X1808, P1803, C1808 AND L1801 ARE LOCATED APPROXIMATELY 10 FT HORIZONTALLY TO THE WEST AND OVER 20 FT ABOVE CCW PUMPS 1C-SAB AND 1B-SB RUNNING WEST TO EAST AT COLUMN LINES 18 TO 36.
: ALL OTHER CABLES ARE RUN IN CONDUIT.
: A MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS IS INSTALLED IN THE FIRE ZONE. IONIZATION SMOKE DETECTION IS PROVIDED. FIRE LOADING IN FIRE ZONE 1-A-3-PB (FAABL3-3-PB) IS 12,500 BTU/SQ FT. MANUAL ALARM STATIONS, HOSE STATIONS, AND PORTABLE EXTINGUISHERS ARE AVAILABLE IN AND ADJACENT TO THE FIRE ZONE. FLOOR DRAINS ARE INSTALLED.
: 6. REQUEST EXEMPTION FROM PROVIDING 20 FT SEPARATION BETWEEN AUXILIARY FEEDWATER PUMPS 1A-SA, 1B-SB AND 1X-SAB AND CONTROLS ASSOCIATED WITH THE PUMPS. THESE PUMPS ARE PRESENTLY LOCATED 10 TO 20 FT APART AND ARE SEPARATED BY 10 FT HIGH PARTIAL HEIGHT WALLS. THESE PARTIAL HEIGHT WALLS EXTEND 16° - 3" AND 18° - 3" PERPENDICULAR FROM WEST WALL AT COL. B.
: CABLE TRAYS RUN NEAR CEILING LEVEL APPROXIMATELY 5 TO 7 FT WEST OF THE PUMPS.
: A MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS, IS INSTALLED IN MOST OF THE FIRE ZONE. IONIZATION SMOKE DETECTION IS PROVIDED.
: FIRE LOADING IN FIRE ZONE 1-A-3-PB (FAABL3-3-PB) IS 12,500 BTU/SQ FT. MANUAL ALARM STATIONS, HOSE STATIONS, AND PORTABLE EXTINGUISHERS ARE AVAILABLE IN AND ADJACENT TO THE FIRE ZONE. FLOOR DRAINS ARE INSTALLED.
: 7. REQUEST EXEMPTION FROM PROVIDING 20 FT SEPARATION BETWEEN THE MOTOR OF COMPONENT COOLING WATER PUMP 1A-SA AND THE PUMP HOUSING OF COMPONENT COOLING WATER PUMP 1C-SAB DURING MAINTENANCE OUTAGE OF PUMP 1B-SB. THERE IS A 21 FT SEPARATION FROM THE MOTOR OF EACH PUMP. THE SEPARATION BETWEEN THE MOTOR OF CCW PUMP 1A-SA AND THE PUMP HOUSING OF CCW PUMP 1C-SAB IS NOW 15 FT, WITH NO INTERVENING COMBUSTIBLES.
: A MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS, IS INSTALLED IN MOST OF THE FIRE ZONE. IONIZATION SMOKE DETECTION IS PROVIDED.
: FIRE LOADING IN FIRE ZONE 1-A-3-PB (FAABL3-3-PB) IS 12,500 BTU/SQ FT. MANUAL ALARM STATIONS, HOSE STATIONS, AND PORTABLE EXTINGUISHERS ARE AVAILABLE IN AND ADJACENT TO THE FIRE ZONE. FLOOR DRAINS ARE INSTALLED.
: 8. REQUEST EXEMPTION FROM CONSIDERATION OF INTERVENING COMBUSTIBLES IN THE CASE OF IEEE-383-QUALIFIED CABLE

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

INSULATION RUNNING IN LADDER TYPE OPEN CABLE TRAYS NEAR CEILING LEVEL BETWEEN SERVICE WATER BOOSTER PUMPS 1A-SA AND 1B-SB (DWG: -S11) IN EXCESS OF 20 FT VERTICAL DISTANCE ABOVE THE PUMPS. THESE PUMPS ARE LOCATED ABOUT 180 FT APART BUT EACH HAS LESS THAN 20 FT HORIZONTAL DISTANCE FROM CABLE TRAYS RUNNING IN THE AREA.

MULTI-CYCLE SPRINKLER SYSTEMS, ACTUATED BY THERMAL DETECTORS, ARE INSTALLED IN FIRE ZONE 1-A-3-PB (FAABL3-3-PB), WHERE PUMP 1A-SA IS LOCATED, AND FIRE ZONE 1-A-3-COMB (FAABL3-3-COMB), WHERE PUMP 1B-SB IS LOCATED.

IONIZATION SMOKE DETECTION IS PROVIDED IN EACH ZONE.

FIRE LOADING IN FIRE ZONE 1-A-3-PB (FAABL3-3-PB) IS 12,500 BTU/SQ FT AND, IN FIRE ZONE 1-A-3-COMB (FAABL3-3-COMB), IS 36,600 BTU/SQ FT. MANUAL ALARM STATIONS, HOSE STATIONS, AND PORTABLE EXTINGUISHERS ARE AVAILABLE IN AND ADJACENT TO THE FIRE ZONES. FLOOR DRAINS ARE INSTALLED.

9. REQUEST EXEMPTION FROM PROVIDING 3-HOUR RATED FIRE DOORS FOR THE CVCS CHARGING PUMP ROOMS. PRESENT DESIGN ALLOWS THE WALLS SEPARATING THE CVCS CHARGING PUMPS TO BE CLASSIFIED AS 3-HOUR FIRE RATED BARRIERS. THERE IS A 4 TO 6 INCH HIGH STEP-UP AT THE ROOM ENTRANCES. FLOOR DRAINS ARE LOCATED BETWEEN THE ENTRANCE AND PUMP IN EACH ROOM. EACH PUMP IS SEPARATED FROM THE ENTRANCE BY A 15 FT LONG SHIELD WALL. FIRE ZONE 1-A-3-PB (FAABL3-3-PB) IS PROVIDED WITH EARLY WARNING IONIZATION DETECTION AND MULTI-CYCLE SPRINKLERS, ACTUATED BY THERMAL DETECTORS. THE COMBUSTIBLE LOADING IN FIRE ZONE 1-A-3-PB IS 12,500 BTU/SQ FT.

10. REQUEST EXEMPTION FROM PROVIDING FIRE DAMPERS IN HVAC DUCTS PENETRATING ELEV 236. AND ELEV 247 IN FIRE ZONE 1-A-3-PB (FAABL3-3-PB) AND WALL AT COL F INTO PUMP ROOMS FOR CVCS PUMP 1A-SA AND CVCS PUMP 1C-SAB.
THESE FLOORS AND WALL ARE 3-HOUR RATED AND ALL MECHANICAL, ELECTRICAL AND HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL.
THE DUCTS INVOLVED ARE AS FOLLOWS:
ELEV 236: 1 - 18 1/2" X 18 1/2".
ELEV 236, WALL, COL F: 2 - 48 1/2" X 16".
ELEV 247: 2 - 18 1/2" X 18 1/2", 5 - 12 1/2" X 12 1/2", 5 - 10 1/2" X 8 1/2", 5 - 12" X 12", 2 - 30 1/2" X 24 1/2".
FIRE LOADING IN THIS FIRE ZONE IS LOW AT 12,500 BTU/SQ FT.
FIRE LOADING IN FIRE ZONE 1-A-2-PT (FAABL2-2-PT) DIRECTLY BELOW IS ONLY NEGLIGIBLE. MULTI-CYCLE SPRINKLERS, ACTUATED

TABLE 9.5B - 3
ESASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG. ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSCAPF DATABAL REV 0-8 OCT 7 83 * (R) SCASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

BY THERMAL DETECTION, ARE PROVIDED IN FIRE ZONE 1-A-3-PB (FAABL3-3-PB). WITH EARLY WARNING IONIZATION SMOKE DETECTION. THE THICKNESS OF HVAC DUCTWORK VARIES BETWEEN 16 AND 22 GAUGE.

11. REQUEST EXEMPTION FROM CONSIDERATION OF ANALYSIS OF FIRE AREA 1-A-BAL AS A SINGLE MULTI-FLOOR FIRE AREA IN SAFE SHUTDOWN ANALYSIS IN CASE OF FIRE.
EACH ELEVATION WILL BE ANALYZED AS A SEPARATE FIRE AREA.
FLOORS BETWEEN ELEVATIONS ARE 3-HOUR FIRE-RATED AND ALL MECHANICAL, ELECTRICAL, AND HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL.
FIRE LOADINGS OF CONTIGUOUS FIRE AREAS OR ZONES ARE:
1-A-2-PT (FAABL2-2-PT) NEGLIGIBLE

COMMENTS:

1. VALVES LISTED BELOW ARE REQUIRED FOR SAFE SHUTDOWN, HOWEVER, ON LOSS OF POWER, THESE VALVES WILL FAIL IN A POSITION WHICH WILL NOT IMPAIR SAFE SHUTDOWN. NO FURTHER PROTECTION REQUIRED.
VALVES: AOV-3CX-W10SB, MOV-3CC-B6SB.
2. CABLES REQUIRED FOR SAFE SHUTDOWN WILL BE REMOVED FROM CABLE TRAYS P1803 AND C1808 AND WILL BE INSTALLED IN SEPARATE PROTECTED CONDUITS. NO PROTECTION OF CABLE TRAYS WILL BE REQUIRED.

========== DWG: CAR-SH SK-668-S10 ELEV. 236.00 ==========

MODIFICATIONS INDICATED:

1. CABLES REQUIRED FOR SAFE SHUTDOWN WILL BE REMOVED FROM CABLE TRAYS P1803 AND C1808 AND WILL BE INSTALLED IN SEPARATE PROTECTED CONDUITS. NO PROTECTION OF CABLE TRAYS WILL BE REQUIRED.
2. PROVIDE 1-HR ENCLOSURE FOR CONDUIT 17022S.
3. EXTEND SPRINKLER SYSTEM TO COVER CONDUIT 17022S.

EXEMPTION REQUEST/JUSTIFICATION

1. REQUEST EXEMPTION FROM PROVIDING AUTOMATIC DETECTION AND SUPPRESSION SYSTEM IN THE ENTIRE FIRE AREA. MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTION, IS PROVIDED IN FIRE ZONE 1-A-3-COME (FAABL3-3-COME). THE SYSTEM COVERS APPROXIMATELY 35 PER CENT OF THE FIRE ZONE AND IS INSTALLED ABOVE CABLE TRAYS IN THE CORRIDOR. IONIZATION DETECTION IS PROVIDED, COVERING THE ENTIRE FIRE ZONE. THE FIRE LOADING IN THIS FIRE ZONE IS APPROXIMATELY 29,000 BTU/SQ FT, WITH THE CONCENTRATED COMBUSTIBLES IN THE CABLE TRAYS. MANUAL FIRE EQUIPMENT IS AVAILABLE IN AND ADJACENT TO THIS FIRE ZONE.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-0 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

: ========== DWG: CAR-SH SK-668-S11 ELEV. 236.00 ==========
: MODIFICATIONS INDICATED:
: 1. CABLES REQUIRED FOR SAFE SHUTDOWN WILL BE REMOVED FROM CABLE TRAYS P1803 AND C1808 AND WILL BE INSTALLED IN SEPARATE PROTECTED CONDUITS. NO PROTECTION OF CABLE TRAYS WILL BE REQUIRED.
: 2. PROVIDE 1-HR RATED ENCLOSURE FOR CONDUITS AND JUNCTION BOXES LISTED BELOW:
: CONDUIT 15432U-S8-4 (PROTECT FOR ENTIRE RUN)
: JUNCTION BOX B1586-SB.
: 3. EXTEND EXISTING THERMAL DETECTION AND MULTICYCLE SUPPRESSION SYSTEMS TO PROTECT BORIC ACID TRANSFER PUMP 1B-SB.
: 4. PROVIDE 1-HOUR FIRE-RATED PARTIAL HEIGHT WALL (10 FT HIGH) BETWEEN BORIC ACID TRANSFER PUMPS 1A-SA AND 1B-SB.
:
: ========== DWG: CAR-SH SK-668-S12 ELEV. 261.00 ==========
: EXEMPTION REQUEST/JUSTIFICATION:
: 1. REQUEST EXEMPTION FROM PROVIDING 3-HR FIRE BARRIER ENCLOSURE FOR THE FOLLOWING:
: VALVES AOV-2MS-P18SA-1, AOV-2MS-P19SB-1, AOV-2MS-P20SA-1, MOV-2MS-V8SB-1.
: CONDUITS 16058F-SB-1, 1544CA-SB-1, 16052T-SB-3, 15436T-SB-3.
: JUNCTION BOXES B1573-SB, B1568-SA.
: EXEMPTION REQUEST IS BASED ON NEGLIGIBLE IN-SITU AND TRANSIENT COMBUSTIBLES IN FIRE ZONE 1-A-46-ST(FAABL4-46-ST).
: THE MAIN STEAM TUNNEL, FIRE ZONE 1-A-46-ST (FAABL4-46-ST). HAS NO AUTOMATIC FIRE SUPPRESSION OR DETECTION CAPABILITIES.
: FIRE ZONE 1-A-46-ST (FAABL4-46-ST) HAS NEGLIGIBLE FIRE LOADING (LESS THAN 1,000 BTU/SQ FT) AND IS ISOLATED FROM OTHER PLANT AREAS BY HEAVY REINFORCED CONCRETE CONSTRUCTION WITH NO PENETRATIONS.
: THE STEAM TUNNEL IS OPEN TO ATMOSPHERE AND, SHOULD A FIRE OCCUR, THE HEAT WILL DISSIPATE TO THE ATMOSPHERE.
: ACCESS TO MAIN STEAM AND FEEDWATER PIPE TUNNELS IS VIA STAIRS, MAKING IT DIFFICULT, IF NOT IMPOSSIBLE, TO INTRODUCE ADDITIONAL TRANSIENT COMBUSTIBLES SUCH AS A DRUM OF OIL.
: 2. REQUEST EXEMPTION FROM PROVIDING AUTOMATIC DETECTION AND SUPPRESSION SYSTEMS IN THE ENTIRE FIRE AREA.
: A MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTION, IS PROVIDED IN FIRE ZONE 1-A-4-CHLR (FAABL4-4-CHLR). THE FIRE LOADING IN THIS ZONE IS MODERATE, 88,000 BTU/SQ FT.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSCAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

IONIZATION FIRE DETECTION IS PROVIDED THROUGHOUT THE ENTIRE FIRE ZONE 1-A-4-COR (FAABL4-4-COR) AND THE PORTION OF FIRE ZONE 1-A-4-CHLR SHOWN ON THIS DRAWING. THE FIRE LOADING IN FIRE ZONE 1-A-4-COR IS MODERATE, 88,600 BTU/SQ FT.
MANUAL ALARM STATIONS, HOSE STATIONS AND EXTINGUISHERS ARE AVAILABLE IN AND ADJACENT TO THE ZONES.
THE MAIN STEAM TUNNEL, FIRE ZONE 1-A-46-ST (FAABL4-46-ST) HAS NO AUTOMATIC SUPPRESSION OR DETECTION CAPABILITIES.

3. REQUEST EXEMPTION FROM PROVIDING FIRE DAMPERS IN HVAC DUCTS PENETRATING ELEV 261 IN FIRE ZONE 1-A-4-CHLR (FAABL4-4-CHLR). THIS FLOOR IS 3-HOUR RATED AND ALL MECHANICAL, ELECTRICAL AND HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL. THE DUCT PENETRATIONS INVOLVED ARE:
1-A-4-CHLR; 2 - 14" X 10".
THE FIRE LOADING FOR FIRE ZONE 1-A-4-CHLR IS 88,000 BTU/SQ FT.
FIRE ZONE 1-A-3-COR (FAABL3-3-COR), LOCATED BELOW, HAS A LOW FIRE LOADING OF 7,000 BTU/SQ FT.
FIRE ZONE 1-A-EPA (FAAEPA), LOCATED BELOW, HAS A LOW FIRE LOADING OF 72,990 BTU/SQ FT.
FIRE ZONE 1-A-EPB (FAAEPB), LOCATED BELOW, HAS A LOW FIRE LOADING OF 79,970 BTU/SQ FT.
MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS, IS PROVIDED IN FIRE ZONE 1-A-4-CHLR, WITH EARLY WARNING IONIZATION DETECTION.
THE THICKNESS OF HVAC DUCTWORK VARIES BETWEEN 16 AND 22 GAUGE.

4. REQUEST EXEMPTION FROM CONSIDERATION OF ANALYSIS OF FIRE AREA 1-A-BAL AS A SINGLE MULTI-FLOOR FIRE AREA IN SAFE SHUTDOWN ANALYSIS IN CASE OF FIRE.
EACH ELEVATION WILL BE ANALYZED AS A SEPARATE FIRE AREA.
FLOORS BETWEEN ELEVATIONS ARE 3-HOUR FIRE-RATED AND ALL MECHANICAL, ELECTRICAL, AND HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL.
FIRE LOADINGS OF CONTIGUOUS FIRE AREAS OR ZONES ARE:
1-A-EPA (FAAEPA) 72,900 BTU/SQ FT
1-A-EPB (FAAEPB) 79,970 BTU/SQ FT
1-A-3-MP (FAABL3-3-MP) 2,500 BTU/SQ FT
1-A-3-COR (FAABL3-3-COR) 7,000 BTU/SQ FT

COMMENTS:

1. NORMALLY OPEN VALVES MOV-2AF-V19SB-1, MOV-2AF-V19SB-1 AND MOV-2AF-V23SB-1 ARE NOT REQUIRED TO CLOSE FOR SAFE SHUTDOWN.
2. NORMALLY OPEN VALVES AOV-2MS-V1SAB-1, AOV-2MS-V2SAB-1 AND

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES CCLS: (SEE DWGS)

(F) SHSDAPF CATABAL REV 0-6 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS
: ACV-2HS-V3SAB-1 FAIL CLOSED IN SAFE POSITION.
:
: ========== DWG: CAR-SH SK-668-S13 ELEV. 261.0? ==========
: MODIFICATIONS INDICATED:
: 1. PROVIDE 1-HR RATED ENCLOSURE FOR JUNCTION BOXES, CONDUITS,
: AND CABLE TRAYS:
: JUNCTION BOXES : B1614-SR3.
: CONDUITS (PROTECT FOR ENTIRE EXPOSED RUN OR AS INDICATED)
: 154180-SB-2,
: 17015H-SR3-2 (FROM FLOOR TO BOX B1614-SR3),
: 17014N-SR3-2 (FROM FLOOR TO BOX B1614-SR3),
: 15437U-SA-1 1/2 (FROM AH-20 (1A-SA) TO COL LINE 28).
: CABLE TRAYS: X1803-SB, X1806-SB, P1816-SB, C1812-SB.
: ENCLOSURE WILL BE IN ADDITION TO EXISTING AUTOMATIC
: DETECTION AND SUPPRESSION SYSTEMS WHICH PROTECT BOTH
: SA AND SB TRAINS.
: EXEMPTION REQUEST/JUSTIFICATION:
: 1. REQUEST EXEMPTION FROM PROVIDING 1-HR RATED FIRE ENCLOSURE
: TO SEPARATE REDUNDANT AIR HANDLING UNITS AH-19(1B-SB)
: AND AH-20(1B-SB) FROM AH-19(1A-SA) AND AH-20(1A-SA), WHICH
: ARE LOCATED TOO CLOSE TO MEET SEPARATION CRITERIA IN AREAS
: PROTECTED BY AUTOMATIC SPRINKLER SYSTEMS.
: REDUNDANT COUNTERPARTS AH-19(1A-SA) AND AH-20(1A-SA)
: RESPECTIVELY ARE LOCATED LESS THAN 20 FT APART. INTERVENING
: COMBUSTIBLES ARE PRESENT AS DESCRIBED IN ITEM 3 BELOW.
: MOST OF THE FIRE ZONE IS PROTECTED BY AUTOMATIC MULTI-CYCLE
: SPRINKLERS, ACTUATED BY THERMAL DETECTORS, WITH EARLY
: WARNING IONIZATION DETECTION ALSO PROVIDED.
: FIRE LOADING IN FIRE ZONE 1-A-4CHLR (FAABL4-4-CHLR) IS
: 88,000 BTU/SQ FT. MANUAL ALARM STATIONS, HOSE STATIONS, AND
: EXTINGUISHERS ARE AVAILABLE IN AND ADJACENT TO THE FIRE ZONE.
: FLOOR DRAINS ARE INSTALLED.
: 2. REQUEST EXEMPTION FROM PROVIDING AUTOMATIC DETECTION AND
: SUPPRESSION SYSTEMS IN THE ENTIRE FIRE AREA.
: AUTOMATIC MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL
: DETECTORS, IS PROVIDED OVER THE ENTIRE CHILLER ROOM, FIRE
: ZONE1-A-4-CHLR (FAABL4-4-CHLR), EXCEPT FOR TWO SMALL ROOMS
: CONTAINING NEGLIGIBLE COMBUSTIBLE LOADING.
: AUTOMATIC IONIZATION SMOKE DETECTION IS PROVIDED THROUGHOUT
: THE FIRE ZONE, WITH THE EXCEPTION OF THE ABOVE TWO ROOMS.
: MANUAL HOSE STATIONS AND EXTINGUISHERS ARE AVAILABLE FOR USE.
: 3. REQUEST EXEMPTION FROM PROVIDING 1-HOUR FIRE RATED ENCLOSURE

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG. ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

: TO SEPARATE HVAC CHILLERS WC-2(1A-SA) AND WC-2(1B-SB) AND
: CONDUITS ASSOCIATED WITH THEM WHICH ARE LOCATED LESS THAN
: 20 FT HORIZONTALLY FROM CABLE TRAYS RUNNING IN THE AREA.
: ALSO, REQUEST EXEMPTION FROM PROVIDING 1-HOUR FIRE RATED
: ENCLOSURE TO SEPARATE CONDENSER WATER PUMPS P7(1A-SA) AND
: P7(1B-SB) AND CIRCUITS ASSOCIATED WITH THEM.
: THE ABOVE HVAC CHILLERS, CHILLED WATER PUMPS, CONDENSER WATER
: CIRCULATING PUMPS AND ASSOCIATED CONDUITS ARE LOCATED BETWEEN
: 0 AND 25 FT FROM VARIOUS CABLE TRAYS RUNNING IN THE AREA.
: THE CHILLER AND PUMP UNITS ARE SEPARATED BY MORE THAN 100 FT
: FROM THEIR REDUNDANT COUNTERPARTS.
: EQUIPMENT IS LOCATED IN FIRE ZONE 1-A-4-CHLR (FAABL4-4-CHLR),
: WHICH HAS A COMBUSTIBLE LOADING OF 88,000 BTU/SQ FT.
: THIS FIRE ZONE IS PROTECTED BY PROVISION OF AN AUTOMATIC
: MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS.
: EARLY WARNING IONIZATION SMOKE DETECTORS ARE PROVIDED.
: MANUAL HOSE STATIONS AND EXTINGUISHERS ARE PROVIDED FOR USE.
: 4. REQUEST EXEMPTION FROM PROVIDING FIRE DAMPERS IN HVAC DUCTS
: PENETRATING ELEV 261 IN FIRE ZONE 1-A-4-CHLR (FAABL4-4-CHLR).
: THIS FLOOR IS 3-HOUR RATED AND ALL MECHANICAL, ELECTRICAL AND
: HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE
: MATERIAL. THE DUCT PENETRATIONS INVOLVED ARE:
: 8 - 10" DIAM, 2 - 18" DIAM, 4 -14" X 10",
: 1 - 29" X 12", 1 - 56" X 38" AND 1 - 60" X 50".
: THE FIRE ZONE FIRE LOADING IS MODERATE AT 88,000 BTU/SQ FT.
: FIRE ZONE 1-A-3-PB (FAABL3-3-PB) BELOW HAS LOW FIRE LOADING
: OF 12,500 BTU/SQ FT.
: MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS,
: IS PROVIDED IN FIRE ZONE 1-A-4-CHLR (FAABL4-4-CHLR), WITH
: EARLY WARNING SMOKE DETECTION.
: THE THICKNESS OF HVAC DUCTWORK VARIES BETWEEN 16 AND 22 GAUGE.
: 5. REQUEST EXEMPTION FROM CONSIDERATION OF ANALYSIS OF FIRE AREA
: 1-A-BAL AS A SINGLE MULTI-FLOOR FIRE AREA IN SAFE SHUTDOWN
: ANALYSIS IN CASE OF FIRE.
: EACH ELEVATION WILL BE ANALYZED AS A SEPARATE FIRE AREA.
: FLOORS BETWEEN ELEVATIONS ARE 3-HOUR FIRE-RATED AND ALL
: MECHANICAL, ELECTRICAL, AND HVAC PENETRATIONS ARE SEALED
: WITH 3-HOUR FIRE RESISTIVE MATERIAL.
: FIRE LOADINGS OF CONTIGUOUS FIRE AREAS OR ZONES ARE:
: 1-A-3-PB (FAABL3-3-PB) 12,500 BTU/SQ FT
:
: COMMENTS:

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSLAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

1. NORMALLY OPEN VALVES AOV-3FP-V120SB, AOV-3FP-V133SA, AOV-3SA-V302SB, AND AOV-3SA-V307SA WILL FAIL CLOSED IN SAFE POSITION.

