3.2 Classification of Structures, Systems, and Components

The APR1400 structures, systems, and components (SSCs) are classified according to nuclear safety classification, quality groups, seismic category, 10 CFR 50, Appendix B, quality assurance program, and codes and standards.

Safety-related SSCs are defined in 10 CFR 50.2 as SSCs that are relied on to remain functional during and following design basis events to ensure the following:

a. The integrity of the reactor coolant pressure boundary

b. The capability to shut down the reactor and maintain it in a safe shutdown condition; or

c. The capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the applicable guideline exposures in 10 CFR 50.34(a)(1) or 10 CFR 100.11

The APR1400 SSCs that perform the above safety functions are classified as safety-related. The safety-related SSCs meet the quality assurance requirements of Appendix B of 10 CFR 50. SSCs that do not perform the above safety functions are classified as non-safety-related, and the requirements of 10 CFR 50, Appendix B, are not applied to these SSCs.

However, APR1400 SSCs that are important to safety but are not safety-related are additionally classified so that they are designed to the appropriate quality standards. The augmented quality assurance requirements for these SSCs, which are described in Chapter 17, are commensurate with the importance of their safety functions. The areas where these augmented quality controls are applied to SSCs important to safety are anticipated transient without scram (ATWS), station blackout, fire protection, seismic Category II SSCs, and risk-significant non-safety-related SSCs determined by the design reliability assurance program, which is described in Section 17.4.

This section provides the methodology that is used to classify APR1400 SSCs. Seismic classifications are described in Subsection 3.2.1, and quality group classifications are described in Subsection 3.2.2. The safety classifications are described in Subsection 3.2.3.

3.2.1 Seismic Classification

General Design Criterion (GDC) 2 (Reference 1) requires, in part, that nuclear power plant SSCs important to safety be designed to withstand the effects of earthquakes without loss of capability to perform their safety function. Plant features, including foundations and supports, that are designed to remain functional in the event of a safe shutdown earthquake (SSE) or surface deformation are designed as seismic Category I. These plant features are the features that are necessary to provide reasonable assurance of (1) the integrity of the reactor coolant pressure boundary (RCPB), (2) the capability to shut down the reactor and maintain it in a safe shutdown condition, or (3) the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the guideline exposures of 10 CFR 50.34(a)(1) and 10 CFR 52.79 or 10 CFR 100.11 (Reference 2).

The earthquake for which these plant features are designed is defined as the SSE in 10 CFR 100, Appendix A (Reference 3), and 10 CFR 50, Appendix S (Reference 4). The SSE is based on an evaluation of the maximum earthquake potential and produces the maximum vibratory ground motion for which SSCs important to safety are designed to remain functional.

NRC Regulatory Guide (RG) 1.29 (Reference 5) is used as guidance to identify seismic Category I SSCs to fulfill the requirements of GDC 2.

NRC RG 1.143 (Reference 6) is used as guidance for the seismic design and classification for radioactive waste management SSCs. Designing and constructing radioactive waste management SSCs to meet the requirements of GDC 61 and the guidance on seismic design and classification in NRC RG 1.143 provide reasonable assurance that SSCs that contain radioactivity are properly classified and that radiation exposure as a result of a seismic event will be as low as is reasonably achievable (ALARA).

NRC RG 1.151 (Reference 7) is used as guidance for the seismic classification of safety-related instrumentation sensing lines and their supports. Compliance with Positions C.2 and C.3 of NRC RG 1.151 provides reasonable assurance that the instrument sensing lines used to actuate or monitor safety-related systems are appropriately classified and will be capable of withstanding the effects of the SSE.

NRC RG 1.189 (Reference 8) is used as guidance for the seismic classification of fire protection systems. Compliance with Positions 3.2.1, 6.1.1.2, and 7.1 of NRC RG 1.189 provides reasonable assurance that the SSCs important to safety that are required to function during an SSE are properly classified as seismic Category I, will function during such events, and will provide reasonable assurance that the safety functions can be performed.

Seismic categories are designated as seismic Category I, II, or III. Seismic Category III is the equivalent of the non-seismic (NS) category specified in NRC RG 1.29.

The seismic categories of SSCs are listed in Table 3.2-1. The COL applicant is to identify the seismic classification of site-specific SSCs that are to be designed to withstand the effects of an SSE (COL 3.2(1)).

The seismic category portions of SSCs are indicated by the class breaks shown on the piping and instrumentation diagrams for the appropriate systems described in this DCD. Seismic Category I requirements extend to the first seismic anchor beyond the interface of the classification change. Supports for piping and components have the same seismic classifications as the piping and components that are supported.

Seismic Category I, II, and III (NS) SSCs are defined as follows:

a. Seismic Category I

   SSCs that are important to safety and designed to remain functional in the event of an SSE are designated as seismic Category I.

   The selection of seismic Category I SSCs is in accordance with the definition above and the guidance provided by NRC RG 1.29 (Reference 5). Seismic Category I components have a designated safety class in accordance with ANSI/ANS 51.1-1983 (Reference 9; see Subsection 3.2.3). All components in Safety Classes 1, 2, and 3 are seismic Category I. The portions of SSCs that form an interface between seismic Category I and seismic Category II/III (or NS) features are designed to seismic Category I requirements in accordance with Regulatory Position C.3 of NRC RG 1.29 (Reference 5). Seismic Category I

design requirements extend to the first seismic anchor (restraint) beyond the defined boundaries.

Portions of some non-safety-related systems (e.g., fire protection system) are classified as seismic Category I to comply with NRC RG 1.189.

Seismic Category I SSCs are designed to remain functional and within the applicable stress and deformation limits (elastic range of material properties) when subjected to the effects of the vibratory motion of the operating basis earthquake (OBE) in combination with normal operation loads. This design is based on the design for SSE loads where an OBE is defined as one third of the SSE, as described in Subsection 3.7.1.1. Seismic Category I structures are protected from interaction with adjacent non-seismic structures, as described in Subsection 3.7.2.8. The seismic classifications of platforms and miscellaneous steel located in seismic Category I application are described in Subsection 3.8.3.

Seismic Category I SSCs meet the QA requirements of 10 CFR 50, Appendix B (Reference 10). The criteria used for the design of seismic Category I SSCs are described in Section 3.7.

b. Seismic Category II

SSCs that do not perform a nuclear safety-related function and whose continued function is not required are classified as non-nuclear safety (NNS) (see Subsection 3.2.3).

NNS SSCs that are not seismic Category I but whose failure by virtue of physical proximity to safety-related equipment or structures could prevent a component or structure from fulfilling its required function are classified as seismic Category II.

NNS SSCs are designed to preclude a gross structural failure resulting from an SSE that could degrade the ability of an adjacent safety-related SSC to function to an unacceptable level or result in incapacitating injuries to personnel in the main control room (MCR).

Seismic Category II SSCs meet the augmented quality assurance requirements for non-safety-related SSCs as described in Section 17.5.

c. Seismic Category III (NS)

All SSCs not covered by seismic Category I or II are classified as seismic Category III (NS) and are designed in accordance with industry codes and standards as applicable for their design function.

3.2.2 System Quality Group Classification

GDC 1 of 10 CFR 50 Appendix A (Reference 1) requires that nuclear power plant systems and components important to safety be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety function to be performed. Fluid systems and pressure-retaining components are part of the RCPB and other fluid systems that are important to safety. Such systems (1) prevent or mitigate the consequences of accidents and malfunctions originating in the RCPB, (2) permit shutdown of the reactor and maintain it in a safe shutdown condition, and (3) retain radioactive material.

NRC RG 1.26 (Reference 11) is the principal document that is used to identify, on a functional basis, the components of systems that are important to safety and that are in Quality Groups A, B, C, and D, which are defined below. ASME Section III, or safety Class 1, components that are part of the RCPB are identified in 10 CFR 50.55a (Reference 12).

Systems and components are assigned to quality groups in accordance with the quality group classification system (NRC Quality Groups A, B, C or D) defined in NRC RG 1.26 (Reference 11), which was established for water-steam-containing components important to safety. Two other quality groups, E and G, are defined, in addition to those designated in NRC RG 1.26, to indicate the governing design codes for the components that are not covered under NRC Quality Groups A, B, C, or D.

The quality group classifications and codes and standards for mechanical and fluid systems and components are listed in Table 3.2-1 and are shown on the applicable piping and

instrument diagrams. The P&IDs identify the classification boundaries of interconnecting piping and valves, as well as the interfaces between the safety-related and non-safety-related portions of each system. The COL applicant is to identify the quality group classification of site-specific systems and components and their applicable codes and standards (COL 3.2(2)).

Quality Groups A through E and G are defined below.

Quality Group A (ASME Section III, Subsection NB)

Quality Group A applies to RCPB components whose failure could cause a loss of enough reactor coolant to prevent orderly reactor shutdown and cooldown, assuming makeup is provided only by the normal makeup systems. Normal makeup systems are systems that are normally used to maintain reactor coolant inventory during startup, hot standby, power operation, and cooldown using onsite power.

Quality Group B (ASME Section III, Subsection NC)

Quality Group B applies to the containment building, components in the RCPB not in Quality Group A, and the components of safety systems that are necessary to perform the following:

a. Remove heat directly from the reactor or containment building

b. Circulate reactor coolant for safety-related purposes

c. Control radioactivity released within the containment building

d. Control hydrogen concentrations in the containment building atmosphere

e. Introduce emergency negative reactivity to make the reactor subcritical or restrict the addition of positive reactivity (e.g., safety injection system)

f. Provide or maintain sufficient reactor coolant inventory for emergency core cooling (e.g., IRWST)

Quality Group B safety systems include the following:

a. The containment, including those valves and components of closed systems used to effect isolation of the containment atmosphere from the outside environs

b. Shutdown cooling system (SCS)

c. Portions of the auxiliary systems that form a reactor coolant letdown and makeup loop

d. Containment spray system (CSS)

e. The containment building air cleanup system and the portions serving as extensions of the containment building during air cleanup recirculation after an accident

f. Portions of the steam and main feedwater system (MFS) extending from and including the secondary side of the steam generator (SG) up to and including the wall penetration anchors beyond the outermost containment isolation valves

g. Containment hydrogen control system

Quality Group C (ASME Section III, Subsection ND)

Quality Group C applies to ASME Section III components that are not in Quality Qroup A or B and the components of safety systems that are necessary to perform the following:

a. Release to the environment radioactive gases normally required to be held for decay if they fail

b. Provide or support a safety system function

c. Control the airborne radioactivity released outside the containment building

d. Provide or maintain sufficient reactor coolant inventory for core cooling (e.g., reactor coolant normal makeup function)

e. Introduce negative reactivity to achieve or maintain subcritical reactor conditions (e.g., boron makeup function)

f. Remove decay heat from spent fuel

Quality Group C safety systems include the following:

a. Portions of the auxiliary system that provide boric acid to the reactor coolant

b. Portions of the cooling water systems that cool other safety systems, the MCR, and safety-related electrical components

c. Spent fuel pool (SFP) cooling system

d. Condensate storage tanks

e. Air cleanup systems other than those listed under Quality Group B (e.g., MCR, fuel building air cleanup)

f. Portions of the auxiliary systems that form the purification section of the letdown loop

g. Portions of the radioactive waste processing system

h. Onsite emergency power supply supporting auxiliary systems

Quality Group D

Quality Group D applies to non-safety-related systems and components that are not covered under Quality Group A, B, or C and that are designed to ASME B31.1 (Reference 13) code criteria or other codes and standards listed in Table 1 of NRC RG 1.26. Quality Group D may include parts or portions of systems that contain or may contain radioactive material.

The reactor makeup water system (RWMS) and steam generator blowdown system (SGBDS), which contain or may contain radioactive materials, are designed in accordance with applicable codes and standards, QA requirements, and guidance provided in NRC RG 1.143.

Quality Group E

Quality Group E pertains to non-safety-related fluid systems and components that are designed to codes other than ASME B31.1 code criteria and codes and standards listed in NRC RG 1.26.

Quality Group G

Quality Group G pertains to safety-related fluid systems and components that are designed to codes other than ASME Section III.

3.2.3 Safety Class

Fluid system components important to safety are classified in accordance with ANSI/ANS-51.1-1983 (Reference 9). Safety Class 1, 2, 3, and non-nuclear safety (NNS) of ANSI/ANS-51.1-1983 are equivalent, on a functional basis, to Quality Groups A, B, C, D of NRC RG 1.26. The criteria establish safety classes that are used as a guide to the selection of codes, standards, and quality assurance provisions for the design and construction of the components. The safety class designations are also used as a guide to the fluid system components that are classified as seismic Category I and II (see Subsection 3.2.1).

