

NuScaleDCRaisPEm Resource

From: Cranston, Gregory
Sent: Wednesday, November 22, 2017 1:15 PM
To: RAI@nuscalepower.com
Cc: NuScaleDCRaisPEm Resource; Lee, Samuel; Chowdhury, Prosanta; Karas, Rebecca; Budzynski, John; Bovol, Bruce
Subject: Request for Additional Information No. 286 RAI No. 9223 (5.2.2)
Attachments: Request for Additional Information No. 286 (eRAI No. 9223).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.

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: 313

Mail Envelope Properties (MWHPR09MB12008B29BAEED27F89E831090200)

Subject: Request for Additional Information No. 286 RAI No. 9223 (5.2.2)
Sent Date: 11/22/2017 1:15:20 PM
Received Date: 11/22/2017 1:15:24 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

"Karas, Rebecca" <Rebecca.Karas@nrc.gov>

Tracking Status: None

"Budzynski, John" <John.Budzynski@nrc.gov>

Tracking Status: None

"Bavol, Bruce" <Bruce.Bavol@nrc.gov>

Tracking Status: None

"RAI@nuscalepower.com" <RAI@nuscalepower.com>

Tracking Status: None

Post Office: MWHPR09MB1200.namprd09.prod.outlook.com

Files	Size	Date & Time
MESSAGE	556	11/22/2017 1:15:24 PM
Request for Additional Information No. 286 (eRAI No. 9223).pdf		86215

Options

Priority: Standard

Return Notification: No

Reply Requested: No

Sensitivity: Normal

Expiration Date:

Recipients Received:

Request for Additional Information No. 286 (eRAI No. 9223)

Issue Date: 11/22/2017

Application Title: NuScale Standard Design Certification - 52-048

Operating Company: NuScale Power, LLC

Docket No. 52-048

Review Section: 05.02.02 - Overpressure Protection

Application Section: 5.2.2

QUESTIONS

05.02.02-1

Regulatory Basis:

10 CFR 52.47(c)(2) states, in part, that an application for certification of a nuclear power reactor design that differs significantly from the light-water reactor designs or uses simplified, inherent, passive, or other innovative means to accomplish its safety functions must provide an essentially complete nuclear power reactor design and must meet the requirements of 10 CFR 50.43(e).

Additionally, 10 CFR 50, Appendix A, General Design Criterion 14, "Reactor Coolant Pressure Boundary" requires that the reactor coolant pressure boundary shall be designed, fabricated, erected, and tested so as to have an extremely low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture.

10 CFR 50, Appendix A, General Design Criterion 15, "Reactor Coolant System Design" requires that the reactor coolant system and associated auxiliary, control, and protection systems shall be designed with sufficient margin to assure that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences.

Question:

During the Chapter 19 audit, the staff reviewed NRELAP calculations developed to evaluate the Reactor Coolant System (RCS) overpressure resulting from Anticipated Transient Without Scram (ATWS) events. Many of the key inputs for the Reactor Safety Valves (RSVs) were assumed values, since the detailed design specifications were not complete. The RSVs are relied on for overpressure protection of the reactor coolant pressure boundary during normal operation and the anticipated operational occurrences addressed in Chapter 15. The assumed NRELAP input includes valve throat areas, flow coefficients (C_v), and stroke times. They have been appropriately identified as open design issues. Provide a description of the closure plan for resolution of these inputs, including the schedule, proposed means of assessment, potential "downstream" impacts, and any other considerations.