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SUBJECT: Forwards revised response to Question 260.1. Info will be included in next FSAR amend.

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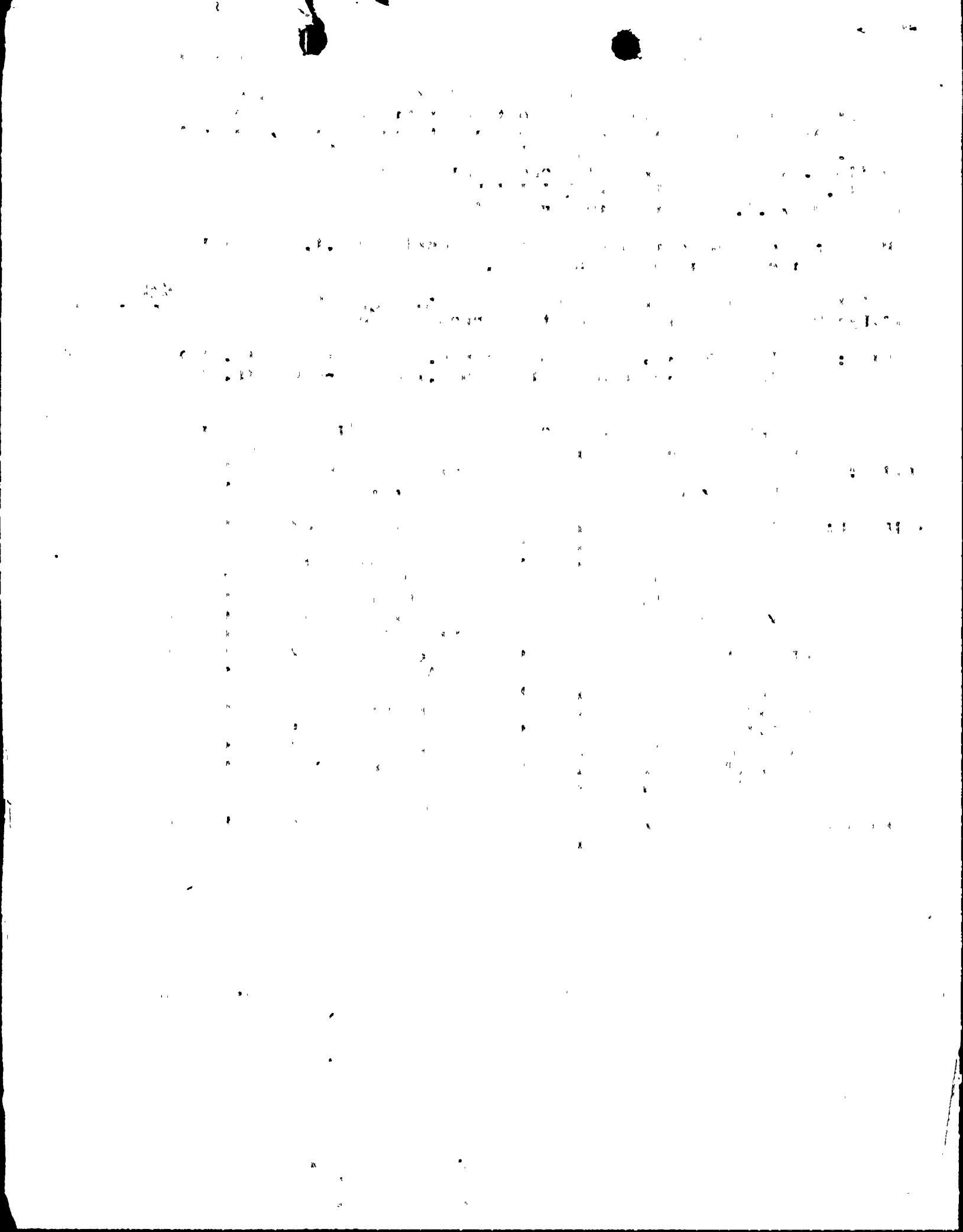
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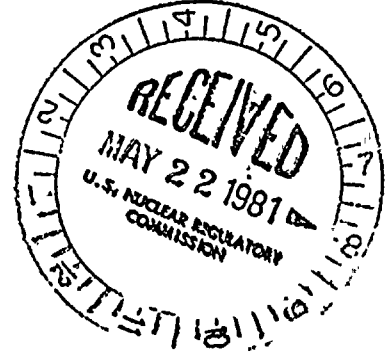


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May 19, 1981



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

SUSQUEHANNA STEAM ELECTRIC STATION
SER OUTSTANDING ISSUE #71
ER 100450 FILE 841-2
PLA-812

Docket Nos. 50-387
50-388

Dear Mr. Youngblood:

In reply to Susquehanna Safety Evaluation Report Outstanding Issue #71,
attached please find PL's revised response to Question 260.1. This information
will be included in the next FSAR amendment.

Very truly yours,

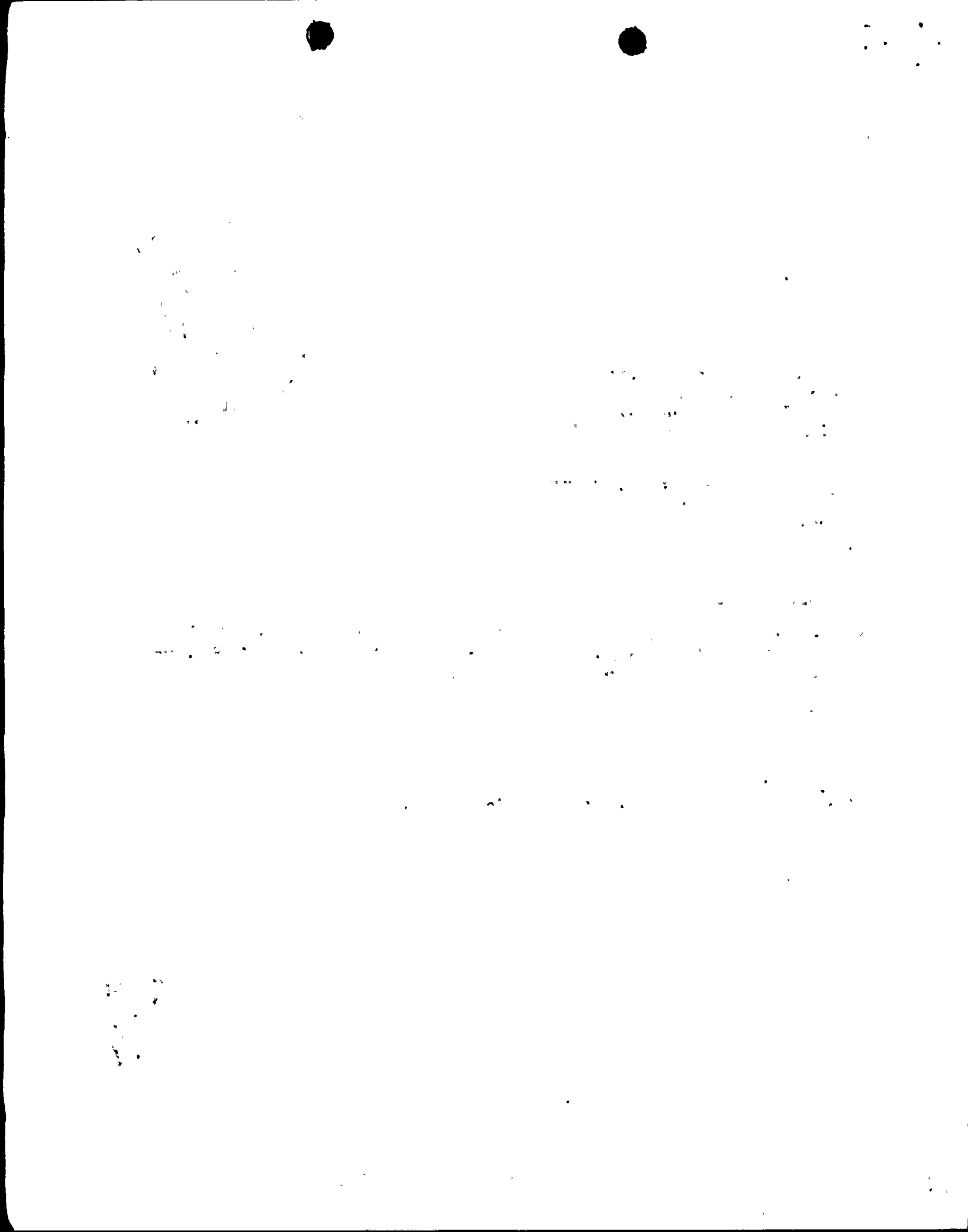
N. W. Curtis
Vice President-Engineering & Construction-Nuclear