The safety classification in ANSI/ANS-51.1-1983 is summarized as follows:

a. Safety Class 1

   Safety Class 1 (SC-1) applies to pressure-retaining portions and supports of mechanical equipment that form part of the RCPB whose failure could cause a loss of reactor coolant in excess of the reactor coolant normal makeup capability and whose requirements are within the scope of the ASME Section III.

b. Safety Class 2

Safety Class 2 (SC-2) applies to pressure-retaining portions and supports of primary containment and other mechanical equipment, whose requirements are within the scope of the ASME Section III, which are not assigned to SC-1 but are relied on to accomplish the following safety functions:

1) Provide fission product barriers or primary containment radioactive material holdup or isolation

2) Provide emergency heat removal for the primary containment atmosphere to an intermediate heat sink, or emergency removal of radioactive material from the primary containment atmosphere (e.g., containment spray)

3) Introduce emergency negative reactivity to make the reactor subcritical (e.g., boron injection system), or restrict the addition of positive reactivity via pressure boundary equipment

4) Provide reasonable assurance of emergency core cooling where the equipment provides coolant directly to the core (e.g., residual heat removal, emergency core cooling)

5) Provide or maintain sufficient reactor coolant inventory for emergency core cooling

c. Safety Class 3

Safety Class 3 (SC-3) applies to equipment not included in SC-1 or SC-2 that is designed and relied on to accomplish the following safety functions:

1) Provide the functions defined in SC-2 where equipment, or portions thereof, is not within the scope of ASME Section III

2) Except for the primary containment boundary extension function, provide reasonable assurance of hydrogen concentration control of the primary containment atmosphere to acceptable limits

3) Remove radioactive material from the atmosphere of confined space outside primary containment (e.g., MCR, fuel building) containing SC-1, SC-2, or SC-3 equipment

4) Introduce negative reactivity to achieve or maintain subcritical reactor conditions (e.g., boron makeup)

5) Provide or maintain sufficient reactor coolant inventory for core cooling (e.g., reactor coolant normal makeup system)

6) Maintain geometry within the reactor to provide reasonable assurance of core reactivity control or core cooling capability (e.g., core support structures)

7) Structurally load-bear or protect SC-1, SC-2, or SC-3 equipment

8) Provide radiation shielding for the MCR or offsite personnel

9) Provide reasonable assurance of required cooling for liquid-cooled stored fuel (e.g., SFP and cooling system)

10) Provide reasonable assurance of nuclear safety functions provided by SC-1, SC-2, or SC-3 equipment (e.g., provide heat removal for SC-1, SC-2, or SC-3 heat exchangers, provide lubrication of SC-1, SC-2, or SC-3 pumps, provide fuel oil to emergency diesel engine)

11) Provide actuation or motive power for SC-1, SC-2, or SC-3 equipment

12) Provide information or controls to provide reasonable assurance of capability for manual or automatic actuation of nuclear safety functions required of SC-1, SC-2, or SC-3 equipment

13) Supply or process signals or supply power required for SC-1, SC-2, or SC-3 equipment to perform its required nuclear safety functions

14) Provide a manual or automatic interlock function to provide reasonable assurance that the proper performance of nuclear safety functions required of SC-1, SC-2, and SC-3 equipment is maintained

15) Provide an acceptable environment for SC-1, SC-2, or SC-3 equipment and operating personnel

c. Non-nuclear safety

Non-nuclear safety (NNS) applies to equipment or structures that are not included in SC-1, SC-2, or SC-3. These items are not relied on to perform a nuclear safety function.

All pressure-containing components in SC-1, SC-2, and SC-3 are designed, manufactured, and tested in accordance with the requirements of ASME Section III Code Class 1, 2, and 3, respectively. Components designated as NNS are designed and constructed with appropriate consideration of the intended service using applicable industry codes and standards. Table 3.2-2 shows the interrelationship and/or correspondence between the classifications.

The electrical equipment in SC-3 is in accordance with IEEE 308 (Reference 14), IEEE 603 (Reference 15), and applicable IEEE standards. The structures in SC-2 and SC-3 are in accordance with *[ASME Section III, Division 1, Class MC (Reference 16); ASME Section III, Division 2, Subsection CC (Reference 17); [ACI-349]* (Reference 18); and ANSI/AISC N-690 (Reference 19).]**

The safety classification system is also used to identify the components that fall under the requirements of 10 CFR 50, Appendix B (Reference 10). Components in safety Classes 1, 2, and 3 are designed and manufactured under a rigorous quality assurance program reflecting the requirements of 10 CFR 50, Appendix B, and are designated as such in Table 3.2-1 in the column labeled 10 CFR 50, Appendix B. Components that do not serve a safety-related function are not subject to the quality assurance requirements of 10 CFR 50,

Appendix B, and are designated as such in Table 3.2-1 in the column labeled 10 CFR 50, Appendix B.

Piping supports and component supports are in the same safety class and have the same QA requirements as the piping and components to which they apply.

The safety classification systems described above meet the intent of NRC RG 1.26 and the requirements of 10 CFR 50.55a.

3.2.4 Classification Listings

Table 3.2-1 provides component classifications as defined in Subsections 3.2.1 through 3.2.3. Table 3.2-1 also provides the quality assurance requirements of 10 CFR 50, Appendix B, and the applicable codes and standards.

3.2.5 Combined License Information

COL 3.2(1) The COL applicant is to identify the seismic classification of site-specific SSCs that should be designed to withstand the effects of the SSE.

COL 3.2(2) The COL applicant is to identify the quality group classification of site-specific systems and components and their applicable codes and standards.

3.2.6 References

1. 10 CFR 50, Appendix A, “General Design Criteria for Nuclear Power Plants.”

2. 10 CFR 100, Section 100.11, “Determination of Exclusion Area, Low Population Zone, and Population Center Distance.”

3. 10 CFR 100, Appendix A, “Seismic and Geologic Siting Criteria for Nuclear Power Plants.”

4. 10 CFR 50, Appendix S, “Earthquake Engineering Criteria for Nuclear Power Plants.”

5. NRC RG 1.29, “Seismic Design Classification,” Rev. 4, U.S. Nuclear Regulatory Commission, March 2007.

6. NRC RG 1.143, "Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants," Rev. 2, U.S. Nuclear Regulatory Commission, November 2001.

7. NRC RG 1.151, "Instrument Sensing Lines," Rev. 1, U.S. Nuclear Regulatory Commission, July 2010.

8. NRC RG 1.189, "Fire Protection for Nuclear Power Plants," Rev. 2, U.S. Nuclear Regulatory Commission, October 2009.

9. ANSI/ANS 51.1, "Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants," American Nuclear Society, April 29, 1983.

10. 10 CFR 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants."

11. NRC RG 1.26, "Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants," Rev. 4, U.S. Nuclear Regulatory Commission, March 2007.

12. 10 CFR 50, Section 50.55a, "Codes and Standards."

13. ASME B31.1, "Power Piping."

14. IEEE Std. 308, "IEEE Standard Criteria for Class 1E Power Systems for Nuclear Power Generating Stations," 2001.

15. IEEE Std. 603, "IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations," 1991.

16. ASME Boiler and Pressure Vessel Code, Section III, Division 1, "Rules for Construction of Nuclear Facility Components," Subsection NE, "Class MC Components," American Society of Mechanical Engineers, 2001.

17. *[ASME Boiler and Pressure Vessel Code, Section III, Division 2, "Code for Concrete Containments," Subsection CC, American Society of Mechanical Engineers, 2001.]**

18. *[ACI-349, "Code Requirements for Nuclear Safety Related Concrete Structures," American Concrete Institute, 1997.]**

19. *[ANSI/AISC N690, "Specification for the Design, Fabrication and Erection of Steel Safety-Related Structures for Nuclear Facilities," 1994.]**

Table 3.2-1 (1 of 86)

Classification of Structures, Systems, and Components[1]

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
I. Major Structures							
1. Containment building (including mechanical and electrical penetrations)		SC-2	B	*[ASME Sec. III NE-2001 with 2003 Addenda,]** *[ASME Sec. III CC-2001 with 2003 Addenda]**	Yes	I	
2. Containment building internal structures (including radiation shield)		SC-3	N/A	*[ACI 349-1997]*, [ANSI/AISC N690-1994 incl. Supp. 2 (2004)]**	Yes	I	
3. Auxiliary building (including TSC)		SC-3	N/A	*[ACI 349-1997]*, [ANSI/AISC N690-1994 incl. Supp. 2 (2004)]**	Yes	I	
4. Turbine generator building		NNS	N/A	ACI 318-2008 AISC 360-2005	A	II	(3)(d)
5. Compound building		NNS	N/A	ACI 318-2008 AISC 360-2005	A	II	(3)(d), (4)
6. Emergency generator building		SC-3	N/A	*[ACI 349-1997]*, [ANSI/AISC N690-1994 incl. Supp. 2 (2004)]**	Yes	I	
7. Alternate AC Generator Building		NNS	N/A	ACI318-2008	A	II	(3)(d)
8. Essential Service Water Pump Houses		SC-3	N/A	*[ACI349-1997] *, [ANSI/AISC N690-1994 incl. supp. 2(2004)] **	Yes	I	
9. Component Cooling Water Heat Exchanger Building		SC-3	N/A	*[ACI349-1997] *, [ANSI/AISC N690-1994 incl. supp. 2(2004)] **	Yes	I	

Table 3.2-1 (2 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
II. Systems and components							
1. AC – Auxiliary Process Cabinet							
a. APC A/B/C/D	AB	SC-3	N/A	IEEE-603-1991, IEEE 323-2003, IEEE 344-2004	Yes	I	
b. APC N1/N2	AB	NNS	N/A	N/A	A	III	
2. AF – Auxiliary Feedwater							
a. Auxiliary feedwater pumps							
1) Pumps	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
2) Motors	AB	SC-3	N/A	ANSI C50.41-1982	Yes	I	
b. Auxiliary feedwater pump suction piping and valves from auxiliary feedwater suction manual valves (AFW-V1001 A/B, AFW-V1002 A/B)	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
c. Auxiliary feedwater pump discharge piping and valves up to and excluding auxiliary feedwater isolation valves (AFW-V043 ~ 046)	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
d. Auxiliary feedwater pump discharge piping from auxiliary feedwater isolation valves (AFW-V043 ~ 046) up to feedwater connection	RCB	SC-2	B	ASME Sec. III Div. 1 NC-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (3 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
e. Auxiliary feedwater pump recirculation piping and valves up to and including auxiliary feedwater recirculation isolation valves (AFW-V1011 A/B, AFW V1013 A/B)	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
3. AN – Alarm							
a. Alarm processing server and display device (QIAS-N)	AB	NNS	N/A	N/A	A	I	
b. Alarm processing server and display device (IPS)	AB	NNS	N/A	N/A	A	II	(3)(d)
c. Alarm sound device and speaker	AB	NNS	N/A	N/A	A	II	(3)(d)
4. AT – Auxiliary Feedwater Pump Turbine							
a. Auxiliary feedwater pump turbines	AB	SC-3	C/G	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
b. Steam admission/exhaust/ preheating lines and valves	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
c. Non-safety-related piping/ component in safety-related areas	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
d. Others	AB	NNS	D	ASME B31.1-2010	N/A	III	
5. AX – Auxiliary Feedwater Storage and Transfer							
a. Auxiliary feedwater storage tank	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (4 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
b. Auxiliary feedwater makeup piping up to and including auxiliary feedwater storage tank inlet manual valves (AX-V1605, AX-V1606)	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
c. Auxiliary feedwater makeup piping from auxiliary feedwater storage tank inlet manual valves (AX-V1605, AX-V1606) up to and including auxiliary feedwater storage tank makeup check valve (AX-V1600)	AB	NNS	D	ASME B31.1-2010	A	II	(3)(a), (3)(d), (3)(e)
d. Auxiliary feedwater pump suction piping and valves from auxiliary feedwater storage tanks up to and excluding auxiliary feedwater suction manual valves (AFW-V1001 A/B, AFW-V1002 A/B)	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
e. Component cooling water/ essential chilled water makeup piping up to and including component cooling water/ essential chilled water makeup pump supply valves (AX-V1607, AX-V1608)	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
f. Auxiliary feedwater storage tank sampling piping up to and including auxiliary feedwater storage tank grab sample test valves (AX-V2642, AX-V2644)	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (5 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
g. Auxiliary feedwater storage tank overflow piping	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
h. Auxiliary feedwater storage tank drain piping from auxiliary feedwater storage tank drain valves (AX-V2642, AX-V2643) to condensate polishing area sump in safety-related area	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
i. Auxiliary feedwater storage tank drain piping up to condensate polishing area sump in non-safety-related area	TGB	NNS	D	ASME B31.1-2010	N/A	III	
j. Auxiliary feedwater storage tank cross connection line up to and including AFWST connection manual valves (AX-V1621, AX-V1622)	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
k. Auxiliary feedwater storage tank cross connection line between and excluding AFWST connection manual valves (AX-V1621, AX-V1622)	AB	NNS	D	ASME B31.1-2010	A	II	(3)(a), (3)(b), (3)(d)
l. Non-safety backup supply line up to and including AFW pump suction manual valves (AX-V1623, AX-V1624)	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (6 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
m. Non-safety backup supply line from AFW pump suction manual valves (AX-V1623, AX-V1624) up to and including raw water supply valve (AX-V1208) and condensate storage tank water supply valve (AX-V1627)	AB	NNS	D	ASME B31.1-2010	A	II	(3)(b), (3)(d)
6. BI – Bypass and Inoperable Status Indication							
a. Control logic and indication device		NNS	N/A	IEEE 603-1991	A	II	(3)(d), (8)
7. CA – Condenser Vacuum							
a. Containment isolation valves and associated piping	AB, RCB	SC-2	B	ASME Sec. III Div. 1 NC-2007 with 2008 addenda	Yes	I	
b. Non-safety-related piping and components in safety-related areas	AB, RCB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
c. Condenser vacuum pumps, booster fan and other components	TGB	NNS	D	ASME B31.1-2010	N/A	III	
8. CC – CCW							
a. CCW heat exchangers	CCWHXB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
b. CCW pumps	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
c. CCW makeup pumps	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (7 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
d. CCW surge tanks	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
e. Chemical addition tank	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
f. Component cooling water supply and return piping and valves excluding the following 1) through 9) below:	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
1) Containment penetration piping of RCP cooler supply line between and including the valves, CC-231 and CC-1099 in the division I	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
2) Containment penetration piping of RCP cooler return line between and including the valves, CC-249, CC-250, and CC-1100 in the division I	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
3) RCP cooler supply and return piping between the valves, CC-1099, CC-249, and CC-1100 in the division I	RCB	NNS	D	ASME B31.1-2010	A	II	(3)(d)

Table 3.2-1 (8 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
4) Non-essential supply and return piping between the valve CC-145 and CC-147 in the division I excluding the following v) through vii) below:	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
5) Containment penetration piping of letdown heat exchanger supply line between and including the valves CC-296, CC-297, and CC-1685 in the division I	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
6) Containment penetration piping of letdown heat exchanger return line between and including the valve CC-301, CC-302, and CC-1686 in the division I	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
7) Letdown heat exchanger supply and return piping between the valves, CC-297, CC-301, CC-1685, and CC-1686 in the division I	RCB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
8) Non-essential supply and return piping between the valve CC-146 and CC-148 in the auxiliary building of the division II	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
9) Non-essential supply and return piping in the compound building of the division II	RCB	NNS	D	ASME B31.1-2010	N/A	III	
9. CD – Condensate							
a. Piping in auxiliary bldg.	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
b. Condenser, condensate pumps, tanks, valves, strainers, and feed water heaters	TGB	NNS	D	ASME B31.1-2010	N/A	III	
c. Other piping	TGB	NNS	D	ASME B31.1-2010	N/A	III	
10. CE – Control Element Assembly Drive							
a. Control element drive mechanism	RCB	SC-1	A	ASME Sec. III NB -2007 with 2008 addenda	Yes	I	
1) Pressure housing assembly	RCB	SC-1	A	ASME Sec. III NB -2007 with 2008 addenda	Yes	I	
2) Motor assembly	RCB	SC-2	B	N/A	Yes	I	
3) Extension shaft assembly	RCB	SC-2	B	N/A	Yes	I	
b. Reactor trip switchgear	RCB	SC-3	N/A	IEEE-603-1991	Yes	I	
c. Rod drive motor generator set	RCB	NNS	N/A	N/A	N/A	III	

