3.2 CLASSIFICATION OF STRUCTURES, COMPONENTS, AND SYSTEMS

Certain structures, components, and systems of the nuclear plant are considered important to safety because they perform safety actions required to avoid or mitigate the consequences of abnormal operational transients or accidents. The purpose of this section is to classify structures, components, and systems, according to the importance of the safety function they perform. In addition, design requirements are placed upon such equipment to assure the proper performance of safety actions, when required.

3.2.1 Seismic Classification

General Design Criterion 2 of Appendix A to 10CFR50 and Appendix A to 10CFR100 require that nuclear power plant structures, systems, and components important to safety be designed to withstand the effects of earthquakes without loss of capability to perform their safety function. NRC Regulatory Guide 1.29 (Rev. 2, 2/76) provides additional guidance and defines Seismic Category I structures, components, and systems as those necessary to assure:

(1) The integrity of the reactor coolant pressure boundary

(2) The capability to shut down the reactor and maintain it in a safe condition, or

(3) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the guideline exposures of 10CFR 50.67.

Plant structures, systems, and components, including their foundations and supports, designed to remain functional in the event of a Safe Shutdown Earthquake are designated as Seismic Category I, as indicated in Table 3.2-1. Class 1E electric equipment is Seismic Category I equipment. Seismic classification of systems instrumentation is discussed in Chapter 7.

All Seismic Category I structures, systems, and components are analyzed under the loading conditions of the SSE and OBE. Since the two earthquakes vary in intensity, the design of Seismic Category I structures, components, equipment, and systems to resist each earthquake and other loads will be based on levels of material stress or load factors, whichever is applicable, and will yield margins of safety appropriate for each earthquake. The margin of safety provided for Safety Class structures, components, equipment, and systems for the SSE will be sufficiently large to assure that their design functions are not jeopardized.

Seismic Category I structures are sufficiently isolated or protected from other structures to ensure that their integrity is maintained at all times.

Components (and their supporting structures) which are not Seismic Category I and whose collapse could result in loss of required function through impact with or flooding of Seismic Category I structures, equipment, or systems required after a safe shutdown earthquake, are analytically checked to confirm their integrity against collapse when subjected to seismic loading resulting from the safe shutdown earthquake.

The Operating Basis Earthquake as defined in 10 CFR 100, Appendix A, is not incorporated as a part of the seismic classification scheme.

The seismic classification indicated in Table 3.2-1 meets the requirements of NRC Regulatory Guide 1.29 except as otherwise noted in the table. Where only portions of systems are identified as Seismic Category I on this table, the boundaries of the Seismic Category I portions of the system are shown on the piping and instrument diagrams in appropriate sections of this report.

3.2.2 System Quality Group Classifications

System quality group classifications as defined in NRC Regulatory Guide 1.26 have been determined for each water, steam or radioactive waste containing component of those applicable fluid systems relied upon to:

(1) prevent or mitigate the consequences of accidents and malfunctions originating within the reactor coolant pressure boundary,

(2) permit shutdown of the reactor and maintain it in the safe shutdown conditions, and

(3) contain radioactive material.

A tabulation of quality group classification for each component so defined is shown in Table 3.2-1 under the heading, "Quality Group Classification." Figure 3.2-1 is a diagram which depicts the relative locations of these components along with their quality group classification. Interfaces between components of different classifications are indicated on the system piping and instrumentation diagrams which are found in the pertinent section of the FSAR.

System Quality Group Classifications and design and fabrication requirements as indicated in Tables 3.2-1, 3.2-2, 3.2-3, and 3.2-4 meet the requirements of Regulatory Guide 1.26 (Rev. 3, 2/76) except as noted.

3.2.2.1 Quality Group D (Augmented)

Certain portions of the radwaste system meet the additional requirements of Quality Group D (Augmented) as defined in the NRC Branch Technical Position ETSB 11-1 (Rev. 1), parts B.IV and B.VI. Portions of the radwaste system meeting the requirements of Quality Group D (Augmented) may be determined from notes on the appropriate figures in Chapter 11.

3.2.3 System Safety Classifications

Structures, systems, and components are classified as Safety Class I, Safety Class 2, Safety Class 3, or Other in accordance with the importance to nuclear safety. Equipment is assigned a specific safety class, recognizing that components within a system may be of differing safety importance. A single system may thus have components in more than one safety class.

The safety classes are defined in this section and examples of their broad application are given. Because of specific design considerations, these general definitions are subject to interpretation and exceptions. Table 3.2-1 provides a summary of the safety classes for the principal structures, systems, and components of the plant.

Design requirements for components of safety classes are also delineated in this section. Where possible, reference is made to accepted industry codes and standards which define design requirements commensurate with the safety function(s) to be performed. In cases where industry codes and standards have no specific design requirements, the locations of the appropriate subsections that summarize the requirements to be implemented in the design are indicated.

3.2.3.1 Safety Class 1

3.2.3.1.1 Definition of Safety Class 1

Safety Class 1, SC-1, applies to components of the reactor coolant pressure boundary or core support structure whose failure could cause a loss of reactor coolant at a rate in excess of the normal makeup system.

3.2.3.2 Safety Class 2

3.2.3.2.1 Definition of Safety Class 2

Safety Class 2, SC-2, applies to those structures, systems, and components, other than service water systems, that are not Safety Class 1 but are necessary to accomplish the safety functions of:

(1) inserting negative reactivity to shut down the reactor,

(2) preventing rapid insertion of positive reactivity,

(3) maintaining core geometry appropriate to all plant process conditions,

(4) providing emergency core cooling,

(5) providing and maintaining containment,

(6) removing residual heat from the reactor and reactor core, and

(7) storing spent fuel.

Safety Class 2 includes the following:

(1) Reactor protection system and Alternate Rod Injection system.

(2) Those components of the control rod system which are necessary to render the reactor subcritical.

(3) Systems or components which restrict the rate of insertion of positive reactivity.

(4) The assembly of components of the reactor core which maintain core geometry including the fuel assemblies, core support structure, and core grid plate, as examples.

(5) Other components within the reactor vessel such as jet pumps, core shroud, and core spray components which are necessary to accomplish the safety function of emergency core cooling.

(6) Emergency core cooling systems.

(7) Primary containment.

(8) Reactor building (secondary containment)

(9) Post-accident containment heat removal systems.

(10) Initiating systems required to accomplish safety functions, including emergency core cooling initiating system and containment isolation initiating system.

(11) At least one of the systems which recirculates reactor coolant to remove decay heat when the reactor is pressurized and the system to remove decay heat when the reactor is not pressurized.

(12) Spent fuel storage racks and spent fuel pool.

(13) Electrical and instrument auxiliaries necessary to operation of the above.

Structures, systems, and components in Safety Class 2 are listed in Table 3.2-1.

3.2.3.3 Safety Class 3

3.2.3.3.1 Definition of Safety Class 3

Safety Class 3, SC-3, applies to those structures, systems, and components that are not Safety Class 1 or Safety Class 2, but

(1) Whose function is to process radioactive wastes and whose failure would result in release to the environment of gas, liquid, or solids resulting in a single-event whole body dose to a person at the site boundary greater than 500 mrem.

(2) Which provide or support any safety system function. Safety Class 3 includes the following:

a. Service water systems required for the purpose of:

1. Removal of decay heat from the reactor

2. Emergency core cooling

3. Post-accident heat removal from the suppression pool

4. Providing cooling water needed for the functioning of emergency systems.

b. Fuel supply for the onsite emergency electrical system.

c. Emergency equipment area cooling.

d. Compressed gas or hydraulic systems required to support control or operation of safety systems.

e. Electrical and instrumentation auxiliaries necessary for operation of the above.

3.2.3.4 Other Structures, Systems, and Components

3.2.3.4.1 Definition of Other Structures, Systems, and Components

A boiling water reactor has a number of structures, systems, and components in the power conversion or other portions of the facility which have no direct safety function but which may be connected to or influenced by the equipment within the Safety Classes defined above. Such structures, systems, and components are designated as "other."

3.2.3.4.2 Design Requirements for Other Structures, Systems, and Components

The design requirements for equipment classified as "other" are specified by the designer with appropriate consideration of the intended service of the equipment and expected plant and environmental conditions under which it will operate. Where possible, design requirements are based on applicable industry codes and standards. Where these are not available, the designer utilizes accepted industry or engineering practice.

3.2.4 Quality Assurance

Structures, systems, and components whose safety functions require conformance to the quality assurance requirement of 10CFR50, Appendix B, are summarized in Table 3.2-1 under the heading, "Quality Assurance Requirements." The Operational Quality Assurance Program is described in Chapter 17.

3.2.5 Correlation of Safety Classes with Industry Codes

The design of plant equipment will be commensurate with the safety importance of the equipment. Hence, the various safety classes have a gradation of design requirements. The correlation of safety classes with other design requirements are summarized in Table 3.2-5.

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Reactor System	4.5		C						
Reactor vessel		GE	C	A	1	III-A	I	Y	
Reactor vessel support skirt		GE	C	NA	1	III-A	I	Y	
Reactor vessel appurtenances, pressure retaining portions		GE	C	A	1	III-A	I	Y	
CRD housing supports		GE	C	NA	2	X	I	Y	
Reactor internal structures, engineered safety features		GE	C	NA	2	X	I	Y	
Reactor internal structures, other		GE	C	N/A	Other	X	N/A	N	
Control rods		GE	C	N/A	2	X	I	Y	
Control rod drives		GE	C	N/A	2	III-2	I	Y	
Core support structure		GE	C	N/A	2	III-1	I	Y	
Power range detector hardware - pressure retaining portions		GE	C	A	1	III-1	I	Y	
Fuel assemblies		AREVA	C	N/A	2	X	I	Y	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Nuclear Boiler System	4.5								
Vessels, level instrumentation condensing chambers		GE	C	A	1	III-1	I	Y	10
Vessels, air accumulators		P	C	C	3	III-3	I	Y	
Air supply check valves, piping downstream of air supply check valve		P	C	C	3	III-3	I	Y	
Piping, relief valve discharge		P	C	C	3	III-3	I	Y	
Piping, main steam, within outermost Isolation valve		GE	C	A	1	III-1	I	Y	
Pipe supports, main steam		P	C	NA	1	III-1	I	Y	
Pipe restraints, main steam		P	C	NA	1	X	I	Y	
Piping, other within outermost isolation valves		P	C	A	1	III-1	I	Y	10
Piping, instrumentation beyond outermost isolation valves		P	R,T	B	2	III-2	Note 20	N	
Safety/relief valves		GE	C	A	1	III-1	I	Y	
Valves, main steam isolation valves		GE	C,R	A	1	III-1	I	Y	
Quenchers and quencher supports		P	C	C	3	III-3	I	Y	
Valves, other, isolation valves within primary containment		P	C	A	1	III-1	I	Y	10
Feedwater piping inside isolation valves		P	C	A	1	III-1	I	Y	
Valves, instrumentation beyond outermost isolation valves		P	C,R,T	B	2	111-2	I	Y	5
Mechanical modules, instrumentation with safety function		GE	C	NA	2	X	I	Y	
Electrical modules with safety function		GE	C	NA	2	IEEE-279/323	I	Y	
Cable, with safety function		P	C	NA	2	IEEE-279/323/383	NA	Y	15

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Recirculation System	5								
Piping		GE	C	A	1	III-1	I	Y	10
Piping suspension, recirculation line		GE	C	NA	1	III-1	I	Y	61
Pipe restraints, recirculation line		GE	C	NA	2	X	NA	Y	
Pumps		GE	C	A	1	III-1	I	Y	
Valves		GE	C	A	1	III-1	I	Y	10
Pump Motors		GE	C	NA	2	NEMA/NEC	I	N	
Electrical modules, with safety function		GE/P	C	NA	2	IEEE-279/323	I	Y	
Cable with safety function		P	C,R	NA	2	IEEE-279/323/383	NA	Y	15
Piping		P	T	D	Other	B31.1.0	NA	N	
CRD Hydraulic System	4								
Valves, scram discharge volume lines		P/GE	R	B	2	III-2	I	Y	10
Valves, insert and withdraw lines		P/GE	R	B	2	III-2	I	Y	35
Valves, other		P	R	D	Other	B31.1.0	NA	N	
Piping, scram discharge volume lines		P	R,C	B	2	III-2	I	Y	
Piping, insert and withdraw lines		P	C,R	B	2	III-2	I	Y	
Piping, other		P	R	D	Other	B31.1.0	NA	N	50
Hydraulic control unit		GE	R	NA	2	NA	I	Y	12
Electrical modules, with safety function		GE	R	NA	2	IEEE-279/323	I	Y	
Cable, with safety function		P	C,R	NA	2	IEEE-279/323/383	NA	Y	15
ENGINEERED SAFETY FEATURES									
Standby Liquid Control System	9.3.5								
Standby liquid control tank		GE	R	B	2	API 650	I	Y	66
Pump		GE	R	B	2	NP&V-II	I	Y	
Pump motor		GE	R	NA	2	X	I	Y	
Valves, explosive		GE	R	B	2	NP&V-II	I	Y	
Valves, isolation and within		P	C,R	A	1	III-1	I	Y	10
Valves, beyond isolation valves		P	R	B	2	III-2	I	Y	10
Piping, within isolation valves		P	C	A	1	III-1	I	Y	10
Piping, beyond isolation valves		P	R	B	2	III-2	I	Y	10
Electrical modules, with safety function		GE	R	NA	2	IEEE-279/323	I	Y	
Cable, with safety function		P	R	NA	2	IEEE-279/323/383	NA	Y	15

