U.S. NUCLEAR REGULATORY COMMISSION SUMMARY OF THE OCTOBER 27, 2022, OBSERVATION PREAPPLICATION PUBLIC MEETING WITH SMR, LLC (A HOLTEC INTERNATIONAL COMPANY) TO DISCUSS TECHNICAL SPECIFICATIONS TO SUPPORT THE CONSTRUCTION PERMIT APPLICATION FOR THE SMR-160 DESIGN

Meeting Summary

The U.S. Nuclear Regulatory Commission (NRC) held a preapplication public meeting on October 27, 2022, with SMR, LLC (SMR), a Holtec International Company, to discuss technical specifications (TS) to support the construction permit (CP) application for the SMR-160 design. Specifically, SMR (applicant) requested the meeting to discuss the NRC requirements and guidance for the development of TS in a CP application.

This virtual preapplication meeting had attendees from SMR, LLC, Holtec International, LLC, the NRC staff, and members of the public.

- The applicant referenced the TS guidance in NUREG-0800, Standard Review Plan Sections 16.0 and 16.1, and the draft interim staff guidance document issued for public comment in December 2021, in its request to discuss the development of TS for its CP application.[1, 2, 3]

- The NRC staff noted that this early engagement is beneficial to both the applicant and the NRC staff. These discussions of generic application of the guidance will help the applicant develop TS that can be implemented for its design and will support a more efficient NRC staff review of the operating license (OL) application.

- In response to the applicant's question of the staff's expectations of TS in the preliminary safety analysis report (PSAR) accompanying the CP application, the NRC staff responded that fully developed TS are not expected during the CP application stage.

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1 U.S. NRC, NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition (NUREG-0800, Formerly issued as NUREG-75/087)," Section 16.0, "Technical Specifications," Revision 3, dated March 2010. (Agencywide Documents and Access Management System (ADAMS) Accession No. ML100351425)

2 U.S. NRC, NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition (NUREG-0800, Formerly issued as NUREG-75/087)," Section 16.1, "Risk-informed Decision Making: Technical Specifications," Revision 1, March 2007 (ML100351425)

3 U.S. NRC, Draft Interim Staff Guidance, DNRL-ISG-2022-XX, "Safety Review of Light-Water Power-Reactor Construction Permit Applications," issued December 2021. (ML21165A157)

At the CP application stage, an applicant should identify the items to potentially be the subject of TS requirements for the categories stated in 10 CFR 50.36(c): safety limits, limiting safety system settings, limiting conditions for operation, surveillance requirements, design features, and administrative controls. The selection of structures, systems, and components (SSCs), and process parameters should be based on ensuring the validity of the design and analysis assumptions used in the preliminary safety analysis report (PSAR). The plant design should facilitate implementation of TS requirements for performance of surveillances and performance of remedial actions when limiting conditions for operation are not met. Such coordination of the design with the preliminary TS may avoid Specifications that are overly restrictive or difficult to implement.

- Consistent with the information in the PSAR regarding the plant design and safety analyses of design-basis accidents, anticipated operational occurrences, and other postulated events and transients, a CP applicant should list the items to potentially be the subject of TS limiting conditions for operation (LCOs) in accordance with the LCO selection criteria in 10 CFR 50.36(c)(2)(ii). Implementation of specified remedial actions (required actions and associated completion times) when LCOs are not met could be less onerous by appropriate design choices at the CP application stage.

  The NRC staff encourages a conservative approach to selecting items in each of the five categories of TS required by 10 CFR 50.36(c) recognizing that the selected items may not be all-inclusive and might change with the final design.

- In response to the applicant's question on what information would be included in a licensee-controlled Technical Requirements Manual (TRM), the NRC staff referenced the ESBWR and AP1000 design certification applications (DCAs) in which each applicant identified the SSCs that would be subject to availability controls in a TRM as part of its evaluation of the regulatory treatment of nonsafety systems (RTNSS – commonly pronounced "rit-ness").[4, 5, 6] The NRC staff noted that the applicant for the NuScale DCA performed a RTNSS evaluation but identified no SSCs needing availability controls.[7, 8, 9] The NRC staff encouraged future discussions on what would be included in a TRM to facilitate understanding of the design and to avoid unnecessary questions during the review of the CP and OL applications.

