



Luminant

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TXX-15104

Ref. # 10CFR50.55a(z)(1)

July 22, 2015

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

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT
DOCKET NO. 50-446
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION FOR
RELIEF REQUEST 2A3-1 FOR UNIT 2 INSERVICE INSPECTION FOR APPLICATION
OF AN ALTERNATIVE TO THE ASME BOILER AND PRESSURE VESSEL CODE
SECTION XI EXAMINATION REQUIREMENTS FOR CLASS 1 AND 2 PIPING WELDS
(2007 EDITION OF ASME CODE, SECTION XI, 2008 ADDENDA
THIRD INTERVAL START DATE: AUGUST 3, 2014
THIRD INTERVAL END DATE: AUGUST 2, 2023)

REFERENCES: 1. Letter logged TXX-15032 dated March 4, 2015 from Rafael Flores to the NRC
submitting Relief Request No. 2A3-1 Regarding Risk Informed Inservice Inspection
Program for the Class 1 and 2 Piping (Third ISI Interval Start Date: August 3, 2014;
Third ISI Interval End Date: August 2, 2023)

2. Email dated June 22, 2015 from Balwant Singal of the NRC to Timothy Hope of
Luminant Power requesting additional information regarding Relief Request 2A3-1
(TAC No. MF5813)

Dear Sir or Madam:

Per Reference 1, Luminant Generation Company, LLC (Luminant Power) submitted Relief Request 2A3-1 for Comanche Peak Unit 2 for the third ten year inservice inspection interval. Per Reference 2, the NRC provided a request for additional information regarding the subject relief request.

Attached is the Luminant Power response to the request for additional information.

This communication contains no new licensing basis commitments regarding Comanche Peak Unit 2.

A-047
NRR

Should you have any questions, please contact Mr. Jack Hicks at (254) 897-6725.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

By: 
Fred W. Madden
Director, External Affairs

Attachment – Response to Request for Information Regarding Unit 2 Relief Request 2A3-1 for Risk-Informed Inservice Inspection of Piping Welds

c - Marc L. Dapas, Region IV
Balwant K. Singal, NRR
Resident Inspectors, Comanche Peak
Robert Free, TDLR
Jack Ballard, ANII, Comanche Peak

**COMANCHE PEAK NUCLEAR POWER PLANT UNIT 2
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING
RELIEF REQUEST 2A3-1 FOR RISK-INFORMED INSERVICE INSPECTION OF PIPING WELDS
(THIRD 10-YEAR ISI INTERVAL START DATE: August 3, 2014)
TAC NO. MF5813**

NRC REQUEST 1:

Of the welds not selected for future examinations, did the previous examinations identify any service induced degradation? If service induced degradation was identified, please discuss the degradation mechanism. Please discuss the corrective actions taken to mitigate the degradation?

LUMINANT POWER RESPONSE TO REQUEST 1:

During the Second Interval there were no unacceptable indications identified during the performance of the RI-ISI examinations. Therefore, no new service induced degradation was identified and no corrective actions were required.

NRC REQUEST 2:

Please identify any augmented inspection programs subsumed in the proposed third 10-year interval RI-ISI program and discuss the reason(s) for any changes. Examples include: augmented program for managing thermal fatigue (NRC Bulletin (BL) 88-11, Generic Letter (GL) 89-08, NRC Information Notice (IN) 93-20, and Materials Reliability Program (MRP)-146), augmented program for addressing stress corrosion cracking (BL 79-17), augmented program to address the requirements of 10 CFR 50.55a(g)(6)(ii)(E) that requires implementation of ASME Code Case N-722-1 with conditions, augmented program for piping welds in high energy main steam and main Feedwater piping (NRC NUREG-0800, Standard Review Plan 3.6.2, and augmented program for inspection of feedwater system piping (NRC BL 79-13).

LUMINANT POWER RESPONSE TO REQUEST 2:

The RI-ISI process has criteria that specifically evaluate the susceptibility of piping to thermal fatigue issues. Therefore, augmented examination programs such as those presented in NRC Bulletin 88-11, Information Notice 93-20, MRP-146 and Bulletin 79-13 are subsumed by the RI-ISI application. This is the same criteria that has been implemented and approved since the initial RI-ISI application in 2001.

The augmented inspection program for flow accelerated corrosion (FAC) per Generic Letter 89-08 is relied upon to manage this damage mechanism and remains a separate program which is not affected or changed by the RI-ISI program. This is the same criteria that has been implemented and approved since the initial RI-ISI application in 2001.

The augmented inspection program for high energy break exclusion piping is a separate program and is not affected or changed by this RI-ISI Relief Request.

CPNPP will meet the criteria of 10CFR50.55a(g)(6)(ii)(E) and therefore implement Code Case N-722-1 for the performance of reactor coolant pressure boundary visual inspections.

CPNPP will meet the criteria of 10CFR50.55a(g)(6)(ii)(F) and therefore implement Code Case N-770-1 for the examination of Class 1 piping and nozzle dissimilar-metal butt welds. The Risk Ranking, Element Selection, and Risk Impact Analysis has been changed to reflect the inspection of Primary Water Stress Corrosion Cracking (PWSCC) under Code Case N-770-1 with the applicable welds removed from the RI-ISI Element Selection process.