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
RHR System	5.4.7								
Heat exchangers, primary side		GE	R	B	2	III-2	I	Y	
Heat exchangers, secondary side		GE	R	C	3	III-3	I	Y	
Piping, within outermost containment isolation valves		P	C	A	1	III-1	I	Y	10
Piping, beyond outermost containment isolation valves		P	R	B	2	III-2	I	Y	10
Containment spray line piping within isolation valve		P	C,R	B	2	III-2	I	Y	
Containment spray line piping beyond isolation valve		P	R	B	2	III-2	I	Y	
Pumps		GE	R	B	2	NP&V-II	I	Y	
Pump motors		GE	R	NA	2	NEMA/NEC	I	Y	
Reactor vessel head spray line piping inside second isolation valve		P	C	A	1	III-1	I	Y	
Reactor vessel head spray line piping beyond second isolation valve		P	R	B	2	III-2	I	Y	
Valves, isolation LPCI line		P	C,R	A	1	III-1	I	Y	
Valves, isolation, other		P	C,R	B	2	III-2	I	Y	10
Valves, beyond isolation valves		P	R	B	2	III-2	I	Y	10
Mechanical modules		GE	R	NA	2		I	Y	
Electrical modules, with safety function		GE	R	NA	2	IEEE-279/323	I	Y	
Cable, with safety function		P	C,R	NA	2	IEEE-279/323/383	NA	Y	15
Core Spray	6.3								
Piping, within outermost isolation valves		P	C	A	1	III-1	I	Y	10
Piping, beyond outermost isolation valves		P	R,C	B	2	III-2	I	Y	10
Pumps		GE	R	B	2	NP&V-II	I	Y	
Pump motors		GE	R	NA	2	NEMA/NEC	I	Y	
Valves, containment isolation and within containment		P	C	A	1	III-1	I	Y	10
Valves, beyond outermost containment isolation valves		P	R	B	2	III-2	I	Y	10
Electrical modules with safety function		GE	R	NA	2	IEEE-279/323	I	Y	
Cable, with safety function		P	R	NA	2	IEEE-279/323/383	NA	Y	15

* Refer to the general notes at the end of this table.

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
High Pressure Coolant Injection	6.3								
Piping, and valves within outermost containment isolation valve (turbine inlet steam line and instrument lines only)		P	C	A	1	III-1	I	Y	10,28
Piping and valves within outermost containment isolation valves (other than above)		P	C	B	2	III-2	I	Y	10,28
Piping, return test line to condensate storage tank beyond second isolation valve		P	R,O	D	Other	B31.1.0	NA	N	
Piping, beyond outermost containment isolation valve, other		P	R	B	2	III-2	I	Y	10
Pumps		GE	R	B	2	NP&V-II	I	Y	
HPCI turbine		GE	R	NA	2	X	I	Y	11,38
Valves, beyond isolation valves, motor operated		P	R	B	2	III-2	I	Y	10
Valves, other		P	R	B	2	III-2	I	Y	10
Electrical modules, with safety function		GE	R	NA	2	IEEE-279/323	I	Y	
Cable with safety function		P	R	NA	2	IEEE-279/323/383	NA	Y	15

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
RCIC System	5.4.6								
Piping, and valves within outermost containment isolation valves (turbine inlet steam line and instrument lines only)		P	C,R	A	1	III-1	I	Y	10,28
Piping and valves within outermost containment isolation valves (other than above)		P	C,R	B	2	III-2	I	Y	10,28
Piping, and valves beyond outermost containment isolation valves (except for "other" shown below)		P	R	B	2	III-2	I	Y	10
Piping, and valves: Other; return test line to condensate storage tank beyond second isolation valve; vacuum pump discharge from vacuum pump to check valve F028; condensate pump discharge to valve for F049; all leakoff piping from RCIC governor valve; gland exhaust piping from RCIC turbine		P GE	O,R R	D D	Other	B31.1.0 B31.1.0	NA	N	
RCIC barometric condenser					Other		NA	N	
RCIC condensate pump and condenser vacuum pump		GE GE	R R	D B	Other	X NP&V-II	NA	N	
Pumps		GE	R	NA	2	X	I	Y	
RCIC turbine		GE	R	NA	2	IEEE-279/323	I	Y	11,38
Electrical modules, with safety function		P	R,C	NA	2	IEEE-279/323/383	I	Y	
Cable, with safety function					2		NA	Y	15

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
FUEL STORAGE AND HANDLING	9.1								
Storage Equipment	9.1.1, 9.1.2, 9.1.4								
New fuel storage racks		GE	R	NA	2	AWS D1.1	I	Y	
Spent fuel storage racks (includes storage of control rods, control rod guide tubes, defective fuel storage containers, out-of core sipping containers and channels)		P	R	NA	2	AISI/AA	I	Y	
Control Rod Storage Hangers (includes control rod blades)		P	R	NA	2	AISC	I	Y	
Channel storage racks		GE	R	NA	Other	AWS DI.I	NA	N	
In vessel racks		GE	R	NA	Other	AWS DI.I	I	Y	
Defective fuel storage containers		GE	R	NA	3	AWS DI.I	NA	Y	
Independent Spent Fuel Storage Facility (ISFSI)									
Horizontal Storage Modules		TNW	ISFSI	NA	Other	ACI 349 ACI 318	I	Y	62
Dry Shielded Canisters		TNW	ISFSI	NA	Other	ASME	I	Y	62,63
Fuel Servicing Equipment	9.1.4								
Fuel preparation machine		GE	R	NA	3	X	I	Y	
New fuel inspection stand		GE	R	NA	Other	X	NA	N	
General purpose grapple		GE	R	NA	2	X	I	Y	
Irradiated fuel shipping cask		NA	R	NA	Other	49CFR 173.393, 49CFR 173.396	I	Y	45
Jib cranes		P	R	NA	Other	CMAA 70/B30.10	NA	N	
Railway bay unloading crane		P	R	NA	Other	CMAA 70/B30.10	NA	N	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Reactor Vessel Servicing Equipment	9.1.4								
Main Steam Line Plugs (REM*Light Model)		GEH	R	NA	Other	AA	I	Y	48, 58
Dryer & separator sling [Supplied with Nuclear System]		GE	R	NA	Other	X	NA	Y	
RPV head strongback/carousel		GE	R	NA	Other	X	NA	Y	53
Service platform		GE	R	NA	Other	X	NA	N	73
Control rod grapple		GE	R	NA	Other	X	NA	Y	
Reactor building crane		P	R	NA	Other	CMAA 70/B30.20	I	Y	23
Main Steam Line Plugs (Spring Disk Model) [Wetlift]		NA	R	NA	Other	X	I	Y	57,58
MSL Plugs Restraint Ring [Wetlift]		NA	R	NA	Other	X	I	Y	57
Watertight Hook Box [Wetlift]		NA	R	NA	Other	X	NA	Y	59
Rigid Pole Handling System [Wetlift]		NA	R	NA	Other	X	NA	Y	60
Refuel Floor Auxiliary Platform (RFAP)		GE	R	NA	Other	CMAA-74	NA	Y	23
Jet Pump Plugs		NA	R	NA	Other	X	L	Y	69
360 Degree Refuel Work Platform		GE	R	NA	Other	AISC	NA	Y	23
Refueling Equipment	9.1.4								
Refueling platforms		GE	R	NA	2	X	I	Y	23
Fuel grapples		GE	R	NA	Other	X	NA	N	
Under Reactor Vessel Service Equipment	9.1.4								
Equipment handling platform		GE	C	NA	Other	X	NA	N	
CRD handling equipment		NES	C	NA	Other	X	NA	N	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Fuel Pool Cooling & Cleanup System	9.1.3								
Heat Exchangers		P	R	C	Other	III-3, TEMA C	NA	N	
Pumps		P	R	C	Other	III-3	NA	N	
Skimmer surge tanks		P	R	C	3	III-3	I	Y	
Filter demineralizer vessels		P	R	D	Other	VIII-1	NA	N	19,31
Resin and precoat tanks		P	R	D	Other	API-650	NA	N	
Cooling loop piping and valves downstream of Valve 1-53-001, 2-53-001		P	R	C	Other	III-3	NA	N	46,55
RHR intertie piping and valves		P	R	C	3	III-3	I	Y	
Emergency service water makeup piping and valves		P	R	C	3	III-3	I	Y	
Other piping and valves		P	R	D	Other	B31.1.0	NA	N	19,31,56
Cooling loop piping upstream of Valve 1-53-001, 2-53-001 from skimmer surge tank		P	R	C	3	III-3	I	Y	
RADIOACTIVE WASTE MANAGEMENT	11								
Liquid Waste Management Systems	11.2								
Centrifugal pumps		P	R/RW/T	D	Other	III-3**	NA	N	31,22
Atmospheric tanks		P	RW/T	D	Other	VIII-1/III-3	NA	N	31,22
Filter vessel		P	RW	D	Other	VIII-1	NA	N	31,22
Demineralizer vessel		P	RW	D	Other	III-3**	NA	N	31,22
Evaporator, complete system		P	RW	D	Other	III-3**/MA B	NA	N	31,22
Laundry drain filter		P	RW	D	Other	VIII-1	NA	N	
Liquid and chemical waste piping and valves		P	R/RW/T	D	Other	B31.1	NA	N	31,22
Laundry drain waste and auxiliary piping and valves		P	RW	D	Other	B31.1	NA	N	

**These items were constructed to the ASME Code but are not required to be maintained to this code per NRC Branch Technical Position ETSB 11-1.

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Offgas System	11.3								
Heat exchangers		P		D	Other		NA	N	22,31
Recombiner Condenser-Unit 2 & Common			T			VIII-1			50
Recombiner Condenser-Unit 1			T			III/VIII-1			
Recombiner Preheater			T			III-3			
Motive Steam Jet Condenser			T			III-3			
Condensate Cooler			T			VIII-1			
Charcoal Treatment Inlet			RW			VIII-1			
Precooler									
Chiller			T			VIII-1			
Piping		P	T,RW	D	Other	B31.1.0	NA	N	10,22,31
Valves, flow control		P	T,RW	D	Other	B31.1.0	NA	N	22,31
Valves, other		P	T,RW	D	Other	B31.1.0	NA	N	10,22,31
Motors		P	RW	NA	Other	NEMA-MG1	NA	N	22
HEPA filters		P	RW	D	Other	VIII-1	NA	N	22,31
Pressure vessels		P		D	Other		NA	N	22,31
Recombiner Vessel-Unit 1, 2 & Common			T	D		VIII-3			
Motive Steam Jet Ejector			T			VIII-1			
Charcoal Guard Bed			RW			VIII-1			
Charcoal Adsorber Vessels			RW			VIII-1			

