

3I Equipment Qualification Environmental Design Criteria

The information in this section of the reference ABWR DCD, including all subsections, tables, and figures, is incorporated by reference with the following departures.

STD DEP T1 2.14-1 (Table 3I-13)

[STD DEP T1 2.15-2 \(Table 3I-4 and Table 3I-14\)](#)

STD DEP T1 3.4-1 (Table 3I-13 note)

STD DEP 3I-2 (Table 3I-7)

STD DEP Admin

3I.0.1 COL License Information

The following site-specific supplement addresses COL License Information Item 3.43.

The radiation environment conditions given in Tables 3I-7 through 3I-11 and Tables 3I-16 through 3I-19 will be revised as necessary based upon as-designed and as-procured equipment. These tables in the FSAR will be updated as necessary in accordance with 10 CFR 50.71(e).

Table 3I-4 Thermodynamic Environment Conditions Inside Reactor Building (Outside Secondary Containment) Plant Normal Operating Conditions

<u>Plant Zone/Typical Equipment</u>	<u>Pressure¹ kPaG</u>	<u>Temperature °C</u>	<u>Relative Humidity</u>
<u>Diesel generator rooms [Figs. 1.2-8/9.5-6]</u>	<u>0</u>	<u>Max 50 60</u> <u>Min 10</u>	<u>Max 90</u> <u>Min 10</u>

Table 3I-13 Thermodynamic Environment Conditions Inside Reactor Building (Secondary Containment) Plant Accident Conditions¹ (Continued)

<u>Plant Zone/Typical Equipment</u>		<u>Time²</u>			
		<u>1 (h)</u>	<u>6 (h)</u>	<u>12 (h)</u>	<u>100 (day)</u>
<u>FCS⁶ valves including Isolation valve (recombiner instrument, controls), electrical equipment (power source-cables)[Figs. 1.2-8/6.2-40]</u>	<u>Temperature (°C)</u>	<u>120</u>	<u>120</u>	<u>66</u>	<u>66</u>
	<u>Pressure (kPaG)</u>	<u>102.97³</u>	<u>102.97³</u>	<u>3.43</u>	<u>0</u>
	<u>Humidity (%)</u>	<u>Steam</u>	<u>Steam</u>	<u>100</u>	<u>90 max</u>

4. Safety-related motor control centers, power centers, metal clad switchgear, and remote multiplexing units digital logic controllers in the reactor building are located outside the secondary containment in the emergency electrical equipment rooms.

Table 3I-14 Thermodynamic Environment Conditions Inside Reactor Building (Outside Secondary Containment) Plant Accident Conditions

<u>Plant Zone/Typical Equipment</u>	<u>Pressure¹ kPaG</u>	<u>Temperature °C</u>	<u>Relative Humidity</u>
<u>Diesel generator room [Figs. 1.2-8/9.5-6]</u>	<u>0</u>	<u>Max 50 60</u> <u>Min 10</u>	<u>Max 90</u> <u>Min 10</u>

**Table 3I-17 Radiation Environment Conditions Inside Reactor Building
Design Basis Accident (Secondary Containment)**

Plant Zone/Typical Equipment	Accident	LOCA Dose Rate		Integrated Dose ¹	
		Gamma (Gy/h)	Beta (Gy/h)	Gamma (Gy)	Beta (Gy)
General floor area [Fig. 1.2-4]	15.6.5	8E-2	2E+0	2E+1	3E+2
RHR room [Figs. 1.2-4/5.4-10]	15.6.5	2E+3	1E+5	6E+5	8E+7
RCIC room [Figs. 1.2-4/5.4-8]	15.6.2	7E-2	1E+0	9E-1	3E+1
HPCF room [Figs. 1.2-4/6.3-7]	15.6.5	1E+3	6E+4	4E+5	5E+7
SGTS room [Figs. 1.2-10/6.5-1]	15.6.5	2E+4	2E+0	3E+7	3E+2
MS tunnel [Figs. 1.2-8/5.1-3]	15.6.4	9E-1	7E+0	2E+0 4E+1	9E+0 9E+0
Divisional valve room [Figs 1.2-5/ECCS]	15.6.5	2E+3	2E+5	8E+5	2E+8
Instrument rack room [Figs. 1.2-6/ECCS]	15.6.5	3E-2	2E+0	5E+0 5E+0	5E+2 5E+2

1. Integration dose is summed over a six month period for Accident Case 15.6.5, 6 hours for 15.6.2, and 2 hours for 15.6.4.

