

## NuScaleDCRaisPEm Resource

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**From:** Chowdhury, Prosanta  
**Sent:** Saturday, March 10, 2018 6:48 PM  
**To:** Request for Additional Information  
**Cc:** Lee, Samuel; Cranston, Gregory; Murray, Demetrius; Kent, Lauren; D'Agostino, Amy; NuScaleDCRaisPEm Resource  
**Subject:** FW: Request for Additional Information No. 381 eRAI No. 9397 (Ch. 18)  
**Attachments:** Request for Additional Information No. 381 (eRAI No. 9397).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.

Prosanta Chowdhury, Project Manager  
Licensing Branch 1 (NuScale)  
Division of New Reactor Licensing  
Office of New Reactors  
U.S. Nuclear Regulatory Commission  
301-415-1647

**Hearing Identifier:** NuScale\_SMR\_DC\_RAI\_Public  
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**From:** Chowdhury, Prosanta

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**Options**

**Priority:** Standard  
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## Request for Additional Information No. 381 (eRAI No. 9397)

Issue Date: 03/10/2018

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:

### QUESTIONS

18-19

Title 10 of the *Code of Federal Regulations* (10 CFR) 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 11.4.3.6.4, criterion 2 says, "To assure that the participants' performance is representative of plant personnel, the applicant's training of participants should result in near asymptotic performance (i.e., stable, not significantly changing from trial to trial) and should be tested for such before conducting the validation."

In Section 4.6.4 of the V&V IP the applicant states, "To assure near-asymptotic performance and a consistent level of proficiency between individuals making up the operating crews, only participants who have successfully completed the training program and have reached an acceptable level of proficiency are considered to be qualified for operating crew assignment." Please clarify how participants' proficiency levels will be assessed prior to conducting validation testing.