========== DWG: CAR-SH SK-668-S14 ELEV. 261.00 ==========

MODIFICATIONS INDICATED:

1. PROVIDE 1-HR RATED ENCLOSURE FOR THE FOLLOWING EQUIPMENT:
   CABLE TRAYS P1808, C1810. (PARTIAL LENGTH OF RUN)
   JUNCTION BOXES B1624-SR4, B1746-SB.
   CONDUITS 16034U-SB-4, 16034Q-SB-4, 16034V-SB-4, 16034R-SB-4
   17012R-SB-4, 17022S-SR4-3, 17022V-SR4-3, 17012P-SB-4.
2. PROVIDE 1-HR RATED FIRE BARRIER WITH CLASS B LABELED FIRE DOOR TO SEPARATE MCC-1B35-SB FROM MCC-1A35-SA.
3. EXTEND EXISTING FIRE DETECTION AND SUPPRESSION SYSTEMS TO INCLUDE PROTECTION FOR JUNCTION BOX B1624-SR4.
4. ESSENTIAL CABLES 12550A, 13285A AND 13286A WILL BE REMOVED FROM CABLE TRAY P1808 AND RUN IN SEPARATE PROTECTED CONDUIT.
5. ESSENTIAL CABLE 13285E WILL BE REMOVED FROM CABLE TRAY C1810 AND RUN IN SEPARATE PROTECTED CONDUIT.
5. PROVIDE 1-HOUR FIRE-RATED ENCLOSURE FOR CABLE TRAYS P1305-SA, C1300-SA, AND L1300-SA FROM COL H TO COL F SO THAT A SINGLE FIRE CANNOT AFFECT MCC-1B35-SB AND REDUNDANT CABLES TO MCC-1A35-SA.

EXEMPTION REQUEST/JUSTIFICATION:

1. REQUEST EXEMPTION FROM PROVIDING AUTOMATIC DETECTION AND SUPPRESSION SYSTEMS IN THE ENTIRE FIRE AREA.
   MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS, IS INSTALLED OVER CABLE TRAY RUNS LOCATED IN THE CORRIDOR.
   AUTOMATIC IONIZATION SMOKE DETECTION SYSTEM IS PROVIDED THROUGHOUT ZONE 1-A-4-COME (FAABL4-4-COME) ON AN AREA BASIS.
   COMBUSTIBLE LOADING IN THE FIRE ZONE IS LOW. APPROXIMATELY 21,500 BTU/SQ FT.
   MANUAL FIRE CONTROL CAPABILITY IS AVAILABLE FOR ZONE USE.
2. REQUEST EXEMPTION FROM PROVIDING FIRE DAMPERS IN HVAC DUCTS PENETRATING ELEV 261 IN FIRE ZONE 1-A-4-COME (FAABL4-4-COME).
   THIS FLOOR IS 3-HOUR RATED AND ALL MECHANICAL, ELECTRICAL AND HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL. INVOLVED DUCT PENETRATION IS 1 - 30" X 24".
   THE FIRE LOADING IN THE FIRE ZONE IS LOW AT 21,500 BTU/SQ FT.
   FIRE ZONE 1-A-3-COME (FAABL3-3-COME) BELOW HAS LOW FIRE LOAD OF 39,000 BTU/SQ FT.
   MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS,

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)
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(F) SHSCAFF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55
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GENERAL COMMENTS
: IS PROVIDED IN FIRE ZONE 1-A-4-COME OVER SAFETY RELATED
: EQUIPMENT WITH EARLY WARNING IONIZATION SMOKE DETECTION
: PROVIDED OVER THE ENTIRE ZONE.
: THE THICKNESS OF HVAC DUCTWORK VARIES BETWEEN 16 AND 22 GAUGE.
: 3. REQUEST EXEMPTION FROM CONSIDERATION OF ANALYSIS OF FIRE AREA
: 1-A-BAL AS A SINGLE MULTI-FLOOR FIRE AREA IN SAFE SHUTDOWN
: ANALYSIS IN CASE OF FIRE.
: EACH ELEVATION WILL BE ANALYZED AS A SEPARATE FIRE AREA.
: FLOORS BETWEEN ELEVATIONS ARE 3-HOUR FIRE-RATED AND ALL
: MECHANICAL, ELECTRICAL, AND HVAC PENETRATIONS ARE SEALED
: WITH 3-HOUR FIRE RESISTIVE MATERIAL.
: FIRE LOADINGS OF CONTIGUOUS FIRE AREAS OR ZONES ARE:
: 1-A-3-COME (FAABL3-3-COME) 39,000 BTU/SQ FT
:
: ========== DWG: CAR-SH SK-668-S15 ELEV. 261.00 ==========
: MODIFICATIONS INDICATED:
: 1. PROVIDE 1-HR RATED ENCLOSURE FOR FOLLOWING TRAIN SB EQUIPMENT:
: CABLE TRAYS P1808, C1810, C1800, X1806, P1816, C1812.
: CONDUIT 16034P-SB-4, 16034N-SB-4, 16076W-SB-4,
: 16090C-SB-4, 16074V-SB-4, 15449L-SB-4,
: 16056S-SB-4, 16088M-SB-4, 16074S-SB-4, 16078F-SB-4,
: 16078E-SB-4, 17042X-SB-4, 15432U-SB-4.
: ENCLOSURE WILL BE IN ADDITION TO EXISTING AUTOMATIC DETECTION
: AND SUPPRESSION SYSTEMS WHICH PROTECT BOTH SA AND SB TRAINS.
: EXEMPTION REQUEST/JUSTIFICATION:
: 1. REQUEST EXEMPTION FROM PROVIDING AUTOMATIC DETECTION AND
: SUPPRESSION SYSTEMS IN THE ENTIRE FIRE AREA.
: MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS,
: IS PROVIDED OVER CORRIDOR AND HAZARDOUS AREAS (APPROXIMATELY
: 80 PER CENT OF FIRE ZONE 1-A-4-COME (FAABL4-4-COMB)).
: FIRE LOADING FOR THIS ZONE IS 48,900 BTU/SQ FT.
: EARLY WARNING IONIZATION SMOKE DETECTION IS PROVIDED IN THE
: FIRE ZONE EXCEPT IN THE BORIC ACID TANK CUBICLE.
: 2. REQUEST EXEMPTION FROM PROVIDING FIRE DAMPERS IN HVAC DUCTS
: PENETRATING ELEV 261 IN FIRE ZONE 1-A-4-COMB (FAABL4-4-COMB).
: THIS FLOOR IS 3-HOUR RATED AND ALL MECHANICAL, ELECTRICAL AND
: HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE
: MATERIAL. THE DUCT PENETRATION INVOLVED IS 1 - 26" X 18".
: THE FIRE LOADING IN THE FIRE ZONE IS 21,800 BTU/SQ FT.
: FIRE ZONE 1-A-3-COMB (FAABL3-3-COMB) BELOW HAS LOW FIRE LOAD
: OF 36,600 BTU/SQ FT.
: MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS,

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

IS PROVIDED IN FIRE ZONE 1-A-4-COMB OVER SAFETY RELATED EQUIPMENT AND CABLE TRAYS, WITH EARLY WARNING IONIZATION SMOKE DETECTORS PROVIDED OVER THE ENTIRE FIRE ZONE.
THE THICKNESS OF HVAC DUCTWORK VARIES BETWEEN 16 AND 22 GAUGE.

5. REQUEST EXEMPTION FROM CONSIDERATION OF ANALYSIS OF FIRE AREA 1-A-BAL AS A SINGLE MULTI-FLOOR FIRE AREA IN SAFE SHUTDOWN ANALYSIS IN CASE OF FIRE.
EACH ELEVATION WILL BE ANALYZED AS A SEPARATE FIRE AREA.
FLOORS BETWEEN ELEVATIONS ARE 3-HOUR FIRE-RATED AND ALL MECHANICAL, ELECTRICAL, AND HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL.
FIRE LOADINGS OF CONTIGUOUS FIRE AREAS OR ZONES ARE:
1-A-EPA (FAAEPA) 72,990 BTU/SQ FT
1-A-4-COR (FAABL4-4-COR) 88,600 BTU/SQ FT

========== DWG: CAR-SH SK-668-S16 ELEV. 286.00 ==========

MODIFICATIONS INDICATED:

1. EXTEND CLASSIFICATION OF 3-HR RATED FIRE BARRIER ON EXISTING WALL RUNNING ALONG COL LINE 29 FROM COL LINE E TO CONTAINMENT.

EXEMPTION REQUEST/JUSTIFICATION:

1. REQUEST EXEMPTION FROM PROVIDING AUTOMATIC DETECTION AND SUPPRESSION SYSTEMS IN THE ENTIRE FIRE AREA.
AUTOMATIC IONIZATION SMOKE DETECTION AND MANUAL ALARM STATIONS ARE PROVIDED IN THE HVAC EQUIPMENT ROOMS, FIRE ZONES 1-A-5-HVA (FAABL5-5-HVA) AND 1-A-5-HVB (FAABL5-5-HVB).
SINCE THE WALLS, FLOOR AND CEILING ENCLOSING FIRE ZONE 1-A-5-HVB (FAABL5-5-HVB) ARE 3-HOUR RATED, THE ZONE MAY BE RECLASSIFIED AND ANALYZED AS A SEPARATE FIRE AREA.
FIRE LOADINGS FOR THE ZONES ARE 20,400 AND 61,700 BTU/SQ FT, RESPECTIVELY. MANUAL HOSE STATIONS AND EXTINGUISHERS ARE LOCATED IN AND ADJACENT TO THESE ROOMS.
A MANUAL ALARM STATION IS PROVIDED IN THE CONTAINMENT EQUIPMENT HATCH ACCESS ROOM, FIRE ZONE 1-A-5-CEH (FAABLE-5-CEH).
SEE EXEMPTION REQUEST 1., CAR-SH-SK-668-S12, FIRE AREA 1-A-BAL, FOR A DESCRIPTION OF THE STEAM TUNNEL, FIRE ZONE 1-A-46-ST (FAABL5-5-ST).
THE FIRE LOADINGS FOR THE CONTAINMENT EQUIPMENT HATCH AREA AND THE STEAM FEEDWATER TUNNEL ARE NEGLIGIBLE (LESS THAN 1,000 BTU/SQ FT).

2. REQUEST EXEMPTION FROM PROVIDING FIRE DAMPERS IN HVAC DUCTS PENETRATING ELEV 286 IN FIRE ZONE 1-A-5-CEH (FAABL5-5-CEH).
THIS FLOOR IS 3-HOUR RATED AND ALL MECHANICAL, ELECTRICAL AND

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRME 10/07/83 11.56.55

GENERAL COMMENTS

HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL. THE DUCT PENETRATION INVOLVED IS 1 - 16" X 14".
THE FIRE LOADING IN FIRE ZONE 1-A-5-CEH IS NEGLIGIBLE.
FIRE LOADING FOR FIRE AREA 1-A-EPA (FAAEPA), LOCATED BELOW, IS 72,990 BTU/SQ FT AND FIRE LOADING FOR FIRE ZONE 1-A-4-COR (FAABL4-4-COR) IS 88,600 BTU/SQ FT.
THE THICKNESS OF HVAC DUCTWORK VARIES BETWEEN 16 AND 22 GAUGE.

3. REQUEST EXEMPTION FROM CONSIDERATION OF ANALYSIS OF FIRE AREA 1-A-BAL AS A SINGLE MULTI-FLOOR FIRE AREA IN SAFE SHUTDOWN ANALYSIS IN CASE OF FIRE.
   EACH ELEVATION WILL BE ANALYZED AS A SEPARATE FIRE AREA.
   FLOORS BETWEEN ELEVATIONS ARE 3-HOUR FIRE-RATED AND ALL MECHANICAL, ELECTRICAL, AND HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL.
   FIRE LOADINGS OF CONTIGUOUS FIRE AREAS OR ZONES ARE:
   1-A-5-CEH (FAABL5-5-CEH) NEGLIGIBLE
   1-A-EPA (FAAEPA) 72,990 BTU/SQ FT
   1-A-4-COR (FAABL4-4-COR) 88,600 BTU/SQ FT

COMMENTS:

1. CONDUITS 154290-SA-4, 15429R-SA-4, 15465R-SA-4, 15465S-SA-4 AND JUNCTION BOX B5099 CONTAIN POWER CABLES WHICH FEED 480V EMERGENCY MCC 1A36-SA. THIS MCC SUPPLIES EQUIPMENT ASSOCIATED WITH AIR HANDLERS AH-15 AND AH-16. NO MODIFICATION IS REQUIRED FOR THE CONDUITS AND JUNCTION BOX BECAUSE TWO DEDICATED AIR HANDLERS (AH-97 AND AH-98) ARE AVAILABLE AS BACK UPS TO AH-15 AND AH-16.
2. FUNCTION OF VALVE AOV-3CX-W16SA-1 IS TO PROVIDE CHILLED WATER SERVICE TO AH-13(1A-SB) AND AH-13(1B-SB) FROM SA CHILLER. POSTULATED FIRE MAY RESULT IN LOSS OF ENTIRE SAFETY TRAIN SB INCLUDING SA VALVE. HOWEVER, REDUNDANT SYSTEM AH-12(1A-SA), AND AH-12(1B-SA) WOULD BE FUNCTIONAL AND CAPABLE OF SAFE SHUTDOWN.
3. POSTULATED FIRE MAY AFFECT REDUNDANT DUCTWORK ORIGINATING FROM AIR HANDLERS IN THIS AREA AND SERVING CABLE VAULTS A AND B. NO MODIFICATIONS ARE REQUIRED AS A LOSS OF VENTILATION TO THE CABLE VAULTS WILL NOT IMPAIR SAFE SHUTDOWN CAPABILITY.
   (SEE FIRE AREA 1-A-CSRB COMMENT NO. 2)

========== DWG: CAR-SH SK-668-S17 ELEV. 286.00 ==========

EXEMPTION REQUEST/JUSTIFICATION:

1. REQUEST EXEMPTION FROM PROVIDING AUTOMATIC DETECTION AND SUPPRESSION SYSTEMS IN THE ENTIRE FIRE AREA.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-8 OCT 7 83 * (R) SCASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

THE HVAC EQUIPMENT ROOM, FIRE ZONE 1-A-5-HV3 (FAABL5-5-HVA). SOUTH OF SWITCHGEAR ROOM A HAS A MANUAL ALARM STATION, HOSE STATION, AND PORTABLE EXTINGUISHER. FIRE LOADING IS NEGLIGIBLE (LESS THAN 1,000 BTU/SQ FT).

THE NON-SAFETY BATTERY ROOM, ZONE 1-A-5-BATN (FAABL5-5-BATN). IS ENCLOSED WITHIN 3-HOUR FIRE RESISTANCE RATED BARRIERS, HAS AUTOMATIC IONIZATION SMOKE DETECTION AND A FIRE LOADING OF 51,000 BTU/SQ FT.

2. REQUEST EXEMPTION FROM PROVIDING FIRE DAMPERS IN HVAC DUCTS PENETRATING ELEV 286 IN FIRE ZONE 1-A-5-HV3 (FAABL5-5-HV3). THE FLOOR IS 3-HOUR FIRE RATED AND ALL MECHANICAL, ELECTRICAL AND HVAC PENERATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL. THE DUCT PENETRATION INVOLVED IS 104" X 54".
THE FIRE LOADING IN THE FIRE ZONE IS NEGLIGIBLE.
THE THICKNESS OF HVAC DUCTWORK VARIES BETWEEN 16 AND 22 GAUGE.
FIRE ZONE 1-A-4-CHLR (FAABL4-4-CHLR) BELOW HAS MODERATE FIRE LOADING OF 88,000 BTU/SQ FT.

========== DWG: CAR-SH SK-668-S22 ELEV. 236.00 ==========

MODIFICATIONS INDICATED:

1. CLASSIFY AS 3-HR RATED FIRE BARRIER THE EXISTING WALL AND DOOR LOCATED AT COL LINE KZ BETWEEN COLS 24Z AND 27.

COMMENTS:

1. THE 3-HR FIRE BARRIER IS BEING PROVIDED TO MAINTAIN SEPARATION OF REDUNDANT EQUIPMENT AND SYSTEMS ASSOCIATED WITH AH-23, AH-29 AND CONTAINMENT FAN COOLERS AH-1(1A-SB), AH-1(1B-SB), AH-2(1A-SA) AND AH-2(1B-SA).

EXEMPTION REQUEST/JUSTIFICATION:

1. REQUEST EXEMPTION FROM PROVIDING AUTOMATIC DETECTION AND SUPPRESSION SYSTEMS IN THE ENTIRE FIRE AREA.
MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS, IS PROVIDED IN FIRE ZONE 1-A-3-COMI (FAABL3-3-COMI) OVER CABLE TRAY RUNS IN THE CORRIDOR. AUTOMATIC IONIZATION SMOKE DETECTION IS PROVIDED THROUGHOUT THE FIRE ZONE. EXCEPT OVER THE BORON RECYCLE HOLDUP TANK CUBICLE AND THE SOUTHERN END OF THE FIRE ZONE (COLUMN LINE 24Z TO 18Z). THE FIRE LOADING IN THIS FIRE ZONE IS APPROXIMATELY 26,900 BTU/SQ FT WITH CONCENTRATION IN THE CABLE TRAY AREA.
MANUAL ALARM STATIONS, HOSE STATIONS AND EXTINUISHERS ARE AVAILABLE IN AND ADJACENT TO THIS FIRE ZONE FOR BACKUP.
2. REQUEST EXEMPTION FROM PROVIDING FIRE DAMPERS IN HVAC DUCTS PENETRATING ELEV 236 IN ZONE 1-A-3-COMI (FAABL3-3-COMI).

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHRNE 10/07/83 11.56.55

GENERAL COMMENTS

THIS FLOOR IS 3-HOUR RATED AND ALL MECHANICAL, ELECTRICAL AND HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL. THE DUCT PENETRATION IS 1 - 28 1/2" X 28 1/2".
THE FIRE LOADING IN THE FIRE ZONE IS 26,909 BTU/SQ FT.
FIRE ZONE 5-A-1-C1 BELOW HAS A NEGLIGIBLE FIRE LOAD.
MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS, IS PROVIDED BETWEEN COL 42 AND COL 43 IN FIRE ZONE 1-A-3-COMI.
EARLY WARNING IONIZATION SMOKE DETECTION IS PROVIDED IN THE REMAINDER OF THE FIRE ZONE.
THE THICKNESS OF HVAC DUCTWORK VARIES BETWEEN 16 AND 22 GAUGE.

========== DWG: CAR-SH SK-668-S23 ELEV. 261.00 ==========

MODIFICATIONS INDICATED:

1. ESSENTIAL CABLES 12550A, 13285A AND 13286A WILL BE REMOVED FROM CABLE TRAY P1808 AND RUN IN SEPARATE PROTECTED CONDUITS.
2. ESSENTIAL CABLE 13285E WILL BE REMOVED FROM CABLE TRAY C1210 AND RUN IN SEPARATE PROTECTED CONDUIT.
3. EXTEND THERMAL DETECTION AND MULTICYCLE SPRINKLER SYSTEMS TO PROTECT NEW CONDUITS.
4. PROVIDE 1-HR RATED ENCLOSURE FOR THE ENTIRE EXPOSED LENGTH OF THE NEW CONDUITS.

