



May 02, 2018

Docket No. 52-048

U.S. Nuclear Regulatory Commission  
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11555 Rockville Pike  
Rockville, MD 20852-2738

**SUBJECT:** NuScale Power, LLC Supplemental Response to NRC Request for Additional Information No. 157 (eRAI No. 9033) on the NuScale Design Certification Application

**REFERENCES:** 1. U.S. Nuclear Regulatory Commission, "Request for Additional Information No. 157 (eRAI No. 9033)," dated August 08, 2017  
2. NuScale Power, LLC Response to NRC "Request for Additional Information No. 157 (eRAI No.9033)," dated September 14, 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. 9033:

- 16-9

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](mailto:smirsky@nuscalepower.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Zackary W. Rad".

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. 9033



RAIO-0518-59798

**Enclosure 1:**

NuScale Supplemental Response to NRC Request for Additional Information eRAI No. 9033

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

**eRAI No.:** 9033

**Date of RAI Issue:** 08/08/2017

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### **NRC Question No.:** 16-9

Paragraph (a)(11) of 10 CFR 52.47 and paragraph (a)(30) of 10 CFR 52.79 state that a design certification (DC) applicant and a combined license (COL) applicant, respectively, are to propose technical specifications (TS) prepared in accordance with 10 CFR 50.36 and 50.36a. 10 CFR 50.36 sets forth requirements for TS to be included as part of the operating license for a nuclear power facility. The model standard technical specifications (STS) in the following documents provide NRC guidance on format and content of TS as acceptable means to meet 10 CFR 50.36 requirements. These documents may be accessed using the Agencywide Documents Access and Management Systems (ADAMS) by their accession numbers.

- NUREG-1431, “STS Westinghouse Plants,” Revision 4 (ADAMS Accession Nos. ML12100A222 and ML12100A228)
- NUREG-1432, “STS Combustion Engineering Plants,” Revision 4 (ADAMS Accession Nos. ML12102A165 and ML12102A169)
- NUREG-2194, “STS Westinghouse Advanced Passive 1000 (AP1000) Plants,” Revision 0 (ADAMS Accession No. ML16111A132)

The NRC staff needs to evaluate technical differences in the proposed generic TS (GTS) from applicable provisions in these documents, which are referenced by the DC applicant in Design Control Document (DCD) Tier 2, Section 16.1, and the docketed rationale for each difference because conformance to STS provisions is used in the safety review as the initial point of guidance for evaluating the adequacy of the GTS to ensure adequate protection of public health and safety, and the completeness and accuracy of the GTS Bases.

In the Bases for proposed LCO 3.0.2, the fifth and sixth paragraphs should be combined, as presented in the markup of NUREG-1431 in TSTF-529-A, “Clarify Use and Application Rules,” Revision 4, dated February 29, 2016 (ADAMS Accession No. ML16060A455).

In addition, the staff considers the proposed sentence “Alternatives that would not result in redundant equipment being inoperable should be used instead,” to be less clear than the STS sentence it replaced, that says, “Additionally, if intentional entry into ACTIONS would result in redundant equipment being inoperable, alternatives should be used instead.” Therefore, with suggested changes indicated by markup to match TSTF-529, the fourth, fifth, and sixth paragraphs should say:

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*Fourth paragraph (no change):*

The nature of some Required Actions of some Conditions necessitates that, once the Condition is entered, the Required Actions must be completed even though the associated Conditions no longer exist. The individual LCO's ACTIONS specify the Required Actions where this is the case. An example of this is in LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits."

*Fifth and sixth paragraphs combined:*

The Completion Times of the Required Actions are also applicable when a system or component is removed from service intentionally. The reasons for intentionally relying on the ACTIONS include, but are not limited to, performance of Surveillances, preventive maintenance, corrective maintenance, or investigation of operational problems.

[Remove paragraph break.]

