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NL-07-1516

Mr. James E. Dyer
Director, Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

**Vogtle Electric Generating Plant Unit 1
Mitigation of Alloy 82/182 Pressurizer Butt Welds in 2008**

- References:
- (1) Letter from J. T. Gasser to U. S. NRC, "Examination and Mitigation of Alloy 82/182 Pressurizer Butt Welds," dated March 6, 2007 (NL-07-0483)
 - (2) Letter from J. E. Dyer (U. S. NRC) to J. T. Gasser, "Confirmatory Action Letter – Vogtle Electric Generating Plant Units 1 and 2 (CAL No. NRR-07-005 dated March 12, 2007)
 - (3) Electric Power Research Institute (EPRI) Final Report, "Advanced FEA Evaluation of Growth of Postulated Circumferential PWSCC Flaws in Pressurizer Nozzle Dissimilar Metal Welds, (MRP-216): Evaluations Specific to Nine Subject Plants, EPRI, Palo Alto, CA: 2007. 1015383," dated July 31, 2007
 - (4) Nuclear Energy Institute Letter to J. E. Dyer, Submittal of the EPRI Advanced Finite Element Analysis Final Report, dated August 1, 2007

In the Reference 1 submittal, Southern Nuclear Operating Company (SNC) provided the plans and schedule for the mitigation of pressurizer Alloy 82/182 butt welds for Vogtle Electric Generating Plant Unit 1 (VEGP-1). In that submittal, SNC stated that, based on the current refueling outage schedule, VEGP-1 would complete the mitigation action in the spring of 2008, i.e., beyond the industry-sponsored Materials Reliability Program MRP-139 implementation date of December 31, 2007.

Reference 1 also provided regulatory commitments regarding the VEGP-1 schedule for mitigation actions, enhanced Reactor Coolant System (RCS) leakage monitoring, and inspection reporting requirements. Also, specific to VEGP-1, a commitment was made to adopt contingency plans to shut down by

December 31, 2007 to perform weld overlays, if technical information, being developed by EPRI through advanced finite element analyses, does not provide reasonable assurance to the NRC that primary water stress corrosion cracking (PWSCC) conditions will remain stable and not lead to rupture without significant time from the onset of detectable leakage. These regulatory commitments were confirmed in the Reference 2 Confirmatory Action Letter.

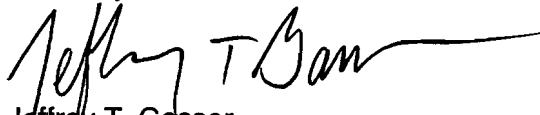
EPRI's advanced finite element analysis, Reference 3, was recently completed and submitted by Reference 4. The analysis, which is applicable to VEGP-1, assumed the existence of large circumferential cracks in all the analyzed locations. This assumption is very conservative considering field inspections and experience which has shown a relatively low number of PWSCC indications in these components. With this conservatism, the analysis concluded there is significant time for crack growth between the onset of detectable leakage and development of a critical flaw size.

This letter confirms that the Reference 3 EPRI Advanced Finite Element Analysis report bounds the VEGP-1 pressurizer Alloy 82/182 welded pipe/nozzle components. SNC has reviewed the report and verified that the input addresses VEGP-1 weld configurations and loads, that the analysis and conclusions are applicable to VEGP-1 design, and that all welds representative of VEGP-1 are adequately addressed by the crack growth analyses and associated sensitivity cases. Finally, the analytical results applicable to VEGP-1 satisfy the leakage evaluation criteria presented in the report.

Therefore, SNC concludes the analytical results presented in Reference 3, and the current plant enhanced leakage monitoring program, provides reasonable assurance and an adequate basis for performing mitigation activities during the scheduled refueling outage in spring of 2008 as committed to in Reference 1, after which time VEGP-1 will fully satisfy the MRP-139 inspection/mitigation requirements for pressurizer Alloy 82/182 components.

If you have any questions concerning this submittal, please contact Rick Graham at (205) 992-5808.

Sincerely,



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Executive Vice President

JTG/DRG/cag

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