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

April 1, 2014

Mr. Rafael Flores
Senior Vice President and
Chief Nuclear Officer
Attention: Regulatory Affairs
Luminant Generation Company LLC
P.O. Box 1002
Glen Rose, TX 76043

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNIT 2 – REQUEST FOR RELIEF NO. B-14 FROM REACTOR PRESSURE VESSEL HOT-LEG NOZZLE WELD EXAMINATION REQUIREMENTS FOR THE SECOND 10-YEAR INSERVICE INSPECTION INTERVAL (TAC NO. MF3170)

Dear Mr. Flores:

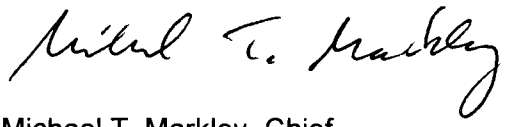
By letter dated November 26, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13346A174), as supplemented by letter dated January 23, 2014, 2014 (ADAMS Accession No. ML14038A255), Luminant Generation Company LLC (the licensee) submitted Request for Relief No. B-14, to the U.S. Nuclear Regulatory Commission (NRC) for use of an alternative to certain requirements of American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, related to inservice inspection (ISI) of welds for the second 10-year ISI interval at Comanche Peak Nuclear Power Plant (CPNPP), Unit 2. Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), paragraph 50.55a(a)(3)(ii), the licensee requested for approval to use an alternative method for examination of the reactor pressure vessel hot-leg nozzle welds on the basis that complying with the specified requirement is impractical. Although the licensee submitted its request in accordance with 10 CFR 50.55a(a)(3)(ii), the NRC staff assessed the proposed alternative in accordance with 10 CFR 50.55a(g)(5)(iii).

The NRC staff has reviewed the request and concludes, as set forth in the enclosed safety evaluation, that the proposed alternatives for weld ISI would provide reasonable assurance of leak tightness and structural integrity or leak tightness of the welds identified in the relief request and that complying with the specified ASME Code, Section XI requirements, set forth in 10 CFR 50.55a(g)(5)(iii) is impractical. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), the NRC staff grants the licensee's proposed Request for Relief No. B-14 for the duration of the second 10-year ISI interval, currently scheduled to end on August 1, 2014.

All other ASME Code, Section XI requirements for which relief has not been specifically requested, remain applicable, including a third-party review by the Authorized Nuclear Inservice Inspector.

If you have any questions, please contact Balwant K. Singal at 301-415-3016 or by e-mail at Balwant.Singal@nrc.gov.

Sincerely,



Michael T. Markley, Chief
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-446

Enclosure:
Safety Evaluation

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF NO. B-14

SECOND 10-YEAR INSERVICE INSPECTION INTERVAL PROGRAM

LUMINANT GENERATION COMPANY LLC

COMANCHE PEAK NUCLEAR POWER PLANT, UNIT 2

DOCKET NO. 50-446

1.0 INTRODUCTION

By letter dated November 26, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13346A174), as supplemented by letter dated January 23, 2014 (ADAMS Accession No. ML14038A255), Luminant Generation Company LLC (Luminant, the licensee) submitted Request for Relief No. B-14, to the U.S. Nuclear Regulatory Commission (NRC) for use of an alternative to certain requirements the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, related to inservice inspection (ISI) of welds for the second 10-year ISI interval, at the Comanche Peak Nuclear Power Plant (CPNPP), Unit 2.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(5)(iii) the licensee submitted alternative B-14 proposing an alternative to ASME Code, Section XI, Appendix VIII, Supplement 10 for dissimilar metal (DM) weld examination qualification requirements pertaining to volumetric examination of nickel-based Alloy 82/182 DM welds associated with the hot-leg Reactor Pressure Vessel (RPV) nozzle to safe-end welds. The licensee's proposed alternative is to use NRC-approved ASME Code Case N-695, "Qualification Requirements for Dissimilar Metal Piping Welds," but with a Root Mean Square (RMS) error of 0.189 inches on the basis that the code case RMS error requirement is impractical.