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Solid Waste Management System	11.4								
Centrifugal pumps		P	RW	D	Other	III-3	NA	N	19,31,22
Regeneration waste transfer pumps		P	T	D	Other	Manuf. Standard	NA	N	22
Solidification system pumps		P	RW	D	Other	Manuf. Standard	NA	N	22
Filter demineralizer backwash tanks		P	R	D	Other	III-3	NA	N	22
Phase separators		P	RW	D	Other	VIII-1	NA	N	31,22
Regen. Waste surge tanks		P	T	D	Other	VIII-1	NA	N	22
Waste mixing tanks		P	RW	D	Other	VIII-1	NA	N	22
Waste containers, HSA		PL	RW	NA	Other	D1.1,D1.1	NA	N	
Waste containers, LSA		PL	RW	NA	Other	D1.1	NA	N	
Solid radwaste collecting piping and valves		P	R/T/RW	D	Other	B31.1	NA	N	31,22
Solidification system piping and valves		P	RW	D	Other	B31.1	NA	N	22
Aux. piping and valves		P	R/T/RW	D	Other	B31.1	NA	N	
Backwash tank drain lines		P	R/T/RW	D	Other	B31.1	NA	N	22
Reactor Water Cleanup System	5.4.8								
Filter demineralizer vessels		GE	R	C	Other	III-3	NA	N	
Regenerative and nonregenerative heat exchangers		GE	R	C	Other	III-3	NA	N	
Piping and valves within reactor coolant pressure boundary (RCPB)		P	R,C	A	1	III-1	I	Y	26 10
RWCU Recirc Pumps		GE	R	C	Other	III-3	NA	N	
Piping and valves beyond outermost containment isolation valve up to valves F104, F042, F034, F035		P	R	C	Other	III-3	NA	N	
Piping and valves beyond valves F104 and F042 to feedwater system		P	R	B	2	III-2	I	Y	
Piping and valves beyond F034 and F035		P	R	D	Other	B31.1.0	NA	N	
Mechanical modules		GE	R	NA	Other	X	NA	N	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
WATER SYSTEMS									
RHR Service Water and Spray Pond System	9.2.6								
Cross connect piping to RHR system, within second automatic isolation valve		P	R	B	2	III-2	I	Y	
Piping and valves, chemical treatment makeup water, blowdown		P	O	D	Other	B31.1.0	NA	N	
Piping, other		P	O,R,SW	C	3	III-3	I	Y	
RHR SW Pumps		P	SW	C	3	III-3	I	Y	
Pump motors		P	SW	NA	3	IEEE-323/344	I	Y	
Valves, isolation		P	C,R	B	2	III-2	I	Y	
Valves, other		P	O,R,SW	C	3	III-3	I	Y	
Electrical modules, with safety function		P	O,R,SW	NA	3	IEEE-279/323	I	Y	15
Cable, with safety function		P	O,R,SW	NA	3	IEEE-279/323/383	NA	Y	
Heat exchangers		P	R	C	3	III-3/TEMA C	I	Y	
Piping drain pumps		P	O	NA	Other	NA	NA	N	
Emergency Service Water System	9.2.5								
Piping up to RHR SW system		P,GH	O,G,R, T,CS, EG,SW	C	3	III-3	1	Y	
Piping supports in Diesel Generator 'E' building		GH	EG	C	3	III-3	I	Y	
Pumps		P	SW	C	3	III-3	I	Y	
Pump Motors		P	SW	NA	3	IEEE-323/344	I	Y	
Valves		P,GH	O,G,R, T,CS, SW,EG	C	3	III-3	I	Y	
Electrical modules with safety function		P	O,G,R,T, CS,SW	NA	3	IEE-279/323	I	Y	
Cable, with safety function		P	O,G,R, SW,T,CS	NA	3	IEEE-279/323/383	NA	Y	15
Heat exchangers		P,GH	R,T,G, CS,EG	C	3	III-3	I	Y	52

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Reactor Building Closed Cooling Water System	9.2.2								
Piping and valves forming part of containment boundary		P	R,C	B	2	III-2	I	Y	
Piping and valves, other		P	R,C,T	D	Other	B31.1.0	NA	N	
Tanks		P	R	D	Other	VIII-1	NA	N	
Heat exchangers		P	R	D	Other	VIII-1/TEMA C	NA	N	
Pumps		P	R	D	Other	Hyd.I	NA	N	24
Plant Service Water System	9.2.1								
Piping and valves forming part of the SW/ESW Interface		P	R,C	C	3	III-3	I	Y	
Piping and valves, other		P	R,C,T	D	Other	B31.1.0	NA	N	
Heat Exchangers		P	CT	D	Other	VIII-1/TEMA C	NA	N	
Pumps		P	CW	D	Other	Hyd.I	NA	N	24
Turbine Building Closed Cooling Water System	9.2.3								
Piping and valves		P	T	D	Other	B31.1.0	NA	N	
Heat exchangers		P	T	D	Other	VIII-1/TEMA C	NA	N	
Tanks		P	T	D	Other	VIII-1	NA	N	
Pumps		P	T	D	Other	Hyd.I	NA	N	24
Circulating Water System	9.2								
Piping		P	O,T,CW	D	Other	AWWA-C201	NA	N	
Condenser		P	T	D	Other	HEI	NA	N	
Pumps		P	CW	NA	Other	VIII-1/Hyd.I	NA	N	24
Valves		P	T,CW	D	Other	AWWA-C201 &	NA	N	
Cooling tower		P	O	NA	Other	C504	NA	N	
Piping, Non-pipe Class		P	O,T,CW	NA	Other	NONE	NA	N	
Valves, Non-pipe Class		P	T,CW	NA	Other	AWWA AWWA	NA	N	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Diesel Generator 'A-D' Systems	9.5.4,9.5.5, 9.5.6, 9.5.7, 9.5.8								
Diesel Generator		P	G	NA	2	IEEE-387	I	Y	
Heat Exchangers, Jacket Water, Intercoolers and Lube Oil		P	G	C	3	III-3/TEMA C	I	Y	54
Engine Mounted Piping and Valves for Fuel Oil, Lube Oil, Jacket Water, Intake/Exhaust, Starting Air Systems		P	G	NA	Other	X	I	Y	
Filter Housings		P	G	C	3	VIII/B31.1.0	I	Y	
Starting Air System Piping and Valves From Air Receiver Inlet Check Valves to Engine Skid		P	G	C	3	III-3	I	Y	
Other Starting Air Piping and Valves Upstream of the Air Receiver Inlet Check Valves		P	G	D	Other	B31.1.0	NA	N	
Air Dryer Piping and Components		P	G	NA	Other	NA	NA	N	
Air receivers		P	G	C	3	III-3	I	Y	
Air Compressors		P	G	D	Other	NA	NA	N	
Fuel Oil Storage Tanks		P	O	C	3	III-3	I	Y	
Fuel Oil Day Tanks		P	G	C	3	III-3	I	Y	
Fuel Oil System Piping and Valves, Auxiliary Skid and Transfer System (except vent lines and portion of fill lines)		P	G, O	C	3	III-3	I	Y	
Fuel Oil Transfer Pump		P	O	C	3	III-3	I	Y	
Fuel Oil Transfer Pump Motor		P	O	NA	3	IEEE-323/344	I	Y	
Jacket Water System Piping and Valves		P	G	D	Other	X	I	Y	
Jacket Water Heater		P	G	NA	Other	NA	I	Y	
Jacket Water Circulating Pump		P	G	D	Other	Hyd. I	I	Y	24
Air Intake and Exhaust Piping System (except Mufflers, Filers, Manifolds and Expansion Joints)		P	G	C	3	III-3	I	Y	
Lube Oil System Piping and Valves		P	G	D	Other	X	I	Y	
Lube Oil Circulating Pump		P	G	D	Other	Hyd. I	NA	N	24
Dirty Lube Oil Drain Tank		P	G	NA	Other	None	NA	N	
Lube Oil Heater		P	G	NA	Other	None	NA	N	
Electrical Modules with Safety Functions		P	G	NA	3	IEEE-279	I	Y	
Cable with Safety Functions		P	G	NA	3	IEEE-279/323/383	NA	Y	15

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Diesel Generator 'E' Systems	9.5.4,-5,-.6,-.7,-.8								
Diesel Generator		GH	EG	N/A	2	DEMA	I	Y	
Diesel Engine intercoolers		GH	EG	C	3	III-3	I	Y	
Engine mounted piping and valves for lube oil, jacket water, fuel oil, intake/exhaust, starting air systems required to perform a safety function		GH	EG	N/A	Other	X	I	Y	
Intake/Exhaust piping and expansion joints		GH	EG	C	3	III-3	I	Y	
Auxiliary skid mounted piping, valves, filters and strainers		GH	EG	C	3	III-3	I	Y	
Jacket water, lube oil, fuel oil motor driven pumps		GH	EG	C	3	III-3	I	Y	
Jacket water and lube oil pump motor		GH	EG	N/A	Other	IEEE-323,-344	I	Y	
Fuel oil pump motor		GH	EG	N/A	3	IEEE-323,-344	I	Y	
Jacket water Stand Pipe		GH	EG	C	3	III-3	I	Y	
Jacket water, lube oil, fuel oil, heat exchangers		GH	EG	C	3	III-3	I	Y	
Jacket water and lube oil heaters		GH	EG	N/A	Other	IEEE-323,-344	I	Y	
Fuel oil transfer system piping and valves (except vent line and portion of fill line)		GH	EG,O	C	3	III-3	I	Y	
Fuel oil transfer pump		GH	EG	C	3	III-3	I	Y	
Fuel oil transfer pump motor		GH	EG	N/A	3	IEEE-323,-344	I	Y	
Fuel oil day tank		GH	EG	C	3	III-3	I	Y	
Fuel oil storage tank		GH	O	C	3	III-3	I	Y	
Fuel oil transfer system strainer		GH	EG	C	3	III-3	I	Y	
Electrical modules with safety function		GH	EG	N/A	3	IEEE-323,-344	I	Y	
Cable, with safety functions		GH	EG,O	N/A	3	IEEE-383	I	Y	
Air receiver skid piping and valves		GH	EG	C	3	III-3	I	Y	
Air receivers		GH	EG	C	3	III-3	I	Y	
Air Compressors		GH	EG	D	Other	NA	NA	N	
Engine mounted equipment required to perform a safety function		GH	EG	N/A	3	DEMA	I	Y	
Engine mounted equipment and valves not required to perform safety function		GH	EG	N/A	Other	DEMA	N/A	N	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
HEATING, VENTILATING & AIR CONDITIONING SYSTEMS									
Control Structure	9.4.1								
Control Structure Emergency Outside Air Supply System CSEOASS or CREOASS									
Motors		P	CS	NA	3	IEEE323/344	I	Y	16
Fans		P	CS	NA	3	AMCA	I	Y	16
Prefilters		P	CS	NA	3	UL CLASS I	I	Y	16
Electric Heaters		P	CS	NA	3	UL-1096	I	Y	16
HEPA Filters		P	CS	NA	3	MIL-F-51068C (or ASME AG-1-1997)[71] MIL-F-51079A (or ASME AG-1-1997)[71] UL-586	I	Y	16
Adsorber Units		P	CS	NA	3	AACC CS-8	I	Y	16
Ductwork		P	CS	NA	3	AISI, AAWS	I	Y	16
Dampers		P	CS	NA	3	AMCA	I	Y	16
Control Room & Computer Room HVAC									
Motors		P	CS	NA	3	NEMA MG1 IEEE-344/323	I	Y	
Instrumentation		P	CS	NA		IEEE-279/323	I	Y	
Fans		P	CS	NA	3	AMCA	I	Y	
Prefilters		P	CS	NA	3	UL Class I	I	Y	
HEPA filters		P	CS	NA	3	MIL-F-51068C (or ASME AG-1-1997)[71]	I	Y	
		P	CS	NA	3	MIL-F-51079 (or ASME AG-1-1997)[71]	I	Y	
Adsorber units		P	CS	NA	3	AACC CS-8	I	Y	
Dampers, isolation		P	CS	NA	3	ANSI N509-80 Table 5-1	I	Y	
Dampers, flow distribution		P	CS	NA	3	AMCA	I	Y	
Ductwork		P	CS		3	AMCA	I	Y	
Coils, cooling		P	CS	C	3	AISI, AWS	I	Y	
Electric heating coils						ARI NEC,NEMA			

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Relay Room, Cable Spreading, Battery Room HVAC, and HVAC Equipment Room	9.4.1								
Motors		P	CS	NA	3	NEMA MG1 IEEE-344/323	I	Y	
Fans		P	CS	NA	3	AMCA	I	Y	
Prefilters		P	CS	NA	3	UL Class 1	I	Y	
Coils, heating, electric		P	CS	NA	3	NEC, NEMA	I	Y	
Coils, cooling		P	CS	NA	3	ARI	I	Y	
Dampers		P	CS	NA	3	AMCA	I	Y	
Ductwork		P	CS	NA	3	AISI	I	Y	
Piping & valves		P	CS	C	3	B31.1	I	Y	
Instrumentation		P	CS	NA	Other	IEEE-279/323	I	Y	
SGTS Equipment Room H&V	9.4.1.1.5								
Motors		P	CS	NA	3	NEMA MG1 IEEE-344/323	I	Y	
Fans		P	CS	NA	3	AMCA	I	Y	
Heaters, electric		P	CS	NA	3	NEC 424 NFPA 90A & 90B	I	Y	
Dampers		P	CS	NA	3	AMCA	I	Y	
Ductwork		P	CS	NA	3	AISI,AWS	I	Y	
Instrumentation		P	CS	NA	3	IEEE-279/323			