COMMENTS:

1. POSTULATED FIRE MAY AFFECT CABLES AND CONDUITS ASSOCIATED WITH DG AND FO SYSTEMS.

EXEMPTION REQUEST/JUSTIFICATION:

1. REQUEST EXEMPTION FROM PROVIDING AUTOMATIC DETECTION AND SUPPRESSION SYSTEM IN THE ENTIRE FIRE AREA.
MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTION, IS PROVIDED OVER CABLE TRAY RUNS AND CHARCOAL FILTERS IN FIRE ZONES 1-A-4-COMI (FAABL4-4-COMI), 1-A-4-CHFA (FAABL4-4-CHFA), AND 1-A-4-CHFB (FAABL4-4-CHFB). THE FIRE LOADING IN THE THREE ZONES IS 36,000, 68,500 AND 59,700 BTU/SQ FT, RESPECTIVELY. AUTOMATIC EARLY WARNING IONIZATION SMOKE DETECTION IS PROVIDED ON AN AREA BASIS IN EACH FIRE ZONE. MANUAL FIRE CONTROL CAPABILITIES ARE AVAILABLE TO THE ZONES.
2. REQUEST EXEMPTION FROM PROVIDING FIRE DAMPERS IN HVAC DUCTS PENETRATING ELEV 261 IN FIRE ZONES 1-A-4-CHFA (FAABL4-4-CHFA), 1-A-4-CHFB (FAABL4-4-CHFB), AND 1-A-4-COMI (FAABL4-4-COMI). THIS FLOOR IS 3-HOUR RATED AND ALL MECHANICAL, ELECTRICAL AND HVAC PENETRATIONS ARE SEALED WITH 3-HOUR FIRE RESISTIVE MATERIAL. THE DUCT PENETRATIONS INVOLVED ARE:
1-A-4-CHFA; 2 - 12" DIAM, 1 - 26" X 22", 1 - 36" X 2c",

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BAL :: CARS AREA IDENTIFIER: FAABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BALANCE OF BLDG, ALL LVLS
SHOWN ON DWG: CAR-SH-SK-668VARIOUS ELEV: VARIES COLS: (SEE DWGS)

(F) SHSDAPF DATABAL REV 0-8 OCT 7 83 * (R) SDASHPNE 10/07/83 11.56.55

GENERAL COMMENTS

: 1 - 46 1/2" X 36 1/2", 1 - 78" X 52", 1 - 80" X 14".
: 1-A-4-CHFB; 1 - 5" DIAM, 4 - 8" DIAM, 1 - 8 1/2" X 6 1/2",
: 2 - 12 1/2" X 10 1/2", 1 - 16 1/2" X 14 1/2",
: 1 - 36" X 14", 1 - 60 1/2" X 36 1/2".
: 1-A-4-COMI; 1 - 16" X 8".
: THE FIRE LOADING IN THE FIRE ZONES ARE:
: 1-A-4-CHFA (FAABL4-4-CHFA) 68,500 BTU/SG FT,
: 1-A-4-CHFB (FAABL4-4-CHFB) 59,200 BTU/SG FT. AND
: 1-A-4-COMI (FAABL4-4-COMI) 36.000 BTU/SQ FT.
: FIRE ZONE 1-A-3-COMI (FAABL3-3-COMI) BELOW HAS LOW FIRE LOAD
: OF 26,900 BTU/SG FT.
: MULTI-CYCLE SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS,
: IS PROVIDED IN FIRE ZONES 1-A-4-CHFA AND 1-A-4-CHFB,
: PROTECTING CHARCOAL FILTER UNITS AND SAFETY RELATED CABLE
: TRAYS, AND WITH EARLY WARNING IONIZATION SMOKE DETECTORS.
: PROVIDED THROUGHOUT BOTH FIRE ZONES.
: THE THICKNESS OF HVAC DUCTWORK VARIES BETWEEN 16 AND 22 GAUGE.
: 3. REQUEST EXEMPTION FROM CONSIDERATION OF ANALYSIS OF FIRE AREA
: 1-A-BAL AS A SINGLE MULTI-FLOOR FIRE AREA IN SAFE SHUTDOWN
: ANALYSIS IN CASE OF FIRE.
: EACH ELEVATION WILL BE ANALYZED AS A SEPARATE FIRE AREA.
: FLOORS BETWEEN ELEVATIONS ARE 3-HOUR FIRE-RATED AND ALL
: MECHANICAL, ELECTRICAL, AND HVAC PENETRATIONS ARE SEALED
: WITH 3-HOUR FIRE RESISTIVE MATERIAL.
: FIRE LOADINGS OF CONTIGUOUS FIRE AREAS OR ZONES ARE:
: 1-A-3-COMI (FAABL3-3-COMI) 26,900 BTU/SG FT
:
:
: THIS COMPLETES GENERAL COMMENTS ON FIRE AREA 1-A-BAL

TABLE 9.5E - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-ACP :: CARS AREA IDENTIFIER: FAAACP
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, AUX CONTROL PANEL ROOM
SHOWN ON DWG: CAR-SH-SK-668S17 ELEV: 286.00 COLS: D-E 37-39

(F) SHSDAFF DATA REV 0-2 FEB 10 83 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 72,479 MBTUS
COVERING 310 SQ FT TO GIVE A FIRE LOADING OF 235,500 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: 2.9 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
FIRE EXTINGUISHER(S) - IN ADJACENT AREAS
INTERIOR AREA HOSE STATION(S) - IN ADJACENT AREAS
IONIZATION AREA DETECTION
MANUAL FIRE ALARM STATION(S) - ADJACENT TO AREA

FIRE MITIGATION FEATURES
REDUNDANT TRAIN EQUIPMENT SEPARATION BARRIERS - CABLE TRAYS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOCP)

EXPOSED TO COMMON FIRE
MULTI TRAIN COMMON EQUIPMENT
REDUNDANT TRAIN CABLES AND CONDUITS

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: CONDUIT 16159X-SA-2 CONTAINS THE POWER AND CONTROL CABLES FOR
: DAMPERS AC-D21SA AND AC-D22SA WHICH PROVIDE COOLING TO THE MAIN
: AUXILIARY CONTROL PANEL ROOM.
: NO PROTECTION IS PROVIDED BECAUSE SHUTDOWN CAN BE ACHIEVED FROM
: THE MAIN CONTROL ROOM, THEREFORE, NO PROTECTION IS REQUIRED
: FOR THIS CONDUIT.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BATA :: CARS AREA IDENTIFIER: FAARTA
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BATTERY ROOM A
SHOWN ON DWG: CAR-SH-SK-666S17 ELEV: 286.00 COLS: D-E 23-25

(F) SHSDAFF DATA REV 0-1 MAY 11 83 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 3,599 MBTUS
COVERING 210 SQ FT TO GIVE A FIRE LOADING OF 17,506 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .2 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
FIRE EXTINGUISHER(S) - IN ADJACENT AREAS
INTERIOR AREA HOSE STATION(S) - IN ADJACENT AREAS
IONIZATION AREA DETECTION

FIRE MITIGATION FEATURES
SPILL RETENTION CURBS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)

EXPOSED TO COMMON FIRE
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-BATB :: CARS AREA IDENTIFIER: FAABTB
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, BATTERY ROOM B
SHOWN ON DWG: CAR-SH-SK-668817 ELEV: 286.00 COLS: D-E 29-31

(F) SHSDAFF DATA REV 0-0 NOV 11 82 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 11,000 MBTUS
COVERING 210 SQ FT TO GIVE A FIRE LOADING OF 51,000 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .6 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
FIRE EXTINGUISHER(S) - IN ADJACENT AREAS
INTERIOR AREA HOSE STATION(S) - IN ADJACENT AREAS
IONIZATION AREA DETECTION

FIRE MITIGATION FEATURES
SPILL RETENTION CURBS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)

EXPOSED TO COMMON FIRE
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-CSRA :: CARS AREA IDENTIFIER: FAACSA
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, CABLE SPREADING ROOM A
SHOWN ON DWG: CAR-SH-SK-668S18 ELEV: 286.00 COLS: B-FW 36-43

(F) SHSDAPF DATA REV 0-2 FEB 10 83 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 877,299 METUS
COVERING 4,700 SQ FT TO GIVE A FIRE LOADING OF 186,000 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: 2.3 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-PREACTION - THERMAL DETECTION
FIRE EXTINGUISHER(S) - IN ADJACENT AREAS
INTERIOR AREA HOSE STATION(S) - IN ADJACENT AREAS
IONIZATION AREA DETECTION
THERMAL SUPPRESSION SYSTEM ACTUATION - PREACTION SYSTEM

FIRE MITIGATION FEATURES
REDUNDANT TRAIN EQUIPMENT SEPARATION BARRIERS - CABLE TRAYS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SMOKE REMOVAL- DEDICATED HVAC (NOT AV. ON LOOP)

EXPOSED TO COMMON FIRE
REDUNDANT TRAIN CABLES AND CONDUITS
REDUNDANT TRAIN EQUIPMENT
: DUCTWORK IN AREA

MODIFICATIONS INDICATED
ENCLOSE ONE OR MORE TRAIN CONDUITS
: PROVIDE 1-HR RATED ENCLOSURE FOR THE FOLLOWING CONDUITS OVER
: THEIR ENTIRE EXPOSED LENGTHS IN THE AREA:
: 16020G-SR2-2, 16020T-SR4-2, 16020R-SR2-1 1/2, 16020S-SR2-1 1/2,
: 16106E-SR4-1 1/2, 16106D-SR4-1, 10632H-SR4-1, 10988B-SR4-2.
: PROVIDE 1-HR RATED ENCLOSURE OVER THE FOLLOWING JUNCTION BOXES:
: B1702-SR2, B5071-SR4, B5245-SR4.
ENCLOSE ONE OR MORE TRAIN CABLE TRAYS
: PROVIDE 1-HR RATED ENCLOSURE FOR CABLE TRAY CC0078-SS,
: ENTIRE LENGTH OF TRAY.

GENERAL COMMENTS
: 1. REDUNDANT CABLE TRAYS AND CONDUITS IN THIS AREA ARE SEPARATED

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-CSRA :: CARS AREA IDENTIFIER: FAACSA
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, CABLE SPREADING ROOM A
SHOWN ON DWG: CAR-SH-SK-668S18 ELEV: 286.00 COLS: B-FW 36-43

(F) SHSDAPF DATA REV 0-2 FEB 10 83 * (R) SDASHRNE 10/07/63 11.58.37

GENERAL COMMENTS
: BY A 3-HR FIRE BARRIER BEING PROVIDED UNDER DCN'S 650-724,
: 650-734, 650-742, AND 650-697.
: 2. POSTULATED FIRE MAY AFFECT REDUNDANT DUCTWORK SERVING
: FIRE AREAS 1-A-CSRA AND 1-A-CSRB.
: NO DUCTWORK MODIFICATIONS ARE REQUIRED SINCE A LOSS OF
: VENTILATION TO THESE AREAS WILL NOT IMPAIR SAFE SHUTDOWN
: CAPABILITY DUE TO THE LOW HEAT LOADS GENERATED BY
: THE ENERGIZED CABLES.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-CSRB :: CARS AREA IDENTIFIER: FAACSB
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, CABLE SPREADING ROOM B
SHOWN ON DWG: CAR-SH-SK-668S18 ELEV: 286.00 CCLS: B-FW 36-43

(F) SHSDAPF DATA REV 0-1 FEB 10 83 * (R) SDASHRNC 10/07/83 11.59.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 426,399 MBTUS
COVERING 2,125 SQ FT TO GIVE A FIRE LOADING OF 200,700 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: 2.5 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-PREACTION - THERMAL DETECTION
FIRE EXTINGUISHER(S)
INTERIOR AREA HOSE STATION(S)
IONIZATION AREA DETECTION
THERMAL SUPPRESSION SYSTEM ACTUATION - PREACTION SYSTEM

FIRE MITIGATION FEATURES
REDUNDANT TRAIN EQUIPMENT SEPARATION BARRIERS - CABLE TRAY
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SMOKE REMOVAL- DEDICATED HVAC (NOT AV. ON LOOP)

EXPOSED TO COMMON FIRE
REDUNDANT TRAIN CABLES AND CONDUITS
REDUNDANT TRAIN EQUIPMENT
: DUCTWORK IN AREA

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: 1. REDUNDANT CABLE TRAYS IN THIS AREA ARE SEPARATED BY A
: 3-HR FIRE BARRIER BEING PROVIDED UNDER DCN'S 650-724,
: 650-734, 650-742, AND 650-697.
: 2. POSTULATED FIRE MAY AFFECT REDUNDANT DUCTWORK SERVING.
: FIRE AREAS 1-A-CSRA AND 1-A-CSRB.
: NO DUCTWORK MODIFICATIONS ARE REQUIRED SINCE A LOSS OF
: VENTILATION TO THESE AREAS WILL NOT IMPAIR SAFE SHUTDOWN
: CAPABILITY DUE TO THE LOW HEAT LOADS GENERATED BY
: THE ENERGIZED CABLES.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-EPA :: CARS AREA IDENTIFIER: FAAEPA
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, ELECTRICAL PENETRATION AREA A
SHOWN ON DWG: CAR-SH-SK-668S12 ELEV: 261.00 COLS: E-H 15-25

(F) SHSDAFF DATA REV 0-0 NOV 12 82 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 266,719 METUS
COVERING 3,700 SQ FT TO GIVE A FIRE LOADING OF 72,050 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .9 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DOOR-CL B-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS- NON-SAFETY HVAC DUCTS
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-MULTICYCLE - THERMAL DETECTION
FIRE EXTINGUISHER(S)
INTERIOR AREA HOSE STATION(S)
IONIZATION AREA DETECTION
THERMAL SUPPRESSION SYSTEM ACTUATION - MULTICYCLE SYSTEM

FIRE MITIGATION FEATURES
SPILL RETENTION CURBS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (NOT AVAIL. ON LOOP)

EXPOSED TO COMMON FIRE
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-EPB :: CARS AREA IDENTIFIER: FAAEPB
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, ELECTRICAL PENETRATION AREA B
SHOWN ON DWG: CAR-SH-SK-668S12 ELEV: 261.00 COLS: E-H 29-35

(F) SHSDAPF DATA REV 0-0 NOV 12 82 * (R) SDASPRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 292,189 BTUS
COVERING 3,700 SQ FT TO GIVE A FIRE LOADING OF 79,970 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: 1.0 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DOOR-CL B-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-MULTICYCLE - THERMAL DETECTION
FIRE EXTINGUISHER(S)
INTERIOR AREA HOSE STATION(S)
IONIZATION AREA DETECTION
THERMAL SUPPRESSION SYSTEM ACTUATION - MULTICYCLE SYSTEM

FIRE MITIGATION FEATURES
SPILL RETENTION CURBS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (NOT AVAIL. ON LOOP)

EXPOSED TO COMMON FIRE
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

TABLE 9.5E - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-SWGRA :: CARS AREA IDENTIFIER: FAASGA
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, SWITCHGEAR ROOM A
SHOWN ON DWG: CAR-SH-SK-668S17 ELEV: 286.00 COLS: AA-ZZ 01-99

(F) SHSDAFF DATA REV 0-0 NOV 12 82 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 115,399 MBTUS
COVERING 5,200 SQ FT TO GIVE A FIRE LOADING OF 22,300 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .3 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
FIRE EXTINGUISHER(S) - IN ADJACENT AREAS
INTERIOR AREA HOSE STATION(S) - IN ADJACENT AREAS
IONIZATION AREA DETECTION

FIRE MITIGATION FEATURES
SPILL RETENTION CURBS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)

EXPOSED TO COMMON FIRE
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: THIS AREA CONTAINS ONLY SA DESIGNATED EQUIPMENT AND ASSOCIATED
: CONTROLS REQUIRED FOR SAFE SHUTDOWN.

TABLE 9.5B - 5
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-A-SWGRB :: CARS AREA IDENTIFIER: FAASGB
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1, SWITCHGEAR ROOM B
SHOWN ON DWG: CAR-SH-SK-668S17 ELEV: 286.00 COLS: B-E 26-36

(F) SFSDAPF DATA REV 0-2 JAN 10 83 * (R) SCASHRNE 10/07/83 11.52.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 371,399 MBTUS
COVERING 5,400 SQ FT TO GIVE A FIRE LOADING OF 68,900 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .9 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DOOR-CL B-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
FIRE EXTINGUISHER(S) - IN ADJACENT AREAS
INTERIOR AREA HOSE STATION(S) - IN ADJACENT AREAS
IONIZATION AREA DETECTION

FIRE MITIGATION FEATURES
SPILL RETENTION CURBS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)

EXPOSED TO COMMON FIRE
REDUNDANT TRAIN CABLES AND CONDUITS.
REDUNDANT TRAIN EQUIPMENT
: DUCTWORK IN AREA

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: 1. POSTULATED FIRE WILL IMPACT REDUNDANT DUCTWORK SERVING THE
: AUXILIARY CONTROL PANEL (ACP) ROOM, HOWEVER.....
: NO MODIFICATIONS WILL BE REQUIRED SINCE LOSS OF VENTILATION
: IN THE ACP ROOM WILL NOT IMPAIR SAFE SHUTDOWN CONDUCTED
: FROM THE MAIN CONTROL ROOM. (NO SIMULTANEOUS FIRES ARE
: POSTULATED DURING THE COURSE OF THIS ANALYSIS.)
: 2. CONDUIT 1615SN-SA-1 1/2 IS THE ALTERNATIVE POWER FEED TO
: IDP-1A-SA. MAIN POWER FEED IS FROM INVERTERS VIA CONDUIT
: 1604SH-SA- LOCATED ON ELEV. 305.

TABLE 9.5B - 3
EBASCO SERVICES, INC -
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-C :: CARS AREA IDENTIFIER: FACRCB
FIRE AREA NAME: CONTAINMENT BLDG, UNIT 1, ALL LEVELS, ALL AREAS
SHOWN ON DWG: CAR-SH-SK-668SC1-SC4 ELEV: VARIES COLS: A -C 01-22

(F) SHSCAPF DATA REV 0-3 SEP 12 83 * (R) SDASHRNE 10/07/83 11.59.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 494,000 MBTUS
COVERING 50,000 SQ FT TO GIVE A FIRE LOADING OF 10,520 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .1 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
: (CONTAINMENT HATCHES EQUIVALENT TO CLASS A DOORS)
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-MULTICYCLE
: OVER CHARCOAL FILTER HOUSINGS
: OVER CABLE TRAYS
: AROUND REACTOR COOLANT PUMPS
FIRE EXTINGUISHER(S)
INTERIOR AREA HOSE STATION(S)
IONIZATION AREA DETECTION - PARTIAL
THERMAL SUPPRESSION SYSTEM ACTUATION - MULTICYCLE SYSTEM

FIRE MITIGATION FEATURES
TRANSIENT FIRE LOAD ADMINISTRATIVE CONTROLS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (NOT AVAIL. ON LOOP)
SUMP PUMP WASTE REMOVAL

EXPOSED TO COMMON FIRE
REDUNDANT TRAIN CABLES AND CONDUITS
REDUNDANT TRAIN EQUIPMENT
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
ADD SUPPRESSION SYSTEM - MULTICYCLE SPRINKLERS
: 1. EXTEND AUTOMATIC MULTICYCLE SPRINKLER SYSTEMS ACTUATED BY
: THERMAL DETECTION TO PROTECT THE FOLLOWING EQUIPMENT AS
: SHOWN ON DRAWINGS SK-668 S01 AND S02:
: AH-1 (1A-SB) CONTAINMENT FAN COOLER
: AH-1 (1B-SB) CONTAINMENT FAN COOLER
: AH-2 (1A-SA) CONTAINMENT FAN COOLER
: AH-2 (1B-SA) CONTAINMENT FAN COOLER
: CABLE TRAYS AND CONDUITS TO PRESSURIZER HEATERS

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-C :: CARS AREA IDENTIFIER: FACRCP
FIRE AREA NAME: CONTAINMENT BLDG, UNIT 1, ALL LEVELS, ALL AREAS
SHOWN ON DWG: CAR-SH-SK-668S01-S04 ELEV: VARIES COLS: A -C 01-22

(F) SHSDAPF.DATA REV 0-3 SEP 12 83 * (R) SDASHRNE 10/07/83 11.58.37

GENERAL COMMENTS

COMMENTS:

1. ACCUMULATOR ISOLATION VALVES ARE REQUIRED TO OPERATE DURING HOT STANDBY WHEN THE RCS PRESSURE DROPS BELOW 660 PSIG. IN THE EVENT OF FIRE DAMAGE TO THESE VALVES, REPAIRS AND CONTINUED COOLDOWN TO INITIATION OF RHR SYSTEM OPERATION CAN BE ACHIEVED WITHIN 72 HOURS.
   VALVES ARE: 2SI-V535SA, 2SI-V536SB, AND 2SI-V537SA.

2. MECHANICAL SN DESIGNATED VALVES ARE DESIGNED TO FAIL IN THEIR SAFE MODE OR REMAIN IN THEIR SAFE POSITION. FOR THIS ANALYSIS, NO CONSIDERATION IS GIVEN TO SPATIAL SEPARATION BECAUSE A FIRE EVENT DOES NOT AFFECT THE VALVE FUNCTION.

3. EQUIPMENT DESIGNATED SN, EXCLUDING PRESSURIZER HEATERS, DOES NOT REQUIRE ELECTRICAL POWER DURING SAFE SHUTDOWN OPERATIONS.

4. PRESSURIZER HEATERS ARE DESIGNATED SN AND ARE REQUIRED FOR SAFE SHUTDOWN. THE HEATERS REQUIRE ELECTRICAL POWER DURING SAFE SHUTDOWN AND ARE FED BY NON-SAFETY CABLES WHICH ARE CONNECTED TO THE DIESEL GENERATOR. THEREFORE, THE HEATERS AND ASSOCIATED CABLES AND CONDUITS ARE PROTECTED BY AUTOMATIC FIRE DETECTION AND SUPPRESSION SYSTEMS.

