

**U.S. NUCLEAR REGULATORY COMMISSION SUMMARY OF THE SEPTEMBER 20, 2023,  
OBSERVATION PREAPPLICATION PUBLIC MEETING WITH SMR, LLC (A HOLTEC  
INTERNATIONAL COMPANY) TO DISCUSS CONCEPT OF OPERATIONS AND  
SIMULATOR DEVELOPMENT**

**Meeting Summary**

The U.S. Nuclear Regulatory Commission (NRC) held an observation public meeting on September 20, 2023, with SMR, LLC (SMR), a Holtec International Company (Holtec), to discuss preapplication information related to the SMR-160 concept of operations, Human Factors Engineering (HFE) planning, and development of a plant-referenced simulator.<sup>1</sup> Specifically, SMR (Holtec) requested the meeting to provide a high-level overview of the concept of operations and to receive NRC staff feedback on multi-unit simulator considerations for the SMR-160 design. SMR (Holtec) provided presentation slides for the public meeting.<sup>2, 3</sup> This included obtaining feedback on plans for simulator development with regards to the HFE verification and validation processes of NUREG-0711, "Human Factors Engineering Program Review Model," and with regards to declaration of a plant-reference simulator for licensing examinations in accordance with 10 CFR Part 55, "Operators' Licenses." This meeting summary satisfies the SMR (Holtec) request for review and feedback on its preapplication meeting materials.

Preapplication engagements, including this meeting, provide an opportunity for the NRC staff to engage in early discussions with a prospective applicant to offer licensing guidance and to identify potential licensing issues early in the licensing process. No decisions or commitments were made during the preapplication meeting.

This virtual, observation preapplication meeting had attendees from SMR (Holtec), NRC staff, and members of the public. The NRC staff and SMR (Holtec) discussed proprietary information during the closed session. Additionally, visitors from the Japan Nuclear Regulation Authority observed the meeting at NRC Headquarters.

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<sup>1</sup> Letter from A. Brenner, "SMR, LLC Preapplication Meeting Materials for September 20, 2023, Project No. 99902049," dated September 11, 2023, Agencywide Documents and Access Management System (ADAMS) Accession No. ML23254A365, part of ML23254A364.

<sup>2</sup> SMR, LLC, "Enclosure 2: SMR, LLC Meeting Presentation Materials for September 20, 2023," dated September 20, 2023, ML23254A367 – Public, part of ML23254A364.

<sup>3</sup> SMR, LLC, "Enclosure 1: SMR, LLC Meeting Presentation Materials for September 20, 2023," dated September 20, 2023, ML23254A366 – Proprietary, part of ML23254A364.

The following provides key discussions which elaborated on the content of the slides discussed during the meeting during the meeting:<sup>2</sup>

- In discussing concept of operations related to plant design, SMR (Holtec) stated that it has passive systems that rely on one-time, automatic DC powered valve actuation and there is no credit taken for operator action. The NRC staff sought clarification regarding designating a system as passive if a valve had to receive a signal to reposition. SMR (Holtec) said that the valve is not considered passive because it is DC powered and operates once to perform its safety function but that the system is still considered passive. After the meeting, the NRC confirmed that this classification is consistent with the statements in SECY-94-084, "Policy and Technical Issues Associated With the Regulatory Treatment of Non-Safety Systems in Passive Plant Designs," (ML003708068) which states, "Unlike the current generation of LWRs or the evolutionary ALWRs, the passive ALWR designs make extensive use of safety systems that rely on the driving forces of buoyancy, gravity, and stored energy sources. These passive systems supply safety-injection water, perform core and containment cooling, and perform other functions. These passive safety systems contain no pumps and include valves that are operated by either air pressure or dc electric power from batteries or use check valves actuated by the pressure differential across the valve."
- In conjunction with human system interface (HSI) discussions, SMR (Holtec) stated that the plant is designed to be highly automated such that the main role of the control room operator is to monitor plant status and evolutions to ensure both that the HSI is controlling properly and that the plant is responding correctly.
- Guidance documents used by SMR (Holtec) were described in the meeting materials and includes RG 1.149, "Nuclear Power Plant Simulation Facilities for Use in Operator Training, License Examinations, and Applicant Experience Requirements," (ML110420119).
- There were no questions from members of the public.

The open session ended and was followed by a closed session for SMR (Holtec) to briefly discuss propriety information related to:

1. Milestone descriptions and dates associated with plant-referenced simulator development to support operator training.
2. Proposed numbers of licensed reactor operators and senior reactor operators needed to operate one or more units.
3. Identification of common systems shared by multiple units at on site.

The meeting was adjourned.