

**U.S. NUCLEAR REGULATORY COMMISSION SUMMARY OF THE FEBRUARY 8, 2023,**  
**OBSERVATION PREAPPLICATION PUBLIC MEETING**  
**WITH SMR, LLC (A HOLTEC INTERNATIONAL COMPANY)**  
**TO DISCUSS THE SMR-160 INSTRUMENTATION & CONTROL HAZARDS ANALYSIS**

**Meeting Summary**

The U.S. Nuclear Regulatory Commission (NRC) held an observation public meeting on February 8, 2023, with SMR, LLC (SMR), a Holtec International Company (Holtec), to discuss preapplication information related to the SMR-160 instrumentation & control (I&C) hazards analysis.<sup>1</sup> Specifically, SMR (Holtec) requested the meeting to discuss its White Paper entitled, “SMR, LLC, 160 Hazard Analysis for I&C System Methodology Report No. HI-2230060, Rev. 0.”<sup>2</sup> SMR (Holtec) provided presentation slides for the public meeting.<sup>3</sup>

This virtual observation preapplication meeting had attendees from SMR (Holtec), NRC staff, and a member of the public. A closed session was conducted between the NRC staff and SMR (Holtec) to discuss proprietary information.

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.

The following summarizes the discussion during the open session of the meeting:

- SMR (Holtec) opened its presentation with the objective of the meeting to familiarize the staff with the SMR-160 I&C hazards analysis, to obtain staff feedback on whether it meets the applicable regulatory requirements, and to discuss areas that may pose potential risk to licensing.
- The NRC staff noted that it is working on a revision to Regulatory Guide 1.152. The NRC staff anticipates issuing the draft guide in the near-term for public comment and conducting a public meeting during the comment period. The draft guide includes an endorsement of Annex D of the Institute of Electrical and Electronics Engineers (IEEE) standard (Std) IEEE 7-4.3.2-2016 with respect to hazards analysis.<sup>4</sup> <sup>5</sup>The NRC staff

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<sup>1</sup> Letter from J. Hawkins, “SMR, LLC, Preapplication Meeting Materials for February 8, 2023,” dated January 23, 2023, Agencywide Documents and Access Management System (ADAMS) Accession No. ML23023A003, part of ML23023A002.

<sup>2</sup> SMR, LLC, “SMR, LLC, 160 Hazard Analysis for I&C System Methodology Report No. HI-2230060, Rev. 0,” dated January 23, 2023, ML23023A006 - Public, ML23023A005 – Proprietary, both part of ML23023A002.

<sup>3</sup> SMR, LLC, “SMR, LLC, Holtec International, SMR-160 I&C Hazard Analysis Overview,” January 23, 2023, ML23023A004, part of ML23023A002.

<sup>4</sup> U.S. NRC, Regulatory Guide 1.152, “Criteria for Use of Computers in Safety Systems of Nuclear Power Plants,” Revision 3, July 2011, ML102870022.

<sup>5</sup> Institute of Electrical and Electronics Engineers (IEEE), IEEE Std 7-4.3.2, “Criteria for Digital Computers in Safety Systems of Nuclear Power Generating Stations.”

noted that Annex D of IEEE Std 7-4.3.2 contains guidance on identification and control of hazards during the I&C life cycle development process.

- In response to the NRC staff's question on how the outcomes or outputs of the hazard analysis will be used later, SMR (Holtec) explained that the analysis looks at all the potential failures of the plant design to inform design changes to mitigate or eliminate the potential failures. SMR (Holtec) noted that it does not anticipate submitting a topical report on this topic.
- There were no questions or comments from members of the public.

The open session ended at 1:45 pm.

The following provides a non-proprietary summary of the discussion during the closed session of the meeting:

- The NRC staff noted that there are no regulatory requirements to perform a hazards analysis. However, the NRC has endorsed the use of hazards analyses methods as an acceptable means of meeting the regulatory requirements in Title 10 of the *Code of Federal Regulations* 50.55a for IEEE 603.<sup>6, 7</sup>
- The NRC staff asked how disciplines other than I&C will be considered in the hazards analysis processes. The NRC staff noted that the concept of hazards analysis is a systems approach which should include all aspects and disciplines of a system when identifying the sources of hazards. The NRC staff also noted that SMR (Holtec) may want to consider expanding the scope of the hazards analysis processes described in the white paper to include other disciplines, as it moves forward with the design.
- The NRC staff noted that following a process of conducting a hazards analysis and an iterative approach to address hazards when identified supports a better system design because it takes a wholistic approach to the design.
- SMR (Holtec) stated its plans to submit a revision to the White Paper to support a formal assessment by the NRC staff.

The closed session ended at 2:50 pm.

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<sup>6</sup> Title 10 of the *Code of Federal Regulations* (CFR), 50.55a, "Codes and Standards."

<sup>7</sup> IEEE Std 603, "Standard Criteria for Safety Systems for Nuclear Power Generating Stations."