Table 3.2-1 (10 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
11. CI – Containment							
a. Mechanical penetration		SC-2	B	ASME Sec. III NC - 2007 with 2008 addenda	Yes	I	
b. Electrical penetration	RCB	SC-2	N/A	IEEE-317-1983 IEEE 323-2003 IEEE 344-2004	Yes	I	
12. CM – Containment Monitoring							
a. Containment Isolation	RCB	SC-2	B	IEEE-323-2003 IEEE- 344-2004	Yes	I	
b. Safety-related sample tubing and valves	RCB/AB	SC-2	B	IEEE-323-2003 IEEE- 344-2004	Yes	I	
c. Other safety-related equipment	RCB/AB	SC-3	G	IEEE-323-2003 IEEE- 344-2004	Yes	I	
d. Non-safety-related equipment	AB	NNS	D	N/A	A	II	(3)(d)
13. CN – Soft Control							
a. Safety class soft controller	AB	SC-3	N/A	IEEE-323-2003 IEEE-344-2004 IEEE-379-2000 IEEE-603-1991 IEEE-7-4.3.2-2003	Yes	I	
b. Non-safety class soft controller	AB	NNS	N/A	N/A	A	II	(3)(d)

Table 3.2-1 (11 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
14. CP – Condensate Polishing							
a. Condensate polishing package	TGB	NNS	D	ASME Sec. VIII-2010 ASME B31.1-2010	N/A	III	
15. CQ – Communication							
a. Equipment in safety-related areas							
1) Telephone, page phone in MCR	AB	NNS	N/A	N/A	A	II	(3)(d)
2) Evacuation alarm board in MCR	AB	NNS	N/A	N/A	A	II	(3)(d)
3) Page phone full booth	AB	NNS	N/A	N/A	A	II	(3)(d)
b. Others	ALL	NNS	N/A	N/A	N/A	III	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
16. CR – Core Protection Calculation System							
a. CPC (core protection calculator)	AB	SC-3	N/A	IEEE-323-2003 IEEE-338-1987 IEEE-344-2004 IEEE-379-2000 IEEE-383-2003 IEEE-603-1991 IEEE-7-4.3.2-2003	Yes	I	
b. CEAC (control element assembly calculator)	AB	SC-3	N/A		Yes	I	
c. CPP (CEA position processor)	AB	SC-3	N/A		Yes	I	
d. OM (operator's module)	AB	SC-3	N/A		Yes	I	
e. I/O simulator	AB	NNS	N/A	N/A	N/A	III	
17. CS – Containment Spray							
a. Containment spray pumps	AB	SC-2	B	ASME Sec.III NC-2007 with 2008 addenda	Yes	I	
b. Containment spray heat exchangers	AB	SC-2	B	ASME Sec.III NC-2007 with 2008 addenda	Yes	I	
c. Containment spray miniflow heat exchangers	AB	SC-2	B	ASME Sec.III NC-2007 with 2008 addenda	Yes	I	
d. Spray nozzles (including ECSBS spray nozzles)	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (13 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
e. CSS piping and valves from CSS suction line to containment penetration, ECSBS piping and valve from V1013 to containment penetration	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
f. CSS piping and valves from containment penetration to CSS spray nozzles, ECSBS piping and valve from containment penetration to ECSBS spray nozzles	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
g. ECSBS piping and valves from external siamese hose connection to V1013 (excluding V1013)	AB	NNS	D	ASME B31.1-2010	A	I	(3)(b)
h. CSS refueling pool piping to V1011 (excluding V1011)	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
18. CT – Condensate Storage and Transfer							
a. Condensate storage tanks with associated components, and valves	TGB	NNS	D	ASME Sec. VIII-2010/ ASME B31.1-2010 /ASME B16.34-2009/API 620-2008	A	III	(3)(b)
b. Non-safety-related piping in safety-related area	AB	NNS	D	ASME B31.1-2010	A	II	(3)(b), (3)(d)

Table 3.2-1 (14 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
19. CV – Chemical and Volume Control							
a. Regenerative heat exchanger	RCB	SC-2/SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
b. Letdown heat exchanger (tube/shell)	RCB	SC-2/ SC-3	B/C	ASME Sec. III NC/ND-2007 with 2008 addenda	Yes	I	(N-1)
c. Charging pump miniflow heat exchanger	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
d. Purification ion exchangers	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
e. Deborating ion exchanger	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
f. Volume control tank	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
g. Chemical addition system	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	N/A	III	
h. Boric acid batching tank	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	N/A	III	
i. Charging pumps / charging pump motors	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
j. Auxiliary charging pump	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
k. Auxiliary charging pump suction stabilizer/pulsation dampener	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
l. Boric acid makeup pumps	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (15 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
m. Reactor makeup water pumps	AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda / HI Std-1994	N/A	III	
n. Boric acid concentrator							
1) Process unit	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	N/A	III	
2) I&C assembly	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	N/A	III	
o. Preholdup ion exchanger	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
p. Boric acid condensate ion exchanger	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	N/A	III	
q. Reactor drain pumps	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
r. Holdup pumps	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	N/A	III	
s. 1) Reactor drain tank	RCB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	N/A	III	
2) Reactor drain tank support	RCB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
t. Holdup tank	Yard	NNS	D	API-650-2007 with 2008 addendum	N/A	III	
u. Equipment drain tank	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	
v. Boric acid storage tank	Yard	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (16 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
w. Reactor makeup water tank	Yard	NNS	D	API-620-2008 with 2009, 2010 addendum	N/A	III	
x. Gas stripper							
1) Process unit	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
2) I&C assembly	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	N/A	III	
y. Purification filters	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
aa. Reactor drain filters	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
ab. Seal injection filters	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
ac. Reactor makeup water filter	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	N/A	III	
ad. Boric acid filter	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
ae. Letdown strainer	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
af. Preholdup strainer	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
ag. Boric acid condensate ion exchanger strainer	AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda /B16.34-2009	N/A	III	
ah. Boric acid batching strainer	AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda /B16.34-2009	N/A	III	

Table 3.2-1 (17 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
ai. Boric acid batching eductor	AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda /B16.34-2009	N/A	III	
aj. Letdown orifices	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
ak. Charging restricting orifices	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
al. Piping and Valves							
1) Within RCPB	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
2) Letdown, charging, seal injection, and aux. spray piping and valves							
– Inside containment	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
– Letdown piping and valves from CV-523 outlet to CV-520 outlet	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
– Letdown piping and valves from CV-520 outlet to CV-415 inlet	AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda /B16.34-2009	A N/A	II III	(3)(d), CV-870/ 894/895/ 896: Seismic Cat. III
– Letdown piping and valves from CV-415 inlet to VCT inlet	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (18 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
– RCP CBO piping and valves from CV-505 outlet to VCT inlet	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
– RCP seal injection piping and valves form seal injection tee to CV-255 inlet	AB, RCB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
– Charging piping and valves from VCT outlet to CV-524 inlet	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
3) Containment isolation	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
4) Reactor water drain collection	AB						
– Inside containment (reactor drain tank)	RCB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda	A	II	(3)(d)
– Outside containment (equipment drain tank, reactor drain pump suction and discharge to holdup tank)	AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda	A	II	(3)(d)
5) Boric acid recovery system (holdup tank to boric acid storage tank and reactor makeup water tank)	Yard	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda	A N/A	II III	(3)(d), CV-686/ 127: Seismic Cat. II

Table 3.2-1 (19 of 86)

Item No. / Principal SSCs	Location[(2)]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[(3)]	Seismic Category	Remarks
6) Boric acid supply (BAST to VCT/charging pump suction)	Yard, AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
7) Reactor makeup water supply (RMWT to CV-186 inlet)	Yard, AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda	A	II	(3)(d)
8) BAMP to IRWST isolation valve CV-553	AB, RCB	NNS	D	ASME B16.34 - 2009	A	II	(3)(d), (3)(e)
9) BABT to BAST isolation valve CV-126	AB	NNS	D	ASME B16.34 - 2009	A	III	(3)(e)
20. CW – Circulating Water							
a. CW pumps	Yard	NNS	D	HI Standards – 2010	N/A	III	
b. Butterfly valves	TGB, Yard	NNS	D	AWWA C504-2010	N/A	III	
c. Condenser tube cleaning system components	TGB	NNS	D	ASME B31.1-2010	N/A	III	
d. Circulating water pump lube water booster pumps	Yard	NNS	D	HI Standards-2010	N/A	III	
e. [[Makeup pumps]]	Yard	NNS	D	HI Standards-2010	N/A	III	
f. [[Blowdown pumps]]	Yard	NNS	D	HI Standards-2010	N/A	III	
g. [[Cooling towers (including cooling tower fans)]]	Yard	NNS	D	CTI-2010	N/A	III	
h. Piping and valves	TGB, Yard	NNS	D	ASME B31.1-2010	N/A	III	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
21. CY – Information Processing							
a. MCR, RSR workstation display device	AB	NNS	N/A	N/A	A	II	(3)(d)
b. TSC and ERF workstation display device	AB/EOF	NNS	N/A	N/A	N/A	III	
c. Information processing device server and related equipment	AB	NNS	N/A	N/A	N/A	III	
d. Computer room engineering station	AB	NNS	N/A	N/A	N/A	III	
e. I&C equipment room engineering station	AB	NNS	N/A	N/A	A	II	(3)(d)
f. Others	AB	NNS	N/A	N/A	N/A	III	
22. DC – DC Distribution							
a. DC equipment necessary for safety-related function							
1) Safety-related battery chargers	AB	SC-3	N/A	IEEE 308-2001 IEEE 323-1974 IEEE 344-2004 IEEE 420-2001 IEEE 450-2002	Yes	I	
2) Safety-related batteries	AB	SC-3	N/A	IEEE 308-2001 IEEE 323-1974 IEEE 344-2004 IEEE 420-2001 IEEE 450-2002	Yes	I	

Table 3.2-1 (21 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
3) Safety-related DC control centers	AB	SC-3	N/A	IEEE 308-2001 IEEE 323-1974 IEEE 344-2004 IEEE 420-2001 IEEE 450-2002	Yes	I	
b. Non-safety-related DC equipment in safety-related areas							
1) Non-safety-related battery chargers	AB	NNS	N/A	N/A	A	II	(3)(d), (3)(e)
2) Non-safety-related batteries	AB	NNS	N/A	N/A	A	II	(3)(d), (3)(e)
3) Non-safety-related DC control centers	AB	NNS	N/A	N/A	A	II	(3)(d)
c. DC equipment in AAC generator building							
1) Non-safety-related battery chargers	AAC GTG	NNS	N/A	N/A	A	III	(3)(b), (3)(e)
2) Non-safety-related batteries	AAC GTG	NNS	N/A	N/A	A	III	(3)(b), (3)(e)
3) Non-safety-related DC control centers	AAC GTG	NNS	N/A	N/A	A	III	(3)(b), (3)(e)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
d. Others							
1) Non-safety-related battery chargers	TGB, RCB	NNS	N/A	N/A	N/A	III	
2) Non-safety-related batteries	TGB, RCB	NNS	N/A	N/A	N/A	III	
3) Non-safety-related DC control centers	TGB, RCB	NNS	N/A	N/A	N/A	III	
23. DE – Radioactive Drain							
a. Exposed piping and components in safety-related areas	AB	NNS	D	ASME B31.1 - 2010 HI Standards - 2010	A	II	(3)(d)
b. Embedded piping and components necessary for flood protection in safety-related areas	AB	NNS	D	ASME B31.1 - 2010 HI Standards - 2010	A	II	(3)(d)
c. Piping and components necessary for flood protection in non-safety-related areas	AB	NNS	D	ASME B31.1 - 2010 HI Standards - 2010	A	II	(3)(d)
d. Containment isolation valves and associated piping	RCB, AB	SC-2	B	ASME Sec. III NC -2007 with 2008 addenda	Yes	I	
e. Flood alarm loops of ESF pump rooms and elevation 55 ft 0 in of each quadrant wall	AB	SC-3	C	ASME Sec. III ND - 2007 with 2008 addenda	Yes	I	
f. Reactor containment bldg. drain sump pump	RCB	NNS	D	HI Standards - 2010	A	II	(3)(d)
g. ICI cavity sump pump	RCB	NNS	D	HI Standards - 2010	A	II	(3)(d)

