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

August 16, 2012

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 A-2 FROM INSPECTION REQUIREMENTS ON REACTOR PRESSURE VESSEL HEAD PENETRATION NOZZLES DUE TO GEOMETRIC LIMITATIONS FOR THE SECOND 10-YEAR INSERVICE INSPECTION INTERVAL (TAC NO. ME7789)

Dear Mr. Flores:

By letter dated January 5, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12017A126), as supplemented by letters dated April 16, 2012, June 13, 2012, and August 2, 2012 (ADAMS Accession Nos. ML12124A269, ML12174A203, and ML12227A359, respectively), Luminant Generation Company LLC (the licensee) submitted request for relief (Relief Request No. A-2) for Comanche Peak Nuclear Power Plant (CPNPP), Unit 2 from certain inspection requirements on reactor pressure vessel head penetration nozzles, due to geometric limitations. The licensee requested the relief for the second 10-year inservice inspection (ISI) interval, which began on August 3, 2004, and ends on August 2, 2014.

Specifically, the licensee requested relief from the minimum coverage requirements for ultrasonic examination provided by American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME 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," for control rod drive mechanism nozzles 74 through 78. The licensee also requested a relief to delay the performance of the examination of nozzles 63 and 65 to refueling outage 2RF13, as the sleeve design of these nozzles does not permit inspection with the currently available equipment. The licensee indicated that these two penetrations will still be examined within the prescribed 2.25 re-inspection year period, as required by Code Case N-729-1.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the submittal and concluded that compliance with the examination coverage requirements of Title 10 of the *Code of Federal Regulations* (10 CFR), Paragraph 50.55a(g)(6)(ii)(D)(3) for penetration nozzles 74 through 78 would result in hardship without a compensating increase in the level of quality and safety, thus fulfilling the technical requirements of 10 CFR 50.55a(a)(3)(ii). However, since the proposed examination coverage was not submitted and authorized prior to implementation of the alternative, the regulatory requirements of 10 CFR 50.55a(a)(3) have not been fulfilled, and the NRC staff does not have the regulatory authority to authorize the use of this proposed

alternative for CPNPP, Unit 2. The NRC Region IV staff has been informed of the apparent noncompliance with NRC regulations and may take additional NRC actions.

The NRC staff also concluded that the relief requested for RPVH penetration nozzles 63 and 65 is not required at this time.

For any future ISI 10-year intervals, for which the relief from the ASME Code, Section XI, ISI requirements is desired, the licensee should request relief and obtain NRC staff authorization prior to implementation.

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.

The NRC staff's safety evaluation is enclosed. If you have any questions, please contact Balwant K. Singal at 301-415-3016 or by e-mail at Balwant.Singal@nrc.gov.

Sincerely,

CFLyon for

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

Docket No. 50-446

Enclosure:
As stated

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 RELIEF NO. A-2

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 January 5, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12017A126), as supplemented by letters dated April 16, 2012, June 13, 2012, and August 2, 2012 (ADAMS Accession Nos. ML12124A269, ML12174A203, and ML12227A359, respectively), Luminant Generation Company LLC (the licensee) submitted request for relief (Relief Request No. A-2) for Comanche Peak Nuclear Power Plant (CPNPP), Unit 2 from certain inspection requirements on reactor pressure vessel head (RPVH) penetration nozzles, due to geometric limitations. The licensee requested the relief for the second 10-year inservice inspection (ISI) interval, which began on August 3, 2004, and ends on August 2, 2014.

Specifically, the licensee requested relief from the minimum coverage requirements for ultrasonic examination (UT) provided by American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME 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," for control rod drive mechanism (CRDM) nozzles 74 through 78. The licensee also requested a relief to delay the performance of the examination of nozzles 63 and 65 to refueling outage 2RF13, as the sleeve design of these nozzles does not permit inspection with the currently available equipment. The licensee indicated that these two penetrations will still be examined within the prescribed 2.25 re-inspection year (RIY) period, as required by Code Case N-729-1.

The current request for relief for examination coverage of penetration nozzles 74 through 78 is for the inspection performed in 2RF12 in the spring of 2011. Examination of penetration nozzles 63 and 65 is scheduled to be performed during 2RF13 in the fall of 2013, one refueling outage after the examination of the other 76 penetration nozzles, but within the 2.25 RIY requirement for these penetration nozzles.

