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Chapter 2 Site Characteristics

2.0 Introduction

This [section](#) of the referenced DCD is incorporated by reference with the following departures and/or supplements.

Replace the last two paragraphs with the following.

VCS COL 2.0-1-A

DCD site parameter values for the ESBWR standard plant are identified in [DCD Table 2.0-1](#) and DCD Tier 1, [Table 5.1-1](#).

[Table 2.0-201](#) identifies each DCD site parameter value and the corresponding VCS site characteristic value. In accordance with 10 CFR 52.79 and SRP Section 2.0, [Table 2.0-201](#) evaluates whether the VCS site characteristic values are bounded by the DCD site parameter values.

VCS COL 2.0-2-A through 2.0-30-A

Information on the VCS site characteristics is provided in [Sections 2.1](#) through [2.5](#). This information addresses NRC guidance in NUREG-0800 as identified in [Table 2.0-2R](#). In the “COL Information” column, the COL item from the DCD is replaced with information responding to the COL item and identifying the FSAR section which addresses the SRP section invoked by the COL item.

2.0.1 COL Unit-Specific Information

VCS COL 2.0-1-A

2.0-1-A Site Characteristics Demonstration

This COL item is addressed in Section 2.0.

VCS COL 2.0-2-A through 2.0-30-A

2.0-2-A through 2.0-30-A **Standard Review Plan Conformance**
These COL items are addressed in Section 2.0.

Table 2.0-2R (Sheet 1 of 4)
Limits Imposed on Acceptance Criteria in Section II of SRP by ESBWR Design

	Subsection	Subject	ESBWR DCD Parameters, Considerations and/or Limits	COL Information
VCS COL 2.0-2-A	2.1.1	Site Location and Description	None	COL Item 2.0-2-A is addressed in Subsection 2.1.1.
VCS COL 2.0-3-A	2.1.2	Exclusion Area Authority and Control	None	COL Item 2.0-3-A is addressed in Subsection 2.1.2.
VCS COL 2.0-4-A	2.1.3	Population Distribution	ESBWR PRA offsite consequence analysis in DCD Reference 2.0-1 is based on a population density of 305 people per square kilometer (790 per square mile)	COL Item 2.0-4-A is addressed in Subsection 2.1.3. The population density for offsite consequence analysis provided in Subsection 2.1.3 is bounded by (is less than) the density used in DCD Reference 2.0-1 .
VCS COL 2.0-5-A	2.2.1-2.2.2	Identification of Potential Hazards in Site Vicinity	Per DCD Table 2.0-1	COL Item 2.0-5-A is addressed in Subsections 2.2.1 and 2.2.2.
VCS COL 2.0-6-A	2.2.3	Evaluation of Potential Accidents	None considered in vicinity of plant	COL Item 2.0-6-A is addressed in Subsection 2.2.3.
VCS COL 2.0-7-A	2.3.1	Regional Climatology	Per DCD Table 2.0-1	The portion of COL Item 2.0-7-A to provide information in accordance with SRP 2.3.1 is addressed in Subsection 2.3.1. The wind speed used in design of nonsafety-related structures that are not included as part of the ESBWR Standard Plant design is 49 m/s (110 mph).
VCS COL 2.0-8-A	2.3.2	Local Meteorology	None	COL Item 2.0-8-A is addressed in Subsection 2.3.2.
VCS COL 2.0-9-A	2.3.3	Onsite Meteorological Measurements Programs	None	COL Item 2.0-9-A is addressed in Subsection 2.3.3.

Table 2.0-2R (Sheet 2 of 4)
Limits Imposed on Acceptance Criteria in Section II of SRP by ESBWR Design

	Subsection	Subject	ESBWR DCD Parameters, Considerations and/or Limits	COL Information
VCS COL 2.0-10-A	2.3.4	Short-Term Dispersion Estimates for Accidental Atmospheric Releases	Per DCD Table 2.0-1 . See also Chapter 15	The portion of COL Item 2.0-10-A to supply information in accordance with SRP 2.3.4 is addressed in Subsection 2.3.4. Information provided in Table 2.0-201 shows that the site characteristic short-term meteorological dispersion values are bounded by the site parameter values. This means that dose values given in DCD Chapter 15 remain bounding for this FSAR and less than stipulated in 10 CFR 50.34(a) and the applicable portions of SRP Sections 11 and 15.
VCS COL 2.0-11-A	2.3.5	Long-Term Diffusion Estimates	Per DCD Table 2.0-1 . See Subsections 2.3.5 and 12.2.2.1 for a discussion of the generation of these values	COL Item 2.0-11-A is addressed in Subsection 2.3.5.
VCS COL 2.0-12-A	2.4.1	Hydraulic Description Maximum Groundwater Level	Per DCD Table 2.0-1	COL Item 2.0-12-A is addressed in Subsection 2.4.1.
VCS COL 2.0-13-A	2.4.2	Floods	Per DCD Table 2.0-1	COL Item 2.0-13-A is addressed in Subsection 2.4.2.
VCS COL 2.0-14-A	2.4.3	Probable Maximum Flood on Streams and Rivers	Probable maximum flooding level on streams and rivers does not exceed the maximum flood level defined in DCD Table 2.0-1	COL Item 2.0-14-A is addressed in Subsection 2.4.3.
VCS COL 2.0-15-A	2.4.4	Potential Dam Failures Seismically Induced	Potential seismically induced dam failures do not cause flooding to exceed the maximum flood level defined in DCD Table 2.0-1	COL Item 2.0-15-A is addressed in Subsection 2.4.4.

Table 2.0-2R (Sheet 3 of 4)
Limits Imposed on Acceptance Criteria in Section II of SRP by ESBWR Design

	Subsection	Subject	ESBWR DCD Parameters, Considerations and/or Limits	COL Information
VCS COL 2.0-16-A	2.4.5	Probable Maximum Surge and Seiche Flooding	Probable maximum surge and seiche flooding level does not exceed the maximum flood level defined in DCD Table 2.0-1	COL Item 2.0-16-A is addressed in Subsection 2.4.5.
VCS COL 2.0-17-A	2.4.6	Probable Maximum Tsunami Flooding	Probable maximum tsunami flooding level does not exceed the maximum flood level defined in DCD Table 2.0-1	COL Item 2.0-17-A is addressed in Subsection 2.4.6.
VCS COL 2.0-18-A	2.4.7	Ice Effects	None	COL Item 2.0-18-A is addressed in Subsection 2.4.7.
VCS COL 2.0-19-A	2.4.8	Cooling Water Canals and Reservoirs	None	COL Item 2.0-19-A is addressed in Subsection 2.4.8.
VCS COL 2.0-20-A	2.4.9	Channel Diversions	None	COL Item 2.0-20-A is addressed in Subsection 2.4.9.
VCS COL 2.0-21-A	2.4.10	Flooding Protection Requirements	None	COL Item 2.0-21-A is addressed in Subsection 2.4.10.
VCS COL 2.0-22-A	2.4.11	Cooling Water Supply	None	COL Item 2.0-22-A is addressed in Subsection 2.4.11.
VCS COL 2.0-23-A	2.4.12	Groundwater	Per DCD Table 2.0-1	COL Item 2.0-23-A is addressed in Subsection 2.4.12.
VCS COL 2.0-24-A	2.4.13	Accidental Releases of Liquid Effluents in Ground and Surface Waters	The source term provided in DCD Table 12.2-13a , "Liquid Waste Management System Equipment Drain Collection Tank Activity," is used in the effects analysis	COL Item 2.0-24-A is addressed in Subsection 2.4.13.

Table 2.0-2R (Sheet 4 of 4)
Limits Imposed on Acceptance Criteria in Section II of SRP by ESBWR Design

	Subsection	Subject	ESBWR DCD Parameters, Considerations and/or Limits	COL Information
VCS COL 2.0-25-A	2.4.14	Technical Specifications and Emergency Operation Requirements	None	COL Item 2.0-25-A is addressed in Subsection 2.4.14.
VCS COL 2.0-26-A	2.5.1	Basic Geologic and Seismic Information	None	COL Item 2.0-26-A is addressed in Subsection 2.5.1.
VCS COL 2.0-27-A	2.5.2	Vibratory Ground Motion	Per DCD Table 2.0-1 (and DCD Figures 2.0-1 and 2.0-2)	The portion of COL Item 2.0-27-A to provide information in accordance with SRP 2.5.2 is addressed in Subsection 2.5.2. Information provided in Table 2.0-201 confirms that reactor building/fuel building, control building, and fire water service complex foundation input response spectra are enveloped by the ESBWR certified seismic design response spectra referenced at foundation level.
VCS COL 2.0-28-A	2.5.3	Surface Faulting	ESBWR design assumes no permanent ground deformation from tectonic or non-tectonic faulting	COL Item 2.0-28-A is addressed in Subsection 2.5.3. Information to address permanent ground deformation from tectonic or non-tectonic faulting is provided in Subsection 2.5.3.
VCS COL 2.0-29-A	2.5.4	Stability of Subsurface Materials and Foundations	Per DCD Table 2.0-1	The portion of COL Item 2.0-29-A to provide information in accordance with SRP 2.5.4 is addressed in Subsection 2.5.4. Information to address localized liquefaction potential under other than Seismic Category I structures is provided in Subsection 2.5.4.8.
VCS COL 2.0-30-A	2.5.5	Stability of Slopes	Per DCD Table 2.0-1	COL Item 2.0-30-A is addressed in Subsection 2.5.5.

