

## NuScaleDCRaisPEm Resource

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**From:** Cranston, Gregory  
**Sent:** Monday, July 23, 2018 9:27 AM  
**To:** NuScaleDCRaisPEm Resource  
**Cc:** Chowdhury, Prosanta  
**Subject:** Request for Additional Information No. 429 eRAI No. 9396 (18.1)  
**Attachments:** Request for Additional Information No. 429 (eRAI No. 9396).pdf

Attached please find NRC staff's request for additional information (RAI) concerning review of the NuScale Design Certification Application.

Please submit your technically correct and complete response within 60 days of the date of this RAI to the NRC Document Control Desk.

If you have any questions, please contact me.

Thank you.

Gregory Cranston, Senior Project Manager  
Licensing Branch 1 (NuScale)  
Division of New Reactor Licensing  
Office of New Reactors  
U.S. Nuclear Regulatory Commission  
301-415-0546

**Hearing Identifier:** NuScale\_SMR\_DC\_RAI\_Public  
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**From:** Cranston, Gregory

**Created By:** Gregory.Cranston@nrc.gov

**Recipients:**

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**Options**

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**Return Notification:** No  
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## **Request for Additional Information No. 429 (eRAI No. 9396)**

Issue Date: 04/23/2018

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 18 - Human Factors Engineering

Application Section: 18

### **QUESTIONS**

18-44

Title 10 of the Code of Federal Regulations (10CFR) Section 52.47(a)(8) requires an applicant for a design certification to provide a final safety analysis report (FSAR) that must include the information necessary to demonstrate compliance with any technically relevant portions of the Three Mile Island requirements set forth in 10 CFR 50.34(f), except paragraphs (f)(1)(xii), (f)(2)(ix), and (f)(3)(v). Section 10 CFR 50.34(f)(2)(iii) requires an applicant to "Provide, for Commission review, a control room design that reflects state-of-the-art human factor principles prior to committing to fabrication or revision of fabricated control room panels and layouts." Chapter 18, "Human Factors Engineering," of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," and NUREG-0711, "Human Factors Engineering Program Review Model," identify criteria the staff uses to evaluate whether an applicant meets the regulation. The applicant stated in the FSAR, Tier 2, Section 18.0, "Human Factors Engineering - Overview," that its human factors engineering (HFE) program incorporates accepted HFE standards and guidelines including the applicable guidance provided in NUREG-0711, Revision 3.

NUREG-0711, Section 11.4.3.3, "Validation Testbeds," Criterion 9 states, "The applicant should verify the conformance of the testbed to the testbed-required characteristics before validation tests are conducted." NuScale provided the verification and validation (V&V) implementation plan (IP) for review. The staff reviewed the V&V IP. In Section 4.3.9 the applicant states, "The testbed is verified to conform with the required characteristics before validation tests are conducted." However, no further information is provided. As part of an audit of documents in NuScale's electronic reading room, the staff had the opportunity to review an "Integrated Systems Validation Test Plan." In sections 9.2 and 9.3 of this document, the applicant provides more information regarding the methods used to verify the conformance of the testbed to the testbed-required characteristics. Please either update the V&V IP to include this information or reference sections 9.2 and 9.3 of the "Integrated Systems Validation Test Plan." If referencing ISV test plan, please indicate revision number.