2.0 REGULATORY EVALUATION

Although the licensee submitted its request in accordance with 10 CFR 50.55a(a)(3)(ii), the NRC staff determined that the proposed alternative addresses an impracticality; therefore, the NRC staff assessed the proposed alternative in accordance with the following:

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) must meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The

Enclosure

regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code, incorporated by reference in 10 CFR 50.55a(b), 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein.

The regulations in 10 CFR 50.55a(g)(5)(iii) state that

> If the licensee has determined that conformance with a code requirement is impractical for its facility, the licensee shall notify the NRC and submit, as specified in § 50.4, information to support the determinations. Determinations of impracticality in accordance with this section must be based on the demonstrated limitations experienced when attempting to comply with the code requirements during the inservice inspection interval for which the request is being submitted. Requests for relief made in accordance with this section must be submitted to the NRC no later than 12 months after the expiration of the initial or subsequent 120-month inspection interval for which relief is sought.

The regulations in 10 CFR 50.55a(g)(6)(i) state that

> The Commission will evaluate determinations under paragraph (g)(5) of this section that code requirements are impractical. The Commission may grant such relief and may impose such alternative requirements as it determines is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

ASME Code Case N-695 is accepted for use in NRC Regulatory Guide (RG) 1.147, Revision 16, "Inservice Inspection Code Case Acceptability ASME Section XI, Division 1," October 2010 (ADAMS Accession No. ML101800536), and incorporated by reference in 10 CFR 50.55a(b).

Based on the above, and subject to the following technical evaluation, the NRC staff concludes that regulatory authority exists for the licensee to request and the NRC staff to grant the relief requested by the licensee pursuant to 10 CFR 50.55a(g)(6)(i).

3.0 TECHNICAL EVALUATION

3.1 Relief Request for Alternative B-14

3.1.1 ASME Code Components Affected

The affected components are the Class 1, R-A, R1.15 (formerly ASME Code Examination Category B-F, B5.10) (ASME Code Case N-770-1 Category A-2) RPV nozzle to safe-end DM welds, as follows:

- TCX-1-4100-1 Loop 1 Hot Leg Nozzle to Safe End DM Weld
- TCX-1-4200-1 Loop 2 Hot Leg Nozzle to Safe End DM Weld
- TCX-1-4300-1 Loop 3 Hot Leg Nozzle to Safe End DM Weld
- TCX-1-4400-1 Loop 4 Hot Leg Nozzle to Safe End DM Weld

In its letter dated November 26, 2013, the licensee stated that the outlet nozzle safe-end dimensions are 34.82 inches outside diameter (OD) by 27.88 inches inside diameter (ID) with a wall thickness of 2.94 inches. In addition, the licensee clarified in its letter dated January 23, 2014, that the pipe material is cast stainless steel, SA-351-CF8A; safe end is constructed from stainless steel, F-316L; the DM weld is Alloy 182; the nozzle is constructed from carbon steel SA-508; and the nozzle cladding is stainless steel.

3.1.2 Applicable Code Edition and Addenda

The CPNPP, Unit 2 ASME Code of record for the second 10-year ISI interval that started on August 3, 2004, and is scheduled to end on August 2, 2014, is the 1998 Edition through the 2000 Addenda. The licensee has stated that they are using the 2001 Edition of ASME Code Section XI Appendix VIII.

3.1.3 Applicable Code Requirements (as stated by the licensee)

> The volumetric examination specified by Examination Category R-A, Item R1.15, "RPV nozzle to safe-end DM butt welds" will be performed using the ultrasonic (UT) examination method as described in IWA-2232 and Appendix [I]. Appendix [I], [I]-2220 requires that ultrasonic examination procedures, equipment, and personnel be qualified by performance demonstration in accordance with Appendix VIII qualification requirements, Luminant Power is using NRC-approved Code Case N-695, "Qualification Requirements for Dissimilar Metal Piping Welds."
>
> Code Case N-695 provides an alternative to the Appendix VIII, Supplement 10 requirements for the qualification requirements for examination of DM welds. Paragraph 3.3(c) indicates examination procedures, equipment, and personnel are qualified for depth-sizing when the Root Mean Square (RMS) error of the flaw depth measurements, as compared with the true depths, does not exceed 0.125 inches.