VCS COL 2.0-1-A

**Table 2.0-201 (Sheet 1 of 36)
 Evaluation of DCD Site Parameters**

Subject ⁽¹⁶⁾	DCD Site Parameter Value ^{(1) (16)}	Site Characteristic	Evaluation
Maximum Groundwater Level			
	0.61 m (2 ft) below plant grade	3.05 m (10 ft) below final floor elevation (plant grade)	The site characteristic value for maximum groundwater level in the power block area when the cooling basin is filled is 3.05 meters (10 feet) below final floor elevation. The site characteristic value is bounded by the DCD site parameter value. (See Subsection 2.4.12.3.7)
Extreme Wind: Seismic Category I and II Structures			
100-year Wind Speed (3-second gust) ⁽¹³⁾	67.1 m/s (150 mph)	52.8 m/s (118 mph)	The site characteristic value for basic wind speed is defined as the 3-second gust wind speed at 10 m (33 ft) above the ground that has a 1 percent annual probability of being exceeded (100-year mean recurrence interval). The ASCE code (DCD Reference 2.0-2) projects the 100-year occurrence by increasing the 50-year value by 7%. The site characteristic value of 52.8 m/s (118 mph) is bounded by the DCD site parameter value. (See Subsection 2.3.1.3.1)

**Table 2.0-201 (Sheet 2 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Exposure Category	D	C	The DCD site parameter of extreme wind exposure category is determined using ASCE 7 (DCD Reference 2.0-2). Exposure category is determined by a number of variables including wind speed, building shape and location, and surface roughness. The DCD site parameter of Exposure Category D results in the most severe design wind pressures. The site characteristic is Exposure Category C. The site characteristic is bounded by (is less than) the DCD site parameter value for extreme wind exposure category. (See Subsection 2.3.1.3.1)
Extreme Wind: Non-Seismic Standard Plant Structures			
50-year Wind Speed (3-second gust)	58.1 m/s (130 mph)	49.2 m/s (110 mph)	The site characteristic value for a 50-year wind speed (3-second gust) is 49.2 m/s (110 mph). This value is bounded by the DCD site parameter value. (See Subsection 2.3.1.3.1)
Maximum Flood (or Tsunami) Level⁽²⁾			
	0.3 m (1 ft) below plant grade		The DCD site parameter of maximum flood (or tsunami) water level of 1 ft (0.3 m) below plant grade is the same as the design flood level in DCD Table 3.4-1 . The design plant grade elevation identified in DCD Table 3.4-1 is at 4650 mm, which corresponds to the final floor elevation of 96.0 ft (29.3 m) (NAVD 88) for the site. Therefore, the DCD site parameter value corresponds to a maximum flood water level no higher than 95.0 ft (29.0 m) for the site.

**Table 2.0-201 (Sheet 3 of 36)
 Evaluation of DCD Site Parameters**

Subject ⁽¹⁶⁾	DCD Site Parameter Value ⁽¹⁾ (16)	Site Characteristic	Evaluation
Maximum Flood (or Tsunami) Level⁽²⁾ (continued)			
		0.6 m (2 ft) below final floor elevation (plant grade) based on the PMP	The site characteristic value for maximum flood water level is due to the local probable maximum precipitation (PMP) flood. This value is 2 ft (0.6 meters) below final floor elevation in the power block area based on the maximum water elevation of 94.0 ft (28.7 m) (NAVD 88) in this area. Therefore, the site characteristic value for maximum flood water level below final floor elevation is bounded by the value established by the DCD site parameter. (See Subsection 2.4.2.3.4)
		1.4 m (4.5 ft) below final floor elevation (plant grade) based on cooling basin breach	The maximum water level due to a breach of the cooling basin is 91.5 ft (27.9 m). This value is 4.5 ft (1.4 m) below the final floor elevation. This value is bounded by the DCD site parameter. (See Subsection 2.4.4)
Tornado			
Maximum Tornado Wind Speed ⁽³⁾	147.5 m/s (330 mph)	102.8 m/s (230 mph)	The site characteristic value for design basis tornado maximum wind speed is defined as the maximum wind speed resulting from passage of a tornado having a probability of occurrence of 1×10^{-7} per year. The site characteristic value is bounded by the DCD site parameter value. (See Subsection 2.3.1.3.2)
Maximum Rotational Speed	116.2 m/s (260 mph)	82.3 m/s (184 mph)	The site characteristic value for design basis tornado maximum rotational speed is defined as the rotation component of the maximum tornado wind speed. The site characteristic value is bounded by the DCD site parameter value. (See Subsection 2.3.1.3.2)

Table 2.0-201 (Sheet 4 of 36)
Evaluation of DCD Site Parameters

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Translational Speed	31.3 m/s (70 mph)	20.6 m/s (46 mph)	The site characteristic value for design basis tornado maximum translational speed is defined as the translational component of the maximum tornado wind speed. The site characteristic value is bounded by the DCD site parameter value. (See Subsection 2.3.1.3.2)
Radius	45.7 m (150 ft)	45.7 m (150 ft)	The site characteristic value for design basis tornado radius of maximum rotational speed is defined as the distance from the center of the tornado at which the maximum rotational wind speed occurs. The site characteristic value meets (is the same as) the DCD site parameter value. (See Subsection 2.3.1.3.2)
Pressure Drop	16.6 kPa (2.4 psi)	8.3 kPa (1.2 psi)	The site characteristic value for design basis tornado pressure drop is defined as the decrease in ambient pressure from normal atmospheric pressure resulting from passage of the tornado. The site characteristic value is bounded by the DCD site parameter value. (See Subsection 2.3.1.3.2)
Rate of Pressure Drop	11.7 kPa/s (1.7 psi/sec)	3.4 kPa/s (0.5 psi/sec)	The site characteristic value for design basis tornado maximum rate of pressure drop is defined as the rate of pressure drop resulting from the passage of the tornado. The site characteristic value is bounded by the DCD site parameter value. (See Subsection 2.3.1.3.2)

Table 2.0-201 (Sheet 5 of 36)
Evaluation of DCD Site Parameters

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Missile Spectrum ⁽³⁾	Spectrum I of SRP 3.5.1.4, Rev. 2 applied to full building height	Spectrum I of SRP 3.5.1.4, Rev. 2 applied to full building height	DCD Section 3.5.1.4 specifies that Seismic Category I buildings are designed to resist tornado generated missiles per DCD Table 2.0-1 and their resistance to missiles is independent of site topography. Therefore, the VCS site characteristic for tornado missile spectrum, defined as that required by the DCD, meets (is the same as) the DCD site parameter value.
Precipitation (for Roof Design)			
Maximum Rainfall Rate ⁽⁴⁾	49.3 cm/hour (19.4 in/hour)	49.3 cm/hour (19.4 in/hour)	This site characteristic value for local intense precipitation is defined as the maximum potential rainfall at the immediate site. This value is 49.3 cm/hour (19.4 in/hour). This site characteristic value meets (is the same as) the DCD site parameter value. (See Subsection 2.4.2.3.1)
Maximum Short-Term Rate	15.7 cm (6.2 in) in 5 minutes	15.7 cm (6.2 in) in 5 minutes	This site characteristic value for local intense precipitation is defined as the maximum potential rainfall at the immediate site in a five minute period. This value is 15.7 cm (6.2 in) in 5 minutes. This site characteristic value meets (is the same as) the DCD site parameter value. (See Subsection 2.4.2.3.1)

Table 2.0-201 (Sheet 6 of 36)
Evaluation of DCD Site Parameters

Subject ⁽¹⁶⁾	DCD Site Parameter Value ^{(1) (16)}	Site Characteristic	Evaluation
Maximum Roof Load ⁽⁵⁾	2873 Pa (60 lbf/ft ²)	1422 Pa (29.7 lb/sq ft)	<p>The site-specific roof live load from antecedent snow pack represents a 100-year return ground snow load of 297 Pa (6.2 lb/sq ft) that on the roof of each safety-related building is taken as 60% of that value based on exposure and thermal conditions per the ASCE 7 Commentary in DCD Reference 2.0-2. Therefore, the roof snow load from the antecedent snow pack is no more than 177 Pa (3.7 lb/sq ft) for any safety-related building. Also, as described in DCD Table 3G.1-2, the roof scuppers and drains are designed independently to handle the 48-hour probable maximum winter precipitation (PMWP) with no more than 100 mm (4 in) of water accumulation on the roof. The added load from such an accumulation is no more than 1005 Pa (21 lb/sq ft) for any safety-related building. Because precipitation during a PMWP event is liquid, the total roof loading includes a rain-on-snow surcharge to account for liquid flowing through the 100-yr snow pack before it accumulates on the roof. Per Section 7.10 of ASCE 7, 239 Pa (5 lb/sq ft) accounts for the rain-on-snow surcharge. Therefore, the total maximum roof load (snow pack plus rain) on a safety-related building is 1422 Pa (3.7 + 21 + 5 or 29.7 lb/sq ft). The site characteristic value of 1422 Pa (29.7 lb/sq ft) is bounded by the DCD site parameter.</p>