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Portions of the containment spray and residual heat removal systems contain Class 2 piping that is less than 0.375 in. thick. ASME Section XI does not require surface or volumetric examinations on this piping, based on the wall thickness. However, in response to NRC SSER-26, CPNPP committed to performing volumetric examinations on 7.5% of the welds in this "thin wall" piping during each ten year interval. This piping was included in the scope of the RI-ISI application, and therefore is addressed by the RI-ISI program. Consequently, the RI-ISI program subsumes this augmented inspection program. This is the same criteria that has been implemented and approved since the initial RI-ISI application in 2001.

There are no other augmented examination programs that interface with the RI-ISI program.

NRC REQUEST 3:

The NRC staff notes that the licensee did not specify in RR 2A3-1 whether it will review and update the proposed third 10-year CPNPP, Unit 2, RI-ISI program on a regular basis (e.g., at least on the basis of the ASME Code periods, more frequently if dictated by any plant procedure to update the probabilistic risk assessment (PRA), or as new degradation mechanisms are identified). Please clarify whether the licensee will implement a monitoring program to review and update the proposed RI-ISI program for the third 10-year ISI interval in accordance with the guidance in NRC Regulatory Guides (RGs) 1.174 and 1.178.

LUMINANT POWER RESPONSE TO REQUEST 3:

Both the original RI-ISI submittal and the resultant NRC Safety Evaluation call for a periodic review and update. The RI-ISI program is a living program requiring feedback of new relevant information to ensure the appropriate identification of high safety significant piping locations. As a minimum, the RI-ISI program will be reviewed and adjusted on an ASME period basis. In addition, significant changes may require more frequent adjustment as directed by NRC Bulletin or Generic Letter requirements, or by industry and plant specific feedback. This is the same criteria that has been implemented and approved since the initial RI-ISI application in 2001.

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NRC REQUEST 4:

In Section 4.0 of the NRC safety evaluation report of EPRI TR-112657, Revision B-A, "Revised Risk-Informed Inservice Inspection Evaluation Procedure," (ADAMS Accession No. ML013470102), the NRC staff concluded that a licensee requesting to implement an RI-ISI program pursuant to 10 CFR 50.55a(z)(1) may incorporate into its application, by reference, the program described in EPRI TR-112657, Revision B-A, together with appropriate plant specific information, provided that the application includes, among other items, a summary of the risk impact of the changes to the ISI program.

The licensee stated in its application dated March 4, 2015 that a new risk impact analysis was performed, and that the revised RI-ISI program continues to represent a risk reduction when compared to the last deterministic ASME Code, Section XI, inspection program.

To demonstrate that the acceptance criteria of EPRI TR-112657, Revision B-A, for change in CDF and LERF per system are met, please provide tabulated values for the system level changes in CDF and LERF (i.e., the changes in CDF and LERF compared between the ASME Code ISI program and the CPNPP, Unit 2, third 10-year RI-ISI program). For an example, please refer to Tables 3.6.1 and 3.6.2 of Luminant letter dated February 15, 2001 (ADAMS Accession Number ML010520269) requesting relief from the ASME Code, Section XI examination requirements for inservice inspection of Class 1 and 2 piping welds for CPNPP, Units 1 and 2.

LUMINANT POWER RESPONSE TO REQUEST 4:

See the table on the following page for the results of the current risk impact analysis for CPNPP Unit 2. The applicable "CDF Impact" and "LERF Impact" values are those with Probability of Detection (POD) included.

CPNPP Unit 2 Bounding Estimate of Risk Impact Based on Best Estimate Failure Rates

