



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

October 14, 2011

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

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 – REQUEST FOR
ALTERNATIVE W3-ISI-018, INSPECTION OF REACTOR PRESSURE VESSEL
HEAD CONTROL ELEMENT DRIVE MECHANISM NOZZLES DURING THE
THIRD 10-YEAR INSERVICE INSPECTION INTERVAL (TAC NO. ME5702)

Dear Sir or Madam:

Pursuant to paragraph 50.55a(a)(3)(ii) of Title 10 of the *Code of Federal Regulations* (10 CFR), by letter dated February 16, 2011, Entergy Operations, Inc. (the licensee), submitted request for alternative W3-ISI-018, "Inspection of Reactor Pressure Vessel Head Control Element Drive Mechanism Nozzles during the Third Ten-Year Inservice Inspection Interval," for U.S. Nuclear Regulatory Commission (NRC) review and authorization. The request pertained to augmented examination of reactor vessel head (RVH) control element drive mechanism (CEDM) nozzles at Waterford Steam Electric Station, Unit 3 (Waterford 3) for the third 10-year inservice inspection (ISI) interval, which began on May 31, 2008, and is scheduled to end on July 1, 2017. The licensee requested relief from the examination requirements of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) Case N-729-1, "Alternative Examination Requirements for PWR [Pressurized-Water Reactor] Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial Penetration Welds, Section XI, Division 1," as required and conditioned by 10 CFR 50.55a(g)(6)(ii)(D). Specifically, the licensee stated that the bottom of the CEDM nozzles contains a threaded area that cannot be effectively examined volumetrically to the extent required by Code Case N-729-1, and justified examination of an alternative volume for each nozzle. The NRC staff granted the verbal authorization of this request on April 6, 2011.

The licensee identified physical limitations which prevent full volumetric inspections of the nozzle below the J-groove weld. The licensee performed engineering evaluations, which consist of a finite element and a fracture mechanics crack growth analysis, to show that a postulated through-wall crack in the unexamined region of nozzle below the J-groove weld toe will not propagate to the toe of the J-groove weld within one operating cycle.

The NRC staff concludes that the proposed alternative provides reasonable assurance of structural integrity and leak tightness of the CEDM nozzles, and that complying with the requirements of ASME Code Case N-729-1, as required and conditioned by 10 CFR 50.55a(g)(6)(ii)(D), would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(ii) and authorizes the licensee's proposed alternative at Waterford 3, for the 17th operating cycle,

beginning in spring of 2011, up to the commencement of the 18th refueling outage in fall of 2012 when the RVH is replaced.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in this relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

The NRC staff's safety evaluation is enclosed.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael T. Markley". The signature is written in a cursive style with a large initial "M".

Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosure:
Safety Evaluation

cc w/encl.: Distribution via Listserv



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR ALTERNATIVE W3-ISI-018, INSPECTION OF

REACTOR VESSEL HEAD CONTROL ELEMENT DRIVE MECHANISM NOZZLES

DURING THIRD 10-YEAR INSERVICE INSPECTION INTERVAL

ENERGY OPERATIONS, INC.

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

1.0 INTRODUCTION

By letter dated February 16, 2011 (Reference 1), Entergy Operations, Inc. (the licensee), submitted request for alternative W3-ISI-018, "Inspection of Reactor Pressure Vessel Head Control Element Drive Mechanism Nozzles During the Third Ten-Year Inservice Inspection Interval," for U.S. Nuclear Regulatory Commission (NRC) review and authorization. The request pertained to augmented examination of reactor vessel head (RVH) control element drive mechanism (CEDM) nozzles at Waterford Steam Electric Station, Unit 3 (Waterford 3) for the third 10-year inservice inspection (ISI) interval. The licensee requested relief from the inspection requirements of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) Case N-729-1, "Alternative Examination Requirements for PWR [Pressurized-Water Reactor] Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial Penetration Welds, Section XI, Division 1," as required and conditioned by paragraph 50.55a(g)(6)(ii)(D) of Title 10 of the *Code of Federal Regulations* (10 CFR). Specifically, the licensee stated that the bottom of the CEDM nozzles contains a threaded area that cannot be effectively examined volumetrically to the extent required by Code Case N-729-1, and justified examination of an alternative volume for each nozzle.

The licensee planned to replace the RVH during refueling outage (RFO) 17 concurrent with replacement of the original steam generators. Replacement of each component would necessitate that a temporary opening be made in the containment. The licensee discovered a manufacturing condition with the replacement steam generators which would prevent their installation during RFO 17. Replacing the RVH alone in RFO 17 and then the steam generators in RFO 18 would require that temporary openings be made in the containment during sequential refueling outages.