The licensee's proposed alternative to the requirements of Appendix VIII, Supplement 10 qualification is NRC-approved ASME Code Case N-695, "Qualification Requirements for Dissimilar Metal Piping Welds", but with a RMS error of 0.189 inches is described below.

3.1.4 Reason for Request (as stated by the licensee)

> Luminant will be performing volumetric examinations of the RPV nozzle-to-safe end dissimilar metal welds from the inside surface during the upcoming 2RF14 outage (April 2014), and will implement the alternative requirements of ASME Code Case N-695. Code Case N-695 requires that qualified procedures and personnel shall demonstrate a flaw depth-sizing error less than or equal to 0.125 inch RMS. This Relief Request is being submitted due to the impracticality of meeting the required 0.125 inch RMS value required by Code Case N-695. The nuclear power industry has attempted to qualify personnel and procedures for depth-sizing examinations performed from the inside surface of dissimilar metal welds since November 2002. To date, no inspection vendor has met RMS error requirements of Code Case N-695.
>
> The inability of examination procedures to achieve the required RMS error value is primarily due to a combination of factors such as surface condition (e.g., roughness), scan access, base materials, and the dendritic structure in the welds themselves. The combination of these factors has proven too difficult for vendors to achieve an RMS error value that meets the established requirements.

In the letter dated November 26, 2013, the licensee also stated that:

> The most recent attempt at achieving 0.125 inch RMS error was in early 2008. This attempt, as well as previous attempts, did not achieve the required RMS error value. The qualification attempts have been substantial. The attempts have involved multiple vendors, ultrasonic instruments, personnel, and flaw depth-sizing methodologies, all of which have been incapable of achieving the 0.125 inch RMS error value.
>
> The process of qualification for this type of flaw sizing is well established. The cost and effort involved to perform a successful demonstration is quantifiable when a capable technique is available. However, when a capable technique is not available, the costs and effort required for a successful demonstration cannot be easily quantified.

3.1.5 Proposed Alternative and Basis for Use (as stated by the licensee)

> Luminant Power proposes using an alternative depth-sizing RMS error value greater than the 0.125 inch RMS error value stated in ASME Code Case N-695 for the examination of welds listed above. Luminant Power proposes to use a RMS error of 0.189 inches (based on the results achieved by Luminant Power's examination vendor) instead of the 0.125 inches required for Code Case N-695.

In the event a flaw is detected that requires depth sizing, Luminant Power proposes that the following method for reporting flaw through-wall sizes shall be used:

- For flaw(s) detected and measured as less than [50 percent (%)] through-wall in depth, the depth shall be adjusted by adding the difference between the required RMS error and the demonstrated RMS error to the measured through-wall extent for comparison with applicable ASME Section XI acceptance criteria. The practice of adjusting the measured RMS error value by adding the difference between the required RMS error value and the vendor demonstrated RMS error value is further supported by Electrical Power Research Institute (EPRI) Materials Reliability Program (MRP) document MRP 2012-046 [Enclosure to letter dated November 26, 2013]. This document utilizes a statistical approach to provide a technical justification that validates the aforementioned RMS error adjustments.

- For flaw(s) detected and measured as 50% through-wall in depth or greater, the depth shall also be adjusted by adding the difference between the required RMS error and the demonstrated RMS error to the measured through-wall extent for comparison with applicable ASME Section XI acceptance criteria. Additionally, for flaw(s) detected and measured as 50% through-wall in depth or greater and to remain in service without mitigation or repair, Luminant Power shall submit the flaw evaluations including ID profiling information of the weld, pipe and nozzle at and in the region of the flaw, and confirmation whether the flaw(s) are surface breaking, as determined by eddy current, to the NRC for review and approval prior to reactor startup.

