Response to SDAA Audit Question

Question Number: A-12-1

Receipt Date: 04/10/2023

Question:

This item is regarding the RG 1.143 classification of the Radioactive Waste Building (RWB) structure (not the systems or components within the RWB).

NuScale Design Specific Review Standard (DSRS), Sections 12.3-12.4 and Chapter 11, indicate that structures housing radioactive waste processing systems and components should be classified using the guidance of RG 1.143.

The RG 1.143 classification for portions of the radwaste building is unclear. In several places in the application, such as Section 3.8.4.1.3, it indicates that a small portion of the above grade structure, such as areas used for waste sorting and storage, and the entirety of the below grade portion of the RWB is classified as RG 1.143 classification RW-IIa. Table 3.2-1, specifies that the “Below-grade structure (areas designated for storage or processing of radioactive waste)” is RW-IIa and that the above-grade structure is Seismic Category III. Please clarify the following:

1. Is the entirety of the below grade portions of the RWB classified RW-IIa? If so, please correct Table 3.2-1.

2. Which portions of the RWB are considered below grade? Is the entirety of the 82’ Elevation on the plant figures considered below grade? The portions of the RWB that are above and below grade should be clearly defined.

3. As discussed above, several places in the application indicate that a small portion of the RWB structure above grade is classified as RW-IIa. Please clarify which above grade rooms or areas are RW-IIa and which are Seismic Category III.

Response:

The portion of the Radwaste Building (RWB) that is below grade elevation (below 100’ Elevation level) is classified as a RW-IIa structure. The above-grade portion of the building is a steel-framed Seismic Category III (SC-III) structure with the exception of an RW-IIa isolated enclosure used for waste sorting and storage. Rooms 225, 226 and 227, as depicted in Figure 1.2-24, at the 100’ elevation, are RW-IIa. Other areas at the 100’ elevation level, and areas above 100’ elevation level, are considered SC-III. Areas below grade are RW-IIa. Table 3.2-1 in the SDA has been revised to reflect the above-stated information.

Markups of the affected changes, as described in the response, are provided below:

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Table 3.2-1: Seismic Classification of Building Structures

Structure	Seismic Category
Reactor Building (RXB) • Majority of the building is SC-I, but several areas of the building are classified as SC-II (Note 1)	I/II
Turbine Building	III
Control Building (CRB) • Area housing the main control room and associated facilities	I
CRB • Portions of the building where protection of SC-I areas is required	II
CRB • Areas not classified as SC-I or SC-II (Note 1)	III
Annex Building	III
Firewater Building	III
Diesel Generator Building	III
Radioactive Waste Building • Above-grade structure	III
Radioactive Waste Building • Below-grade structure ~~(~~and areas above grade designated for storage or processing of radioactive waste (Section 3.8.4.1.3)~~)~~	RW-IIa
Central Utility Building	III
Site Plant Cooling Water Chem Feed Building	III
Site Utility Racks	III

Note 1: Seismic Classification for RXB and CRB are discussed in Section 3.7.2.