Enclosure

On April 6, 2011, the NRC staff verbally authorized the use of Relief Request W3-ISI-018, which was documented in a memorandum dated April 18, 2011 (ADAMS Accession No. ML111010371). This safety evaluation documents the NRC staff's basis for the verbal authorization.

2.0 REGULATORY EVALUATION

The regulations in 10 CFR 50.55a(g)(6)(ii)(D) require that licensees of existing operating PWRs augment their existing ISI programs to examine the RVH penetration nozzles in accordance with ASME Code Case N-729-1, subject to the conditions specified in 10 CFR 50.55a(g)(6)(ii)(D), paragraphs (2) through (6). Paragraph (3) of 10 CFR 50.55a(g)(6)(ii)(D) states, in part, that

Instead of the specified 'examination method' requirements for volumetric and surface examinations in Note 6 of Table 1 of Code Case N-729-1, the licensee shall perform volumetric and/or surface examination of essentially 100 percent of the required volume or equivalent surfaces of the nozzle tube, as identified by Figure 2 of ASME Code Case N-729-1.

The regulations in 10 CFR 50.55a(a)(3) state, in part, that alternatives to the requirements of 10 CFR 50.55a(g) may be used when authorized by the NRC, if the applicant demonstrates that: (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The licensee's request for alternative, which defines an alternative examination volume or surface for each nozzle, has been submitted on the basis that compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The ISI Code of record for Waterford 3 for the third 10-year ISI interval, which began on May 31, 2008, and is scheduled to end on July 1, 2017, is Section XI of the ASME Code, 2001 Edition through the 2003 Addenda.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Request for Alternative

3.1.1 Components Affected

Ninety-one (91) RPV head CEDM Nozzles, 02-T-01 through 02-T-91, and their associated J-groove welds identified by item number B4.20 in Table 1 of ASME Code Case N-729-1.

3.1.2 Code Requirements

The regulations in 10 CFR 50.55a(g)(6)(ii)(D)(1) require, in part, that licensees of existing operating PWRs shall augment their existing ISI programs with ASME Code Case N-729-1, subject to the conditions specified in 10 CFR 50.55a(g)(6)(ii)(D)(2) through (6). The licensee is to perform a volumetric and/or surface examination of essentially 100 percent of the required volume or equivalent surfaces of the nozzle tube, as identified in Figure 2 of ASME Code Case N-729-1. Figure 2 identifies the required volume of the tube to be inspected as a distance

"a" above the highest point of the root of the J-groove weld to a distance "a" below the lowest point of the toe of the J-groove weld. The distance "a" is equal to 1.5 inches (38 mm) for incidence angle, Θ , ≤ 30 degrees and for all nozzles ≥ 4.5 inches (115 mm) outside diameter (OD) or 1-inch (25 mm) for $\Theta \geq 30$ degrees; or to the end of the tube, whichever is less. If a surface examination is being substituted for a volumetric examination on a portion of a penetration nozzle that is below the toe of the J-groove weld, the surface examination shall be of the inside and outside wetted surface of the penetration nozzle not examined volumetrically.

3.1.3 Licensee's Reason for Request

The licensee stated that Code-compliant CEDM inspections cannot be performed due to physical limitations which prevent examination of essentially 100 percent of the required volume of the nozzle below the J-groove weld, and the alternative surface examination procedure would result in a high radiation exposure to the workers, between 27 and 45 person-rem for examination of all 91 nozzles (Reference 2). The licensee planned to replace the RVH during RFO 17 in the spring of 2011 when the steam generator was planned to be replaced, but the licensee discovered a manufacturing condition with the replacement steam generators which would prevent their installation during RFO 17. Replacing the RVH alone in RFO 17 and the steam generators in RFO 18 would require temporary openings to be made in containment during sequential refueling outages. The licensee states that each of these options, Code-compliant examination of essentially 100 percent of the required volume or replacement of the RVH during RFO 17, would result in hardship without a compensating increase in the level of quality and safety.

3.1.4 Licensee's Proposed Alternative and Basis for Use

The licensee proposes to perform ultrasonic (UT) volumetric examination, qualified in accordance with the requirements of 10 CFR 50.55a(g)(6)(ii)(D)(4), from the inside diameter (ID) of each CEDM nozzle from the applicable distance "a", defined in Figure 2 of Code Case N-729-1, above the highest point on the root of the J-groove weld down to a point approximately 1.544 inches above the bottom of the nozzle. The 1.544-inch distance is determined by the length of the threaded portion at the bottom of the nozzle that is used to attach the CEDM guide-cone plus a length resulting from the chamfer region and the size of the ultrasonic transducer. The licensee will also perform a bare metal visual inspection of the RVH surface and a demonstrated volumetric leak path assessment of the J-groove weld.