The U.S. Nuclear Regulatory Commission (NRC) staff notes that the penetration nozzles 1

Enclosure

through 78, except nozzles 63 and 65, were examined during refueling outage 2RF08 in the spring of 2005. However, authorization for a limited examination coverage for penetration nozzles 74 through 78 was not obtained prior to or after performing the examination. A summary of the events leading to the present request for alternative is described in Section 3.0 of the Technical Evaluation below.

2.0 REGULATORY EVALUATION

The regulations in Title 10 of the *Code of Federal Regulations* (10 CFR), Paragraph 50.55a(g)(6)(ii)(D) require that licensees of existing operating PWRs implement the requirements of ASME Code Case N-729-1, subject to the conditions specified in paragraphs (g)(6)(ii)(D)(2) through (6). Licensees of existing operating reactors as of September 10, 2008, shall implement their augmented ISI program by December 31, 2008.

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 Director, Office of Nuclear Reactor Regulation, 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. Any proposed alternatives must be submitted and authorized prior to implementation.

The NRC staff has reviewed the licensee's request for relief from the examination coverage requirements of ASME Code Case N-729-1, as required and conditioned by 10 CFR 50.55a(g)(6)(ii)(D)(3), 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 NRC staff notes that the proposed alternative was not submitted and authorized prior to implementation.

3.0 TECHNICAL EVALUATION

3.1 Background

The First Revised NRC Order EA-03-009, "Issuance of First Revised NRC Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," dated February 20, 2004 (ADAMS Accession No. ML040220181), required interim bare metal visual (BMV) and non-visual nondestructive examination to be performed on RPVHs at all PWRs before February 11, 2008. The Order specified both the examination methods and examination extent. The licensee performed a BMV examination of the RPVH at CPNPP, Unit 2, in the seventh refueling outage (2RF07) in the fall of 2003, and UT of 76 of the 78 CRDM penetration nozzles during 2RF08 in the spring of 2005. Five of the 76 penetrations examined, penetration nozzles 74 through 78, could not be examined to the extent required by the Order due to nozzle geometry. Penetration nozzles 63 and 65 could not be examined due to the presence of guide sleeves.

By letter dated June 22, 2006[1], the licensee submitted a request for relief from the February 11, 2008, examination implementation deadline, per the requirements of the Section IV.C.3 of the Order, for the two unexamined penetration nozzles. The two unexamined penetration nozzles were subsequently modified and examined prior to the February 11, 2008, examination implementation deadline in the fall of 2006 during 2RF09.

By letter dated December 18, 2006[2], the licensee withdrew its June 22, 2006, request and submitted a request for the inspection coverage achieved for penetration nozzles 74 through 78 during the 2RF09 inspection. The NRC staff recognizes that the licensee performed the inspections required by the Order and submitted a request for relief from inspection coverage prior to the required inspection date (February 11, 2008), but the NRC staff neither reviewed nor authorized the request for alternative examination coverage submitted as part of the letter dated December 18, 2006.

The interim inspection required by the Order was superseded by the inspection requirements of ASME Code Case N-729-1, as required and conditioned by 10 CFR 50.55a(g)(6)(ii)(D) (73 FR 52730; September 10, 2008), which states, in part, that

> All licensees of pressurized water reactors shall augment their inservice inspection program with ASME Code Case N–729–1 subject to the conditions specified in paragraphs (g)(6)(ii)(D)(2) through (6) of this section. Licensees of existing operating reactors as of September 10, 2008 shall implement their augmented inservice inspection program by December 31, 2008. Once a licensee implements this requirement, the First Revised NRC Order EA–03–009 no longer applies to that licensee and shall be deemed to be withdrawn.

On the basis of the inspection period for a low susceptibility head, the licensee performed an inspection of the RPVH penetrations 1 through 78, except nozzles 63 and 65, within the prescribed 2.25 RIY time period in the spring of 2011 during 2RF12. Due to interference issues, penetrations 63 and 65 could not be examined during 2RF12, but are planned for examination in the fall of 2012 during 2RF13. The NRC staff notes that relief from inspection coverage requirements for penetrations 74 through 78 was neither requested by the licensee nor authorized by the NRC prior to performing inspections in 2011, or before the end of the 2.25 RIY period for inspections performed in 2005.

