Entergy

Entergy Nuclear South
Entergy Operations, Inc.
17265 River Road
Killona, LA 70057
Tel 504 739 6660
Fax 504 739 6678
kwalsh1@entergy.com

Kevin T. Walsh
Vice President, Operations
Waterford 3

W3F1-2007-0039

August 7, 2007

Mr. James E. Dyer
Director, Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Mail stop O-5-E-7
Rockville, MD 20852

SUBJECT: Mitigation of Alloy 600/82/182 Pressurizer Butt Welds in 2008
Waterford Steam Electric Station, Unit 3
Docket No. 50-382
License No. NPF-38

REFERENCES:

1. Entergy Operations, Inc. letter to U.S. NRC, "*Inspection and Mitigation of Alloy 600/82/182 Pressurizer Butt Welds,*" dated February 21, 2007 (CNRO-2007-00005)
2. Letter from J. E. Dyer (U.S. NRC) to Entergy Operations, Inc, "Confirmatory Action Letter - Waterford Steam Electric Station, Unit 3 (TAC No. MD4196) dated March 20, 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: 1015383 dated July 31, 2007
4. Nuclear Energy Institute Letter to J Dyer, "Transmittal of EPRI 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," dated August 1, 2007

Dear Sir or Madam:

In the Reference 1 submittal, Entergy Operations, Inc. (Entergy) provided the plans and schedule for the mitigation of pressurizer Alloy 600/82/182 butt welds for Waterford Steam Electric Station, Unit 3 (Waterford 3). In that submittal, Entergy stated that, based on the current refueling outage schedule, Waterford 3 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.

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Reference 1 also provided regulatory commitments regarding the Waterford 3 schedule for mitigation actions, enhanced Reactor Coolant System (RCS) leakage monitoring, and inspection reporting requirements. Also, specific to Waterford 3, a commitment was made to develop plans and strategies to shut down before December 31, 2007 and perform mitigation actions on the pressurizer dissimilar metal (DM) butt welds, if technical information, being developed by the EPRI through advanced finite element analyses, does not provide reasonable assurance 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 Waterford 3, 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 Waterford 3 pressurizer Alloy 82/182 welded pipe / nozzle components. Entergy has reviewed the report and verified that the input addresses Waterford 3 weld configurations and loads, that the analysis and conclusions are applicable to Waterford 3 design, and that all welds representative of Waterford 3 are adequately addressed by the crack growth analyses and associated sensitivity cases. Finally, the analytical results applicable to Waterford 3 satisfy the leakage evaluation criteria presented in the report.

Therefore, Entergy 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 Waterford 3 will fully satisfy the MRP-139 inspection/mitigation requirements for pressurizer Alloy 600/82/182 components.

This letter contains no commitments. If you have any questions concerning this submittal, please contact Ron Williams at 504-739-6255.

Sincerely,

KTW/RLW

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

Dr. Bruce S. Mallett
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

NRC Senior Resident Inspector
Waterford 3
P.O. Box 822
Killona, LA 70066-0751

U.S. Nuclear Regulatory Commission
Attn: Mr. Kaly Kalyanam
MS O-7E1
Washington, DC 20555-0001