TEG/mks

Attachment

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QUESTION 260.1:

Section 17.1.2.2 of the standard format (Regulatory Guide 1.70) requires the identification of safety-related structures, systems, and components (Q-list) controlled by the QA program. You are requested to supplement and clarify the Q-list in Table 3.2-1 of the FSAR in accordance with the following:

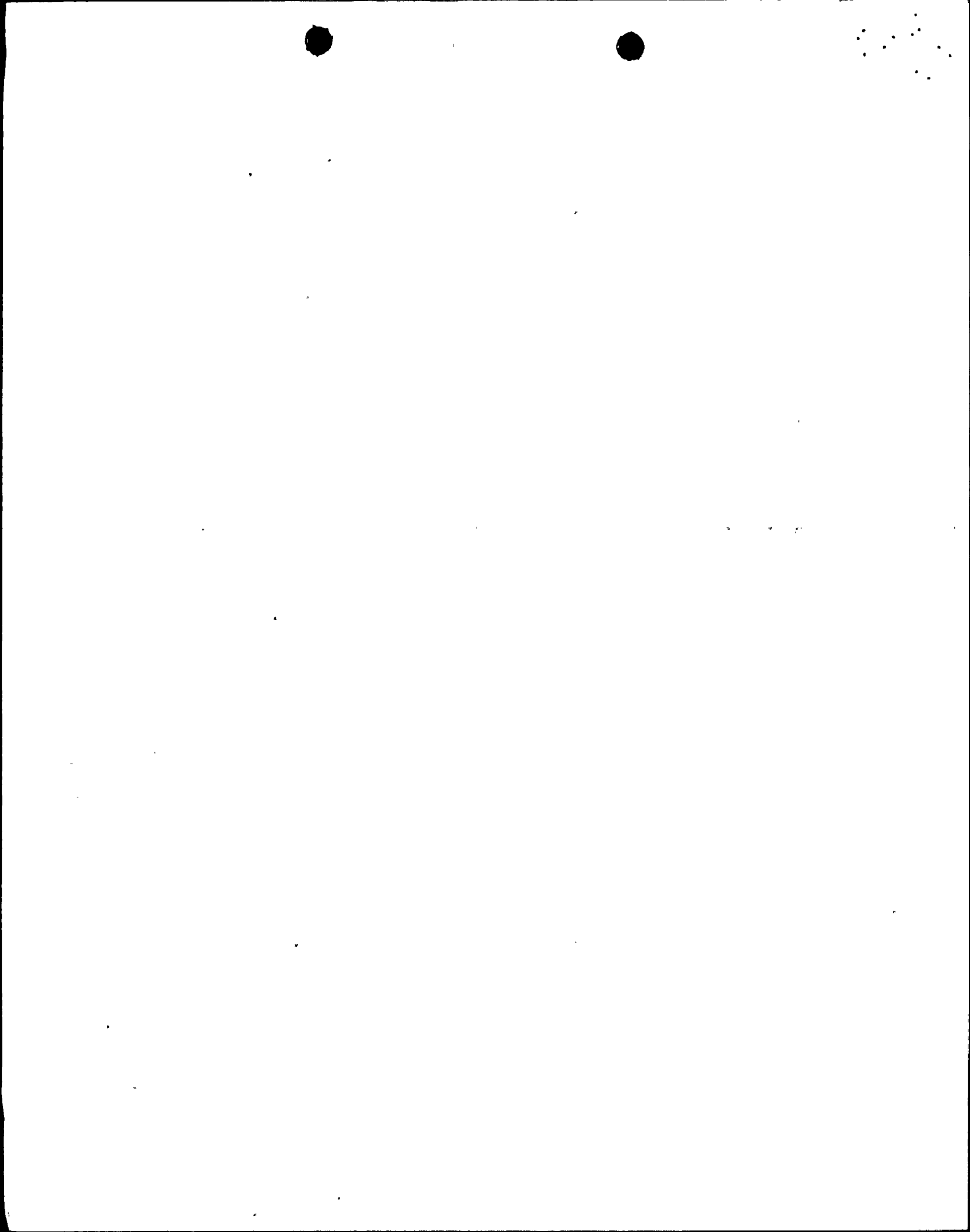
- a. The following items from the Q-list need expansion and/or clarification as noted. Revise the list as indicated or justify not doing so.
 - 1) Clarify that the Control Rod Drive System includes the scram accumulators.
 - 2) Clarify that discharge piping fill lines and jockey pumps are included in the HPCI, RCIC, RHR, and Core Spray Systems.
 - 3) Clarify that the Emergency Core Cooling and RCIC Systems include the mechanical vortex suppression devices.
 - 4) Identify the "equipment associated with a safety action" as regards the Leakage Detection System. For example, it is not clear that post-LOCA ECCS Leakage Detection Systems are included.
- b. The following items do not appear on the Q-list. Add the following items to the list or justify not doing so.
 - 1) ESSW Spray Pond Emergency Spillway.
 - 2) Site grading.
 - 3) Roof scuppers and parapet openings.
 - 4) Pressure resisting doors.
 - 5) Meteorological data collection programs.
 - 6) Refueling Interlock System.
 - 7) Rod worth minimizer.
 - 8) Primary Containment Vacuum Relief System - instrumentation and controls.
 - 9) Standby Gas Treatment System - instrumentation and controls.
 - 10) Missile barriers for safety related equipment.