5. EACH RHR TRAIN IS PROVIDED WITH TWO (IN SERIES) MOTOR OPERATED ISOLATION VALVES, EACH POWERED FROM A DIFFERENT SAFETY TRAIN. ONE VALVE IN EACH TRAIN IS PROVIDED WITH AN ALTERNATIVE POWER FEED FROM ITS REDUNDANT DIVISION MCC AND IS BROUGHT TO THE TERMINAL BOX AT THE OUTBOARD SIDE OF THE PENETRATION THAT IS USED BY THE PERMANENT FEEDER TO THE RESPECTIVE VALVE. (SEE FSAR CHANGE NOTICE F-87)

EXEMPTION REQUEST/JUSTIFICATION:

1. REQUEST EXEMPTION FROM PROVIDING AUTOMATIC DETECTION AND SUPPRESSION SYSTEMS IN THE ENTIRE FIRE AREA.
   MOST OF THE ESSENTIAL, REDUNDANT CABLES, EQUIPMENT AND ASSOCIATED NON-SAFETY CIRCUITS NECESSARY TO ACHIEVE AND MAINTAIN HOT SHUTDOWN CONDITIONS IN THIS FIRE AREA MEET APPENDIX R TO 10CFR50 PARAGRAPH III.G.2.D SEPARATION CRITERIA (MIN 20 FT HORIZONTAL SPACE WITH NO INTERVENING COMBUSTIBLES). THOSE CASES THAT DO NOT MEET THE CRITERIA ARE PROVIDED WITH AUTOMATIC MULTI-CYCLE SPRINKLER SYSTEMS, ACTUATED BY THERMAL DETECTORS. EARLY WARNING IONIZATION SMOKE DETECTION IS

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-C :: CARS AREA IDENTIFIER: FACRCB
FIRE AREA NAME: CONTAINMENT BLDG, UNIT 1, ALL LEVELS, ALL AREAS
SHOWN ON DWG: CAR-SH-SK-668S01-S04 ELEV: VARIES COLS: A -C 01-22

(F) SHSDAPF DATA REV 0-3 SEP 12 83 * (R) SDASHRNE 10/07/83 11.58.37

GENERAL COMMENTS
: PROVIDED WHERE CABLE TRAYS ARE PRESENT.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-D-DGA :: CARS AREA IDENTIFIER: FADDGA
FIRE AREA NAME: DIESEL GEN BLDG, UNIT 1, DIESEL GEN A AREAS
SHOWN ON DWG: CAR-SH-SK-668S24-S25 ELEV: 261.00 COLS: A-C 1-2

(F) SHSDAPF DATA REV 0-0 SEP 21 82 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 54,599 MBTUS
COVERING 8,900 SQ FT TO GIVE A FIRE LOADING OF . 6,210 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .1 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DOOR-CL B-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-MULTICYCLE - THERMAL DETECTION
: PARTIAL SPRINKLER SYSTEM COVERAGE
FIRE EXTINGUISHER(S)
INTERIOR AREA HOSE STATION(S) - IN ADJACENT AREAS
IONIZATION AREA DETECTION - PARTIAL
THERMAL AREA DETECTION - PARTIAL
THERMAL SUPPRESSION SYSTEM ACTUATION
ULTRA-VIOLET AREA DETECTION - PARTIAL

FIRE MITIGATION FEATURES
TRANSIENT FIRE LOAD ADMINISTRATIVE CONTROLS
SPILL RETENTION CURBS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SUMP PUMP WASTE REMOVAL

EXPOSED TO COMMON FIRE
COMBUSTIBLE LIQUID PIPING-DIESEL OIL
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: ANALYSIS INDICATES THAT NO REDUNDANT SYSTEMS, REQUIRED FOR
: SAFE SHUTDOWN, ARE WITHIN THIS FIRE AREA.

TABLE 9.5B - 3
ESASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-D-DGB :: CARS AREA IDENTIFIER: FADDGB
FIRE AREA NAME: DIESEL GEN BLDG, UNIT 1, DIESEL GEN B AREAS
SHOWN ON DWG: CAR-SH-SK-666S24-S25 ELEV: 261.00 COLS: A-C 2-3

(F) SHSDAFF DATA REV 0-1 MAY 11 83 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 54,599 MBTUS
COVERING 8,900 SQ FT TO GIVE A FIRE LOADING OF 6.210 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .1 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DOOR-CL B-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-MULTICYCLE - THERMAL DETECTION
: PARTIAL SPRINKLER SYSTEM COVERAGE
FIRE EXTINGUISHER(S)
INTERIOR AREA HOSE STATION(S) - IN ADJACENT AREAS
IONIZATION AREA DETECTION - PARTIAL
THERMAL AREA DETECTION - PARTIAL
THERMAL SUPPRESSION SYSTEM ACTUATION
ULTRA-VIOLET AREA DETECTION - PARTIAL

FIRE MITIGATION FEATURES
TRANSIENT FIRE LOAD ADMINISTRATIVE CONTROLS
SPILL RETENTION CURBS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SUMP PUMP WASTE REMOVAL

EXPOSED TO COMMON FIRE
COMBUSTIBLE LIQUID PIPING-DIESEL OIL
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: ANALYSIS INDICATES THAT NO REDUNDANT SYSTEMS, REQUIRED FOR
: SAFE SHUTDOWN, ARE WITHIN THIS FIRE AREA.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-D-DTA :: CARS AREA IDENTIFIER: FADDTA
FIRE AREA NAME: DIESEL GEN BLDG, UNIT 1, DIESEL GEN A DAY TANK AREA
SHOWN ON DWG: CAR-SH-SK-668S24-S25 ELEV: 261.00 COLS: C- 2

(F) SHSDAPF DATA REV 0-0 SEP 21 82 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 324,000 MBTUS
COVERING 144 SQ FT TO GIVE A FIRE LOADING OF 2,250,000 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: *** HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS- NON-SAFETY HVAC DUCTS
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-MULTICYCLE - THERMAL DETECTION
FIRE EXTINGUISHER(S) - IN ADJACENT AREAS
INTERIOR AREA HOSE STATION(S) - IN ADJACENT AREAS
THERMAL SUPPRESSION SYSTEM ACTUATION

FIRE MITIGATION FEATURES
SPILL RETENTION CURBS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SUMP PUMP WASTE REMOVAL

EXPOSED TO COMMON FIRE
COMBUSTIBLE LIQUID PIPING-DIESEL OIL
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: ANALYSIS INDICATES THAT NO REDUNDANT SYSTEMS, REQUIRED FOR
: SAFE SHUTDOWN, ARE WITHIN THIS FIRE AREA.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-D-DTB :: CARS AREA IDENTIFIER: FADDTB
FIRE AREA NAME: DIESEL GEN BLDG, UNIT 1, DIESEL GEN B DAY TANK AREA
SHOWN ON DWG: CAR-SH-SK-668S24-S25 ELEV: 261.00 COLS: C- 3

(F) SHSDAFF DATA REV 0-I MAY 11 83 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 324,000 MBTUS
COVERING 144 SQ FT TO GIVE A FIRE LOADING OF 2,250,000 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: *** HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS- NON-SAFETY HVAC DUCTS
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-MULTICYCLE - THERMAL DETECTION
FIRE EXTINGUISHER(S) - IN ADJACENT AREAS
INTERIOR AREA HOSE STATION(S) - IN ADJACENT AREAS
THERMAL SUPPRESSION SYSTEM ACTUATION

FIRE MITIGATION FEATURES
SPILL RETENTION CURBS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SUMP PUMP WASTE REMOVAL

EXPOSED TO COMMON FIRE
COMBUSTIBLE LIQUID PIPING-DIESEL OIL
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: ANALYSIS INDICATES THAT NO REDUNDANT SYSTEMS, REQUIRED FOR
: SAFE SHUTDOWN, ARE WITHIN THIS FIRE AREA.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-O-PA :: CARS AREA IDENTIFIER: FAOPA-
FIRE AREA NAME: DIESEL OIL STG AREA, UNIT 1, DIESEL OIL PUMP A ROOM
SHOWN ON DWG: CAR-SH-SK-668S26 ELEV: 242.00 COLS: AA-ZZ 01-99

(F) SHSCAFF DATA REV 0-C NOV 4 82 * (P) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 6,000 MBTUS
COVERING 95 SQ FT TO GIVE A FIRE LOADING OF 63,000 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .8 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-MULTICYCLE
FIRE EXTINGUISHER(S)
HOSE STREAMS FROM YARD HYDRANT
ULTRA-VIOLET AREA DETECTION
THERMAL SUPPRESSION SYSTEM ACTUATION
MANUAL FIRE ALARM STATION(S)

FIRE MITIGATION FEATURES
SPILL RETENTION CURBS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SUMP PUMP WASTE REMOVAL

EXPOSED TO COMMON FIRE
COMBUSTIBLE LIQUID PIPING-DIESEL OIL
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: 1. ANALYSIS INDICATES NO REDUNDANT SYSTEMS REQUIRED FOR SAFE
: SHUTDOWN WITHIN THIS AREA.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-O-PB :: CARS AREA IDENTIFIER: FAOPB-
FIRE AREA NAME: DIESEL OIL STG AREA, UNIT 1, DIESEL OIL PUMP B ROOM
SHOWN ON DWG: CAR-SH-SK-668S26 ELEV: 242.00 COLS: AA-ZZ 01-99

(F) SHSDAPF DATA REV 0-0 NOV 4 82 * (R) SDASHRNE 10/07/83 11.58.17

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 6,000 MBTUS
COVERING 95 SQ FT TO GIVE A FIRE LOADING OF 63,000 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .6 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-MULTICYCLE - THERMAL DETECTION
FIRE EXTINGUISHER(S)
HOSE STREAMS FROM YARD HYDRANT
ULTRA-VIOLET AREA DETECTION
THERMAL SUPPRESSION SYSTEM ACTUATION - MULTICYCLE SYSTEM
MANUAL FIRE ALARM STATION(S)

FIRE MITIGATION FEATURES
SPILL RETENTION CURBS
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SUMP PUMP WASTE REMOVAL

EXPOSED TO COMMON FIRE
COMBUSTIBLE LIQUID PIPING-DIESEL OIL
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: 1. ANALYSIS INDICATES NO REDUNDANT SYSTEMS REQUIRED FOR SAFE
: SHUTDOWN WITHIN THIS AREA.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 1-G :: CARS AREA IDENTIFIER: FATIGB
FIRE AREA NAME: TURBINE GENERATOR BLDG, UNIT 1, ALL AREAS
SHOWN ON DWG: CAR-SH-SK-668S ELEV: 240.00 COLS: AA-AY 07-43

(F) SHSDAFF DATA REV 0-1 DEC 16 8 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 5,945,000 MBTUS
COVERING 164,200 SQ FT TO GIVE A FIRE LOADING OF 36,360 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .5 HOURS

GENERAL COMMENTS
: NON-SAFETY-RELATED AREA USED FOR POWER GENERATION
: SEPARATED FROM SAFETY-RELATED AREAS BY 3-HR RATED FIRE BARRIERS.
: NO SKETCH IS REQUIRED FOR THIS FIRE AREA.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-A-BAL :: CARS AREA IDENTIFIER: FCABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1-2, ALL LEVELS
SHOWN ON DWG: CAR-SH-SK-668S19 ELEV: 286.00 COLS: FW-L 41-45

(F) SHSDAFF DATA REV 0-5 OCT 7 83 * (R) SDASHFNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 2,354,899 BTUS
COVERING 29,000 SQ FT TO GIVE A FIRE LOADING OF 81,230 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: 1.0 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DOOR-CL B-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS- NON-SAFETY HVAC DUCTS
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-PREACTION
: PROVIDED OVER CHARCOAL FILTER HOUSINGS
FIRE EXTINGUISHER(S)
INTERIOR AREA HOSE STATION(S)
IONIZATION AREA DETECTION - PARTIAL
: IN AREAS NOT PROTECTED BY PREACTION SPRINKLER SYSTEMS
THERMAL SUPPRESSION SYSTEM ACTUATION
: FOR ACTUATION OF AUTOMATIC PREACTION SPRINKLER SYSTEMS

FIRE MITIGATION FEATURES
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (NOT AVAIL. ON LOOP)

EXPOSED TO COMMON FIRE
REDUNDANT TRAIN CABLES AND CONDUITS
REDUNDANT TRAIN EQUIPMENT - DUCTWORK

MODIFICATIONS INDICATED
ENCLOSE ONE OR MORE TRAIN CONDUITS
: PROVIDE 1-HR RATED ENCLOSURE FOR CONDUITS
: 16033K-SA-1 1/2, 12776A-SA-1.
ENCLOSE ONE OR MORE TRAIN EQUIPMENT
: PROVIDE 1-HR RATED ENCLOSURE FOR THE FOLLOWING EQUIPMENT:
: MOTORIZED DAMPER AC-D11SA-1
ADD SUPPRESSION SYSTEM
: PROVIDE AUTOMATIC PREACTION SPRINKLER SYSTEM ACTUATED BY
: THERMAL DETECTION TO PROTECT THE EQUIPMENT, ASSOCIATED
: CONDUITS AND JUNCTION BOX B1717-SA.
ADD LOCAL BARRIERS - EQUIPMENT SEPARATION

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-A-BAL :: CARS AREA IDENTIFIER: FCABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1-2, ALL LEVELS
SHOWN ON DWG: CAR-SH-SK-668S19 ELEV: 286.00 COLS: FW-L 41-45

(F) SHSDAPF DATA REV 0-5 OCT 7 83 * (R) SDASHRNE 10/07/83 11.58.37

MODIFICATIONS INDICATED
: PROVIDE 1-HOUR RATED PARTIAL HEIGHT WALL BETWEEN
: AIR HANDLING UNITS AH-92(1A-SA) AND AH-92(1B-SB)

GENERAL COMMENTS
: EXEMPTION REQUEST/JUSTIFICATION:
: 1. REQUEST EXEMPTION FROM PROVIDING 1-HR FIRE RATED COMPLETE
: ENCLOSURE FOR AIR HANDLER AH-92(1A-SA) TO SEPARATE IT FROM
: ITS REDUNDANT COUNTERPART AH-92 (1B-SB).
: AH-9(1A-SA), AH-92(1B-SB), AH-92(2A-SA) AND AH-92(2B-SB) ARE
: LOCATED IN CLOSE PROXIMITY (WITHIN 20 FT) OF EACH OTHER IN
: FIRE ZONE 12-A-5-DIH (FCABL1-5-DIH). AH-92(1A-SA) IS LOCATED
: 6" FROM AH-92(1B-SB) AND BOTH ARE LOCATED APPROXIMATELY 10 TO
: 12 FT FROM AH-92(2A-SA) AND AH-92(2B-SB). A PARTIAL HEIGHT
: (8 FT HIGH) BARRIER OF 1-HOUR FIRE RESISTANCE RATING SEPARATES
: THE SB UNITS FROM THE SA UNITS.
: THE COMBUSTIBLE LOADING IN THIS FIRE ZONE IS APPROXIMATELY
: 14,590 BTU/SQ FT. A PRE-ACTION SPRINKLER SYSTEM, ACTUATED BY
: THERMAL DETECTORS, IS INSTALLED IN FIRE ZONE 12-A-5-DIH
: (FCABL1-5-DIH). IONIZATION SMOKE DETECTION IS ALSO PROVIDED.
: SOME GREASE BUT NO OIL MAY BE INTRODUCED INTO THIS ROOM.
: MANUAL ALARM STATIONS, HOSE STATIONS AND EXTINGUISHERS ARE
: AVAILABLE IN AND ADJACENT TO THE FIRE ZONE.
: 2. EXEMPTION IS REQUESTED FROM PROVISION OF AUTOMATIC SPRINKLER
: SYSTEM THROUGHOUT THE ENTIRE FIRE AREA 12-A-BAL.
: THE FIRE ZONE 12-A-5-DIH (FCABL1-5-DIH) PORTION OF THIS FIRE
: AREA, WHICH CONTAINS ESSENTIAL REDUNDANT EQUIPMENT REQUIRED
: FOR SAFE SHUTDOWN, IS PROVIDED WITH A SUPPRESSION SYSTEM.
: A PRE-ACTION SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS,
: IS PROVIDED IN THE DEMINERALIZER INSTRUMENT AND HVAC EQUIPMENT
: ROOM. ELEV 286. FIRE ZONE 12-A-5-DIH (FCABL1-5-DIH).
: THIS FIRE ZONE HAS A FIRE LOADING OF 14,590 BTU/SQ FT.
: CHARCOAL FILTER ROOMS ON ELEV 286, FIRE ZONE 12-A-5-CHF,
: AND ON ELEV 305, FIRE ZONE 12-A-6-CHF1, ARE PROTECTED WITH
: A PRE-ACTION SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS.
: THE FIRE LOADINGS FOR THESE ZONES ARE 94,940 AND 106,350
: BTU/SQ FT, RESPECTIVELY. ALL ROOMS HAVE IONIZATION DETECTION
: FOR EARLY WARNING OF SMOKE CONDITION. MANUAL ALARM STATIONS,
: HOSE STATIONS, AND EXTINGUISHERS ARE AVAILABLE IN AND
: ADJACENT TO THE FIRE ZONES.
: 3. REQUEST EXEMPTION FROM CONSIDERATION OF ANALYSIS OF FIRE AREA
: 12-A-BAL AS A SINGLE MULTI-FLOOR FIRE AREA IN SAFE SHUTDOWN
: ANALYSIS IN CASE OF FIRE.

TABLE 9.5E - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-A-BAL :: CARS AREA IDENTIFIER: FCABAL
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1-2, ALL LEVELS
SHOWN ON DWG: CAR-SH-SK-668S19 ELEV: 286.00 COLS: FW-L 41-45

(F) SHSDAPF DATA REV 0-5 OCT 7 83 * (R) SDASHRNE 10/07/83 11.58.37

GENERAL COMMENTS
: EACH ELEVATION WILL BE ANALYZED AS A SEPARATE FIRE AREA.
: FLOORS BETWEEN ELEVATIONS ARE 3-HOUR FIRE-RATED AND ALL
: MECHANICAL, ELECTRICAL, AND HVAC PENETRATIONS ARE SEALED
: WITH 3-HOUR FIRE RESISTIVE MATERIAL.
: FIRE LOADINGS OF CONTIGUOUS FIRE AREAS OR ZONES ARE:
: 1-A-4-COMB (FAABL4-4-COMB) 21,400 BTU/SQ FT
: 12-A-5-CHF (FCABL5-5-CHF) 94,340 BTU/SQ FT
:
: COMMENTS:
: 1. POSTULATED FIRE AFFECTS REDUNDANT DUCTWORK PASSING THROUGH
: THIS AREA SERVING THE CABLE VAULTS A AND B.
: NO MODIFICATIONS ARE REQUIRED SINCE A LOSS OF VENTILATION TO
: THE CABLE VAULTS WILL NOT IMPAIR SAFE SHUTDOWN CAPABILITY.
: (SEE FIRE AREA 1-A-CSRB, COMMENT NO. 2)
: 2. DRAWING CAR-SH-SK-668S19 SHOWS ONLY THE PORTION OF FIRE
: AREA 12-A-BAL (FCABAL) WHICH CONTAINS EQUIPMENT
: REQUIRED FOR SAFE SHUTDOWN.

TABLE 9.5E - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-A-CRC1 :: CARS AREA IDENTIFIER: FCACRC
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1-2, CONTROL ROOM COMPLEX
SHOWN ON DWG: CAR-SH-SK-668S20 ELEV: 305.00 COLS: D-FW 36-44

(F) SHSDAPF DATA REV 0-5 OCT 7 83 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 216,719 METUS
COVERING 5,800 SQ FT TO GIVE A FIRE LOADING OF 38,000 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .5 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
FIRE DAMPERS- NON-SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
FIRE EXTINGUISHER(S) - IN ADJACENT AREAS
INTERIOR AREA HOSE STATION(S) - IN ADJACENT AREAS
IONIZATION AREA DETECTION

FIRE MITIGATION FEATURES
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SMOKE REMOVAL- DEDICATED HVAC (NOT AV. ON LOOP)

EXPOSED TO COMMON FIRE
REDUNDANT TRAIN CABLES AND CONDUITS
REDUNDANT TRAIN EQUIPMENT
: DUCTWORK IN AREA

MODIFICATIONS INDICATED
Halon Suppression System

GENERAL COMMENTS
: EXEMPTION REQUEST/JUSTIFICATION:
: 1. ROOMS HOUSING PROCESS INSTRUMENT AND CONTROL RACKS AND
: AUXILIARY RELAY PANELS CONTAIN REDUNDANT CABINETS AND PANELS
: REQUIRED FOR SAFE SHUTDOWN. ACCESSABILITY AND VENTILATION
: REQUIREMENTS OF THIS EQUIPMENT PRECLUDE PROVISION OF A 3-HR
: FIRE BARRIER SEPARATION.
: EXCEPTION TO THE SEPARATION CRITERIA IS REQUESTED BASED ON
: THE FOLLOWING CONSIDERATIONS:
: A. THIS AREA HAS A LOW FIRE LOADING.
: B. AREA IS EQUIPPED WITH SMOKE DETECTORS ARRANGED TO ALARM
: IN THE CONTROL ROOM, VIA THE COMMUNICATION ROOM. BOTH
: ROOMS ARE MANNED 24 HOURS PER DAY.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-A-CRC1 :: CARS AREA IDENTIFIER: FCACRC
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1-2, CONTROL ROOM COMPLEX
SHOWN ON DWG: CAR-SH-SK-668S2C ELEV: 305.00 COLS: D-FW 36-44

(F) SHSDAPF DATA REV 0-5 OCT 7 83 * (R) SDASHRNE 10/07/83 11.58.37

GENERAL COMMENTS

C. AREA IS ACCESSIBLE FROM THE CONTROL ROOM AND ADJACENT PLANT AREAS.
D. FIRE EXTINGUISHERS ARE LOCATED IN THIS AND ADJACENT AREAS.
E. HOSE STATIONS LOCATED IN ADJACENT FIRE AREA 12-A-HVIR AND OUTSIDE THE CONTROL ROOM PROVIDE HOSE STREAMS FROM OPPOSITE DIRECTIONS.

THE READY ACCESSIBILITY TO THIS AREA FOR THE USE OF AVAILABLE FIRE EXTINGUISHERS AND HOSE STATIONS BY PERSONNEL IN NEARBY AREAS, COMBINED WITH THE EARLY ALERT CAPABILITIES OF THE IONIZATION FIRE DETECTION SYSTEM, PROVIDE AN EFFECTIVE FIRE PROTECTION RESPONSE TO THE FIRE HAZARD PRESENTED BY THE LOW COMBUSTIBLE LOADING WITHIN THIS AREA.