---

[1] Madden, F. W., TXU Generation Management Company LLC, letter to U.S. Nuclear Regulatory Commission, "Relaxation Request for NRC Issuance of First Revised Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," dated June 22, 2006 (ADAMS Accession No. ML061790392).

[2] Madden, F. W., TXU Generation Management Company LLC, letter to U.S. Nuclear Regulatory Commission, "Update to 60-Day Response to Revision 1 of NRC Order EA-03-009, "Issuance of First Revised NRC Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," dated December 18, 2006 (ADAMS Accession No. ML063630152).

3.2 Licensee's Request for Alternative

3.2.1 Components Affected

Item Number B4.20 (UNS N06600 nozzles and UNS N06082 or UNS W86812 partial penetration welds in the RPV head), nozzle penetration numbers 74 through 78, Code Class 1.

3.2.2 Applicable Code Edition and Addenda

The ISI Code of record for CPNPP, Unit 2, for the second 10-year ISI interval, that began on August 3, 2004, and is scheduled to end on August 2, 2014, is the 1998 Edition through the 2000 Addenda of Section XI of the ASME Code.

3.2.3 Code Requirements

The regulations in 10 CFR 50.55a(g)(6)(ii)(D)(1) state, in part, that

> All licensees of pressurized water reactors shall augment their inservice inspection program with ASME Code Case N-729-1 subject to the conditions specified in paragraphs (g)(6)(ii)(D)(2) through (6) of this section.

The regulations in 10 CFR 50.55a(g)(6)(ii)(D)(3) state, 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 subject RPVH penetrations, numbers 74 through 78, have an incidence angle of 48.7 degrees and an outside diameter (OD) of 4.0 inches, thus, the required coverage is 1.0-inch below the lowest portion of the toe of the J-groove weld.

3.2.4 Licensee's Reason for Request

The licensee stated that the geometric configuration of the subject penetration nozzles does not allow full coverage to the required distance "a" (Figure 1, Code Case N-729-1) below the toe of the J-groove weld using UT and the use of liquid penetrant (PT) examination to obtain the required coverage would result in significant radiation dose.

3.2.5 Licensee's Proposed Alternative and Basis for Use

As an alternative to the examination coverage requirements shown as dimension "a" in Figure 2 of ASME Code Case N-729-1, the licensee proposes to use the UT coverage attained in refueling outage 2RF12 in the spring of 2011 to satisfy the examination coverage requirement for the subject head penetrations.

The licensee stated that a plant-specific stress analysis demonstrates that the hoop stresses remain below 20 ksi (tensile) over the entire region outside the proposed alternative examination zone. The licensee further stated that a deterministic fracture mechanics (FM) analysis demonstrates that a potential axial crack in the unexamined zone will not grow to the toe of the J-groove weld prior to the next scheduled examination.

The licensee stated that relief from the examination coverage requirements for similar reasons has been authorized by the NRC staff for Beaver Valley Power Station, Unit 2, San Onofre Nuclear Generating Station, Unit 2, and Indian Point Nuclear Generating Station, Unit 2.

3.3 NRC Staff Evaluation

Primary water stress-corrosion cracking (PWSCC) of nickel-based pressure retaining boundary materials is a safety concern. Operational experience has shown that PWSCC can occur as a result of the combination of susceptible material such as nickel-based Alloy 600 or Alloy 182 weld metal, corrosive environment, and tensile stresses, resulting in leakage and the potential for loss of structural integrity. The examination requirements of ASME Code Case N-729-1, as required and conditioned by 10 CFR 50.55a(g)(6)(ii)(D), are intended to ensure the leak tightness and structural integrity of RPVH penetration tubes and their associated J-groove welds through nondestructive examination.

The licensee stated that the geometry of the subject penetration nozzles 74 through 78 does not allow full coverage to the distance "a" of Figure 2, Code Case N-729-1. Based on the review of Figure 1 included in Attachment 2 to the licensee's letter dated December 18, 2006, the NRC staff concluded that the threaded portion on the OD and the chamfer on the inside diameter (ID) of the penetration nozzles prevents examination by UT to the extent required below the J-groove weld toe.