- 11) Steam lines to the HPCI and RCIC turbines along with the associated valves and restraints.
- 12) Equipment and drain floor - piping and containment isolation valves.
- 13) Quencher and quencher support.
- 14) Downcomers and braces.
- 15) Primary Containment Purge System.
- 16) Primary Containment Ventilation System - piping and containment isolation valves.
- 17) Onsite Power Systems (Class 1E)
 - a) transformers
 - b) valve operators
 - c) protective relays and control panels
- 18) Engineered safety features DC equipment - protective relays and control panels.
- 19) Biological shielding within primary containment, reactor building, and control building.
- 20) Nuclear boiler system instrumentation piping beyond the outermost isolation valve.
- 21) Drywell cooling system piping and valves for coolers V-414A and B, V-415A and B, and V-416A and B.
- 22) Mainsteam system piping to turbine stop valves and branch line piping up to and including first valve.
- 23) Spent fuel pool liner.
- 24) Radiation monitoring (fixed and portable).
- 25) Radioactivity monitoring (fixed and portable).
- 26) Radioactivity sampling (air, surfaces, liquids).
- 27) Radioactive contamination measurement and analysis.
- 28) Personnel monitoring internal (e.g., whole body counter) and external (e.g., TLD system).
- 29) Instrument storage, calibration, and maintenance.
- 30) Decontamination (facilities, personnel, and equipment).

- 31) Respiratory protection, including testing.
 - 32) Contamination control.
 - 33) Feedwater spargers.
 - 34) Safety-related masonry walls (see IE Bulletin No. 80-11).
 - 35) Measuring and test equipment used for safety-related structures, systems, and components.
 - 36) Expendable and consumable items necessary for the functional performance of safety-related structures, systems, and components (i.e., weld rod, fuel oil, boric acid, snubber oil, etc.).
- c. Enclosure 2 of NUREG-0737, "Clarification of TMI Action Plan Requirements" (November 1980) identified numerous items that are safety-related and appropriate for OL application and therefore should be on the Q-list. These items are listed below. Add these items to the Q-list and/or indicate where on the Q-list they can be found. Otherwise justify not doing so.

NUREG-0737
 (Enclosure 2)
Clarification Item

- | | |
|--|------------|
| 1) Plant-safety-parameter display console. | I.D.2 |
| 2) Reactor coolant system vents. | II.B.1 |
| 3) Plant shielding. | II.B.2 |
| 4) Post accident sampling. | II.B.3 |
| 5) Valve position indication. | II.D.3 |
| 6) Dedicated hydrogen penetrations. | II.E.4.1 |
| 7) Containment isolation dependability. | II.E.4.2 |
| 8) Accident monitoring instrumentation. | II.F.1 |
| 9) Instrumentation for detection of inadequate core-cooling. | II.F.2 |
| 10) HPCI & RCIC initiation levels. | II.K.3(13) |
| 11) Isolation of HPCI and rCIC. | II.K.3(15) |



SSES-FSAR

- | | |
|---|-------------------|
| 12) Challenges to and failure of relief valves. | II.K.3(16) |
| 13) ADS actuation. | II.K.3(18) |
| 14) Restart of core spray and LPCI. | II.K.3(21) |
| 15) RCIC suction. | II.K.3(22) |
| 16) Space cooling for HPCI. & RCIC. | II.K.3(24) |
| 17) Power on pump seals. | II.K.3(25) |
| 18) Common reference level. | II.K.3(27) |
| 19) ADS valves, accumulators, and associated equipment and instrumentation. | II.K.3(28) |
| 20) Emergency plans. | III.A.1.1/III.A.2 |
| 21) Emergency support facilities. | III.A.1.2 |
| 22) Inplant I radiation monitoring. | III.D.3.3 |
| 23) Control-room habitability. | III.D.3.4 |

d. The instrumentation and control systems and components must be identified on the Q-list (FSAR Table 3.2-1) to the same scope and level of detail provided in Chapter 7 of the FSAR.

RESPONSE:

Introduction

Table 3.2-1 (SSES Design Criteria Summary) of the FSAR is intended to provide identification of safety-related structures, systems, and components as required by Section 17.1.2.2 of the standard format (Regulatory Guide 1.70). The "Q List" for Susquehanna SES is not a part of the FSAR. The "Q-List" is just one of a series of controlled QA program documents which serve to identify in expanded detail the quality classification of SSES items and related services in response to FSAR commitments. Quality Code Section III related, safety impact related, fire protection related, environmental monitoring related, etc. The SSES QA Manual and its implementing procedures prescribe the preparation and maintenance of these quality classification documents and defines the quality assurance controls that are to be applied to such items/services.

a-1 The scram accumulators are a part of the hydraulic control unit which is indicated as safety related in Table 3.2-1.

- a-2 The discharge piping fill lines for HPCI, RCIC, RHR and core spraysystems are included in Table 3.2-1 of the FSAR. These lines, between the main system piping and the condensate system outer isolation check valve, are included under the respective systems subsection's "Piping Beyond Outermost Containment Isolation Valves."

The line fill system adopted for SSES does not incorporate jockey pumps to perform the fill function. The fill function is performed by the condensate transfer system. See response to Question 211.211 and FSAR Section 6.3.

- a-3 The SSES Suppression Pool has no vortex suppression devices. Testing is conducted to assure that vortices do not adversely affect ECCS systems. The condensate storage tank supply line is provided with a vortex breaker; however, it is not safety related inasmuch as the tank is not safety related. See response to NRC Question 211.214 for testing information.

- a-4 See revised Note 39 to FSAR Table 3.2-1.

b-1 ESSW Spray Pond Emergency Spillway

The ESSW Spray Pond Emergency Spillway was installed as part of the spray pond concrete liner. The material used to construct the spillway (concrete and reinforcing steel) was controlled by the same quality requirements in effect for the concrete liner. Therefore, the listing on Table 3.2-1 for Spray Pond (Structures Page 26) applies to the ESSW Spray Pond Emergency Spillway as a safety-related structure.

- b-2 All Category I buildings have watertight doors. Therefore, site grading will not affect safety-related equipment and should not be considered a safety-related item (Reference FSAR Section 2.4.2.3). For this reason site grading will not be listed on Table 3.2-1; however, watertight doors are listed in the revised Table 3.2-1.

- b-3 Roof scuppers and openings are not part of the secondary containment structure for the Reactor Building. Overflow will not penetrate into doors (reference response to Question 260.1.b.2). The parapet openings are also a backup system for the primary drainage system on the roof. Roof loads as a result of scupper failure have been considered in the structural design of the buildings. Therefore, the scupper and parapet openings are not safety-related items and will not be listed in Table 3.2-1. A discussion of the design capacities of the roof drainage system is provided in FSAR Subsection 2.4.2.3.

- b-4 Pressure-resisting doors classified as safety-related components are designed according to the criteria shown in the revised section of Table 3.2-1 (Buildings).
- b-5 This stem is not a "structure, system or component" requiring entry in Table 3.2-1. Control of this activity is provided by appropriate procedures which are covered under a quality program.
- b-6 Not in Table 3.2-1. Not a safety system. However; there are surveillances required by Technical Specifications.
- b-7 Not in Table 3.2-1. Not a safety system. However, there are surveillances required by Technical Specifications.
- b-8 No instrumentation or controls for the Primary Containment Vacuum Relief System have a safety related function. (i.e., They are only for testing and are not used post-LOCA). Therefore, they are not included in Table 3.2-1.
- b-9 See revised Table 3.2-1 under Standby Gas Treatment "and associated instrumentation" has been added to Control Panels.
- b-10 Those missile barriers classified as safety-related structure are designed in accordance with the criteria shown in the revised section of Table 3.2-1 (Structures).
- b-11 Piping and associated valves to the HPCI and RCIC turbines are included in Table 3.2-1 of the FSAR under the following subsections:
- HPCI - "Piping beyond outermost containment isolation valve, other"
 - "Valves other"
 - RCIC - "Piping beyond outermost containment isolation valve, other"
 - "Valves other"
- Associated restraints for the HPCI and RCIC turbine piping are not detailed in Table 3.2-1 of the FSAR as they are not principal components of systems.
- b-12 Table 3.2-1 of the FSAR has been revised to incorporate the safety related piping and isolation valves and applicable codes and standards associated with the containment penetrations.
- b-13 See revised Table 3.2-1 (Nuclear Boiler System).

