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July 31, 2023

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: SMR, LLC Request for Written Assessment of White Paper Submitted with
Meeting Materials for July 26, 2023 (Project No. 99902049)

SMR, LLC is pleased to request written assessment of the white paper submitted in support of the July 26, 2023 preapplication meeting regarding the instrumentation and controls platform diversity evaluation to support the construction permit application for the SMR-160 design. SMR, LLC has estimated an additional 20 hours for the review of this material. If more hours are required for the review, please discuss with the SMR, LLC Director of Licensing.

Enclosure 1 provides written responses to questions provided by the NRC Staff in advance of the July 26, 2023 preapplication meeting.

If you have any questions or require any additional information, please contact Andrew Brenner, SMR-160 Director of Licensing, at a.brenner@holtec.com, (O) 856-957-2011, or (C) 215-704-8387.

Respectfully,

**Andrew
Brenner**

Digitally signed by Andrew
Brenner
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Andrew Brenner
Director of Licensing, SMR, LLC

Enclosures:

1. SMR, LLC Responses to NRC Staff Questions for July 26, 2023 (NP)

CC:

K. Trice (SMR, LLC, President)
J. Fleming (Holtec International, LLC, VP of Licensing, Regulatory Affairs & PSA)
J. Hawkins (SMR, LLC, Managing Director of SMR-160)
M. Hayes (USNRC, DNRL, NLIB, Branch Chief)
C. Lauron (USNRC, DNRL, NLIB, Senior Project Manager)
G. Cranston (USNRC, DNRL, NLIB, Senior Project Manager)
M. Sayoc (USNRC, DNRL, NLIB, Project Manager)

Responses to NRC Staff Feedback on 7/26 Public Meeting Materials

SMR, LLC is pleased to provide the following responses (in red) to NRC staff initial feedback (in black) on the subject meeting materials:

Please see initial feedback on the presentation materials on 7/26 Public Meeting on I&C diversity:

- In addition to the NUREG CR 6303 methods, Holtec may also want to consider the methods provided in [NUREG/CR-7007](#), "Diversity Strategies for Nuclear Power Plant Instrumentation and Control Systems." This NUREG provides a method that can be used to quantify the degree of diversity achieved for specific designs and is based on the same diversity categories defined in NUREG/CR 6303. Though there is not specific numeric criteria for determining acceptability of a diverse system, the results of this analysis strategy would provide a means for making a relative comparison of diverse systems and functions that can be used to establish a diversity basis for the plant I&C designs.

Thank you, we are aware of NUREG/CR-7007 and are considering it in our assessment. We are however focusing on using NUREG 6303 as the primary guidance for the evaluation.

- The Diversity analysis provided in the paper seems to address the diversity of functions performed by the DAS, however, the subsequent D3 analysis may also identify reliance on functions that are performed by systems other than the DAS. For these non-DAS functions, the NRC staff would anticipate a similar analysis to be performed for the systems or circuits performing these functions. Our experience is that most plants rely on functions performed by two or more diverse plant systems or components to satisfy the criteria of BTP 7-19 when performing the best estimate analysis methods to address the potential for CCF of the safety related digital I&C system. Ultimately, the NRC staff will be looking for assurance that all functions that are credited in the D3 analysis remain operable in the presence of a CCF of the safety protection system, regardless of what systems perform them.

The white paper presented is one piece of the overall D3 assessment being performed for SMR-160, focusing on the diversity between the two system architectures, as we feel that is a vital area to obtain early feedback on. The overall D3 scope addressing the point above will be provided in further licensing documentation.

- Holtec should be aware of the recent change in the NRC's policy on CCF and how this new policy will be implemented into regulatory guidance in the near future. This policy change has been issued on SECY 22-0-76, "Expansion of Current Policy on Potential Common-Cause Failures in Digital Instrumentation and Control Systems" and the NRC staff is currently working on a revision to Branch Technical Position 7-19 to adopt the

Responses to NRC Staff Feedback on 7/26 Public Meeting Materials

use of risk informed approaches that can be used for performance of D3 analysis. The new policy will not invalidate analysis methods performed in accordance with the previous policies and guidance, therefore, the acceptability of the analysis provided in the JEXK-0143-1048-P(R0) white paper would not be impacted by this policy change. However, the policy change introduces the possibilities of using risk informed alternative methods for addressing CCF in a D3 analysis, and Holtec may want to consider use of these methods as the criteria for them becomes available. The NRC recently held a public meeting on 7/11/20223 to discuss its plans for implementing this new policy on CCF and we anticipate additional public interactions as the guidance development proceeds.

Thank you for the feedback. We are aware of the ongoing revision to BTP 7-19; however, we do not plan to use the alternate methods being added.