



THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

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MURRAY R. EDELMAN

VICE PRESIDENT
NUCLEAR

January 4, 1984
PY-CEI/NRR-0034 L

Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Perry Nuclear Power Plant
Docket Nos. 50-440; 50-441
Equipment Qualification Questions

Dear Mr. Youngblood:

During a meeting on November 1, 1983, with the Equipment Qualification Branch (EQB) the NRC staff requested additional information on our response to the EQB questions in your letter dated March 23, 1983.

Enclosed is the additional information requested for questions 270.1a, 270.1c, and our response to question 270.8.

This letter and its attachments finalizer the responses to all questions from the March 23, 1983 letter.

Very truly yours,

Murray R. Edelman
Vice President
Nuclear Group

MRE:kay

Attachments

cc: Jay Silberg, Esq.
John Stefano
Max Gildner
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270.1. Based on the information contained in Section 3.11 of your FSAR we are unable to determine if all essential systems and components have been identified and included in your harsh environment qualification program. Provide the following additional information for our review:

- a. A comparison of the systems in Table 3.2-1 of the FSAR with the systems included in your October 25, 1982 master list. Justification should be provided for the exclusion of any safety-related systems (e.g., all components of the system are located in a mild environment, system is not required for accident mitigation, etc.) Identify the class 1E function(s) performed by each system.
- b. A list of the TMI Action Plan equipment which you have previously committed to qualifying by fuel load in the format provided in your October 25, 1982 letter for safety-related equipment.
- c. A list of safety-related equipment located in a harsh environment which has been exempted from qualification for harsh environmental conditions. Individual components in exempted systems need not be identified.
- d. A list of all essential equipment in a harsh environment (i.e., NUREG-0588, Appendix E, categories 2a & 2b) in the format of your October 25, 1982 letter. Certain equipment, such as terminal blocks, splices, and cable, are not currently included in the master list of equipment.

Response

The "October 25, 1982 master list" was a sort of all class IE equipment in the Equipment Qualification Review List (EQRL). The EQRL (see Section 3.11.3.1) is a continuously updated computerized data base for all safety-related electrical and active mechanical equipment (as defined in Section 3.11.1.1) in both harsh and mild environmental zones. The EQRL also provides a column label "EC" for equipment category. The EQRL legend pages provide exact definitions for equipment category per NUREG 0588, Appendix E as follows: paragraph 2a is A1, paragraph 2b is A2, paragraph 2c is A3 and paragraph 2d is A4.

- a. As stated in Section 3.11.1.1, Table 3.2-1 is the basis for the EQRL. Attached is a copy of Table 3.2-1 which has been modified to:
 - 1) demonstrate correlation to the EQRL, 2) identify the class IE function performed by each system, in terms of the six safety functions listed in Section 3.11.1.1 items a through f. Justification is provided for each line item of Table 3.2-1 which is not in the EQRL. A current copy of the EQRL sort titled "Safety-Related Equipment Identification and Environmental Qualification Summary" is attached to the letter transmitting these revised responses.
- b. TMI Action Plan (see Appendix 1A) has been reviewed and the following is a list of safety-related equipment which has been committed to be qualified prior to fuel load. The MPL Numbers are listed as in the EQRL sort submitted in a) above.

<u>App. 1A Item</u>	<u>Equipment Description</u>	<u>MPL Number</u>
II.B.1	Safety Relief Valves (existing equipment)	B21-F041A-G, K B21-F047B-D, F-H B21-F051A-D, G
II.B.2	All PNPP safety-related electrical and active mechanical equipment is qualified to radiation doses in accordance with Regulatory Guides 1.3 and 1.4.	

<u>App. 1A Item</u>	<u>Equipment Description</u>	<u>MPL Number</u>
II.D.1	Safety Relief Valves (existing equipment)	B21-F041A-G, K B21-F047B-D, F-H B21-F051A-D, C
II.D.3	SRV Position Indication	1B21-N410A thru V 1H22-P090
II.F.1	1. High Range Noble Gas Monitors	1D19-P300, 1D19-J300 1D19-P400, 1D19-J400 1D19-P500, 1D19-J500
	2. High Range Gamma Monitors	1D19-N100A,B, 1D19-J100 1D19-N200A,B, 1D19-J200
	3. Containment Pressure Monitors	1D23-N270A, B
	4. Suppression Pool Water Level Monitors	1G43-N090A, B
	5. Containment and Drywell Hydrogen Monitor	1H51-P022A, B
II.F.2	No additional instrumentation is required.	

- c. The EQRL, which is sorted on equipment category A3 (NUREG 0588, Appendix E, paragraph 2C), provides the scope of equipment in a harsh environment exempt from qualification for harsh environment. A copy is attached to the letter transmitting these revised responses. The basis for justification of these exemptions is discussed in attached revised Section 3.11.2.2.2 Qualification Analysis.
- d. The EQRL, which is sorted on equipment category A1 and A2 devices, provides the required list of NUREG 0588, Appendix E, category 2a and 2b devices. A copy is attached to the letter transmitting these revised responses. Equipment such as terminal blocks, splices, and cable are provided on a separate list which is also attached to the letter transmitting these revised responses.

- h. The expected inservice maintenance procedure and schedule. The qualified life will be expressed in the most purposeful terms for the particular application.

Justification is provided in the qualification documentation of the means used to estimate the qualified life.

3.11.2.2.1.7.9 Service Conditions

For the aging program, the following service conditions are used to determine the contributing factors for the equipment qualified life:

- a. Normal service conditions.
- b. Abnormal service conditions.

3.11.2.2.2 Qualification Analysis

Analyses are used for environmental qualification when such analyses can be shown to be conservative. In general, qualification by analysis is limited to simple constructions and used to supplement the type testing (discussed in Section 3.11.2.2.1). Such analyses, performed for full environmental qualification or to supplement the type testing, are justified in the test plan, test specification, or qualification report.

Class 1E or active equipment, classified as safety-related either by association or because it is in the primary pressure boundary and not required to function to mitigate the consequences of an accident, may be exempted from qualification for harsh environment conditions by analysis of the possible failure modes present when subject to that harsh environment. Each of the possible failure modes is identified and analyzed to determine if it has an effect on performance of the safety functions of other safety-related equipment. For pressure boundary equipment analyzed in this manner it will be necessary to qualify the pressure boundary function as discussed in Section 3.11.2.2.5.2.