- b-14 See revised Table 3.2-1 (Buildings).
- b-15 The Primary Containment Purge System is not safety related with the exception of the piping and valving associated with the primary containment penetration boundary. See revised Table 3.2-1 under Primary Containment Purge System.
- b-16 The Primary Containment Ventilation System should be referred to as the Dry Well Cooling System. The Dry Well Cooling System has no primary containment penetration.
- b-17 Appropriate onsite power system components which are safety-related are listed in Table 3.2-1. Where the specific components are part of a safety-related (class 1E) system, they appear in Table 3.2-1 as subsets of the Onsite Power Systems. (Example: Load Center Transformers are a subcomponent of Load Center, and Valve Operators are a subcomponent of Motor Operated Valves.)
- b-18 Engineered safety features DC equipment listed under electric systems are safety-related. See Table 3.2-1. The protective relays and control panels are subsets of this system.
- b-19 Biological shielding determined to be safety-related is designed in accordance with the criteria shown in the revised section of Table 3.2-1 (Structures, Page 26).
- b-20 Instrument lines are safety-related for all divisionalized loops all the way to the local instruments. These are included as a subset of the various systems identified in Table 3.2-1.
- b-21 With the exception of cooling water piping and valves associated with the primary containment penetration boundary the reactor building chilled water system is not safety related. In Table 3.2-1 the components of the Drywell Coolers have been listed separately under Drywell Cooling System.
- b-22 As indicated in Table 3.2-1, under Nuclear Boiler System, the piping beyond the outermost isolation valves up to the turbine casing is Quality Group "B" and as stated in Note 20, has been designed by the use of a dynamic seismic system analysis to withstand the OBE and SSE design loads in combination with other appropriate loads, within the limits specified for Class 2 pipe in the ASME Section 3 Code.
- b-23 Spent fuel pool liner is addressed in Table 3.2-1 under "Structures".

- b-24 This is not a "structure, system or component" requiring entry in Table 3.2-1. Control and calibration of radiation monitoring (fixed and portable) is provided by appropriate procedures which are covered under a quality program.
- b-25 This is not a "structure, system or component" requiring entry in Table 3.2-1. Control and calibration of radioactivity monitoring (fixed and portable) is provided by appropriate procedures which are covered under a quality program.
- b-26 This item is not a "structure, system or component" requiring entry in Table 3.2-1. Control of radioactivity contamination measurement and analysis is provided by appropriate procedures which are covered under a quality program.
- b-27 This item is not a "structure, system or component" requiring entry in Table 3.2-1. Control of radioactive contamination measurement and analysis is provided by appropriate procedures which are covered under a quality program.
- b-28 This item is not a "structure, system or component" requiring entry in Table 3.2-1. Control of personnel monitoring (e.g., whole body counter) and external (e.g., TLD system) is provided by appropriate procedures which are covered under a quality program.
- b-29 This item is not a "structure, system or component" requiring entry in Table 3.2-1. Control of instrument storage, calibration and maintenance is provided by appropriate procedures which are covered under a quality program.
- b-30 Decontamination equipment and facilities are not safety related. Decontamination piping and valves are a part of the "Liquid Radwaste Management Systems -- Liquid & Chemical Waste Piping and Valves" as described in Table 3.2-1 of the FSAR.
- Personnel decontamination is not a "structure, system or component" requiring entry in Table 3.2-1. Control of personnel decontamination is provided by appropriate procedures which are covered under a quality program.
- b-31 This item is not a "structure, system or component" requiring entry in Table 3.2-1. Control of respiratory protection, including testing is provided by appropriate procedures which are covered under a quality program.

- b-32 This item is not a "structure, system or component" requiring entry in Table 3.2-1. Contamination control is provided by appropriate procedures which are covered under a quality program.
- b-33 Masonry walls designed as safety-related structures are designed in accordance with the criteria shown in the revised section of Table 3.2-1 (Structures).
- b-35 Measuring and test equipment is not safety related. Calibration of these pieces of measuring and test equipment used to perform checks on safety functions of safety-related equipment are controlled by the construction/operational QA program.
- b-36 The classification of these items is beyond the definition of a "structure, system or component" requiring entry in Table 3.2-1. The quality classification of expendable and consumable items necessary for the functional performance of safety-related structures, systems or components is determined as part of the procurement process in accordance with the provisions of the QA program.

c. Introduction

Part C of the question invokes enclosure (2) to NUREG 0737 as the basis for modifying Table 3.2-1 to include certain items. NUREG 0737 does not impose this requirement in all cases. Many of the TMI action plan requirements are intangible in that they call for studies, documentation, administrative controls, etc. Our approach in responding to Part C of this question has been to identify major structural or hardware-related requirements of NUREG 0737, and to apply quality assurance to those items, if appropriate. Finally, for SSES, implementation of many of the identified sections of NUREG 0737 is not yet required per enclosure (2). For all modifications that are eventually required for SSES, safety-related classification will be determined. For more information, refer to PP&L's response to NUREG 0737.

- c-1 The Safety Parameter Display System (SPDS) is not safety related and therefore will not be added to Table 3.2-1. However, it will be procured and maintained under procedures which are covered under a quality program.
- c-2 The various reactor coolant system vent paths are safety-related. They are designated in Table 3.2-1, as follows:

The RCS vessel head vent is a subset of "reactor vessel appurtenances; pressure retaining portions" under "Reactor System".

The main steam relief valves with their ADS function are a subset of "safety/relief valves" under "Nuclear Boiler System."

- c-3 Shield walls identified as a result of the Plant Shielding Study (NUREG 0737 Item II.B.2) will be reviewed for classification as safety-related structures. Table 3.2-1 will be updated as necessary to reflect the design criteria used for design of those shielding walls classified as safety-related.
- c-4 The Post Accident Sampling Station (PASS), with the exception of its interfaces with safety related systems, will not in itself be safety related. All PASS interfaces will be covered in the appropriate systems in their piping/valve descriptions. Specific description of the PASS in Table 3.2-1 will be incorporated upon completion of design.
 PASS operations will not be a "structure, system or component" requiring entry in Table 3.2-1. Control will be provided by appropriate procedures in Chapter 17 of the FSAR and Section 6.8 of the technical specifications describing the QA program coverage of procedural controls.
- c-5 Valve position indication is a subset of Safety Relief Valve under Nuclear Boiler System in Table 3.2-1.
- c-6 Not applicable to SSES. Hydrogen recombiners are inside containment.
- c-7 Containment isolation valves are safety-related as shown in Table 3.2-1. This subject was part of a study from which no changes to Table 3.2-1 resulted.
- c-8 Accident monitoring has both safety and non-safety related listing as follows:
 - (a) Noble gas effluent radiological monitor is non-safety related per NUREG-0737.
 - (b) Continuous samples of plant effluents for radioactive iodine and particulate are non-safety related.
 - (c) Containment Hi-range radioactive monitors are safety related. See revised Table 3.2-1 under Post Accident Monitoring.
 - (d) Containment pressure monitor is safety related. See revised Table 3.2-1 under Post Accident Monitoring.

