

## NuScaleDCRaisPEm Resource

---

**From:** Cranston, Gregory  
**Sent:** Friday, May 26, 2017 3:54 PM  
**To:** RAI@nuscalepower.com  
**Cc:** NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Zimmerman, Jacob; Sacko, Fanta  
**Subject:** Request for Additional Information No. 33, RAI 8824  
**Attachments:** Request for Additional Information No. 33 (eRAI No. 8824).pdf

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

Please submit your 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  
**Email Number:** 45

**Mail Envelope Properties** (a00cdb7f95064d148b1d37cca6b5ebf5)

**Subject:** Request for Additional Information No. 33, RAI 8824  
**Sent Date:** 5/26/2017 3:54:18 PM  
**Received Date:** 5/26/2017 3:54:19 PM  
**From:** Cranston, Gregory

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

**Recipients:**

"NuScaleDCRaisPEm Resource" <NuScaleDCRaisPEm.Resource@nrc.gov>  
Tracking Status: None  
"Lee, Samuel" <Samuel.Lee@nrc.gov>  
Tracking Status: None  
"Chowdhury, Prosanta" <Prosanta.Chowdhury@nrc.gov>  
Tracking Status: None  
"Zimmerman, Jacob" <Jacob.Zimmerman@nrc.gov>  
Tracking Status: None  
"Sacko, Fanta" <Fanta.Sacko@nrc.gov>  
Tracking Status: None  
"RAI@nuscalepower.com" <RAI@nuscalepower.com>  
Tracking Status: None

**Post Office:** HQPWMSMRS07.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	527	5/26/2017 3:54:19 PM
Request for Additional Information No. 33 (eRAI No. 8824).pdf		88609

**Options**

**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

## **Request for Additional Information No. 33 (eRAI No. 8824)**

Issue Date: 05/26/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 08.04 - Station Blackout

Application Section:

### QUESTIONS

08.04-1

10 CFR 50.63, "Loss of all alternating current power," requires that each nuclear power plant be capable of withstanding or coping with, and recovering from a station blackout (SBO) event of a specified duration (known as coping duration), and maintaining adequate core cooling and appropriate containment integrity for the SBO coping duration. RG 1.155 and DSRS Section 8.4 describe guidance acceptable to the staff for meeting the requirements of 10 CFR 50.63 to be applied to the NuScale design. DSRS Section I (page 8.4-2) states that the review should determine that the capability to achieve and maintain safe shutdown and containment integrity during an SBO conform to the guidance provided in Section C.3.2 of RG 1.155, "Station Blackout."

In Section 8.4.3 of the FSAR Tier 2, the applicant states that the design adequacy and capability of equipment needed to cope with an SBO for the 72-hour duration of the event was evaluated, and the evaluation provides reasonable assurance that the required SBO equipment remains operable, and that no special equipment provisions or operator actions are necessary to ensure the operability of SBO mitigation equipment for the 72-hour duration.

In Section 8.4.3 of the FSAR Tier 2, the applicant states that an SBO transient sensitivity case that considered a simultaneous loss of all AC and DC power was evaluated and demonstrates that the NuScale Power Plant design does not rely on DC power from the EDSS to meet the requirements of 10 CFR 50.63.

In order for the staff to determine NuScale design's compliance with 10 CFR 50.63, the staff requests the following additional information:

1. Please provide the assumptions and a summary of the evaluation that NuScale performed as stated in FSAR Tier 2, Section 8.4.3 as it relates to conformance to RG 1.155, Section C.3.2. In addition, discuss the COL applicant responsibility, if applicable.
2. Please provide the assumptions and a summary of the SBO transient sensitivity evaluation that NuScale performed to show compliance with 10 CFR 50.63.