There is no Appendix VIII qualification for embedded flaws. Luminant Power's inspection vendor's procedure does address sizing of embedded volumetric (fabrication) flaws, with through-wall sizing determined by measurement of the -6dB (1/2 maximum response) limits of the flaw response, with no correction factor applied.

For an embedded planar flaw, the 0.064 inch-inch correction factor will be added to the bottom tip (nearest to the ID) response. The total through-wall extent and near surface tip or "S" dimension, used for the determination of surface proximity, will also add the adjusted conservative measurement value of 0.064 inches to the computed flaw depth. Eddy current will also be used for the entire ID surface of the inspection area during the detection scans. The eddy current results will be used to help verify the ID surface connectivity of all reported flaws.

If the examination vendor demonstrates an improved depth sizing RMS error prior to the examination, the excess of that improved RMS error over the 0.125 inch RMS error requirement, if any, will be added to the measured value for comparison with applicable acceptance criteria. In the event that an indication is detected that requires depth sizing, a process will be used where the

difference between the required RMS error and vendor demonstrated RMS error will be added to the measured through-wall depth. This amended through-wall depth will then be used to determine the acceptability of the indication, as follows:

- For planar indications that are not connected to the inside surface, the amended through-wall depth will be compared with the Section IWB-3500 acceptance criteria.

- For planar indications that are connected to the inside surface, an IWB-3600 evaluation will be performed.

The above statement is not meant to suggest that ID surface connected flaws will not be compared to the acceptance standards of IWB-3500. The intent is that all flaws, either ID connected or embedded, will be compared to the acceptance standards of IWB-3500. Additionally, any flaw determined to be ID connected will also be evaluated per IWB-3600, whether or not an evaluation per IWB-3500 requires an IWB-3600 analytical evaluation. IWB-3600 evaluations will be performed. A flaw evaluation based on IWB-3600 for an inside surface-connected flaw will calculate flaw growth based on the degradation mechanisms of primary stress corrosion cracking and fatigue.

Luminant Power's inspection vendor will not be attempting any further Appendix VIII qualification demonstrations prior to the 2RF14 refueling outage. Therefore, the demonstrated or measured RMS error of 0.189 inches will be used.

The proposed alternative assures that the DM nozzle-to-safe-end welds will be fully examined by procedures, personnel and equipment qualified by demonstration in all aspects except depth sizing. Therefore, it will assure that there is reasonable assurance of structural integrity and thus, will provide an acceptable level of quality and safety. Pursuant to 10CFR50.55a(g)(5)(iii), relief is requested to use this alternative depth-sizing error due to impracticality.

3.1.6 Duration of Proposed Alternative

In the November 26, 2013 submittal, the licensee stated that the proposed relief request is applicable to the CPNPP, Unit 2 refueling outage 2RF14, scheduled to begin April 2014. This outage falls within the second 10-year ISI interval. The end date for the second 10-year ISI interval for CPNPP, Unit 2 is August 2, 2014.

3.2 NRC Staff Evaluation

The licensee proposed to use NRC-approved ASME Code Case N-695 to satisfy the requirements of the ASME Code, Section XI, Appendix VIII, Supplement 10. ASME Code Case N-695 requires that procedures used to inspect welds from the inside surface of the pipe be qualified by performance demonstration. The acceptance criterion in ASME Code Case N-695 specifies that the RMS error of the examination procedures shall not be greater

than 0.125 inches. The licensee could not meet the RMS error value in ASME Code Case N-695, and proposed an alternative to meet the acceptance criterion in ASME Code Case N-695 in accordance with 10 CFR 50.55a(a)(3)(ii). The NRC staff determined that the proposed alternative addresses an impracticality and evaluated the relief request in accordance with 10 CFR 50.55a(g)(5)(iii).