2. REQUEST EXEMPTION FROM
   A. PROVIDING 3-HOUR FIRE-RATED ENCLOSURE FOR THE AUXILIARY RELAY PANELS AND MAIN TERMINAL CABINET PANELS, AND
   B. PROVIDING A 1-HOUR FIRE-RATED ENCLOSURE FOR THE PROCESS INSTRUMENT CONTROL RACKS (PICR) AND ISOLATION CABINETS (ISOLCAB) IN FIRE AREA 12-A-CRC1 (FCACRC).

   THE PLANT DESIGN PROVIDES APPROXIMATELY 10 TO 12 FT SEPARATION BETWEEN REDUNDANT RELAY PANELS AND APPROXIMATELY 10 TO 14 FT SEPARATION BETWEEN THE PICR'S AND THE ISOLCAB'S.
   FIRE ZONES 12-A-6-PICR1 (FCACRC-6-PICR1) AND 12-A-6-ARR1 (FCACRC-6-ARR1) ARE PROVIDED WITH HALON SUPPRESSION SYSTEM, ACTUATED BY IONIZATION DETECTORS.
   PORTABLE FIRE EXTINGUISHERS ARE PROVIDED IN THIS AREA AND IN ADJACENT AREAS. HOSE STATIONS ARE LOCATED IN ADJACENT FIRE AREA 12-A-HVIR (FCAHVI). COMBUSTIBLE LOAD IN FIRE AREA 12-A-CRC1 (FCACRC) IS 38,000 BTU/SQ FT.

GENERAL COMMENTS:

1. FUNCTION OF AH-93(1X-SA) IS REDUNDANT TO SUPPLY DUCT FROM AH-13(1A-SB) AND AH13(1B-SB). NO MODIFICATIONS ARE REQUIRED SINCE AH-93(1X-SA) AND ITS REDUNDANT COUNTER-PARTS ARE LOCATED IN SEPARATE FIRE AREAS.
2. POSTULATED FIRE MAY IMPACT ABILITY TO ACHIEVE SAFE SHUTDOWN FROM CONTROL ROOM DUE TO THE FACT THAT THE COMMON DUCTWORK SERVING THE CONTROL ROOM PASSES THROUGH THIS AREA. LOSS OF VENTILATION MAY RESULT IN THE TEMPORARY EVACUATION OF THE CONTROL ROOM. HOWEVER, THE OPERATOR CAN ESTABLISH AND MAINTAIN SAFE SHUTDOWN CONDITION FROM THE AUXILIARY CONTROL PANEL (ACP) LOCATED IN THE RAB AT ELEV. 286.00. (SEE FSAR SECTION 7.4, ARTICLE 7.4.1.11.)
3. SPACE BELOW THE RAISED FLOOR OF THE COMPUTER ROOM, FIRE ZONE

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-A-CRC1 :: CARS AREA IDENTIFIER: FCACRC
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1-2, CONTROL ROOM COMPLEX
SHOWN ON DWG: CAR-SH-SK-S68S20 ELEV: 305.00 COLS: D-FW 36-44

(F) SHSDAPF DATA REV 0-5 OCT 7 83 * (R) SDASHRNE 10/07/83 11.52.37

GENERAL COMMENTS
: 12-A-6-CR (FCACRC-6-CR) WILL BE PROVIDED WITH HALON
: SUPPRESSION SYSTEM.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-A-CR :: CARS AREA IDENTIFIER: FCACRM
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1-2, CONTROL ROOM ONLY
SHOWN ON DWG: CAR-SH-SK-668S20 ELEV: 305.00 COLS: E-D 31-43

(F) SFSDAFF DATA REV 0-4 OCT 7 83 * (R) SDASHRNE 10/07/83 11:58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 0 MBTUS
COVERING 5,600 SQ FT TO GIVE A FIRE LOADING OF 0 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .0 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DOOR-CL B-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
FIRE DAMPERS- NON-SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
FIRE EXTINGUISHER(S)
INTERIOR AREA HOSE STATION(S)
IONIZATION AREA DETECTION

FIRE MITIGATION FEATURES
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SMOKE REMOVAL- DEDICATED HVAC (NOT AV. ON LOOP)

EXPOSED TO COMMON FIRE
REDUNDANT TRAIN EQUIPMENT

MODIFICATIONS INDICATED
ADD SUPPRESSION SYSTEM - HALON SYSTEM - Fire Zone 12-A-6-RT1 (only)

GENERAL COMMENTS
: EXEMPTION REQUEST/JUSTIFICATION:
: 1. REQUEST EXEMPTION FROM PROVIDING 20 FT SEPARATION OF SAFE SHUTDOWN EQUIPMENT IN FIRE ZONE 12-A-6-RT1 (FCACRM-6-RT1). THE REDUNDANT MAIN TERMINATION CABINETS ARE SEPARATED BY APPROXIMATELY 15 FT.
FIRE AREA 12-A-CR (FCACRM) IS PROVIDED WITH EARLY WARNING IONIZATION DETECTION, DESIGNED TO ALARM IN THE CONTROL ROOM VIA THE COMMUNICATIONS ROOM. PORTABLE FIRE EXTINGUISHERS ARE PROVIDED IN THIS AND ADJACENT AREAS. HOSE STATIONS ARE LOCATED IN ADJACENT FIRE AREA 12-A-HVIR (FCAHVI). COMBUSTIBLE LOAD IN FIRE AREA 12-A-CR (FCACRM) IS NEGLIGIBLE (LESS THAN 1,000 BTU/SQ FT).
: 2. REQUEST EXEMPTION FROM PROVIDING SUPPRESSION SYSTEM IN THE

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-A-CR :: CARS AREA IDENTIFIER: FCACRM
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1-2, CONTROL ROOM ONLY
SHOWN ON DWG: CAR-SH-SK-668S20 ELEV.: 305.00 COLS: B-D 31-43

(F) SHSDAPF DATA REV 0-4 OCT 7 83 * (R) SDASHRNE 10/07/83 11.58.37

GENERAL COMMENTS

ENTIRE FIRE AREA 12-A-CR (FCACRM). HALON SUPPRESSION SYSTEM WILL BE PROVIDED ONLY IN FIRE ZONE 12-A-6-RT1 (FCACRM-6-RT1). FIRE AREA 12-A-CR IS PROVIDED WITH EARLY WARNING IONIZATION DETECTION, DESIGNED TO ALARM IN THE CONTROL ROOM VIA THE COMMUNICATION ROOM. PORTABLE FIRE EXTINGUISHERS ARE PROVIDED IN THIS AND ADJACENT AREAS. HOSE STATIONS ARE LOCATED IN ADJACENT FIRE AREA 12-A-HVIR (FCAHVI). COMBUSTIBLE LOAD IN FIRE AREA 12-A-CR IS NEGLIGIBLE (LESS THAN 1000 BTU/SQ FT).

GENERAL COMMENTS:

1. POSTULATED FIRE MAY IMPACT ABILITY TO ACHIEVE SAFE SHUTDOWN FROM CONTROL ROOM AND COULD RESULT IN THE TEMPORARY EVACUATION OF THE AREA, HOWEVER, THE OPERATOR CAN ESTABLISH AND MAINTAIN SAFE SHUTDOWN CONDITION FROM THE AUXILIARY CONTROL PANEL (ACP) LOCATED IN THE RAB AT ELEV. 286.00.
   (SEE FSAR SECTION 7.4, ARTICLE 7.4.1.11.)
2. THE TEMPORARY WALL WHICH SEPARATES UNIT 1 AND UNIT 2 CONTROL ROOMS HAS BEEN CHANGED TO A PERMANENT REINFORCED CONCRETE WALL AS PER DCN-550-623. THE WALL AND DOOR WILL HAVE 3-HOUR FIRE RATINGS. THE FSAR WILL BE REVISED LATER.

3. The concrete wall which separates the control room (FCACRM) from the adjacent Fire Zone FCACRM-6-RT1 is equivalent to a 3-hour constructed fire wall. The conduit, HVAC, etc., penetrations are sealed with 3-hour fire-resistive material. The two HVAC ducts which penetrate the wall are constructed of 18-gauge steel. The doors in the wall are hollow metal doors, 1 3/4" thick, fabricated of two #16 gauge roller leveled prime quality cold rolled steel sheets.

TABLE 9.5B - 3
BEASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-A-HV:IR :: CARS AREA IDENTIFIER: FCAHVI
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1-2, HVAC AND INSTR RCOMS
SHOWN ON DWG: CAR-SH-SK-668S21 ELEV: 305.00 COLS: FW-H 41-45

(F) SHSOAPF DATA REV 0-6 OCT 7 83 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 47,679 MBTUS
COVERING 3,700 SQ FT TO GIVE A FIRE LOADING OF 13,300 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .2 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS- NON-SAFETY HVAC DUCTS
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-PREACTION
: OVER CHARCOAL FILTER HOUSINGS
FIRE EXTINGUISHER(S) - IN ADJACENT AREAS
INTERIOR AREA HOSE STATION(S) - IN ADJACENT AREAS
IONIZATION AREA DETECTION - PARTIAL
: IN AREAS NOT PROTECTED BY AUTOMATIC PREACTION SPRINKLER SYSTEMS
THERMAL SUPPRESSION SYSTEM ACTUATION
: ACTUATION OF AUTOMATIC PREACTION SPRINKLER SYSTEMS

FIRE MITIGATION FEATURES
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SMOKE REMOVAL- DEDICATED HVAC (NOT AV. ON LOOP)

EXPOSED TO COMMON FIRE
REDUNDANT TRAIN CABLES AND CONDUITS
REDUNDANT TRAIN EQUIPMENT
: DUCTWORK IN AREA

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: EXEMPTION REQUEST/JUSTIFICATION:
: 1. REQUEST EXEMPTION FROM PROVIDING SEPARATION AS REQUIRED IN
: APPENDIX R TO 10CFR50 BETWEEN AH-15(1A-SA), AH-15(1B-SB),
: AH-16(1A-SA) AND AH-16(1B-SB). FIRE ZONE 12-A-6-HV7
: (FCHVI-6-HV7) HAS A SMALL COMBUSTIBLE LOADING OF 16,150
: BTU//SQ FT, LIMITED MINIMAL TRANSIENT COMBUSTIBLES, AND
: ALTERNATIVE SHUTDOWN CAPABILITY AS DESCRIBED BELOW.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-A-HV:IR :: CARS AREA IDENTIFIER: FCAHVI
FIRE AREA NAME: REACTOR AUX BLDG, UNIT 1-2, HVAC AND INSTR ROOMS
SHOWN ON DWG: CAR-SH-SK-668S21 ELEV: 305.00 COLS: FW-H 41-45

(F) SHSDAPF DATA REV 0-6 OCT 7 83 * (R) SDASHRNE 10/07/83 11.58.37

GENERAL COMMENTS

: AUTOMATIC IONIZATION DETECTION IS PROVIDED IN THE FIRE AREA, WHICH IS READILY ACCESSIBLE FROM THE CONTROL ROOM.
: THE CHARCOAL FILTERS LOCATED IN THIS FIRE ZONE ARE PROVIDED WITH PRE-ACTION SPRINKLERS, ACTUATED BY THERMAL DETECTORS.
: DURING NORMAL OPERATION, AH-15(1A-SA) AND AH-15(1B-SB), WHICH ARE LOCATED IN FIRE ZONE 12-A-6-HV7 (FCHVI-6-HV7), PROVIDE COOLING FOR THE CONTROL ROOM FIRE AREA 12-A-CR (FCACRM) WHICH CONSISTS OF FIRE ZONES 12-A-6-CR1 (FCACRM-6-CR1) AND 12-A-6-RT1 (FCACRM-6-RT1).
: AH-16 (1A-SA) AND AH-16(1B-SB), WHICH ARE ALSO LOCATED IN FIRE ZONE 12-A-6-HV7, PROVIDE COOLING FOR FIRE ZONES 12-A-6-PICR1 (FCACRC-6-PICR1), 12-A-6-CR (FCACRC-6-CR) AND 12-A-6-ARP1 (FCACRC-6-ARP1), WHICH ARE PART OF FIRE AREA CONTROL ROOM COMPLEX 12-A-6-CRC1 (FCACRC).
: IN CASE OF A FIRE IN FIRE ZONE 12-A-6-HV7, THE HVAC UNITS MAY CEASE TO FUNCTION AND THE COOLING TO THE CONTROL ROOM AREA 12-A-CR AND THE CONTROL ROOM COMPLEX FIRE ZONES LISTED ABOVE MAY BE LOST.
: IF SUCH A FIRE OCCURS, NON-SAFETY BACK-UP SYSTEMS AH-97 (1&2A-NNS), AH-97 (1&2B-NNS) AND AH-98 (1-2A-NNS), AH-98 (1-2B-NNS), WHICH CAN BE MANUALLY ALIGNED TO THE EMERGENCY DIESEL GENERATOR, WILL START AND WILL PROVIDE COOLING FOR FIRE ZONE 12-A-6-RT1 AND FIRE ZONES 12-A-6-PICR1, 12-A-6-ARR1 RESPECTIVELY. FIRE ZONE 12-A-6-CR1 (CONTROL ROOM) IS EVACUATED AND SAFE SHUTDOWN IS ACHIEVED FROM THE ALXILIARY CONTROL PANEL LOCATED IN FIRE AREA 1-A-ACF (FAAACP) AT ELEV 286; COOLING FOR THIS AREA IS PROVIDED BY AH-13 (1A-SA), AH13 (1B-SB) LOCATED IN 1-A-5-HV5 (FAA6L5-5-HV[) AT ELEV 286.
: 2. REQUEST EXEMPTION FROM PROVIDING AUTOMATIC DETECTION AND SUPPRESSION SYSTEMS IN THE ENTIRE FIRE AREA 12-A-HV:IR. FIRE ZONE 12-A-6-HV7 (FCHVI-6-HV7) HAS APPROXIMATELY 10 PER CENT OF ITS AREA PROTECTED WITH AN AUTOMATIC PRE-ACTION SPRINKLER SYSTEM, ACTUATED BY THERMAL DETECTORS OVER THE CHARCOAL FILTERS. THE FIRE LOADING IN THIS ZONE IS 16,850 BTU/SQ FT. FIRE ZONE 12-A-6-IRR (FCAHVI-6-IRR) HAS NO FIRE LOADING. IONIZATION SMOKE DETECTION IS PROVIDED IN THE NON-SPRINKLERED PORTION OF FIRE ZONE 12-A-6-HV7 (FCHVI-6-HV7) AND IN THE ENTIRE FIRE ZONE 12-A-6-IRR (FCAHVI-6-IRR). MANUAL ALARM STATIONS, HOSE STATIONS AND EXTINGUISHERS ARE PROVIDED IN AND ADJACENT TO THE FIRE ZONES.
:

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-I-ESWPA :: CARS AREA IDENTIFIER: FCIESA
FIRE AREA NAME: ESW INTAKE STRUCTURE, UNIT 1-2, PUMP TRAIN A
SHOWN ON DWG: CAR-SH-SK-668S27 ELEV: 262.00 COLS: AA-ZZ 01-99

(F) SHSDAPF DATA REV 0-3 SEP 24 83 * (R) SDASHRNC 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 15,279 MBTUS
COVERING 2,100 SQ FT TO GIVE A FIRE LOADING OF 7,500 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .1 HOURS

FIRE AREA PASSIVE PROTECTION
NO FIRE DAMPERS-SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
FIRE EXTINGUISHER(S) - (NO HOSE STATIONS PROVIDED)
INTERIOR AREA HOSE STATION(S) - (NO HOSE STATIONS PROVIDED)
HOSE STREAMS FROM YARD HYDRANT
IONIZATION AREA DETECTION - PARTIAL
ULTRA-VIOLET AREA DETECTION - PARTIAL

FIRE MITIGATION FEATURES
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SMOKE REMOVAL- ONCE THROUGH

EXPOSED TO COMMON FIRE
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: ANALYSIS INDICATES NO REDUNDANT SYSTEMS REQUIRED FOR SAFE
: SHUTDOWN WITHIN THIS FIRE AREA.
:
: EXEMPTION REQUEST/JUSTIFICATION:
: 1. REQUEST EXEMPTION FROM PROVISION OF AUTOMATIC SPRINKLER SYSTEM
: FOR THE ESW AIR HANDLING UNIT TEMPERATURE ELEMENTS:
: TE-1EV-6591A-SA AND TE-1EV-6589A-SA.
: THE PRESENT DESIGN PROVIDES APPROXIMATELY 25 FT SEPARATION
: BETWEEN THESE UNITS AND THEIR REDUNDANT COUNTERPARTS:
: TE-1EV-6591B-SB AND TE-1EV-6589B-SB.
: THESE TEMPERATURE ELEMENTS ARE LOCATED OUTDOORS, EXTERNAL OF
: FIRE AREA 12-I-ESWPA (FCIESA), ARE NOT EXPOSED TO ANY FIRE
: LOAD AND ARE DESIGNED TO START THE AH UNITS BASED ON OUTSIDE

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-I-ESWPA :: CARS AREA IDENTIFIER: FCIESA
FIRE AREA NAME: ESW INTAKE STRUCTURE, UNIT 1-2, PUMP TRAIN A
SHOWN ON DWG: CAR-SH-SK-668S27 ELEV: 262.00 COLS: AA-ZZ 01-99

(F) SHSDAPF DATA REV 0-3 SEP 24 83 * (R) SDASHRNE 10/07/83 11.52.37

GENERAL COMMENTS

: TEMPERATURE.
: 2. REQUEST EXEMPTION FROM PROVIDING 3-HOUR RATED FIRE DOORS AT THE EXTERIOR OF THE ESW INTAKE STRUCTURE. PRESENT PLANT DOORS (D1169, D1170) ARE DESIGNED TO WITHSTAND THE EFFECTS OF TORNADOS. AS THESE ARE ALSO CONTROLLED SECURITY DOORS, THEY WILL BE ELECTRONICALLY MONITORED IN NORMALLY CLOSED POSITION.
: FIRE AREA FIRE LOADING IS 7,500 BTU/SQ FT.
: THE PRESENT DOORS SHOULD PROVIDE THE DEGREE OF FIRE RESISTANCE REQUIRED FOR THE DESCRIBED OCCUPANCY AND HAZARD.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-I-ESWPB :: CARS AREA IDENTIFIER: FC1ESB
FIRE AREA NAME: ESW INTAKE STRUCTURE, UNIT 1-2, PUMP TRAIN B
SHOWN ON DWG: CAR-SH-SK-668S27 ELEV: 262.00 COLS: AA-ZZ 01-99

(F) SHSDAPF DATA REV C-3 SEP 12 83 * (R) SDASHRNE 10/07/83 11.58.37

AS-DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 15,279 MBTUS
COVERING 2,100 SQ FT TO GIVE A FIRE LOADING OF 7,500 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .1 HOURS

FIRE AREA PASSIVE PROTECTION
NO FIRE DAMPERS-SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
FIRE EXTINGUISHER(S) - (NO HOSE STATIONS PROVIDED)
INTERIOR AREA HOSE STATION(S) - (NO HOSE STATIONS PROVIDED)
HOSE STREAMS FROM YARD HYDRANT
IONIZATION AREA DETECTION - PARTIAL
ULTRA-VIOLET AREA DETECTION - PARTIAL

FIRE MITIGATION FEATURES
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)
SMOKE REMOVAL- ONCE THROUGH

EXPOSED TO COMMON FIRE
SINGLE TRAIN CABLES AND CONDUITS
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: ANALYSIS INDICATES NO REDUNDANT SYSTEMS, REQUIRED FOR SAFE
: SHUTDOWN, WITHIN THIS FIRE AREA.
: EXEMPTION REQUEST/JUSTIFICATION:
: 1. REQUEST EXEMPTION FROM ENCLOSURE WITH FIRE BARRIERS OF THE
: ESW AIR HANDLING UNIT TEMPERATURE ELEMENTS:
: TE-1EV-6591B-SB AND TE-1EV-6589B-SB.
: THE PRESENT DESIGN PROVIDES APPROXIMATELY 25 FT SEPARATION
: BETWEEN THESE UNITS AND THEIR REDUNDANT COUNTERPARTS:
: TE-1EV-6591A-SA AND TE-1EV-6589A-SA.
: THESE TEMPERATURE ELEMENTS ARE LOCATED OUTDOORS, EXTERNAL OF
: FIRE AREA 12-I-ESWPB (FC1ESB), ARE NOT EXPOSED TO ANY FIRE
: LOAD, ARE DESIGNED TO START THE AH UNITS BASED ON OUTSIDE
: TEMPERATURE, AND THUS CANNOT BE ENCLOSED WITHOUT IMPAIRING

TABLE 9.5B - 3
EBASCO SERVICES, INC.
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-I-ESWPB :: CARS AREA IDENTIFIER: FCIESB
FIRE AREA NAME: ESW INTAKE STRUCTURE, UNIT 1-2, PUMP TRAIN B
SHOWN ON DWG: CAR-SH-SK-668S27 ELEV: 262.00 COLS: AA-ZZ 01-99

(F) SHSDAPF DATA REV 0-3 SEP 12 83 * (R) SDASHRNE 10/07/83 11.58.37

GENERAL COMMENTS

: THEIR PRIMARY FUNCTION.
: 2. REQUEST EXEMPTION FROM PROVIDING 3-HOUR RATED FIRE DOORS
: AT THE EXTERIOR OF THE ESW INTAKE STRUCTURE. PRESENT PLANT
: DOORS (D1173, D1174) ARE DESIGNED TO WITHSTAND THE EFFECTS OF
: TORNADOS. AS THESE ARE ALSO CONTROLLED SECURITY DOORS, THEY
: WILL BE ELECTRONICALLY MONITORED IN NORMALLY CLOSED POSITION.
: FIRE AREA FIRE LOADING IS 7,500 BTU/SQ FT.
: THE PRESENT DOORS SHOULD PROVIDE THE DEGREE OF FIRE RESISTANCE
: REQUIRED FOR THE DESCRIBED OCCUPANCY AND HAZARD.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-0-TA :: CARS AREA IDENTIFIER: FCOTKA
FIRE AREA NAME: DIESEL OIL TANK BLDG, UNIT 1-2. OIL STORAGE TANK A
SHOWN ON DWG: CAR-SH-SK-668S26 ELEV: 242.00 COLS: AA-ZZ 01-99