The licensee performed engineering evaluations, which consist of a finite element (FE) and a fracture mechanics (FM) crack growth analysis, to show that a postulated through-wall crack in the unexamined region of nozzle below the J-groove weld toe will not propagate to the toe of the J-groove weld within one operating cycle. This analysis is documented in the licensee's Engineering Report M-EP-2003-004, Rev. 0 (Reference 3).

The licensee stated that the combination of the qualified UT examinations to the extent possible, along with the engineering evaluations, demonstrate that the integrity of the pressure boundary will be maintained until the RVH can be replaced during RFO 18 in the fall of 2012.

3.2 NRC Staff Evaluation

The susceptibility of RVH penetration nozzles in PWRs to primary-water stress-corrosion cracking (PWSCC) is a safety concern. The nozzles are nickel-based alloys and are welded using nickel-based weld metal to the RVH. Primary-water coolant, high-tensile stresses, and elevated operating temperatures can result in PWSCC of the susceptible nickel-based alloys used in the CEDM nozzles, J-groove weld, and butter material. The subject CEDM nozzles at Waterford 3 meet the conditions for PWSCC and, therefore, may be susceptible to cracking in the nozzles and associated welds which could result in nozzle ejection and/or leakage of boric acid causing corrosion of the low-alloy steel head.

The OD of the Waterford 3 CEDM nozzles is 4.050 inches and the incident angles vary between 0 degrees and 49.7 degrees. Therefore, the distance "a" in Figure 2 of Code Case N-729-1 is equal to 1.5 inches (38 mm) for nozzle incidence angle, Θ , ≤ 30 degrees or 1 inch (25 mm) for $\Theta \geq 30$ degrees; or to the end of the tube, whichever is less.

The licensee has identified physical limitations which prevent full volumetric inspections of the nozzle below the J-groove weld. These limitations include a guide-cone-threaded connection with a welded set screw and two tack welds and a 45° chamfer at the cone-nozzle interface. The licensee has calculated the distance from the bottom of the nozzle that cannot be volumetrically examined due to these physical limitations. This length consists of the threaded portion of the nozzle (1.25 inches) plus the width of the chamfer (0.094 inches) plus the distance that the UT transducer needs for contact and coupling (0.20 inches). The sum of these three values is 1.544 inches. The NRC staff concludes that these values are reasonable.

The as-built length of each nozzle below the toe of each J-groove weld has been evaluated based on examination of the Waterford 3 nozzles in RFO 12. The length below the J-groove weld toe that can be examined is given in the table below in the column "Minimum Length Examined by UT (inch)" for the bounding nozzle group incidence angles. The NRC staff concludes that the basic design of the subject CEDM nozzles with threaded guide-cones makes UT examination to the distance "a" below the toe of the J-groove weld impossible without extensive modification of the nozzle tube and guide-cone.

Nozzle Group (Head Angle Degrees)	Minimum Length Examined by UT (inch)	Predicted Propagation in One Cycle (inch)
0	1.029	0.265
7.8	1.002	0.250
29.1	0.637	0.160
49.7	0.420	0.160

3.2.1 Hardship Evaluation

To overcome the physical limitations which prevent volumetric examination to the required distance, the guide-cones would have to be removed by grinding off the set-screw welds and the two guide-cone tack welds, and the nozzle and guide-cone would have to be redesigned, machined, and the guide-cones would have to be reinstalled. The NRC staff concludes that this

procedure would result in a significant occupational radiological exposure to the personnel performing these activities.

The licensee has the option of performing surface inspections of the ID and OD wetted surfaces of each nozzle to meet the current requirements for the volumetric inspection. In a letter dated August 13, 2004 (Reference 2), in response to the NRC staff's request for additional information (RAI) related to Waterford 3's Relaxation Request #4 to NRC Order EA-03-009 for the Control Element Drive Mechanism Nozzles, the licensee estimated that surface examination would result in a high-radiation exposure to the workers, between 27 and 45 person-rem for examination of all 91 nozzles. The NRC staff concludes that removal, modification, and reinstallation of the guide-cones or performing a manual surface examination of the nozzle would result in exposure to personnel of a significant radiation dose, resulting in a hardship.

The licensee planned to replace the RVH during RFO 17 in the spring of 2011 when the steam generators were to be replaced. The licensee stated that it discovered a manufacturing condition with the replacement steam generators which would prevent their installation during RFO 17. The NRC staff concludes that replacing the RVH alone in RFO 17 would present a significant hardship since temporary openings needed in the containment would need to be made during RFO 17 to replace the RVH and then again during RFO 18 to replace the steam generators.