- (e) Containment suppression pool water level instrumentation is safety related. See revised Table 3.2-1 under Post Accident Monitoring.
- (f) Containment H₂O₂ monitor system is safety related. See revised Table 3.2-1 under Post Accident Monitoring.
- c-9 As a result of this study, no additional instrumentation was required, therefore there is no change required in Table 3.2-1.
- c-10 As a result of these studies there was no change required of the HPCI and RCIC set points. There were no changes to Table 3.2-1 because of these studies.
- c-11 These studies resulted in minor changes to the systems but no changes to Table 3.2-1.
- c-12 Response to the TMI study is still in the evaluation phase. Table 3.2-1 will be modified as necessary.
- c-13 The BWR owners group is still evaluating this requirement. If the study so indicates, Table 3.2-1 will be modified accordingly.
- c-14 This study determined that no changes were required to Table 3.2-1.
- c-15 The changes resulting from the requirements of NUREG 0737, Item II.K.2(22), did not alter the content of Table 3.2-1.
- c-16 Safety-related unit coolers are provided in these rooms as necessary to maintain temperature. See ECCS Pump Room in Table 3.2-1.
- c-17 Response to the TMI issues is under study/evaluation. Any modifications to the SSES design will be reflected in Table 3.2-1 as appropriate.
- c-18 This study resulted in no changes to SSES equipment. Entries in Table 3.2-1 are not required as they are included within the individual systems.
- c-19 Response to this TMI issue is under study/evaluation. Any modifications to the SSES design will be evaluated to determine if they are safety related. Table 3.2-1 will be modified as deemed appropriate.
- c-20 This item is not a "structure, system or component" requiring entry in Table 3.2-1. Control of this activity is provided by appropriate procedures. Chapter 17 of the FSAR

and Section 6.8 of the Technical Specifications describe the QA program coverage of procedural controls.

- c-21 These items are not safety related. Justification is contained in NUREG 0696 paragraph 2.5 and 4.2 (Table 2 and footnotes). The Emergency Facilities are not required for safe shutdown or immediate or long term operation following a LOCA. The failure of these facilities will not cause the release of radioactivity in excess of 10 CFR 100 limits or cause or increase severity of a DBA. The individual facilities will be designed and installed in accordance with quality plans set forth under Section I.D of NUREG 0696. For these reasons Emergency Support Facilities will not be added to Table 3.2-1.
- c-22 This item is not a "structure, system or component" requiring entry in Table 3.2-1. Control of this activity is provided by appropriate procedures. Chapter 17 of the FSAR and Section 6.8 of the Technical Specifications describe the QA program coverage of procedural controls.
- c-23 Control room habitability is maintained by safety related equipment. This equipment is identified in Table 3.2-1 under the section heading HVAC System-Control Structure.
- d. Instrumentation and Control system are identified only at the system level in Table 3.2-1 without providing information on the individual component level. The quality classification of individual components has been identified in expanded detail in controlled QA program documents (e.g., "Q-List" and the instrument index).

TABLE 3.2-1 (Continued)

Principal Components (34*)	FSAR Section	Source of Supply	Location	Quality Group Classification	Safety Class	Principal Construction Codes and Standards	Seismic Category	Quality Assurance Requirement	Comments
	(1)*	(2)*	(3)*	(4)*	(5)*	(6)*	(7)*	*	
Fans	P	C	NA	Other	NEMA MG1	AMCA 210	I	Y	
Coils, cooling	P	C	NA	Other	ARI		I	Y	
Ductwork	P	C	NA	Other	AISI		I	Y	
Dampers	P	C	NA	3	AMCA		I	Y	
Piping and valves	P	C	NA	Other	B31.1		NA	N	16
<u>Combustible Gas Control System</u>									
Hydrogen recombiners inside containment	P	C	NA	2	NA		I	Y	
Primary Containment Atmosphere monitoring system (PCAHS)	P	C, R	B, D	2	III-2		I	Y	10, 41
Piping valves forming Contmt. Penetration Boundary	P	C,R	B	2	III-2		I	Y	22
<u>Standby Gas Treatment System</u> 9.4.1									
Motors	P	CS	NA	3	IEEE-323/344		I	Y	16
Fans	P	CS	NA	3	AMCA		I	Y	16
Prefilters	P	CS	NA	3	UL Class 1		I	Y	16
Demisters	P	CS	NA	3	MSAR 71-45		I	Y	16
HEPA filters	P	CS	NA	3	MIL-F-51079		I	Y	16
Adsorber units	P	CS	NA	3	MIL-F-51068C		I	Y	16
Ductwork	P	CS	NA	3	AACC CS-8		I	Y	16
Dampers	P	CS	NA	3	RDT M-16-1T		I	Y	16
Piping	P	CS	C	3	AISI		I	Y	16
Valves	P	CS	C	3	AMCA		I	Y	16
Electric heaters	P	CS	NA	3	NFPC		I	Y	16
Control panels and associated instrumentation	P	C,S	NA	3	B31.1		I	Y	22
					NEMA & NEC		I	Y	
					NEMA		I	Y	23
<u>Radwaste Building HVAC</u> 9.4.3									
Motors	P	RW	NA	Other	NEMA MG1		NA	N	
Fans	P	RW	NA	Other	AMCA		NA	N	
Prefilters	P	RW	NA	Other	UL Class 1		NA	N	
HEPA filters	P	RW	NA	Other	MIL-F-		NA	N	

* Refer to the General Notes at the end of this table.

SSES-FSAR

TABLE 3.2-1 (Continued)

Page 20

Principal Components (34*)	FSAR Section	Source of Supply (1)*	Location (2)*	Quality Group Classification (3)*	Safety Class (4)*	Principal Construction Codes and Standards (5)*	Seismic Category (6)*	Quality Assurance Requirement (7)*	Comments *
All portions that input to the reactor protection system		GE	C,R	NA	2	IEEE-279	I	Y	
All portions that input to the engineered safety feature actuation system		P/GE	C,R	NA	2	IEEE-279	I	Y	
<u>Engineered Safety Features Actuation System</u>	7.3								
All portions		GE	C,R	NA	2	IEEE-279	I	Y	
<u>Engineered Safety Features Systems</u> (controls and instrumentation required for safety associated with each actuated system)	7.3								
Emergency core cooling system		GE	C,R	NA	2	IEEE-279	I	Y	
Containment isolation system		P	C,R	NA	2	IEEE-279	I	Y	
Containment purge systems (pressure boundary only)		P	C,R	NA	2	IEEE-279	I	Y	
Emergency diesel generator systems		P	G	NA	2	IEEE-279	I	Y	23
Main steam line break detection system		P	C,R,T	NA	2	IEEE-279	I	Y	
<u>Controls and Instrumentation Associated with Safe Shutdown Systems</u>	7.4								
Control room habitability system		P	CS	NA	2	IEEE-279	I	Y	15
PCAMS		P	C,R	B,D	2	IEEE-279	I	Y	
<u>Instrumentation Associated with Other Systems Required for Safety</u>	7.6								15
Spent fuel pooling cooling system		P	R	NA	2	IEEE-279	I	Y	16
Fuel handling area ventilation isolation system		P	R	NA	2	IEEE-279	I	Y	
Control room panels		P	CS	NA	2	IEEE-279	I	Y	
Local instrument racks associated		P	CS	NA	2	IEEE-279	I	Y	

* Refer to the General Notes at the end of this table.

