Response to SDAA Audit Question

Question Number: A-19.2-32

Receipt Date: 06/10/2024

Question:

SDAA FSAR Section 19.2.3.3.8, “Equipment Survivability,” states that simulation results confirm the NPM remains below CNV temperature and pressure limits for all accident sequences considered in the PRA. This section further states that the most challenging accident sequence with respect to containment pressure results from a general reactor trip with failure of the RSVs to open and a successful automatic ECCS actuation at high RCS energy to protect the RPV from over pressurization, but it does not identify the most challenging accident sequence with respect to containment temperature.

NuScale is requested to:

1. For the most challenging accident sequence with respect to containment temperature, summarize the accident sequence, provide the maximum containment temperature predicted for this accident sequence, and discuss the margin between the predicted containment temperature and the containment temperature limit.
2. For the most challenging accident sequence with respect to containment pressure, provide the maximum containment pressure predicted for this accident sequence and discuss the margin between the predicted containment pressure and the ultimate failure pressure.

Response:

1. The most challenging accident sequence with respect to containment vessel (CNV) temperature is {{

}}$^{2(a),(c)}$ This sequence is case TRN-24T-00 in ER-116286, Probabilistic Risk Assessment Level 1 non-ATWS Report, Revision 1, which NuScale has provided in the “SDAA Audit Section 19.1-19.3” electronic reading room. {{

}}$^{2(a),(c)}$

{{

}}2(a),(c)

2. The predicted peak CNV pressure for the most challenging accident sequence with respect to CNV pressure, described in part 1 of this response, is {{

}}2(a),(c)

No changes to the SDAA are necessary.