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NUCLEAR ENERGY INSTITUTE

August 31, 2015

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80FR 37312

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U.S. Nuclear Regulatory Commission
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Subject: Industry Comments on NuScale Power, LLC, Design-Specific Review Standard and Safety Review Matrix, *80 Fed. Reg. 37312 and 39454* [Docket ID NRC-2015-0160]

Project Number: 689

Dear Ms. Bladey:

On behalf of the nuclear energy industry, the Nuclear Energy Institute (NEI)¹ appreciates the opportunity to provide comments on the NuScale Power, LLC, Design-Specific Review Standard (DSRS) and Safety Review Matrix as requested in the subject *Federal Register* notice.

The following comments are intended to enhance the DSRS process in achieving the goals in the NRC's Staff Requirements Memorandum (SRM) COMGBJ—10-0004/COMGEA-10-0001, "Use of Risk Insights to Enhance the Safety Focus of Small Modular Reactor Reviews," dated August 31, 2010 (ML102510405). In particular, these comments are intended to assist in achieving the goal to enhance the clarity, predictability and efficiency of the NRC's pre-application and application review activities by aligning the review focus and resources to risk-significant structures, systems, and components that contribute most to safety. We note that NuScale Power has submitted their own comments that address the applicability of the DSRS based on their specific design, and we fully support those comments.

¹ NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

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Early and Frequent Interactions and Communications

Experience from design certification (DC), early site permit (ESP) and combined license (COL) applications has shown that early and frequent interactions and communications between the applicant (the term applicant is used to also include pre-applicants) and the NRC enhance the clarity, predictability and efficiency of the NRC's review. The NRC has established voluntary pre-application and DSRS processes to maximize the benefits from early and frequent interactions and communications with the applicant. The extent of benefits realized depends directly on the depth and timing of pre-application engagement.

A draft DSRS is developed in parallel with a DC application (DCA), thus the completeness of the draft DSRS is subject to the completeness of the scope of the design in the DCA. Correspondingly, the DSRS development is *iterative and evolves with the development of the DCA*. The NRC should share the details of the in-progress DSRS with the applicant, updating them as it evolves, just as the applicant should share the details of the design with the NRC as the design evolves. We appreciate that the staff issued the complete-as-possible draft DSRS more than one year prior to NuScale's planned application submittal. Consistent with the goals of clarity, predictability and efficiency, the NRC should address stakeholder comments, complete outstanding sections, and issue the final DSRS at least six months before the date of application.

It is possible that the maturity of some areas of the design may not support issuing the corresponding sections of the draft DSRS in accordance with the aforementioned schedule goals. In these cases, publication of the publicly available version of other sections of the draft DSRS, for which the design is mature enough to support publication on-schedule, should not be delayed as they wait for the completion of all draft DSRS sections. In this manner, the NRC should develop a process for publishing draft DSRS sections separately, based on availability, similar to what is done for the standard review plan. This will also benefit stakeholder review and comment, as it can be difficult to perform an adequate review in the allotted 60-day comment period when the draft DSRS sections are issued all at once.

Clarity for Design Specific Features

The intent of the DSRS is to use risk insights to establish staff guidance tailored to the specific details of the design in a manner that makes the review more safety-focused and efficient. The NRC accomplishes this by reviewing existing review guidance, i.e., the standard review plan (SRP), to determine which portions should be applied to the specific design, and whether changes to existing review guidance, or new review guidance, is necessary to address any new and/or innovative design features. Many of the SRP sections will either be referenced in the DSRS as "use-as-is" or will not be included in the DSRS because the SRP section is not applicable to the design (e.g., innovative design features obviate the need for systems structures and components (SSCs) addressed in the SRP section). Some sections of the SRP that are included in the DSRS may need to incorporate minor "editorial" modifications (e.g., nomenclature changes for design applicability) while others will require major revisions/replacement because the design meets a regulatory requirement or accomplishes a safety function in a manner different than described in the SRP.

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In this manner is important that the DSRS be tailored to the specifics of the design, such that the DSRS only contains review guidance on design features and SSCs that are included within the scope of the design, and uses SSC nomenclature consistent with the design. We understand that NuScale has provided numerous DSRS comments related to achieving this objective.

The value of the DSRS is also measured in its ability to address design-specific policy and technical issues in a manner that provides clarity and predictability to the DC applicant and the reviewer. For designs that incorporate new or innovative design features, one of the greatest sources of regulatory uncertainty is the resolution of new technical and policy issues associated with design-specific features. Therefore, consistent with the purpose and objectives of the SRP, the NRC should make the early resolution of these design-specific issues, and the incorporation of the resolution into the DSRS, a primary objective of the DSRS process. This would help minimize the potential that these issues remain unresolved and begin to adversely affect design finalization and NRC review. Some design-specific issues may be addressed in technical reports submitted by the DC applicant. In these cases, the NRC should use the review of these reports to resolve the design-specific issues and document the resolution in the DSRS.