Table 3.2-1 (23 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
h. Aux. bldg. floor drain sump pump	AB	NNS	D	HI Standards - 2010	A	II	(3)(d)
i. Aux. bldg. equipment drain sump pump	AB	NNS	D	HI Standards - 2010	A	II	(3)(d)
j. Safety injection pump room sump pump	AB	NNS	D	HI Standards - 2010	A	II	(3)(d)
k. Shutdown cooling pump room sump pump	AB	NNS	D	HI Standards - 2010	A	II	(3)(d)
l. Containment spray pump room sump pump	AB	NNS	D	HI Standards - 2010	A	II	(3)(d)
m. Aux. bldg. chemical drain sump pump	AB	NNS	D	HI Standards - 2010	A	II	(3)(d)
n. Compound bldg. normal sump pump	CPB	NNS	D	HI Standards - 2010	N/A	III	
o. Spent resin long term storage tank room sump pump	CPB	NNS	D	HI Standards - 2010	N/A	III	
p. Compound bldg. chemical drain sump pump	CPB	NNS	D	HI Standards - 2010	N/A	III	
q. RLS drain sump pump	CPB	NNS	D	HI Standards - 2010	N/A	III	
24. DG – Emergency Diesel Generator							
a. Fuel oil feed pumps	AB, EDB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
b. Air receivers	AB, EDB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
c. Heat exchangers	AB, EDB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (24 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
d. Expansion tanks	AB, EDB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
e. Combustion air intake and exhaust duct work	AB, EDB	SC-3	G	DEMA – 1974	Yes	I	
f. Engine, engine-mounted components, and generator	AB, EDB	SC-3	G	DEMA – 1974	Yes	I	
g. Starting air compressors, air dryer package, lube oil separator, lube oil/preheating water heat exchanger, HT water electric heater, preheating HT water pump, prelube oil pump and other non-safety-related equipment	AB, EDB	NNS	D	ASME Sec. VIII-2010	A	II	(3)(d)
h. Non-safety-related piping and equipment located at outdoor	AB, EDB	NNS	D	ASME B31.1-2010	N/A	III	
25. DI – Display							
a. QIAS-N display	AB	NNS	N/A	N/A	A	I	
b. IPS display	AB	NNS	N/A	N/A	A	II	(3)(d)
26. DO – Diesel Fuel Oil Transfer							
a. Diesel fuel oil storage tanks	AB, EDB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
b. Diesel fuel oil transfer pumps	AB, EDB						
1) Pumps		SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
2) Motors		SC-3	N/A	IEEE-323-1974/344-2004/334-2006	Yes	I	

Table 3.2-1 (25 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
c. Diesel fuel oil day tanks	AB, EDB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
d. Other safety-related components and piping	AB, EDB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
e. Non-safety-related components and piping in safety-related areas	AB, EDB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
f. Others	AB, EDB	NNS	D	N/A	N/A	III	
27. DP – Diverse Protection System (DPS)							(14)
a. DPS Cabinet	AB	NNS	N/A	IEEE 384-1992, IEEE 344-2004	A	II	(3)(a)
b. DPS-OM	AB	NNS	N/A	IEEE 384-1992, IEEE 344-2004	A	II	(3)(a)
28. ED – Non-radioactive equipment vent and drain							
a. Non-safety-related components and piping in safety-related areas	AB, CCWHXB, CPB, ESWIS	NNS	D	ASME B31.1-2010	A	II	(3)(d)
b. Flood protection embedded components and piping in safety-related areas	AB, CCWHXB, CPB, ESWIS	NNS	D	ASME B31.1-2010	A	II	(3)(d)
c. Flood protection components and piping in non-safety-related areas	TGB, FPWTB, CWIS	NNS	D	ASME B31.1-2010	A	II	(3)(d)
d. Others		NNS	D	ASME B31.1-2010	N/A	III	

Table 3.2-1 (26 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
29. EF – Engineered Safety Feature Actuation System	AB	SC-3	N/A	IEEE-323-2003 IEEE-344-2004 IEEE-379-2000 IEEE-603-1991 IEEE-7-4.3.2-2003	Yes	I	
30. EM – Seismic Monitoring	AB, RCB, CPB, CCWHXB	NNS	N/A	IEEE-344-2004	A	I	(9)
31. ER – Emergency Response Facility							
a. ERF in MCR and TSC	AB	NNS	N/A	N/A	A	II	(3)(d), (5)
b. ERF panels and displays in EOF	Outside of plant	NNS	N/A	N/A	N/A	III	
32. ET – Auxiliary Transformer							
a. Standby aux. transformers	Yard	NNS	N/A	N/A	A	III	(3)(e)
b. Unit aux. transformers	Yard	NNS	N/A	N/A	N/A	III	
33. FC – Spent Fuel Pool Cooling and Cleanup							(10)
a. Spent fuel pool cooling heat exchangers	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
b. Spent fuel pool cooling pumps	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
c. Spent fuel pool cleanup pumps	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
d. Spent fuel pool cleanup filters	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)

Table 3.2-1 (27 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
e. Spent fuel pool cleanup demineralizers	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
f. Spent fuel pool demineralizer filters	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d)
g. Valves and piping of cooling loop	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
h. Valves and piping of makeup water supply line and boric acid makeup line from V1208, V1210, V2001 and V2002 to cooling loop	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
i. Valves and piping of cleanup loop and connected line excluding the following j through l below:	AB, RCB	NNS	D	ASME B31.41-2010	A	II	(3)(d)
j. Valves and piping of boric acid makeup line from but excluding V2034 to cleanup loop	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
k. Valves and piping of IRWST return line from but excluding V1217 to cleanup loop	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
l. Valves and piping of containment isolation line including V1142, V1143, V1144, V1145	AB , RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
m. Valves and piping of spent fuel pool demineralized water makeup line	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)

Table 3.2-1 (28 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
n. Valves and piping of spent fuel pool external makeup and spray lines	AB	NNS	D	ASME B31.1-2010	A	I	(3)(d)
34. FD – Fire Detection and Alarm							
a. Fire control panels in safety-related areas	AB	NNS	N/A	NFPA 72-2010, NFPA 70-2008	A	II	(3)(c)
b. Fire detector	ALL	NNS	N/A	NFPA 72-2010, NFPA 70-2008	N/A	III	
c. Notification and control equipment	ALL	NNS	N/A	NFPA 72-2010, NFPA 70-2008	N/A	III	
35. FH – Fuel Handling and Transfer							
a. New fuel storage racks	AB	NNS	N/A	ANS 57.3	Yes	I	
b. Spent fuel storage racks	AB	NNS	N/A	ANS 57.2	Yes	I	
c. Refueling machine	RCB	NNS	D	N/A	A	II	(3)(d)
d. Spent fuel handling machine	AB	NNS	D	N/A	A	II	(3)(d)
e. New fuel elevator	AB	NNS	D	N/A	A	II	(3)(d)
f. Fuel transfer system							
1) Transfer carriage	RCB, AB	NNS	D	N/A	A	II	(3)(d)
2) Upender	RCB, AB	NNS	D	N/A	A	II	(3)(d)
3) Hydraulic power unit	RCB, AB	NNS	D	N/A	A	II	(3)(d)
g. New fuel handling tool	AB	NNS	D	N/A	N/A	III	
h. Spent fuel handling tool	AB	NNS	D	N/A	N/A	III	
i. Fuel transfer tube valve and stand	AB	NNS	D	N/A	A	II	(3)(d)

Table 3.2-1 (29 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
j. Fuel transfer tube	RCB, AB	NNS	D	N/A	A	II	(3)(d)
k. Refueling machine bridge rails and spent fuel handling machine bridge rails	RCB, AB	NNS	D	N/A	N/A	III	
l. CEA elevator	RCB	NNS	D	N/A	A	II	(3)(d)
m. CEA cutter	RCB	NNS	D	N/A	N/A	III	
n. CEA change platform	RCB	NNS	D	N/A	A	II	(3)(d)
o. Upper guide structure lifting rig	RCB	NNS	D	ASME Sec. III NF - 2007 with 2008 addenda	A	II	(3)(d)
p. Core barrel lifting rig	RCB	NNS	D	ASME Sec. III NF - 2007 with 2008 addenda	A	II	(3)(d)
q. Underwater television	RCB	NNS	N/A	N/A	N/A	III	
r. Refueling pool seal	RCB	NNS	D	N/A	A	II	(3)(d)
s. In-core instrumentation cutter	RCB	NNS	D	N/A	N/A	III	
t. Gripper operating tool	RCB	NNS	D	N/A	N/A	III	
u. CEA handling tool	RCB	NNS	D	N/A	N/A	III	
v. Refueling supervisory console	RCB	NNS	D	N/A	N/A	III	
w. Refueling simulator	AB	NNS	D	N/A	N/A	III	
x. ICI guide tube	RCB	SC-1	A	ASME Sec. III NB -2007 with 2008 addenda	Yes	I	
aa. ICI guide tube support	RCB	SC-1	A	ASME Sec. III NF -2007 with 2008 addenda	Yes	I	
ab. ICI insertion and removal tool	RCB	NNS	D	N/A	N/A	III	
ac. ICI sealing housing	RCB	SC-1	A	ASME Sec. III NB -2007 with 2008 addenda	Yes	I	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
ad. ICI seal table	RCB	SC-1	A	ASME Sec. III NB -2007 with 2008 addenda	Yes	I	
ae. ICI holding frame	RCB	NNS	D	N/A	N/A	III	
af. Fuel transfer tube blind flange	RCB	SC-2	B	ASME Sec. III NE -2007 with 2008 addenda	Yes	I	
36. FI – Fixed In-core Detector Amplifier System (FIDAS)							
a. Cabinet	AB, RCB	NNS	N/A	N/A	A	II	(N-9)
37. FP – Fire Protection							
a. Containment isolation	AB, RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	YES	I	
b. Seismic Category I fire protection subsystem							
1) Subsystem Components							
(a) Seismic Category I fire pumps	AB	NNS	D	NFPA 20-2010	A	I	(3)(c)
(b) Seismic Category I fire water tanks	AB	NNS	D	AWWA D-100-2005 NFPA 22 - 2010	A	I	(3)(c)
(c) Others	AB	NNS	D/E	N/A	A	I	(3)(c)
2) Subsystem fire protection piping		NNS	D/E	NFPA 13-2010 ASME B31.1-2010	A	I	(3)(c)

Table 3.2-1 (31 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
c. Normal fire protection subsystem in safety-related areas							
1) Subsystem Components							(12)
(a) Fire control panel	ALL	NNS	N/A	UL/NFPA 20-2010	A	II	(3)(c),
(b) Fire hydrant	Yard	NNS	E	NFPA 24-2010	A	II	(3)(c)
(c) Extinguisher	ALL	NNS	E	NFPA 10 -2010	A	II	(3)(c)
(d) Others	ALL	NNS	D/E	N/A	A	II	(3)(c)
2) Subsystem fire protection piping	ALL	NNS	D/E	NFPA 13- 2010 ASME B31.1-2010	A	II	(3)(c), (12)
d. Normal fire protection subsystem in non-safety-related areas							
1) Subsystem components							
(a) Main fire pumps and jockey pump	FPWTB	NNS	E	NFPA 20-2010	A	III	(3)(c)
(b) Freshwater storage tanks	Yard	NNS	E	AWWA D-100-2005 NFPA 22-2010	A	III	(3)(c)
(c) Fire control panel	FPWTB	NNS	N/A	UL/NFPA 20-2010	A	III	(3)(c)
(d) Fire hydrant	Yard	NNS	E	NFPA 24-2010	A	III	(3)(c)
(e) Extinguisher	ALL	NNS	E	NFPA 10-2010	A	III	(3)(c)
(f) Others	ALL	NNS	D/E	N/A	A	III	(3)(c)
2) Subsystem fire protection piping		NNS	D/E	NFPA 13-2010 ASME B31.1-2010	A	III	(3)(c)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
38. FW – Feedwater							
a. From the SG up to and including the MSVH penetration anchor	RCB, MSVH	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
b. Other piping	TGB	NNS	D	ASME B31.1-2010	N/A	III	
c. Feedwater pumps	TGB	NNS	D	HI Standards - 2010	N/A	III	
d. Feedwater booster pumps and motor	TGB	NNS	D	HI Standards - 2010	N/A	III	
e. Startup feedwater pump and motor	TGB	NNS	D	HI Standards - 2010	A	III	(3)(e)
f. Startup feedwater pump discharge check valve	TGB	NNS	D	ASME B31.1-2010	A	III	(3)(e)
g. Startup feedwater pump discharge isolation valve	TGB	NNS	D	ASME B31.1-2010	A	III	(3)(e)
h. Startup feedwater control valve	TGB	NNS	D	ASME B31.1-2010	A	III	(3)(e)
i. Feedwater heaters	TGB	NNS	D	ASME Sec. VIII - 2010	N/A	III	
j. Other components	TGB	NNS	D	ASME Sec. VIII - 2010	N/A	III	
39. GD – Grounding							
a. Grounding conductor	ALL	NNS	N/A	IEEE 80-2000 IEEE 665-1995	N/A	III	
b. Lightning protection equipment	ALL	NNS	N/A	IEEE 80-2000 IEEE 665-1995	N/A	III	

Table 3.2-1 (33 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
40. GP – Cathodic Protection							
a. Panels in safety-related areas	ESWIS, CCWHXB	NNS	N/A	NACE SP 0169-2007 NACE SP 048-2008	A	II	(3)(d)
b. Others							
1) Anode	ALL	NNS	N/A	NACE SP 0169-2007 NACE SP 048-2008	N/A	III	
2) Reference electrode	ALL	NNS	N/A	NACE SP 0169-2007 NACE SP 048-2008	N/A	III	
3) Panels in other areas	ALL	NNS	N/A	N/A	N/A	III	
41. GW – Gaseous Radwaste							(4)
a. Containment isolation	RCB, AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
b. Piping and components containing radioactive material	CPB	NNS	D	ASME Sec. VIII - 2007 ASME B31.3 - 2010	A	II	(3)(d)
c. Piping and components not related to radioactive material	CPB	NNS	D	N/A	N/A	III	
d. Header drain tank	CPB	NNS	D	ASME Sec. VIII – 2007	A	II	(3)(d)
e. Charcoal guard bed	CPB	NNS	D	ASME Sec. VIII – 2007	A	II	(3)(d)
f. Charcoal delay bed	CPB	NNS	D	ASME Sec. VIII – 2007	A	II	(3)(d)
g. HEPA filter	CPB	NNS	D	ASME Sec. VIII – 2007	A	II	(3)(d)
h. Waste gas dryer	CPB	NNS	D	ASME Sec. VIII – 2007	A	II	(3)(d)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
42. HC – Hoist Crane (All except Fuel Handling and Transfer System)							
a. Reactor containment building polar crane	RCB	NNS	N/A	N/A	A	II	(3)(d), (11), (13)
b. Fuel handling area overhead crane	AB	NNS	N/A	N/A	A	II	(3)(d), (11)
c. Cranes and/or hoists in safety-related areas	AB, CPB	NNS	N/A	N/A	A	II	(3)(d), (11)
d. Others	AB, CPB	NNS	N/A	N/A	N/A	III	
43. HD – Heater Drain							
a. Feedwater heater drain control valves	TGB	NNS	D	ASME B31.1-2010	N/A	III	
b. Others	TGB	NNS	D	N/A	N/A	III	
44. HG – Containment Hydrogen Control							
a. Passive autocatalytic recombiners (PARs)	RCB	NNS	E	Manufacturer standard	A	I	(3)(e)
b. Hydrogen ignitors	RCB	NNS	N/A	Manufacturer standard	A	I	(3)(e)

