September 11, 2017

Dr. Dennis C. Bley, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: SAFETY EVALUATION OF THE NUSCALE POWER, LLC LICENSING TOPICAL REPORT TR-0815-16497-P, "SAFETY CLASSIFICATION OF PASSIVE NUCLEAR POWER PLANT ELECTRICAL SYSTEMS," REVISION 1

Dear Dr. Bley:

Thank you for your letter, dated July 26, 2017 (Agencywide Document Access and Management System (ADAMS) Accession No. ML17205A380), regarding the Advisory Committee for Reactor Safeguards (ACRS) review of NuScale Power, LLC (NuScale) licensing topical report (TR)-0815-16497-P, "Safety Classification of Passive Nuclear Power Plant Electrical Systems," Revision 1. I appreciate the time and effort that the ACRS has devoted to this important subject, as reflected in meetings held with the ACRS Subcommittee for Future Plant Designs on March 24, 2017, and the ACRS Full Committee on July 12, 2017. Your letter contained two conclusions and recommendations:

Conclusion and Recommendation 1:

NuScale topical report TR-0815-16497-P, Revision 1, is acceptable for use only as a reference document for the NuScale plant electrical systems design subject to the staff limitations and conditions. The staff SER on this topical report should be amended accordingly.

Staff Response: The staff agrees with the ACRS Recommendation 1, and will update Revision 1 of its safety evaluation report accordingly.

Conclusion and Recommendation 2:

The staff should include an additional condition that the design, qualification, and quality assurance provisions described in Table 3-2 should be applied to any non-safety AC or DC power supplies that support (1) operation of risk-significant systems or components or (2) performance of risk-significant human actions that are identified in the site-specific probabilistic risk assessment.

Staff Response: The staff has determined that the intent of the recommendation has been addressed through the U.S. Nuclear Regulatory Commission requirement for a reliability assurance program (RAP). Any non-safety AC or DC power supplies that support (1) operation of risk significant systems or components or (2) performance of risk-significant human actions that are identified in the site-specific probabilistic risk assessment (PRA), would be considered risk-significant and therefore, would be within the scope of the applicant's RAP. Being in the scope of the RAP ensures that such systems or components receive appropriate treatment in the areas of design, qualification, quality assurance, and others, as prescribed by the Commission policy and associated regulatory provisions. Specifically, staff requirements memorandum (SRM)-SECY-95-132, "Policy and Technical Issues Associated with the Regulatory Treatment of Nonsafety Systems in Passive Plant Designs," dated June 28, 1995 (ADAMS Accession No. ML003708019), approved Item E, of Attachment 2, to SECY-95-132 (ADAMS Accession No. ML003708005). In Item E, the staff described that a RAP would apply to plant structures, systems, and components (SSCs) that are risk-significant (or significant contributors to plant safety) as determined by using a combination of probabilistic, deterministic, or other methods of analysis to identify and quantify risk such as the design certification PRA.

The RAP is part of the design control document that would be codified by incorporation within the design-specific rulemaking for a design certification applicant. Meeting this requirement provides evidence that: (1) the reactor will be designed, constructed, and operated in a manner that is consistent with the assumptions and risk insights for these risk-significant SSCs, (2) the risk-significant SSCs will not degrade to an unacceptable level of performance or condition during plant operations, (3) the frequency of transients that challenge SSCs will be minimized, and (4) these SSCs will function reliably when challenged. The RAP becomes part of a combined license (COL) application that references a certified design and may be augmented based on the plant-specific design and PRA. COL holders assure that the objectives of the RAP are fulfilled by establishing appropriate treatment requirements in operational programs for the SSCs in the scope of the RAP, including the quality assurance program, maintenance program, inservice testing program, and inservice inspection program.

The staff appreciates your review review of this SER and looks forward to future interactions with the Committee as part of its NuScale review activities.

Sincerely,

/RA Michael R. Johnson for/

Victor M. McCree
Executive Director
for Operations

Project No.: PROJ0769

cc: Chairman Svinicki
Commissioner Baran
Commissioner Burns
SECY

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