**Table 2.0-201 (Sheet 7 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Maximum Ground Snow Load ⁽⁵⁾ (100-year recurrence interval)	2394 Pa (50 lb/ft ²)	297 Pa (6.2 lb/sq ft)	Any accumulation of snow is a rare occurrence on the Upper Coastal division within the Coastal Prairie region where the site is located, with normal annual totals at all observing stations averaging less than 0.5 inch. The site characteristic is bounded by the DCD site parameters. (See Subsection 2.3.1.3.4)
Maximum 48-hour Winter Rainfall ⁽⁵⁾	91.4 cm (36 in)	86.4 cm (34 in)	The site characteristic value for 48-hour probable maximum winter precipitation is defined as the probable maximum precipitation during the winter months (to be used in conjunction with the 100-year snow pack in determining extreme winter precipitation loads for roofs). The site characteristic is bounded by the DCD site parameter. (See Subsection 2.3.1.3.4)
Ambient Design Temperature: ⁽⁶⁾ 2% Exceedance Values			
Maximum	35.6°C (96°F) dry bulb, 26.1°C (79°F) wet bulb (coincident)	33.8°C (92.9°F) dry bulb, 24.8°C (76.6°F) wet bulb (coincident)	The site characteristic values for maximum dry bulb and wet bulb, coincident temperatures for 2% annual exceedance are defined as the ambient dry bulb temperature (and coincident wet bulb temperature) that will be exceeded 2% of the time annually. The site characteristic values are bounded by the DCD site parameter values. (See Subsection 2.3.1.5)
Maximum	27.2°C (81°F) wet bulb (non-coincident)	25.9°C (78.7°F) wet bulb (non-coincident)	The site characteristic value for the maximum wet bulb temperature (non-coincident) for 2% annual exceedance is defined as the ambient wet bulb temperature that will be exceeded 2% of the time annually. This value is bounded by the DCD site parameter value. (See Subsection 2.3.1.5)

Table 2.0-201 (Sheet 8 of 36)
Evaluation of DCD Site Parameters

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Minimum	-23.3°C (-10°F)	0.7°C (33.3°F) (1% exceedance value)	The site characteristic value is the value for the minimum dry bulb temperature for 1% annual exceedance. There is a lack of availability of data at the statistical 2% exceedance condition, therefore a more conservative (lower numerically) value at the 1% point is utilized. This value is defined as the ambient dry bulb temperature below which dry bulb temperatures will fall 1% of the time annually. This value is bounded by the DCD site parameter value. (See Subsection 2.3.1.5)
Ambient Design Temperature:⁽⁶⁾ 1% Exceedance Values			
Maximum	37.8°C (100°F) dry bulb, 26.1°C (79°F) wet bulb (coincident)	34.7°C (94.4°F) dry bulb, 24.7°C (76.5°F) wet bulb (coincident)	The site characteristic values for maximum dry bulb and wet bulb, coincident temperatures for 1% annual exceedance are defined as the ambient dry bulb temperature (and coincident wet bulb temperature) that will be exceeded 1% of the time annually. The site characteristic values are bounded by the DCD site parameter values. (See Subsection 2.3.1.5)
Maximum	27.8°C (82°F) wet bulb (non-coincident)	26.3°C (79.3°F) wet bulb (non-coincident)	The site characteristic value for the maximum wet bulb temperature (non-coincident) for 1% annual exceedance is defined as the ambient wet bulb temperature that will be exceeded 1% of the time annually. This value is bounded by the DCD site parameter value. (See Subsection 2.3.1.5)
Minimum	-23.3°C (-10°F)	0.7°C (33.3°F)	The site characteristic value for minimum dry bulb temperature 1% annual exceedance is defined as the ambient dry bulb temperature below which dry bulb temperatures will fall 1% of the time annually. The site characteristic value is bounded by the DCD site parameter value. (See Subsection 2.3.1.5)

**Table 2.0-201 (Sheet 9 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Ambient Design Temperature:⁽⁶⁾ 0% Exceedance Values			
Maximum	47.2°C (117°F) dry bulb, 26.7°C (80°F) wet bulb (coincident)	43.0°C (109.4°F) dry bulb, 24.0°C (75.2°F) wet bulb (coincident)	The site characteristic values for maximum dry bulb and wet bulb, coincident temperatures for zero percent (0%) annual exceedance are defined as the ambient dry bulb temperature (and coincident wet bulb temperature) that will be exceeded 0% of the time annually. The site characteristic values are bounded by the DCD site parameter values. The 100-year return period maximum dry bulb value of 44.1°C (111.3°F) and maximum coincident wet bulb value of 21.5°C (70.7°F) are also bounded by the DCD site parameter values for 0% exceedance. (See Subsection 2.3.1.5)
Maximum	31.1°C (88°F) wet bulb (non-coincident)	29.1°C (84.4°F) wet bulb (non-coincident)	The site characteristic value for the maximum wet bulb temperature (non-coincident) for zero percent (0%) annual exceedance is defined as the ambient wet bulb temperature that will be exceeded 0% of the time annually. This value is bounded by the DCD site parameter value. The 100-year return period maximum non-coincident wet bulb value of 30.1°C (86.1°F) is also bounded by the DCD site parameter value for 0% exceedance. (See Subsection 2.3.1.5)

**Table 2.0-201 (Sheet 10 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value^{(1) (16)}	Site Characteristic	Evaluation
Minimum	-40°C (-40°F)	-12.2°C (10°F)	The site characteristic value for minimum dry bulb temperature zero percent (0%) annual exceedance is defined as the ambient dry bulb temperature below which dry bulb temperatures will fall zero percent (0%) percent of the time annually. The site characteristic value is bounded by the DCD site parameter value. The 100-year return period minimum dry bulb value of -15.8°C (3.6°F) is also bounded by the DCD site parameter value for 0% exceedance. (See Subsection 2.3.1.5)
Soil Properties: Minimum Static Bearing Capacity⁽⁷⁾			
Reactor/Fuel Building	699 kPa (14,600 lbf/ft ²)	Unit 1: 900 kPa (18,800 lbf/ft ²) Unit 2: 1235 kPa (25,800 lbf/ft ²)	The DCD site parameter of minimum static bearing capacity underlying the reactor/fuel building foundation is determined by the minimum static bearing capacity for any layer of material under this foundation. As shown in Table 2.5.4-288 , the allowable bearing capacity (i.e., static bearing capacity) value under the reactor/fuel building is bounded by (is greater than) the DCD site parameter value for both units. (See Subsection 2.5.4.10.2)
Control Building	292 kPa (6100 lbf/ft ²)	Unit 1: 1096 kPa (22,900 lbf/ft ²) Unit 2: 1365 kPa (28,500 lbf/ft ²)	The DCD site parameter of minimum static bearing capacity underlying the control building foundation is determined by the minimum static bearing capacity for any layer of material under this foundation. As shown in Table 2.5.4-288 , the allowable bearing capacity (i.e., static bearing capacity) value under the control building is bounded by (is greater than) the DCD site parameter value for both units. (See Subsection 2.5.4.10.2)

**Table 2.0-201 (Sheet 11 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value^{(1) (16)}	Site Characteristic	Evaluation
Fire Water Service Complex	165 kPa (3450 lbf/ft ²)	Unit 1: 397 kPa (8300 lbf/ft ²) Unit 2: 479 kPa (10,000 lbf/ft ²)	The DCD site parameter of minimum static bearing capacity underlying the fire water service complex foundation is determined by the minimum static bearing capacity for any layer of material under this foundation. As shown in Table 2.5.4-288 , the allowable bearing capacity (i.e., static bearing capacity) value under the fire water service complex is bounded by (is greater than) the DCD site parameter value for both units. (See Subsection 2.5.4.10.2)
Soil Properties: Minimum Dynamic Bearing Capacity⁽⁷⁾			
Reactor/Fuel Building			
Soft	2700 kPa (56,400 lbf/ft ²)	Unit 1: 2705 kPa (56,500 lbf/ft ²) Unit 2: 3706 kPa (77,400 lbf/ft ²)	Based on Note (7) and a shear wave velocity for the structural fill material at the foundation level of 300 m/s (1000 ft/s), the material below the reactor/fuel building foundation is classified as soft. As shown in Table 2.5.4-288 , the ultimate bearing capacity (i.e., dynamic bearing capacity) value under the reactor/fuel building is bounded by (is greater than) the DCD site parameter value for both units. (See Subsection 2.5.4.10.2)
Medium	7300 kPa (152,500 lbf/ft ²)	Not Applicable	Based on Note (7) and a shear wave velocity for the structural fill material at the foundation level of 300 m/s (1000 ft/s), the material below the reactor/fuel building foundation is classified as soft.
Hard	5400 kPa (112,800 lbf/ft ²)	Not Applicable	Based on Note (7) and a shear wave velocity for the structural fill material at the foundation level of 300 m/s (1000 ft/s), the material below the reactor/fuel building foundation is classified as soft.