Syst	Risk		Upper Bound		Failure Potential		Best Estimate Failure Rate	POD Improvement Factors			Inspection Locations			CDF Impact		LERF Impact	
	Cat	Rank	Risk Cat CCDP	Risk Cat CLERP	DMs	Rank		S XI	RI-ISI	None	S XI	RI-ISI	Delta	w/ POD	w/o POD	w/ POD	w/o POD
RCS	2	High	198E-03	165E-03	TASCS, TT	Medium	2.00E-07	0.3	0.9	0.5	4	2	-2	-2.38E-10	3.96E-10	-1.98E-10	3.30E-10
RCS	2	High	198E-03	165E-03	TASCS	Medium	2.00E-07	0.3	0.9	0.5	1	6	5	-2.02E-09	-9.90E-10	-1.68E-09	-8.25E-10
RCS	2	High	198E-03	165E-03	TT	Medium	2.00E-07	0.3	0.9	0.5	4	0	-4	4.75E-10	7.92E-10	3.96E-10	6.60E-10
RCS	2 (2)	High (High)	198E-03	165E-03	TT (PWSCC)	Medium (Medium)	2.00E-07	0.3	0.9	0.5	1	0	-1	1.19E-10	1.98E-10	9.90E-11	1.65E-10
RCS	4	Medium	100E-04	100E-05	None	Low	100E-08	0.5	0.5	0.5	49	30	-19	9.50E-12	9.50E-12	9.50E-13	9.50E-13
RCS	4 (2)	Medium (High)	100E-04	100E-05	None (PWSCC)	Low (Medium)	100E-08	0.5	0.5	0.5	12	0	-12	6.00E-12	6.00E-12	6.00E-13	6.00E-13
RCS	5a	Medium	100E-04	100E-05	TASCS	Medium	2.00E-07	0.3	0.9	0.5	5	2	-3	-6.00E-12	3.00E-11	-6.00E-13	3.00E-12
RCS	5a	Medium	100E-04	100E-05	TT	Medium	2.00E-07	0.3	0.9	0.5	2	6	4	-9.60E-11	-4.00E-11	-9.60E-12	-4.00E-12
RCS	5a (5a)	Medium (Medium)	100E-04	100E-05	TT (PWSCC)	Medium (Medium)	2.00E-07	0.3	0.9	0.5	1	0	-1	6.00E-12	1.00E-11	6.00E-13	1.00E-12
RCS	6a	Low	100E-06	100E-07	None	Low	100E-08	0.5	0.5	0.5	0	0	0	no change	no change	no change	no change
RCS	7a	Low	100E-06	100E-07	None	Low	100E-08	0.5	0.5	0.5	0	0	0	no change	no change	no change	no change
RCS Total														-1.74E-09	4.12E-10	-1.39E-09	3.32E-10
CVCS	5a	Medium	100E-04	100E-05	TT	Medium	2.00E-07	0.3	0.9	0.5	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CVCS	6a	Low	100E-06	100E-07	None	Low	100E-08	0.5	0.5	0.5	5	0	-5	negligible	negligible	negligible	negligible
CVCS	6b	Low	100E-06	100E-07	TT	Medium	2.00E-07	0.3	0.9	0.5	0	0	0	no change	no change	no change	no change
CVCS	7a	Low	100E-06	100E-07	None	Low	100E-08	0.5	0.5	0.5	0	0	0	no change	no change	no change	no change
CVCS Total														0.00E+00	0.00E+00	0.00E+00	0.00E+00
SIS	4	Medium	100E-04	100E-05	None	Low	100E-08	0.5	0.5	0.5	4	10	6	-3.00E-12	-3.00E-12	-3.00E-13	-3.00E-13
SIS	6a	Low	100E-06	100E-07	None	Low	100E-08	0.5	0.5	0.5	33	7	-26	1.30E-13	1.30E-13	1.30E-14	1.30E-14
SIS	6b	Low	100E-06	100E-07	IGSCC	Medium	2.00E-07	0.5	0.5	0.5	2	2	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SIS	7a	Low	100E-06	100E-07	None	Low	100E-08	0.5	0.5	0.5	6	0	-6	negligible	negligible	negligible	negligible
SIS Total														-2.87E-12	-2.87E-12	-2.87E-13	-2.87E-13
RHRS	4	Medium	100E-04	100E-05	None	Low	100E-08	0.5	0.5	0.5	17	13	-4	2.00E-12	2.00E-12	2.00E-13	2.00E-13
RHRS	6a	Low	100E-06	100E-07	None	Low	100E-08	0.5	0.5	0.5	0	0	0	no change	no change	no change	no change
RHRS Total														2.00E-12	2.00E-12	2.00E-13	2.00E-13
CSS	4	Medium	100E-04	100E-05	None	Low	100E-08	0.5	0.5	0.5	13	2	-11	5.50E-12	5.50E-12	5.50E-13	5.50E-13
CSS	6a	Low	100E-06	100E-05	None	Low	100E-08	0.5	0.5	0.5	3	0	-3	negligible	negligible	negligible	negligible
CSS	7a	Low	100E-06	100E-07	None	Low	100E-08	0.5	0.5	0.5	14	0	-14	negligible	negligible	negligible	negligible
CSS Total														5.50E-12	5.50E-12	5.50E-13	5.50E-13
FWS	6b (4)	Medium	100E-04	100E-05	TASCS, (FAC)	Medium (High)	2.00E-07	0.3	0.9	0.5	3	0	-3	negligible	negligible	negligible	negligible
FWS	7a (4)	Low	100E-06	100E-07	None (FAC)	Low (High)	100E-08	0.5	0.5	0.5	14	0	-14	negligible	negligible	negligible	negligible
FWS Total														0.00E+00	0.00E+00	0.00E+00	0.00E+00
MSS	7a	Medium	100E-04	100E-05	None (FAC)	Low (High)	100E-08	0.5	0.5	0.5	0	0	0	negligible	negligible	negligible	negligible
MSS Total														negligible	negligible	negligible	negligible
AFW	6a (3)	Medium	100E-04	100E-05	None (FAC)	Low (High)	100E-08	0.5	0.5	0.5	7	0	-7	negligible	negligible	negligible	negligible
AFW Total														negligible	negligible	negligible	negligible
Grand Total														-1.74E-09	4.16E-10	-1.39E-09	3.32E-10