Consistency with Established Regulatory Positions

Inherent in the development of the DSRS is the objective of maintaining consistency with established regulatory positions, except as noted upfront where new regulatory positions are needed to address design-specific issues. Thus, the DSRS should not establish new or different regulatory positions for portions of the design that are adequately addressed by existing guidance, and for which the new or different regulatory position could be equally applicable to other designs. In this manner, the NRC should ensure that revisions/replacements to sections of the SRP are only included in the DSRS where: 1) it is warranted by the innovative or unique features of the design, 2) there has been recent resolution of a generic issue that is applicable to the design, but which has not been reflected in the SRP, or 3) the applicant plans to deviate from the SRP and the NRC establishes a position for the design-specific approach. The NRC should also include a basis (e.g., conditions 1, 2 or 3, above) for the draft DSRS section, because in many cases it is not evident why the NRC is modifying or creating a new section for the DSRS.

Regulatory clarity, predictability and efficiency depend upon ensuring that the DSRS does not establish new or different regulatory positions except as necessary to address unique design features. We note that the NuScale Power draft DSRS Section 14.3.8 *Radiation Protection - Inspection, Test, Analysis and Acceptance Criteria (ITAAC)* contains several new acceptance criteria that specify the need for Tier 1 information and ITAAC, such as for the minimization of contamination, that were not necessary to support the NRC's certification of previous designs, and are not related to any features unique to the NuScale design. Thus, we believe that these acceptance criteria effectively establish a new or different regulatory position and should be removed from the NuScale Power draft DSRS. This issue has been raised in generic interactions related to standardized ITAAC, and that is the appropriate forum for dealing with ITAAC issues that are not unique to the NuScale design.

Early Resolution of Generic Policy and Technical Issues

When generic policy and technical issues exist that affect a design, resolving these issues well in advance of issuing the publicly available draft DSRS, and reflecting the resolution of the issues in the draft DSRS will enhance regulatory clarity, predictability and efficiency. In the case of SMRs, the NRC proactively identified potential generic issues in SECY-10-0034, "Potential Policy, Licensing, and Key Technical Issues for Small Modular Nuclear Reactor Designs," dated March 28, 2010, and has provided several status updates to the Commission on their resolution, the latest included in SECY-14-0095 "Status of the Office of New Reactors Readiness to Review Small Modular Reactor Applications," dated August 28, 2014. The nuclear industry has also been proactive to address generic issues by engaging the NRC in numerous public meetings and submitting several NEI white papers. These efforts have resulted in resolution of generic aspects of several issues related to SMR design certification applications, including the classification of systems, structures and components, risk approaches to SMR licensing, and the licensing structure for multi-module designs.

However, the following two generic issues have a direct impact on the clarity, predictability and efficiency of NRC review of DCAs and should be resolved soon so that they do not negatively affect the issuance of a final DSRS for NuScale or the submittal and review of DCAs.

Standardization of ITAAC: The NRC and the nuclear industry have been meeting since 2013 to develop standardized ITAAC and these interactions have resulted in significant alignment on the scope of ITAAC for DCAs, which is reflected in NEI 15-02, *Industry Guideline for the Development of Tier 1 and ITAAC Under 10 CFR Part 52*, Draft A of Revision 0, dated May 2015. The NuScale DCA is the lead applicant for NEI 15-02, and therefore NEI 15-02 should be incorporated into and reflected in the NuScale Power DSRS Section 14.3. We look forward to receiving NRC feedback on draft A of Revision 0 of NEI 15-02 as soon as possible, so that the guidance can be finalized for use and NRC endorsement in a regulatory guide. To adequately support NuScale's application schedule, our mutual objective should be to accomplish this by January 2016.

Use of Tier 2*: Since 2014, the NRC has been reassessing the need for and scope of Tier 2* in future design certifications. In a December 19, 2014, letter to the NRC, we provided a basis for our recommendation that Tier 2* information should not be included in future DCs. Pending resolution of this issue, we understand that SMR applicants do not plan to include Tier 2* information in their DCAs. Correspondingly, there should not be a discussion of Tier 2* in the DSRSs. We look forward to the NRC providing an update on their reassessment of the need for and scope of Tier 2* in future design certifications as soon as possible.

Finally, it is important that the purpose and objectives of the DSRS are consistently achieved across all of the sections. We understand that NuScale has provided numerous comments on the draft DSRS related to achieving this objective. Although variations in the level of detail in the design may contribute to these inconsistencies, we believe that a lack of clear instructions on the development of the DSRS sections is also a

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contributing factor. To this end, we support the NRC's plans to include guidance on the DSRS in the on-going update to Regulatory Guide (RG) 1.206, *Combined License Applications for Nuclear Power Plants*. As RG 1.206 is intended for applicants, and provides guidance relevant to their participation in the DSRS process, we recommend that the NRC also document (e.g., in an office instruction) the objectives of the DSRS and the steps for its development by NRC staff.

If you have any questions or require additional information, please contact Marc Nichol (202-739-8131; mrn@nei.org) or me.

Sincerely,



Russell J. Bell

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