

3.2 Classification of Structures, Components, and Systems

The information in this section of the reference ABWR DCD, including all subsections, tables and figures, is incorporated by reference with the following departures and supplement (Hot Machine Shop). Note that the departures used for Table 3.2-1 are numbered with {} brackets.

~~{7}~~ STD DEP T1 2.4-3 Reactor Core Isolation Cooling System

~~{6}~~ STD DEP T1 2.14-1 Hydrogen Recombiner Requirements Elimination

{4} STD DEP 9.3-2 Breathing Air System

~~{5}~~ STD DEP T1 2.15-1 Radwaste Building

{1} STD DEP T1 3.4-1 Safety Related I&C Architecture, ~~and Mux~~

{2} STD DEP 8.3-1 ~~Dual~~Plant Medium Voltage Electrical System Design

{3} STD DEP 9.1-1 Fuel Storage and Handling

~~STD DEP T1 2.14 1 in Table 3.2 1 Flammability Control System~~

~~The Hydrogen Recombiner Requirements Elimination description was provided in ABWR Licensing Topical Report NEDO 33330, "Advanced Boiling Water Reactor (ABWR) Hydrogen Recombiner Requirements Elimination," Revision 1, dated September, 2007. The markup information on page C 15, C 16 and C 174 of the Licensing Topical Report is incorporated by reference.~~

~~STD DEP T1 2.4 3 in Table 3.2 1 RCIC System~~

~~The Reactor Core Isolation Cooling System (RCIC) alternate design description was provided in ABWR Licensing Topical Report NEDE 33299P, "Advanced Boiling Water Reactor (ABWR) with Alternate RCIC Turbine Pump," dated December, 2006. The markup information on pages C 7, C 8, C 9, and C 10 of the Licensing Topical Report is incorporated by reference.~~

Table 3.2-1 Classification Summary

The classification information is presented by System* in the following order:

Item No.	MPL Number†	Title
C Control and Instrument Systems		
C7	C71	Reactor Protection System Trip and Isolation Functions System † {1}
C11	C91	Process Computer (Includes PMCS and PGCS) <u>Plant Information and Control System</u> {1}
<u>C14</u>	<u>C74</u>	<u>ESF Logic and Control System</u> {1}
H Control Panels		
H6	H23	Multiplexing System {1}
<u>I</u>	<u>Containment and Environmental Control Systems</u>	
T8	T49	Flammability Control System {6}
U Structures and Servicing Systems		
U15	U95	Hot Machine Shop

Table 3.2-1 Classification Summary (Continued)

Principal Component ^a	Safety Class ^b	Location ^c	Quality Group Classification ^d	Quality Assurance Requirement ^e	Seismic Category ^f	Notes
C7 Reactor Protection System Trip and Isolation-Function System {1}						
C11 Process Computer (includes PMCS & PGCS) Plant Information and Control System {1}	N	X	—	E	—	
C14 <u>ESF Logic and Control System {1}</u>	<u>3</u>	<u>SC, X, T, RZ</u>	<u>—</u>	<u>B</u>	<u>I</u>	
D3 Containment Atmospheric Monitoring System {6}						
2. <u>Components with nonsafety-related function (hydrogen and oxygen monitors)</u>	<u>N</u>	<u>C, SC, X, RZ</u>	<u>—</u>	<u>E</u>	<u>—</u>	
E4 RCIC System {7}						
2. Piping including supports—discharge line from vacuum pump to containment isolation valves, and discharge line from condensate pump to the first globe valve <u>Not Used</u>	N	SG	G	E	—	(g)
4. <u>RCIC Turbine-Pump and piping including support, CST suction line from the first RCIC motorized valve, S/P suction line to the pump, discharge line up to the FW line “B” thermal sleeve</u>	<u>2</u>	<u>SC, M</u>	<u>B</u>	<u>B</u>	<u>I</u>	<u>(g) (m)</u>

Table 3.2-1 Classification Summary (Continued)

Principal Component ^a	Safety Class ^b	Location ^c	Quality Group Classification ^d	Quality Assurance Requirement ^e	Seismic Category ^f	Notes
9. Turbine including supports <u>Not Used</u>	2	SG	—	B	I	(m)
F1 Fuel Servicing Equipment {3}	N/2	SC	—/B	E/B	—	(x)
H6 Multiplexing System {1}						
1. Electrical module with safety-related functions (Essential)	3	RZ,X	—	B	I	
2. Cable with safety-related functions (Essential)	3	RZ,X	—	B	I	
3. Other electrical modules and cables (Non-essential)	N	SC,RZ,X,W	—	E	—	
P19 Breathing Air System {4}	N	C,SC,T	—	E	—	
1. Containment Isolation including supports, valves and piping	2	C,SC	B	B	I	
2. Other mechanical and electrical components	N	C,SC,RT,MCH	—	E	—	
R5 Metalclad Switchgear {2}						
1. Safety-related 6900 4160 Volt switchgear	3	RZ	—	B	I	
T8 Flammability Control System {6}	2	SG	B	B	I	
<u>U13 Radwaste Building {5}</u>	<u>N</u>	<u>W</u>	<u>—</u>	<u>E</u>	<u>—</u>	<u>(p)</u>
1. Structural walls and slabs above grade level (see Subsection 3H.3.3.)	N	W	—	E	—	
2. Radwaste Building Substructure	3	W	—	B	I	
U15 Hot Machine Shop	N	MCH	—	E	—	

Table 3.2-1 Notes and Footnotes

c. MCH = Hot Machine Shop

m. ~~The RCIC turbine and pump are designed and fabricated to ASME Code Section III, and pump are designed and fabricated to ASME Code Section III. is not included in the scope of standard codes. To assure that the turbine is fabricated to the standards commensurate with safety and performance requirements, General Electric has established specific design requirements for this component which are as follows:~~

- ~~1. All welding shall be qualified in accordance with Section IX, ASME Boiler and Pressure Vessel Code.~~
- ~~2. All pressure-containing castings and fabrications shall be hydrotested at 1.5 times the design pressure.~~
- ~~3. All high pressure castings shall be radiographed according to:
ASTM E-94
E-141
E-142 Maximum feasible volume
E-446, 186 or 280 Severity level 3~~
- ~~4. As cast surfaces shall be magnetic particle or liquid penetrant tested according to ASME Code, Section III, Paragraphs NB-2545, NC-2545, or NB-2546, and NC-2546.~~
- ~~5. Wheel and shaft forgings shall be ultrasonically tested according to ASTM A-388.~~
- ~~6. Butt welds in forgings shall be radiographed and magnetic particle or liquid penetrant tested according to the ASME Boiler and Pressure Vessel Code, Section III Paragraph NB-2575, NC-2575, NB-2545, NC-2545, NB-2546, NC-2546 respectively. Acceptance standards shall be in accordance with ASME Boiler and Pressure Vessel Code Section III, Paragraph NB-5320, NC-5320, NB-5340, NC-5340, NB-5350, NC-5350, respectively.~~
- ~~7. Notification shall be made on major repairs and records maintained thereof.~~
- ~~8. Record system and traceability shall be according to ASME Section III, NCA-4000.~~
- ~~9. Quality control and identification shall be according to ASME Section III, NCA-4000.~~
- ~~10. Authorized inspection procedures shall conform to ASME Section III, NB-5100 and NC-5100.~~
- ~~11. Non-destructive examination personnel shall be qualified and certified according to ASME Section III, NB-5500 and NC-5500.~~

x. The cranes and Safety Class 2 {3} fuel servicing equipment are designed to hold up their loads and to maintain their positions over the units under conditions of SSE.

