

## **NRR-PMDAPEm Resource**

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**From:** Williams, Shawn  
**Sent:** Friday, January 13, 2017 5:38 AM  
**To:** Chamberlain, Amy Christine; Redd, Jason P.  
**Cc:** RICE, APRIL R  
**Subject:** Request for Additional Information Vogtle (LAR-16-016) Regarding Stainless Steel Embed Plates  
**Attachments:** Final RAI questions regarding Vogtle and Summer SS Embed Plate LARs.docx

Ms. Chamberlain and Mr. Redd,

By letter dated August 29, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16242A399), Southern Nuclear Operating Company (the licensee) requested an amendment to the Combined Operating License Numbers NPF-91 and NPF-92, for Vogtle Electric Generating Plant, Units 3 and 4.

The U.S. Nuclear Regulatory Commission staff is reviewing the submittal and has determined that additional information in the attachment is needed to complete its review.

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**Recipients:**  
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Tracking Status: None  
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REQUESTS FOR ADDITIONAL INFORMATION  
LICENSE AMENDMENT REQUEST  
REGARDING STAINLESS STEEL EMBED PLATES  
SOUTHERN NUCLEAR OPERATING COMPANY  
VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 (LAR-16-016)

By letter dated August 29, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16242A399), Southern Nuclear Operating Company (the licensee) requested an amendment to the Combined Operating License Numbers NPF-91 and NPF-92, for Vogtle Electric Generating Plant, Units 3 and 4.

The U.S. Nuclear Regulatory Commission staff is reviewing the submittal and has determined that additional information below is needed to complete its review.

**Regulatory Basis:**

10 CFR Part 50, GDC 1, "Quality Standards and Records," requires that structures, systems, and components important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed.

10 CFR Part 50, GDC 2, "Design Bases for Protection Against Natural Phenomena," requires that structures, systems, and components important to safety shall be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunamis, and seiches without loss of capability to perform their safety functions.

10 CFR Part 50, GDC 4, "Environmental and Dynamic Effects Design Bases," requires that structures, systems, and components important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing and postulated accidents, including loss-of-coolant accidents.

10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," Appendix D, "Design Certification Rule for the AP1000 Design," Section VIII.B.6 requires prior NRC approval for changes to Tier 2\* information. The proposed changes affect Tier 2\* information and therefore requires NRC approval.

**RAI Question 1:**

The proposed Tier 2\* wording describes the testing methodology and results used to justify that the specific population of inaccessible welds that did not receive the appropriate nondestructive examination (NDE) can meet their design requirements. Currently, the proposed Tier 2\* wording describes the impacted welds as:

*The non-conforming partial penetration welds associated with reinforcement bar sizes #6 and #9 C3J couplers installed on ASTM A240 stainless steel embedment plates under CA01 that did not undergo nondestructive examination at the time of fabrication...*

While the proposed Tier 2\* wording describes the impacted welds, it does not clearly state that the testing is only representative of the couplers that are referenced in the LAR. The test results represent only this specific population that have been installed under CA01; therefore the test results and conclusions in the LAR are not applicable to other populations of couplers.

- a. Please clarify the proposed Tier 2\* wording so that it is clear that it is only applicable to this specific population of couplers, and that it is not applicable for future welds that may not receive the appropriate NDE.

### **RAI Question 2:**

The design of the Phase II test assembly was to aid in the fit-up for the tensile testing machine, and to attempt to isolate the failure point at the test weld. The test assembly design ground out the threads of the test coupler, filled in the test coupler with weld material, and welded an oversized coupler to the test coupler with a fixture weld. The staff previously requested justification to show that this design would not have any impact on the mechanical properties of the test weld. The LAR states that hardness testing was performed. From the description in the LAR, the hardness testing only shows the potential changes to the mechanical properties at the fillet weld surface. Based on the test assembly design, it is likely that the majority of the heat input would impact the partial joint penetration (PJP) weld and the heat affected zone (HAZ).

- a. Please provide additional detail related to the hardness testing that demonstrates the test assembly design had no impact on the test weld mechanical properties (particularly at the PJP and HAZ).

The LAR states that several Phase II test welds were “influenced by the fixture weld” during tensile testing and therefore they were not considered as part of the test results.

- b. Please explain what “influenced by the fixture weld” means. The LAR states that there was no impact to the hardness, but some of the test samples’ failures were “influenced by the fixture weld.”