# Response to SDAA Audit Question

**Question Number**: A-3.5.3-6

**Receipt Date**: 08/28/2023

**Question**:

Section 3.5.3.2 states that the ductility factors from Section NB3.14, Table NB3.1 of Reference 3.5-9 (AISC N690-18) are used in accordance with requirements of SRP 3.5.3. The SRP 3.5.3 states that maximum allowable ductility ratios for steel and reinforced concrete barriers, in the above analysis, are given in AISC N690-94 including supplement 2(2004), and in RG 1.142, respectively. It is unclear to the staff whether the applicant also considers RG 1.142 in determining the ductility factors. Provide the ductility factors for steel components including steel tension members, structural steel flexural members, and structural steel columns in Section 3.5.3.2.

**Response**:

As stated in Table 1.9-2 of the US460 standard design approval application (SDAA), the NuScale design partially conforms to Regulatory Guide (RG) 1.142. The language endorses ACI 349-13 with exceptions, and RG 1.142 provides additional limitations to Appendix F of ACI 349-13 for some sections. However the sections of Appendix F used to justify the allowable ductility (F3.3 and F3.4) are not supplemented by RG 1.142, so the regulatory guide is not applicable for these values. Therefore, it is not discussed in the text of the SDAA for steel ductility ratios.

The ductility ratios used in SDAA Section 3.5.3.2 are taken directly from ANSI/AISC N690, which is a publicly available, copyrighted source approved by the NRC. The Standard Review Plan for 3.5.3 does not require including the ductility factors for steel components in the SDAA.

No changes to the SDAA are necessary.