3.11.2.2.3 Operating Experience

Operating experience, if available, serves as a basis for determining the qualified life of equipment (e.g., systems or elements, components, modules and other constituent parts of systems). IEEE Standard 323-1974 defines operating experience as an "accumulation of verifiable service data for conditions equivalent to those for which the equipment is to be qualified."

TABLE 3.2-1* (MODIFIED
FOR RESPONSE TO 270.1a) REV 1
EQUIPMENT CLASSIFICATION

Principal Component (1) (SYSTEM NO) / ^{Safety}Function ^{Safety}Class (2)

CORRELATION TO EQRL

I. Reactor System (B13) / a, c

- | | |
|---------------------------------------------------------------|-----|
| 1. Reactor vessel | 1 |
| 2. Reactor vessel support skirt | 1 |
| 3. Reactor vessel appurtances,
pressure retaining portions | 1 |
| 4. CRD housing supports | 2 |
| 5. Reactor internal structures,
engineered safety features | 2 |
| 6. Non-safety class reactor internals | NSC |
| 7. Control Rods | 2 |
| 8. Control rod drives } SEE SYSTEM "C11" | 2 |
| 9. Core support structure | 2 |
| 10. Fuel assemblies | 2 |

NOT INCLUDED - PASSIVE MECHANICAL

NON-SAFETY

NOT INCLUDED - PASSIVE MECHANICAL

II. Nuclear Boiler System (B21) / a, b, c, e, f

- | | |
|--------------------------------------------------------------------------|---|
| 1. Vessels, level instrumentation
condensing chambers | 1 |
| 2. Vessels, air accumulators | 2 |
| 3. Piping, relief valve discharge | 3 |
| 4. Piping, main steam, within
outermost isolation valve | 1 |
| 5. Piping, feedwater within outermost
isolation valve | 1 |
| 6. Pipe supports, main steam | 1 |
| 7. Pipe restraints, main steam | 2 |
| 8. Piping, main steam, between
isolation valve and M.O.
stop valve | 2 |

NOT INCLUDED - PASSIVE MECHANICAL

▲ one or more of the six safety functions as listed in para 3.11.1.1 items a thru f

a) EMERGENCY REACTOR SHUTDOWN	d) CONTAINMENT HEAT REMOVAL
b) CONTAINMENT ISOLATION	e) REACTOR HEAT REMOVAL
c) REACTOR CORE COOLING	f) PREVENTING SIGNIFICANT RELEASE OF RADIOACTIVE MATERIAL


TABLE 3.2-1* (Continued)
(MODIFIED FOR REPOSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM ID)	Safety Function Class	Safety (2)	CORRELATION TO EQRL
9. Piping, main steam between M.O. stop valve and turbine stop valve	NSC		NON - SAFETY
10. Piping connected to main steam between isolation valve and M.O. stop valve	2		<u>NOT INCLUDED - PASSIVE MECHANICAL</u>
11. Piping connected within outermost M.S. isolation valve	1		↓
12. Piping connected to M.S. between isolation valve and stop valve beyond its first isolation valve	NSC		NON - SAFETY
13. Safety Relief Valves	1		<u>INCLUDED</u>
14. Valves, main steam isolation valves	1		↓
15. Valves, other isolation within M.S. isolation valves	1		<u>INCLUDED - THOSE WITH ACTIVE OR I.E. FUNCTION</u>
16. Valves, M.O. stop valves	2		↓
17. Valves, other isolation between M.S. isolation valves and M.O. stop valves	2		↓
18. Valves, instrumentation in piping connected to M.S. between isolation valves and stop valves beyond their first isolation valve	NSC		NON - SAFETY
19. Mechanical modules with safety function	2		<u>INCLUDED</u>
20. Electrical modules with safety function	2		↓
21. Cable, with safety function	2		MATERIALS OF CONSTRUCTION LIST

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TABLE 3.2-1^{*} (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM N ²)	SAFETY FUNCTION	Safety Class (2)	CORRELATION TO EQRL
22. Piping, SRV position hydraulic sensing line up to first isolation valve		3	<u>NOT INCLUDED - PASSIVE MECHANICAL</u> 
23. Piping, SRV position hydraulic sensing line, from first isolation valve to pressure switch		2	
24. Valves, isolation SRV position hydraulic sensing line		3	
25. Valves, isolation SRV position hydraulic sensing line		2	

3-2-10-3

TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1)(SYSTEM NO)	SAFETY ▲ Safety (2) FUNCTION Class	CORRELATION TO EQRL
III. Recirculation System (B33) / NONE		
1. Piping	1	<u>NOT INCLUDED - PASSIVE MECHANICAL</u>
2. Pipe suspension, recirculation line	1	
3. Pipe restraints, recirculation line	2	↓
4. Pumps	1	
5. Valves	1	NON - SAFETY
6. Pump motors	NSC	
7. Electrical modules, with safety function	3	INCLUDED
8. Cable with safety function	2	
		MATERIALS OF CONSTRUCTION LIST
IV. CRD Hydraulic System (C11) / a, f		
1. Valves, isolation, water return line	1	<u>INCLUDED - THOSE WITH ACTIVE OR IE FUNCTION</u>
2. Valves, scram discharge volume lines	2	
3. Valves, insert and withdraw lines	2	↓
4. Valves, other	NSC	
5. Piping, water return line within isolation valves	1	NON - SAFETY
6. Piping, scram discharge volume lines	2	
7. Piping, insert and withdraw lines	2	<u>NOT - INCLUDED - PASSIVE MECHANICAL</u>
8. Piping, other	NSC	
9. Hydraulic control unit	2	NON - SAFETY
10. Electrical modules, with safety function	2	
11. Cable, with safety function	2	<u>INCLUDED</u>
		MATERIAL OF CONSTRUCTION LIST