Entering ACTIONS for these reasons must be done in a manner that does not compromise safety. Intentional entry into ACTIONS should not be made for operational convenience. Additionally, Alternatives that would not if intentional entry into ACTIONS would result in redundant equipment being inoperable, alternatives should be used instead. Doing so limits the time both subsystems/trains of a safety function are inoperable and limits the time conditions exist which may result in LCO 3.0.3 being entered. Individual Specifications may specify a time limit for performing an SR when equipment is removed from service or bypassed for testing. In this case, the Completion Times of the

Required Actions are applicable when this time limit expires, if the equipment remains removed from service or bypassed.

The applicant is requested to revise the fifth and sixth paragraphs, as indicated above, to match the presentation of TSTF-529.

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### **NuScale Response:**

This supplemental response is provided in response to information requested during the April 4, 2018 NRC-NuScale public meeting addressing issues identified by the staff on February 14, 2018. This information supplements the response provided to RAI 157-9033, Question 16-9, as provided in NuScale letter RAIO-0917-55987, dated September 14, 2017 (ML17257A450).

Changes have been made to the proposed NuScale technical specifications to incorporate TSTF 565, Revision 1 into the Bases of LCO 3.0.2 and LCO 3.0.3.



**Impact on DCA:**

The Technical Specifications have been revised as described in the response above and as shown in the markup provided in this response.

## BASES

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### LCO 3.0.2 (continued)

Completing the Required Actions is not required when an LCO is met, or is no longer applicable, unless otherwise stated in the individual Specifications.

The nature of some Required Actions of some Conditions necessitates that, once the Condition is entered, the Required Actions must be completed even though the associated Conditions no longer exist. The individual LCO's ACTIONS specify the Required Actions where this is the case. An example of this is in LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits."

The Completion Times of the Required Actions are also applicable when a system or component is removed from service intentionally. ~~Intentional entry into ACTIONS should not be made for operational convenience that permits routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. Individual Specifications may specify a time limit for performing an SR when equipment is removed from service or bypassed for testing. In this case, the Completion Times of the Required Actions are applicable when this time limit expires, if the equipment remains removed from service or bypassed.~~ The ACTIONS for not meeting a single LCO adequately manage any increase in plant risk, provided any unusual external conditions (e.g., severe weather, offsite power instability) are considered. In addition, the increased risk associated with simultaneous removal of multiple structures, systems, trains or components from service is assessed and managed in accordance with 10 CFR 50.65(a)(4).

When a change in MODE or other specified condition is required to comply with Required Actions, the unit may enter a MODE or other specified condition in which another Specification becomes applicable. In this case, the Completion Times of the associated Required Actions would apply from the point in time that the new Specification becomes applicable, and the ACTIONS Condition(s) are entered.

## BASES

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### LCO 3.0.3

LCO 3.0.3 establishes the actions that must be implemented when an LCO is not met; and:

- a. An associated Required Action and Completion Time is not met and no other Condition applies; or
- b. The condition of the unit is not specifically addressed by the associated ACTIONS. This means that no combination of Conditions stated in the ACTIONS can be made that exactly corresponds to the actual condition of the unit. Sometimes, possible combinations of Conditions are such that entering LCO 3.0.3 is warranted; in such cases, the ACTIONS specifically state a Condition corresponding to such combinations and also that LCO 3.0.3 be entered immediately.

This Specification delineates the time limits for placing the unit in a safe MODE or other specified condition when operation cannot be maintained within the limits for safe operation as defined by the LCO and its ACTIONS. ~~It is not intended to be used as an operational convenience that permits routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable.~~ Planned entry into LCO 3.0.3 should be avoided. If it is not practicable to avoid planned entry into LCO 3.0.3, plant risk should be assessed and managed in accordance with 10 CFR 50.65(a)(4), and the planned entry into LCO 3.0.3 should have less effect on plant safety than other practicable alternatives.

Upon entering into LCO 3.0.3, 1 hour is allowed to prepare for an orderly shutdown before initiating a change in unit operation. This includes time to permit the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid. The time limits specified to enter lower MODES of operation permit the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the capabilities of the unit, assuming that only the minimum required equipment is OPERABLE. This reduces thermal stresses on components of the Reactor Coolant System and the potential for a plant upset that could challenge safety systems under conditions to which this Specification applies. The use and interpretation of specified times to complete the actions of LCO 3.0.3 are consistent with the discussion of Section 1.3, "Completion Times."