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TABLE 3.2-1 (Continued)

Principal Components (34*)	FSAR Section	Source of Supply	Location	Quality Group Classification	Safety Class	Principal Construction Codes and Standards	Seismic Category	Quality Assurance Requirement	Comments
	(1)*	(2)*	(3)*	(4)*	(5)*	(6)*	(7)*	*	
with safety related equipment		P	ALL	NA	2	IEEE-279	I	Y	
<u>Instrumentation Associated with Systems Not Required for Safety</u>	7.7								
Seismic instrumentation		P	ALL	NA	Other	NA	I	Y	16
Area radiation monitoring		P	ALL	NA	Other	NA	NA	N	
<u>Leak Detection System</u>	5.2.5 §.2.5								23
Temperature elements		GE	C,R,T	N/A	2	IEEE-323	I	Y	39
Differential temperature switch		GE	C,R	N/A	2	IEEE-323	I	Y	39
Differential flow indicator		GE		N/A	2	IEEE-323	I	Y	39
Pressure switch		GE	C,R	N/A	2	IEEE-323	I	Y	39
Differential pressure indicator switch		GE		N/A	2	IEEE-323	I	Y	39
Differential flow summer		GE		N/A	2	IEEE-323	I	Y	39
<u>Process Radiation Monitors</u>									
Electrical modules, main steam line and reactor building ventilation monitor		GE	R	N/A	2	IEEE-323	I	Y	15
Cable, main steam line and reactor building ventilation monitors		P	R	N/A	2	IEEE-279/ 323/383	I	Y	
<u>Electric Systems</u>	8								
<u>Engineered Safety Features AC Equipment</u>	8.3								
4.16 kV switchgear		P	O	NA	2	IEEE-308/ 323/344	I	Y	
480 V load centers		P	O	NA	2	IEEE-308/ 323/344	I	Y	
480 V motor control centers		P	O	NA	2	IEEE/308/ 344	I	Y	
<u>Engineered Safety Features DC Equipment</u>	8.3								

* Refer to the General Notes at the end of this table.

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TABLE 3.2-1 (Continued)

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Principal Components (34*)	FSAR Section	Source of Supply	Loca- tion	Quality Group Classi- fication	Safety Class	Principal		Quality Assurance Requirement	Comments
						Construc- tion Codes and Standards	Seismic Category		
		(1)*	(2)*	(3)*	(4)*	(5)*	(6)*	(7)*	*
125 V and 250 V station batteries and racks, battery chargers		P	CS	NA	2	IEEE-308/ 323/344	I	Y	
125 V switchgear and distribution panels		P	CS	NA	2	IEEE-308/ 323/344	I	Y	
<u>120 V Vital AC System Equipment</u>	8.3								
Static inverters		P	CS	NA	2	IEEE-308/ 323/344	I	Y	
120 V distribution panels		P	CS,R	NA	2	IEEE-308/ 323/344	I	Y	
<u>Electric Cables for ESF Equipment</u>	8.3								
5 kV power cables		P	ALL	NA	2	IEEE-308/ 383	NA	Y	15
600 V power cables		P	ALL	NA	2	IEEE-308/ 383	NA	Y	15
Control and instrumentation cables		P	ALL	NA	2	IEEE-308/ 383	NA	Y	15
<u>Miscellaneous Electrical</u>	8								
Primary containment building electrical penetration assemblies		P	C	NA	2	IEEE-317/ 344/383	I	Y	
Conduit supports, safety related		P	ALL	NA	2	IEEE-344	I	Y	15
Tray supports, safety related		P	ALL	NA	2	IEEE-344	I	Y	15
Emergency lighting systems		P	ALL	NA	2	IEEE-344	I	Y	
Emergency communications systems		P	ALL	NA	Other	NONE	NA	N	
Diesel generator		P	G	NA	2	IEEE-387	I	Y	
<u>Auxiliary Systems</u>									
<u>Compressed Air and Instrument Gas Systems</u>	9.3.1								
Compressors		P	T	NA	Other	NONE	NA	N	
Pressure vessels, for safety related equipment		P	C,R	C	3	III-3	I	Y	

* Refer to the General Notes at the end of this table.

TABLE 3.2-1 (Continued)

Principal Components (34*)	FSAR Section	Source of Supply	Location	Quality Group Classification	Safety Class	Principal Construction Codes and Standards	Seismic Category	Quality Assurance Requirement	Comments
	(1)*	(2)*	(3)*	(4)*	(5)*	(6)*	(7)*	*	
Pressure vessels, not for safety related equipment	P	ALL	D	Other	VIII-1	NA	N		
Piping and valves forming part of containment boundary	P	C,R	B	2	III-2	I	Y		
Piping and valves, safety related	P	C,R	C	3	III-3	I	Y		
Piping and valves, other	P	ALL	D	Other	B31.1.0	NA	N		
Nitrogen storage bottler	P	R	NA	Other	DOT	I	N		
16									
<u>Sampling Systems</u>	9.3.2								
Sample coolers	P	C,R,T,D	RW	4	VIII-1 TEMA C	NA	N		
Piping and valves on III-1 systems	P	C	A	1	III-1	I	Y	10	
Piping and valves on III-2 systems	P	C,R	B	2	III-2	I	Y	10	
Piping and valves on III-3 systems	P	R,T,RW	C	3	III-3	I	Y	10	
Piping and valves, other systems	P	R,T,RW	D	Other	B31.1.0	NA	N	10	
Piping and valves, containment penetration, isolation	P	C	B	2	III-2	I	Y	10	
16									
<u>Fire Protection System</u>	9.5.1								
Tanks	P	O	D	Other	API-650/ D100	NA	N		
Pumps, piping and water system components	P	ALL	NA	Other	NFPA/NEPIA	NA	N		
Gas system components (CO and Halon 1301)	P	CS	NA	Other	NFPA/NEPIA	NA	N		
Fire and smoke detection and alarm system	P	ALL	NA	Other	NFPA/NEPIA	NA	N		
<u>Generator External Hydrogen System</u>									
Vessels	P	T	D	Other	VIII-1	NA	N		
Piping	P	T	D	Other	B31.1.0	NA	N		
Valves	P	T	D	Other	B31.1.0	NA	N		
<u>Nitrogen System</u>									

* Refer to the General Notes at the end of this table.