Table 3.2-1 (35 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
45. HT – Heat Tracing							
a. Equipment in safety-related areas							
1) Heat tracing panel	AB	NNS	N/A	IEEE 622-1987, IEEE 515-2004, IEEE 622A-1986, IEEE 622B-1988	A	II	(3)(d)
2) Distribution transformer	AB	NNS	N/A	N/A	A	II	(3)(d)
b. Others	TGB, CPB, Yard	NNS	N/A	IEEE 622-1987, IEEE 515-2004, IEEE 622A-1986, IEEE 622B-1988	N/A	III	
46. IA – Instrument Air							
a. Containment isolation	AB, RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
b. Non-safety-related piping and equipment in safety-related areas	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
c. Air compressor and auxiliaries	TGB	NNS	D	ISA-S7.0.01-1996	N/A	III	
d. Piping in non-safety-related areas	TGB	NNS	D	N/A	N/A	III	
e. Others	TGB	NNS	D	N/A	N/A	III	

Table 3.2-1 (36 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
47. IC – In-core Monitoring							
a. In-core instrument	RCB	SC-1	A	IEEE-323-2003 IEEE-344-2004	Yes	I	Seal plug only
b. Cabling and cable tray system from seal table to pool-wall junction panel	RCB, AB	SC-3	C	IEEE-323-2003 IEEE-344-2004	Yes	I	
c. Cables and cable tray system from pool wall junction panel to containment penetration	RCB, AB	SC-3	N/A	IEEE-383-2003	Yes	I	
d. Cables and cable tray system from containment penetration to FIDAS cabinet	RCB, AB	NNS	N/A	IEEE-386-1992	Yes	II	
e. Cables and cable tray system from containment penetration to QIAS-P cabinet	RCB, AB	SC-3	N/A	IEEE-383-2003	Yes	I	
48. IP – Instrument and Control Power (Including Inverters)							
a. Safety inverter	AB	SC-3	N/A	IEEE 308-2001 IEEE 323-2003 IEEE 344-2004 IEEE 420-2013	Yes	I	
b. Non-safety inverter	AB	NNS	N/A	N/A	A	II	(3)(d)
c. Non-safety UPS	AAC GTG	NNS	N/A	N/A	A	III	(3)(b)
d. Non-safety UPS	AB	NNS	N/A	N/A	A	II	(3)(d)
e. Non-safety UPS	AB,CPB	NNS	N/A	N/A	N/A	II,III	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
49. IS – Security							
a. Security CCTV subconsole & color graphic console	AB	NNS	N/A	10 CFR 73.55-2010 IEEE 692-2010	A	II	(3)(d), (6)
b. Other security equipment	ALL	NNS	N/A	N/A	N/A	III	(6)
50. IW – In-Containment Refueling Water Storage							
a. In-containment refueling water storage tanks	RCB	SC-3	G	ASME Sec. III CC-2001 with 2003 Addenda	Yes	I	
b. Holdup volume tank	RCB	SC-3	G	ASME Sec. III CC-2001 with 2003 Addenda	Yes	I	
c. Trisodium phosphate baskets	RCB	SC-3	N/A	ASME Sec. III CC-2001 with 2003 Addenda	Yes	I	
d. IRWST sump strainers	RCB	SC-3	G	AISC N690-1994&2004(Supplement No.2)	Yes	I	
e. Swing panels	RCB	SC-3	G	ASME AG-1-1997	Yes	I	
f. In-containment refueling water storage tank spillway	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
g. Holdup volume tank flooding lines including the power operated valves V001 and 002 (MOV)	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
h. Reactor cavity flooding lines including the power operated valves V003 and 004 (MOV)	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
i. IRWST pressure/temperature instrument penetration piping including isolation valves	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
j. IRWST level instrument penetration piping including isolation valves	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
k. HVT level instrument penetration piping including isolation valves	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
l. Reactor cavity level instrument penetration piping including isolation valves	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
m. Containment penetration piping of CVCS BAMP suction line upstream including isolation and relief valves	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
51. LD – Leak Detection							
a. ESF pump compartment, CCW pump compartment and flood level at floor of each quadrant	RCB, AB, CCWHXB	SC-3	N/A	IEEE-323-2003 IEEE-344-2004	Yes	I	
b. Containment air radiation monitors	RCB	SC-3	N/A	IEEE-323-2003 IEEE-344-2004	Yes	I	(16)

Table 3.2-1 (39 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
52. LL – Lighting							
a. Equipment in safety-related area							
1) Lighting fixture	MCR, FHA, RCB	NNS	N/A	NFPA 101-2009	A	II	(3)(d)
2) Lighting transformer	RCB, AB, CCWHXB, ESWIS	NNS	N/A	NFPA 101-2009	A	II	(3)(d)
3) Lighting distribution panel	RCB, AB, CCWHXB, ESWIS	NNS	N/A	NFPA 101-2009	A	II	(3)(d)
b. Equipment in other areas	ALL	NNS	N/A	N/A	N/A	III	
53. LP – Large Display Panel	AB	NNS	N/A	N/A	A	II	(3)(d)
54. MP – Main Power							
a. Protective relays for generator and transformer	AB	NNS	N/A	N/A	A	II	(3)(d)
b. Generator excitation system, main transformer, generator circuit breaker, isolated phase bus and related protection facility	TGB Yard	NNS	N/A	N/A	N/A	III	
c. Others	TGB	NNS	N/A	N/A	N/A	III	

Table 3.2-1 (40 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
55. MS – Main Steam							
a. Piping and components from SG up to and including the MSVH penetration anchor wall	RCB, MSVH	SC-2	B	ASME Sec. III NC-2010	Yes	I	
b. Piping and components from outlet of MSADVs and MSSVs	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
c. Piping inside main steam pipe enclosure	MS Pipe Enclosure	NNS	D	ASME B31.1-2010	A	II	(3)(d)
d. Components inside turbine generator building from outside main steam pipe enclosure	TGB	NNS	D	ASME B31.1-2010	N/A	III	
e. Other piping		NNS	D	ASME B31.1-2007 with 2008, 2009 addenda	N/A	III	
56. NB – 4.16 kV Non-Class 1E Power							
a. 4.16 kV switchgears in aux. building	AB	NNS	N/A	N/A	A	II	(3)(d)
b. 4.16 kV switchgear (SW02N) in turbine building	TGB	NNS	N/A	N/A	A	III	(3)(e)
c. Switchgear in AAC generator building	AAC GTG	NNS	N/A	N/A	A	III	(3)(b)
d. 4.16 kV switchgear (SW02M) in turbine building	TGB	NNS	N/A	N/A	N/A	III	
57. NC – NSSS process control							
a. Feedwater control signal processing and processor	AB	NNS	N/A	N/A	N/A	II	
b. Steam bypass control signal processing and processor	AB	NNS	N/A	N/A	N/A	II	

Table 3.2-1 (41 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
c. PZR level control signal processing and processor	AB	NNS	N/A	N/A	N/A	II	
d. PZR pressure control signal processing and processor	AB	NNS	N/A	N/A	N/A	II	
e. PZR heater proportional power controller	AB	NNS	N/A	N/A	N/A	III	
f. CVCS – signal processing and processor	AB	NNS	N/A	N/A	N/A	II	
g. Boron dilution alarm system – signal conditional and processing electronics	AB	NNS	N/A	N/A	N/A	II	
58. NG – 480V Non-1E Load Center							
a. 480V non-1E load centers and transformers in safety-related areas	AB	NNS	N/A	N/A	A	II	(3)(d)
b. 480V non-1E load center and transformer in AAC building	AAC GTG	NNS	N/A	N/A	A	III	(3)(b)
c. 480V non-1E load center and transformer (LC05N/TR05N) in turbine building	TGB	NNS	N/A	N/A	A	III	(3)(e)
d. 480V non-1E load centers and transformers in other areas	TGB CPB Pump House	NNS	N/A	N/A	N/A	III	

Table 3.2-1 (42 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
59. NH – 480V non-1E MCC and low voltage							
a. 480V MCCs, 120/208V distribution panels and XFMRs in safety-related areas	AB	NNS	N/A	N/A	A	II	(3)(d)
b. 480V MCC, 120/208V distribution panel and XFMR (MC20N) in turbine building	TGB	NNS	N/A	N/A	A	III	(3)(e)
c. 480V MCCs, 120/208V distribution panels and XFMRs in AAC generator building	AAC GTG	NNS	N/A	N/A	A	II	(3)(b)
d. 480V MCCs, 120/208V distribution panels and XFMRs in other areas	TGB CPB Pump House	NNS	N/A	N/A	N/A	III	
60. NI – NSSS Integrity Monitoring							
a. Alarm unit cabinet (AUC) and field components	RCB, AB	NNS	N/A	IEEE-344-2004 IEEE-383-2003	A	II	(3)(d)
b. Analysis computer console (ACC)	AB	NNS	N/A	N/A	N/A	III	
c. Acoustic leak monitoring (ALMS)	RCB, AB	NNS	N/A	N/A	A	II	(3)(d)
d. Internal vibration monitoring (IVMS)	RCB, AB	NNS	N/A	ASME OM-S/G Part 5-2007	A	II	(3)(d)
e. Loose parts monitoring (LPMS)	RCB, AB	NNS	N/A	ASME OM-S/G Part 12-2007	A	II	(3)(d)
f. RCP vibration monitoring (RCPVMS)	RCB, AB	NNS	N/A	ASME OM-S/G Part 14-2007	A	II	(3)(d)

Table 3.2-1 (43 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
61. NP – 13.8 kV Non-1E Power							
a. 13.8 kV switchgears in turbine building	TGB	NNS	N/A	N/A	A	III	(3)(e)
b. 13.8 kV switchgears in aux. building	AB	NNS	N/A	N/A	A	II	(3)(d)
62. NR – Ex-core Neutron Flux Monitoring							
a. Startup/control channel	RCB, AB	NNS	N/A	N/A	N/A	II	
b. Safety channel	RCB, AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004	Yes	I	
63. PD – Diverse Indication System (DIS)							
a. DIS cabinet	AB	NNS	N/A	IEEE 384-1992	A	III	Diversity Req’ts
b. DIS display (FPD) & switch	AB	NNS	N/A	IEEE 344-2004	A	II	Diversity Req’ts
64. PE – ESF Component Control							
a. Safety-related component control cabinets and field-mounted instruments							
1) Group controller cabinet and related instruments	AB	SC-3	N/A	IEEE-323-2003 IEEE-344-2004 IEEE-379-2000 IEEE-603-1991 IEEE-7-4.3.2-2003	Yes	I	

Table 3.2-1 (44 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
2) Field loop controller cabinet	AB	SC-3	N/A	IEEE-323-2003 IEEE-344-2004 IEEE-379-2000 IEEE-603-1991 IEEE-7-4.3.2-2003	Yes	I	
3) Maintenance test panel (MTP)	AB	SC-3	N/A	IEEE-323-2003 IEEE-344-2004 IEEE-379-2000 IEEE-603-1991 IEEE-7-4.3.2-2003	Yes	I	
4) Interface test processor (ITP)	AB	SC-3	N/A	IEEE-323-2003 IEEE-344-2004 IEEE-379-2000 IEEE-603-1991 IEEE-7-4.3.2-2003	Yes	I	
b. Safety-related instrument sensing line (all applications)	RCB, AB, CCWHXB	SC-1/ SC-2/ SC-3	A/B/C	IEEE-323-2003 IEEE-344-2004 IEEE-379-2000 IEEE-603-1991 IEEE-7-4.3.2-2003	Yes	I	
65. PF – 4.16 kV Class 1E Power							
a. 4.16 kV switchgear	AB	SC-3	N/A	IEEE 308-2001, IEEE 323-1974, IEEE 344-2004, IEEE 420-2001	Yes	I	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
66. PG – 480V Class 1E Load Center							
a. 480V LCs and LC XFMRs	AB	SC-3	N/A	IEEE 308-2001, IEEE 323-1974, IEEE 344-2004, IEEE 420-2001	Yes	I	
67. PH – 480V Class 1E MCC and Low Voltage							
a. 480V MCCs 120/208V distribution panels and XFMRs	AB Pump House EDG	SC-3	N/A	IEEE 308-2001, IEEE 323-1974, IEEE 344-2004, IEEE 420-2001	Yes	I	
68. PM – MCR							
a. Control console (RO, TO, EO, SS, STA)							
1) Frame	AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004 IEEE-420-2013	Yes	I	
2) Information FPD and processor	AB	NNS	N/A	N/A	A	II	(3)(d)
3) ESF-CCS soft control module	AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004 IEEE-420-2013	Yes	I	