Therefore, the NRC staff concludes that compliance with the inspection requirements of 10 CFR 50.55a(g)(6)(ii)(D) would result in a hardship.

3.2.2 Proposed Alternative Evaluation

As an alternative to the Code-required volumetric examinations, the licensee has proposed to perform a UT examination of the subject nozzles from the required distance "a" above the root of the J-groove weld, per Code Case N-729-1, to the maximum extent possible below the J-groove weld. The values for these examination distances below the J-groove weld, based on previous UT examinations, are shown in the table in Section 3.2 of this safety evaluation. The examination will be performed by personnel and techniques qualified in accordance with the requirements of 10 CFR 50.55a(g)(6)(ii)(D)(4).

The licensee analyzed the propagation distance of a hypothetical through-wall crack located in the uninspected zone at the bottom of the nozzle with its tip at the upper boundary of the unexamined zone and extending down to a point where cracking is no longer expected (Reference 3). This analysis consisted of two parts: an FE analysis of the J-groove weld residual stress and the operational pressure and temperature loads, and an FM evaluation of the distance that the postulated through-wall crack could propagate during one cycle. The analysis was performed for four different RVH-penetration nozzle incident angles: 0, 7.8, 29.1, and 49.7 degrees. In response to the NRC staff's previous RAI related to Request for Alternative W3-ISI-016 (Reference 4), the licensee stated that each of these groups represented the bounding condition for the nozzles higher on the head (i.e., analysis for the 29.1 degree group bounds the intermediate nozzles between 7.8 and 29.1 degrees). The FE analysis used the as-built geometry and sizes that had been determined from previous UT nozzle examinations at a sister plant. In response to the NRC staff's previous RAI concerning whether reanalysis using as-built data from Waterford 3 is necessary (Reference 2), the licensee stated

that the Waterford 3 as-built nozzle configurations, determined by UT examination of each Waterford 3 CEDM nozzle during RFO 12, are bounded by the previous analysis and no revision to the analysis is necessary. This conclusion and the FM evaluation of crack growth within one refueling cycle were accepted by the NRC staff in a safety evaluation dated March 22, 2005 (Reference 5). The column "Predicted Propagation in One Cycle (inch)" in the table in Section 3.2 of this safety evaluation lists the values for the predicted propagation distance for the appropriate bounding case of the incidence angle. These values were provided on page 12 of the licensee's RAI response dated October 24, 2003 (Reference 6), for a previous relief request dated September 15, 2003 (Reference 7). The NRC staff accepted the analysis of this relief request in a safety evaluation dated November 7, 2003 (Reference 8), conditioned on the acceptance of the crack-growth equation and constants that were used. The NRC staff notes that the crack-growth equation and constants that were used in the licensee's analysis are the same as those for RPV head penetration nozzles given in ASME Code, Section XI, Appendix O, 2004 Edition and, therefore, concludes their use is acceptable.

The licensee provided data (table in Section 3.2 of this safety evaluation)) for the length of the CEDM nozzle below the toe of the J-groove weld that can be examined by UT, for each of the Waterford 3 CEDM nozzle groups that was examined with UT, along with the predicted propagation length in one cycle. When the calculated crack-propagation distance in one cycle of operation is less than the distance below the J-groove weld toe which is inspected using UT, the nozzle pressure boundary integrity is assured for at least one cycle of operation. For each of the nozzle groups in the table, the predicted propagation distance in one cycle of operation is less than one-half of the distance below the J-groove weld toe than can be examined by UT. Furthermore, a crack would have to propagate past the toe of the J-groove weld to the weld root before the pressure boundary integrity would be violated. Based on the above, the NRC staff concludes that there is sufficient margin to ensure pressure boundary integrity of the Waterford 3 RVH CEDM nozzles for one operating cycle and that the licensee's proposed alternative provides reasonable assurance of structural integrity and leak tightness of the CEDM nozzles.

The NRC staff notes that a similar alternative was authorized for Waterford 3 on July 23, 2010, for CEDM nozzle examination (Reference 9). Furthermore, inspections performed on these nozzles during RFO 16 did not detect any PWSCC.

In summary, the NRC staff concludes that the licensee's proposed alternative inspection provides a reasonable assurance of structural integrity and leak tightness of the CEDM nozzles for at least one cycle of operation, and that compliance with the requirements of 10 CFR 50.55a(g)(6)(ii)(D)(3) would result in hardship without a compensating increase in the level of quality and safety.