(F) SHSDAFF DATA REV 0-0 NOV 2 82 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 18,900,000 BTUS
COVERING 1,400 SQ FT.TO GIVE A FIRE LOADING OF 13,500,000 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: *** HOURS

FIRE AREA PASSIVE PROTECTION
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
FIRE EXTINGUISHER(S)
INTERIOR AREA HOSE STATION(S)
HOSE STREAMS FROM YARD HYDRANT

FIRE MITIGATION FEATURES
PENETRATION FIRE STOP(S)

EXPOSED TO COMMON FIRE
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: 1. ANALYSIS INDICATES NO REDUNDANT SYSTEMS REQUIRED FOR SAFE
: SHUTDOWN WITHIN THIS AREA.
: 2. STORAGE TANK IS BURIED UNDERGROUND AND IS OF SEISMIC
: CATEGORY I CONSTRUCTION.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 12-0-TB :: CARS AREA IDENTIFIER: FC0TKB
FIRE AREA NAME: DIESEL OIL TANK BLDG, UNIT 1-2, OIL STORAGE TANK B
SHOWN ON DWG: CAR-SH-SK-668526 ELEV: 242.00 COLS: AA-ZZ 01-99

(F) SHSDAPF DATA REV 0-0 NOV 2 82 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 18,900,000 MBTUS
COVERING 1,400 SQ FT TO GIVE A FIRE LOADING OF 13,500,000 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: *** HOURS

FIRE AREA PASSIVE PROTECTION
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
FIRE EXTINGUISHER(S)
INTERIOR AREA HOSE STATION(S)
HOSE STREAMS FROM YARD HYDRANT

FIRE MITIGATION FEATURES
PENETRATION FIRE STOP(S)

EXPOSED TO COMMON FIRE
SINGLE TRAIN EQUIPMENT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: 1. ANALYSIS INDICATES NO REDUNDANT SYSTEMS REQUIRED FOR SAFE
: SHUTDOWN WITHIN THIS AREA.
: 2. STORAGE TANK IS BURIED UNDERGROUND AND IS OF SEISMIC
: CATEGORY I CONSTRUCTION.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: S-F-BAL :: CARS AREA IDENTIFIER: FPFBAL
FIRE AREA NAME: FUEL HANDLING BLDG, ALL UNITS, BALANCE OF AREAS
SHOWN ON DWG: CAR-SH-SK-668S ELEV: 261.00 COLS: AA-ZZ 01-99

(F) SHSCAFF DATA REV 0-1 SEP 15 83 * (R) SDASHRNE 10/07/83 11:58:37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL	10,449 MBTUS
COVERING 91,000 SQ FT TO GIVE A FIRE LOADING OF	125 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING:	.0 HOURS

GENERAL COMMENTS
: ANALYSIS INDICATES NO EQUIPMENT IN THIS AREA IS REQUIRED
: FOR SAFE SHUTDOWN.
: NO SKETCH IS REQUIRED FOR THIS FIRE AREA.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 5-F-CHF :: CARS AREA IDENTIFIER: FPFCHF
FIRE AREA NAME: FUEL HANDLING BLDG, ALL UNITS, CHARCOAL FILTER AREAS
SHOWN ON DWG: CAR-SH-SK-668S ELEV: 261.00 COLS: L-M 36-50

(F) SHSDAPF DATA REV 0-0 NOV 12 82 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 130,239 MBTUS
COVERING 5,000 SQ FT TO GIVE A FIRE LOADING OF 26,440 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .5 HOURS

GENERAL COMMENTS
: ANALYSIS INDICATES NO EQUIPMENT IN THIS AREA IS REQUIRED
: FOR SAFE SHUTDOWN.
: NO SKETCH IS REQUIRED FOR THIS FIRE AREA.

TABLE 9.5B - 3
ERASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 5-F-FPP :: CARS AREA IDENTIFIER: FPFFPA
FIRE AREA NAME: FUEL HANDLING BLDG, ALL UNITS, FUEL POOL PUMP AREA
SHOWN ON DWG: CAR-SH-SK-6685 ELEV: 236.00 COLS: L-N 26-58

(F) SHSDAFF DATA REV 0-C NOV 12 82 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 6,039 MBTUS
COVERING 8,000 SQ FT TO GIVE A FIRE LOADING OF 758 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .0 HOURS

GENERAL COMMENTS
: ANALYSIS INDICATES NO EQUIPMENT IN THIS AREA IS REQUIRED
: FOR SAFE SHUTDOWN.
: NO SKETCH IS REQUIRED FOR THIS FIRE AREA.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 5-O-BAL :: CARS AREA IDENTIFIER: FPOBAL
FIRE AREA NAME: DIESEL OIL STG AREA, ALL UNITS, PIPING-CORRIDOR
SHOWN ON DWG: CAR-SH-SK-668S26 ELEV: 242.00 COLS: AA-ZZ 01-99

(F) SHSDAFF DATA REV 0-4 SEP 24 83 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 2,000 MBTUS
COVERING 1,200 SQ FT TO GIVE A FIRE LOADING OF 1,666 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .0 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS - SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
FIRE EXTINGUISHER(S)
HOSE STREAMS FROM YARD HYDRANT

FIRE MITIGATION FEATURES
PENETRATION FIRE STOP(S)
SMOKE REMOVAL- NORMAL HVAC (AVAIL. ON LOOP)

EXPOSED TO COMMON FIRE
COMBUSTIBLE LIQUID PIPING-DIESEL OIL
REDUNDANT TRAIN CABLES AND CONDUITS
REDUNDANT TRAIN EQUIPMENT

MODIFICATIONS INDICATED
ENCLOSE ONE OR MORE TRAIN CONDUITS
: PROVIDE THREE HOUR RATED ENCLOSURE TO THE FOLLOWING:
: CONDUITS 16004S-SB-4, 13286A-SB-1 1/2, 15438H-SB-4,
: X15438G-SB-3, 13285E-SB-1.
: JUNCTION BOX B-216-SB, B9130-SB.

GENERAL COMMENTS
: ANALYSIS INDICATES NEED TO DESIGNATE CORRIDOR ADJACENT TO THE
: FUEL OIL TRANSFER PUMP ROOMS AS A NEW FIRE AREA 5-O-BAL.
: THE DETAILED FIRE HAZARD ANALYSIS FOR THIS NEW AREA WILL FOLLOW.
:
: EXEMPTION REQUEST/JUSTIFICATION:
: 1. REQUEST EXEMPTION FROM PROVIDING SUPPRESSION SYSTEM OVER THE
: ENTIRE AREA OF THE DIESEL OIL STORAGE BUILDING FIRE AREA
: 5-O-BAL (FPOBAL), THE CORRIDOR AREA EXTERNAL OF THE FUEL
: PUMP ROOMS. THE PRESENT DESIGN PROVIDES FOR MULTI-CYCLE
: SPRINKLERS, ACTUATED BY THERMAL DETECTORS, INSIDE PUMP ROOMS
: FOR UNITS 1 & 2 PORTION OF THIS AREA. NO EQUIPMENT WILL BE

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 5-0-BAL :: CARS AREA IDENTIFIER: FP0BAL
FIRE AREA NAME: DIESEL OIL STG AREA, ALL UNITS, PIPING-CORRIDOR
SHOWN ON DWG: CAR-SH-SK-668S26 ELEV: 242.00 COLS: AA-ZZ 01-99

(F) SHSCAPF DATA REV 0-4 SEP 24 83 * (R) SDASHRNE 10/07/83 11.58.37

GENERAL COMMENTS

: INSTALLED IN THE UNITS 3 & 4 PORTION OF THE AREA.
: 3-HOUR RATED ENCLOSURES WILL BE PROVIDED FOR SAFE SHUTDOWN
: CABLE TRAYS AND EQUIPMENT IN THE CORRIDOR.
: 2. REQUEST EXEMPTION FROM PROVIDING 3-HOUR RATED FIRE DOORS AT
: THE STAIR TOWERS IN THE DIESEL OIL STORAGE BUILDING. FIRE
: AREA 5-0-BAL (FP0BAL). THE STAIRWELLS ARE UNDERGROUND AND
: EXIT TO THE OUTDOORS. THE COMBUSTIBLE LOADING IN THE
: ADJACENT FIRE AREA IS NEGLIGIBLE.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 5-S-BAL :: CARS AREA IDENTIFIER: FPSASW
FIRE AREA NAME: SCREENING STRUCTURE, AUX RESERVOIR, ALL UNITS
SHOWN ON DWG: CAR-SH-SK-666528 ELEV: 262.00 COLS: AA-ZZ 01-99

(F) SHSDAPF DATA REV 6-4 SEP 12 83 * (R) SDASHRNE 10/07/85 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 49 MBTUS
COVERING 1,504 SQ FT TO GIVE A FIRE LOADING OF 33 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .0 HOURS

FIRE AREA PASSIVE PROTECTION
3 HR FIRE BARRIER ENCLOSURE

EXPOSED TO COMMON FIRE
REDUNDANT TRAIN CABLES AND CONDUITS

GENERAL COMMENTS
: EXEMPTION REQUEST/JUSTIFICATION:
: 1. REQUEST EXEMPTION FROM PROVIDING 20 FT SEPARATION :
: CONDUITS 12218B-SB-3, 12218A-SB-1 1/2, 15472A-SB-1 1/2,
: 16132U-SB-3, FROM
: CONDUITS 12217A-SA-1 1/2, 12217B-SA-3, 15483A-SA-1 1/2,
: 16149J-SA-3.
: ELECT JUNCT BOXES B252-SB, B253-SB, B254-SB FROM
: ELECT JUNCT BOXES B249-SA, B250-SA, B251-SA.
: VALVES MOV35W-B2SB-1 FROM MOV35W-B1SA-1.
: PLANT DESIGN PROVIDES 13 FT SEPARATION BETWEEN REDUNDANT
: CONDUITS. COMBUSTIBLE LOADING IN FIRE AREA 5-S-BAL (FPSASW)
: IS NEGLIGIBLE (LESS THAN 1,000 BTU/SQ FT).
: 2. REQUEST EXEMPTION FROM PROVIDING SUPPRESSION AND DETECTION
: FOR FIRE AREA 5-S-BAL (FPSASW). COMBUSTIBLE LOADING IN THE
: FIRE AREA IS NEGLIGIBLE (LESS THAN 1,000 BTU/SQ FT).

3. Request exemption from providing three-hour rated fire doors in the exterior wall of the ESW screening structure. This exemption is based on neglible combustible loading in the area.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 5-W-BAL :: CARS AREA IDENTIFIER: FPWBAL
FIRE AREA NAME: WASTE PROCESSING BLDG, ALL UNITS, ALL AREAS
SHOWN ON DWG: CAR-SH-SK-668 ELEV: 236.00 COLS: AA-ZZ 01-99

(F) SHSDAPF DATA REV 0-2 SEP 24 83 * (R) SDASHRNE 10/07/83 11.58.37

AS DESCRIBED IN THE FHA, FIRE AREA COMBUSTIBLES TOTAL 5,491,500 MBTUS
COVERING 231,500 SQ FT TO GIVE A FIRE LOADING OF 24,000 BTU/SQFT
RECOMMENDED EQUIVALENT FIRE BARRIER FOR THIS FIRE LOADING: .3 HOURS

FIRE AREA PASSIVE PROTECTION
FIRE DOOR-CL A-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DOOR-CL B-LABELED OR CERTIFIED EQUIV CONSTR
FIRE DAMPERS- NON-SAFETY HVAC DUCTS
3 HR FIRE BARRIER ENCLOSURE

FIRE AREA ACTIVE PROTECTION
AUTO SPRINKLER SYSTEM-PREACTION - (PARTIAL COVERAGE)
FIRE EXTINGUISHER(S)
INTERIOR AREA HOSE STATION(S)
HOSE STREAMS FROM YARD HYDRANT
IONIZATION AREA DETECTION - PARTIAL
THERMAL SUPPRESSION SYSTEM ACTUATION - PREACTION SYSTEM

FIRE MITIGATION FEATURES
PENETRATION FIRE STOP(S)
REDUNDANT TRAIN PARTIAL SEPARATION BARRIERS - (PARTIAL)
SMOKE REMOVAL- NORMAL HVAC (NOT AVAIL. ON LOOP) - (PARTIAL)
SMOKE REMOVAL- DEDICATED HVAC (NOT AV. ON LOOP) - (PARTIAL)
: PROVIDED FOR CONTROL ROOM AND CABLE VAULT

MODIFICATIONS INDICATED
NO MODIFICATIONS REQUIRED

GENERAL COMMENTS
: NO SKETCH IS REQUIRED FOR THIS FIRE AREA.
: 1. MECHANICAL VALVES 3CS-G5SN AND 3CS-G6SN, LOCATED IN THE RAB,
: AT ELEVATION 261.00 BETWEEN COL 41-42 AND 3-F,
: ARE AIR OPERATED VALVES REQUIRED FOR SAFE SHUTDOWN.
: THESE VALVES ARE DESIGNED TO FAIL IN THEIR SAFE POSITION.
: 2. ANALYSIS IS NOT REQUIRED FOR:
: POWER AND CONTROL CABLES (NO SAFETY TRAIN DESIGNATION)
: ASSOCIATED WITH THE ABOVE VALVES,
: ARP-122 BACKFLUSH CONTROL PANEL, AND
: AUXILIARY CONTROL PANEL LOCATED IN THE WPB CONTROL ROOM.
: 3. CONDUITS ASSOCIATED WITH REQUIRED SAFE SHUTDOWN EQUIPMENT
: ARE EMBEDDED THROUGHOUT THE FIRE AREA.

TABLE 9.5B - 3
EBASCO SERVICES, INC
CAROLINA POWER & LIGHT CO. SHEARON HARRIS NUCLEAR POWER PLANT

SAFE SHUTDOWN ANALYSIS BY FIRE AREA
(INFORMATION SUPPLEMENTS DETAILED PROJECT FIRE HAZARD ANALYSES)

FIRE AREA: 5-W-BAL :: CARS AREA IDENTIFIER: FPWBAL
FIRE AREA NAME: WASTE PROCESSING SLDG, ALL UNITS, ALL AREAS
SHOWN ON DWG: CAR-SH-SK-668 ELEV: 236.00 COLS: AA-ZZ 01-99

(F) SHSDAPF DATA REV 0-2 SEP 24 83 * (R) SDASHRNL 10/07/83 11.58.37

GENERAL COMMENTS
:

ENCLOSURE 3

Shearon Harris Nuclear Power Plant
Draft SER Open Item 350
Supplemental Information

During the meetings held September 26 and 27 on Fire Protection, the following additional design information was requested:

1. Design Drawings, Specification, and a Statement Concerning Certificate of Compliance for Fire Doors.

2. Design Drawings showing the Ventilation of the Main Control Room Cabinet.

3. Design Drawings showing the Ventilation of the Main Control Room Cabinet.

4. Design Drawings showing the location of Conduit Inside the Control Room.

Response:

The following design information is attached:

1. Fire Doors - Pioneer vendor prints (1364-45229 22 SHTS), Fire Door Specification CAR-SH-AS-54 and Pioneer letter concerning "A" label and "B" label doors.*

2. Stairwell enclosures - CP&L design drawings 2168-G-702S01 and 702S02 and Masonry Specification CAR-SH-AS-27.*

3. Ventilation of control room cabinet - Westinghouse vendor print (1364-15131)*

4. Control Room Conduit - CP&L design drawings 2166-G-322 and 332S02.*

The additional information supplied above should answer the NRC questions.

*Due to the size of these drawings, only one copy of each is being sent to the NRC reviewer.

pioneer
THE TOTAL PRODUCT LINE

RUSH
Call X2447
for pickup.

cc: M. Sorbaro

October 4, 1983

RECD OCT 6 1983

Ebasco Services, Inc.
Two World Trade Center
New York, New York 10048

Att'n.: Mr. E.R. Sion

Re: Job #C9825
Carolina Power & Light
Shearon Harris Nuclear Power Plant
Project Identification CAR-SH-AS-54

Dear Mr. Sion:

Please be advised that our certificate of compliance showing 3 hour or 1 1/2 fire rating for doors is exactly the same as the "A" label or "B" label attached to the doors.

This sameness applies in manufacturing, design, quality assurance, shipment, etc.

Very truly yours,
Pioneer Industries

T. Chu
Manager, Engineering Dept.

c.c.

TC/ear

Project Identification
No. CAR-SH-AS-54
Order No. PO NY-435272

NORTH CAROLINA PROFESSIONAL SEAL 6498 ENGINEER MURRAY WEBER

Murray Weber 11/19/81

EBASCO SERVICES INCORPORATED
EBASCO SPECIFICATION

FIRE AND CONTROL DOORS AND HARDWARE

SEISMICALLY & NON-SEISMICALLY DESIGNED EQUIPMENT

THIS SPECIFICATION INCLUDES FIRE PROTECTION EQUIPMENT

PURCHASER: EBASCO SERVICES INCORPORATED, AGENT

OWNER: CAROLINA POWER & LIGHT COMPANY

OPERATING COMPANY: CAROLINA POWER & LIGHT COMPANY

PROJECT: SHEARON HARRIS NUCLEAR POWER PLANT

UNIT NO.: 1, 2, 3 & 4 NOMINAL KW 900,000 KW PER UNIT

LOCATION: WAKE COUNTY, NORTH CAROLINA

SELLER: PIONEER INDUSTRIES, CARLSTADT, NJ

"THIS DOCUMENT IS DELIVERED IN ACCORDANCE WITH AND IS SUBJECT TO THE PROVISIONS OF SECTION X OF THE CONTRACT BETWEEN CAROLINA POWER & LIGHT COMPANY AND EBASCO SERVICES INCORPORATED DATED SEPTEMBER 1, 1970, AS AMENDED."

Prepared under the supervision of Murray Weber N.C. PE License No. 6498

Murray Weber 11/19/81

Revisions	Date	Prepared By	Reviewed By:	Pages Affected	CP&L Approval
Original	12-20-78	R Chamides	D Houghton		01-11-79
R1	04-27-79	R Chamides	D Houghton	All	05-18-79
R2	09-25-80	R Chamides	D Houghton	i,1,2,5,18-23	09-24-80
R3	11-19-81	J Kaplan	D Houghton	1,3-15,17-23, i	09-24-81
R4	12-13-82	E Sion	K Ilachinski M. Weber 12/13/82	i, 2, 3 DCN Incorporated 650-781	10-25-82
R5	4-11-83	E Sion	K Ilachinski M. Weber 4/11/83	DCN Incorporated 650-795	1/14/83

EBASCO SERVICES INCORPORATED

EBASCO SPECIFICATION
FIRE AND CONTROL DOORS AND HARDWARE
SEISMICALLY AND NON-SEISMICALLY DESIGNED EQUIP

CONTENTS

Ebasco Specification
Fire and Control Doors and Hardware

Project Identification No. CAR-SH-AS-54

1. SCOPE

.01 This specification covers the requirements for designing, fabricating, furnishing, shop coating, testing and shipping of the door assembly and required hardware that are subjected to any of the special service conditions or combinations of them. All doors with combined requirements as listed below are also indicated on the architectural door schedule drawings with corresponding door number. All Vendor details and specifications shall be approved by Nuclear Mutual Limited (NML) prior to the commencement of fabrication. Individual door assembly approvals shall be by "Certificate of Compliance." See Paragraph 2.03. R3

The following legend indicates the various types:

A = Control - Hinged - Security controls only.

B = Fire - Hinged - Certified fire rated 3 hour "A Label" type construction. R2 R3

C = Fire - Sliding - Certified fire rated 3 hour "A Label" type construction. R2

D = Fire - Hinged - Certified fire rated 1-1/2 hour "B Label" type construction. R2

SD = Seismically Designed

NSD = Non-Seismically Designed

Type A/NSD Control Door Assembly and Hardware - Hinged

These doors shall be control only - See criteria Paragraph 5.01 for differential criterias of Types A, B, C, D.

Type A/SD Control Door Assembly and Hardware - Hinged

This door shall be Type A with seismically designed qualifications combined.

Type A-B/NSD Control and Fire Door Assembly and Hardware - Hinged

This door shall be as Type A combined with Type B Fire Requirements - Certified fire rated 3 hour "A Label" type construction. R2

Type A-B/SD Control and Fire Door Assembly and Hardware - Hinged

This door shall be Type A and B with Certified fire rated 3 hour "A Label" type construction with seismically designed qualifications combined. R2

1. SCOPE (Cont'd)

.01 (Cont'd)

Type B/NSD Fire Door Assembly - Hinged

No control devices - Certified fire rated 3 hour "A Label" type construction only. R2

Type B/SD Fire Door Assembly-Hinged. Certified fire rated 3 hour "A Label" type construction - seismically designed construction - No Control Devices R2

Type C/SD Fire Door Assembly-Sliding. Certified fire rated 3 hour "A Label" type construction - seismically designed construction - No Control Devices R2

Type D/NSD Fire Door Assembly-Hinged. Certified fire rated 1-1/2 hour "B Label" type construction - No Control Devices R2

R4

1. SCOPE (Cont'd)

.02 Ebasco Project Drawings for reference.

Architechtural Reference Drawings:

CAR-2168 SK 6418-223 A, Door Schedule Sheet 1

CAR-2168 SK 6418-224 A, Door Schedule Sheet 2 R4

CAR-2168 SK 6418-225 A, Door Schedule Sheet 3

2. RESPONSIBILITY AND PERFORMANCE

Seller shall be solely responsible for the adequacy of design, penetration resistance materials, fabrication, delivery, quality assurance, testing and shop prime painting of the doors frames, and transom panels in compliance with this specification. Review, inspection and examination by Purchaser of drawings, design, procedures, materials or fabrication shall in no way relieve Seller of this responsibility. R3

Seller shall guaranty that all "Seismically Designed and/or Pressure (positive or negative) Doors Assemblies" will not be subject to permanent deformities resulting from pressure impact. R3

Deviations from this specification after acceptance of the Purchase Order by Seller shall be submitted in writing for Purchaser's review and written approval.

