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CNRO-2004-00002

January 16, 2004

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

SUBJECT: NRC Order EA-03-009 60-Day Report

Waterford Steam Electric Station, Unit 3
Docket No. 50-382
License No. NPF-38

- REFERENCES:
1. Entergy Operations, Inc. letter to the NRC, *Relaxation Request to NRC Order EA-03-009 for the Vent Line Nozzle*, dated August 27, 2003 (CNRO-2003-00034)
 2. Entergy Operations, Inc. letter to the NRC, *Relaxation Request to NRC Order EA-03-009 for the Control Element Drive Mechanism Nozzles*, dated September 15, 2003 (CNRO-2003-00038)
 3. Entergy Operations, Inc. letter to the NRC, *Relaxation Request to NRC Order EA-03-009 for the In-Core Instrumentation Nozzles*, dated October 24, 2003 (CNRO-2003-00058)

Dear Sir or Madam:

On February 11, 2003, the NRC issued NRC Order EA-03-009 (the Order) addressing inspection requirements for reactor pressure vessel (RPV) heads at pressurized water reactors. The NRC stated that the actions in the Order are interim measures, necessary to ensure that licensees implement and maintain appropriate measures to inspect and, as necessary, repair RPV heads and associated penetration nozzles. Section IV.E of the Order requires licensees to submit a report detailing the inspection results within sixty (60) days after returning the plant to operation.

Entergy Operations, Inc. (Entergy) performed the required RPV head inspections at Waterford Steam Electric Station, Unit 3 (Waterford 3) during the recent refueling outage RF-12. Waterford 3 returned to operation on November 22, 2003.

The enclosure to this letter provides the 60-day report as required by Section IV. E of the Order. In summary, Entergy did not identify any boric acid leakage or primary water stress corrosion cracking (PWSCC) during the RF12 RPV head inspections.

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In addition to meeting the requirements of Section IV.E of the Order, this letter meets previous commitments documented in the referenced letters to include the results of the inspections in the 60-day report.

There are no commitments contained in this letter.

If you have any questions or require additional information, please contact Guy Davant at (601) 368-5756.

Sincerely,



MAK/GHD/ghd

Enclosure: NRC Order EA-03-009 60-Day Report

cc: Mr. W. A. Eaton (ECH)
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ENCLOSURE

CNRO-2004-0002

**WATERFORD STEAM ELECTRIC STATION, UNIT 3
NRC ORDER EA-03-009 60-DAY REPORT**

**WATERFORD STEAM ELECTRIC STATION, UNIT 3
 NRC ORDER EA-03-009 60-DAY REPORT**

Waterford Steam Electric Station, Unit 3 (Waterford 3) is a Combustion Engineering (CE) designed unit with Alloy 600 reactor pressure vessel (RPV) head penetrations which are subject to NRC Order EA-03-009 (Reference 1). Entergy either complied with the Order or received relaxation in accordance with the Order, where necessary (References 2, 3, and 4) by performing inspections of the Waterford 3 RPV head during refueling outage RF-12, which was conducted in the fall of 2003. In accordance with Section IV.E of the Order, results of the RPV head inspections performed during RF-12 are provided in the tables below.

Inspection Area	Inspection Method	Extent of Inspection	RF-12 Findings
Visual Inspection of RPV Head (Reference 1)	BMV of entire RPV head surface, including all nozzle penetrations.	Performed a BMV examination of 100% of the RPV head surface, including 360° around each nozzle penetration.	A BMV inspection of the RPV head was conducted using visual and boroscopics techniques. No boric acid deposits were identified.
NDE of CEDM Penetrations (91) (Reference 4)	UT of nozzle wall	Inspected 2 inches above the J-groove weld to the blind zone of the CEDM nozzle (1.544 inches above the bottom of the nozzle).	A Westinghouse open housing UT probe was used to perform the examinations. The exams revealed no PWSCC indications in the CEDM nozzles.
	UT of J-groove weld (triple point exam)	Examined the extent of J-groove weld next to nozzle to 0.060-inch depth.	The open housing UT probe did not reveal any PWSCC indications in the 91 CEDM J-groove welds.
	Manual ECT of one (1) special interest area of 1 CEDM nozzle J-groove weld	Examined the outside diameter (OD) wetted surface area corresponding to a special interest indication on 1 CEDM nozzle in order to verify no PWSCC flaw in that region.	A manual ECT exam was conducted on the exterior surface of the nozzle. No indications of PWSCC were identified.
	UT of nozzle annulus (leakage assessment)	Interrogated the interference fit in the nozzle annulus above J-groove weld for leak path assessment.	The open housing probe examination revealed no leak path present in the annulus region of the CEDM nozzles.

Inspection Area	Inspection Method	Extent of Inspection	RF-12 Findings
NDE of ICI Penetrations (10) (Reference 3)	UT of nozzle wall	Inspected 2 inches above the J-groove weld (except for counter-bore liftoff) to the blind zone of the ICI nozzle.	The open housing probe UT examination revealed no PWSCC indications in the 10 ICI nozzles.
	ECT of counter-bore region	The open housing probe ECT examination of the ID of the nozzles included 100% of the counter-bore region of the 10 ICI nozzles.	The open housing probe ECT examinations revealed no indications of PWSCC in the counter-bore region of the 10 ICI nozzles.
	Manual PT and ECT of lower extent of nozzle.	Inspected the lower extent of the blind zone on the 10 ICI nozzles.	Manual PT exams were conducted on the blind zone areas. Six (6) nozzles had initial indications that required further examination with the ECT method, and in some cases an engineering evaluation. The indications that exceeded Code requirements were removed by grinding and PT cleared.
	UT of nozzle annulus (leakage assessment)	Interrogated the interference fit in nozzle annulus above J-groove weld for leakage path.	The open housing probe examination revealed no leak path present in the annulus region of the ICI nozzles.
NDE of Vent Line Penetration (1) (Reference 2)	ECT of nozzle and J-groove weld wetted surface area	Performed ECT of wetted surface from a minimum of 2 inches above the J-groove weld to the end of the vent line nozzle and including the weld.	The ECT examination revealed no indications of PWSCC on the weld or nozzle.

LEGEND:

BMV - Bare Metal Visual

CEDM - Control Element Drive Mechanism

ECT - Eddy Current Examination

ICI - In-Core Instrumentation

NDE - Non-Destructive Examination

PT - Liquid Dye Penetrant Testing

PWSCC - Primary Water Stress Corrosion Cracking

UT - Ultrasonic Testing

REFERENCES:

1. NRC letter to licensees, *Issuance of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors*, dated February 11, 2003
2. NRC letter to Entergy Operations, Inc., *Arkansas Nuclear One, Unit 2 (ANO-2) and Waterford Steam Electric Station, Unit 3 (Waterford 3) - Relaxation Request from U. S. Nuclear Regulatory Commission (NRC) Order EA-03-009 for the Vessel Head Penetration Vent Line Nozzle (TAC Nos. MB9882 and MB9883)*, dated October 2, 2003
3. NRC letter to Entergy Operations, Inc., *Waterford Steam Electric Station, Unit 3 (Waterford 3) - Relaxation Request from U. S. Nuclear Regulatory Commission (NRC) Order EA-03-009 for the Incore Instrument (ICI) Nozzles (TAC No. MC0812)*, dated November 7, 2003
4. NRC letter to Entergy Operations, Inc., *Waterford Steam Electric Station, Unit 3 (Waterford 3) - Relaxation Request from U. S. Nuclear Regulatory Commission (NRC) Order EA-03-009 for the Control Element Drive Mechanism Nozzles (TAC No. MB9644)*, dated November 12, 2003