TABLE 3.2-1^{*} (Continued)
(MODIFIED FOR RESPONSE TO 270-1a) REV 1

Principal Component ⁽¹⁾ (SYSTEM NR) / SAFETY [▲] Safety ⁽²⁾ FUNCTION Class	CORRELATION TO EQRL
V. Standby Liquid Control System (C41)/a,f	
1. Standby liquid control storage tank 2	NOT INCLUDED - PASSIVE MECHANICAL
2. Pump 2	<u>INCLUDED</u>
3. Pump Motor 2	↓
4. Valves, explosive and within 2	<u>INCLUDED - THOSE WITH ACTIVE OR IE FUNCTION</u>
5. Valves, isolation and Piping between 1	↓
6. Valves, beyond isolation valves 2	<u>NOT INCLUDED - PASSIVE MECHANICAL</u>
7. Piping, within isolation valves 1	↓
8. Piping, beyond isolation valves 2	INCLUDED
9. Electrical modules, with safety function 2	MATERIALS OF CONSTRUCTION LIST
10. Cable, with safety function 2	
VI. Neutron Monitoring System (C51)/a	
1. Piping, TIP 2	<u>NOT INCLUDED - PASSIVE MECHANICAL</u>
2. TIP subsystem 2	↓
3. Electrical modules, IRM and APRM 2	<u>INCLUDED</u>
4. Cable, IRM and APRM 2	MATERIALS OF CONSTRUCTION LIST
VII. Reactor Protection System (C71)/a	
1. Electrical modules 2	INCLUDED
2. Cable 2	MATERIALS OF CONSTRUCTION LIST

TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM USE) / SAFETY FUNCTION Class	Safety (2)	CORRELATION TO EQRL
VIII. Process Radiation Monitors (D17/D19) / a, b, f		
1. Electrical modules, main steam line and reactor building ventilation monitors	2	INCLUDED
2. Cable, main steam line and reactor building ventilation monitors	2	MATERIALS OF CONSTRUCTION LIST
3. Main steam line	2	INCLUDED
4. Containment vent exhaust	2	INCLUDED
5. Off-gas	NSC	NON-SAFETY
6. Carbon bed vault	NSC	↓
7. Steam packing exhauster	NSC	
IX. RHR System (E12) / a, b, c, d, e, f		
1. Heat exchangers, primary side	2	NOT INCLUDED - PASSIVE MECHANICAL
2. Heat exchangers, secondary side	3	↓
3. Piping, within outermost isolation valves	1	
4. Piping, beyond outermost isolation valves	2	↓
5. Pumps	2	
6. Pump motors	2	INCLUDED
7. Valves, isolation, LPCI line between	1	↓
8. Valves, isolation, other	2	

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1 a) REV 1

Principal Component (1)	(SYSTEM NO)	SAFETY FUNCTION	Safety (2) Class	CORRELATION TO EQRL
9.		Valves, beyond isolation valves	2	<u>INCLUDED - THOSE WITH ACTIVE OR IE FUNCTION</u> ↓
10.		Mechanical modules	2	
11.		Electrical modules, with safety function	2	INCLUDED MATERIALS OF CONSTRUCTION LIST
12.		Cable, with safety function	2	
13.		Suppression pool strainers	2	NOT INCLUDED - PASSIVE MECHANICAL

TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component ⁽¹⁾ (SYSTEM NO) / SAFETY ⁽²⁾ Safety Class
FUNCTION Class

CORRELATION TO EQRL

X. Low Pressure Core Spray (E21) / a, b, c, e, f

- | | |
|----------------------------------------------|---|
| 1. Piping, within outermost isolation valves | 1 |
| 2. Piping, beyond outermost isolation valves | 2 |
| 3. Pumps | 2 |
| 4. Pump motors | 2 |
| 5. Valves, isolation and piping between | 1 |
| 6. Valves, beyond outermost isolation valves | 2 |
| 7. Electrical modules with safety function | 2 |
| 8. Cable with safety function | 2 |

NOT INCLUDED - PASSIVE MECHANICAL

INCLUDED

(VALVES)

INCLUDED - THOSE WITH ACTIVE OR IE FUNCTION

INCLUDED
MATERIALS OF CONSTRUCTION LIST

00 XI. High Pressure Core Spray (E22) / a, b, c, e, f

- | | |
|--------------------------------------------------------------------------------------|-----|
| 1. Day Supply diesel tank | 3 |
| 2. Piping, within outermost isolation valve | 1 |
| 3. Piping, diesel service water | 3 |
| 4. Piping, return test line to condensate storage tank beyond second isolation valve | NSC |
| 5. Piping, beyond outermost isolation valve, other | 2 |
| 6. Pump, HPCS | 2 |
| 7. Pump motor HPCS | 2 |
| 8. Pump, diesel service water | 3 |
| 9. Valves, beyond diesel shutoff valves | 3 |
| 10. Valves, outer isolation and within | 1 |

NOT INCLUDED - PASSIVE MECHANICAL

INCLUDED

INCLUDED - THOSE WITH ACTIVE OR IE FUNCTION

TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM N°)	SAFETY FUNCTION	Safety (2) Class	CORRELATION TO EQRL
11. Valves, beyond isolation valves, motor operated		2	<div>↓</div> INCLUDED INCLUDED MATERIALS OF CONSTRUCTION LIST INCLUDED
12. Valves, diesel service water		3	
13. Valves, other		2	
14. Electrical modules, with safety function		2	
15. Electrical auxiliary equipment		3	
16. Cable with safety function		2	
17. Electrical Auxiliary equipment with safety function		2	
XII. RCIC System (ESI) a, b, c, e, f			
1. Piping, within outermost isolation valves		1	<div>NOT INCLUDED- PASSIVE MECHANICAL</div> <div>↓</div>
2. Piping, beyond outermost isolation valves		2	
3. Piping, return test line to condensate storage tank beyond second isolation valve and vacuum pump discharge line to containment isolation valves		NSC	NON-SAFETY
4. Pumps		2	INCLUDED
5. Valves, isolation and piping between		1	INCLUDED (VALVES)
6. Valves, return test line to condensate storage beyond second isolation valve and vacuum pump discharge line to containment isolation valves		NSC	NON-SAFETY