**Table 2.0-201 (Sheet 12 of 36)
Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Control Building			
Soft	2800 kPa (58,500 lbf/ft ²)	Unit 1: 3285 kPa (68,600 lbf/ft ²) Unit 2: 4099 kPa (85,600 lbf/ft ²)	Based on Note (7) and a shear wave velocity for the structural fill material at the foundation level of 300 m/s (1000 ft/s), the material below the control building foundation is classified as soft. As shown in Table 2.5.4-288 , the ultimate bearing capacity (i.e., dynamic bearing capacity) value under the control building is bounded by (is greater than) the DCD site parameter value for both units. (See Subsection 2.5.4.10.2)
Medium	2500 kPa (52,300 lbf/ft ²)	Not Applicable	Based on Note (7) and a shear wave velocity for the structural fill material at the foundation level of 300 m/s (1000 ft/s), the material below the control building foundation is classified as soft.
Hard	2400 kPa (50,200 lbf/ft ²)	Not Applicable	Based on Note (7) and a shear wave velocity for the structural fill material at the foundation level of 300 m/s (1000 ft/s), the material below the control building foundation is classified as soft.
Fire Water Service Complex			
Soft	440 kPa (9200 lbf/ft ²)	Unit 1: 1197 kPa (25,000 lbf/ft ²) Unit 2: 1436 kPa (30,000 lbf/ft ²)	Based on Note (7) and a shear wave velocity for the structural fill material at the foundation level of 300 m/s (1000 ft/s), the material below the fire water service complex foundation is classified as soft. As shown in Table 2.5.4-288 , the ultimate bearing capacity (i.e., dynamic bearing capacity) value under the fire water service complex is bounded by (is greater than) the DCD site parameter value for both units. (See Subsection 2.5.4.10.2)

**Table 2.0-201 (Sheet 13 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Medium	540 kPa (11,300 lbf/ft ²)	Not Applicable	Based on Note (7) and a shear wave velocity for the structural fill material at the foundation level of 300 m/s (1000 ft/s), the material below the fire water service complex foundation is classified as soft.
Hard	670 kPa (14,000 lbf/ft ²)	Not Applicable	Based on Note (7) and a shear wave velocity for the structural fill material at the foundation level of 300 m/s (1000 ft/s), the material below the fire water service complex foundation is classified as soft.
VCS DEP 2.5.4-1	Minimum Shear Wave Velocity⁽⁸⁾ 300 m/s (1000 ft/s)	Unit 1: 221 m/s (726 ft/s) Unit 2: 219 m/s (719 ft/s)	The minimum shear wave velocity over a certain thickness of the soil column at seismic strain, which is a lower bound value after taking into account uncertainties, has been calculated to be below the minimum 300 m/s (1000 ft/s) DCD site parameter value. The DCD requires that the lower bound of the shear wave velocity be greater than 300 m/s (1000 ft/s), calculated at a depth from the surface equal to the embedment depth plus two times the largest foundation plan dimension. The site characteristic value does not meet this requirement, requiring a site-specific soil-structure interaction analysis be performed. The results of the preliminary site-specific soil-structure interaction (SSI) analysis are provided in Subsection 3.7.2.4 . The site-specific SSI analysis shows that the VCS safe shutdown earthquake responses are bounded by the ESBWR design envelope. (See Subsection 2.5.4.4.5 for shear wave velocity values)

**Table 2.0-201 (Sheet 14 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value^{(1) (16)}	Site Characteristic	Evaluation
Liquefaction Potential			
Seismic Category I structures	None under footprint of Seismic Category I structures resulting from site-specific SSE.	None under footprint of Seismic Category I structures resulting from site-specific SSE.	The site characteristic value for liquefaction meets (is the same as) the DCD site parameter. As described in Subsection 2.5.4.8 , there is no potential for liquefaction under the Seismic Category I structures
Other than Seismic Category I structures	See Note 14	See Evaluation column	Note 14 in DCD Table 2.0-1 provides a requirement to address liquefaction potential under other than Seismic Category I structures. That requirement is not a site design parameter. As described in Subsection 2.5.4.8 there is no potential for liquefaction under other than Seismic Category 1 structures.
Angle of Internal Friction			
	≥ 30 degrees	≥ 30 degrees	The site characteristic value for angle of internal friction is provided in Subsection 2.5.4.2.1.3.7 and Table 2.5.4-232 and meets (is the same as) the DCD site parameter value.

**Table 2.0-201 (Sheet 15 of 36)
 Evaluation of DCD Site Parameters**

Subject ⁽¹⁶⁾	DCD Site Parameter Value ^{(1) (16)}	Site Characteristic	Evaluation
Seismology			
SSE Horizontal Ground Response Spectra ⁽⁹⁾	DCD Figure 2.0-1	Figures 3.7-214, 3.7-215, and 3.7-216	<p>The DCD site parameter values for SSE response spectra at foundation level are identified as the certified seismic design response spectra (CSDRS). The CSDRS for the reactor building/fuel building (RB/FB) and the control building are shown in DCD Figures 2.0-1 (horizontal) and 2.0-2 (vertical). The CSDRS for the fire water service complex (FWSC) are 1.35 times the accelerations shown in DCD Figures 2.0-1 and 2.0-2. The site characteristic values are identified as the foundation input response spectra (FIRS). The RB/FB FIRS are shown in Figure 3.7-214, the control building FIRS are shown in Figure 3.7-215, and the FWSC FIRS are shown in Figure 3.7-216. (See Subsection 3.7.1.1.4)</p>
SSE Vertical Ground Response Spectra ⁽⁹⁾	DCD Figure 2.0-2	Figures 3.7-214, 3.7-215, and 3.7-216	<p>The comparisons of the DCD site parameter (CSDRS) and site characteristic values (FIRS) for the RB/FB and the control building are provided in Figure 2.0-201 for the horizontal spectra and in Figure 2.0-202 for the vertical spectra. The comparisons of the CSDRS and VCS FIRS for the FWSC are provided in Figure 2.0-203 for the horizontal spectra and Figure 2.0-204 for the vertical spectra. These comparisons demonstrate that the site characteristic values are bounded by the values established by the DCD site parameters.</p>

**Table 2.0-201 (Sheet 16 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value^{(1) (16)}	Site Characteristic	Evaluation
Hazards in Site Vicinity			
Site Proximity Missiles and Aircraft	< about 10 ⁻⁷ per year (for site proximity missile hazards)	No site proximity missile hazards identified	The site characteristic value for site proximity missiles value is that there are no site proximity missile sources identified. As discussed in Section 2.2 , there are no nearby missile sources identified in the site vicinity and this value is bounded by (is less than) the DCD site parameter value.
	< about 10 ⁻⁷ per year (for aircraft hazards)	9.8x10 ⁻⁸ per year	The site characteristic value for total probability per year of a civil or military aircraft crashing was estimated as shown in Subsection 2.2.3.1.4 and the total accident probability is bounded by the DCD site parameter value.
Volcanic Activity	None	None	The VCS site characteristic value for volcanic activity is that no volcanic activity is anticipated in the region, as discussed in Subsection 2.5.1.2.5 . The VCS site characteristic value meets (is the same as) the DCD site parameter value.

**Table 2.0-201 (Sheet 17 of 36)
 Evaluation of DCD Site Parameters**

VCS COL 6.4-2-A
 VCS DEP 2.0-1

Subject ⁽¹⁶⁾	DCD Site Parameter Value ⁽¹⁾ (16)	Site Characteristic	Evaluation
Toxic Gases	None* *Maximum toxic gas concentrations at the Main Control Room (MCR) HVAC intakes: < toxicity limits	See Subsection 2.2.3.1.3 for materials that could exceed toxicity limits	A Toxic Gas Detection System (TGDS) is provided to monitor air passing through the control room outside air intake louvers. In the event the concentrations of any of the toxic gases listed in Table 2.2-213 reach or exceed the designated setpoint, the TGDS initiates an alarm in the main control room (MCR). Upon actuation of this toxic gas alarm, personnel in the MCR will don protective clothing and breathing apparatus. The MCR personnel will have at least 5 minutes from the time of the toxic gas alarm to don protective gear before the Immediately Dangerous to Life and Health (IDLH) concentration is reached in the control room. (See Subsection 6.4.5)
Required Stability of Slopes⁽¹⁰⁾			
Factor of safety for static (non-seismic) loading	1.5	Not Applicable	Factors of safety for stability of slopes are not site design parameters. Given the natural topography and the project earthwork/site grading, there are no safety-related slopes, neither natural nor man-made, which are pertinent to the development of the power block at the VCS site.
Factor of safety for dynamic (seismic) loading due to site-specific SSE	1.1	Not Applicable	Factors of safety for stability of slopes are not site design parameters. Given the natural topography and the project earthwork/site grading, there are no safety-related slopes, neither natural nor man-made, which are pertinent to the development of the power block at the VCS site.

**Table 2.0-201 (Sheet 18 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Maximum Settlement Values for Seismic Category I Buildings⁽¹⁵⁾			
Maximum settlement at any corner of basemat			
Under Reactor/Fuel Building	103 mm (4.0 inches)	Unit 1: 38 mm (1.5 inches)	The site characteristic value for the maximum settlement of a corner for the reactor building/fuel building foundation is provided in Table 2.5.4-289 and is bounded by the DCD site parameter value for both units. (See Subsection 2.5.4.10.3)
		Unit 2: 38 mm (1.5 inches)	
Under Control Building	18 mm (0.7 inches)	Unit 1: 12 mm (0.5 inches)	The site characteristic value for the maximum settlement of a corner for the control building foundation is provided in Table 2.5.4-289 and is bounded by the DCD site parameter value for both units. (See Subsection 2.5.4.10.3)
		Unit 2: 12 mm (0.5 inches)	
Under FWSC Structure	17 mm (0.7 inches)	Unit 1: 5 mm (0.2 inches)	The site characteristic value for the maximum settlement of a corner for the fire water service complex (FWSC) foundation is provided in Table 2.5.4-289 and is bounded by the DCD site parameter value for both units. (See Subsection 2.5.4.10.3)
		Unit 2: 5 mm (0.2 inches)	
Averaged settlement at four corners of basemat			
Under Reactor/Fuel Building	65 mm (2.6 inches)	Unit 1: 38 mm (1.5 inches)	The site characteristic value for the averaged settlement at four corners is the maximum settlement of a corner because each corner settles the same amount, i.e., the maximum amount for a corner. The maximum settlement of a corner for the reactor/fuel building foundation is provided in Table 2.5.4-289 and is bounded by the DCD site parameter value for both units. (See Subsection 2.5.4.10.3)
		Unit 2: 38 mm (1.5 inches)	