3.2.3 Regulatory Commitments

In its letter dated February 16, 2011, the licensee made the following regulatory commitment scheduled to be completed during the spring 2011 refueling outage:

The alternative examination proposed by W3-ISI-018 will be performed for the Waterford 3 CEDM nozzle examinations.

The NRC staff concludes that reasonable controls for the implementation and for subsequent evaluation of proposed changes pertaining to the regulatory commitments are best provided by the licensee's administrative processes, including its commitment management program. The regulatory commitments do not warrant the creation of regulatory requirements (items requiring prior NRC approval of subsequent changes). The staff concludes these regulatory commitments are acceptable.

4.0 CONCLUSION

As set forth above, the NRC staff concludes that the proposed alternative provides reasonable assurance of structural integrity and leak tightness of the CEDM nozzles, and that complying with the requirements of ASME Code Case N-729-1, as required and conditioned by 10 CFR 50.55a(g)(6)(ii)(D), would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(ii) and authorizes the licensee's proposed alternative at Waterford 3, for the existing RVH until the RFO 18 in the fall of 2012 when it will be replaced.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in this relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

5.0 REFERENCES

1. Steelman, W. J., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Request for Alternative W3-ISI-018, Inspection of Reactor Pressure Vessel Head Control Element Drive Mechanism Nozzles during the Third Ten-Year Inservice Inspection Interval," dated February 16, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML110480484).
2. Burford, F. G., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Response to NRC Request for Additional Information Pertaining to Waterford 3 Relaxation Request #4 to NRC Order EA-03-009 for the Control Element Drive Mechanism Nozzles," dated August 13, 2004 (ADAMS Accession No. ML042320558).
3. Entergy Nuclear South, "Fracture Mechanics Analysis for the Assessment of the Potential for Primary Water Stress Corrosion Crack (PWSCC) Growth in the Uninspected Regions of the Control Element Drive Mechanism (CEDM) Nozzles at Waterford Steam Electric Station, Unit 3," Engineering Report M-EP-2003-004 Rev. 0, September 2003; transmittal letter dated September 15, 2003, from M. A. Krupa, to U.S. Nuclear Regulatory Commission (ADAMS Accession No. ML032790349).
4. Murillo, R. J., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Response to NRC Request for Additional Information for Alternative W3-ISI-016, Inspection of Reactor Pressure Vessel Head Control Element Drive Mechanism Nozzles during Third Ten-Year Inservice Inspection Interval," dated November 2, 2009 (ADAMS Accession No. ML093080128).

5. Berkow, H. N., U.S. Nuclear Regulatory Commission, letter to Joseph E. Venable, Entergy Operations, Inc., "Safety Evaluation for Waterford Steam Electric Station, Unit 3 - Relaxation Request from U. S. Nuclear Regulatory Commission (NRC) First Revised Order EA-03-009 for Control Rod Drive Mechanism (CEDM) Nozzles (TAC No. MC2643), dated March 22, 2005 (ADAMS Accession No. ML050820683).
6. Krupa, M. A., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Response to a Request for Additional Information Pertaining to Relaxation Request to NRC Order EA-03-009 for the Control Element Drive Mechanism Nozzles," dated October 24, 2003 (ADAMS Accession No. ML033110181).
7. Krupa, M. A., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Relaxation Request to NRC Order EA-03-009 for the Control Element Drive Mechanism Nozzles," dated September 15, 2003 (ADAMS Accession No. ML032790346).
8. Berkow, H. N., U.S. Nuclear Regulatory Commission, letter to Michael A. Krupa, Entergy Operations, Inc., "Safety Evaluation for Waterford Steam Electric Station Unit 3, Order (EA-03-009) Relaxation Request for Examination Coverage for Reactor Pressure Vessel Head Control Element Drive Mechanism Penetration Nozzles," dated November 12, 2003 (ADAMS Accession No. ML033160192).
9. Markley, M. T., U.S. Nuclear Regulatory Commission, letter to Entergy Operations, Inc., "Waterford Steam Electric Station, Unit 3 - Request for Alternative W3-ISI-016, Inspection of Reactor Pressure Vessel Head Control Element Drive Mechanism Nozzles during Third 10-Year Inservice Inspection Interval (TAC No. ME2411)," dated July 23, 2010 (ADAMS Accession No. ML101470453).

Principal Contributor: Jay Wallace

Date: October 14, 2011

beginning in spring of 2011, up to the commencement of the 18th refueling outage in fall of 2012 when the RVH is replaced.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in this relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

The NRC staff's safety evaluation is enclosed.

Sincerely,

/RA/

Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-382

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Safety Evaluation

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