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM #)	SAFETY FUNCTION	Safety Class (2)	CORRELATION TO EQRL
7. Valves, other		2	INCLUDED - THOSE WITH ACTIVE OR IE FUNCTION
8. Turbine		2	INCLUDED
9. Electrical modules, with safety function		2	INCLUDED
10. Cable, with safety function		2	MATERIALS OF CONSTRUCTION LIST
XIII. Fuel Service Equipment (F11)	NONE		NOT INCLUDED - PASSIVE MECHANICAL
XIV. Reactor Vessel Service Equipment (F13)	NONE		
XV. In-Vessel Service Equipment (F14)	NONE		
1. Control rod grapple		2	
XVI. Refueling Equipment (F15)	NONE		
1. Refueling equipment assembly platform		2	
2. Refueling bellows		NSC	
3. Fuel transfer system			

3.2-1
10

TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM N°) / SAFETY FUNCTION Class	Safety (2)	CORRELATION TO EQRL
XVII. Storage Equipment (F16) / NONE		
1. Fuel Storage Racks	2	
2. Defective fuel storage container	3	<u>NOT INCLUDED - PASSIVE MECHANICAL</u>
		↓
XVIII. Radwaste System (G50/G61) / b, f		
1. Tanks	NSC	NON-SAFETY
2. Heat exchangers	NSC	NON-SAFETY
3. Piping		
a. Between containment isolation valves	2	NOT INCLUDED - PASSIVE MECHANICAL
b. All others	NSC	NON-SAFETY
4. Pumps	NSC	NON-SAFETY
5. Valves		
a. Containment isolation	2	INCLUDED
b. Discharge flow control	NSC	<u>NON-SAFETY</u>
c. All others	NSC	
6. Mechanical modules	NSC	↓

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Am. 10 (11-29-82)

TABLE 3.2-1^{*} (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component ⁽¹⁾ (SYSTEM NO.) / SAFETY FUNCTION	Safety Class ⁽²⁾	CORRELATION TO EQRL
XIX. Reactor Water Cleanup System (G33) / b,c		
1. Vessels: Filter/demineralizer	NSC	NON-SAFETY
2. Heat exchangers carrying reactor water	NSC	NON-SAFETY
3. Pump suction piping, to outermost isolation valve	1	<u>NOT INCLUDED - PASSIVE MECHANICAL</u>
4. Pump discharge piping, to RHR and blowdown	3	
5. Pumps	NSC	NON-SAFETY
6. Valves, isolation valves and piping between	1	INCLUDED (VALVES)
7. Valves, pump discharge to RHR and blowdown	3	INCLUDED - THOSE WITH ACTIVE OR IE FUNCTION
8. Filter/demineralizer	NSC	
9. Filter/demineralizer precoat subsystem	NSC	<u>NON-SAFETY</u>
10. Nonregenerative heat exchanger shell and interconnecting piping carrying closed cooling water	NSC	↓

3210-12

TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM No) / SAFETY Safety (2) FUNCTION Class		CORRELATION TO EQRL
XX. Fuel Pool Cooling and Cleanup System (G41) / b,d,f		
1. Surge tanks	3	<u>NOT INCLUDED - PASSIVE MECHANICAL</u> ↓ INCLUDES ISOLATION VALVES ONLY
2. Heat exchangers	3	
3. Piping	3	
4. Pumps	3	
5. Valves	3	
6. Filter Demineralizer System, Cask Pit Drain Subsystem, and Fuel Transfer Tube Subsystem		<u>NON-SAFETY</u> ↓ NOT INCLUDED - PASSIVE MECHANICAL NON-IE
a. Piping and valves	NSC	
b. Tanks	NSC	
c. Pumps	NSC	
d. Vessels (F/D)	NSC	
7. RHR Connection	3	
8. Pump motors	3	
XXI. Control Room Panels (H13) a,b,c,d,e,f		
1. Electrical modules, with safety function	2	<u>INCLUDES ALL IE PANELS</u> ↓
2. Cable, with safety function	2	
3. Safety Parameter Display Panel	NSC	

3.2-19

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1



Principal Component (1) (SYSTEM NO) / SAFETY FUNCTION	Safety Class (2)	CORRELATION TO EQRL
XXII. Local Panels and Racks (H22/H51) / a, b, c, d, e, f		
1. Electrical modules, with safety function	2	INCLUDED MATERIALS OF CONSTRUCTION LIST
2. Cable, with safety function	2	
XXIII. Offgas System (N64) / NONE		
1. Tanks	NSC	<u>NON-SAFETY</u> 
2. Heat exchangers	NSC	
3. Piping	NSC	
4. Pumps	NSC	
5. Valves, flow control	NSC	
6. Valves, other	NSC	
7. Mechanical Modules, with safety function	NSC	
8. Pressure Vessels	NSC	
XXIV. Main Steamline Isolation Valve Leakage Control System (E32) / b, f		
1. Piping and valves up to the first isolation valve of the inboard subsystem	1	<u>INCLUDED VALVES WITH ACTIVE OR IE FUNCTION</u> 
2. Piping and valves, other	2	
3. Blowers	2	

TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component ⁽¹⁾ (SYSTEM N ²) / SAFETY FUNCTION Class ⁽²⁾	CORRELATION TO EQRL
XXV. Emergency Service Water System (P45) / d, e, f	
1. Piping 3	NOT INCLUDED - PASSIVE MECHANICAL
2. Pumps 3	<u>INCLUDED</u>
3. Pump Motors 3	↓
4. Strainers 3	NOT INCLUDED - PASSIVE MECHANICAL
5. Valves 3	INCLUDED - THOSE WITH ACTIVE OR IE FUNCTION
6. Electrical Modules, with Safety Function 2	INCLUDED
7. Cable, with Safety Function 2	MATERIALS OF CONSTRUCTION LIST
XXVI. Emergency Closed Cooling Water System (P42) / d, e, f	
1. Piping 3	NOT INCLUDED - PASSIVE MECHANICAL
2. Pumps 3	<u>INCLUDED</u>
3. Pump Motors 3	↓
4. Valves 3	MATERIALS OF CONSTRUCTION LIST
5. Electric Modules, with Safety Function 2	NOT INCLUDED - PASSIVE MECHANICAL
6. Cable, with Safety Function 2	
7. Heat Exchangers 3	
XXVII. Plant Service and Cooling Water Systems (Plant Service Water, nuclear closed cooling & Turbine Building Closed Cooling) (P41, P43, P44) / b	
1. Piping and valves forming part of primary containment boundary 2	INCLUDES ISOLATION VALVES ONLY
2. Other equipment and piping NSC	NON-SAFETY

