



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

January 28, 2009

Vice President, Operations  
Entergy Operations, Inc.  
Waterford Steam Electric Station, Unit 3  
17265 River Road  
Killona, LA 70057-3093

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 1, GRAND GULF NUCLEAR STATION,  
UNIT 1, RIVER BEND STATION, UNIT 1, AND WATERFORD STEAM  
ELECTRIC STATION, UNIT 3 - REQUEST FOR ADDITIONAL INFORMATION  
RE: RELIEF REQUEST CEP-ISI-011 FOR THIRD 120-MONTH INSERVICE  
TESTING INTERVAL (TAC NOS. MD8826, MD8827, MD8828, AND MD8829)

Dear Sir or Madam:

By letter dated May 20, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML081620369), Entergy Operations, Inc. (Entergy, the licensee), submitted an application for a request to utilize, pursuant to paragraph 50.55a(a)(3)(i) of Title 10 of the *Code of Federal Regulations* (10 CFR), the alternative requirements in American Society of Mechanical Engineers Boiler and Pressure Vessel Code (Code), Code Case N-747 in lieu of the requirements of Table IWB-2500-1, Examination Category B-A, Item Number B1.40.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the application and determined that additional information is required in order to complete the review. The enclosed request for additional information was discussed with Mr. W. Brice of your staff. Mr. Brice agreed to provide a response within 30 days of the receipt of this letter.

If you have any questions, please contact me at (301) 415-1480.

Sincerely,

A handwritten signature in black ink, appearing to read "N. Kalyanam".

N. Kalyanam, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-313, 50-416,  
50-458, and 50-382

Enclosure:  
Request for Additional Information

cc: w/encl: Distribution via ListServ

REQUEST FOR ADDITIONAL INFORMATION  
RELIEF REQUEST FOR ALTERNATIVE CEP-ISI-011 FOR  
ARKANSAS NUCLEAR ONE, UNIT 1  
GRAND GULF NUCLEAR STATION, UNIT 1  
RIVER BEND STATION, AND  
WATERFORD STEAM ELECTRIC STATION, UNIT 3  
ENTERGY OPERATIONS, INC.

By letter dated May 20, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML081620369), Entergy Operations, Inc. (Entergy, the licensee), submitted an application for a request to utilize, pursuant to paragraph 50.55a(a)(3)(i) of Title 10 of the *Code of Federal Regulations* (10 CFR), the alternative requirements in American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Code Case N-747 in lieu of the requirements of Table IWB-2500-1, Examination Category B-A, Item Number B1.40.

The U.S. Nuclear Regulatory Commission (NRC) staff requests that the licensee provide additional analyses to support the elimination of the ASME Code, Section XI-required volumetric examination for the reactor vessel head-to-flange weld. This alternative, as established in Code Case N-747, may be rejected for endorsement by the staff in Regulatory Guide 1.147 for the reasons outlined below:

Alternatives to current inservice inspection (ISI) requirements that use a probabilistic risk assessment as a basis must initially be submitted as a risk-informed ISI program pursuant to 10 CFR 50.55a(a)(3)(i) (i.e., on a plant-specific basis and not on a generic basis).

The NRC staff requests that Entergy provide a more quantitative technical basis for the alternative proposed in Code Case N-747. First, no supporting neutron fluence assessment or documentation to establish a conservative neutron fluence estimate for these welds and a conservative reference temperature nil ductility ( $RT_{NDT}$ ) value for the welds is provided. Thus, there is no data to support a conclusion that the fracture toughness is low. Second, the methods in ASME Code Appendix G to Section XI apply only to pressure-temperature limit methods and not to ISI inspection requirements.

The additional supporting analyses for the alternative proposed in CEP-ISI-011 must address the two technical issues outlined above, specifically:

- (1) Provide a determination (or conservative estimation) of the neutron fluence at the flange location and explain how a sufficiently high plant-specific fracture toughness is assured at the location of interest (i.e., show that the toughness of the limiting Waterford 3 material at the plant-specific boltup temperature is consistent with assumptions made in the technical basis).
- (2) Explain how the results of the Appendix G-related analysis directly support the requested ISI program relief.

Enclosure

January 28, 2009

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**SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 1, GRAND GULF NUCLEAR STATION, UNIT 1, RIVER BEND STATION, UNIT 1, AND WATERFORD STEAM ELECTRIC STATION, UNIT 3 - REQUEST FOR ADDITIONAL INFORMATION RE: RELIEF REQUEST CEP-ISI-011 FOR THIRD 120-MONTH INSERVICE TESTING INTERVAL (TAC NOS. MD8826, MD8827, MD8828, AND MD8829)**

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Sincerely,

**/RA/**

N. Kalyanam, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
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**ADAMS Accession No. ML083390757**

\*No major change from Staff provided RAI dated

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NRR/DCI/CVIB*	NRR/LPL4/BC	NRR/LPL4/PM
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DATE	1/28/09	1/27/09	01/13/09	1/28/09	1/28/09

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