**Table 2.0-201 (Sheet 19 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Under Control Building	12 mm (0.5 inches)	Unit 1: 12 mm (0.5 inches) Unit 2: 12 mm (0.5 inches)	The site characteristic value for the averaged settlement at four corners is the maximum settlement of a corner because each corner settles the same amount, i.e., the maximum amount for a corner. The maximum settlement of a corner for the control building foundation is provided in Table 2.5.4-289 and meets (is the same as) the DCD site parameter value for both units. (See Subsection 2.5.4.10.3)
Under FWSC Structure	10 mm (0.4 inches)	Unit 1: 5 mm (0.2 inches) Unit 2: 5 mm (0.2 inches)	The site characteristic value for the averaged settlement at four corners is the maximum settlement of a corner because each corner settles the same amount, i.e., the maximum amount for a corner. The maximum settlement of a corner for the FWSC foundation is provided in Table 2.5.4-289 and is bounded by the DCD site parameter value for both units. (See Subsection 2.5.4.10.3)
Maximum Differential Settlement along the longest mat foundation dimension			
Within Reactor/Fuel Building	77 mm (3.0 inches)	Unit 1: 30 mm (1.2 inches) Unit 2: 30 mm (1.2 inches)	The site characteristic value for the maximum differential settlement along the longest mat foundation dimension is the maximum settlement of the edge of the reactor/fuel building foundation less the maximum settlement for a corner. These values are provided in Table 2.5.4-289 and are bounded by the DCD site parameter value for both units. (See Subsection 2.5.4.10.3)

Table 2.0-201 (Sheet 20 of 36)
Evaluation of DCD Site Parameters

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Within Control Building	14 mm (0.6 inches)	Unit 1: 10 mm (0.4 inches) Unit 2: 10 mm (0.4 inches)	The site characteristic value for the maximum differential settlement along the longest mat foundation dimension is the maximum settlement of the edge of the control building foundation less the maximum settlement for a corner. These values are provided in Table 2.5.4-289 and are bounded by the DCD site parameter value for both units. (See Subsection 2.5.4.10.3)
Under FWSC Structure	12 mm (0.5 inches)	Unit 1: 5 mm (0.2 inches) Unit 2: 5 mm (0.2 inches)	The site characteristic value for the maximum differential settlement along the longest mat foundation dimension is the maximum settlement of the edge of the FWSC foundation less the maximum settlement for a corner. These values are provided in Table 2.5.4-289 and are bounded by the DCD site parameter value for both units. (See Subsection 2.5.4.10.3)

**Table 2.0-201 (Sheet 21 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value^{(1) (16)}	Site Characteristic	Evaluation
Maximum Differential Displacement between Reactor/Fuel Buildings and Control Building			
	85 mm (3.3 inches)	Unit 1: edge to edge, 46 mm (1.8 inches) edge to corner, 56 mm (2.2 inches) Unit 2: edge to edge, 46 mm (1.8 inches) edge to corner, 56 mm (2.2 inches)	The site characteristic value for the maximum differential displacement between the reactor/fuel building foundation and the control building foundation is, (1) the maximum settlement of the edge of the reactor/fuel building foundation less the maximum settlement of the edge of the control building foundation and (2) the maximum settlement of the edge of the reactor/fuel building foundation less the maximum settlement of the corner of the control building foundation. For the reactor/fuel building and the control building foundations, the maximum settlement values are provided in Table 2.5.4-289. These values are bounded by the DCD site parameter value for both units. (See Subsection 2.5.4.10.3)
Meteorological Dispersion (X/Q)⁽¹¹⁾			
EAB X/Q			
0–2 hours	$2.00 \times 10^{-3} \text{ s/m}^3$	$2.34 \times 10^{-4} \text{ s/m}^3$	The site characteristic value for short-term (accident release) atmospheric dispersion for 0–2 hour X/Q value at the EAB is defined as the 0–2 hour atmospheric dispersion factor to be used to estimate dose consequences of accidental airborne releases at the EAB. The site characteristic value is bounded by the DCD site parameter value. (See Subsection 2.3.4.2)

**Table 2.0-201 (Sheet 22 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value^{(1) (16)}	Site Characteristic	Evaluation
LPZ X/Q			
0–8 hours	$1.90 \times 10^{-4} \text{ s/m}^3$	$1.67 \times 10^{-5} \text{ s/m}^3$	The site characteristic value for short-term (accident release) atmospheric dispersion for 0–8 hour X/Q value at the LPZ is defined as the 0–8 hour atmospheric dispersion factor to be used to estimate dose consequences of accidental airborne releases at the LPZ. The site characteristic value is bounded by the DCD site parameter value. (See Subsection 2.3.4.2)
8–24 hours	$1.40 \times 10^{-4} \text{ s/m}^3$	$1.11 \times 10^{-5} \text{ s/m}^3$	The site characteristic value for short-term (accident release) atmospheric dispersion for 8–24 hour X/Q value at the LPZ is defined as the 8–24 hour atmospheric dispersion factor to be used to estimate dose consequences of accidental airborne releases at the LPZ. The site characteristic value is bounded by the DCD site parameter value. (See Subsection 2.3.4.2)
1–4 days	$7.50 \times 10^{-5} \text{ s/m}^3$	$4.60 \times 10^{-6} \text{ s/m}^3$	The site characteristic value for short-term (accident release) atmospheric dispersion for 1–4 day X/Q value at the LPZ is defined as the 1–4 day atmospheric dispersion factor to be used to estimate dose consequences of accidental airborne releases at the LPZ. The site characteristic value is bounded by the DCD site parameter value. (See Subsection 2.3.4.2)

**Table 2.0-201 (Sheet 23 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
4–30 days	$3.00 \times 10^{-5} \text{ s/m}^3$	$1.29 \times 10^{-6} \text{ s/m}^3$	The site characteristic value for short-term (accident release) atmospheric dispersion for 4–30 day X/Q value at the LPZ is defined as the 4–30 day atmospheric dispersion factor to be used to estimate dose consequences of accidental airborne releases at the LPZ. The site characteristic value is bounded by the DCD site parameter value. (See Subsection 2.3.4.2)
Control Room X/Q: Values shown on the same row in DCD Table 2.0-1 are in sets below.			
Reactor Building – Diffuse Source			
Unfiltered inleakage			
0–2 hours	$1.90 \times 10^{-3} \text{ s/m}^3$	$8.61 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
2–8 hours	$1.30 \times 10^{-3} \text{ s/m}^3$	$4.54 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
8–24 hours	$5.90 \times 10^{-4} \text{ s/m}^3$	$1.65 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
1–4 days	$5.00 \times 10^{-4} \text{ s/m}^3$	$1.05 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
4–30 days	$4.40 \times 10^{-4} \text{ s/m}^3$	$7.90 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)

Table 2.0-201 (Sheet 24 of 36)
Evaluation of DCD Site Parameters

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Air intakes (emergency and normal)			
0–2 hours	$1.50 \times 10^{-3} \text{ s/m}^3$	$7.93 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
2–8 hours	$1.10 \times 10^{-3} \text{ s/m}^3$	$3.84 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
8–24 hours	$5.00 \times 10^{-4} \text{ s/m}^3$	$1.59 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
1–4 days	$4.20 \times 10^{-4} \text{ s/m}^3$	$1.07 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
4–30 days	$3.80 \times 10^{-4} \text{ s/m}^3$	$8.23 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
Passive Containment Cooling System/Reactor Building Roof			
Unfiltered inleakage			
0–2 hours	$3.40 \times 10^{-3} \text{ s/m}^3$	$5.75 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
2–8 hours	$2.70 \times 10^{-3} \text{ s/m}^3$	$5.00 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
8–24 hours	$1.40 \times 10^{-3} \text{ s/m}^3$	$1.81 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)

**Table 2.0-201 (Sheet 25 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
1–4 days	$1.10 \times 10^{-3} \text{ s/m}^3$	$1.17 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
4–30 days	$7.90 \times 10^{-4} \text{ s/m}^3$	$5.28 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
Air intakes (emergency and normal)			
0–2 hours	$3.00 \times 10^{-3} \text{ s/m}^3$	$9.30 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
2–8 hours	$2.50 \times 10^{-3} \text{ s/m}^3$	$4.89 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
8–24 hours	$1.20 \times 10^{-3} \text{ s/m}^3$	$1.92 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
1–4 days	$9.00 \times 10^{-4} \text{ s/m}^3$	$1.04 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
4–30 days	$7.00 \times 10^{-4} \text{ s/m}^3$	$6.78 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
Turbine Building			
Unfiltered inleakage			
0–2 hours	$1.20 \times 10^{-3} \text{ s/m}^3$	$3.93 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)

Table 2.0-201 (Sheet 26 of 36)
Evaluation of DCD Site Parameters

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
2–8 hours	$9.80 \times 10^{-4} \text{ s/m}^3$	$2.01 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
8–24 hours	$3.90 \times 10^{-4} \text{ s/m}^3$	$8.29 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
1–4 days	$3.80 \times 10^{-4} \text{ s/m}^3$	$6.42 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
4–30 days	$3.20 \times 10^{-4} \text{ s/m}^3$	$3.72 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
Air intakes (emergency and normal)			
0–2 hours	$1.20 \times 10^{-3} \text{ s/m}^3$	$3.04 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
2–8 hours	$9.80 \times 10^{-4} \text{ s/m}^3$	$1.96 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
8–24 hours	$3.90 \times 10^{-4} \text{ s/m}^3$	$7.10 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
1–4 days	$3.80 \times 10^{-4} \text{ s/m}^3$	$4.60 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
4–30 days	$3.20 \times 10^{-4} \text{ s/m}^3$	$2.79 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)

