



South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

August 6, 2007  
NOC-AE-07002199  
10CFR50.55a

Mr. James E. Dyer  
Director, Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
One White Flint North  
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South Texas Project  
Units 1 & 2  
Docket Nos. STN 50-498, STN 50-499  
Mitigation of Alloy 600/82/182 Pressurizer Butt Welds in 2008

- References:
- (1) Letter from David Rencurrel, STPNOC, to U. S. NRC Document Control Desk, "Inspection and Mitigation of Alloy 82/182 Pressurizer Butt Welds - Revised," dated February 22, 2007 (NOC-AE-07002120, ML070600123)
  - (2) Letter from J. E. Dyer, NRC, to James J. Sheppard, STPNOC, "Confirmatory Action Letter – South Texas Project Units 1 and 2 (TAC Nos. MD4186 and MD 4187)", dated March 27, 2007 (AE-NOC-07001608, ML070790336)
  - (3) Electric Power Research Institute 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) Letter from Alexander Marion, Nuclear Energy Institute, to James E. Dyer, NRC, "Transmittal of EPRI Report "Advanced FEA Evaluation of Growth of Postulated Circumferential PWSCC Flaws in Pressurizer Nozzle Dissimilar Metal Weld (MRP-126): Evaluations Specific to Nine Subject Plants", dated August 1, 2007

Dear Mr. Dyer:

In the Reference 1 submittal, STP Nuclear Operating Company (STPNOC) provided the plans and schedule for the mitigation of pressurizer Alloy 600/82/182 butt welds for South Texas Project (STP) Units 1 & 2. In that submittal, STPNOC stated that, based on the current refueling outage schedule, STP Unit 2 would complete the pressurizer nozzle weld mitigation in its Spring 2007 outage and STP Unit 1 would complete the mitigation action in the Spring of 2008; i.e., beyond the industry-sponsored Materials Reliability Program MRP-139 implementation deadline of December 31, 2007.

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Reference 1 also provided regulatory commitments regarding the STP Unit 1 and Unit 2 schedule for mitigation actions, enhanced Reactor Coolant System (RCS) leakage monitoring, and inspection reporting requirements.

STPNOC completed the mitigation and inspection of the Unit 2 pressurizer nozzles as committed in Reference 1 and STP Unit 2 satisfies the MRP-139 inspection/mitigation requirements for pressurizer Alloy 600/82/182 components.

Specific to STP Unit 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 (CAL).


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

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

Therefore, STPNOC concludes the analytical results presented in Reference 3 and the current plant enhanced leakage monitoring program provide a reasonable and adequate basis for performing mitigation or inspection activities during the scheduled refueling outages in spring of 2008 as committed to in Reference 1, after which time STP Unit 1 will fully satisfy the MRP-139 inspection/mitigation requirements for pressurizer Alloy 600/82/182 components.

There are no new commitments in this letter.

If you have any questions concerning this submittal, please contact Mr. A. W. Harrison at (361) 972-7298, or me at (361) 972-7867.

  
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Vice President,  
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cc:  
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