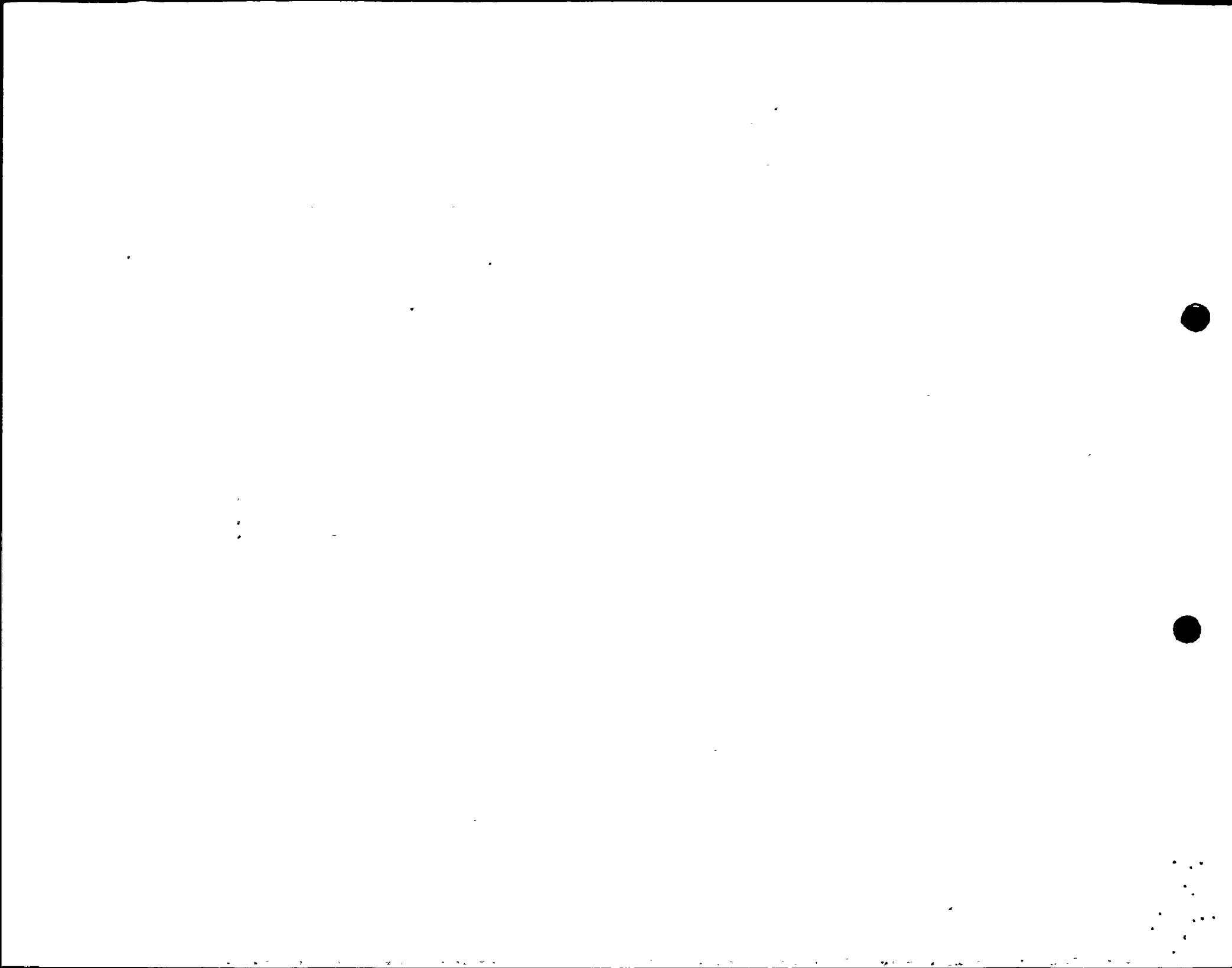


TABLE 3.2-1 (Continued)

	FSAR Section	Source of Supply	Loca- tion	Quality Group Classi- fication	Safety Class	Principal Construc- tion Codes and Standards	Seismic Category	Quality Assurance Requirement	Comments
Principal Components (34*)	(1)*	(2)*	(3)*	(4)*	(5)*	(6)*	(7)*	*	
Vessels		P	O	D	Other	VIII-1	NA	N	
Piping		P	O	D	Other	B31.1.0	NA	N	
Valves		P	O	D	Other	B31.1.0	NA	N	
<u>Plant Chilled Water System</u>	9.2.12								
Chillers		P	ALL	D	Other	B9.1	NA	N	
Chilled water heat exchangers		P	ALL	D	Other	VIII-1/ TEMA C	NA	N	
Pumps		P	ALL	D	Other	VIII-1/ Hyd.I	NA	N	24
Piping		P	ALL	D	Other	B31.1.0	NA	N	
Valves		P	ALL	D	Other	B31.1.0	NA	N	
<u>Safety Related Chilled Water System</u>									
Chillers		P	CS	D	3	ARI/B9.1	I	Y	
Heat exchangers		P	CS	D	3	VIII-1/ TEMA C	I	Y	
Pumps		P	CS	D	3	VIII-1/L Hyd.I	I	Y	
Motors		P	CS	NA	3	IEEE-323/ 344	I	Y	
Piping		P	CS	D	3	B31.1	I	Y	
Valves		P	CS	D	3	B31.1	I	Y	
<u>Equipment and Floor Drains</u>	9.3.3								
Piping, radioactive		P	ALL	D	Other	B31.1.0	NA	N	15
Piping, nonradioactive		P	ALL	D	Other	B31.1.0	NA	N	
Piping & valves, containment penetrating isolation		P	R,C	B	2	III-2	I	Y	22
<u>Demineralized Water Makeup System</u>	9.2.9								
Tanks		P	CW	D	Other	VIII-1	NA	N	
Pumps		P	CW	D	Other	B31.1.0/ Hyd.I	NA	N	24
Motors		P	CW	NA	Other	NEMA MG1	NA	N	
Piping and valves		P	ALL	D	Other	B31.1.0	NA	N	

Buildings

* Refer to the General Notes at the end of this table.