- The NRC staff suggested adhering to the format, style, and content guidance in the writer's guide for improved TS in TSTF-GG-05-01[10] noting that its use would support a more efficient staff review of TS and bases at the OL application stage. The NRC staff noted that

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4 U.S. NRC, SECY-94-084, "Policy and Technical Issues Associated with the Regulatory Treatment of Non-Safety Systems in Passive Plant Designs," March 28, 1994. (ML003708068)

5 U.S. NRC, SECY-95-132, "Policy and Technical Issues Associated with RTNSS in Passive Plant Designs (SECY-94-084)," May 22, 1995. (ML003708005)

6 NUREG-1966, "Final Safety Evaluation Report Related to the Certification of the Economic Simplified Boiling-Water Reactor Standard Design," Chapter 22, "Regulatory Treatment of NonSafety Systems." (ML14100A187)

7 NuScale Design Certification Application, Part 4, "Generic Technical Specifications." (ML20224A516)

8 NuScale Design Certification Application, Part 2, "Final Safety Analysis Report," Tier 2, Chapter 16, "Technical Specifications." (ML20224A505)

9 U.S. NRC, Final Safety Evaluation Report on the NuScale Design, Chapter 16, "Technical Specifications." (ML20205L409)

10 TSTF-GG-05-01, Revision 1, "Writer's Guide for Plant-Specific Improved Technical Specifications," August 2010. (ML12046A089)

the writer's guide is not endorsed by the NRC and there are minor departures from the writer's guide in standard TSs (STS - NUREGs 1430 to 1434, and 2194).[11]

The NRC staff observed that the SMR-160 design has similarities with the NuScale certified design and suggested that the applicant review the NuScale certified design generic TS and bases for guidance in drafting TS and bases for the SMR-160 design.[7]

- In response to the applicant's question on whether there has been a reactor design approval or certification application that proposed risk-informed TS, the NRC staff referenced the DCA for the U.S. Advanced Pressurized-Water Reactor (US APWR) design by Mitsubishi Heavy Industries, as an example of proposing risk-informed completion time provisions in its proposed generic TS. The NRC staff noted that the joint process, by the PWR and BWR Owners Groups' Technical Specifications Task Force (TSTF) and the NRC staff, for incremental improvements to the STS NUREGs, commonly referred to as the "TSTF traveler process," has been successful developing risk-informed improvements. Examples are risk-informed TS initiatives related to operational Mode entry with an inoperable LCO-required SSC, required action completion time risk-informed extensions, and surveillance test interval risk-informed extensions.

  For a new reactor design, the NRC staff noted the importance of understanding the accident analyses and plant operations to review the proposed LCOs against the LCO selection criteria in 10 CFR 50.36(c)(2)(ii) at both the CP and OL application stages. The NRC staff stated that the NuScale design certification (DC) applicant proposed to include the risk-informed TS initiative of TSTF-425 by including an administrative controls Surveillance Frequency Control Program Specification, and at the staff's request, stated the initial surveillance frequencies and their rationales or bases in Design Control Document Section 16.1 in Part 2 of its DCA. Usually, TS LCO required action completion times are proposed consistent with reference TS for equivalent plant conditions and may be revised with justifications that include risk insights. NRC staff review of proposed risk-informed TS requirements considers the maturity of the probabilistic risk assessment (PRA) model from which the risk insights are derived.

  In response to the applicant's question of whether the PRA could be used if it was further along in the peer review process, the NRC staff encouraged further discussion on this topic.

- The NRC staff received the following comments and questions from members of the public observing the meeting:

  - A member of the public requested the quality assurance information from the applicant and from the NRC and that this information should be included as a link in the meeting summary. In addition, the meeting summaries should have substance and details on the discussion. The NRC staff responded that information on the applicant's quality assurance program is found on the NRC's public website.

  - A member of the public referenced an Advisory Committee on Reactor Safeguards briefing of the Commission on the NuScale certified design and that it included several issues to be addressed by the COL applicant. The member of the public was

[11] See NRC public website for more information: https://www.nrc.gov/reactors/operating/licensing/techspecs.html

concerned that the NuScale review, with these outstanding issues, is referenced as a model to follow. The member of the public asked how a plant can be constructed without design information. The NRC staff responded that the CP application will include design information as required by the regulations and that information is reviewed by the staff and verified to satisfy the regulations before the permit is issued and construction begins.

- A member of the public requested clarification on whether the applicant is seeking a license under 10 CFR Part 50 or 52, whether there will be an environmental impact statement issued, and a timeline for the project. The NRC staff responded that the applicant has stated that it plans to submit an application for a CP under 10 CFR Part 50, an environmental review will be conducted consistent with regulations, and that the timing of the applicant's plans is a business decision about which the NRC cannot provide additional details.

- A member of the public requested that the meeting participation information (link to meeting and call-in information) be included in the meeting notice.