The NRC staff has confirmed that since 2002, the industry has not been able to satisfy the RMS error acceptance criterion of less than 0.125 inches when qualifying the UT inspection procedures performed from the inside surface of a pipe. The NRC staff concludes that this inability to qualify inside surface UT inspection techniques in accordance with ASME Code Case N-695 constitutes an impracticality as described in 10 CFR 50.55a(g)(5)(iii).

To address the issue of increased potential for under sizing of flaws by inside surface UT inspection procedures that do not meet the ASME Code Case N-695 acceptance criterion, the NRC staff, in July 2012, in conjunction with personnel from the Performance Demonstration Initiative, examined the proprietary UT examination data set compiled from all attempts to date to qualify inside surface UT inspection procedures to the acceptance criterion contained in ASME Code Case N-695. Based on this examination, the NRC staff concluded that:

(a) For flaw depths less than or equal to 50 percent pipe wall thickness, a flaw could be appropriately depth-sized if a correction factor is added to the measured flaw depth such that the adjusted flaw depth is equal to the measured flaw depth plus the difference between the vendor procedure qualification RMS error and 0.125 inches (procedure qualification RMS error - 0.125).

(b) For flaw depths greater than 50 percent wall thickness, the variability of sizing errors is sufficiently large that no single mathematic flaw size adjustment formula is sufficient to provide reasonable assurance of appropriate flaw depth sizing. As a result, the NRC staff finds it necessary to evaluate the flaws that have depth greater than 50 percent through-wall on a case-by-case basis.

To provide reasonable assurance of the structural integrity of examined welds, the NRC staff determined that the following compensatory measures shall be applied to any proposed alternative examination to address the measurement uncertainty in flaw depth sizing when examining welds from the inside surface:

(1) Examine the welds under consideration using a UT technique that is qualified for flaw detection and length sizing.

(2) For flaw(s) with a measured depth of less than 50 percent of the wall thickness, the depth shall be adjusted by adding the measured flaw depth to the difference between the procedure qualification RMS error and 0.125 inches (i.e., procedure qualification RMS error - 0.125).

(3) For flaw(s) with a measured depth of greater than 50 percent of the wall thickness, either the degraded weld needs to be repaired in accordance with the ASME Code, or a flaw evaluation needs to be submitted to the NRC for review and approval prior to reactor startup. In addition, the flaw depth reported and

analyzed in the flaw evaluation shall also be adjusted by adding the measured flaw depth to the difference between the procedure qualification RMS error and 0.125 inches (i.e., procedure qualification RMS error - 0.125).

(4) In addition to information normally contained in flaw evaluations performed in accordance with the ASME Code, Section XI, IWB-3600, the submitted flaw evaluation shall include: (a) information concerning the degradation mechanism that caused the crack, (b) information concerning the surface roughness and/or profile in the area of the examined pipe and/or weld, and (c) information concerning areas in which the UT probe may "lift off" from the surface of the pipe and/or weld.

(5) Perform eddy current examination(s) to confirm whether a flaw is connected to the inside surface of the pipe and/or weld.

In Section 6 of Attachment 1 of its letter dated November 26, 2013, the licensee stated that the measured flaw size will be adjusted by adding the difference between the demonstrated RMS error (0.189 inches) and the required RMS error (0.125 inches) to the measured flaw size. The measured flaw depth will be increased by a correction factor of 0.064 inches (0.189 inches - 0.125 inches).

The licensee also stated, in part, that:

> For an embedded planar flaw, the 0.064 inch correction factor will be added to the bottom tip (nearest to the ID) response. The total through-wall extent and near surface tip or "S" dimension, used for the determination of surface proximity, will also add the adjusted conservative measurement value of 0.064 inches to the computed flaw depth.

ASME Code, Section XI, IWA-3310 provides requirements under which a subsurface flaw must be considered as a surface-breaking flaw based on the flaw's proximity to the pipe surface. If a subsurface flaw is detected in the affected welds, nozzle, safe end, or pipe, the flaw would have two ends (crack tips). One end would be located closer to the inside surface of the pipe and/or weld and the other end would be located closer to the outside surface of the pipe.