**Table 2.0-201 (Sheet 27 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Fuel Building – Diffuse Source			
Unfiltered inleakage – Values are not required for any dose analysis, therefore no values are provided.			
Air intakes (emergency and normal)			
0–2 hours	$2.80 \times 10^{-3} \text{ s/m}^3$	$2.12 \times 10^{-3} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
2–8 hours	$2.50 \times 10^{-3} \text{ s/m}^3$	$1.15 \times 10^{-3} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
8–24 hours	$1.25 \times 10^{-3} \text{ s/m}^3$	$4.82 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
1–4 days	$1.10 \times 10^{-3} \text{ s/m}^3$	$3.53 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
4–30 days	$1.00 \times 10^{-3} \text{ s/m}^3$	$2.77 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
Fuel Building Cask Doors			
Unfiltered inleakage – Values are not required for any dose analysis, therefore no values are provided.			
Air intakes (emergency and normal)			
0–2 hours	$1.50 \times 10^{-3} \text{ s/m}^3$	$8.02 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
2–8 hours	$1.30 \times 10^{-3} \text{ s/m}^3$	$4.65 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)

**Table 2.0-201 (Sheet 28 of 36)
Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
8–24 hours	$6.80 \times 10^{-4} \text{ s/m}^3$	$2.08 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
1–4 days	$5.60 \times 10^{-4} \text{ s/m}^3$	$1.54 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
4–30 days	$4.30 \times 10^{-4} \text{ s/m}^3$	$1.06 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
Radwaste Building			
Unfiltered inleakage – Values are not required for any dose analysis, therefore no values are provided.			
Air intakes (emergency and normal)			
0–2 hours	$1.50 \times 10^{-3} \text{ s/m}^3$	$2.24 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
2–8 hours	$1.30 \times 10^{-3} \text{ s/m}^3$	$1.21 \times 10^{-4} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
8–24 hours	$6.80 \times 10^{-4} \text{ s/m}^3$	$5.96 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
1–4 days	$5.60 \times 10^{-4} \text{ s/m}^3$	$2.98 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)
4–30 days	$4.30 \times 10^{-4} \text{ s/m}^3$	$1.58 \times 10^{-5} \text{ s/m}^3$	The site characteristic value is provided in Table 2.3.4-205 and is bounded by the DCD site parameter value. (See Subsection 2.3.4.3)

**Table 2.0-201 (Sheet 29 of 36)
 Evaluation of DCD Site Parameters**

VCS COL 12.2-2-A	Subject ⁽¹⁶⁾	DCD Site Parameter Value ⁽¹⁾ ⁽¹⁶⁾	Site Characteristic	Evaluation
	Long-Term Dispersion Estimates ⁽¹²⁾			
	X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	The site characteristic values assume conservatively, that each sensitive receptor (meat animal, vegetable garden, resident) is at the location of the closest receptor.	The site characteristic values for long-term (routine release) atmospheric dispersion estimates are defined based on type of sensitive receptor (maximally exposed individual) and decay time. Each of these values is compared with the appropriate DCD site parameter value, X/Q or D/Q, below. Each site characteristic value that is equal to or less than the DCD site parameter value results in a lower estimated dose for the same source term, and conversely, a higher X/Q or D/Q results in a higher estimated dose. As shown below, every site characteristic value is not bounded by (some are greater than) the DCD site parameter value. Per Note (12), if a site-specific X/Q value exceeds the DCD site parameter value, the release concentrations in DCD Table 12.2-17 must be adjusted proportionate to the change in X/Q to show the 10 CFR 20 limits are met; and the annual average doses in DCD Table 12.2-18b must be changed to show the 10 CFR 50, Appendix I limits are met. Per DCD COL Item 12.2-2-A, calculation bases in DCD Tables 12.2-15 and 12.2-18a are replaced with site-specific values for calculation of airborne concentrations and doses. Tables 12.2-15R , 12.2-18aR , and 12.2-18bR identify the replacement of DCD information. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
	D/Q	$4.0 \times 10^{-9} \text{ m}^{-2}$		

**Table 2.0-201 (Sheet 30 of 36)
 Evaluation of DCD Site Parameters**

Subject ⁽¹⁶⁾	DCD Site Parameter Value ⁽¹⁾ (16)	Site Characteristic	Evaluation
Property Boundary			
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$7.40 \times 10^{-6} \text{ s/m}^3$, no decay, west, 0.66 mi	The site characteristic value for this long-term dispersion estimate is defined as the maximum annual average undepleted/no decay X/Q value for use in determining gaseous pathway doses to the maximally exposed individual. The site characteristic value is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2 , the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$7.40 \times 10^{-6} \text{ s/m}^3$, 2.26 day decay, west, 0.66 mi	The site characteristic value for this long-term dispersion estimate is defined as the maximum annual average undepleted/2.26 day decay X/Q value for use in determining gaseous pathway doses to the maximally exposed individual. The site characteristic value is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2 , the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.

**Table 2.0-201 (Sheet 31 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value^{(1) (16)}	Site Characteristic	Evaluation
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$6.70 \times 10^{-6} \text{ s/m}^3$, 8 day decay, west, 0.66 mi	The site characteristic value for this long-term dispersion estimate is defined as the maximum annual average depleted/8 day decay X/Q value for use in determining gaseous pathway doses to the maximally exposed individual. The site characteristic value is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2 , the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.
D/Q	$4.0 \times 10^{-9} \text{ m}^{-2}$	$4.40 \times 10^{-8} \text{ m}^{-2}$, north-northwest, 0.92 mi	The site characteristic value for this long-term dispersion estimate is defined as the maximum annual average D/Q value for use in determining gaseous pathway doses to the maximally exposed individual. The site characteristic value is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2 , the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.

**Table 2.0-201 (Sheet 32 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Resident			
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$2.20 \times 10^{-6} \text{ s/m}^3$, no decay, north-northwest, 1.53 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2, the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$2.20 \times 10^{-6} \text{ s/m}^3$, 2.26 day decay, north-northwest, 1.53 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2, the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$1.80 \times 10^{-6} \text{ s/m}^3$, 8 day decay, north-northwest, 1.53 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value is bounded by the DCD site parameter value. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
D/Q	$4.0 \times 10^{-9} \text{ m}^{-2}$	$1.20 \times 10^{-8} \text{ m}^{-2}$, north-northwest, 1.53 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2, the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.

**Table 2.0-201 (Sheet 33 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Meat Animal			
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$2.20 \times 10^{-6} \text{ s/m}^3$, no decay, north-northwest, 1.53 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2, the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$2.20 \times 10^{-6} \text{ s/m}^3$, 2.26 day decay, north-northwest, 1.53 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2, the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$1.80 \times 10^{-6} \text{ s/m}^3$, 8 day decay, north-northwest, 1.53 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value is bounded by the DCD site parameter value. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
D/Q	$4.0 \times 10^{-9} \text{ m}^{-2}$	$1.20 \times 10^{-8} \text{ m}^{-2}$, north-northwest, 1.53 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2, the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.

**Table 2.0-201 (Sheet 34 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value⁽¹⁾ (16)	Site Characteristic	Evaluation
Vegetable Garden			
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$1.60 \times 10^{-6} \text{ s/m}^3$, no decay, northwest, 1.79 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value is bounded by the DCD site parameter value. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$1.60 \times 10^{-6} \text{ s/m}^3$, 2.26 day decay, northwest, 1.79 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value is bounded by the DCD site parameter value. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$1.30 \times 10^{-6} \text{ s/m}^3$, 8 day decay, northwest, 1.79 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value is bounded by the DCD site parameter value. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
D/Q	$4.0 \times 10^{-9} \text{ m}^{-2}$	$7.70 \times 10^{-9} \text{ m}^{-2}$ northwest, 1.79 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2 , the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.

**Table 2.0-201 (Sheet 35 of 36)
 Evaluation of DCD Site Parameters**

Subject⁽¹⁶⁾	DCD Site Parameter Value^{(1) (16)}	Site Characteristic	Evaluation
Unit 2 Reactor			
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$2.30 \times 10^{-5} \text{ s/m}^3$, no decay, north-northeast, 0.19 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2, the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$2.30 \times 10^{-5} \text{ s/m}^3$, 2.26 day decay, north-northeast, 0.19 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2, the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.
X/Q	$2.0 \times 10^{-6} \text{ s/m}^3$	$2.20 \times 10^{-5} \text{ s/m}^3$, 8 day decay, north-northeast, 0.19 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2, the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.

Table 2.0-201 (Sheet 36 of 36)
Evaluation of DCD Site Parameters

Subject ⁽¹⁶⁾	DCD Site Parameter Value ^{(1) (16)}	Site Characteristic	Evaluation
D/Q	$4.0 \times 10^{-9} \text{ m}^{-2}$	$7.90 \times 10^{-8} \text{ m}^{-2}$, north-northeast, 0.19 mi	The site characteristic value for this long-term dispersion estimate is provided in Table 2.3.5-203 . (See Subsection 2.3.5.2) The site characteristic value exceeds the DCD site parameter value. As discussed in Section 12.2, the resulting annual average doses continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.

