RAIO-1117-57438

November 30, 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 Supplemental Response to NRC Request for Additional Information No. 01 (eRAI No. 8738) on the NuScale Design Certification Application

REFERENCES:
1. U.S. Nuclear Regulatory Commission, "Request for Additional Information No. 01 (eRAI No. 8738)," dated April 11, 2017
2. NuScale Power, LLC Response to NRC "Request for Additional Information No. 01 (eRAI No.8738)," dated June 07, 2017

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

The Enclosure to this letter contains NuScale's supplemental response to the following RAI Question from NRC eRAI No. 8738:

- 13.05.02.01-1

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 Steven Mirsky at 240-833-3001 or at smirsky@nuscalepower.com.

Sincerely,

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

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Enclosure 1: NuScale Supplemental Response to NRC Request for Additional Information eRAI No. 8738

Enclosure 1:

NuScale Supplemental Response to NRC Request for Additional Information eRAI No. 8738

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NuScale Power™

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

eRAI No.: 8738
Date of RAI Issue: 04/11/2017

NRC Question No.: 13.05.02.01-1

REGULATORY BASIS REQUIREMENTS

TMI Action Plan Item I.C.1, a Post-TMI requirement approved by the Commission for implementation, requires the preparation of emergency procedure technical guidelines for development of the Emergency Operating Procedures (EOPs). Preparation of the technical guidelines is conducted in accordance with NUREG-0737, "Clarification of TMI Action Plan Requirements," and NUREG-0737, Supplement 1, "Requirements for Emergency Response Capability," which also specify submittal of the technical guidelines to the NRC for review and approval.

Meeting the requirements of TMI Action Plan Item I.C.1 as prescibed in NUREG-0737, Section I.C.1, and Supplement 1 to NUREG-0737, Section 7, is acceptance criteria in SRP 13.5.2.1, "Operating and Emergency Operating Procedures." Design-specific Generic Technical Guidelines (GTGs), otherwise referred to as the Emergency Operating Guidelines (EOGs), will be used by COL applicants to develop their Plant-Specific Technical Guidelines (P-STGs), from which their EOPs will be developed, and are the responsibility of the DC applicant.

The P-STGs may be based on either of the following GTG options:

a. ***NuScale design-specific GTGs, the development of which has no basis in any of the previously reviewed and approved owners group GTGs.*** NuScale would provide the supporting analyses used in the developmental process (e.g., best estimate analyses for the operational transients and accidents that were used for the NuScale GTGs; analyses that identify operator tasks, and information and control needs; engineering evaluations; etc.).

b. ***NuScale design-specific GTGs that are derived from one of the previously reviewed and approved owners group GTGs (i.e., Westinghouse, Combustion Engineering, Babcock and Wilcox, General Electric).*** NuScale would identify significant safety deviations from the approved owner's group GTGs (including identification of additional equipment beyond that identified in the GTGs), and provide the supporting analyses (e.g., best estimate analyses for the operational transients and accidents that were used for the NuScale GTGs; analyses that identify operator tasks, and information and control needs;

engineering evaluations; etc.) necessary to technically justify the adequacy of each deviation.

ISSUE

NuScale DCD Section 13.5 does not include NuScale design-specific GTGs.

INFORMATION NEEDED

Provide NuScale design-specific GTGs prepared in accordance with the prescribed guidance in NUREG-0737, Section I.C.1, and Supplement 1 to NUREG-0737, Section 7, along with the necessary supporting analyses.

NuScale Response:

This response supplements and revises the original RAI 13.05.02.01-1 (eRAI No. 8738) response (ML17158B549) and the supplemental response provided on June 30, 2017 (ML17181A433). FSAR Tier 2 Section 13.5.2.1 has been updated to incorporate the NuScale generic technical guidelines (TR-1117-57216).

Impact on DCA:

FSAR Sections 13.5.2.1 and 13.5.3 and FSAR Table 1.6-2 have been revised as described in the response above and as shown in the markup provided in this response.