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
REACTOR BUILDING									
Reactor Building HVAC (Zone I and Zone II) Includes Steam Tunnel Cooling, U2 Elec. Eq. Room H&V and U1 Remote Shutdown Room Ventilation	9.4								
Motors		P	R	NA	Other	NEMA MG 1	NA	N	
Fans		P	R	NA	Other	AMCA	NA	N	
Prefilters		P	R	NA	Other	UL Class I	NA	N	
HEPA Filters						MIL-F-51068C, (or ASME AG-1-1997)[71] MIL-F-51079 (or ASME AG-1-1997)[71]			
Adsorber Units		P	R	NA	Other	AACC CS-8 RDT M-16-1T	NA	N	
Coils, Coiling – Chilled & Service Water		P	R	NA	Other	ARI	NA	N	
Coils, Heating		P	R	NA	Other	NEC, NEMA	NA	Y	
Dampers, Isolation, & Ductwork Connected to RB Recirculation System		P	R	NA	3	AMCA, SMACNA, AISI, AWS	I	Y	
Dampers, Other		P	R	NA	Other	AMCA	NA	N	
Ductwork – Other		P	R	NA	Other	SMACNA, AISI, AWS	NA	N	
Piping Connected to SGTS		P	R	C	3	NFPC	I	Y	
Remainder Also see Plant Chilled Water System		P	R	D	Other	B31.1	NA	N	
ECCS and RCIC Pump Rooms	9.4.2								
Motors		P	R	NA	3	IEEE-323/344	I	Y	
Fans		P	R	NA	3	AMCA	I	Y	
Filters		P	R	NA	3	NA	I	Y	
Coils, cooling		P	R	NA	3	ARI	I	Y	
Piping and valves		P	R	C	3	III-3	I	Y	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Emergency SWGR and Load Center Rooms	9.4								
Motors		P	R	NA	3	NEMA MG1 IEEE-344/323	I	Y	
Fans		P	R	NA	3	AMCA	I	Y	
Prefilters		P	R	NA	3	UL Class 1	I	Y	
Coils, cooling U1-CSCW, U2-DX & condenser		P	R	C	3	III-3	I	Y	
Coils Cooling – RBCW, Both Units		P	R	NA	3	ARI	I	Y	
Dampers		P	R	NA	3	AMCA	I	Y	
Ductwork		P	R	NA	3	AISI,AWS	I	Y	
Piping & Valves,		P	R	C	3	III-3	I	Y	
Unit 1-CSCW, Unit 2-Refrigeration Instrumentation		P	R	NA	Other	IEEE-279/323	I	Y	
Also See Plant Chilled Water System									
Refueling Floor HVAC (Zone III)-Both Units	9.4.6								
Motors		P	R	NA	Other	NEMA MG1	NA	N	
Fans		P	R	NA	Other	AMCA	NA	N	
Prefilters		P	R	NA	Other	UL Class 1	NA	N	
HEPA filters		P	R	NA	Other	MIL-F-51079 (or ASME AG-1-1997)[71]	NA	N	
		P	R	NA	Other	MIL-F-51068C (or ASME AG-1-1997)[71]	NA	N	
Adsorber units		P	R	NA	Other	RDT M-16-1T	NA	N	
Coils, Cooling (RBCW) & Heating		R	R	NA	3	AACC CS-8 ARI	I	Y	
Damper-Isolation and Ductwork Connected to RB Recirculation System		P	R	NA	Other	AMCR,SMACNA	NA	N	
Ductwork - Other		P	R	NA	Other	AISI,AWS	NA	N	
Dampers - Other		P	R	NA	Other	SMACNA/AISI AMCA	NA	N	
Piping & Valves						B31.1			
Also See Plant Chilled Water System									

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Drywell Atmosphere Recirculation and Cooling System	9.4.5								
Motors		P	C	NA	Other	IEEE-334/ NEMA MG1	I	Y	65
Fans		P	C	NA	Other	AMCA 210	I	Y	65
Coils, cooling		P	C	NA	Other	ARI	I	Y	65
Ductwork		P	C	NA	Other	AISI,AWS	I	Y	65
Dampers		P	C	NA	3	AMCA	I	Y	65
Piping and valves		P	C	NA	Other	B31.1	NA	N	
Combustible Gas Control System									
Primary Containment Atmosphere monitoring system (PCAMS)		P	C,R	B,D	2	IEEE-344 III-2	I	Y	10, 41
Piping valves forming Containment Penetration Boundary		P	C,R	B	2	IEEE-344 III-2	I	Y	69
Standby Gas Treatment & RB Recirculation System									
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 (or ASME AG-1-1997)[71]	I	Y	16
		P	CS	NA	3	MIL-F-51068C (or ASME AG-1-1997)[71]	I	Y	16
Adsorber units		P	CS	NA	3	AACC CS-8	I	Y	16
		P	CS	NA	3	ANSI N509-80 Table 5-1	I	Y	16
Ductwork		P	CS	C	3	AISI,AWS	I	Y	16
Dampers		P	CS	C	3	AMCA	I	Y	16
Piping		P	CS	NA	3	NFPC	I	Y	
Valves		P	CS	NA	3	B31.1	I	Y	
Electric heaters						NEMA & NEC			
Control panels						NEMA, IEEE 323			

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Radwaste Building HVAC	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-51079A (or ASME AG-1-1997)[71]	NA	N	
		P	RW	NA	Other	MIL-F-51068C	NA	N	
		P	RW	NA	Other	(or ASME AG-1-1997)[71]	NA	N	
Coils, cooling & heating						ARI & UL			
Adsorber units		P	RW	NA	Other	MIL-C-17605	NA	N	
		P	RW	NA	Other	RDT M-16-1T	NA	N	
Ductwork		P	RW	NA	Other	SMACNA	NA	N	
Dampers						AMCA			
Electric heating coil						NEC			
Diesel Generator Buildings HVAC	9.4.7								
Motors		P,GH	G,EG	NA	3	NEMA MG-1 IEEE344	I	Y	
Fans		P,GH	G,EG	NA	3	AMCA	I	Y	
Ductwork		P,GH	G, EG	NA	3	AISI,AWS	I	Y	
Dampers		P,GH	G,EG	NA	3	AMCA	I	Y	
Turbine Building HVAC	9.4.4								
Motors		P	T	NA	Other	NEMA MG1	NA	N	
Fans		P	T	NA	Other	AMCA	NA	N	
Filters		P	T	NA	Other	NA	NA	N	
Coils, cooling		P	T	NA	Other	ARI	NA	N	
Ductwork		P	T	NA	Other	SMACNA	NA	N	
Dampers		P	T	NA	Other	AMCA	NA	N	
Electric heating coil		P	T	NA	Other	NEC,NEMA	NA	N	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Emergency Service Water Pumphouse Ventilation	9.4.8								
Motors		P	SW	NA	3	NEMA MG1 IEEE344	I	Y	
Fans		P	SW	NA	3	AMCA	I	Y	
Ductwork		P	SW	NA	3	AISI,AWS	I	Y	
Dampers		P	SW	NA	3	AMCA	I	Y	
Administration Building HVAC									
Motors		P	O	NA	Other	NEMA MG1	NA	N	
Fans		P	O	NA	Other	AMCA	NA	N	
Prefilters		P	O	NA	Other	UL Class 1	NA	N	
Dampers		P	O	NA	Other	AMCA	NA	N	
Coils, cooling		P	O	NA	Other	ARI	NA	N	
Coils, heating		P	O	NA	Other	NEC, NEMA	NA	N	
Ductwork		P	O	NA	Other	SMACNA	NA	N	
Main Steam and Power Conversion System	10.3								
Main Steam System									
Main steam piping to turbine stop valves and branch line piping up to and including first valve.		P	R,T	B	2	III-2	NA	N	20
Main Steam piping from and including the turbine stop valve to turbine HP casing and branch line piping up to and including first valve.		P	T	D	Other	B31.1.0	NA	N	9,18,33
Steam piping and valves, other		P	T	D	Other	B31.1.0	NA	N	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Main Condenser Evacuation System	10.4.2								
Piping and components		P	T,RW	D	Other	B31.1.0	NA	N	
Heat exchangers		P	T	D	Other	VIII-1	NA	N	
Air ejectors		P	T	D	Other	B31.1.0	NA	N	
Condensate and Feedwater System	10.4.7								
Reactor feedwater piping and valves, RPV to outermost isolation valve		P	C,R	A	1	III-1/III-2	I	Y	32
Reactor feedwater, piping and valves, other		P	R,T	D	Other	B31.1.0	NA	N	
Steam piping to feedwater pump turbine		P	T	D	Other	B31.1.0	NA	N	
Crossover (low pressure) piping		P	T	D	Other	B31.1.0	NA	N	
Bypass (high pressure) piping, downstream of first isolation valve									
Condensate piping and valves		P	T	D	Other	B31.1.0	NA	N	
Heat exchangers		P	T	D	Other	VIII-1/TEMA C	NA	N	
Pressure Vessels		P	T	D	Other	VIII-I	NA	N	
Pumps, feedwater and condensate		P	T	NA	Other	Hyd.I	NA	N	24
Condensate Cleanup System	10.4.6								
Piping and valves		P	T	D	Other	B31.1.0	NA	N	
Pressure vessels		P	T	D	Other	VIII-1	NA	N	
Condensate Storage and Transfer System	9.2.10								
Tanks		P	O	D	Other	D100	NA	N	
Piping and valves		P	RW,O,T,R	D	Other	B31.1.0	NA	N	
Pumps		P	T	D	Other	Hyd.I	NA	N	24
Turbine Gland Sealing System	10.4.3								
Steam seal evaporator (SSE)		P	T	D	Other	VIII-1	NA	N	
Steam Packing Exhauster		P	T	D	Other	X	NA	N	
Piping and valves		P	T	D	Other	B31.1.0/X	NA	N	
SSE Drain Tank		P	T	D	Other	VIII-1	NA	N	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Auxiliary Steam System	10.4.11								
Auxiliary boilers		P	T	D	Other	I	NA	N	
Piping and valves		P	T	D	Other	B31.1.0	NA	N	
Main Chlorination System	9.2.8								
Pumps		P	CA	D	Other	Hyd.I	NA	N	24
Motors		P	CA	NA	Other	NEMA MG1	NA	N	
Piping and valves		P	CA	D	Other	B31.1.0	NA	N	
Lube Oil System	10.2								
Batch oil tank		P	O	D	Other	VIII-1	NA	N	
Reservoirs		P	T	D	Other	API-620	NA	N	
Pumps		P	T	D	Other	VIII/Hyd.I	NA	N	24
Motors		P	T	NA	Other	NEMA MG1	NA	N	
Conditioners		P	T	NA	Other	NA	NA	N	
Heat Exchangers		P	T	D	Other	VIII/TEMA C	NA	N	
Piping and valves		P	T	D	Other	B31.1.0	NA	N	
Instrumentation and Control Systems									
Reactor Instrumentation	7.2								
Reactor Protection System		GE	C,R,T	NA	2	IEEE-279	I	Y	
All portions that must operate to control and safety shut down the reactor to a hot shutdown condition (Electronic modules)									
Cable with safety function		P	C,R,T	NA	2	IEEE-279/383	NA	Y	15
Alternate Rod Injection		P	R	NA	2	10CFR50.62	NA	Y	47
All portions that must operate to control and safely shut down the reactor to a hot shutdown condition (Electronic modules)									
Cable with safety function									

