



FPL Energy
Seabrook Station

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August 2, 2007

Docket No. 50-443

SBK-L-07138

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

Seabrook Station
Justification for Mitigation of Alloy 600/82/182 Pressurizer Butt Welds in 2008

References:

1. Letter from FPL Energy Seabrook, LLC (L-2007-025) to U. S. NRC, "Supplemental Response Regarding Inspection and Mitigation of Alloy 600/82/182 Pressurizer Butt Welds," dated February 21, 2007
2. Letter from J. E. Dyer (U. S. NRC) to Gene St. Pierre, Site Vice President, "Confirmatory Action Letter – Seabrook Station, Unit 1," (March 12, 2007)
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. Nuclear Energy Institute Letter to J. Dyer, Submittal of the EPRI Advanced Finite Element Analysis Final Report, dated August 1, 2007

In the Reference 1 submittal, FPL Energy Seabrook, LLC (FPL Energy Seabrook) provided the plans and schedule for the mitigation of pressurizer Alloy 600/82/182 butt welds for Seabrook Station. In that submittal, FPL Energy Seabrook, LLC stated that, based on the current refueling outage schedule, Seabrook Station would complete the mitigation action in the Spring of 2008; i.e., beyond the industry-sponsored Materials Reliability Program inspection schedule (MRP-139) of December 31, 2007.

Reference 1 also provided regulatory commitments regarding the Seabrook Station schedule for mitigation actions, enhanced Reactor Coolant System (RCS) leakage monitoring, and inspection reporting requirements. Also, specific to Seabrook Station, 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 the MRP (or by industry) through advanced finite element analyses, does not provide reasonable assurance to the NRC that primary water stress corrosion crack (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 Seabrook Station, 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 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 Seabrook Station pressurizer Alloy 82/182 welded pipe / nozzle components. FPL Energy Seabrook has reviewed the report and verified that the input addresses Seabrook Station weld configurations and loads, that the analysis and conclusions are applicable to Seabrook Station design, and that all welds representative of Seabrook Station are adequately addressed by the crack growth analyses and associated sensitivity cases. Finally, the analytical results applicable to Seabrook Station satisfy the leakage evaluation criteria presented in the report.

Therefore, FPL Energy Seabrook believes that 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 outage in spring of 2008 as committed to in Reference 1, after which time Seabrook Station will fully satisfy the MRP-139 inspection/mitigation requirements for pressurizer Alloy 600/82/182 components.

If you have any questions concerning this submittal, please contact Mr. Paul Freeman, Engineering Manager at (603) 773-7452

Very truly yours,

FPL Energy Seabrook, LLC


Gene St. Pierre
Site Vice President

cc: S. J. Collins, NRC Region I Administrator
G. E. Miller, NRC Project Manager
W. J. Raymond, NRC Resident Inspector
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