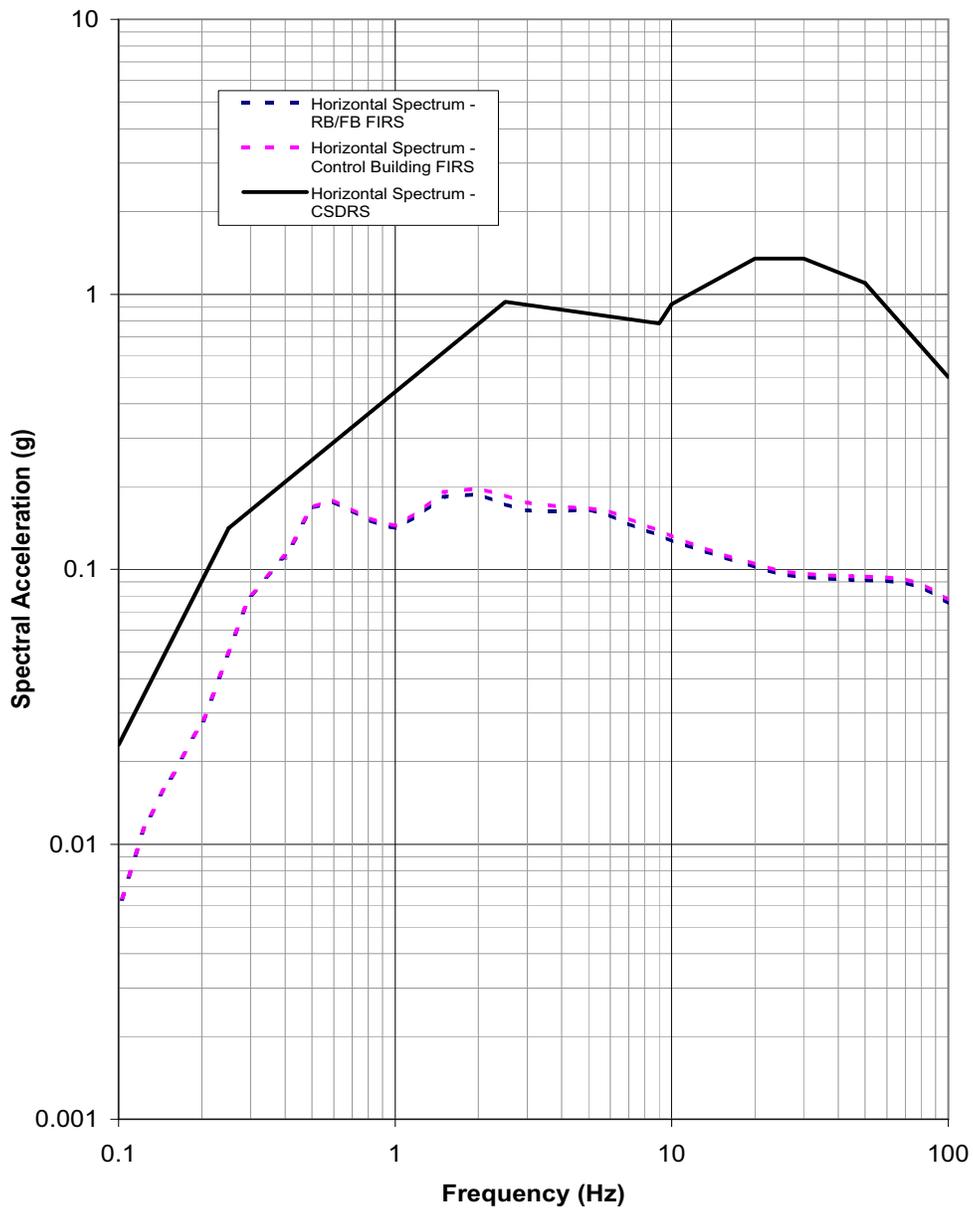
Notes for Table 2.0-201

- (1) The design of the Radwaste Building uses a set of design parameters that are specified in Regulatory Guide 1.143, Table 2, Class RW-IIa instead of the corresponding values given in this table.
- (2) Probable maximum flood level (PMF), as defined in Table 1.2-6 of Volume III of DCD Reference 2.0-4.
- (3) Maximum speed selected is based on Attachment I of DCD Reference 2.0-5, which summarizes the NRC Interim Position on Regulatory Guide 1.76. Concrete structures designed to resist Spectrum I missiles of SRP Section 3.5.1.4, Rev. 2, will also resist missiles postulated in Regulatory Guide 1.76, Revision 1.
- (4) Based on probable maximum precipitation (PMP) for one hour over 2.6 km² (one square mile) with a ratio of 5 minutes to one hour PMP of 0.32 as found in DCD Reference 2.0-3. Roof scuppers and drains are designed independently to limit water accumulation on the roof to no more than 100 mm (4 in) during PMP conditions. See also DCD Table 3G.1-2.
- (5) Maximum design roof load accommodates snow load and 48-hour probable maximum winter precipitation (PMWP) in DCD References 2.0-2 and 2.0-6. Roof scuppers and drains are designed independently to limit water accumulation on the roof to no more than 100 mm (4 in) during PMWP conditions. See also DCD Table 3G.1-2.
- (6) Zero percent exceedance values are based on conservative estimates of historical high and low values for potential sites. One and two percent exceedance values were selected in order to bound the values presented in DCD Reference 2.0-4 and available Early Site Permit applications.
- (7) At foundation level of Seismic Category I structures. For minimum dynamic bearing capacity site-specific application, use the larger value or a linearly interpolated value of the applicable range of shear wave velocities at the foundation level. The shear wave velocities of soft, medium and hard soils are 300 m/sec (1000 ft/sec), 800 m/sec (2600 ft/sec) and greater than or equal to 1700 m/sec (5600 ft/sec), respectively.
- (8) This is the equivalent uniform shear wave velocity (V_{eq}) over the entire soil column at seismic strain, which is a lower bound value after taking into account uncertainties. V_{eq} is calculated to achieve the same wave traveling time over the depth equal to the embedment depth plus 2 times the largest foundation plan dimension below the foundation as follows:

$$V_{eq} = \frac{\sum d_i}{\sum \frac{d_i}{V_i}}$$

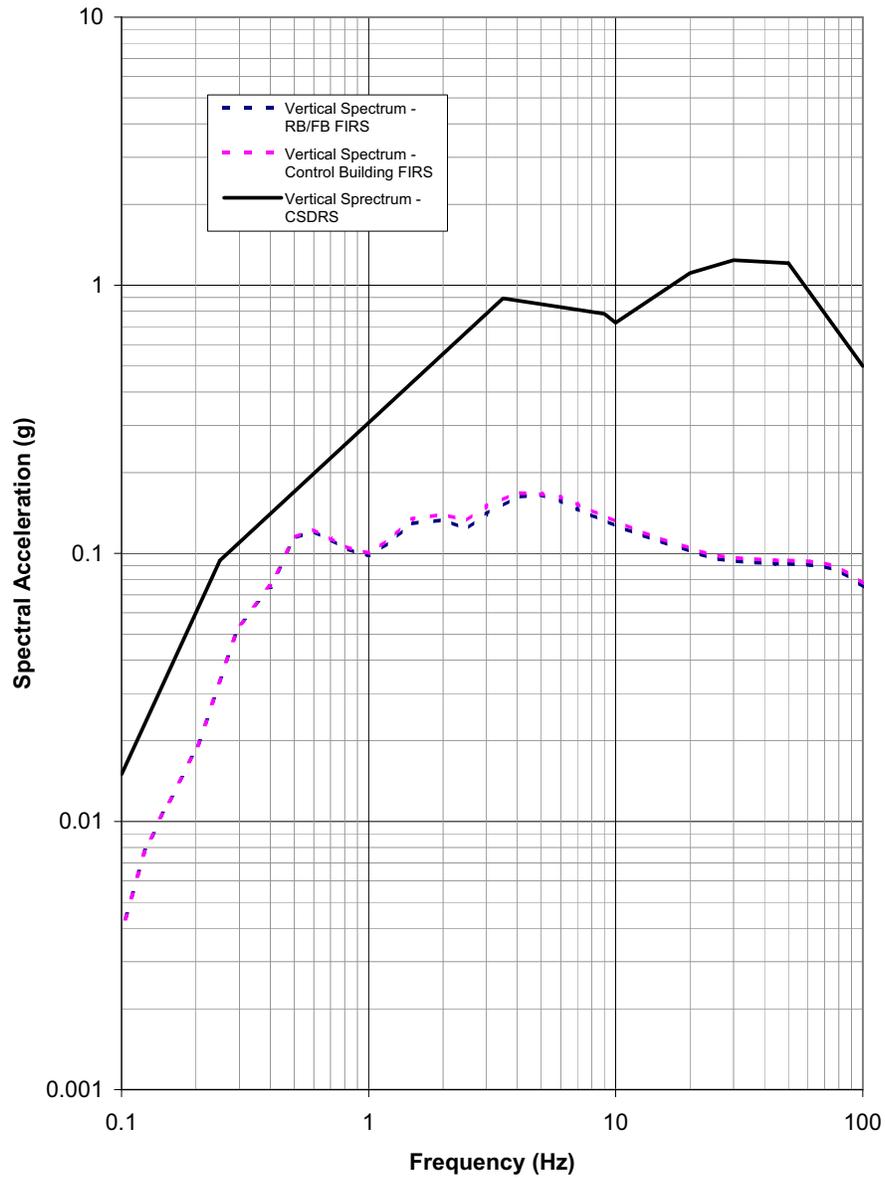
where d_i and V_i are the depth and shear wave velocity, respectively, of the i th layer. The ratio of the largest to the smallest shear wave velocity over the mat foundation width at the foundation level does not exceed 1.7.