3.3.1 Hardship Evaluation

The regulations in 10 CFR 50.55a(g)(6)(ii)(D)(3) permit substitution of a surface examination of the inside and outside wetted surface of the penetration nozzle for the portion of a penetration nozzle that is below the toe of the J-groove weld (Point E on Figure 2 of ASME Code Case N-729-1). The NRC staff notes that the threaded portion on the OD of the CRDM nozzle is not amenable to eddy current (ET) examination due to the presence of the threads. In its letter dated June 13, 2012, the licensee stated that performance of a PT examination on the subject nozzles to obtain the required coverage below the lowest point in the J-groove weld toe would result in a radiological dose of 2.5-3.5 roentgen equivalent man to inspect the five-subject penetration surfaces. On the basis of the relatively high radiological dose and as low as reasonably achievable (ALARA) considerations, the NRC staff concludes that performing a PT examination to attain the required coverage would present a hardship.

The NRC staff is not aware of other options for attaining the required examination coverage and, therefore, concludes that attaining the ASME Code Case N-729-1 examination coverage, as required and conditioned by 10 CFR 50.55a(g)(6)(ii)(D)(3), would present a hardship.

3.3.2 Proposed Alternative Evaluation

As an alternative to the Code-required examination extent, the licensee proposes crediting the present UT examination of the subject nozzles from the required distance "a" above the root of the J-groove weld to the maximum extent possible below the J-groove weld. The licensee stated that the UT examination was performed by personnel and techniques qualified in accordance with the requirements of 10 CFR 50.55a(g)(6)(ii)(D)(4). The NRC staff concludes the UT examination personnel qualifications and techniques are acceptable since they meet the requirements of 10 CFR 50.55a(g)(6)(ii)(D)(4).

In support of this request, the licensee has performed an analysis using two techniques, stress analysis and deterministic FM analysis. The purpose of these analyses is to demonstrate that the present limited UT examination distance provides a reasonable assurance of structural integrity and leak tightness until the next scheduled examination. The first technique evaluates the stress profile below the J-groove weld and demonstrates that the minimum achievable inspection coverage below the bottom of the J-groove weld envelopes the region for which the stresses in the penetration nozzle are in excess of 20 ksi (tensile). The second technique demonstrates that a hypothetical crack in the uninspected region that has its upper boundary 0.20-inch below the toe of the J-groove weld will not propagate to the toe of the J-groove weld before the next examination.

3.3.2.1 Stress Analysis

The licensee performed three dimensional finite element (FE) stress calculations of the penetration nozzle (Reference: Westinghouse Electric Company LLC topical report WCAP-16397-P, Revision 0, "Structural Integrity Evaluation of Reactor Vessel Upper Head Penetrations to Support Continued Operation: Comanche Peak Units 1 and 2," June 2005 (nonproprietary version at ADAMS Accession No. ML063630181)). The analysis included operating stresses and the J-groove weld residual stresses, and used the as-designed weld geometry and sizes. In its letter dated June 13, 2012, the licensee provided values for the as-designed and as-built nozzle configurations, determined by UT examination of each nozzle during refueling outage 2RF08 in the spring of 2005, as well as the required examination distance below the J-groove weld and the actual scan length below the toe of the as-built J-groove weld (summarized in the Table below). The licensee stated that larger (as-built) welds have a reduced stress profile as compared to smaller (as-designed) welds. The NRC staff agrees with this conclusion, because the residual stresses in the nozzle tube result primarily from the constraint of the J-groove weld at the RPVH and a longer J-groove leg length would result in the toe of the weld being farther from the region of high constraint in the RPVH. The licensee's FE analysis confirms that the residual stresses are localized at the J-groove weld. The staff concludes that an increased J-groove weld leg size would decrease the length which can be examined using UT, but would not have a significant effect on the stress state at the bottom of the inspected region. The NRC staff reviewed the licensee's FE analysis by comparing the licensee's supporting data to the conservative analysis performed to support the Electric Power Research Institute's topical report "Materials Reliability Program Generic Evaluation of Examination Coverage Requirements for Reactor Pressure Vessel Head Penetration Nozzles, Revision 1 (MRP-95R1NP)," September 2004 (ADAMS Accession No. ML043200602). The results of the staff's review support the licensee's stress analysis.