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Neutron Monitoring System									
Guide Tubes, TIP (from Ball/Shear valve assembly through penetration to first connection)		GE	C,R	B	2	III-2	I	Y	
Guide Tubes, TIP (remainder of tube after first connection)		GE	C,R	B	2	III-2	NA	Y	
Valves, isolation, TIP subsystem		GE	C,R	B	2	III-2	I	Y	
Electrical modules, IRM and APRM		GE	C,R	NA	2	IEEE-279	I	Y	
Cable, IRM and APRM, with safety function		P	C,R	NA	2	IEEE-279/383	NA	Y	15
Non-Nuclear Instrumentation									
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	IIII-279	I	Y	
Engineered Safety Features Actuation System	7.3								
All portions		GE	C,R	NA	2	IEEE-279	I	Y	
Engineered Safety Features Systems (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,GH	G,EG	NA	2	IEEE-279	I	Y	
Main steam line break detection system			C,R,T	NA	2	IEEE-279	I	Y	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Controls and Instrumentation Associated with Safe Shutdown Systems	7.4								
PCAMS		P	C,R	B,D	2	IEEE-279	I	Y	
Instrumentation Associated with Other Systems Required for Safety	7.6								
Spent fuel pooling cooling system		P	R	NA	2	IEEE-279	I	Y	
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 with safety related equipment		P	ALL	NA	2	IEEE-279	I	Y	
Instrumentation Associated with Systems Not Required for Safety	7.7								
Seismic Instrumentation		P	ALL	NA	Other	NA	I	Y	
Area radiation monitoring		P	ALL	NA	Other	NA	NA	N	
Leak Detection Instrumentation									
Temperature elements		GE	C,R,T		2	IEEE-323	I	Y	39
Differential temperature switch		GE	C,R		2	IEEE-323	I	Y	39
Differential flow indicator		GE	CS		2	IEEE-323	I	Y	39
Pressure switch		GE	C,R		2	IEEE-323	I	Y	39
Differential pressure indicator switch		GE	CS		2	IEEE-323	I	Y	39
Differential flow summer		GE	CS		2	IEEE-323	I	Y	39
Process Radiation Monitors									
Electrical modules, main steam line and reactor building ventilation monitor		GE	R	NA	2	IEEE-323	I	Y	
Cable, main steam line and reactor building ventilation monitors		P	R	NA	2	IEEE-279/323/383	NA	Y	15

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
ELECTRIC SYSTEMS	8								
Engineered Safety Features AC Equipment									
4.16 kV switchgear	8.3	P,GH	R,G,EG	NA	2	IEEE-308/323/344	I	Y	
480 V load centers		P,GH	R,EG	NA	2	IEEE-308/323/344	I	Y	
480 V motor control centers		P,GH	R,G,EG	NA	2	IEEE-308/323/344	I	Y	
Engineered Safety Features DC Equipment	8.3								
125 V and 250 V station batteries and racks, battery chargers		P,GH	CS,EG	NA	2	IEEE-308/323/344	I	Y	
125 V switchgear and distribution panels		P,GH	CS,EG	NA	2	IEEE-308/323/344	I	Y	
120 V Vital AC System Equipment	8.3								
Static inverters		P	CS	NA	2	IEEE-308/323/344	NA	Y	
120 V distribution panels		P	CS,R,EG	NA	2	IEEE-308/323/344	I	Y	
Electric Cables for ESF Equipment	8.3								
5 kV power cables		P	ALL	NA	2	IEEE-323/383	NA	Y	15
600 V power cables		P	ALL	NA	2	IEEE-323/383	NA	Y	15
Control and instrumentation cables		P	ALL	NA	2	IEEE-323/383	NA	Y	15
Miscellaneous Electrical	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	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
AUXILIARY SYSTEMS	9.3.1								
Compressed Air and Instrument Gas Systems									
Compressors		P,PL	T,R,I,RW	NA	Other	NONE	NA	N	
Pressure Vessels, for safety related equipment		P	C,R	C	3	III-3	I	Y	
Pressure vessels, not for safety related equipment		P,PL	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 bottles		P	R	NA	Other	DOT	I	N	64
Piping and supports – Diesel Generator 'E' Building		GH	EG	D	Other	B31.1	I	N	49

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Sampling Systems	9.3.2								
Sample coolers		P, PL	R,T,RW	D	Other	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	R	B	2	III-2	I	Y	10
Piping and valves on III-3 systems		P	R	C	3	III-3	NA	Y	68
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	A	1	III-1	I	Y	10

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

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 *
Fire Protection System	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	
Piping and supports – Diesel Generator 'E' Building		GH	EG	NA	Other	NFPA/NEPIA	I	N	49
General External Hydrogen System									
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	
Nitrogen System									
Vessels		P	O	D	Other	VIII-1	NA	N	
Piping		P	R,O,RW	D	Other	B31.1.0	NA	N	
Valves		P	O	D	Other	B31.1.0	NA	N	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

Reactor Building Chilled Water System	9.2.12.2								
Chillers		P	R	D	Other	X/B9.1	NA	N	
Chilled Water Heat Exchangers		P	R	D	Other	VIII/ TEMA C	NA	N	
Pumps		P	R	D	Other	VIII/ Hyd.I	NA	N	24
Piping		P	R	D	Other	B31.1	NA	N	
Valves		P	R	B	2	III-2	I	Y	
Isolation, Chilled Water to Primary Containment									
Remainder		P	R	D	Other	B31.1	NA	N	
Turbine Building Chilled Water System	**9.2.12.3**								
Chillers		P	T	D	Other	X/B9.1	NA	N	
Chilled Water Heat Exchangers		P	T	D	Other	VIII/TEMA C	NA	N	
Pumps		P	T	D	Other	VIII/ Hyd.I	NA	N	24
Piping		P	T	D	Other	B31.1	NA	N	
Valves		P	T	D	Other	B31.1	NA	N	
Radwaste Building Chilled Water System	**9.2.12.4**								
Chillers		P	RW	D	Other	X/B9.1	NA	N	
Chilled Water Heat Exchangers		P	RW	D	Other	VIII/TEMA C	NA	N	
Pumps		P	RW	D	Other	VIII/Hyd.I	NA	N	24
Piping		P	RW	D	Other	B31.1	NA	N	
Valves		P	RW	D	Other	B31.1	NA	N	
Control Structure Chilled Water System	**9.2.12.1**								
Centrifugal Water Chillers - (Except Condenser)		P	CS	D	3	VIII	I	Y	
Centrifugal Water Chillers - Condenser		P	CS	C	3	III-3	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	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

Equipment and Floor Drains	9.3.3								
Piping, radioactive		P	ALL	D	Other	B31.1.0	NA	N	
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	
Piping and supports in Diesel Generator 'E' Building – nonradioactive		GH	EG	NA	Other	B31.1	I	N	49
Demineralized Water Makeup System	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	
Piping and supports – Diesel Generator 'E' Building		GH	EG	D	Other	B31.1	I	N	49

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

Buildings									
Reactor Building		P	R	B	2	ACI/AISC	I	Y	
Pressure resistant doors		P	R	B	2	ASTM/AWS AISC	NA	Y	
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-2	I	Y	44
Downcomer Bracing		P	C	B	2	AISC	I	Y	
Diesel Generator 'A-D' Building		P	G	NA	2	ACI/AISC	I	Y	
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	0	NA	Other	ACI/AISC	NA	N	
Circulating water pump house		P	0	NA	Other	ACI/AISC	NA	N	
ESSW pumphouse		P	0	NA	3	ACI/AISC	I	Y	
Low Level Radwaste Holding Facility		P	0	NA	Other	ACI/AISC /UBC	NA	N	
Diesel Generator 'E' Building		GH	EG	NA	2	ACI/AISC	I	Y	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

Structures									
Roof Scuppers and Parapet Openings		P	R,CS,G	NA	2	ACI/AISC	NA	Y	
Spray pond & Emergency Spillway		P	O	NA	3	ACI	I	Y	
Condensate storage tank		P	O	D	Other	D100	NA	N	
Spent fuel pool, Rxwell,Dryer-Sep.Pool&Cask Pit		P	R	NA	2	ACI/AISC	I	Y	
Spent fuel pool liner		P	R	NA	2	ACI/AISC	I	Y	
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	ACI/AISC	I	Y	
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	
New Fuel Storage Vault		P	R	NA	2	ACI/AISC	I	Y	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

Post Accident Monitoring	7.6								
SRV position indication system		P	R	NA	2	344	I	Y	
Noble gas effluent radiological monitor		PL	T	NA	NA	ANSI N13.1	NA	N	
Continuous samples of plant effluents for radioactive iodine & particulates		PL	T	NA	NA	ANSI N13.1	NA	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_2/O_2 monitor system		P	R	NA	2	323/344	I	Y	70
Hydrogen Water Chemistry System	9.5.9								
Tanks		NA	O	NA	NA	VIII	NA	N	67
Gas System Components		NA	O, T	NA	NA	B31.1	NA	N	
Piping		NA	O, T	NA	NA	B31.1	NA	N	
Passive Zinc Injection System	9.5.10								
Vessel		NA	T	NA	NA	VIII-1	NA	N	
Piping and valves		NA	T	NA	NA	B31.1	NA	N	

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

General Notes and Comments

1) GE = General Electric

GEH = General Electric - Hitachi

PL = Pennsylvania Power & Light

P = Bechtel as agents for Pennsylvania Power & Light

GH = Gibbs and Hill (Architect/Engineer) and Dravo Constructors, Inc. as agents for Pennsylvania Power & Light

AREVA= AREVA NP, INC. (for reload fuel) Formerly Framatome ANP, formally SPC)

TNW = Transnucléaire West

NA = Not Applicable, see comments

2) Location

C Part of or within primary containment

R Reactor Building

T Turbine Building

CS Control Structure

RW Radwaste and Offgas Building

G Diesel Generator 'A - D' Building

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

EG Diesel Generator ‘E' Building

I Intake Structure

A Administration Building

CW Circulating Water Pumphouse

SW Engineering Safeguards Service Water (ESSW) Pumphouse

CA Chlorine and Acid Storage Building

ISFSI Independent Spent Fuel Storage Installation

O Outdoors, Onsite

3) A,B,C,D - Quality group classification as defined in Regulatory Guide 1.26. The equipment shall be constructed in accordance with codes listed in Tables 3.2-2, 3.2-3, and 3.2-4.

NA - Not applicable to quality group classification

4) 1,2,3, other = safety classes defined in ANSI-N212 and Section 3.2.3.

NA - Not applicable to safety classification

5) Where shown this supplements information in Tables 3.2/2, 3.2/3, and 3.2/4. Notations for principle construction codes:

I ASME Boiler and Pressure Vessel Code, Section I

III 1,2,3, NA, NF, NG, MC = ASME Boiler and Pressure Vessel Code Section III, Class 1,2,3 or MC, or subsection NA, NF or NG

Table Rev 76

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

VIII-1	ASME Boiler and Pressure Vessel Code, Section VIII, Div. 1
NP&V-II	ASME Nuclear Pressure & Valve Code, Class II
API-650	American Petroleum Institute, Welded Steel Tanks for Oil Storage
API-620	American Petroleum Institute, Recommended Rules for Design and Construction of Large, Welded, Low-Pressure Storage Tanks
B9.1	ANSI B9.1, Safety Code for Mechanical Refrigeration
B31.1.0	ANSI B31.1.0, Code for Pressure Piping
SMACNA	Sheet Metal & Air Conditioning Contractors National Assoc., Inc.
HEI	Heat Exchange Institute
TEMA C	Tubular Exchanger Manufacturers Assoc., Class C
HYD.I	Hydraulic Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute, "Specification for the Design of Coldformed Steel Structural Members", 1968, "Design of Light Gage Cold-Formed Stainless Steel Structural Members", 1968
ACI	American Concrete Institute
AMCA	AMCA 210 "Test Codes for Air Moving Devices" AMCA 211 A "AMCA Certified Ratings Program for Air Performance"
AWS D1.1	American Welding Society, Structural Welding Code

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

AWWA	American Water Works Association
CS-8T	American Association for Contamination Control, AACC CS-8T, "Tentative Standard for High-efficiency Gas Phase Adsorber Cells" July, 1972
DEMA	Diesel Engine Manufacturer Association, "Standard Practices for Stationary Diesel and Gas Engines", 1971
D100	American Waterworks Association, AWWA-D100 "Standard for Steel Tanks Standpipes, Reservoirs and Elevated Tanks for Water Storage"
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NEMA MG1	National Electrical Manufacturers' Association, NEMA-MG-1, 1971 "Motors and Generators"
NEMA SM22	National Electrical Manufacturers' Association, NEMA-SM-22, 1970, "Single Stage Steam Turbine for Mechanical Drive Service"
IEEE-279	IEEE-279, Criteria for Protection Systems for Nuclear Power Generating Stations - 1971.
IEEE-308	IEEE-308, Standard Criteria for Class IE Electric Systems for Nuclear Power Generating Stations 1974
IEEE-317	IEEE-317, Standard for Electrical Penetration Assemblies in Containment Structures for Nuclear Fueled Power Generating Stations - 1972
IEEE-323	IEEE-323, General Guide for Qualifying Class IE Electric Equipment for Nuclear Power Generating Stations - 1974
IEEE-344	IEEE-344, Guide for Seismic Qualification of Class IE Electric Equipment for Nuclear Power Generating Stations - 1971 (1975 version used for the Diesel Generator ‘E' Facility)

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

IEEE-383	Type Test of Class IE Electrical Cables, Field Splices, and Connections for Nuclear Power Generating Stations-1975
IEEE-387	IEEE-387, Criteria for Diesel Generator Units applied as Standby Power Supplies for Nuclear Power Generating Stations - 1972
HSI-306	Health and Safety Information, USAEC, Revised Minimal Specification for the High Efficiency Particulate Air Filter. Issue No. 306
NFPA	National Fire Protection Association
NEPIA	Nuclear Energy Property Insurance Association
ARI	Air Conditioning and Refrigeration Institute
DOT	Department of Transportation – Title 49, Section 178.37, Specification 3AA
D1.1	See AWS-D1.1 above
UBC	Uniform Building Code
NA	None Applicable
x	Manufacturer's Standards
AA	Aluminum Association Standard for Aluminum Structures

6) I - The equipment shall be constructed in accordance with the seismic requirements for the Safe Shutdown Earthquake, as described in Section 3.7.

