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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Plan for Resolution of GSI-191 In-Vessel Downstream Effects for U.S. EPR Design Certification

Ref. 1: Letter, Sandra M. Sloan (AREVA NP Inc.) to Document Control Desk (NRC), "Closure Plan for Issues Associated with GSI-191 for the U.S. EPR Design Certification," NRC:10:111, December 14, 2010.

Ref. 2: Letter, Sandra M. Sloan (AREVA NP Inc.) to Document Control Desk (NRC), "Closure Plan for Issues Associated with GSI-191 for U.S. EPR Design Certification and Submittal of Revision 3 to Technical Report ANP-10293P, 'U.S. EPR™ Design Features to Address GSI-191,'" NRC:11:035, March 31, 2011.

In Reference 1, AREVA NP Inc. (AREVA NP) provided a closure plan for resolution of issues associated with GSI-191 supporting U.S. EPR design certification. On March 31, 2011, AREVA NP provided Revision 3 to technical report ANP-10293P, "U.S. EPR™ Design Features to Address GSI-191" (Reference 2) and responses to requests for additional information regarding GSI-191 issued prior to March 17, 2011 (with the exception of those related to in-vessel downstream effects). In Reference 2, AREVA NP committed to providing the path forward for resolution of in-vessel downstream effects by April 30, 2011.

To address in-vessel downstream effects, AREVA NP will perform additional separate effects testing of a simulated U.S. EPR fuel assembly. The fuel assembly testing will be performed to demonstrate that the Emergency Core Cooling System (ECCS) heat removal capability is adequate for situations where the presence of debris and chemical precipitates may inhibit core flow or may deposit on or within fuel assemblies. The testing will apply surrogates for the debris source term and chemical precipitates documented in Section 3.1.2 and Appendix D of ANP-10293P, Revision 3, and will be in accordance with the analytical methodology and test acceptance criteria documented in Appendix F of ANP-10293P, Revision 3. The enclosed attachment provides a timeline for resolution of U.S. EPR in-vessel downstream effects, including the following activities:

- Fuel assembly testing.
- Performing the supporting technical evaluations.
- Preparation and submittal of the associated licensing documentation, including:
 - Responses to outstanding RAIs related to in-vessel downstream effects (RAI 191, Questions 15.6.5-43 through 15.6.5-47 and Question 15.6.5-49; RAI 362, Questions 15.6.5-56 through 15.6.5-60; and RAI 428, Questions 15.6.5-85 through 15.6.5-88 and Question 15.6.5-95).
 - Updated, conforming responses to RAI 30, Questions 15.6.5-4, 15.6.5-7, 15.6.5-18, and 15.6.5-19.

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These activities provide the closure plan for resolving in-vessel downstream effects within the context of design certification for the U.S. EPR. This is a change in the licensing approach described in Reference 1, which proposed resolution of downstream effects issues after design certification.

AREVA NP is in the process of revising the fuel assembly separate effects test plan to conform to ANP-19203P, Revision 3, and has placed a draft of the test plan in the AREVA NP Twinbrook office for NRC inspection. The testing will be performed using the same test facility as in previous U.S. EPR fuel assembly testing (located at Continuum Dynamics, Inc., in Ewing, New Jersey), using a simulated U.S. EPR fuel assembly, and applying the same basic test protocols for separate effects testing previously observed by NRC staff.

AREVA NP requests prompt NRC feedback regarding the acceptability of the test plan or any concerns. NRC staff will be invited to observe the testing as indicated in Attachment 1. AREVA NP will maintain frequent communications with the NRC staff during test preparations and during preparation of associated licensing documentation.

If you have any questions related to this information, please me by telephone at (434) 832-2369 or by e-mail at sandra.sloan@areva.com.

Sincerely,



Sandra M. Sloan, Manager
New Plants Regulatory Affairs
AREVA NP Inc.

Enclosure

cc: G. Tesfaye
Docket 52-020

Attachment 1 - Timeline for Resolution of U.S. EPR In-Vessel Downstream Effects