Table

Penetration Nozzle Number	Nozzle Intersection Angle	N-729-1 Required Inspection Length (in)	Actual Scan Length (in)	20 ksi Line Below Weld Toe (in)	Weld Dimensions (in)	
					As-designed	As-built
74	48.7	1.0	0.81	0.29	1.46	1.56
75	48.7	1.0	0.30	0.29	1.46	2.13
76	48.7	1.0	0.73	0.29	1.46	1.61
77	48.7	1.0	0.33	0.29	1.46	2.06
78	48.7	1.0	0.36	0.29	1.46	1.68

The licensee's plant-specific FE analysis and UT examination distances from the above Table show that the minimum achievable inspection coverage below the bottom of the J-groove weld toe envelopes the region in which the stresses are greater than or equal to 20 ksi (tensile). Based on MRP-95R1NP, a stress of 20 ksi (tensile) was chosen as a conservative range below which the probability of PWSCC is extremely remote. Therefore, the adequacy of the examination volume for each nozzle has been demonstrated by the stress analysis technique since the examination coverage enveloped the region where the stress is in excess of 20 ksi (tensile). The NRC staff notes, however, that the scan lengths for penetration nozzles 75 (0.30-inch) and 77 (0.33-inch) are barely in excess of that of the 20 ksi line (0.29-inch) and could well be within the accuracy of the FE calculation. However, the analysis provided in Section 3.3.2.2 of this safety evaluation for time to propagate to the toe of the J-groove weld provides reasonable assurance of the structural integrity and leak tightness of the penetration nozzles until the next scheduled examination.

3.3.2.2 Deterministic Fracture Mechanics Analysis

The licensee has performed a deterministic FM analysis of the propagation of a hypothetical through-wall crack located in the unexamined zone at the bottom of the nozzle. The licensee assumed that the uppermost tip of the crack is located 0.2-inch below the toe of the J-groove weld, extending to the bottom of the nozzle (Reference: WCAP-16397-P, Revision 0). The analysis consists of two parts: an FE analysis of the operational pressure and temperature loads and J-groove weld residual stresses to determine the stress field in the penetration nozzle, and an FM evaluation of the distance that the postulated through-wall crack could propagate with time by PWSCC in response to the stress field. The crack growth equation and constants that were used in the licensee's analysis are the same as those given in ASME Code, Section XI, Appendix O, 2004 Edition, "Evaluation of Flaws in PWR Reactor Vessel Upper Head Penetration Nozzles," and are acceptable for use. The NRC staff notes that the licensee's assumed hypothetical crack tip uppermost position of 0.2-inch below the J-groove weld toe, rather than at the 0.3-inch examination boundary used in the stress analysis technique, is a significant conservatism as the hoop stress rapidly drops for longer distances, as shown by Figure 2 of the proposed alternative.

In Figure 3 of its letter dated January 5, 2012, the licensee provided the results of the deterministic FM analysis. The results show that 6.6 effective full power years (EFPY) will be required for the hypothetical through-wall flaw to grow to the toe of the J-groove weld. Since the

required inspection interval of 2.25 RIY corresponds to 6.2 EFPY for a head temperature of 561 degrees Fahrenheit (°F)[3], the licensee stated that the assumed hypothetical flaw will not grow to the toe of the J-groove weld prior to the next examination. The NRC staff performed an independent crack growth calculation using the results of the licensee's FE analysis. The results of this calculation support the licensee's analysis. The NRC staff also calculated the time necessary for a hypothetical crack with its uppermost tip 0.3-inch below the J-groove weld toe to propagate to the J-groove weld toe and determined that the necessary time was significantly longer than 10 EFPY. As the result of the licensee's evaluation and the NRC staff's independent calculations, the staff concludes that the inspection coverage and inspection frequency provide a reasonable assurance of structural integrity and leak tightness of each nozzle. The staff further notes that the licensee has performed a Code-compliant UT examination on all 78 of the CPNPP, Unit 2 nozzle penetrations to a distance of at least 0.3-inch below the toe of the J-groove weld and no reportable indications have been found.