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM NO) / SAFETY FUNCTION Class	Safety (2)	CORRELATION TO EQRL
XXVIII. Instrument and Service Air Systems (PS1, PS2, PS7) / a, b		
1. Vessels, accumulators, supporting safety related systems	3	NOT INCLUDED - PASSIVE MECHANICAL
2. Piping and valves in lines between above accumulators and safety related systems	3	INCLUDES ISOLATION VALVES ONLY
3. Other equipment and piping	NSC	NON-SAFETY
XXIX. Diesel Generator Systems (R43, R44, R45, R46, R47, R48) / a, b, c, d, e, f		
1. Day tanks and fuel storage tank	3	NOT INCLUDED - PASSIVE MECHANICAL
2. Piping and valves, fuel oil system and diesel cooling water system	3	INCLUDES VALVES WITH ACTIVE OR IE FUNCTION
3. Pumps, fuel oil system and diesel service water system	3	INCLUDED
4. Pump motors, fuel oil system and diesel service water systems	3	INCLUDED
5. Diesel-generators	3	INCLUDED
6. Diesel-generators starting air system	3	NOT INCLUDED - PASSIVE MECHANICAL
7. Lube oil system	3	INCLUDED
8. Electrical modules with safety functions	2	INCLUDED
9. Cable, with safety functions	3	MATERIALS OF CONSTRUCTION LIST
10. Diesel generator combustion air intake, exhaust system intake and exhaust systems intake air filter, and valves.	3	NOT INCLUDED - PASSIVE MECHANICAL
11. Exhaust silencer and crankcase vent piping	NSC	NON-SAFETY
12. Jacket water cooling	3	INCLUDED

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM NR) / SAFETY FUNCTION	Safety (2) Class	CORRELATION TO EQRL
3. Piping and valves, other	NSC	<u>NON-SAFETY</u> ↓
4. Pressure Vessels	NSC	
5. Condensate & Feedwater Pumps	NSC	
6. All Other Pumps	NSC	
7. Tanks	NSC	
8. Other Components	NSC	
XXXI. Condensate Storage and Transfer System (P11) / NONE		
1. Condensate storage tank	NSC	<u>NON-SAFETY</u> ↓
2. Piping and valves	NSC	
3. Other components	NSC	
XXXII. Auxiliary a-c Power System / a, b, c, d, e, f		
1. 4160 V switch gear with safety functions (R22) 2		<u>INCLUDED</u> ↓
2. 480 V load centers with safety functions (R23) 2		
3. 460 V MCC'S with safety functions (R24) 2		MATERIALS OF CONSTRUCTION LIST
4. All cables with safety function (including underground cables, cable splices, connections and terminal blocks) (R31/R32) 2		
5. Conduit, cable tray and supports containing Class 1E cables (R33) 2		NOT INCLUDED - STRUCTURAL ONLY
6. Conduit, cable tray and supports containing non-1E cables in safety class structures where failure may damage other safety related items. (R33) NSC		
		NON-SAFETY

TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) / SYSTEM N°	SAFETY / FUNCTION Class	Safety (2)	CORRELATION TO EQRL
7. 4160/480 transformer with safety functions (R23)	2		INCLUDED WITH LOAD CENTERS ABOVE
8. Protective relays and control panels with safety functions (R22)	2		INCLUDED
9. a-c control power inverters with safety functions (R14)	2		INCLUDED
10. Containment electrical penetrations (R72)	2		INCLUDED
11. Fire stops	NSC		NON-SAFETY
12. All components with safety functions	2		INCLUDED
XXXIII. 125 Volt d-c Power System (R42)/a,b,c,d,e,f			
1. 125 V batteries, racks, chargers, distribution equipment with safety functions	2		INCLUDED
2. Cables with safety functions	2		MATERIALS OF CONSTRUCTION LIST
3. Conduit and cable tray and supports containing Class 1E cables	2		NOT INCLUDED - STRUCTURAL ONLY
4. Conduit and cable tray and supports containing non-1E cables in safety class structures where failure may damage other safety related items	NSC		NON-SAFETY
5. Protective relays and control panels with safety functions	2		INCLUDED
6. All components with safety functions	2		INCLUDED
XXXIV. Structures / PASSIVE			
1. Reactor Building Complex			
a. Drywell/interior structure	2		NOT INCLUDED - STRUCTURAL ONLY

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM NO.)	SAFETY FUNCTION	Safety (2) Class	CORRELATION TO EQRL
b. Containment vessel		2	NOT INCLUDED - STRUCTURAL ONLY
c. Shield Building		2	
2. Auxiliary Building		2	
3. Steam Tunnel Between Aux. Bldg. and Turbine Bldg.		NSC	
4. Fuel handling intermediate building		2	
5. Radwaste Building		3	
6. Turbine building		NSC	
7. Control building		3	
8. Diesel generator building		3	
9. Off-gas building		3	
10. Emergency Service Water Pump House		3	
11. Circulating and Service Water Pump House		NSC	
12. Intake structures and cooling water tunnels		3	
13. Discharge tunnel entrance structure and downshaft		NSC	
14. Discharge tunnel and diffuser nozzle		3	
15. Spent fuel pool and liner		2	
16. Seismic Category I fill		N/A	
17. Foundation for Seismic Category I electrical duct banks and manholes		2	