.01 The following work shall be included and provided by Seller:

a - Preparation and responsibility for the complete design of the door assemblies and hardware, in accordance with the "Design Criteria" (Section 5), and applicable codes and standards as specified herein.

2. RESPONSIBILITY AND PERFORMANCE (Cont'd)

.01 (Cont'd)

b - Furnishing, fabricating, shop painting, transporting to the site and all materials required for the door assembly complete with hardware as specified.

c - Required Hardware

All hardware indicated in this specification including that required for control, fire and seismically designed doors shall be the responsibility of this door Seller.

Hardware shall be shop installed wherever possible. Should specific doors require site installation of hardware, door Seller shall provide all cuts and templates as needed prior to shipping for installation of the hardware after erection by others. R3

d - Preparation of complete shop drawings.

e - Preparation of complete design calculations.

f - Assistance to Purchaser in providing replies to Regulatory Agencies. As part of such assistance, Seller may be required to:

i - Provide whatever may be necessary in the way of theoretical studies, investigations, tests, supporting data and reports concerning the area of Seller's responsibility.

ii - Provide qualified personnel to make appearances, as required, at hearings upon the request of Purchaser.

.02 The following work shall be provided by Purchaser.

All concrete work, the setting of door frames, and installation of doors. Special instructions, templates, and other pertinent information required for setting of door assemblies shall be provided by Seller.

.03 Letters of Certification for Fire Doors Assemblies.

All fire doors indicated on the door schedules under "Remarks - Fire Rate Hours column as 3 or 1-1/2 hour" correspond to: R3

3 = Certified fire rated 3 hour "A Label" type construction

1-1/2 = Certified fire rated 1-1/2 hour "B Label" type construction

2. RESPONSIBILITY AND PERFORMANCE (Cont'd)

.03 Letters of Certification for Fire Door Assemblies (Cont'd)

All doors in this category when delivered on site shall be accompanied by a verified copy of the "CERTIFICATE OF COMPLIANCE FOR 3 or 1-1/2 HOUR CERTIFIED FIRE RATED ("A or B" LABEL TYPE) CONSTRUCTION." Seller shall submit a copy of the "CERTIFICATE to be used for NML (insurer) APPROVAL." R2

3. CALCULATIONS AND DRAWINGS

.01 Seller shall furnish for Purchaser's review and approval checked design calculations and shop drawings for review and approval of both seismically and non-seismically designed conditions as required prior to fabrication of the doors and door frames.

.02 Shop drawings shall show door and frame details of construction anchorage, methods of assembling sections, installation of hardware, sizes, shapes, thickness of all materials, joints and connections, non-destructive examinations, welding details including identification of welding procedure, and a bill of materials.

.03 Purchaser's review and approval of drawings and calculations shall not relieve Seller from entire responsibility for engineering, design, workmanship and material under the contract.

.04 Details of all control hardware provided by Seller which Seller determines should be kept from public disclosure shall be marked confidential and such information shall be submitted as separate documents.

4. STANDARDS AND CODES

AWS - American Welding Society

D1.1	-	Structural Welding Code	
D1.3	-	Specification for Welding Sheet Steel in Structures	R3
A5.1	-	Specification for Mild Steel Covered Arc Welding Electrodes	
A5.18 E70S-X		Spec for Carbon Steel Filler Metals for Gas Shielded Arc Welding	R3.

ASTM - American Society for Testing and Materials

A36	-	Specification for Structural Steel	
A240	-	Specification for Heat-Resisting Chromuim and Chromium Nickel Stainless Steel Plate, Sheet, and Strip for Fusion Welded Unfired Pressure Vessels.	R5

4. STANDARDS AND CODES (Cont'd)

ASTM - American Society for Testing and Materials (Cont'd)

A366 - Standard Specification for Steel, Carbon, Cold Rolled Sheet Commercial Quality R3

A525 - Zinc Coated (Galvanized) Hot Dipped Steel

A108 - Cold Finished Carbon Steel Bars and Shafting

A569 - Hot Rolled Carbon Steel Sheet & Strip

D1056 - Specification for Sponge and Expanded Cellular Rubber Products. R3

E152 - Fire Test for Door and Assemblies

SSPC - Steel Structure Painting Council

SP6 - Commercial Blast Cleaning

PA1 - Shop, Field and Maintenance Painting

OSHA - Occupational Safety and Health Administration

NRC - Nuclear Regulatory Commission

Regulatory Guide 5.12 - General Use of Locks

NML - Nuclear Mutual Limited

Property Loss Prevention Standards for Nuclear Generating Stations R3

Interim Federal Specification W-A-00450B -

Security Components for Interior Alarm Systems Section 4.6, Paragraph 3.5.2 (1)

UL - Underwriter's Laboratories

437 - Key Locks

752 - Bullet-Resisting Equipment - High Power Rifle Rating

D-UL-10B - Fire Test or Door Assemblies R3

FMS - Factory Mutual System
Factory Mutual System Approval Guide, 1981 R3

4. STANDARDS AND CODES (Cont'd)

NFPA - National Fire Protection Association

80 - Fire Doors and Windows

252 - Fire Tests for Door Assemblies

AISC - American Institute of Steel Construction

Specification for the Design, Fabrication and Erection of Structural Steel for Buildings

Any conflict between this specification and/or the referenced codes and standards shall be immediately brought to Purchaser's attention for written acceptance. Seller shall list in his proposal any additional codes or standards he intends to invoke in the performance of this specification requirements. R3

The doors shall comply with currently applicable Local, State and Federal Regulations, and codes relative to the design, construction, and operation of doors in the locality where the doors will be installed. Unless otherwise noted the document with addenda, amendments and revisions in effect on the date of the purchase order will apply. Later editions may be used by written mutual consent between Seller and Purchaser.

5. DESIGN CRITERIA AND CONSTRUCTION

Pressure Doors R3

Door assemblies shall be designed to withstand positive and negative design pressures up to five (5) pounds per square ft, and to eliminate any possibility of permanent distortion, deflection, rocking, or binding.

Type A - Control Door Assembly - Criteria

.01 The criteria requirements for doors designated as "Type A" on Door Schedule shall be as follows: R3

a - Doors designated "Bullet Resistant" (BR) shall be certified in accordance with UL 752, "High Power Rifle Rating." R3

b - Designated doors will be equipped with key locks in compliance with UL 437. Padlocks will not be used. The locks will have a minimum of six (6) pins with ten (10) key cutting levels per pin and will be resettable without removing the doors. Key locks are to be similar to "Best Lock Co." Catalog Number 21H7EW. Cores and keys will be provided by Purchaser. R3

5. DESIGN CRITERIA AND CONSTRUCTION (Cont'd)

Type A - Control Door Assembly - Criteria (Cont'd)

.01 (Cont'd)

b - (Cont'd)

Neither the lock nor strike will represent a structural weakness in the door. Destruction of the exposed portion of the lock will not result in unlocking of the door or exposure of the remainder of the locking device. The lock shall override the electric strike, where provided, to assure emergency ingress. Free egress shall be available for all Type "A" doors.

c - Astragals shall be provided on specific doors. See Door Schedule for location.

Type B - Fire Door Assembly - Hinged

.01 Design Criteria

All door assemblies shall be designed and constructed to meet the requirements of Codes and Standards (Paragraph 4) to comply with this specification for Certified fire rated 3 hour "A Label" type construction. No door in assemblies marked seismically designed shall be permitted to open by a "seismic" event. R3

All door assemblies to be used in fire barrier openings shall be so designed to accept "Control Hardware" where required. See Ebasco drawings and details.

.02 Doors R3

Doors shall be formed of two 16 gauge prime cold rolled steel sheets and shall be 1-3/4 in. thick.

Doors shall be internally reinforced with pairs of hat shaped steel stiffeners joined together and running vertically full height of door 6 inches apart. Stiffeners shall be spot welded 4 inches on centers to both faces of doors and arc welded to each other top and bottom.

All doors shall be internally reinforced with a 12 gage plate, both sides of the door, for application of surface applied door closers and holders.

Voids between stiffeners shall be filled with insulation.

There shall be no seams on the faces or edges of doors. Vertical edges of doors shall be continuously seam-welded using gas tungsten ARC-Process w/filler addition to the full height of the door. Mechanical joints or seams

5. DESIGN CRITERIA AND CONSTRUCTION (Cont'd)

Type B - Fire Door Assembly - Hinged (Cont'd)

.02 Doors (Cont'd)

intermittently welded, on either the edge or face of door shall not be permitted. Weld marks on door face or edge shall not be permitted. R3

All doors shall be capped to retard moisture from penetrating the door.

.03 Hinges

Hinge reinforcements shall be minimum of 7 gauge (3/16 in.), 6 inches larger than the hinge and drilled and tapped at the factory. All reinforcements for strikes shall be a minimum of 14 gauge. All top hinge reinforcements shall be provided with back-up reinforcement.

.04 Coatings

Coatings shall be as indicated in Section 9 of the specification.

Frames

.01 Frames for all doors shall be manufactured of 16 gage CQ class/steel.

.02 All corners shall be arc-welded and ground smooth. Frames shall be constructed with steel bottom spreaders.

.03 Heads shall be reinforced for surface mounted closers, holders or brackets when & where required.

Reinforcing or cut outs where limit switches are required shall be applied.

.04 Hinges and strike reinforcements shall be 7 gage minimum for all doors. All reinforcements for hinges and strikes shall have steel plaster guards. Tap hinges shall be provided with additional back-up reinforcing.

.05 Pressure sensitive door silencers shall be applied as per manufacturer's specifications.

.06 Seller shall furnish the appropriate anchorage systems to suit the wall structure where door is to be set. Floor clips shall be applied at the bottom of all jambs for proper securing to floors where required.

5. DESIGN CRITERIA AND CONSTRUCTION (Cont'd) R3

.04 Coatings (Cont'd)

.07 Heads of frames for double doors shall have a knock-out for dead bolting of the inactive leaf.

.08 Coatings, by Seller, shall be "Primer" only in accordance with para 9 of this specification.

Additional primer material will accompany the shipment to the field for touch-up purposes prior to the application of the finish coating.

.09 U.L. Labels. Where applicable, frames shall have such labels permanently affixed where visible after installation.

.10 Door and Frame Tag Number, assembly identification shall also be applied as per .09.

Type C - Fire Door Assembly - Sliding

.01 The sliding fire doors shall be the "Fusible Link Self Closing" Type. These doors shall be Certified fire rated 3 hour "A Label" type construction.

.02 Construction

See Ebasco Drawings for location, size and details. These doors shall be constructed of 22 gage steel panels extending to the full height of the door. Door thickness not to exceed 2 in. with a maximum weight of 6 lb per sq foot. Doors shall be of channel shaped interlocking members with the legs of the channels forming the sides of the door.

The flanges shall extend through the full thickness of the door and serve as vertical stiffener reinforcing.

.03 Rods

Steel rods extending through the door horizontally shall pass through holes in the flanges of the channels to unite and lock all sections and form a rigid construction.

.04 Channels

7 gage steel channels shall be assembled on all four edges of the door to complete the door framing.

.05 Core Filling

Shall consist of sheets of corrugated polyform installed in all voids of the sheet metal channels forming the door.

11.0 EQUIPMENT SHIPPING REQUIREMENTS (Cont'd)

Boxes or other shipping units shall be clearly marked to indicate the purchase order and other component identification and shall include any special instructions, e.g., Fragile, Desiccant Inside, CG, This Side Up. Large and heavy shipping units shall have suitable skids for moving or provisions for lifting with slings.

.11 If tape is used on equipment surfaces, it should leave no adhesive residue when removed.

.12 Long-term storage/maintenance instructions shall be provided and shall be included in the instruction manual or shipped separately with the equipment. Long-term storage is defined as a period of greater than one year and up to a limit of eight (8) years. The long-term storage/maintenance instructions shall define the minimum acceptable storage conditions that is expected to be provided for storage of equipment, e.g., whether it would be required to store indoors with provisions for heat and temperature control or stored indoors without heat and temperature control or stored outdoors. The long-term storage instructions shall also include requirements, where applicable, for changing of desiccants, reapplication of preservatives, lubricants, packing or any other maintenance operations that must be performed for the item in order to provide protection from any deterioration due to long-term storage.

12.0 DRAWINGS

.01 Drawings shall be provided showing equipment outline, overall dimensions, clearance dimensions for installation and disassembly, and support locations when applicable.

5. DESIGN CRITERIA AND CONSTRUCTION (Cont'd)

Type C - Fire Door Assembly - Sliding (Cont'd)

.06 Embedded Plates

Seller shall design and detail the door frames to accommodate the embedded plates installed by Purchaser during construction.

.07 Hardware

Hardware shall include all chain, cable, links, tracks, brackets, counter-weights, pulleys, door handles, securing shapes and anchors, and other required parts to complete the work.

.08 Counter Weight Sleeve Boxes

Counterweight sleeve boxes, shall be supplied by Seller and be constructed of 1/8 in. steel galvanized plate to the vertical height required to restrict movement horizontally of the counter weight. This box shall be shop painted as per this specification and delivered to the site as part of the complete assembly package.

.09 Shop Drawings

Shop drawings shall be supplied as per Section 8 of this specification.

.10 Installation

Installation shall be in accordance with the approved shop drawings and written instructions of Seller.

Type D - Fire Door Assembly - Hinged R3

.01 Design Criteria

All door assemblies shall be designed and constructed to meet the requirements of Codes and Standards (Paragraph 4) to comply with this specification for Certified fire rated 1-1/2 hour "B Label" type construction.

.02 Doors

Doors shall be formed of two 16 gauge prime cold rolled steel sheets and shall be 1-3/4 in. thick.

Doors shall be internally reinforced with pairs of hat-shaped steel stiffeners joined together and running vertically full height of door 6 inches apart. Stiffeners shall be spot welded 4 inches on centers to both forces of doors and are welded to each other top and bottom.

5. DESIGN CRITERIA AND CONSTRUCTION (Cont'd)

Type D - Fire Door Assembly - Hinged (Cont'd) R3

.02 Doors (Cont'd)

All doors shall be internally reinforced with a 12 gage plate, both sides of the door, for application of surface applied door closers and holders.

Voids between stiffeners shall be filled with insulation.

There shall be no seams on the faces or edges of doors. Vertical edges of doors shall be continuously seam-welded using gas tungsten ARC-Process w/filler addition to the full height of the door. Mechanical joints or seams intermittently welded, on either the edge or face of door shall not be permitted. Weld marks on door face or edge shall not be permitted.

All doors shall be capped to retard moisture from penetrating the door.

.03 Hinges

Hinge reinforcements shall be minimum of 7 gauge (3/16 in.) 6 inches larger than the hinge and drilled and tapped at the factory. All reinforcements for strikes shall be a minimum of 14 gauge. All top hinge reinforcements shall be provided with back-up reinforcement.

.04 Coatings

Coatings shall be as indicated in Section 9 of the specification.

Frames

.01 Frames for all doors shall be manufactured of 16 gage CQ class/steel.

.02 All corners shall be arc-welded and ground smooth. Frames shall be constructed with steel bottom spreaders.

.03 Heads shall be reinforced for surface mounted closers, holders or brackets when & where required.

Reinforcing or cut outs where limit switches are required shall be applied.

.04 Hinges and strike reinforcements shall be 7 gauge minimum for all doors. All reinforcements for hinges and strikes shall have steel plaster guards. Top hinges shall be provided with additional back-up reinforcing.

5. DESIGN CRITERIA AND CONSTRUCTION (Cont'd)

.04 Coatings (Cont'd) R3

Frames (Cont'd)

.05 Pressure sensitive door silencers shall be applied as per manufacturer's specifications.

.06 Seller shall furnish the appropriate anchorage systems to suit the wall structure where door is to be set. Floor clips shall be applied at the bottom of all jambs for proper securing to floors where required.

.07 Heads of frames for double doors shall have a knock-out for dead bolting of the inactive leaf.

.08 Coatings, by Seller, shall be "Primer"only in accordance with para 9 of this specification.

Additional primer material will accompany the shipment to the field for touch-up purposes prior to the application of the finish coating.

.09 U.L. Labels. Where applicable, shall have such labels permanently affixed where visible after installation.

.10 Door and Frame Tag Number, assembly identification shall also be applied as per .09.

6. MATERIALS AND CONSTRUCTION

Type A, B and D Doors, Frames and "Transom" Panels (where required) - Seismically and Non-Seismically designed. R3

.01 Doors, Mullions, Frames and Transom Panels (panels to match door construction) shall be fabricated from prime cold-rolled steel sheets and be reinforced internally with vertical stiffeners. Door face sheets shall be spot welded to internal stiffeners and perimeter channels. All vertical edges shall be continuously welded, and then ground flush and smooth. Bullet Resistant doors and frames shall be fabricated from prime cold-rolled carbon steel sheets, commercial quality ASTM A366, a Zinc-coated (galvanized) hot-dipped steel sheets ASTM A525, or hot-rolled low carbon steel sheets, ASTM A569. All other doors, frames, and panels shall be fabricated from manufacturers standard commercial quality class 1 steel. R3 R3

6. MATERIALS AND CONSTRUCTION (Cont'd)

.01 (Cont'd)

	GAGES					
	Face Sheets	-	Backing Strips	-	Stiffeners	R3
Bullet Resistant	12	-	7		10	
All other doors including U.L. Label	16	-	16	-	22	
Transom Panels	16	-	To match door construction			
Frames all 16 gage						

.02 Where indicated on the drawings, stainless steel doors and accessories, such as door hinges, hinge pins, closers, locks, door knobs, strikes and all other hardware shall be fabricated from stainless steel sheets or plates conforming to ASTM A240 type 304 with no. 4 finish.

The door frames and saddles shall consist of A36 carbon steel lined with stainless steel sheets along all the exposed surfaces and seal welded. The inside reinforcement for the doors shall be A-36 steel and completely cladded with stainless steel plates. All vertical and horizontal edges shall be continuously seal welded. R5

.03 Wall anchors shall be porvided where required. Embedment plates shall be provided for seismically qualified doors.

.04 Hardware

Seller shall provide the locking device hardware in all door assemblies wherever possible prior to delivery on the site. Pressure doors and frames shall be prepared for mortise or surface mounted hardware as indicated on the project drawings with templates and other instructions submitted by the Hardware Manufacturer. Preparation for the hardware shall include 3/16 in. steel plate reinforcement, welded and ground smooth at all points. This shall be done at all keepers, hinges, or other required devices. R3

.05 Welding

All welding on pressure resistant doors shall be in conformance with the Structural Welding Code AWS D1.1 or AWS D1.3, as specified in Paragraph 16.0. All welds shall be visually examined per AWS D1.1 Paragraph 9.25. No undercut greater than ten (10) percent of the thickness of the steel which has the under cut shall be permitted. R3

6. MATERIALS AND CONSTRUCTION (Cont'd)

.06 Airtight Doors

Airtight doors, where required, will be designed, fabricated, and tested to meet or exceed the acceptable criteria of the Pressure Resistant Doors called out in Paragraph 5 of this specification. See Architectural door schedules. R3

.07 Concrete embedded anchor studs, if used for non-seismic doors shall be low carbon steel conforming to ASTM Specification A-108, Grades 1010 through 1020, either semi- or fully-killed. R3

.08 Gaskets, if used, shall conform to ASTM Specification D1056, Grade SCE-41, Neoprene. R3

7. ACCESS CONTROL HARDWARE

Electric Strikes:

.01 Electric Strike depth shall be adequate to accept the full throw of the latch bolt without binding. Electric Strikes shall be recessed into the door frames as indicated on the door schedules.

.02 Electric Strikes shall be capable of a 3/4 in. throw bolt minimum of continuous energization, and shall have internal adjustment capability.

Electric Strikes shall be capable of a minimum 100,000 operations within one year at 50°C and 90 percent humidity without failure.

.03 Electric Strikes shall have a built-in solenoid that will unlock the door when energized. The strikes shall also have a built-in switch to indicate the bolt position (engaged or not engaged). The switch contacts shall have the capability of being easily changed from normally open or closed to the opposite position by Purchaser. Electric Strikes shall be similar to Folger Adams 310-2 3/4 x AC Rating 120 VAC or DC Rating 125 VDC or approved alternate. R3 R5

Hinges shall be of extra heavy duty concealed ball bearing construction with non-removable pins.

.04 All access aisle-double doors where indicated on the drawings shall have flexible electrical connection N.FC310 as manufactured by "Folger Adams Company" or approved alternate on inactive door leaf. Control doors shall be provided with cover plates to protect latching and strike mechanism on the unsecured side of the portals.

.05 Seller shall provide lock sets as manufactured by "Best Lock Company" Catalog Number 21H7EW or approved alternate without cores or keys which shall be supplied by Purchaser. This lock shall be compatible with the "Folger Adams" locking device Catalog Number 310-2 3/4. R5

7. ACCESS CONTROL HARDWARE

Electric Strikes: (Cont'd)

.06 (Cont'd)

.06 All wiring shall be in accordance with "Electrical Attachment No.-1-CP&L Wiring Standard Rev 5" dated 7-21-76. R3

All access control double doors shall have a hollowed sleeve or 1/2 in. embedded conduit between the flexible connector and the Electric Strike to allow installation of strike wiring.

The inactive leaf of a double door shall be provided on the secure side with a key operated locking mechanism that will lock the door into the upper door frame and the floor. A bolt position switch shall be provided. If two independent locks (upper and lower) are used, each shall have a bolt position indication. Although separately tamper resistant, these switches may give a single alarm indication. This indication must be independent of the active leaf lock position indication. All electrical monitoring contacts provided by Seller must be capable of accepting "End-Of-Line" supervision. All control doors must be capable of accepting door position switches provided by Purchaser.

Limit Switches:

.01 "Alarmed Only and Locked" (AOL) doors and "Internal Operation Only" (IO) doors shall be provided with limit switches as manufactured by Folger Adam Company, Catalog No. ASSW 104A or approved alternate. R5

8. SHOP DRAWINGS

Six (6) sets of shop drawings shall be submitted to Purchaser by Seller for their review and approval prior to the commencement of the work. See Paragraph 3.

9. COATINGS:

Surface Preparation

.01 Cleaning

All carbon steel surfaces to be coated shall be cleaned in accordance with SSPC-SP6 "Commercial Blast Cleaning". The anchor pattern shall be 1-2 mils as measured with a "Keane-Tator" surface profile comparator or an approved alternate.