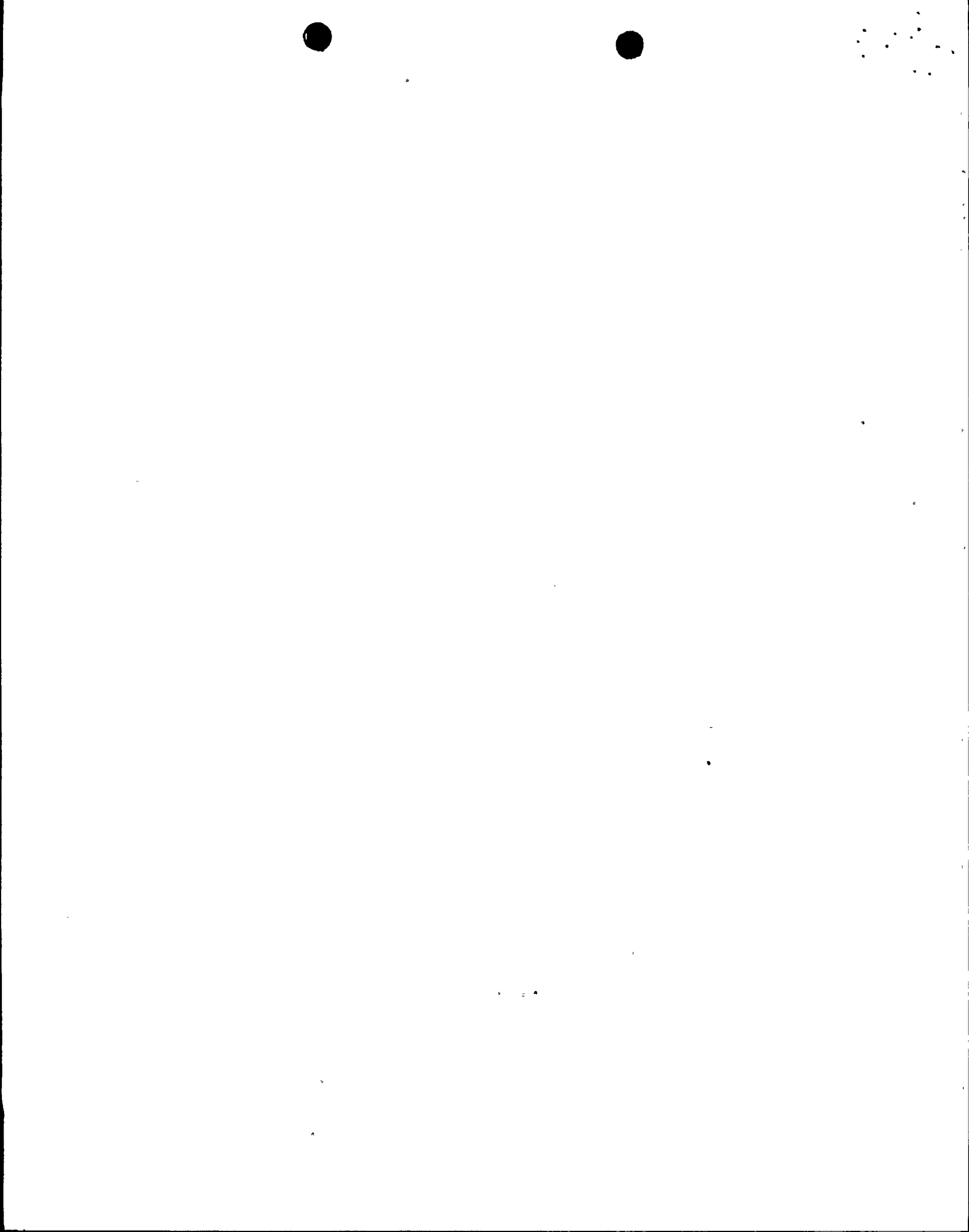


TABLE 3.2-1 (Continued)

Principal Components (34*)	FSAR Section	Source of Supply	Location	Quality Group Classification	Safety Class	Principal Construction Codes and Standards	Seismic Category	Quality Assurance Requirement	Comments
		(1)*	(2)*	(3)*	(4)*	(5)*	(6)*	(7)*	*
Reactor Building		P	R	B	2	ACI/AISC	I	Y	
Pressure resistant doors		P	R	B	2	ASTM/AWS AISC	NA	Y	22
Watertight door		P	R	B	2	ASTM/AWS	NA	Y	
R. B. Equipment door		P	R	B	2	ASTM/AWS	NA	Y	
Primary Containment		P	C	B	2	ACI/AISC/ III	I	Y	27,30
Access hatches/locks/doors		P	C	B	2	III-MC	I	Y	
Liner plate		P	C	B	2	III-MC	I	Y	
Penetration assemblies		P	C	B	2	III-MC	I	Y	29
Vacuum relief valves		P	C	B	2	III-2	I	Y	
Downcomers		P	C	B	2	III-MC	I	Y	
Downcomer Bracing		P	C	B	2	AISC	I	Y	
Diesel generator building		P	G	NA	2	ACI/AISC	I	Y	22
Control structure		P	CS	NA	2	ACI/AISC	I	Y	
Radwaste and offgas building		P	RW	NA	Other	ACI/AISC	NA	N	22
Turbine building		P	T	NA	Other	ACI/AISC	NA	N	21
Administration building		P	O	NA	Other	ACI/AISC	NA	N	
Circulating water pump house		P	O	NA	Other	ACI/AISC	NA	N	
ESSW pumphouse		P	O	NA	3	ACI/AISC	I	Y	
<u>Structures</u>									
Spray pond & Emergency Spillway		P	O	NA	3	ACI	I	Y	22
Condensate storage tank		P	O	D	Other	D100	NA	N	
Spent fuel pool		P	R	NA	2	ACI/AISC	I	Y	
Spent fuel pool liner		P	R	NA	2	ACI/AISC	I	Y	22
Refueling water storage tank		P	O	D	Other	D100	NA	N	
Pipe Whip Restraints		P	R,C	NA	3	AISC	I	Y	
Missile Barriers for safety related equipment		P	C,R, CS,SW, G	NA	Other	AISC	I	Y	22
Biological shielding within Primary containment, reactor Building and control building		P	C,R, CS	NA	Other	ACI/AISC	I	Y	42
Safety related masonry walls		P	R,G, CS	NA	Other	ACI/UBC	I	Y	
<u>Post accident monitoring</u>									

* Refer to the General Notes at the end of this table.

TABLE 3.2-1 (Continued)

Principal Components (34*)	FSAR	Source	Loca-	Quality	Safety	Principal	Seismic	Quality	Comments
	Section	of Supply	tion	Group Classi- fication	Class	Construc- tion Codes and Standards	Category	Assurance Requirements	
	(1)*	(2)*	(3)*	(4)*	(5)*	(6)*	(7)*	*	
Containment Radiation Monitoring Equipment	P	R	NA	2	323/344	I		Y	
SRV position indication system	P	R	NA	2	323/344	I		Y	
Noble gas effluent radiological monitor	P	R	NA	2	ANSI N13.1	I		N	
Continuous samples of plant effluents for radioactive iodine & particulates	P	R	NH	2	ANSI N13.1	I		N	
Containment hi-range radiation monitor	P	R	NA	2	323/344	I		Y	
Containment pressure monitor	P	R	NA	2	323/344	I		Y	
Containment Suppression pool water level instr.	P	R	NA	2	323/344	I		Y	
Containment H /O monitor system	P	R	NA	2	323/344	I		Y	

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* Refer to the General Notes at the end of this table.

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- d. As-cast surfaces shall be magnetic particle or liquid penetrant tested according to ASME, Section III, Paragraph N-232.4 or N-323.3,
- e. Wheel and shaft forgings shall be ultrasonically tested according to ASTM A-388,
- f. Butt-welds shall be radiographed according to ASME, Section III, Paragraph N624, and magnetic particle or liquid penetrant tested according to ASME Section III, Paragraph N626 or N627 respectively,
- g. Notification to be made on major repairs, and records maintained thereof,
- h. Record system and traceability according to ASME Boiler and Pressure Code Section I, Appendix IX, Paragraph IX - 225;
- 39) These instruments initiate isolation of associated equipment upon detecting abnormal leakage. | 23
- 40) In addition to a swing check valve inside the drywell and a positive acting check valve outside the drywell similar to an Atwood-Morrill boiler feed pump check valve as described in their Catalog 63, Section I, a valve with high leak-tight integrity shall be provided outside the drywell. Additionally, a swing check valve and a valve with high leak-tight integrity shall be provided, inside and just outside the containment, respectively. The spring-loaded piston operator of the positive acting check valve will be held open by air pressure during normal operation. Fail-open solenoid valves will be used to release air pressure and to permit the check valve piston operator to close. The positive acting check valve and the high leak-tight integrity isolation valve will be remote manually operated from the control room using signals which indicate loss of control rod drive flow. The classification of the control rod drive water return line from the reactor vessel to and including the motor operated valve outside the drywell will be Group A. The remainder of the system will be Code Group D, except the portion between the check valve just inside the containment and the motor operated valve just outside the containment including both valves, which will be Group B.
- 41 Sample piping and isolation valves are quality group B. Because the analyzers are isolated from containment atmosphere on accident conditions, the piping in the analyzers is quality group D. Isolation is manually removed to allow monitoring.
- 42 Reactor shield wall concrete is a non-structural element (see subsection 3.8.3.1.3) and is therefore non-Category I. | 22