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component	(1) (SYSTEM NO)	SAFETY [▲] Safety (2) FUNCTION Class	CORRELATION TO EQRL
XXXV.	Heating, Cooling and Ventilation Systems		
1.	Annulus Exhaust Gas Treatment System Units (M15) / a, b, c, d, e, f		INCLUDED
	a. Filter housing	2	
	b. Fans and motors	2	INCLUDED
	c. Demisters	2	NOT INCLUDED - PASSIVE MECHANICAL
	d. Heaters, electric	2	INCLUDED
	e. Ductwork	2	NOT INCLUDED - PASSIVE MECHANICAL
	f. Dampers, fire control	NSC	NON-SAFETY
	g. Dampers, check	3	INCLUDED
2.	Drywell Cooling Units (M13) / NONE		NON-SAFETY
3.	Containment Vessel Cooling Units (M11) / NONE		
4.	Purge Supply Units (M14) / NONE		
5.	Purge Exhaust Units (M14) / NONE		
6.	Piping & Isolation Valves from Containment Vessel through outer Isolation Valves (M14) / a, b, f		INCLUDES - ISOLATION VALVES

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TABLE 3.2-1* (Continued)
 (MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) / SYSTEM N ^o / SAFETY & FUNCTION	Safety Class (2)	CORRELATION TO EQRL
7. (ECCS) Pump Rooms Cooling Units (M39)	3 /a,c,d,e	INCLUDED
8. Emergency Closed Cooling Pump Area Cooling Units (M28)	3 /a,c,d,e	INCLUDED
9. Radwaste Building Supply Units (M31)	NSC /NONE	NON-SAFETY

TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) SYSTEM No / SAFETY FUNCTION Class	Safety (2)	CORRELATION TO EQRL
10. Radwaste Building Exhaust Units / NONE	NSC	NON-SAFETY
11. Fuel Handling Building Supply Units		
a. Fans and motors (M40) / f	3	INCLUDED
b. Coils, heating	Other	INCLUDED
c. Prefilter	3	NOT INCLUDED - PASSIVE MECHANICAL
d. Ductwork & dampers	3	INCLUDES DAMPERS ONLY
e. Electrical modules with safety function	3	INCLUDED
f. Cable with safety function	3	MATERIALS OF CONSTRUCTION LIST
12. Fuel Handling Building Exhaust Units		
a. Fans and motors (M40) / f	3	INCLUDED
b. Coils, electric	3	INCLUDED
c. Prefilters	3	NOT INCLUDED - PASSIVE MECHANICAL
d. Hepa filters	3	
e. Adsorber unit	3	
f. Demister	3	
g. Charcoal filter housing	3	
h. Ductwork and dampers	3	INCLUDES DAMPER ONLY
i. Electrical modules with safety function	3	INCLUDED
j. Cable with safety function	3	MATERIALS OF CONSTRUCTION LIST
13. Auxiliary Building Supply Units (M38) / NONE	NSC	NON-SAFETY

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM No)	SAFETY FUNCTION	Safety (2) Class	CORRELATION TO EQRL
14. Auxiliary Building Exhaust Units (M38) NSC	/NONE		<u>NON-SAFETY</u>
15. Intermediate Building Supply Units (M33) NSC	/NONE		↓
16. Intermediate Building Exhaust Units (M33) NSC			
17. Diesel Generator Bldg. (M43) Ventilation Units	/a		
a. Fans and motors		3	INCLUDED
b. Ductwork and dampers		3	INCLUDES DAMPERS
c. Electrical modules with safety function		3	INCLUDED
d. Cable with safety function		3	MATERIALS OF CONSTRUCTION LIST
18. Emergency Service Water Pump House Ventilation Units (M32)/a,c,d,e			
a. Fans and motors		3	INCLUDED
b. Ductwork and dampers		3	INCLUDES DAMPERS
c. Electrical modules with safety function		3	INCLUDED
d. Cable with safety function		3	MATERIALS OF CONSTRUCTION LIST

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1)	SYSTEM No	SAFETY FUNCTION	Safety Class (2)	CORRELATION TO EQRL
19. Turbine Bldg. Cooling and Ventilation Units	(M35)	NONE	NSC	NON-SAFETY
20. Off-Gas Bldg. Exhaust Units	(M36)	F	3	INCLUDED
a. Fans and motors			3	INCLUDED
b. Coils, electric			3	INCLUDED
c. Prefilters			3	NOT INCLUDED - PASSIVE MECHANICAL
d. Hepa filters			3	
e. Adsorber unit			3	
f. Charcoal filter housing			3	↓
g. Ductwork and dampers			3	INCLUDES DAMPERS ONLY
h. Electrical modules with safety function			3	INCLUDED
i. Cable with safety function			3	MATERIALS OF CONSTRUCTION LIST
21. Turbine Building Power Complex Ventilation Units	(M42)	NONE	NSC	NON-SAFETY
22. Heater Bay Ventilation Units	(M41)	NONE	NSC	NON-SAFETY
23. Water Treatment Building Ventilation Units	(M37)	NONE	NSC	NON-SAFETY
24. Control Room Supply and Return Units	(M25)	a, b, c, d, e, f		
a. Fans and motors			3	INCLUDED
b. Coils			3	NOT INCLUDED - PASSIVE MECHANICAL
c. Filters			3	↓
d. Humidifiers			NSC	NON-SAFETY
e. Ductwork and dampers			3	INCLUDES DAMPERS ONLY
f. Heaters, electrical			3	INCLUDED
g. Electrical modules with safety function			3	↓
h. Cable with safety function			3	MATERIALS OF CONSTRUCTION LIST

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1)	SYSTEM NO / SAFETY FUNCTION	Safety Class (2)	CORRELATION TO EQRL
25. Control Room Emergency Recirculation units	(M26)/a,f		
a. Fans and motors		3	INCLUDED
b. Coils, electric		3	↓
c. Prefilters		3	NOT INCLUDED - PASSIVE MECHANICAL
d. Hepa filters		3	↓
e. Adsorber unit		3	INCLUDES DAMPERS ONLY
f. Demister		3	
g. Charcoal filter housing		3	INCLUDED
h. Ductwork and dampers		3	MATERIALS OF CONSTRUCTION LIST
i. Electrical modules with safety function		3	
j. Cable with safety function		3	
26. MCC, Switchgear and Misc. Elec. Equipment Areas Supply and Return Units	(M23)/a,b,c,d,e		
a. Fans and motors		3	INCLUDED
b. Coils, cooling		3	NOT INCLUDED - PASSIVE MECHANICAL
c. Filters		3	↓
d. Ductwork and dampers		3	INCLUDES DAMPERS ONLY
e. Heaters, electrical		3	INCLUDED
f. Electrical modules with safety function		3	↓
g. Cable with safety function		3	MATERIALS OF CONSTRUCTION LIST
27. Battery Room Exhaust Units	(M24)/a,b,c,d,e		
a. Fans and motors		3	INCLUDED
b. Ductwork and dampers		3	INCLUDES DAMPERS ONLY
c. Electrical modules with safety function		3	INCLUDED
d. Cable with safety function		3	MATERIALS OF CONSTRUCTION LIST

TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1)	SYSTEM NO	SAFETY FUNCTION	Safety Class (2)	CORRELATION TO EORL
28.		Controlled Access Area & Misc. Equipment Areas Supply, Return Units (M21)/NONE	NSC	NON-SAFETY

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TABLE 3.2-1^{*} (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM NO)	SAFETY FUNCTION Class	Safety (2)	CORRELATION TO EQRL
29. Controlled Access Area Exhaust Units (M21)/NONE	NSC		NON-SAFETY
30. Combustible Gas Control (M31)/b, f			
a. Compressors	2		INCLUDED
b. Valves	2		↓
c. Piping	2		NOT INCLUDED - PASSIVE MECHANICAL
d. Electrical modules, with safety function	2		INCLUDED
e. Cable, with safety function	2		MATERIALS OF CONSTRUCTION LIST
f. Backup Purge System	2		NOT INCLUDED - PASSIVE MECHANICAL
g. Hydrogen Analyzer	2		INCLUDED
h. Hydrogen Recombiners	2		INCLUDED
31. Control Complex Chillers (P47)/a, b, c, d, e			
a. Motors	3		INCLUDED
b. Heat exchangers	3		NOT INCLUDED - PASSIVE MECHANICAL
c. Piping	3		↓
d. Valves	3		INCLUDED
e. Electrical modules	3		↓
f. Cable with safety function	3		MATERIALS OF CONSTRUCTION LIST
32. Control Complex Chilled Water Pumps (P47)/a, b, c, d, e			
a. Motors	3		INCLUDED
b. Pumps	3		↓
c. Electrical modules	3		MATERIALS OF CONSTRUCTION LIST
d. Cable with safety function	3		

TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1)	SYSTEM (P)/SAFETY FUNCTION	Safety (2) Class	CORRELATION TO EQRL
33. Containment Vessel and Turbine Bldg. Chillers	(P50)/NONE	NSC	NON-SAFETY ↓
34. Containment Vessel and Turbine Bldg. Chiller Water Pumps	(P50)/NONE	NSC	
35. Containment Spray Piping and Nozzles	(E15)/PASSIVE		NOT INCLUDED - PASSIVE MECHANICAL
36. Drywell Vacuum Relief	(M16)/d	2	INCLUDED

XXXVI. Other Components /b

1. Containment Crane	3	NOT INCLUDED - STRUCTURAL ONLY ↓
2. Refueling Cask Crane	3	
3. Containment Isolation Valves and Piping Between for all Containment Penetrations not listed above	2	INCLUDED


TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) / SYSTEM NO. / SAFETY FUNCTION	Safety Class (2)	CORRELATION TO EQR
XXXVII. Suppression Pool Make-up System (G43)/a,e		
1. Valves	2	INCLUDED
2. Piping	2	NOT INCLUDED - PASSIVE MECHANICAL
3. Electrical modules, with safety function	2	INCLUDED
4. Cable, with safety function	2	MATERIALS OF CONSTRUCTION LIST
XXXVIII. Underdrain System / NONE		
1. Porous concrete	3	NOT INCLUDED - STRUCTURAL ONLY
2. Porous concrete pipe	NSC	NON-SAFETY
3. Pumps	NSC	↓
4. Pumped discharge piping	NSC	NOT INCLUDED - PASSIVE MECHANICAL
5. Gravity discharge piping	3	↓
6. Manholes	3	
XXXIX. Liquid System Radiation Monitors (D17)/NONE		
1. Emergency services water systems	NSC	NON-SAFETY
2. Nuclear closed cooling system	NSC	↓
3. Radwaste effluent to ESW	NSC	
4. Radwaste effluent to sewage radiation	NSC	
5. Underdrain system	NSC	↓

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) (SYSTEM ID)	SAFETY Safety (2) FUNCTION Class	CORRELATION TO EQRL
XL. Airborne and Atmospheric Radiation Monitors (D17) / NONE		
1. Radwaste bldg. vent exhaust	NSC	<div>NON-SAFETY</div> 
2. Aux. bldg. vent exhaust	NSC	
3. Intermediate bldg. vent exhaust	NSC	
4. Fuel handling area vent exhaust	NSC	
5. Off-gas bldg. vent exhaust	NSC	
6. Drywell atmospheric	NSC	
7. Containment atmospheric	NSC	
8. Solid waste drumming (portable)	NSC	
9. Refueling operation (portable)	NSC	
10. Heater bay atmospheric (portable)	NSC	
11. Turbine bldg. atmospheric (portable)	NSC	
12. Containment vessel (portable) and drywell purge exhaust	NSC	
13. Control room airborne	NSC	
14. Annulus exhaust trains A and B	NSC	

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) SYSTEM NO / SAFETY FUNCTION Class	Safety (2)	CORRELATION TO EQRL
XLI. Area Radiation Monitors (D21) / NONE		
1. Personnel air lock	NSC	<u>NON-SAFETY</u> 
2. CRD HCU west	NSC	
3. RWCU F/D rec. TK area	NSC	
4. TIP drive area	NSC	
5. RWCU F/D area	NSC	
6. Upper pool area	NSC	
7. Aux. bldg. El. 574' E	NSC	
8. Aux. bldg. El. 574' W	NSC	
9. Turbine room E	NSC	
10. CRD HCU east	NSC	
11. Turbine room W	NSC	
12. Turbine bldg. El. 605'	NSC	
13. Hotwell pump area	NSC	
14. Turbine bldg. sump area	NSC	
15. Off-gas bldg. El. 584'	NSC	
16. Condensate filter pump area	NSC	
17. Off-gas after-filter area	NSC	