Table 3.2-1 (46 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
4) Class 1E switch	AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004 IEEE-420-2013	Yes	I	
5) Non-1E switch	AB	NNS	N/A	N/A	A	II	(3)(d)
6) QIAS-N FPD	AB	NNS	N/A	N/A	A	I	
b. Monitoring Workstation							
1) Information FPD and processor	AB	NNS	N/A	N/A	N/A	III	
c. Safety Console							
1) Frame	AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004 IEEE-420-2013	Yes	I	
2) Class 1E switch	AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004 IEEE-420-2013	Yes	I	
3) Non-1E switch	AB	NNS	N/A	N/A	A	II	(3)(d)
4) Mini LDP (including QIAS-N)	AB	NNS	N/A	N/A	A	I	
5) Operator module	AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004 IEEE-420-2013	Yes	I	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
6) QIAS-P FPD	AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004 IEEE-420-2013	Yes	I	
7) Diversity indication system FPD	AB	NNS	N/A	N/A	A	II	(3)(d)
8) Mark-VI FPD	AB	NNS	N/A	N/A	A	II	(3)(d)
9) ESF-CCS soft control module	AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004 IEEE-420-2013	Yes	I	
69. PN – NSSS Process Instrumentation							
a. Safety related	RCB, AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004	Yes	I	
b. Non-safety related	RCB, AB	NNS	N/A	N/A	A	II/III	(3)(d)
70. PO – Process Component Control							
a. Non-safety-related component control cabinet and local installation component							
1) Process controller cabinet and related component	AB	NNS	N/A	IEEE-336-1971 IEEE-383-2003 IEEE-420-2013, IEEE-7-4.3.2-2003	A	II	(3)(d)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
2) Engineering station	AB	NNS	N/A	IEEE-336-1971 IEEE-383-2003 IEEE-420-2013, IEEE-7-4.3.2-2003	A	II	(3)(d)
3) Others	AB	NNS	N/A	IEEE-336-1971 IEEE-383-2003 IEEE-420-2013, IEEE-7-4.3.2-2003	A	II/III	(3)(d)
b. Non-safety-related component sensing lines							
1) In safety-related area	AB	NNS	D	IEC 61000 series, IEEE-383-2003, IEEE-7-4.3.2-2003	A	II	(3)(d)
2) In non-safety-related areas	AB, TGB, CCWHXB, RCB	NNS	D	IEC 61000 series, IEEE-383-2003, IEEE-7-4.3.2-2003	N/A	III	
71. PP – Post-Accident Monitoring							
a. Instrument for Type A, B, C variables	RCB, AB	SC-3	N/A	ISA S67.02.01 ICEA T-27-581	Yes	I	(7)
b. Instrument for Type D, E variables	RCB, AB	NNS	N/A	ISA S67.02.01 ICEA T-27-581	A	II	(3)(d), (7)
72. PR – Radiation Monitoring							
a. NSSS RMS							
1) PRMS – sampler/detector unit	RCB, AB	NNS	N/A	N/A	A	II	

Table 3.2-1 (49 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
2) PRMS – signal conditional and processing electronics	RCB, AB	NNS	N/A	N/A	A	III	
3) WRBS – sampler/detector unit	RCB, AB	NNS	N/A	N/A	A	II	
4) WRBS – signal conditional and processing electronics	RCB, AB	NNS	N/A	N/A	A	III	
5) GSERMS – sampler/detector unit	RCB, AB	NNS	N/A	N/A	A	II	
6) GSERMS – signal conditional and processing electronics	RCB, AB	NNS	N/A	N/A	A	III	
b. BOP RMS							
1) Safety-related equipment	AB	SC-3	G	IEEE 497-2002 IEEE 603-1991	Yes	I	
2) Non-safety-related equipment in safety-related areas and TSC	AB	NNS	D/E	N/A	A	II	(3)(d)
3) Equipment in non-safety-related areas required to provide reasonable assurance that radioactivity releases are within limits	AB	NNS	D/E	N/A	N/A	III	
4) Containment isolation	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
5) Others	AB	NNS	D	N/A	N/A	III	

Table 3.2-1 (50 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
73. PS – Process Sampling							
a. SG sampling in containment including containment isolation	RCB, AB, CPB	SC-2	B	IEEE-323-2003 IEEE-344-2004 IEEE-382-2003	N/A	I	
b. Non-safety-related sampling in safety-related areas	AB	NNS	D	IEEE-323-2003 IEEE-344-2004 IEEE-382-2003	A	II	(3)(d)
c. Equipment contacting with radioactive sample in non-safety-related areas	CPB	NNS	D	IEEE-323-2003 IEEE-344-2004 IEEE-382-2003	N/A	III	
d. Analyzer and instrumentation	AB, CPB, TGB	NNS	N/A	IEEE-323-2003 IEEE-344-2004 IEEE-382-2003	N/A	III	
e. Others	AB, TGB	NNS	D	IEEE-323-2003 IEEE-344-2004 IEEE-382-2003	N/A	III	
74. PW – Power Control System							
a. Reactor regulating system – signal conditional and processing electronics	AB	NNS	N/A	N/A	N/A	II	
b. Digital rod control system – signal conditional and processing electronics	AB	NNS	N/A	N/A	N/A	II	
c. Digital rod control system power control electronics	AB	NNS	N/A	N/A	N/A	III	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
d. Reactor power cutback system – signal conditional and processing electronics	AB	NNS	N/A	N/A	N/A	II	
e. DRCS remote I/O cabinet	AB	NNS	N/A	N/A	N/A	I	(N-9)
75. PX – Primary Sampling							
a. RCS hot leg sample line CIV inside Containment	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
b. RCS hot leg sample line CIV outside Containment	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
c. RCS PZR surge sample line CIV inside containment	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
d. RCS PZR surge sample line CIV outside containment	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
e. RCS PZR Steam Space Sample Line CIV inside Containment	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
f. RCS PZR steam space sample Line CIV outside containment	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
g. SI pumps miniflow sample line isolation valves	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
h. CS pump miniflow sample line isolation valves	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
i. SC pump miniflow sample line isolation valves	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
j. SI tank sample line CIV inside containment	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
k. SI tank sample line CIV outside containment	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (52 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
l. SI tank sample line isolation valves	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
m. Containment air sample line CIV inside containment	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
n. Containment air sample line CIV outside containment	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
o. Containment air sample return line CIV outside containment	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
p. Containment air sample return line CIV inside containment	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
q. PASS sample return line CIV inside containment	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
r. PASS sample return line CIV outside containment	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
s. SC and CS pumps miniflow line sampling piping and valves	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
t. CVCS purification filter sampling piping and valves	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
u. CVCS ion exchanger sampling piping and valves	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
v. Sampling return piping and valve to VCT	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
w. Air sample/return line in containment building, portion of post-accident sample return line and sample line & component in aux. building	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
x. Normal primary sample cooler rack	CPB	NNS	D	ASME B31.1-2010	N/A	III	
y. Normal primary sample sink	CPB	NNS	D	ASME B31.1-2010	N/A	III	
z. Post-accident primary sample cooler rack	AB	NNS	D	ASME B31.1-2010	N/A	III	
aa. Post-accident primary sample sink	AB	NNS	D	ASME B31.1-2010	N/A	III	
bb. Primary off-gas sample pump	AB	NNS	D	ASME B31.1-2010	N/A	III	
76. QN – Qualified Indication and Alarm –Non-Safety (QIAS-N)							
a. QIAS-N display device (including mini-LDP and SODP)		NNS	N/A	IEEE 386-1992	A	I	
b. QIAS-N processing device and related equipment		NNS	N/A	IEEE 386-1992	A	I	
77. QP – Qualified Indication and Alarm – P(QIAS-P)							
a. QIAS-P display		SC-3	N/A	IEEE-323-2003 IEEE-344-2004 IEEE-379-2000 IEEE-383-2003 IEEE-497-2002 IEEE-603-1991 IEEE-7-4.3.2-2003	Yes	I	
b. QIAS-P processing controller (including ICCMS)		SC-3	N/A		Yes	I	(7)
c. HJTC instrumentation flange assembly		SC-1	A		Yes	I	
d. Heated junction thermocouple probe assembly		SC-1/ SC-3	A/C		Yes	I	SC-3: Seal plug

Table 3.2-1 (54 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
78. RC – Reactor Coolant							
a. Reactor vessel	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
b. CEA	RCB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
c. SG (primary/secondary)	RCB	SC-1/ SC-2	A/B	ASME Sec. III NB-2007 with 2008 addenda ASME Sec. III NC-2007 with 2008 addenda	Yes	I	(N-1)
d. PZR	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
e. RCP	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	(N-3, 4)
f. POSRV							(N-8)
1) Main valves	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
2) Spring-loaded pilot valves	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
3) Double motor-operated pilot valves	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
4) Motor-operated isolation valves	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
5) Manual isolation valves	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
g. Sparger	RCB	SC-3	C	ASME Sec. III ND	Yes	I	

Table 3.2-1 (55 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
h. POSRV piping	RCB	SC-3/ NNS	C/D	ASME Sec. III ND-2007 with 2008 addenda /ASME B31.1-2007 with 2008, 2009 addenda	Yes/NA	I/II	
i. Piping							
1) Reactor coolant piping	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
2) Pressurizer surge line piping	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
3) Pressurizer spray line piping	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
4) Upstream of flow restricting devices	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	(N-5)
5) Downstream of flow restricting devices	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	(N-6)
j. Fuel assemblies	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
k. Integrated head assembly							
1) IHA seismic support system	RCB	SC-1	A	ASME Sec. III, NF -2007 with 2008 addenda	Yes	I	
2) RCGVS flange support	RCB	SC-1	A	ASME Sec. III, NF -2007 with 2008 addenda	Yes	I	
3) Main columns and cooling shroud shells	RCB	SC-3	C	ASME Sec. III, NF -2007 with 2008 addenda	Yes	I	
4) Upper air plenum	RCB	NNS	D	ASME Sec. III, NF -2007 with 2008 addenda	A	II	
l. Core support structures	RCB	SC-3	C	ASME III- NG	Yes	I	(N-2)

Table 3.2-1 (56 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
m. Valves							
1) Pressurizer spray control valves	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
2) Pressurizer spray isolation valves	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
3) Downstream of flow restricting devices	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
n. Discharge piping vacuum breaker	RCB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
o. RCP lube oil collection tank	RCB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	N/A	II	
79. RG – Reactor Coolant Gas Vent							
a. Pressurizer gas vent piping upstream of and including the vent isolation valves V410 through 413	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
b. Reactor vessel upper head gas vent piping upstream of and including the vent isolation valves V414 through 417	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
c. RCGVS gas vent piping to and including the vent isolation valves V412, 413, 416, 417 from downstream of the vent isolation valves V418, 419, 420	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
d. RCGVS gas vent piping from downstream of the vent isolation valves V418 to RDT	RCB	NNS	D	ASME B 31.1-2010	A	II	(3)(d)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
e. RCGVS gas vent piping from downstream of the vent isolation valves V419, 420 to the IRWST anchor wall	RCB	NNS	D	ASME B 31.1-2010	A	II	(3)(d)
f. RCGVS gas vent piping from downstream of the IRWST anchor wall to the end point of RCGVS sparger	RCB	SC-3	C	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
80. RP – Reactor Protective							
a. PPS (plant protection system)	AB	SC-3	N/A	IEEE-323-2003 IEEE-344-2004 IEEE-603-1991 IEEE-7-4.3.2-2003, ASME NQA-1-2008 IEC 61000-4-2-1992	Yes	I	
b. MTP (maintenance test panel)	AB	SC-3	N/A	IEEE-323-2003 IEEE-344-2004 IEEE-603-1991 IEEE-7-4.3.2-2003, ASME NQA-1-2008 IEC 61000-4-2-1992	Yes	I	
c. ITP (integrated test processor)	AB	SC-3	N/A	IEEE-323-2003 IEEE-344-2004 IEEE-603-1991 IEEE-7-4.3.2-2003, ASME NQA-1-2008 IEC 61000-4-2-1992	Yes	I	

Table 3.2-1 (58 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
81. RS – Remote Shutdown Room							
a. Frame	AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004 IEEE-420-2013	Yes	I	
b. Information FPD and processor	AB	NNS	N/A	N/A	A	II	(3)(d)
c. ESF-CCS soft control module	AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004 IEEE-420-2013	Yes	I	
d. Shutdown overview display panel (SODP)	AB	NNS	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004 IEEE-420-2013	Yes	I	
e. Class 1E switch	AB	SC-3	N/A	IEEE-603-1991 IEEE-323-2003 IEEE-344-2004 IEEE-420-2013	Yes	I	
f. Non-Class 1E switch	AB	NNS	N/A	N/A	A	II	(3)(d)
82. RW – Radwaste Control Room	CB	NNS	N/A	N/A	N/A	III	

Table 3.2-1 (59 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
83. SA – Service Air							
a. Containment isolation valves and associated piping	AB, CPB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
b. Non-safety-related piping and equipment in safety-related areas	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
c. Others	TGB	NNS	D	N/A	N/A	III	
86. SC – Shutdown Cooling							
a. Shutdown cooling pumps	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
b. Shutdown cooling heat exchanger (tube/shell)	AB	SC-2/ SC-3	B/C	ASME Sec. III NC/ND-2007 with 2008 addenda	Yes	I	(N-1)
c. Shutdown cooling pump mini-flow heat exchanger (tube/shell)	AB	SC-2/ SC-3	B/C	ASME Sec. III NC/ND-2007 with 2008 addenda	Yes	I	(N-1)
d. Piping and Valves							
1) SCS suction piping and valves on the RCS side from RCS hot leg up to including SI-653, 654	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
2) SC piping and valves from downstream of SI-653, 654 to upstream of and excluding SI-178, 168	RCB, AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
3) Piping and valves on the IRWST cooling line from downstream of SI-688, 693 to SI-300, 301 (up to and including SI-391)	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
4) External reactor vessel cooling fill line downstream of and excluding SI-391	AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda	A	II	(3)(d)
5) Piping and valves on the SCS filling line from and including SI-708, 709 to upstream of SI-106	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
6) Radioactive drain system connection piping	RCB, AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda	A	II	(3)(d)
7) All relief valves discharge piping	RCB, AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda	A	II	(3)(d)
85. SD – SG Blowdown							
a. From SG up to the anchor wall of the blowdown flash tank room, including containment isolation valves	RCB, AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
b. Blowdown flash tank	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d), (4)
c. Regenerative heat exchanger	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d), (4)
d. Mixed bed demineralizer	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d), (4)

Table 3.2-1 (61 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
e. Valves and piping from the anchor wall of the blowdown flash tank room to the points(V1045,050) where discharged into the condensate, and the wastewater treatment system	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d), (4)
f. Valves and piping from the points (V1045,050) where discharged into the condensate, and the wastewater treatment system to the auxiliary building wall.	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
g. Valves and piping from the anchor wall of the blowdown flash tank room to wall of MSIV room	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d), (4)
h. Valves and piping at the downstream of wall of MSIV room	AB, TGB	NNS	D	ASME B31.1-2010	N/A	III	
i. Valves and piping except (e), (f),(g), and (h) within auxiliary building	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d), (4)
j. Equipment and piping of the liquid radwaste system interfaced to the SGBS within the compound building	CPB	NNS	D	ASME B31.1-2010	N/A	III	(4)
k. Equipment and piping within the compound building and turbine building	CPB, TGB	NNS	D	ASME B31.1-2010	N/A	III	