NA - The seismic requirements for the Safe Shutdown Earthquake are not applicable to the equipment or structure.

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

7) Y - Requires compliance with the requirements of 10CFR50, Appendix B in accordance with the quality assurance program described in Chapter 17.

N - Not within the scope of 10CFR50, Appendix B.

8) This note has been intentionally left blank.

9) The following qualification shall be met with respect to the certification requirements:

1. The manufacturer of the turbine stop valves, turbine control valves, turbine bypass valves, and main steam leads from turbine control valve to HP turbine casing shall use quality control procedures equivalent to those defined in General Electric Publication GEZ/4982A, "General Electric Large Steam Turbine-Generator Quality Control Program".

2. A certification shall be obtained from the manufacturer of these valves and steam leads that the quality control program so defined has been accomplished.

10) 1. Instrument and sampling piping from the point where they connect to the process boundary and through the process shutoff (root) valve(s), isolation valve(s), and excess flow check valve, when provided, will be of the same classification as the system to which they connect.

2. See Figure 3.2-2 for instrument line classifications.

3. Other instrument lines:

   a) Those connected to special equipment or Group D system pressure boundaries and utilized to actuate safety systems will be Group C from the system pressure boundary through the process shutoff valve(s) to the sensing instrumentation.

   b) Those connected to Group B and Group C systems and not utilized to actuate safety systems will be of Group D classification except for those Group C systems by GE utilizing capillary (filled and sealed) instrument lines.

   c) Those connected to Group D systems and not utilized to actuate safety systems will be of Group D classification.

4. For sample lines connected to the Reactor Recirculation System, the sample line shall be Group A through the penetration to the outboard containment isolation valve and Group D from the isolation valve to the shutoff valve outside the sample station.

11) The HPCI and RCIC turbines do not fall within the applicable design codes. To ensure that the turbine is fabricated to the standards commensurate with their safety and performance requirements, General Electric has established specific design requirements for this component.

12) The hydraulic control unit (HCU) is a General Electric factory assembled, engineered module of valves, tubing, piping, and stored water which controls a single control rod drive by the application of precisely timed sequences of pressures and flows to accomplish slow insertion or withdrawal of the control rods for power control, while providing rapid insertion for reactor scram.

    Although the hydraulic control unit is field installed and connected to process piping, many of its internal parts differ markedly from process piping components because of the more complex functions they must provide. Thus, although the codes and standards invoked by the Group A, B, C, and D pressure integrity quality levels clearly apply at all levels to the interfaces between the HCU and the connecting conventional piping components (eg, pipe nipples, fittings, simple hand valves, etc.), it is considered that they do not apply to the specialty parts (eg, solenoid valves, pneumatic components and instruments).

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

The design and construction specifications for the HCU do invoke such codes and standards as can be reasonably applied to individual parts in developing required quality levels, but these codes and standards are supplemented with additional requirements for these parts and for the remaining parts and details. For example, (1) all welds are LP inspected, (2) all socket welds are inspected for gap between pipe and socket bottom, (3) all welding is performed by qualified welders, (4) all work is done per written procedures.

The following examples are typical of the problems associated with codes designed to control field assembled components when applied to the design and production of factory fabricated specialty components:

1. The HCU nitrogen gas bottle is a punch forging which is mechanically joined to the accumulator. It stores the energy required to scram a drive at low vessel pressures. It has been code stamped since its introduction in 1966, although its size exempts it from mandatory stamping. It is constructed of a material listed by ASME B&PV Code Section VIII which was selected for its strength and formability.

2. The scram accumulator is joined to the HCU by a split flange joint chosen for its compact design to facilitate both assembly and maintenance. Both the design and construction conform to ANSI B31.1.0 Power Piping Code. This joint, which requires a design pressure of 1750 psig, has been proof tested to 10,000 psi.

3. The accumulator nitrogen shutoff valve is a 6,000 psi cartridge valve whose copper alloy material is listed by ASME B&PV Code Section VIII. The valve was chosen for this service partly because it is qualified by the U.S. Navy for submarine service.

4. The directional control valves are solenoid pilot operated valves which are subplate mounted on the HCU. The valve has a body specially designed for the HCU, but the operating parts are identical to a commercial valve with a proven history of satisfactory service. The pressure containing parts are stainless steel alloys chosen for service, fabrication and magnetic properties. The manufacturer cannot substitute a code material for that used for the solenoid core tube.

The foregoing examples are not meant to justify one pressure integrity quality level or another, but to demonstrate the codes and standards invoked by those quality levels are not strictly applicable to special equipment and part designs. Group D Classification is generally applicable, supplemented by the QC techniques described above. Thus, the Hydraulic Control Unit shall be classified as "Special Equipment".

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

13) This Note Has Been Deleted.

14) This Note Has Been Deleted.

15) The trays and supports for safety related cables meet Seismic Category I and 10CFR50, Appendix B requirements, except in the turbine building. All Class IE and affiliated circuits, including RPS circuits located in a non-Seismic Category I structure (i.e. Turbine Building) are contained within Class IE, Seismic Category I raceways although they are supported from a non-Seismic Category I structure. (See Subsection 3.7b.2.8 for seismic information about the turbine building).

16) AEC Regulatory Guide 1.52, June 1973, suggests various industry standards and codes for this equipment. These references were used for system design, with exceptions as noted in section.

17) AMCA Publication 211A, "AMCA Certified Ratings Program for Air Performance" or AMCA Standard 210, "Test Codes for Air Moving Devices" can be used for blower design purposes.

18) This section of steam piping was seismically analyzed to ensure that it will not fail under loadings normally associated with an SSE.

19) All or part of this component is constructed to a more stringent code or standard than indicated.

20) The MSS from its outer isolation valve up to and including the turbine stop valve and all branch lines 2-1/2 in. in diameter and larger, up to and including the first valve (including their restraints) shall be designed by the use of an appropriate dynamic seismic-system analysis to withstand the Operating Bases Earthquake (OBE) and Safe Shutdown Earthquake design loads in combination with other appropriate loads, within the limits specified for Class 2 pipe in the ASME, Section III Code. The mathematical model for the dynamic seismic analyses of the MSS and branch line piping shall include the turbine stop valves and piping beyond the stop valves including the piping to the turbine casing. The dynamic input loads for design of the MSS shall be derived from a time history model analysis (or an equivalent method) of the reactor and applicable portions of the turbine building. An elastic multi-degree-of-freedom system analysis shall be used to determine the input to the MSS. The stress allowable and associated deformation limits for piping shall be in accordance with the ASME Section III Class 2 requirements for the OBE and SSE loading combinations. The MSS supporting structures (those portions of the turbine building) shall be such that the MSS and its supports can maintain their integrity.

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

21) The power conversion system structures may be constructed in accordance with applicable codes for steam power plants. Those portions of the turbine building interacting with the main steam lines and branch lines are analyzed to show that system integrity is maintained for the main steam lines and branch lines during the SSE.

22) The lower quality group classification, associated construction codes and seismic category are appropriate for this system as a result of analysis per regulatory guides 1.26 and 1.29. The loss of effluent from system components was analyzed to demonstrate that the site boundary dose would not exceed .5 Rem. The classifications indicated in the table are considered justified for the aforementioned doses.

23) These components and associated supporting structures must be designed to retain structural integrity during and after the SSE but do not have to retain operability for protection of public safety. The basic requirement is prevention of structural collapse and damage to equipment and structures required for protection of the public safety and health.

24) There is no established standard for commercial pumps. ASME Section VIII, Division 1 and ANSI B31.1.0 Power Piping represent related, available standards which, while intended for other applications, are used for guidance and recommendations in determining quality group D pump allowable stresses, steel casting quality factors, wall thicknesses, materials compatibility and specifications, temperature pressure environment restrictions, fittings, flanges, gaskets, and bolting, installation procedures, etc.

25) This Note Has Been Deleted.

26) The shell side of the nonregenerative heat exchanger was constructed in accordance with ASME Section VIII, Division I. The regenerative and nonregenerative heat exchangers were also constructed to TEMA Class R requirements.

27) The containment spray ring header and connecting piping extending from the containment isolation valve meets all of the requirements of Group B except that hydrostatic testing is not required.

28) The HPCI and RCIC turbine exhaust lines extending from the containment isolating valve to the suppression pool meets all of the requirements of Group B except that hydrostatic testing of this portion of the piping is not required.

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

29) Piping which penetrates the containment, thus acting as an extension of the containment pressure boundary meets the requirements of Group B or higher. This requirement extends from the first pipe weld on the inside of the penetration to and involving the first isolation valve outside the containment.

30) Reinforced concrete primary containment, including drywell head, hatches, vent pipes, penetrations and spare penetrations are in accordance with Pennsylvania Special Certification. Personnel locks are in accordance with ASME Code Section III, Subsection NE, 1971 Edition, up to and including Addenda of Summer, 1972.

31) Systems and components so designated conform to Quality Group D (Augmented) as defined in NRC Branch Technical Position ETSB 11-1 (Rev. 1) Parts B. IV and B.VI. The Gaseous Radwaste System also conforms to the seismic requirements defined in NRC BTP ETSB-11-1 (Rev. 1) Part B. II. a (3).

32) The feedwater lines from the reactor vessel through the third isolation valve are part of the reactor coolant pressure boundary. The classification of the feedwater line from the reactor vessel through the second isolation valve is Group A. The classification of the feedwater line from the second isolation valve through the third valve is Group B. These classifications are in accordance with Regulatory Guide 1.26 Revision 3, February 1976. Beyond the third valve the classification is Group D.

33) 1. The main steam leads from the turbine control valve to the turbine casing meets all of the requirements of Group D plus the addition of the following requirements:

   a. All longitudinal and circumferential butt weld joints are radiographed (or ultrasonically tested to equivalent standards). Where size or configuration does not permit effective volumetric examination, magnetic particle or liquid penetrant examination may be substituted. Examination procedures and acceptance standards are at least equivalent to those specified in ANSI B31.1.0 Power Piping Code.

   b. All fillet and socket welds are examined by either magnetic particle or liquid penetrant methods. All structural attachment welds to pressure retaining materials are examined by either magnetic particle or liquid penetrant methods. Examination procedures and acceptance standards are at least equivalent to those specified in ANSI B31.1.0 Power Piping Code.

c. All inspection records are maintained for the life of the plant. These records include data pertaining to qualification of inspection personnel, examination procedures, and examination results.

OR

2. The manufacturer of the main leads utilized quality control procedures equivalent to those defined for main steam leads in the General Electric Publication GEZ-4982, "General Electric Large Steam Turbine-Generator Quality Control Program".

A certification has been obtained from the manufacturer of the main steam leads that the quality control so defined has been accomplished.

34) This Note Has Been Deleted.

35) The control rod drive insert and withdraw lines from the drive flange, up to and including the first valve on the hydraulic control unit shall be Safety Class 2.

36) These Notes Have Been Deleted.

37) This Note Has Been Deleted.

38) The turbine does not fall within the applicable design codes. To ensure that the turbine is fabricated to the standards commensurate with their safety and performance requirements, General Electric has established specific design requirements for this component which are as follows:

a. All welding shall be qualified in accordance with Section IX, ASME Boiler and Pressure Vessel Code,

b. All pressure-containing castings and fabrications shall be hydrotested in 1.5 X design pressure,

c. All high-pressure castings shall be radiographed according to:

ASTM E-94	
E-142	maximum feasible volume
E-71, 186 or 280	Severity level 3

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, and

h. Record system and traceability according to ASME Boiler and Pressure Code Section III, Appendix IX, Paragraph IX 225.

