

NuScaleDCRaisPEm Resource

From: Cranston, Gregory
Sent: Wednesday, November 22, 2017 8:41 AM
To: RAI@nuscalepower.com
Cc: NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Kavanagh, Kerri; Kendzia, Thomas; Murray, Demetrius
Subject: Request for Additional Information No. 283 RAI No. 9202 (14.2)
Attachments: Request for Additional Information No. 283 (eRAI No. 9202).pdf

Attached please find NRC staff's request for additional information 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.

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Licensing Branch 1 (NuScale)
Division of New Reactor Licensing
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301-415-0546

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Request for Additional Information No. 283 (eRAI No. 9202)

Issue Date: 11/22/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 14.02 - Initial Plant Test Program - Design Certification and New License Applicants

Application Section: 14.02

QUESTIONS

14.02-5

The U.S. Nuclear Regulatory Commission (NRC) issued Request for Additional Information (RAI) No. 68 (eRAI No. 8740) on June 20, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17171A225), to NuScale Power, LLC (NuScale), transmitting question 14.02-1. Specifically, the NRC staff requested that NuScale identify first-of-a-kind (FOAK) testing and to identify if any of the tests are First Plant Only Tests (FPOTs), to include supporting information. NuScale provided response RAIO-0817-555468 to the RAI on August 16, 2017 (ADAMS Accession No. ML17229B312).

Included in the response to question 14.02-1, NuScale provided a new table within the Final Safety Analysis Report (FSAR): Table 14.2-110, "ITP [Initial Test Program] Testing of New Design Features." Table 14.2-110 of the FSAR provides a listing of the "New System or Component Design," the "Design Feature Tested in the Initial Test Program," and the corresponding "FSAR Section 14.2 Test Number." NuScale also stated in its response that, except for the Comprehensive Vibration Assessment Program, all the ITP tests would be performed on all NuScale Power Modules (NPMs).

- a. The NuScale design includes an Island Mode capability that allows operation of all NPMs without a connection to a transmission grid that could provide an offsite AC power supply. The NRC considers Island mode as a new design feature, and notes that it is not included in FSAR Table 14.2-110. The Island Mode design feature has two tests in the ITP, Island Mode Test for NPM #1 (Test #105, as indicated in Table 14.2-105) and Island Mode Test for Multiple NPMs (Test #106, as indicated in Table 14.2-106).

The NRC staff requests that NuScale clarify why Island Mode has been determined to not be a new design feature and why it is not included in Table 14.2-110.

- b. The Island Mode Test for Multiple NPMs (Test #106), Table 14.2-106 states, in part, that "this startup test is required to be performed once with multiple NPMs in operation."

Based on the above statement, it is unclear to the NRC staff whether Test #106 will be performed per NPM or once per NPM facility. If Test #106 is not performed for every module, then the basis for not performing the test for every module should be documented in FSAR Section 14.2. Note that if Test #106 is not performed for every module, the following NuScale statement in response RAIO-0817-555468 may require revision: "NuScale performs testing of new and unique design features on every module as identified in individual test descriptions in Section 14.2.12."

In addition, Test #106 requires multiple Power Modules to be in operation. Therefore, it does not appear that this test can be performed for the first NPM being put operation. Also, as written, Test #106 does not specify how many NPMs will be in operation or participate in the test. As such, the NRC staff requests that NuScale clarify when Test #106 will be performed (e.g., during the second NPM ITP), and how many NPMs will be involved in the test.