In summary, the NRC staff concludes that the licensee's proposed alternative inspection coverage provides reasonable assurance of structural integrity and leak tightness of the RPVH penetration nozzles 74 through 78 until the next scheduled examination, 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.

3.4 RPVH Penetrations 63 and 65 – Request for Relief to Perform Ultrasonic Examination During Refueling Outage 2RF13

In its letter dated January 5, 2012, the licensee stated that RPVH penetrations 63 and 65 have bell-mouth sleeve configurations that prevented inspection in the refueling outage 2RF12 and stated that these two penetrations will be examined during refueling outage 2RF13. These two penetrations were previously examined during the 2RF09 outage. The licensee also stated that as required by Code Case N-729-1, these two penetrations will still be examined within the prescribed 2.25 RIY period. Since the inspection for these penetration nozzles is scheduled to be performed within prescribed period, the NRC requested the licensee to explain why relief is being requested. In its letter dated June 13, 2012, the licensee stated that RPVH penetration nozzles 63 and 65 were included in the relief request to bring the situation to the NRC staff's attention. The NRC staff concludes that since these penetrations are scheduled for inspection within the period prescribed by Code Case N-729-1, a relief is not required for these penetrations at this time.

4.0 CONCLUSION

Based on the above, the NRC staff concludes that compliance with the examination coverage requirements of 10 CFR 50.55a(g)(6)(ii)(D)(3) for RPVH penetration nozzles 74 through 78 would result in hardship without a compensating increase in the level of quality and safety, thus fulfilling the technical requirements of 10 CFR 50.55a(a)(3)(ii). However, since the proposed examination coverage was not submitted and authorized prior to implementation of the alternative, the regulatory requirements of 10 CFR 50.55a(a)(3) have not been fulfilled, and the NRC staff does not have the regulatory authority to authorize the use of this proposed

---

[3] The NRC staff notes that the reference temperature for calculating RIY in ASME Code Case N-729-1 is 1059.67 °R, whereas the reference temperature in ASME Code, Section XI, Appendix O, for calculating PWSCC crack growth is 1076.67 °R.

alternative for CPNPP, Unit 2. The NRC Region IV staff has been informed of the apparent noncompliance with NRC regulations and may take additional NRC actions.

The NRC staff also concluded that relief requested for RPVH penetration nozzles 63 and 65 is not required at this time.

For any future ISI 10-year intervals, for which the relief from the ASME Code, Section XI, ISI requirements is desired, the licensee should request relief and obtain NRC staff authorization prior to implementation.

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: Jay Wallace, NRR/DE/EPNB

Date: August 16, 2012

alternative for CPNPP, Unit 2. The NRC Region IV staff has been informed of the apparent noncompliance with NRC regulations and may take additional NRC actions.

The NRC staff also concluded that the relief requested for RPVH penetration nozzles 63 and 65 is not required at this time.

For any future ISI 10-year intervals, for which the relief from the ASME Code, Section XI, ISI requirements is desired, the licensee should request relief and obtain NRC staff authorization prior to implementation.

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.

The NRC staff's safety evaluation is enclosed. 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 by FLyon for/

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

Docket No. 50-446

Enclosure:
As stated

cc w/encl: Distribution via Listserv

DISTRIBUTION:
PUBLIC
LPLIV Reading
RidsAcrsAcnw_MailCTR Resource
RidsNrrDeEpnb Resource
RidsNrrDorlDpr Resource
RidsNrrDorlLpl4 Resource
RidsNrrLAJBurkhardt Resource
RidsNrrPMComanchePeak Resource
RidsOgcRp Resource
RidsRgn4MailCenter Resource
JWallace, NRR/DE/EPNB
SKennedy, EDO RIV

ADAMS Accession No. ML12215A249

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NRR/DE/EPNB/BC	NRR/LPL4/BC
NAME	BSingal	JBurkhardt	DAlley(A)	MMarkley (FLyon for)
DATE	8/14/12	8/10/12	8/15/12 (W/Comments)	8/16/12

OFFICIAL AGENCY RECORD