RAI 03.08.02-6, RAI 13.05.02.01-1S2

Table 1.6-2: NuScale Referenced Technical Reports

Report Number	Title	FSAR Section
TR-0116-20781	Fluence Calculation Methodology and Results	4.3, 5.3
TR-0316-22048	Nuclear Steam Supply System Advanced Sensor Technical Report	7.1, 7.2
TR-0416-48929	NuScale Design of Physical Security Systems	9.5, 13.6, 14.2, 14.3
TR-0516-49084	Containment Analysis Methodology	6.2
TR-0616-49121	NuScale Instrument Setpoint Methodology Technical Report	7.0, 7.2
TR-0716-50424	Combustible Gas Control	3.8, 6.2
TR-0716-50439	Comprehensive Vibration Assessment Program (CVAP) Technical Report TR-0716-50439	3.9, 14.2
TR-0816-49833	Fuel Storage Rack Analysis	3.7, 3.8, 9.1
TR-0816-50796	Loss of Large Areas Due to Explosions and Fires Assessment	20.2
TR-0816-50797	Mitigation Strategies for Extended Loss of AC Power (ELAP) Event	20.1
TR-0816-51127	NuFuel HTP2 Fuel and Control Rod Assembly Designs	4.2
TR-0916-51299	Long-Term Cooling Methodology	5.4, 6.2, 6.3, 15.0
TR-0916-51502	NuScale Power Module Seismic Analysis	3.7, 3.12
TR-1015-18177	Pressure and Temperature Limits Methodology	5.3
TR-1016-51669	NuScale Power Module Short-Term Transient Analysis	3.8
TR-1116-51962	NuScale Containment Leakage Integrity Assurance	6.2
TR-1116-52065	Effluent Release Methodology Technical Report	11.1, 11.2, 11.3
RP-0215-10815	Concept of Operations	18.7
RP-0316-17614	Human Factors Engineering Operating Experience Review Results Summary Report	18.2
RP-0316-17615	Human Factors Engineering Functional Requirements Analysis and Function Allocation Results Summary Report	18.3
RP-0316-17616	Human Factors Engineering Task Analysis Results Summary Report	18.4
RP-0316-17617	Human Factors Engineering Staffing and Qualifications Results Summary Report	18.5
RP-0316-17618	Human Factors Engineering Treatment of Important Human Actions Results Summary Report	18.6
RP-0316-17619	Human Factors Engineering Human-System Interface Design Results Summary Report	18.7
RP-0516-49116	Control Room Staffing Plan Validation Results	18.5
RP-0914-8534	Human Factors Engineering Program management Plan	18.1
RP-0914-8543	Human Factors Verification and Validation Implementation Plan	18.1
RP-0914-8544	Human Factors Engineering Design Implementation Implementation Plan	18.11
RP-1215-20253	Control Room Staffing Plan Validation Methodology	18.5
TR-1117-57216	NuScale Generic Technical Guidelines	13.5

13.5 Plant Procedures

Administrative and operating procedures are utilized by the operating organization (plant staff) to ensure that routine operating, off-normal, and emergency activities are conducted in a safe manner.

13.5.1 Administrative Procedures

COL Item 13.5-1: A COL applicant that references the NuScale Power Plant design certification will describe the site-specific procedures that provide administrative control for activities that are important for the safe operation of the facility consistent with the guidance provided in RG 1.33, Revision 3.

RAI 13.01.01-1S1, RAI 13.05.02.01-2, RAI 13.05.02.01-2S1, RAI 13.05.02.01-3, RAI 13.05.02.01-3S1, RAI 13.05.02.01-4, RAI 13.05.02.01-4S1

COL Item 13.5-4: A COL applicant that references the NuScale Power Plant design certification will provide a plan for the development, implementation, and control of administrative procedures, including preliminary schedules for preparation and target dates for completion. Additionally, the COL applicant will identify the group within the operating organization responsible for maintaining these procedures.

13.5.2 Operating and Maintenance Procedures

13.5.2.1 Operating and Emergency Operating Procedures

RAI 13.05.02.01-1S2

Generic technical guidelines for emergency operating procedure development that are specific to the NuScale design are provided in Reference 13.5-1. These generic technical guidelines provide the basis for the Plant Specific Technical Guidelines identified in COL Item 13.5-7.

RAI 13.01.01-1S1, RAI 13.05.02.01-2S1, RAI 13.05.02.01-3S1, RAI 13.05.02.01-4S1

COL Item 13.5-2: A COL applicant that references the NuScale Power Plant design certification will describe the site-specific procedures ~~that licensed operators perform in the control room including normal operating procedures, abnormal operating procedures, and emergency operating procedures (EOPs), and describe the classification system for these types of procedures and general format and content for each classification.~~that operators use in the main control room and locally in the plant, including normal operating procedures, abnormal operating procedures, and emergency operating procedures (EOPs). The COL applicant will describe the classification system for these procedures, and the general format and content of the different classifications.

RAI 13.01.01-1S1, RAI 13.05.02.01-2S1, RAI 13.05.02.01-3S1, RAI 13.05.02.01-4S1

COL Item 13.5-5: A COL applicant that references the NuScale Power Plant design certification will provide a plan for the development, implementation, and control of operating procedures, including preliminary schedules for preparation and target dates for completion. Additionally, the COL applicant will identify the group within the operating organization responsible for maintaining these procedures.

RAI 13.01.01-1S1, RAI 13.05.02.01-2S1, RAI 13.05.02.01-3S1, RAI 13.05.02.01-4S1

RAI 13.01.01-1S1, RAI 13.05.02.01-2, RAI 13.05.02.01-2S1, RAI 13.05.02.01-3, RAI 13.05.02.01-3S1, RAI 13.05.02.01-4, RAI 13.05.02.01-4S1

COL Item 13.5-8: A COL applicant that references the NuScale Power Plant design certification will provide a plan for the development, implementation, and control of maintenance and other operating procedures, including preliminary schedules for preparation and target dates for completion. Additionally, the COL applicant will identify what group or groups within the operating organization have the responsibility for maintaining and following these procedures.

RAI 13.05.02.01-1S2

13.5.3 References

RAI 13.05.02.01-1S2

13.5-1 NuScale Power, LLC, "NuScale Generic Technical Guidelines", TR-1117-57216, Revision 0, November 2017.