U.S. NUCLEAR REGULATORY COMMISSION SUMMARY OF THE OCTOBER 1, 2024, OBSERVATION PREAPPLICATION PUBLIC MEETING WITH SMR, LLC (A HOLTEC INTERNATIONAL COMPANY) TO DISCUSS CONTROL ROD DRIVE SYSTEM TESTING FOR THE SMR-300 DESIGN

Meeting Summary

The following summarizes the key points from the discussion during the meeting:

- SMR (Holtec) opened its presentation with an overview of the agenda and explained the purpose of the meeting as to describe its approach to meeting the Standard Review Plan (SRP) Section 3.9.4 Acceptance Criteria and to describe the control rod drive system (CRDS) design.[1] The desired outcome of the meeting was to align on the plan for the CRDS operability assurance program recognizing that the SMR-300 design will reference existing testing and operating experience (OE). SMR (Holtec) further stated that it wanted to identify essential parameters necessary to demonstrate applicability of existing testing and OE and identify the information that should be submitted to support the review.

- SMR (Holtec) stated that the fourth Review Area of SRP Section 3.9.4, regarding the operability assurance program, would be the focus of the meeting.

- SMR (Holtec) stated that during the September 2022 meeting, SMR (Holtec) asked the NRC staff to clarify the definition of operability assurance program.[2] Based on the NRC staff's response, SMR (Holtec) understood that operability assurance is comprised of life cycle testing, factory acceptance testing, startup testing, and in-service testing.

- SMR (Holtec) stated that it plans to reference previous test programs and OE on similar apparatus. SMR (Holtec) explained that it needs to demonstrate the applicability of previous test programs and OE. SMR (Holtec) stated that pre-service testing for the SMR-300 CRDS will be limited to factory acceptance testing and pre-operational and startup testing once installed. The NRC staff stated that the pressure retaining function of the CRDS should also be addressed.

- The NRC staff shared that SRP Section 4.6 provides guidance for startup testing.[3] SMR (Holtec) responded that it intends to follow the guidance, but that startup testing was not

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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," Section 3.9.4, "Control Rod Drive Systems," Revision 4, March 2017. https://www.nrc.gov/docs/ML1613/ML16133A472.pdf

2 U.S. NRC, Meeting Summary, "Enclosure 3 – 9-13-22 Meeting Summary of the Public Meeting with SMR, LLC, a Holtec International Company, to Discuss Control Rod Drive System," ML22252A194 part of ML22252A181.

3 U.S. NRC, NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," Section 4.6, "Functional Design of Control Rod Drive System," Revision 2, March 2007. https://www.nrc.gov/docs/ML0705/ML070540139.pdf

the focus of the meeting and would be addressed at a future engagement with the NRC staff.

- SMR (Holtec) asked if there are any essential parameters not listed that the NRC staff would be interested in seeing evaluated. The NRC staff responded that they would like to see more information regarding the upper internals flow characteristics. SMR (Holtec) responded that it plans to have a future discussion with the staff discussing these elements in more detail.

- SMR (Holtec) stated that it plans to compare essential parameters to those used in prior test programs and operating plants, stating that the SMR-300 Qualification Summary Report will justify the applicability of testing and OE.

- SMR (Holtec) asked if there was any documentation not listed on the presentation slides that the NRC staff would require in order to evaluate the CRDS. The NRC staff responded that there needs to be a comparison that would demonstrate the applicability of the OE used by SMR (Holtec) to the CRDS for the SMR-300 design.

- There were no questions or comments from members of the public, and the open session ended at 9:37 am.

- During the closed session, the NRC staff stated that SMR (Holtec) would need to be more specific in its description of similarities when comparing operating and tested designs, and the SMR-300 design. SMR (Holtec) responded that it will identify the slight changes to ensure it isn't invalidating the applicability of the existing program being referenced.

- The NRC staff expressed interest in reviewing the design operation under transient conditions. SMR (Holtec) stated that while the testing will only cover the normal conditions, the analysis will cover a wider range of operating conditions.

- The meeting ended at 9:54 am.