- (9) Safe Shutdown Earthquake (SSE) design ground response spectra of 5% damping, also termed Certified Seismic Design Response Spectra (CSDRS), are defined as free-field outcrop spectra at the foundation level (bottom of the base slab) of the Reactor/Fuel and Control Building structures. For ground surface founded Fire Water Service Complex structures, the CSDRS is 1.35 times the values shown in DCD Figures 2.0-1 and 2.0-2.
- (10) Values reported here are actually design criteria rather than site design parameters. They are included here because they do not appear elsewhere in the DCD.
- (11) If a selected site has a X/Q value that exceeds the ESBWR reference site value, the COL applicant will address how the radiological consequences associated with the controlling design basis accident continue to meet the dose reference values provided in 10 CFR 50.34(a) and control room operator dose limits provided in General Design Criterion 19 using site-specific X/Q values.
- (12) If a selected site has a X/Q value that exceeds the ESBWR reference site value, the release concentrations in DCD Table 12.2-17 would be adjusted proportionate to the change in X/Q . In addition, for a site selected that exceeds the bounding X/Q or D/Q values, the COL applicant will address how the resulting annual average doses (DCD Table 12.2-18b) continue to meet the dose reference values provided in 10 CFR 50 Appendix I using site-specific X/Q and D/Q values.
- (13) Value was selected to comply with expected requirements of southeastern coastal locations.
- (14) Localized liquefaction potential under other than Seismic Category I structures is addressed per SRP 2.5.4 in DCD Table 2.0-2.
- (15) Settlement values are long-term (post-construction) values except for differential settlement within the foundation mat. The design of the foundation mat accommodates immediate and long-term (post-construction) differential settlements after the installation of the basemat.
- (16) Information in this column and notes (1) through (15) are from DCD Table 2.0-1. In these notes, "DCD" was added before cited tables, figures, and references from the DCD.



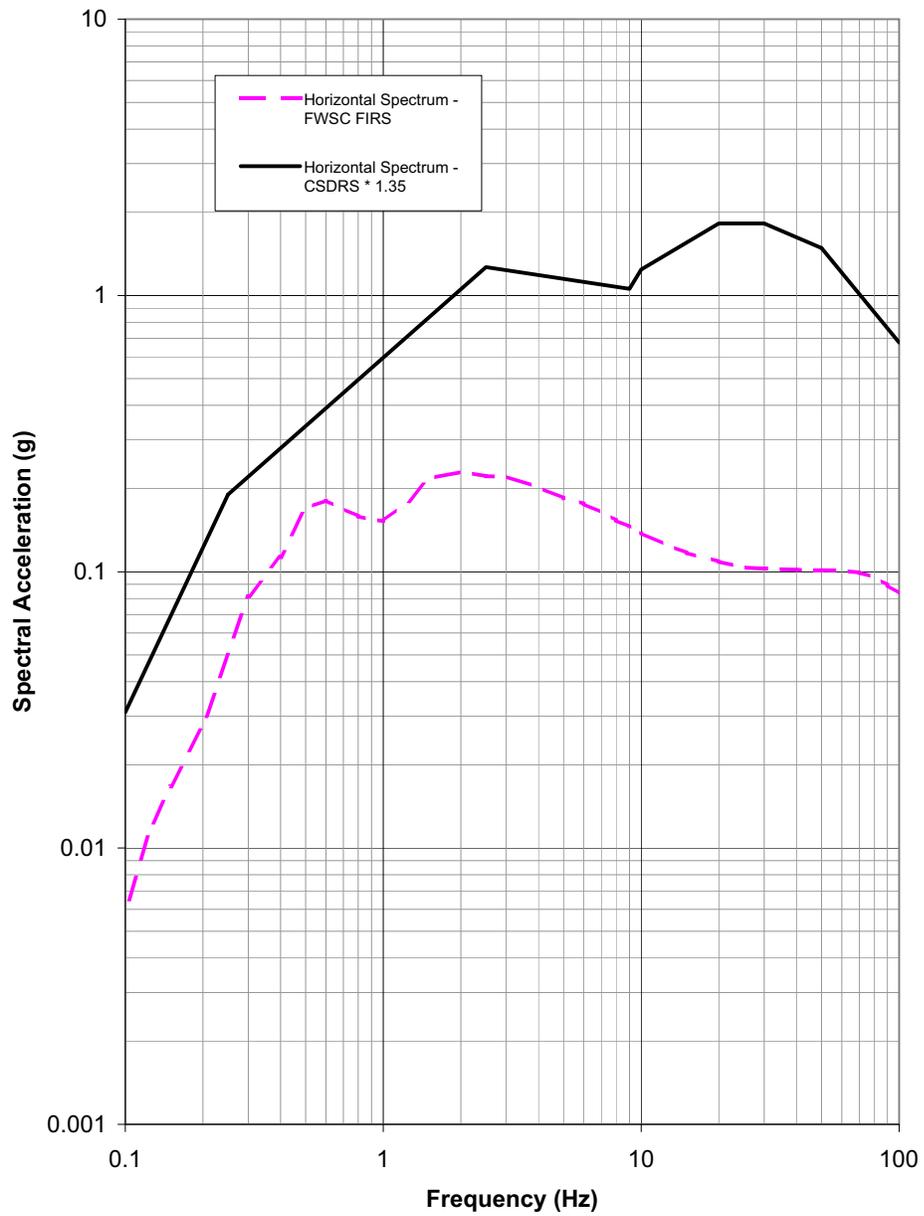
VCS COL 2.0-1-A

Figure 2.0-201 Comparison of Horizontal CSDRS with the Reactor Building/Fuel Building and Control Building FIRS



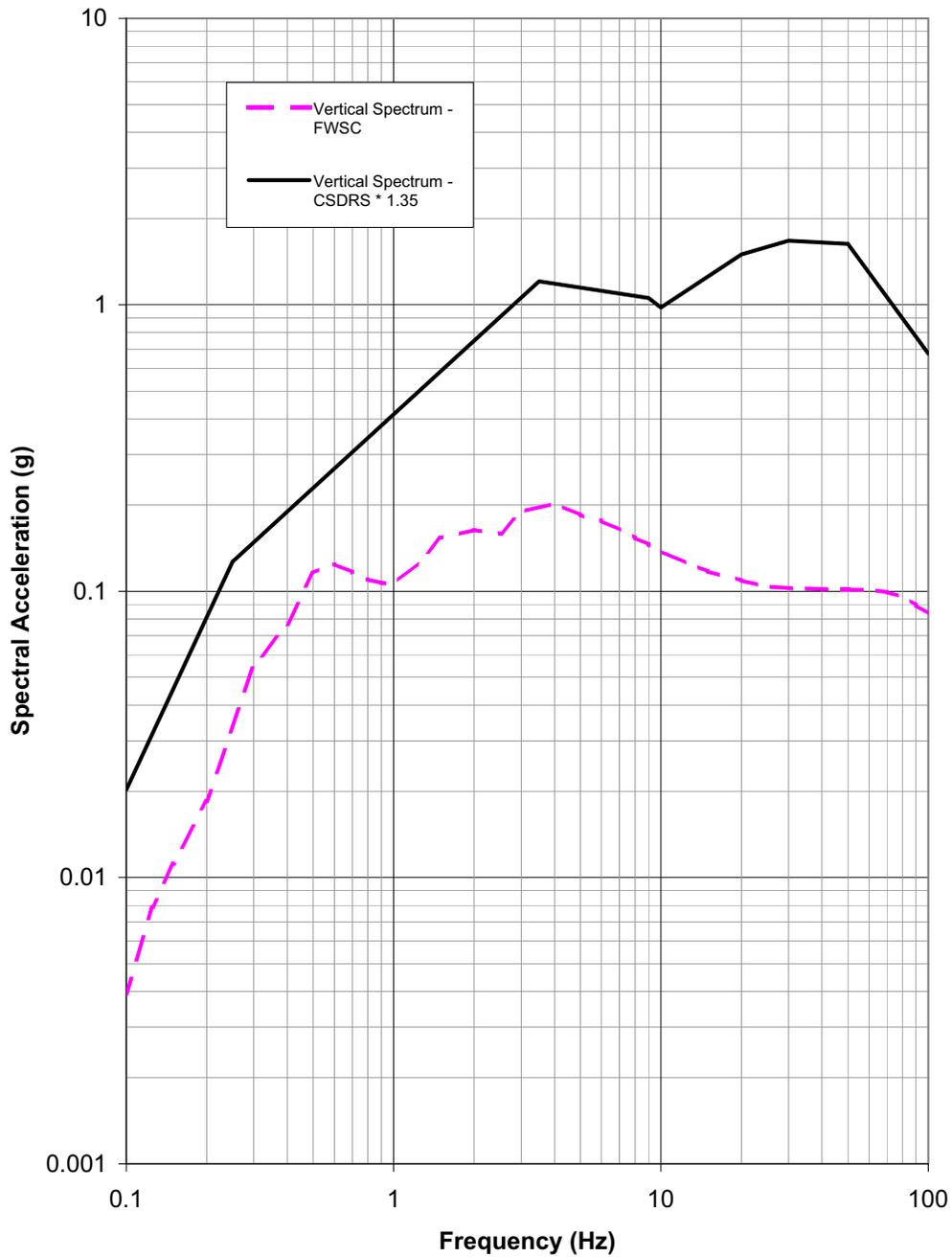
VCS COL 2.0-1-A

Figure 2.0-202 Comparison of Vertical CSDRS with the Reactor Building/Fuel Building and Control Building FIRS



VCS COL 2.0-1-A

Figure 2.0-203 Comparison of Horizontal CSDRS with the FWSC FIRS



VCS COL 2.0-1-A

Figure 2.0-204 Comparison of Vertical CSDRS with the FWSC FIRS