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RC-07-0118

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTN: Mr. James E. Dyer, Director
Office of Nuclear Reactor Regulation

Dear Mr. Dyer:

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS)
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
MITIGATION OF ALLOY 600/82/182 PRESSURIZER BUTT WELDS IN 2008
(CR-07-00439)

- References:
1. Jeffrey B. Archie (SCE&G) Letters to Document Control Desk (NRC), "Inspection and Mitigation of Alloy 82/182 Pressurizer Butt Welds," dated January 31, 2007 and February 19, 2007
 2. J. E. Dyer (NRC) Letter to Jeffrey B. Archie (SCE&G), "Confirmatory Action Letter - Virgil C. Summer Nuclear Station (TAC NO. MD4188)," dated March 15, 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. E. Dyer, "Submittal of the EPRI Advanced Finite Element Analysis Final Report," dated August 1, 2007

In the Reference 1 submittals, South Carolina Electric & Gas Company (SCE&G) provided the plans and schedule for the mitigation of pressurizer Alloy 600/82/182 butt welds for VCSNS. In that submittal, SCE&G stated that, based on the current refueling outage schedule, VCSNS 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.

Reference 1 also provided regulatory commitments regarding the VCSNS schedule for mitigation actions, enhanced Reactor Coolant System (RCS) leakage monitoring, and inspection reporting requirements. Also, specific to VCSNS, 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 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).

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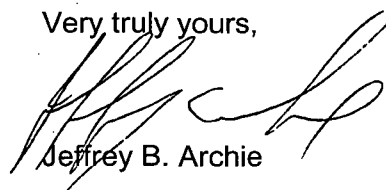
EPRI's advanced finite element analysis, Reference 3, was recently completed and submitted by Reference 4. The analysis, which is applicable to VCSNS, assumed the existence of large circumferential cracks in all the analyzed locations. This assumption is very conservative considering field inspections 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 EPRI Advanced Finite Element Analysis report (Reference 3) bounds the VCSNS pressurizer Alloy 82/182 welded pipe / nozzle components. SCE&G has reviewed the report and verified that the input addresses VCSNS weld configurations and loads, that the analysis and conclusions are applicable to VCSNS design, and that all welds representative of VCSNS are adequately addressed by the crack growth analyses and associated sensitivity cases. Finally, the analytical results applicable to VCSNS satisfy the leakage evaluation criteria presented in the report.

Therefore, SCE&G believes the analytical results presented in Reference 3, and 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 VCSNS will fully satisfy the MRP-139 inspection/mitigation requirements for pressurizer Alloy 600/82/182 components.

Should you have questions, please call Mr. Bruce Thompson at (803) 931-5042.

Very truly yours,



Jeffrey B. Archie

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