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TABLE 3.2-1^{*} (Continued)
(MODIFIED FOR RESPONSE TO 270.1a) REV 1

Principal Component (1) SYSTEM NO / SAFETY Safety (2) FUNCTION Class	CORRELATION TO EQRL
18. HP feedwater heater area NSC	<u>NON-SAFETY</u> ↓
19. Feedpump area NSC	
20. Control room NSC	
21. Off-gas holdup area NSC	
XLII. Primary Containment Area Monitors (High Range) (D19) / NONE 2	INCLUDED
XLIII. Secondary Containment Area Monitors (High Range) (D19) / NONE 2	INCLUDED
XLIV. Airborne Effluents Released from Plant ($1.7 \times 10^{-3} \mu \text{Ci/cc}$ to $10^5 \mu \text{Ci/cc}$) (D17) / NONE	<u>INCLUDED</u> ↓
1. Plant main vent 2	
2. Off-gas vent 2	
3. Turbine bldg./heater bay vent 2	
XLV. Airborne Effluents Released from Plant ($10^{-6} \mu \text{Ci/cc}$ to $10^{-2} \mu \text{Ci/cc}$) (D17) / NONE	<u>NON-SAFETY</u> ↓
1. Plant main vent NSC	
2. Off-gas vent NSC	
3. Turbine bldg./heater bay vent NSC	

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TABLE 3.2-1* (Continued)
(MODIFIED FOR RESPONSE TO 270.1a)

Principal Component (1) (SYSTEM N ^o)	Safety (2) Class	CORRELATION TO EQRL
XLVI. Particulates and Halogens Collection (All identified release points) (D19) / NONE		
1. Plant main vent	NSC	NON-SAFETY ↓
2. Off-gas vent	NSC	
3. Turbine bldg heater bay	NSC	
XLVII. Portable Radiation Monitoring Equipment (N/A) / NONE		
1. Survey area monitors	NSC	
2. Airborne radiohalogen and particulates	NSC	
3. Plant and environs equipment	NSC	↓
4. Multi-channel gamma-ray spectrometer	NSC	
XLVIII. TSC and EOF Airborne and Area Monitors (D19) / NONE	NSC	
XLIX. Feedwater Leakage Control System (N27) / a, b, c, e, f		
1. Piping and valves of the inboard system	2	INCLUDED
2. Piping and valves of the outboard system	2	INCLUDED

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270.8 To demonstrate compliance with 10 CFR 50.49, the following information is required to be submitted before an operating license is granted.

- (a) In accordance with the scope defined in 10 CFR 50.49, provide
 - (1) a list of all nonsafety-related electrical equipment located in a harsh environment whose failure under postulated environmental conditions could prevent satisfactory accomplishment of safety functions by the safety-related equipment. A description of the methods used to identify this equipment must also be included. The nonsafety-related equipment identified must be included in the environmental qualification program.
 - (2) a statement that all safety-related electrical equipment in a harsh environment, as defined in the scope of 10 CFR 50.49, is included in the list of equipment identified in the October 25, 1982 submittal.
 - (3) a list of all Category 1 & 2 postaccident monitoring equipment currently installed, or that will be installed before plant operation, that is relied on to provide measurements and indications of the variables listed in Revision 2 of RG 1.97. The equipment identified must be included in the environmental qualification program.
- (b) Provide information demonstrating qualification of all electrical equipment located in a harsh environment, including all safety-related, nonsafety-related, and installed RG 1.97 equipment discussed above, or provide justifications for interim operation until November 30, 1985, pending completion of qualification, as required by 10 CFR 50.49. This qualification information or justification should be submitted to allow sufficient time for staff review and approval before issuance of an operating license.

Response

(a)(1) Using the methods outlined in NRC Memorandum from Vollmer and Mattson to Eisenhut, dated April 8, 1983, "Guidance for Licensees and License Applicants to demonstrate compliance with 10 CFR 50.49 'Environmental Qualification of Electrical Equipment Important to Safety for Nuclear Power Plants'" and Appendix A, "Typical Equipment or Systems Important to Safety," and Appendix B, "Typical Examples of Non-Safety-Related Equipment" and Regulatory Position C1 of proposed Revision 1 (May 1983) to Regulatory Guide 1.89, all electrical equipment located in a harsh environment whose failure under postulated environmental conditions could prevent satisfactory accomplishment of safety functions is classified as safety-related. Compliance with IEEE Standard 384-1974 as modified by Regulatory Guide 1.75 with the design alternatives noted in Table 8.1-2 assures both electrical and physical separation between redundant safety-related systems and non-safety-related systems so that failure of the non-safety-related equipment will not prevent satisfactory accomplishment of safety functions by the safety-related equipment. Non-safety-related (non-1E) devices in associated circuits as defined in Regulatory Guide 1.75 have either been qualified for the postulated environmental conditions or a failure modes and effects analysis (FMEA) has been done to demonstrate that all possible failure modes of the device will not prevent satisfactory accomplishment of safety functions by safety-related equipment. To further assure that failure of a non-safety-related control system will not result in consequences more severe than those analyzed in Chapter 15 a study was done to answer NRC questions on control systems failure (see letter PY-CEI/NRR-0022L, dated March 14, 1983).

(a)(2) All safety-related electrical equipment in a harsh environment, as defined in the scope of 10 CFR 50.49 is included in the EQRL report entitled "Safety-Related Equipment Identification and Environmental Qualification Summary" provided with the response to Question 270.1(a). (See Sections 3.11.1.1 and 3.11.3.1 for the commitment to provide the above scope of safety-related equipment in the referenced EQRL report.)

270.8 (Cont'd)

(a)(3) The EQRL report entitled "Safety-Related Equipment Identification and Environmental Qualification Summary" provided with the response to Question 270.1(a) includes the post-accident monitoring equipment required in Categories 1 and 2 of Revision 2 of Regulatory Guide 1.97 as listed in Table 7.1-4.

(b) Since as noted in the responses to (a)(1) through (3) above, the subject equipment is already included in the equipment qualification program, no additional information or justification is required.