RAIO-0817-55775

August 31, 2017

Docket No. 52-048

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

SUBJECT: NuScale Power, LLC Response to NRC Request for Additional Information No. 88 (eRAI No. 8917) on the NuScale Design Certification Application

REFERENCE: U.S. Nuclear Regulatory Commission, "Request for Additional Information No. 88 (eRAI No. 8917)," dated July 07, 2017

The purpose of this letter is to provide the NuScale Power, LLC (NuScale) response to the referenced NRC Request for Additional Information (RAI).

The Enclosure to this letter contains NuScale's response to the following RAI Question from NRC eRAI No. 8917:

- 05.02.01.02-1

This letter and the enclosed response make no new regulatory commitments and no revisions to any existing regulatory commitments.

If you have any questions on this response, please contact Marty Bryan at 541-452-7172 or at mbryan@nuscalepower.com.

Sincerely,

Zackary W. Rad
Director, Regulatory Affairs
NuScale Power, LLC

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Enclosure 1: NuScale Response to NRC Request for Additional Information eRAI No. 8917

Enclosure 1:

NuScale Response to NRC Request for Additional Information eRAI No. 8917

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Response to Request for Additional Information
Docket No. 52-048

eRAI No.: 8917
Date of RAI Issue: 07/07/2017

NRC Question No.: 05.02.01.02-1

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 50.55a, certain systems and components of the NuScale Small Modular Reactor (SMR) design are to meet the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code). The requirement ensures that facilities will also meet the requirements of 10 CFR Part 50, Appendix A, General Design Criterion 1 such that structures, systems, and components important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety function to be performed. As part of the applicant's use of the ASME Code, ASME Code Cases may be invoked. The staff has identified the following issues in regards to the applicant's use of the Codes and Standards Rule, 10 CFR 50.55a, and ASME Code Cases.

Issue 1

DCD Tier 2, Section 5.2.1.2 refers to 10 CFR 50.55(a)(1)(i). Change this to 10 CFR 50.55a(a)(1)(i).

The ASME BPVC, Section III code cases used for design, fabrication, and construction are determined by those listed in the applicable ASME BPVC Edition specified in 10 CFR 50.55(a)(1)(i) or Tables 1 and 2 of RG 1.84 pursuant to 10 CFR 50.55a(a)(3)(i) and subject to the applicable provisions of 10 CFR 50.55a(b).

Issue 4

The staff notes that FSAR Section 5.2.1.2 does not identify the use of any ASME Section III Code Cases related to Class 2 or 3 components. The staff is aware of other certified designs which have made use of such Code Cases.

Please verify that no ASME Section III Code Cases related to Class 2 or 3 components are to be used as part of the NuScale design or revise FSAR Section 5.2.1 to identify such Code Cases if they will be used as part of the design.

NuScale Response:

Issue 1:

NuScale has updated the FSAR to 10 CFR 50.55a(a)(1)(i) as requested.

Issue 4:

The NuScale design reactor coolant pressure boundary is comprised exclusively of ASME Class 1 components, piping and appartunances; therefore no code cases related to ASME Class 2 or Class 3 components are used as part of the reactor coolant pressure boundary design. Class 2 and Class 3 components are used in non-reactor coolant pressure boundary systems, however these components are not within the scope of Section 5.2 (Reactor Coolant Pressure Boundary).

Impact on DCA:

FSAR Section 5.2 has been revised as described in the response above and as shown in the markup provided in this response.

certification. If an ASME OM Code edition or addenda dated later than ASME OM-2012 edition is used, these later ASME OM Code editions and addenda and associated code cases must be approved for incorporation by reference per 10 CFR 50.55a(a)(1) or authorized by the NRC pursuant to 10 CFR 50.55a(a)(3) and subject to applicable provisions of 10 CFR 50.55a(b). An ASME OM Code edition or addenda not endorsed by the NRC may be used pursuant to the requirements of 10 CFR 50.55a(z).

8914 RAI 05.02.01.01-2

Section 3.9.6 describes the Inservice Test Program and compliance with 10 CFR 50.55a(f)(3)(iii)(B) and 10 CFR 50.55a(f)(3)(iv)(B).

5.2.1.2 Compliance with Applicable Code Cases

8917 RAI 05.02.01.02-1

The ASME BPVC, Section III code cases used for design, fabrication, and construction are determined by those listed in the applicable ASME BPVC Edition specified in 10 CFR 50.55a(a)(1)(i) or Tables 1 and 2 of RG 1.84 pursuant to 10 CFR 50.55a(a)(3)(i) and subject to the applicable provisions of 10 CFR 50.55a(b). Code cases that are used and listed in Table 2 of RG 1.84 also meet the conditions established in the RG.

Section 5.2.4 and Section 6.6 provide a summary discussion of preservice and ISI examinations and procedures. The applicable ASME BPVC Section XI code cases used for preservice inspection and ISI are identified by the plant owner and determined by those listed in the applicable ASME BPVC Edition specified in 10 CFR 50.55(a)(1)(ii) or Tables 1 and 2 of RG 1.147 pursuant to 10 CFR 50.55a(a)(3)(ii) and subject to the applicable provisions of 10 CFR 50.55a(b). Code cases that are used and listed in Table 2 of RG 1.147 also meet the conditions established in the RG.

The ASME OM code cases used for preservice testing and inservice testing are identified by the plant owner and determined by those listed in the applicable ASME OM Code Edition specified in 10 CFR 50.55(a)(1)(iv) or Tables 1 and 2 of RG 1.192 pursuant to 10 CFR 50.55a(a)(3)(iii) and subject to the applicable provisions of 10 CFR 50.55a(b). Code cases that are used and listed in Table 2 of RG 1.192 also meet the conditions established in the RG.

Table 5.2-1, "ASME Code Cases," provides a consolidated list of the specific code cases used in the NPM RCPB design that are not addressed in ASME BPVC 2013 Edition. Conditionally acceptable ASME code cases listed in Table 5.2-1 are subject to the applicable conditions specified in Table 2 of RG 1.84. Other acceptable and conditionally acceptable ASME code cases listed in RGs 1.84, 1.147, and 1.192 in effect at the time of the Design Certification and listed in RG revisions issued subsequent to the Design Certification may be used for RCPB components. ASME code cases listed in RG 1.193, Revision 4, are not used unless authorized by the NRC pursuant to the requirements of 10 CFR 50.55a(z).

COL Item 5.2-1: A COL applicant that references the NuScale Power Plant design certification and uses a later Code edition or addenda other than American Society of Mechanical Engineers Boiler and Pressure Vessel Code 2013 will perform and document with a