.02 Base Coat

Apply one coat of "Nutec-6 Epoxy Steel Primer" (Imperial Professional Coatings) to a dry film thickness of three (3) mils minimum to five (5) mils maximum.

.03 Finish Coat

Apply one coat of "Reactic 1201" (Imperial Professional Coatings) to a dry film thickness of five (5) mils minimum to a seven (7) mils maximum. All coating work shall be applied in accordance with SSPC-PA1 - Shop, Field, and Maintenance Painting," and the Manufacturer's written instructions.

10. ASSEMBLY AND ERECTION

To minimize field erection time and labor, all doors, door frames and hardware shall be shop assembled to the maximum extent possible.

.01 Seller shall provide complete erection instructions, diagrams showing location and number of each part or any other information which will be helpful for field erection of the doors and door frames.

11. MANUALS AND SPARE PARTS LIST

Seller shall provide a manual for operation and maintenance for special features which shall include a list of recommended spare parts and their prices. This manual shall be complete and shall include sufficient data concerning operating instructions, maintenance procedures, special test procedures and/or other instructions, pertinent to the specific equipment. In addition, it shall specify frequency of inspection and overhaul. Manuals shall be forwarded in the quantity, and distributed as specified in the Purchase Order.

12. SHOP INSPECTION

Material and workmanship shall be subjected to shop inspection by Purchaser to insure conformity with this specification and terms of the purchase order. No material shall be shipped without prior written consent of the Purchaser.

Acceptance of material by Purchaser for shipment does not relieve Seller from the responsibility that all material furnished shall be free from defects and complete in all respects for the purpose intended.

13. PACKAGING, SHIPPING, HANDLING AND STORAGE

Each door assembly and its components shall be properly packed and protected before shipment so that it will arrive on site without damage and with all surfaces clean. To prevent damage during shipment, Seller shall carefully pack and brace all components, within the crate container.

.01 All surfaces shall be adequately protected and covered to prevent damage and corrosion.

.02 Metal straps, fasteners or covers shall not be tack welded to any manufactured part.

.03 Container markings shall include the door frame and transom panel (if required) assembly identification tag number, building location number and purchase order number with any special storage/maintenance or handling instructions as required. See 13.04. R3

.04 Every door and component (hardware, etc.) for each door shall be clearly identified with proper nameplates indicating tag number, safety class, R3

13. PACKAGING, SHIPPING, HANDLING AND STORAGE (Cont'd)

.04 (Cont'd)

capacity and other pertinent information. These tags shall be permanently affixed to doors, frames and transom panels where required. R3

.05 Seller shall specify the requirements needed to ensure that the equipment to be furnished herein will be protected from any deterioration due to long term storage. Long-term storage if required, is defined as a period of greater than one (1) year and up to a limit of eight (8) years. The long-term storage/maintenance instructions should be included in the instruction manual or shipped separately with the equipment. Container markings shall include equipment identification and any special handling instructions, e.g., Fragile, Desiccant Inside, C.G., This Side Up, etc. Large and heavy shipping units shall have suitable skids for moving or provisions for lifting with slings. R3 R2

.06 An ample quantity of primer coating material for touch-up after field erection shall be shipped with the unit. R3

.07 All material arriving on-site in an obviously damaged condition may after Purchaser's investigation be refused and be replaced at Seller's expense. Should such damage be repairable on site, Seller be responsible to correct such damage and Purchaser shall then reinvestigate for acceptance.

.08 All openings shall be properly closed to prevent entrance of foreign matter.

.09 Doors shall be shipped with proper tag numbers indicating Purchase Order No., Building Name, Unit No. , etc., per Purchaser Release for Shipment Instructions. R3

14. DESIGN LOAD AND LOAD COMBINATIONS

Loading for Seismically Designed Doors

.01 Doors, hardware, frames and supports shall be designed to withstand three orthogonal components of earthquake (two horizontal and one vertical) acting simultaneously. The applicable static coefficients are given in Table 1. R3

Table 1. Seismic Criteria

	DBE Seismic Coefficients (g)	
	Horizontal	Vertical
East West and North South	5.9	3.2

14. DESIGN LOAD AND LOAD COMBINATIONS (Cont'd)

Loading for Seismically Designed Doors (Cont'd)

.02 All pressure and seismically designed doors must remain closed during and after an earthquake occurrence. All control room perimeter doors are designed with an allowable 2 cfm maximum leakage, at a positive pressure of 1/8 inch water gauge within the control room. R3

.03 The earthquake loads and stresses in the equipment and supports shall be obtained by multiplying the weight of the components by the specified seismic coefficients. The resulting forces are to be assumed acting at or near the mass center of the components. The horizontal seismic coefficients are assumed to act in any two perpendicular directions of a horizontal plane, and the vertical coefficient shall be considered acting simultaneously with the horizontal in either upward or downward direction, whichever produces the worst loading combination.

.04 The maximum structural responses due to each of the three components of earthquake motion should be combined by taking the square root of the sum of squares (SRSS) of the maximum values of response caused by each of the three components of earthquake motion at a particular point of the structure of the mathematical model. The SRSS load response in each direction shall be added directly to the response for each direction resulting from other loads.

.05 The maximum stresses resulting from earthquake loads in combination with all other applicable loads shall be less than the allowable stresses given below.

The following load combinations and allowable stress shall be considered in the design of the seismic doors:

Load Combination	Allowable Stress	
D	S	R2
D + DBE	1.6S	R2 R3

Where D = Dead Weight plus pressure and other Applicable Loads.
DBE = Design Basis Earthquake
S = AISC Working Stress

.06 Vendor shall supply Purchaser with maximum loads and moments for each load combination at door support points for Purchaser design of door mounting. R3

.07 Vendor shall certify that the actual stresses are less than the allowable stresses and that the functional requirements of Sect. 14.02 are met. Submission of Seller's calculations for the seismically designed equipment is required.

14. DESIGN LOAD AND LOAD COMBINATIONS (Cont'd)

Loading for Seismically Designed Doors (Cont'd)

.07 (Cont'd)

Design of the door frames and anchorage shall be such that the loads transferred to the reinforced concrete walls shall not exceed the strength of 4000 psi concrete as stated in the ACI 318 "Building Code Requirements for Reinforced Concrete."

15. FABRICATION R3

The doors and door frames shall be detailed and fabricated in accordance with the AISC "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings."

Shearing of structural steel shall be accurate and cuts shall be clean without drawn, ragged or split edges. All copes, blocks and other reentrant cuts shall have 1/2 in. minimum radius fillet.

All steel shall have the sharp edges rounded. R3

All curved plates shall be formed to the proper shape by pressure and not by blows.

Field welding shall be kept to a minimum. R3

Door frames shall be secured to embedment plates set in the concrete walls. Frame corners shall be mitered and welded.

Each door shall be provided with a threshold which shall extend from jamb face to jamb face.

All personnel doors shall be equipped with suitable door closers. See door schedule drawings.

All airtight doors shall be equipped with perimeter gaskets at head, jambs and threshold.

16. WELDING OF DOORS R3

All welding of doors including bullet resistant doors shall conform with the AISC Specification and AWS D1.1 as supplemented by the requirements of this specification. For the welding of material less than 1/8 inch in thickness, welding details, qualifications, workmanship and technique shall conform with the requirements of AWS D1.3 as supplemented by the requirements of this specification. R2 R3

16. WELDING OF DOORS (Cont'd) R3

Welding electrodes shall be AWS A5.1, low-hydrogen Class E70 for manual shielded metal arc welding, or A5.18 E70S-X Specification for Carbon Steel Filler Metals for Gas Shielded Arc Welding unless otherwise specified on the drawings. Where other than Carbon Steel is specified, electrode selection shall be subject to approval by Purchaser. Cored wire designed for operation without the use of externally supplied shielding gas is disallowed. The edges or surfaces of the parts to be joined by welding shall be machined or thermal cut and shall be cleaned of all oil, grease, scale, and rust. Where thermal cutting, or arc gouging is done, all loose scale must be removed. Remaining kerf material (that fused during the cutting process) and cut surface depressions must be removed by grinding or chipping. R3

Fillet welds shall be full size and of proper profile for the full length. Butt welds shall be full penetration welds. Care shall be taken in assembling and fitting, and welding shall be controlled to minimize shrinkage stresses and distortion. All finished work shall be of good quality and have a neat appearance without warpage.

17. QUALITY ASSURANCE REQUIREMENTS FOR FIRE AND SEISMICALLY DESIGNED DOORS R3 R2

.01 This section includes the quality assurance requirements applicable to both seismically designed doors and to doors which form a part of the Fire Protection System.

(1) Seller shall provide and maintain an Inspection/Quality Control system which will assure that all items submitted to Purchaser for acceptance conform to contact requirements whether manufactured or processed by Seller or procured from subcontractors.

(2) The Seller shall perform or have performed the inspections and tests required to substantiate product conformance to drawing, specification, and contract requirements and shall also perform or have performed all inspections and tests otherwise required by the contract.

(3) Seller's Inspection/Quality Control System shall be documented and shall be submitted to Purchaser for review prior to award of contract and be available for review throughout the life of the contract.

(4) Purchaser at his option may furnish written notice of the acceptability or nonacceptability of the Inspection/Quality Control System.

17. QUALITY ASSURANCE REQUIREMENTS FOR FIRE AND SEISMICALLY DESIGNED DOORS (Cont'd) R2

.01 (Cont'd)

(5) Seller shall notify Purchaser in writing of any major change to his Inspection/Quality Control System. The Inspection/Quality Control System shall be subject to disapproval if changes thereto would result in a nonconforming product.

If Seller's present documented program has been currently approved by Purchaser and he proposes to use that program for the fabrication of subject components, Seller may so indicate this with the bid submittal in lieu of resubmitting his manual.

OR

If Seller is providing a component which is Underwriters Laboratories Inc, listed and/or accepted by NML - Nuclear Mutual Limited, Seller does not have to provide Purchaser with a documented QA program. In this case Seller shall notify Purchaser accordingly. These components shall also be so labeled. R3

.02 Seller shall also submit to Purchaser, as applicable, three (3) copies of the following documents for review and comments, prior to start of any fabrication:

a - Welding procedures including weld repair procedures and procedure qualification test reports. R3

b - Visual Examination Procedure

c - Performance Test Procedure

d - Final Cleaning Procedure

.03 The following records, as applicable, shall be forwarded to the Site with the components or partial shipment thereof.

a - Certified material test reports are required for all ASME/ASTM pressure-retaining parts. In cases where certified test reports are unobtainable, manufacturer's Certificate of Compliance indicating that the material conforms to the requirements of ASME/ASTM specifications may be accepted.

b - Data and/or test reports prepared in conjunction with the required inspections and test specified in this specification, including the results of all NDT examinations, and records of all repairs

17. QUALITY ASSURANCE REQUIREMENTS FOR FIRE AND SEISMICALLY DESIGNED DOORS (Cont'd) R2

.03 (Cont'd)

b - (Cont'd)

carried out in accordance with ASME/ASTM material specification requirements and the results of all performance.

.04 No departures shall be made from this specification or from accepted standards, unless these exceptions are defined by Seller to Purchaser in writing and approved by Purchaser in writing.

Seller shall report any nonconformances using his form or the Nonconformance Report form available from Ebasco QA Engineering, NY Office or from Ebasco Vendor QA Representative assigned to Seller's facility.

.05 Purchaser, Owner and the NRC shall have free access at all times to the shop where material is being fabricated or tested and Seller shall provide Purchaser with reasonable facilities for inspection, witnessing tests and examining records. Seller shall give Purchaser adequate notice (minimum five (5) working days) prior to the performance of those operations Purchaser desires to witness.

.06 Release for Shipment -

A) Fire Protection System Doors - Seller is to forward a signed copy of the "Release for Shipment" form, which will be provided to him by Ebasco's Vendor Quality Assurance Representative with the equipment or any partial shipment thereof. R3

B) Seismically Designed Doors - The Ebasco "Release for Shipment" form is required. R2

Seller shall forward a certificate of compliance with the equipment or any partial shipment thereof, stating that specification requirements have been met. R3

C) Non-Fire, Non-Seismically-Designed Doors - The Ebasco "Release for Shipment" form is not required. (Type A/NSD).

Revision No. 1 - April 11, 1973
Revision No. 2 - May 2, 1973
Revision No. 3 - Jan. 30, 1974
Revision No. 4 - Sept. 20, 1974
Revision No. 5 - July 21, 1976

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
WIRING STANDARDS

The following wiring standards list the wiring, wiring designation, and termination requirements for the equipment covered by the specification to which this is attached and forms a part of. When the requirements of the specification and this document conflict, those listed in this document shall govern. Any conflict between this document and Seller's standard practices shall be specifically stated in proposal for written resolution. R2

I. WIRING DESIGNATIONS

1. Phase conductors in the a-c power distribution system shall be designated by letters A-B-C.

2. Power conductors in the DC power distribution system shall be designated by the symbols P-N/P-N or P-N.

3. Physical location of bus phase conductors in switchgear, motor control center, and panel board assemblies shall be A-B-C reading left to right, top to bottom, or front to rear when viewed from the front of the assembly.

4. Relays, instruments, auxiliary equipment (such as fuses), and wiring on terminal blocks shall be arranged in order of A-B-C-G or P-N/P-N reading left to right, top to bottom, or front to rear when viewing the front of the devices.

5. Relays and instruments shall be connected in accordance with a system phase sequence of A-B-C, counterclockwise.

6. Elementary diagrams shall show relays, instruments, current transformers, and potential transformers secondary wiring arranged A-B-C-G top to bottom or left to right.

7. Wiring that is electrically equivalent but physically different from approved physical wiring diagrams will not be accepted.

II. WIRE SIZES

1. Preferred Wire Size - Shall be as stated below and shall be used for all applications, except when unobtainable or impractical to apply.

2. Minimum Wire Size - Shall be as stated below and may be used in lieu of the preferred wire size when the preferred wire size is unobtainable or impractical to apply.

3. Preferred and Minimum Wire Sizes - Wire sizes No. 8 and larger shall be Class B stranding. Sizes No. 9 and smaller shall be Class C stranding (minimum of 19 strands). Wiring connections between fixed and hinged sections of panels shall be minimum 61 strand, flexible wire.

a. Wire sizes and equipment wiring shall be as follows:

(*) Indicates preferred size is dictated by circuit requirement.

Wire Size		
Preferred	Minimum	Use
(*)	#10 Awg	Power Circuits - A-C and D-C
#10 Awg	#12 Awg	A-C Current (CT) Circuits; High Current D-C Control Circuits
#12 Awg	#14 Awg	A-C Potential (PT) Circuits; A-C and D-C Control Circuits
#14 Awg	#16 Awg	Phone Jacks, Low Power Devices and ACB Removable Element Wiring

III. CONDUCTOR TERMINATION STANDARDS

1. Terminal blocks for terminating wires shall be heavy duty industrial strap screw type, furnished with a silicon-bronze split type, lock washer under each terminal. General Electric Company Type EB-5 or equivalent shall be used for wires smaller than #8 Awg. General Electric Company Type EB-1 or equivalent shall be used for wires #8 Awg and larger. R3

2. Terminal blocks with self-contained pressure type connectors are not acceptable.

3. Short circuiting type terminal blocks shall be provided for terminating incoming current transformer leads. Two, four, or six circuits shall be provided for each set of current transformer leads. A minimum of three shorting screws shall be provided with each terminal block.

4. Terminal block shall be mounted a minimum of 12 inches above the floor.

5. A minimum of percent, but not less than 1 spare points shall be provided at each panel complete with terminal screws and split type Silicon-bronze lockwashers on each point. R3

6. Connections at relay and instrument studs shall include a silicon-bronze, split type lockwasher. R3

7. Conductors in sizes #26 Awg up through and including #2 Awg shall be terminated with crimp type, full ring (or rectangular) tongue terminals having conductor insulation gripping, nylon or "Kynar" insulating sleeves. Spade type conductor terminals are not allowed.
   a. For conductor sizes #26 Awg through and including #10 Awg, use terminals similar to AMP, "Pre-Insulated Diamond Grip", type PIDG. For Class IE equipment applications, AMP Radiation Resistant PIDG terminals with "Kynar" insulating sleeves shall be used.
   b. For conductor sizes #8 through and including #2 Awg, use terminals similar to Burndy, "Insulug," type YAEV. For Class IE equipment applications, AMP Radiation Resistant PIDG terminals with "Kynar" insulating sleeves shall be used. R4

8. Conductors in sizes larger than #2 Awg shall be terminated with two hole, long barrel, double indent crimp type lugs, such as Burndy, "Hylug," type YA. (Single hole lugs may be used only where necessary.)

9. Bare ground system conductors located above ground or otherwise exposed, those located inside equipment assemblies (i.e., switchgear, MCC, etc.), and motor conduit boxes shall be connected together or terminated with Burndy bolted, clamp type, grounding connectors, having a minimum of 2 holes per lug. (Single hole lugs may be used only where necessary.)

10. No single conductor cable shall be used for interconnections between individual pieces of equipment.

11. Current and potential transformer leads shall be grounded at one point only, which shall be at the terminal board where the leads first enter the switchboard, except PVD bus differential current leads which will be grounded at yard common junction point.

12. Red jumper wire on external connection at switchboard terminal blocks shall be used to connect ground points.

13. There shall be no more than two wires or one wire and one jumper strap terminated on any relay stud or device connection point.

14. All ground wires shall be wired to the ground bus and terminated independently.

15. Grommets sha' be provided for all openings metal barriers used for wiring.

16. No uninsulated, exposed conductor or terminal lug shall extend beyond the sides of the terminal block or its insulating barriers.

17. Fuse blocks shall be heavy duty phenolic with molded barriers and screw connections for ring type terminals.

18. Pull out block type fuses are not acceptable.

19. Auxiliary relays which perform either a trip or close, start or stop function shall not be mounted on a hinged panel or door.

20. Auxiliary relays shall have dust covers.

21. All wires crossing a panel shipping split shall be terminated on terminal blocks on each side of the crossover and adjacent to it.

22. All alarm contacts and spare contacts of lockout type tripping relays shall be wired to terminal blocks.

23. If possible, 480 volt equipment such as terminal blocks, breakers, and relays should be located separate from CT terminals, and 120 volt AC or 125 volt DC equipment. Barriers for 480 volt terminals and exposed live parts are desired. R1

24. All taps of multi-ratio current transformers (hot spot CT's excepted) must be wired to terminal blocks in the control cabinet. If junction boxes are required in wiring between CT and control cabinet, terminal blocks should be used for wiring connections. R1

25. If accidental short circuiting of certain wires can result in malfunction of equipment, such as closing or tripping of a breaker, these wires shall not be terminated on adjacent terminal board points. R2

IV COMPLIANCE WITH IEEE 384-1974 AND NRC REGULATORY GUIDE 1.75 REV 1 - R5

Equipment designated as Class IE shall comply with the requirements of IEEE 384-1974, "IEEE Trial-Use Standard Criteria for Separation of Class IE Equipment and Circuits," as amended by NRC Regulatory Guide 1.75, Rev 1, "Physical Independence of Electric Systems." R4 R5
Specifically, but not limited to, the following paragraphs shall apply:

	Reference - IEEE 384-1974 paragraph - 5.6.2	R5

1. Internal Separation

IV COMPLIANCE WITH IEEE 384-1974 and NRC REGULATORY GUIDE 1.75 REV 1 (Cont'd) RS

	Reference - IEEE 384-1974 paragraph -	R4 RS
2. Internal Wiring Identification	5.6.3	
3. Common Terminations	5.6.4	
4. Non-Class IE Wiring	5.6.5	
5. Cable Entrance	5.6.6	

To meet the above referenced paragraphs of IEEE 384-1974, Purchaser will advise Seller prior to fabrication of Sellers' equipment which cables comprise part of redundant Class IE systems and/or Non-Class IE systems. RS

V SPECIAL TESTS AND REQUIREMENTS

For Class IE service, seller's wiring shall be in accordance with IEEE-383 (1974) IEEE Standard for Type Test of Class IE electric cables, field splices and connections for Nuclear Power Generating Stations. RS
The flame test shall be performed with the ribbon-type gas burner (rated 7000 btu/hr/inch or 70,000 Btu/hr for its total width).

For Non-Class IE service, seller's wiring must, as a minimum, pass the flame test as described above.

Insulating material containing polyvinyl chloride or neoprene shall not be used in any cables.

ENCLOSURE 4

Shearon Harris Nuclear Power Plant
Draft SER Open Item No. 350
Supplemental Information

In the meetings with the NRC Fire Protection reviewer (R. Eberle), the NRC stated that we should describe how we have addressed the items discussed in Inspection and Enforcement Notice 83-41, "Actuation of Fire Supprression System Causing Inoperability of Safety-Related Equipment."

RESPONSE:

IEN 83-41 listed several licensee event reports (LERs) on fires at nuclear facilities. The LERs which describe events which directly affected safety-related equipment are discussed below.

a. LERs - Oyster Creek 11-9-80 and 1-9-82, Dresden 3 11-30-81, Dresden 2 12-24-81, Trojan 7-26-81, Ginna 11-4-81.

All of these examples concern a situation where smoke detectors are used to actuate a water spray system. SHNPP does not use this method. The systems at SHNPP use a heat detector to open a valve to provide water to sprinkler heads but then a fusible link within the sprinkler head must melt to cause water to spray. This system prevents water damage from broken sprinkler heads and minimizes false actuation from electrical problems.

In addition to this design feature, reviews will be conducted of fire zones which contain redundant equipment required for safe shutdown and automatic water suppression. The reviews will utilize a checklist to survey equipment and determine if the normal seals, covers, or enclosures are installed. This protection will minimize the water damage to redundant components.

b. LERs - Farley 1 6-10-81 and 7-21-82

SHNPP does not utilize storage tanks for fire protection water.

c. LER - Surrey 2 5-28-81

SHNPP does not have a fire protection system piped directly into the diesel fuel storage tanks.

d. LER - Grand Gulf 1 7-14-82

SHNPP does not use total flooding systems within the power block. Total flooding systems, however, are used in the QA Record Vault and the PABX rooms which are in the Administration Building. The systems are not capable of repeated discharges and factory tests have shown that overpressurization does not occur.

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