

July 22, 2002

Mr. Michael Krupa
Director, Nuclear and Safety Engineering
Entergy Operations, Inc.
1340 Echelon Parkway
Jackson, MS 39213-8293

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - CORRECTION TO
AUTHORIZATION OF RELIEF REQUEST RE: REQUEST FOR RELIEF FROM
THE REQUIREMENTS OF THE AMERICAN SOCIETY OF MECHANICAL
ENGINEERS (ASME) BOILER AND PRESSURE VESSEL CODE (CODE)
CONCERNING AUTHORIZATION TO USE NEW DESIGN OF MECHANICAL
NOZZLE SEAL ASSEMBLY (MNSA) (TAC NO. MB4272)

Dear Mr. Krupa:

By letter dated March 1, 2002, as supplemented by letters dated March 6, March 29, April 11, and May 1, 2002, Entergy Operations, Inc. (Entergy), requested relief from ASME Code, Section XI, requirements for IWA-4170 required repairs. Entergy requested Nuclear Regulatory Commission (NRC) staff approval to use the new design of the MNSA in temporary applications on locations in the reactor coolant system that exhibit leakage due to primary water stress corrosion cracking at Waterford Steam Electric Station, Unit 3.

The staff evaluated the information provided in the submittal and determined that the proposed alternative would provide an acceptable level of quality and safety for the requested two cycles. Therefore, by letter dated July 3, 2002, NRC authorized Entergy's proposed alternative pursuant to 10 CFR 50.55a(a)(3)(i). A copy of our related Safety Evaluation (SE) was also enclosed.

Errors were discovered on page 2 of the cover letter and page 8 of the SE (Section 4.0, "CONCLUSION"). Revised sheets of these two pages are enclosed with the corrections identified by a marginal vertical bar. Please replace page 2 of the cover letter and page 8 of the SE of the previous submittal with the enclosed, revised sheets.

Mr. M. Krupa

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Please call N. Kalyanam, at (301) 415-1480, with any questions you may have.

Sincerely,

/RA/

N. Kalyanam, Project Manager, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosure: Page 2 of the cover letter, Page 8 of the SE

cc w/encls: See next page

M. Krupa

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Please call N. Kalyanam, at (301) 415-1480, with any questions you may have.

Sincerely,

/RA/

N. Kalyanam, Project Manager, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosure: Page 2 of the cover letter, Page 8 of the SE

cc w/encls: See next page

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Mr. M. Krupa

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for additional clarifying information from Waterford 3, if the relief request was intended for a period exceeding two operating cycles. These aspects, however, are less significant when the use of the MNSA-2s is limited to two operating cycles. The staff did not review the design stress reports with respect to use of the MNSAs beyond a time period of two operating cycles. Therefore, if an application for extended operation, i.e., beyond the approved two operating cycles, is submitted, the staff will need to evaluate all current and any new data, including stress and fatigue calculations, that may pertain to long-term usage before approval is granted for extended operation.

This authorization is valid for two operating cycles of the current inspection interval, which ends in June 30, 2007.

The staff's safety evaluation is enclosed.

Sincerely,

/RA/

Robert A. Gramm, Chief, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosure: Safety Evaluation

cc: w/encl: See next page

- (2) Entergy has used minimum wall thickness in its reinforcement calculations to assure that the pressurizer shell thickness is adequate.
- (3) Entergy will evaluate the area surrounding the leaking nozzles or heater sleeves during the counterbore machining process to verify that no significant degradation of the pressurizer wall annulus region has occurred.
- (4) If the MNSA-2 device leaks, the bolts may be exposed to borated water or steam under conditions in which deposits or slurries develop. Under these conditions and at stress levels present in the MNSA-2 application, the bolts will operate satisfactorily for at least one fuel cycle. Should a leaking MNSA-2 be discovered, it shall be repaired/replaced as part of the walkdown inspections performed in response to Generic Letter 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants." These walkdown inspections are performed prior to entering unit outages. Therefore, the existence of leaking MNSA conditions would be limited to one cycle.
- (5) As required by IWA-4820, a VT-1 preservice inspection will be performed on all MNSA-2 installations in accordance with IWB-2200.
- (6) During plant startup (Mode 3) after initial MNSA-2 installation and during subsequent plant restarts following scheduled outages, the MNSA-2 will be pressure tested and inspected for leakage. To ensure quality of installation and continued operation with the absence of leakage, a pressure test with visual inspection will be performed on each of the installed MNSA-2s with any insulation removed. The test will be performed as part of plant restart and will be conducted at normal operating pressure, with the test temperature determined in accordance with the Waterford 3 P-T Limits, as stated in the Waterford 3 Technical Specifications. Additionally, VT-2 examination of the external edge of the counterbore region will be performed to verify no leakage is present that would not be detected by the leakoff nozzle.

The NRC staff has reviewed the proposed licensee actions and limitations noted above, and concludes that they are sufficient to assure proper installation and operation of the MNSA-2 for their intended use and duration.

4.0 CONCLUSION

The NRC staff concludes that, pursuant to 10 CFR 50.55a(a)(3)(i), the use of MNSA-2s as an alternative to an ASME Code Section XI repair on any leaking nozzles or heater sleeves of the type described above, may be authorized for a period not to exceed two operating cycles, since it is found to provide an acceptable level of quality and safety. This authorization is valid for two operating cycles of the current ISI interval applicable for Waterford 3, which ends on June 30, 2007.

Principle Contributors: T. Bloomer, M. Hartzman

Date: July 3, 2002

Waterford Generating Station 3

cc:

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