Table 3.2-1 (62 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
l. Wet lay-up recirculation Pump	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	A	II	(3)(d), (4)
m. Portion of wet lay-up subsystem within containment or auxiliary building except the containment penetration area and pressure boundaries.	RCB, AB	NNS	D	ASME B31.1-2010	N/A	II	(3)(d), (4)
86. SI – Safety Injection							
a. Safety injection pumps	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
b. Safety injection tanks	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
c. Safety injection filling tank	AB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	N/A	III	
d. Piping and valves							
1) SIP miniflow line (from SIP orifice or SI-218, 219, 254, 255 to IRWST)	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
2) SI piping and valves from IRWST to upstream of and excluding the check valves SI-543, 541, 542, 540 and hot leg isolation valve SI-604, 609	RCB, AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (63 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
3) SI piping and valves between the DVI nozzle and including the check valves SI-543, 541, 542, 540, SIT check valve SI-245, 225, 235, 215, and SI-648, 628, 638, 618	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
4) Hot leg injection piping downstream of and including SI-523, 533 and SI-322, 323	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
5) Hot leg injection piping from and excluding SI-604, 609 to upstream of and excluding SI-523, 533	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
6) Piping and valves on the SIT filling and drain line from and including SI-290 to up to and including SI-661 and up to and excluding SI-322, 323, SI-245, 225, 235, 215, SI-648, 628, 638, 618. Piping between the valves SI-290 and SI-293 is not included.	RCB, AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
7) SIT filling piping between the valves SI-290 and SI-293 (excluding SI-290 and SI-293)	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
8) SIT nitrogen supply piping up to and including valves SI-642, 622, 632, 612, 649, 629, 639, 619	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
9) Piping and valves on the SIT atmosphere vent line up to and including valves SI-643, 623, 633, 613, 608, 606, 607, 605	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
10) Piping and valves on the SIS filling line from and including SI-700, 714, 701, 715 to the piping downstream of SI-476, 435, 478, 447	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	(3)(d)
11) Piping and valves on the SIS filling line from SIFT to up to and including SI-722 and up to and excluding SI-700, 714, 701, 715 and SI-708, 709	AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda	A	II	(3)(d)
12) SIFT vent line	AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda	A	II	(3)(d)
13) Radioactive drain system connection piping	AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda	A	II	(3)(d)
14) All relief valves discharge piping	AB	NNS	D	ASME B31.1-2007 with 2008, 2009 addenda	A	II	(3)(d)

Table 3.2-1 (65 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
87. SS – RCP Shaft Speed Sensing							
a. Safety-related components	RCB	SC-3	N/A	IEEE-323-2003 IEEE-344-2004 IEEE-383-2003	Yes	I	
b. Non-safety-related components	RCB	NNS	N/A	N/A	A	II	
88. SX – Essential Service Water							
a. Essential service water pumps	ESWIS	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
b. Ultimate heat sink cooling towers							(17)
1) Cooling towers	-	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
2) Fans	-	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
c. UHS makeup pumps	-	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	(17)
d. Essential service water debris filters	CCWHXB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
e. Essential service water supply piping and valves to CCW heat exchangers	CCWHXB ESWIS	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
f. Essential service water return piping and valves from CCW heat exchangers	CCWHXB, ESWIS	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	

Table 3.2-1 (66 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
89. SY – Switchyard							
a. GIS and panels	Switch Yard	NNS	N/A	N/A	N/A	III	
b. EMS RTU, fault recorder	Switch Yard	NNS	N/A	N/A	N/A	III	
90. TA – Main Turbine and Auxiliary	TGB	NNS	D	ASME B31.1-2010	N/A	III	
91. TV – Closed Circuit Television							
a. Equipment in safety-related areas	RCB, AB, CCWHXB	NNS	N/A	N/A	A	II	(3)(d)
b. Others	AB	NNS	N/A	N/A	N/A	III	
92. VB – Compound Building HVAC							
a. Air handling units (AHUs) and associated components	CPB	NNS	E	ASME AG-1-2009	N/A	III	
b. Air cleaning units (ACUs) and associated components	CPB	NNS	E	ASME AG-1-2009 ASME N509-2002	N/A	III	(15)
c. Cubicle coolers and associated components	CPB	NNS	E	ASME AG-1-2009	N/A	III	
d. Packaged air conditioning units	CPB	NNS	E	ASME AG-1-2009	N/A	III	
e. Fans and motors	CPB	NNS	E	ASME AG-1-2009	N/A	III	
f. Dampers	CPB	NNS	E	ASME AG-1-2009	N/A	III	
g. Ductwork	CPB	NNS	E	ASME AG-1-2009	N/A	III	
h. Electric duct heaters	CPB	NNS	E	ASME AG-1-2009	N/A	III	
i. Humidifier	CPB	NNS	E	ASME AG-1-2009	N/A	III	

Table 3.2-1 (67 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
93. VC – Control Room HVAC							
a. Control room supply and return air subsystem							
1) AHUs and associated components excluding cooling coils	AB	SC-3	G	ASME AG-1-2009	Yes	I	
2) AHU cooling coils	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
3) Dampers	AB	SC-3	G	ASME AG-1-2009	Yes	I	
4) Humidifiers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
5) Ductwork	AB	SC-3	G	ASME AG-1-2009	Yes	I	
b. Emergency makeup air cleaning subsystem							
1) ACUs and associated components	AB	SC-3	G	ASME AG-1-2009 ASME N509-2002	Yes	I	
2) Dampers	AB	SC-3	G	ASME AG-1-2009	Yes	I	
3) Ductwork	AB	SC-3	G	ASME AG-1-2009	Yes	I	
c. Exhaust air subsystem	AB						
1) Fan and motor	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
2) Duct and ductwork from exhaust duct inlet to isolation damper (Y0028) outlet, including tornado damper	AB	SC-3	G	ASME-AG-1-2009	Yes	I	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
3) Duct and ductwork from isolation damper outlet (Y0028) to tornado damper inlet, including exhaust fan	AB	NNS	E	ASME-AG-1-2009	A	II	(3)(d)
d. Computer room air conditioning subsystem							
1) Packaged air conditioning units	AB	NNS	E	ASME AG-1-2009	N/A	III	
2) Dampers	AB	NNS	E	ASME AG-1-2009	N/A	III	
3) Ductwork	AB	NNS	E	ASME AG-1-2009	N/A	III	
e. Smoke removal subsystem							
1) Fan and motor	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
2) Duct and ductwork from removal duct inlet to isolation damper (Y0030) outlet, including tornado damper	AB	SC-3	G	ASME AG-1-2009	Yes	I	
3) Duct and ductwork from isolation damper (Y0030) outlet to tornado damper inlet, including removal fan	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
94. VD – EDG Area HVAC							
a. EDG room emergency HVAC subsystem							
1) Cubicle coolers and associated components excluding cooling coils	EDG	SC-3	G	ASME AG-1-2009	Yes	I	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
2) Cubicle cooler cooling coils	EDG	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
3) Dampers	EDG	SC-3	G	ASME AG-1-2009	Yes	I	
4) Ductwork	EDG	SC-3	G	ASME AG-1-2009	Yes	I	
b. EDG room normal HVAC subsystem							
1) AHUs and associated components excluding cooling coils	EDG	SC-3	G	ASME AG-1-2009	Yes	I	
2) AHU cooling coils	EDG	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
3) Fans and motors	EDG	SC-3	G	ASME AG-1-2009	Yes	I	
4) Dampers	EDG	SC-3	G	ASME AG-1-2009	Yes	I	
5) Ductwork	EDG	SC-3	G	ASME AG-1-2009	Yes	I	
c. Diesel fuel oil storage tank room HVAC subsystem							
1) Fan and motor	EDG	SC-3	G	ASME AG-1-2009	Yes	I	
2) Dampers	EDG	SC-3	G	ASME AG-1-2009	Yes	I	
3) Ductwork	EDG	SC-3	G	ASME AG-1-2009	Yes	I	

Table 3.2-1 (70 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
95. VE – Electrical and I&C equipment areas HVAC							
a. Electrical and I&C equipment areas HVAC subsystem							
1) Safety-related cubicle coolers and associated components excluding cooling coils	AB	SC-3	G	ASME AG-1-2009	Yes	I	
2) Safety-related cubicle cooler cooling coils	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
3) Non-safety-related cubicle coolers and associated components	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
4) Safety-related electric duct heaters	AB	SC-3	G	ASME AG-1-2009	Yes	I	
5) Non-safety-related electric duct heaters	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
6) Humidifiers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
7) Dampers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
8) Ductwork	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
b. CEDM M/G Set Room HVAC Subsystem							
1) AHU and associated components	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
2) Electric duct heaters	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
3) Humidifiers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
4) Dampers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
5) Ductwork	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
c. Class 1E battery room HVAC subsystem							
1) Fans and motors	AB	SC-3	G	ASME AG-1-2009	Yes	I	
2) Dampers	AB	SC-3	G	ASME AG-1-2009	Yes	I	
3) Electric duct heaters	AB	SC-3	G	ASME AG-1-2009	Yes	I	
4) Ductwork	AB	SC-3	G	ASME AG-1-2009	Yes	I	
d. Non-Class 1E battery room HVAC subsystem							
1) Fans and motors	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
2) Dampers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
3) Electric duct heaters	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
4) Ductwork	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
e. Remote shutdown room HVAC subsystem							
1) Fans and motors	AB	SC-3	G	ASME AG-1-2009	Yes	I	
2) Safety-related cubicle coolers and associated components	AB	SC-3	G	ASME AG-1-2009	Yes	I	
3) Safety-related cubicle cooler cooling coils	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
4) Electric duct heaters	AB	SC-3	G	ASME AG-1-2009	Yes	I	
5) Humidifiers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)

Table 3.2-1 (72 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
6) Dampers	AB	SC-3	G	ASME AG-1-2009	Yes	I	
7) Ductwork	AB	SC-3	G	ASME AG-1-2009	Yes	I	
f. Remote control console room HVAC subsystem							
1) Packaged air conditioning unit	AB	NNS	E	ASME AG-1-2009	N/A	III	
96. VF – Fuel Handling Area HVAC							
a. Normal HVAC subsystem							
1) AHU and associated components	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
2) ACU and associated components	AB	NNS	E	ASME AG-1-2009 ASME N509-2002	A	II	(3)(d), (15)
3) Isolation dampers Y0001A & Y0002B and ductwork from outside intake to Y002B	AB	SC-3	G	ASME AG-1-2009	Yes	I	
4) Isolation dampers Y003A & Y0004B and ductwork from Y0003A to exhaust duct termination	AB	SC-3	G	ASME AG-1-2009	Yes	I	
5) Dampers excluding isolation dampers Y0001A, Y0002B,Y003A and Y0004B	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)

Table 3.2-1 (73 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
6) Ductwork excluding ductwork from outside intake to Y002B and ductwork from Y0003A to exhaust duct termination	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
b. Emergency HVAC Subsystem							
1) ACUs and associated components	AB	SC-3	G	ASME AG-1-2009 ASME N509-2002	Yes	I	
2) Safety-related cubicle coolers and associated components excluding cooling coils	AB	SC-3	G	ASME AG-1-2009	Yes	I	
3) Safety-related cubicle cooler cooling coils	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
4) Dampers	AB	SC-3	G	ASME AG-1-2009	Yes	I	
5) Ductwork	AB	SC-3	G	ASME AG-1-2009	Yes	I	
97. VK – Auxiliary Building Controlled Area HVAC							
a. HELB area HVAC subsystem							
1) AHU and associated components	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
2) ACU and associated components	AB	NNS	E	ASME AG-1-2009 ASME N509-2002	A	II	(3)(d), (15)
3) Cubicle coolers and associated components	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)

Table 3.2-1 (74 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
4) Dampers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
5) Ductwork	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
b. Aux. building controlled area I/II HVAC subsystem							
1) AHUs and associated components	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
2) Normal ACUs and associated components	AB	NNS	E	ASME AG-1-2009 ASME N509-2002	A	II	(3)(d), (15)
3) Emergency ACUs and associated components	AB	SC-3	G	ASME AG-1-2009 ASME N509-2002	Yes	I	
4) Dampers and ductwork associated with Emergency ACUs	AB	SC-3	G	ASME AG-1-2009	Yes	I	
5) Isolation dampers and ductwork between and including Y0017A & Y0019B, Y0018A & Y0020B, Y0021A & Y0023B, Y0022A & Y0024B	AB	SC-3	G	ASME AG-1-2009	Yes	I	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
6) Dampers and ductwork associated with AHUs and normal ACUs excluding isolation dampers and ductwork between and including Y0017A & Y0019B, Y0018A & Y0020B, Y0021A & Y0023B, Y0022A & Y0024B	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
7) Safety-related cubicle coolers and associated components excluding cooling coils	AB	SC-3	G	ASME AG-1-2009	Yes	I	
8) Safety-related cubicle cooler cooling coils	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
9) Non-safety-related cubicle coolers and associated components	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
98. VO – Auxiliary building clean area HVAC							
a. Auxiliary building clean area I/II HVAC subsystem							
1) AHUs and components	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
2) Fans and motors	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)

Table 3.2-1 (76 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
3) Safety-related cubicle coolers and associated components excluding cooling coils	AB	SC-3	G	ASME AG-1-2009	Yes	I	
4) Safety-related cubicle coolers cooling coils	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
5) Non-safety-related cubicle coolers and associated components	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
6) Dampers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
7) Ductwork	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
b. Main steam valve room HVAC subsystem							
1) AHUs and associated components	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
2) Dampers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
3) Ductwork	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
c. Main steam enclosure HVAC subsystem	AB						
1) Fans and motors	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
2) Dampers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
3) Ductwork	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
d. Auxiliary building smoke removal HVAC subsystem							
1) Fans and motors	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
2) Dampers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
3) Ductwork	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
99. VP – Reactor Containment building HVAC							
a. RCFC and associated components	RCB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
b. AHU and associated components	RCB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
c. Fans and motors	RCB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
d. Dampers	RCB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
e. Ductwork	RCB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
100. VQ – Reactor Containment Purge							
a. Containment isolation portions(including isolation damper and piping)	AB, RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
b. ACUs and associated components	AB	NNS	E	ASME AG-1-2009 ASME N509-2002	A	II	(3)(d) , (15)
c. AHU and associated components	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
d. Fans and motors	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
e. Dampers	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)
f. Ductwork	AB	NNS	E	ASME AG-1-2009	A	II	(3)(d)