39) These safety grade instruments provide signals for alarms and/or isolation in the following areas and are collected into this table in one area for ease of identification. Systems: Nuclear Boiler; RHR; RCIC; HPCI; RWCU.

40) This note has been intentionally left blank.

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. Shield wall concrete, because of concrete placement, is non-safety related.

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

43) Code Case 1481-1 has been used because the design temperature of the piping involved is greater than 700°F. ASME Sec. III Appendix Table 1-7.2 only gives allowable stress data up to 700°F. The use of this code case allows stress analysis to be done using stress values in accordance with stress tables of ASME Sec. VIII Division I.

44) ASME Boiler and Pressure Vessel Code, Division 1 Section III Subsection NC has been used for design and fabrication of the downcomers.

45) Shipping casks will not be bought. They will be rented from the shipper.

46) Portions of embedded fuel pool piping are B31.1.

47) Seismically qualified for operating basis earthquakes.

48) The main steam line plugs are supplied by GE-Hitachi and have integral installation tools. The plugs are designed to withstand a design pressure of 60 psig from the steam line side and 16 psig from the vessel side. The plugs also have cable lanyards designed to prevent a dropped plug from reaching the upper core support plate during installation or removal of the plugs. The main steam line plugs are considered as safety-related components and the cable and installation tool are classified as non-quality.

49) All non-safety related piping inside the diesel generator E building has been seismically supported to satisfy Seismic Category 1 requirements in order to eliminate potential safety impact item concerns.

50) Table notations do not reflect seismic island design. For a further description on seismic island reference FSAR Subsection 6.2.3.2.3.1.

51) The Unit #1 offgas recombiner condenser is a dual code vessel. The shell is ASME Section VIII and the bonnet, tubes, and tube sheet are Section III. Section III is in excess of ESTB11-1 requirement but is remaining as Section III due to the inability of the shell supplier to re-stamp the entire condenser as Section VIII.

52) The Reactor and Turbine Building Closed Cooling Water System Heat Exchangers are presented separately.

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

53) For the strongback/carousel with integral nut-rack, compliance with the requirements of 10CFR50 Appendix B, (refer to column "Quality Assurance Requirements" and Note 7) is required only for the strongback components which are load-bearing during the RPV head lift. All other components are not within the scope of 10CFR50 Appendix B.

54) The diesel generator jacket water coolers (OE507B and OE507D) utilize an ASME Section VIII replacement tube bundle in accordance with the guidance of NRC Generic Letter 89-09.

55) The following manually operated valves provide a fillable volume for use of the RHRFPC mode.

The following manually operated valves, which are in the seismically analyzed sections of pipe, require a capability to be closed following a seismic event. These valves have been analyzed to demonstrate that they will be capable of closure following a seismic event:

Spent Fuel Pool to 153018A/B (253018A/B), Fuel Pool Gate Drain to 153038 (253038), and Reactor Well Diffuser to 15303OA/B (25303OA/B).

The following manually operated valves, which are in seismically analyzed sections of pipe, have a post seismic event function to remain in the closed position:

Reactor Well Drain to 153031 (253031), Reactor Well Drain to 153032 (253032), Reactor Well Drain to 153062 (253062), Dryer Separator Pool Drain to 153040 (253040), Dryer Separator Pool Drain to 153041 (253041), Cask Pit Gate Drain to 153050 (2503050), Cask Pit Drain to 153054 (253054), Cask Pit Drain to 053084 & 253800, and Cask Pit Diffuser to 053025.

56) The portions of piping between the surge tank up to and including Valves HV15308 (25308), 153076 (253076), and 153064A/B (253064A/B) have been analyzed to show that they will remain intact following a seismic event. These valves have been analyzed to demonstrate that they will be capable of closure (or remaining closed) following a seismic event. Closure of these valves is necessary to provide a fillable volume for use of the RHRFPC mode. The Skimmer Surge Tank Drain Line Valves, 153065A (253065A), are normally closed and assumed to remain closed during a seismic event.

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

57) Refuel Floor Wetlift System: The Main Steam Line (MSL) Plugs (Disk Spring Model) are supplied by Preferred Engineering. The MSL Plugs are designed to withstand a design pressure of 50 psig. The MSL Plugs Restraint Ring supplied by Preferred Engineering provides a mechanical means to prevent ejection of the MSL Plugs while moving fuel during 45.4 psig Local Leak Rate Test (LLRT) of Main Steam Isolation Valve (MSIV) and during 22.5 psig back pressurization LLRT of MSIV.

58) Qualified for Safe Shutdown Earthquake (SSE).

59) Refuel Floor Wetlift System: The Watertight Hook Box is supplied by Preferred Engineering for use with the Dryer and Separator Sling.

60) Refuel Floor Wetlift System: The Rigid Pole Handling System is supplied by ABB Combustion Engineering for use on the Unit 1 or 2 Refueling Platforms.

61) ASME Section III – NB-3674 “Design of Pipe Supporting Elements” states that supporting elements, including hangers, anchors, and sliding components shall be designed in accordance with NF-3600. (Pending completion of Subsection NF, supporting elements shall be designed in accordance with the requirements of ANSI B31.7-1969).

ANSI B31.7 and MSS-SP-58 (included by reference in ANSI B31.7) were the principal design codes for the GE portion of the suspension system.

62) The Horizontal Storage Modules and Dry Shielded Canisters are designed in accordance with 10CFR72. These components are designated as "Important to Safety".

63) The Dry Shielded Canister (DSC) is designed to meet the intent of ASME Section III, Subsection NB and the DSC Basket is designed to meet the intent of the ASME Section III, Subsections NF and NG, however the DSC is not a code vessel. Utilization of this ASME criterion meets or exceeds the requirements of 10CFR72.

64) Bottles conform to Department of Transportation (DOT) Standards, Title 49, Section 178.37, Specification 3AA. These bottles and associated connection assemblies are not available as Seismic Category I components. However, the bottles are mounted in Seismic Category I racks and are connected to Seismic Category I gas distribution piping.

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

65) Seismic Category “I” and Quality Assurance Requirement “Y” applies to the safety related subsystems (Motors, Fans, Cooling Coils, Ductwork and Dampers) of Drywell Unit Coolers 1V414A/B, 1V416A/B and the Recirculation Fans 1V418A/B. The Seismic Category for all other subsystems of Drywell Unit Coolers is “safety impact” type. The Quality Assurance requirements for all other subsystems of Drywell Unit Coolers is “N”.

66) The SLC System Storage Tanks were purchased before Article NC-3800 on atmospheric tanks was included in the ASME Section III, Class 2 code. The tanks were designed and fabricated to API-650 and supplemental ASME Section III, Class C testing and examination requirements and therefore, meet Quality Group B requirements.

67) Hyrodgen Water Chemistry System: The hydrogen and oxygen storage tanks and associated equipment are located south of the Unit 2 turbine building, outside of the plant security boundary. The storage facility is owned, operated and maintained by a commercial gas supply vendor.

68) ASME Section III, Class 3 sample piping consists of those sample lines connected to the RWCU and FPCC Systems. These portions of the RWCU and FPCC Systems are design and constructed as ASME Section III, Class 3, yet are not Seismic Category I.

69) This section does not apply to the H_2O_2 Analyzers. See Post Accident Monitoring for the design criteria for the H_2O_2 Analyzers.

70) The design of the H_2O_2 Analyzer closed system outside primary containment is in accordance with the design requirements for such systems specified in USNRC Standard Review Plan 6.2.4 (September 1975), Containment Isolation Provisions, paragraph II.3.e., except as follows. The boundary valves between the H_2O_2 Analyzer and Post Accident Sampling System (i.e.,SV-1(2)2361, SV-1(2)2365, SV-1(2)2366, SV-1(2)2368, & SV-1(2)2369) are not electrical Class 1E. See Figure 3.2-2, requirements for “instruments which are open to containment and form a containment pressure boundary “for additional guidance regarding piping/tubing classification.

71) The Jet Pump Plugs are supplied by Preferred Engineering. The Jet Pump Plugs are designed to withstand a design pressure of 100 psi.

TABLE 3.2-1

SSES DESIGN CRITERIA SUMMARY

72) The referenced military standards (MIL-F-51068C and MIL-F-51079A) have been deleted, but represent acceptable standards for installed (or previously purchased) HEPA filters. New HEPA filters will meet the standards presented in ASME AG-1-1997.

73) The Service Platform is not used and has been eliminated.

TABLE 3.2-2

SUMMARY OF CODES AND STANDARDS FOR COMPONENTS OF WATER-COOLED NUCLEAR POWER UNITS SUPPLIED BY AE (ORDERED PRIOR TO JULY 1, 1971 WITH THE EXCEPTIONS OF THOSE COMPONENTS LOCATED INSIDE THE RCPB, AND THE REACTOR PRESSURE VESSEL)

	CODE CLASSIFICATIONS			
COMPONENT	**GROUP A**	**GROUP B**	**GROUP C**	**GROUP D**
Pressure Vessels	ASME Boiler and Pressure Vessel Code, Section III, Class A. See Footnote (2)	ASME Boiler and Pressure Vessel Code, Section III, Class C. See Footnote (2)	ASME Boiler and Pressure Vessel Code, Section VIII, Division 1	ASME Boiler and Pressure Vessel Code, Section VIII, Division 1 or Equivalent
0-15 Psig Storage Tanks	—	API-620 with NDT Examination	API-620 with NDT Examination	API-620 or Equivalent
Atmospheric Storage Tanks	—	Applicable Storage Tank Codes such as API-650, AWWAD100 or ANSI B 96.1 with NDT Examination	Applicable Storage Tank Codes such as API-650 AWWAD100 or ANSI B 96.1 with NDT Examination	API-650, AWWAD100 or ANSI B 96.1 or Equivalent
Piping	ANSI B 31.7, Class 1. See Footnote (3)	ANSI B 31.7, Class II. See Footnote (3)	ANSI B 31.7, Class III. See Footnote (3)	ANSI B 31.1.0 or Equivalent
Pumps and Valves	Draft ASME Code for Pumps and Valves Class I. See Footnote (1) & (4)	Draft ASME Code for Pumps and Valves Class II. See Footnote (1) & (4)	Draft ASME Code for Pumps and Valves Class III. See Footnote (4)	Valves - ANSI B 31.1.0 or Equivalent Pump - Draft ASME Code for Pumps Valves Class III or Equivalent

(1) All pressure-retaining cast parts are radiographed (or ultrasonically tested to equivalent standards). Where size or configuration does not permit effective volumetric examination, magnetic particle or liquid penetrant examination may be substituted. Examination procedures and acceptance standards are at least equivalent to those specified in the applicable class in the code.

(2) 1968 Edition including Addenda through Summer 1970.

(3) 1969 Edition and Addenda.

(4) November 1968 Edition and March 1970 Addenda.

TABLE 3.2-3

SUMMARY OF CODES AND STANDARDS FOR COMPONENTS OF WATER-COOLED NUCLEAR POWER UNITS SUPPLIED BY AE ORDERED AFTER JULY 1, 1971

CODE CLASSIFICATIONS				
COMPONENT	GROUP A[1]	GROUP B[2]	GROUP C[3]	GROUP D[4]
Pressure Vessels	ASME Boiler and Pressure Vessel Code, Section III, Nuclear Power Plant Components – CLASS 1	ASME Boiler and Pressure Vessel Code, Section III, Nuclear Power Plant Components – CLASS 2	ASME Boiler and Pressure Vessel Code, Section III, Nuclear Power Plant Components – CLASS 3	ASME Boiler and Pressure Vessel Code, Section VIII, Division 1
Piping	As above[5][12][14][15][17][20]	As above[6][11][14][18][20]	As above [7][14][19][20]	ANSI B31.1 Power Piping[20]
Pipe Supports	As above	As above[11][13]	As above[11][13]	ANSI B31.1
Pumps	As above	As above	As above	Manufacturer's Standards
Valves	As above	As above	As above	ANSI B31.1
0-15 psig Storage Tanks	---	As above[8]	As above[8]	AP-620 or ASME Boiler and Pressure Vessel Code Section VIII, Division 1
Atmospheric Storage Tanks	---	As above[8]	As above[8][9][10]	API-650, AWWA D 100, ANSI B 96.1, or ASME Boiler and Pressure Vessel Code Section VIII, Division 1

[1][2][3] Components ordered after July 1, 1971 comply with the Codes and Standards in effect at the date of award of the order, except that Group A, B and C components ordered between July 1, 1971 and July 1, 1972 also comply with the following paragraphs of the ASME Boiler and Pressure Vessel Code, Section III, Winter, 1971 Addenda as applicable: (1) NB-2510, NB-2541, NB-2553, NB-2561, (2) NC-2510, NC-2571, (3) ND-2510, ND-2571.