In addition, the licensee stated, in part, that:

> Eddy current will also be used for the entire ID surface of the inspection area during the detection scans. The eddy current results will be used to help verify the ID surface connectivity of all reported flaws.

The NRC staff concludes that the licensee's proposed alternative is consistent with the NRC staff's suggested compensatory measures as discussed because (1) the licensee will add the correction factor to the crack tip that is closer to the ID surface, and (2) the licensee will use eddy current testing to verify whether an embedded flaw is connected to the inside surface.

In Section 6 of its letter dated November 26, 2013, the licensee stated, in part, that "for planar indications that are connected to the inside surface, an IWB-3600 evaluation will be performed." The Code of record, 1998 Edition through 2000 Addenda of the ASME Code, Section XI permits

a detected flaw to be dispositioned by the acceptance standards of IWB-3514. The ASME Code does not require the licensee to perform a flaw evaluation if the flaw is accepted by IWB-3514. However, if the flaw is connected to the inside surface of the nickel-based DM weld, the NRC staff believes that the flaw needs to be evaluated regardless of size, even if it is accepted by IWB-3514.

The NRC staff is concerned regarding crack growth of primary water stress-corrosion cracking (PWSCC), which affects the structural integrity of the nickel-based DM weld. Also, starting from the 2007 Edition of the ASME Code, Section XI, the acceptance standards of IWB-3514 are not applicable to flaws connected to the inside surface of the nickel-based DM welds. The licensee stated that the intent is that all flaws, either ID connected or embedded, will be compared to the acceptance standards of IWB-3500.

Additionally, the licensee will evaluate any flaw determined to be ID surface-connected per IWB-3600, whether or not an evaluation per IWB-3500 requires an IWB-3600 analytical evaluation. The flaw evaluation based on IWB-3600 for an inside surface-connected flaw will calculate flaw growth based on the degradation mechanisms of PWSCC and fatigue.

The licensee's alternative also includes a provision for flaw(s) detected and measured as 50 percent through-wall in depth or greater that shall be completed prior to reactor startup. In accordance with the provision, the licensee shall submit a flaw evaluation, including information noted above in its proposed alternative, to the NRC for review and approval, or repair the weld.

The NRC staff notes that a flaw evaluation will provide information regarding the structural integrity of a weld degraded by PWSCC. The NRC staff concludes that the licensee will evaluate an inside surface-connected flaw per the ASME Code, Section XI, IWB-3600 regardless of the size of the flaw. The NRC further concludes that the provision set forth in the proposed alternative for flaw(s) detected and measured as 50 percent through-wall or greater is an acceptable approach.

In summary, the NRC staff concludes that the proposed alternative in Request for Relief No. B-14 satisfies the staff's suggested compensatory measures as described above. Therefore, the NRC staff determines that the proposed alternative to the RMS error acceptance criterion of ASME Code Case N-695 provides reasonable assurance of the structural integrity and leak tightness in the subject welds.

4.0 CONCLUSION

Based on the above, the NRC staff concludes that the licensee will follow the NRC staff's suggested compensatory measures when dispositioning flaws detected in the subject welds. The NRC staff determines that granting Request for Relief No. B-14 pursuant to 10 CFR 50.55a(g)(6)(i) is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility. The proposed inspections provide reasonable assurance of structural integrity or leak tightness of the subject welds.

Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(5)(iii). Therefore, the NRC staff grants

the licensee's Request for Relief No. B-14 for the duration of the second 10-year ISI interval, currently scheduled to end on August 2, 2014, at CPNPP, Unit 2.

All other ASME Code, Section XI requirements for which relief has not been specifically requested remain applicable, including a third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: Kyle Hanley, NRR/DE/EPNB

Date: April 1, 2014

If you have any questions, please contact Balwant K. Singal at 301-415-3016 or by e-mail at Balwant.Singal@nrc.gov.

Sincerely,

/RA/

Michael T. Markley, Chief
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-446

Enclosure:
Safety Evaluation

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ADAMS Accession No. ML14073A544 ***Memo dated March 11, 2014**

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