Table 3.2-1 (78 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
101. VT – Turbine Building HVAC							
a. AHUs and associated components	TGB	NNS	E	ASME AG-1-2009	N/A	III	
b. Fans and motors	TGB	NNS	E	ASME AG-1-2009	N/A	III	
c. Cubicle coolers and associated components	TGB	NNS	E	ASME AG-1-2009	N/A	III	
d. Electric duct heaters	TGB	NNS	E	ASME AG-1-2009	N/A	III	
e. Packaged air conditioning units and components	TGB	NNS	E	ASME AG-1-2009	N/A	III	
f. Dampers	TGB	NNS	E	ASME AG-1-2009	N/A	III	
g. Ductwork	TGB	NNS	E	ASME AG-1-2009	N/A	III	
102. WD – Domestic Water							
a. Non-safety-related components and piping in safety-related areas	AB, CCWHXB, ESW pump house	NNS	D	ASME Sec. VIII-2010 ASME B31.1-2010	A	II	(3)(d)
b. Domestic water pumps	FPWTB	NNS	D	HI Standards-2010	N/A	III	
c. Hydropneumatic tank	FPWTB	NNS	D	ASME Sec. VIII-2010	N/A	III	
103. WI – Plant Chilled Water							
a. Central chilled water subsystem							
1) Containment penetration portions (including isolation valves and piping)	AB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
2) Chillers	AB	NNS	E	ASME Sec. VIII-2010 ASME AG-1-2009	A	II	(3)(d)
3) Pumps	AB	NNS	D	HI Standards-2010	A	II	(3)(d)
4) Compression tank	AB	NNS	D	ASME Sec. VIII-2010	A	II	(3)(d)
5) Air separator	AB	NNS	D	ASME Sec. VIII-2010	A	II	(3)(d)
6) Chemical additive tank	AB	NNS	D	ASME Sec. VIII-2010	A	II	(3)(d)
7) Control valves	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
8) Manual valves	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
9) Piping and accessories	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
b. Compound building chilled water subsystem							
1) Chillers	CPB	NNS	E	ASME Sec. VIII -2010 ASME AG-1-2009	N/A	III	
2) Pumps	CPB	NNS	D	HI Standards-2010	N/A	III	
3) Compression tank	CPB	NNS	D	ASME Sec. VIII-2010	N/A	III	
4) Air separator	CPB	NNS	D	ASME Sec. VIII-2010	N/A	III	
5) Chemical additive tank	CPB	NNS	D	ASME Sec. VIII-2010	N/A	III	
6) Control valves	CPB	NNS	D	ASME B31.1-2010	N/A	III	
7) Manual valves	CPB	NNS	D	ASME B31.1-2010	N/A	III	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
8) Piping	CPB	NNS	D	ASME B31.1-2010	N/A	III	
104. WL – Raw Water							
a. Service water pumps	FPWTB	NNS	D	HI Standards-2010	N/A	III	
b. Non-safety-related components and piping in safety-related areas	AB, ESWIS, CCWHXB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
c. Components and piping in water treatment building		NNS	D	ASME Sec. VIII-2010 ASME B31.1-2010	N/A	III	
105. WM – Demineralized Water Makeup							
a. Containment isolation valves and associated piping	AB, RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
b. Non-safety-related components and piping in safety-related areas	AB, RCB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
c. Demineralized water storage tanks	Yard	NNS	D	API 650-2007	N/A	III	
d. Demineralized water transfer pumps	FPWTB	NNS	D	HI Standards-2010	N/A	III	
e. Components and piping in water treatment building	FPWTB	NNS	D	ASME Sec. VIII-2010 ASME B31.1-2010	N/A	III	

Table 3.2-1 (81 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
106. WO – Essential Chilled Water							
a. Chillers	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
b. Pumps	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
c. Compression tanks and air separators	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
d. Control valves	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
e. Manual valves	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
f. Piping	AB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
g. Chemical additive tanks	AB	NNS	D	ASME Sec. VIII-2010	A	II	(3)(d)
h. Refrigerant exhaust piping	AB	NNS	D	ASME Sec. VIII-2010	A	II	(3)(d)
i. Demineralized water makeup control valves	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
j. Demineralized water makeup manual valve	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
k. Nitrogen makeup control valves	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
l. Chemical additive tank supply and return line piping and associated valves	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)

Table 3.2-1 (82 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
107. WT – Turbine Generator Building Closed Cooling Water							
a. Pumps	TGB	NNS	D	HI Standards-2010	N/A	III	
b. Heat Exchangers	TGB	NNS	D	ASME B31.1-2010	N/A	III	
c. Valves and associated piping	TGB	NNS	D	ASME B31.1-2010	N/A	III	
108. WV – Liquid Radwaste							(4)
a. Piping and components in safety-related areas	CPB	NNS	D	ASME B31.1 - 2010	A	II	(3)(d)
b. Piping and valve containing radioactive materials	CPB	NNS	D	ASME B31.3 - 2010	A	II/III	(3)(d)
c. Floor drain tank	CPB	NNS	D	API650 - 2007	N/A	III	
d. Equipment waste tank	CPB	NNS	D	API650 – 2007	N/A	III	
e. Chemical waste tank	CPB	NNS	D	API650 – 2007	N/A	III	
f. Monitor tank	CPB	NNS	D	API650 – 2007	N/A	III	
g. Acid storage tank	CPB	NNS	D	API650 – 2007	N/A	III	
h. Acid batch tank	CPB	NNS	D	API650 – 2007	N/A	III	
i. Caustic storage tank	CPB	NNS	D	API650 – 2007	N/A	III	
j. Seal water storage tank	CPB	NNS	D	API650 – 2007	N/A	III	
k. Caustic batch tank	CPB	NNS	D	API650 – 2007	N/A	III	
l. Chemical additive tank	CPB	NNS	D	API650 – 2007	N/A	III	
m. Floor drain pump	CPB	NNS	D	API610 - 2010	N/A	III	
n. Equipment waste pump	CPB	NNS	D	API610 - 2010	N/A	III	

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
o. Chemical waste pump	CPB	NNS	D	API610 - 2010	N/A	III	
p. Monitor tank pump	CPB	NNS	D	API610 - 2010	N/A	III	
q. Seal water pump	CPB	NNS	D	API610 - 2010	N/A	III	
r. Acid batch pump	CPB	NNS	D	API610 - 2010	N/A	III	
s. Caustic batch pump	CPB	NNS	D	API610 - 2010	N/A	III	
t. Chemical additive pump	CPB	NNS	D	API610 - 2010	N/A	III	
u. LRS seal water heat exchanger	CPB	NNS	D	ASME Sec. VIII - 2007 TEMA – 2007	N/A	III	
v. RO package	CPB	NNS	D	ASME Sec. VIII – 2007	A	II/III	(3)(d)
109. WX – Solid Radwaste							(4)
a. Piping and components in safety-related areas	AB	NNS	D	ASME B31.3 - 2010 ASME B31.1 - 2010 ASME Sec. VIII – 2007	A	II	(3)(d)
b. Solid waste compactor	CPB	NNS	D	N/A	N/A	III	
c. Piping and components containing radioactive material	AB, CPB	NNS	D	ASME B31.3 - 2010 ASME B31.1 - 2010 ASME Sec. VIII - 2007 API-650 – 2007	A	II/III	(3)(d)
d. Low-activity spent resin tank	CPB	NNS	D	ASME Sec. VIII - 2007	A	II	(3)(d)
f. Spent resin long term storage tank	CPB	NNS	D	API650 – 2007	A	II	(3)(d)
g. New resin tank	AB	NNS	D	ASME Sec. VIII – 2007	A	II	(3)(d)

Item No. / Principal SSCs	Location(2)	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B(3)	Seismic Category	Remarks
110. WY – Radioactive Laundry		NNS	D	API-650 - 2000 ASME B31.3 - 2010	N/A	III	(4)
a. Detergent waste tank	CPB	NNS	D	API650 – 2007	A	II	(3)(d)
b. Detergent waste tank pump	CPB	NNS	D	API610 – 2010	N/A	III	
c. Detergent waste filter	CPB	NNS	D	ASME Sec. VIII - 2007	N/A	III	

(1) As used in this document, the term safety-related area applies to those areas containing equipment or structures required for safe shutdown (including accident mitigation).

(2) Locations are defined below:

RCB = Reactor Containment Building
CPB = Compound Building
CCWHXB = Component Cooling Water Heat Exchanger Building
CWIS = Circulating Water Intake Structure
MSVH = Main Steam Valve House
EOF = Emergency Operation Facility
AAC GTG = Alternate Alternating Current Gas Turbine Generator Building
AB = Auxiliary Building
TGB = Turbine Generator Building
ESWIS = Essential Service Water Intake Structure
FPWTB = Fire Pump & Water/Wastewater Treatment Building
FHA = Fuel Handling Area
EDG = Emergency Diesel Generator Building
ALL = All areas

(3) Legend:

- Yes – Compliance with the requirements of 10 CFR 50, Appendix B, is required.
- A – Augmented quality assurance requirements of Appendix B to 10 CFR 50, is applied. Augmented quality controls are applied to the following areas:
  - (a) ATWS (Anticipated Transient without Scram)
  - (b) Station Blackout
  - (c) Fire Protection
  - (d) Seismic Category II SSCs
  - (e) Risk significant non-safety related SSCs determined by design RAP
- N/A – The requirements of 10 CFR 50, Appendix B, are not required.

(4) Designed in accordance with NRC RG 1.143. Design guidance per NRC RG 1.143 is applied to seismic classification, codes and standards and QA requirements of the SSCs for radwaste facility. Compound building, which includes radwaste facility, is designed to radwaste safety classification IIa in accordance with NRC RG 1.143 and Seismic Category II corresponding to its radwaste safety classification.

(5) Designed based on guidance contained in NUREG-0696 and NRC NUREG-0737, Supplement 1.

(6) Security system requirements per 10 CFR 73.

(7) IEEE 497 endorsed by NRC RG 1.97 post-accident monitoring parameters. Instrumentation meets qualification and quality requirements of this NRC RG and IEEE 497.

(8) Guidance per NUREG-0718 and NRC RG 1.47.

(9) Earthquake monitoring is per NRC RG 1.12.

(10) Design guidance per NRC RG 1.13.

(11) Design guidance per NRC RG 1.13, NUREG-0554, and NUREG-0612.

(12) Design guidance per NRC RG 1.189.

(13) The entire crane including the bridge and trolley are designed and constructed in accordance with NRC RG 1.29.

(14) Non-safety-related diverse protection system per 10 CFR 50.62 and GL 85-06.

(15) Non-safety-related ACUs and components including fan/motor and associated isolation dampers are per NRC RG 1.140.

(16) Design guidance per NRC RG 1.45

(17) Ultimate heat sink is site specific. Ultimate heat sink structure contains cooling tower and cooling tower basin provided as conceptual design information (CDI), and will also contain associated systems provided by COL applicants.

NSSS Notes:

(N-1) Two safety classes are used for heat exchangers to distinguish primary and secondary sides where they are different.

(N-2) Only those core support structures necessary to support and restrain the core and to maintain safe shutdown capability are classified as seismic Category I.

(N-3) Loss of cooling water and/or seal water service to the reactor coolant pumps (RCPs) may require stopping the pumps. However, the continuous operation of the pumps is not required during or following an SSE. The auxiliaries are therefore not necessarily seismic Category I. Provision for cooling water to the pump bearing oil cooler and pump motor air cooler does not comply with the requirements of NRC RG 1.29.

(N-4) Only those structural portions of the RCPs that are necessary to provide reasonable assurance of the integrity of the RCPB are safety Class 1.

(N-5) Safety classes of piping within the RCPB (as defined in 10 CFR 50) are selected in accordance with the ANSI/ANS 51.1 criteria. Safety Classes 1, 2, 3 and Non-Nuclear Safety of ANSI/ANS 51.1 are equivalent to Quality Groups A, B, C, and D of NRC RG 1.26, respectively.

(N-6) Flow restricting orifices are provided in the nozzles for the RCS sampling lines, the pressurizer (PZR) level and pressure instruments, the RCP differential pressure instrument lines, the common SI header pressure instrument lines, the RCP seal pressure instrument lines, the charging line differential pressure instrument line, and the SI hot leg injection pressure instrument lines to limit flow in the event of a downstream break of a nozzle. The orifice size, 5.55 mm (7/32 in) diameter × 25.4 mm (1 in) long, precludes exceeding fuel design limits while using minimum makeup rates. This permits orderly shutdown in the event of a downstream break in accordance with 10 CFR 50, Appendix A, GDC 33. A reduction may therefore be made in the classification of downstream lines of the orifice.

(N-7) All containment isolation valves (and their operators) within NSSS scope of supply including manual valves, check valves, and relief valves, which also serve as isolation valves, are subject to the pertinent requirements of the Quality Assurance Program.

(N-8) The POSRVs are used for overpressure protection and rapid depressurization function.

(N-9) The 'Associated Circuits' are defined, in accordance with IEEE Standard 384, as equipment, components, or systems the functions of which are Non-Nuclear Safety (NNS) and electrically Non-Class 1E, though their failures or abnormal states can affect the Class-1E equipment, components, or systems due to the effects of less than the minimum separation or the absence of electrical isolation from the Class-1E equipment, components, or systems. Consequently, the equipment, components, or systems, which are defined as "Associated Circuits" although they are functionally Non-Nuclear Safety, are subject to the qualification requirements placed on Class 1E equipment, components, or systems.

Table 3.2-2

Classification System Relationship

Quality Group	Safety Class	Seismic Category
A	SC-1	I
B	SC-2	I
C, G	SC-3	I
D, E	NNS	I(1) II III

(1) Seismic Category I items which are not safety-related but are required by regulatory requirements to be designed for seismic loads are Quality Group D or E (e.g., portions of fire protection system).