[4] Certain portions of the radwaste systems meet the additional requirements of Quality Group D (Augmented) as defined in NRC Branch Technical Position ETSB 11-1, Parts B.IV and B.VI.

[5][6][7] For installation of ASME items, ASME Section III, 1971 Edition with Addenda through the Winter of 1972 shall apply. ASME material shall meet the requirements of ASME Section II, 1971 Edition through the Winter 1972 Addenda or any later Edition or Addenda. Any additional ASME Section III material requirements of Subsection 2000, 1971 Edition through the Winter 1972 Addenda, shall apply. For postweld heat treatment, Paragraphs NB-4600, NC-4600 and ND-4600 of ASME Section III, 1974 Edition, Summer 1976 Addenda are used.

For the installation of attachments to piping systems after testing, paragraphs NB-4436, NC-4436, and ND-4436 of ASME Section III, 1974 Edition, Summer 1976 Addenda are used.

For attachments to piping systems, Paragraphs NB-4433, NC-4433 and ND-4433 of ASME Section III, 1977 Edition, Summer 1979 Addenda are used.

For Code Nameplates, Stamping, and Data Reports, paragraphs NCA-8210, NCA-8220, NCA-8230, NCA-8300, NCA-8414, NCA-8415, NCA-8416, NCA-8417, NCA-8418, and NCA-8420 of ASME Section III, 1977 Edition, Winter 1977 Addenda are used.

TABLE 3.2-3 (Continued)

SUMMARY OF CODES AND STANDARDS FOR COMPONENTS OF WATER-COOLED NUCLEAR POWER UNITS SUPPLIED BY AE ORDERED AFTER JULY 1, 1971

(8)	Orders for Nuclear Storage Tanks were placed after December 31, 1971.
(9)	Atmospheric Storage Tanks fabricated to Group C requirements may be used in a Group D or Group D (Augmented) system.
(10)	The Diesel 'E' Fuel Oil Storage Tank Complies with ASME B&PV Code Section III, 1971 Edition, Winter 1972 Addenda. The A-D Diesel Generator Fuel Oil Storage Tanks comply with the ASME Boiler and Pressure Vessel Code, Section III, 1974 Edition, Winter 1975 Addenda as applicable.
(11)	Control Rod Drive Hydraulic System (CRD) piping and supports are constructed in accordance with ASME Section III, 1974 Edition with Addenda through Winter 1975 except as permitted by NA-1140(f) of ASME III as follows. Materials conform with ASME Section III, 1974 Edition, with Addenda through Winter 1975, or any later Edition of Addenda. ASME Section III, 1977 Edition, with Addenda through Winter 1977, Subsection NF, Paragraph NF-2610, shall apply to piping system support.
(12)	1" and smaller Nuclear Class 1 Piping is designed in accordance with the rules for Nuclear Class 2 piping per ASME Section III, 1974 Edition, Summer 1975 Addenda, Paragraph NB3630.
(13)	Allowable stresses for pipe supports for Nuclear Class 1, 2 and 3 piping shall be in accordance with ANSI Power Piping Code B31.1, 1973.
(14)	For the design of ASME flanges, ASME Section III, 1977 Edition with addenda through summer 1979 is used.
(15)	For the design of Nuclear Class 1, 1" branch connections, ASME Section III, 1977 Edition with Addenda through Summer 1979 is used.
(16)	Code case N316, approved for use at Susquehanna SES by the NRC on 2/17/82, is used in the Bechtel design of small pipe and CRD small pipe.
(17)	For the evaluation of Nuclear Class 1 piping components for snubber elimination or other piping modifications, ASME Section III, 1977 edition with addenda through summer of 1979 may be applied.
(18)	For the evaluation of Nuclear Class 2 piping components for snubber elimination or other piping modifications, ASME Section III, 1980 edition with addenda through winter of 1981 may be applied.
(19)	For the evaluation of Nuclear Class 3 piping components for snubber elimination or other piping modifications, ASME Section III, 1983 edition with addenda through summer of 1984 may be applied.
(20)	For the evaluation of ASME piping components or ANSI piping components which are analyzed for Seismic Category I requirements, Code Case N-411 may be applied for Snubber Elimination or other piping modifications/evaluations.

TABLE 3.2-4

CODE GROUP DESIGNATIONS - INDUSTRY CODES AND STANDARDS
FOR MECHANICAL COMPONENTS SUPPLIED BY THE NSSS VENDOR
(SEE NOTE a)

Group Classification	ASME III Code Classes		Components Ordered on or after Jan. 1, 1970 to July 1, 1971	Components Ordered on or after July 1, 1971
	1968 Ed.	1971 Ed.		
A	A	1	ASME III, 1 NA & NB Subsections TEMA C	ASME III, 1 NA & NB Subsection TEMA C note (d)
B	B*,C	2,MC*	ASME III, B* C ANSI B31.7 II NP & VC, TEMA C TANKS	ASME III, 2 & MC*, NA & NC Subsections NA & NE Subsections TEMA C TANKS NA, NC Note(d)
C	-	3	ASME VIII, Div. 1 ANSI B31.7, III NP & VC, III TEMA C TANKS	ASME III, 3 NA & ND Subsections TEMA C TANKS NA, ND Note (d)
D	-	-	ASME VIII, Div. 1 ANSI B31.1.0 TEMA C TANKS (b) Note (c)	ASME VIII, Div. 1 ANSI B31.1.0 TEMA C TANKS (b) Note (c)

* Metal containment vessel (as applicable) and extensions of containment only. Future addenda will include concrete containment vessels under ASME Section III, Divisions 2, at which time the requirements of this division shall also be met.

NOTES:

(a) With options and additions as necessary for service conditions and environmental requirements.

(b) Class D tanks shall be designed, constructed, and tested to meet the intent of API Standards 620/650, AWWA Standard D100, or ANSI B96.1 Standard for Aluminum Tanks.

(c) For pumps classified Group D and operating above 150 psi or 212°F, ASME Section VIII, Div. 1 shall be used as a guide in calculating the wall thickness for pressure retaining parts and in sizing the cover bolting. For pumps operating below 150 psi and 212°F, manufacturer's standard pump for service intended may be used.

(d) For pumps classified A, B, or C applicable Subsections NB, NC, or ND respectively in ASME Boiler and Pressure Vessel Code, Section III shall be used as a guide in calculating the thickness of pressure retaining portions of the pump and in sizing cover bolting.

TABLE 3.2-5

SUMMARY OF SAFETY CLASS DESIGN REQUIREMENTS (MINIMUM)

Design Requirements	Safety Class			
	1	2	3	Other
Quality Group Classification[1]	A	B	C	D
Quality Assurance Requirement[2]	B	B	B	N/A
Seismic Category[3]	I	I	I	N/A

(1) The equipment shall be constructed in accordance with the indicated code group listed in Table 3.2-1 and defined in Tables 3.2-2, 3.2-3, and 3.2-4.

(2) B - The equipment shall be constructed in accordance with the quality assurance requirements of 10CFR50, Appendix B.

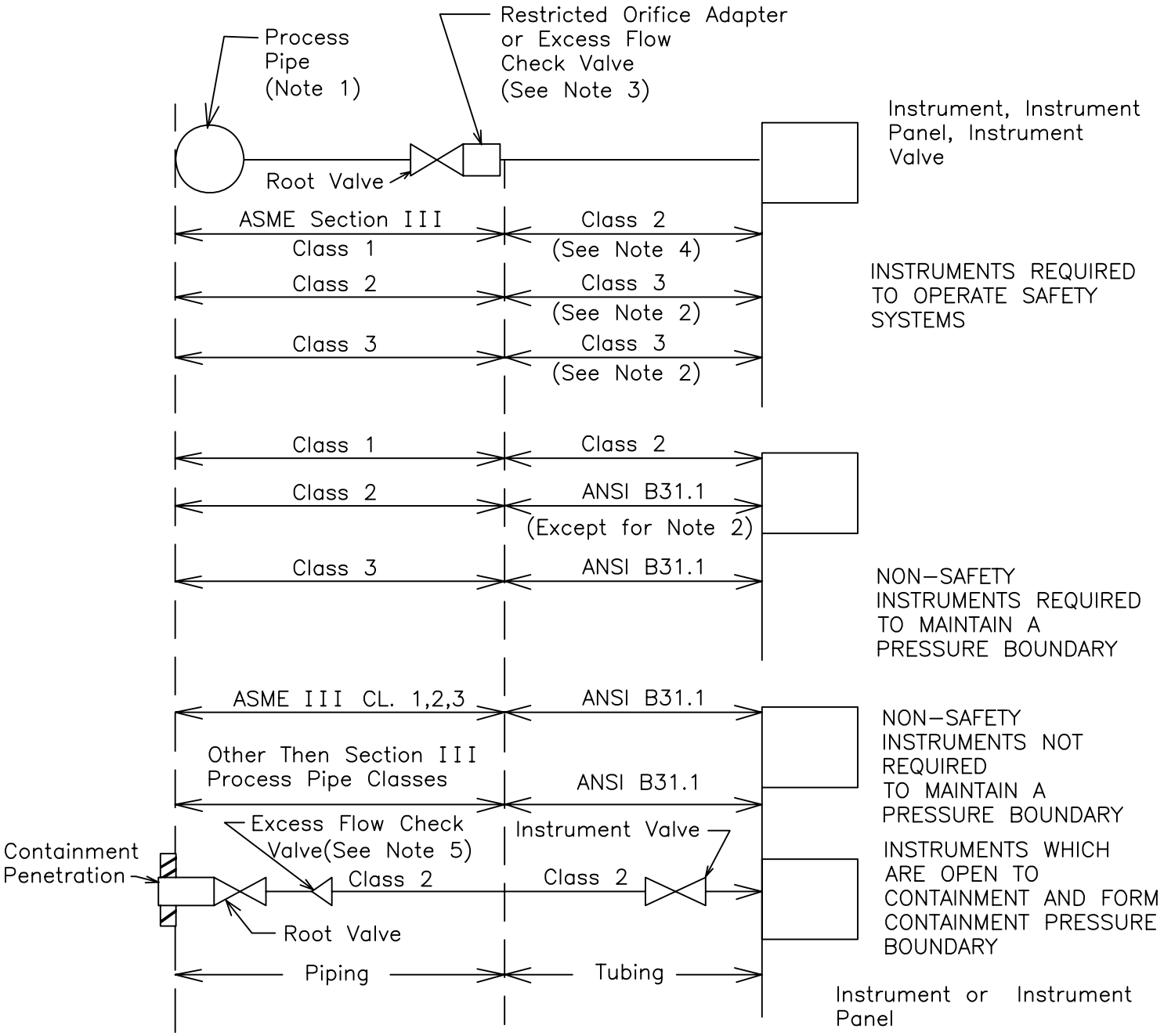
N/A - The equipment shall be constructed in accordance with the quality assurance requirements consistent with accepted practice for steam power plants.

(3) I - The equipment for these safety classes shall be constructed in accordance with the seismic requirements for the safe shutdown earthquake as described in Section 3.7.

N/A - The seismic requirements for the safe shutdown earthquake are not applicable to the equipment of this classification.

Security-Related Information
Figure Withheld Under 10 CFR 2.390

SUSQUEHANNA STEAM ELECTRIC STATION UNITS 1 & 2 FINAL SAFETY ANALYSIS REPORT
CODE CLASSIFICATION OF PIPING AND VALVES FIGURE 3.2-1



Notes:
1) Class for instrument lines from pipe to root valve and adaper is same as process pipe class.
2) Class 2 shall be required on lines that can contain reactor coolant or are radiation Class V and are outside contaiment.
3) A reducing adapter at the root valve serves as a restriction orifice.
4) Most GE shutoff instrument valves are B31.1 not Class 2.
5) Any automatic valve equivalent to an excess flow check valve may be used as an isolation valve for this type of line.

FSAR REV.65

SUSQUEHANNA STEAM ELECTRIC STATION
UNITS 1 & 2
FINAL SAFETY ANALYSIS REPORT

MINIMUM INSTRUMENT LINE CLASSFICATIONS

FIGURE 3.2-2, Rev. 48

Auto-Cad Figure Fsar 3_2_2.dwg