Luminant

Rafael Flores
Senior Vice President
& Chief Nuclear Officer
rafael.flores@Luminant.com

Luminant Power
P O Box 1002
6322 North FM 56
Glen Rose, TX 76043

T 254 897 5550
C 817 559 0403
F 254 897 6652

CP-201100356
Log # TXX-11038

Ref. # 10 CFR 50.55a(3)(i)

August 2, 2011

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

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT
DOCKET NO. 50-445
RELIEF REQUEST A-1 FOR UNIT 1 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 (THIRD INTERVAL START DATE: AUGUST 13, 2010)

Dear Sir or Madam:

Pursuant to 10 CFR 50.55a(3)(i), Luminant Generation Company, LLC (Luminant Power) is submitting Relief Request A-1 (see attachment) for Comanche Peak Unit 1 for the third ten year inservice inspection interval. Luminant Power is requesting the continued use of a risk-informed process as an alternative for the selection of Class 1 and Class 2 piping welds for examination. The alternative process provides an acceptable level of quality and safety as determined by the attached Probabilistic Risk Assessment model.

This communication contains no new licensing basis commitments regarding Comanche Peak Unit 1. Should you have any questions, please contact Mr. Paul Passalugo at (254) 897- 6250.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

By: Fred W. Madden
Fred W. Madden
Director, Oversight & Regulatory Affairs

A047
NRR

Attachment - Relief Request A-1 for Risk-Informed Inservice Inspection of Piping Welds

c - E. E. Collins, Region IV
B. K. Singal, NRR
Resident Inspectors, Comanche Peak
Jack Ballard, ANII, Comanche Peak
Luis Ponce, TDLR

ATTACHMENT TO TXX-11038

RELIEF REQUEST A-1 FOR RISK-INFORMED INSERVICE INSPECTION OF PIPING WELDS

10CFR50.55a Request Number A-1

Proposed Alternative
in Accordance with 10CFR50.55a(a)(3)(i)

-Alternative Provides Acceptable Level of Quality and Safety-

ASME Code Components Affected

Class 1 and Class 2 Piping Welds

Applicable Code and Edition

The CPNPP Unit 1 ISI program is based on the 1998 Edition of ASME Section XI with the 2000 Addenda.

Applicable Code Requirement

Table IWB-2500-1, Examination Category B-F and Category B-J
Table IWC-2500-1, Examination Category C-F-1 and Category C-F-2

Reason For Request

The continued use of a risk-informed process as an alternative for the selection of Class 1 and Class 2 Piping Welds for examination is requested.

Proposed Alternative and Basis for Use

As an alternative to the Code Requirement, a Risk-Informed process will continue to be used for selection of Class 1 and Class 2 Piping Welds for examination.

The Unit 1 ISI program for the examination of Class 1 and Class 2 piping welds is currently in accordance with a risk-informed process submitted February 15, 2001. NRC approved this request on September 28, 2001 (TAC Nos. MB1201 and MB1202). In the original submittal, TXU Electric committed to review and adjust the risk ranking of piping segments as a minimum on an ASME period basis. The first period of implementation of the RI-ISI program was the first period of Interval 2, which ended July, 2003. To satisfy the periodic review requirements, an evaluation and update was performed at the end of each period in accordance with the Nuclear Energy Institute document 04-05, "Living Program Guidance To Maintain Risk-Informed Inservice Inspection Programs For Nuclear Plant Piping Systems", published

April, 2004. The updated program resulting from these reviews is the subject of this proposed alternative.

In accordance with the guidance provided by NEI 04-05, a table is provided as Attachment 1 identifying the number of welds added to and deleted from the originally approved RI-ISI program. The changes to the original program are attributable to several specific actions:

1) During the first period of the second ISI interval, the ISI Program was based on the 1986 Edition of ASME Section XI. Beginning with the second period of the second ISI interval through the first period of the third ISI interval, the ISI Program is in accordance with the 1998 Edition through 2000 Addenda of ASME Section XI. One of the changes in the new edition and addenda of the Code is that the exemption size for Class 2 auxiliary feedwater piping decreased from 4" NPS to 1 ½" NPS. As a result, the 4" NPS Class 2 auxiliary feedwater lines from the outboard isolation valves to where they connect to the four main feedwater lines were added to the ISI Program and consequently added to the RI-ISI Program.

2) In PRA Revision 3B dated May 2005, consequence segments 1-SI01, 1-ACC03A, 1-ACC03B, 1-RHR08A, 1-FW-03A, 1-FW-03B, 1-FW-03C, and 1-FW-03D changed consequence rank from Medium to High. As a result of this change, fourteen segments changed from a risk rank of Low to a risk rank of Medium.

3) In PRA Revision 3C dated June 2007 consequence segments 1-CT-09A, 1-CT-09B, 1-CVCS06, 1-CVCS07, and 1CVCS08 changed consequence rank from Medium to High. Consequence segment 1CVCS16 changed consequence rank from Medium to Low. Consequence segments 1-RHR03A, 1-RHR08A, and 1-RHR-08B changed consequence rank from High to Medium. Consequence segments 1-SI01 and 1-SI02 changed consequence rank from High to Low. As a result of these changes, eighteen Risk Segments changed from a risk rank of Low to a risk rank of Medium, eleven Risk Segments changed from a risk rank of Medium to a risk rank of Low, and one Risk Segment changed from Risk Category 6a to Risk Category 7a, but remained risk rank Low.

4) In PRA Revision 3D dated June 2009 consequence segments 1-CT-03A, 1-CT-03B, 1-CT-04A, 1-CT-04B, 1-CT-05A, and 1-CT-05B, changed consequence rank from Medium to High due to the testing frequency changing from quarterly to once every 18 months. Consequence segments 1-CT07 and 1-CVCS16 changed consequence rank from Low to Medium. Consequence

segments 1-CT09A, 1-CT09B, and 1-RHR-03B changed consequence rank from High to Medium. Consequence segments 1-CVCS06, 1-CVCS07 and 1-CVCS08 changed consequence rank from High to Low. As a result of these changes, twelve Risk Segments changed from a risk rank of Low to a risk rank of Medium, twenty-one Risk Segments changed from a risk rank of Medium to a risk rank of Low, and six Risk Segments changed from Risk Category 7a to Risk Category 6a, but remained risk rank Low. Maximum CCDP used as the Upper Bound in the Risk Impact Analysis changed to 7.48ER-03. Max CLERP changed to 9.55E-04

5) In Period 2, replacement of the steam generators and some MOVs resulted in numerous welds being deleted, added, or re-designated.

A new Risk Impact Analysis was performed, and the revised program continues to represent a risk reduction when compared to the last deterministic Section XI inspection program. The original program represented a reduction of 9.73E-09 in regards to CDF and 3.91E-09 in regards to LERF, while the revised program represents a reduction of 8.3E-09 in regards to CDF and 1.06E-09 in regards to LERF.

The Risk-Informed process continues to provide an adequate level of quality and safety for selection of the Class 1 and Class 2 Piping Welds for examination. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i) it is requested that the proposed alternative be authorized.

PRA Quality

See attached "Summary Statement of Comanche Peak Nuclear Power Plant (CPNPP) PRA Model Capability for Use in Risk-Informed Inservice Inspection Program Licensing Actions".

Duration of Proposed Alternative

The alternative will be used for CPNPP Unit 1 until the end of that unit's third ten-year ISI program inspection interval, subject to the review and update guidance of NEI 04-05. The third inspection interval is currently scheduled to end August, 2020.

CPNPP Unit 1 - Inspection Location Selection Comparison Between Original Approved and Updated RI-ISI Programs by Risk Category												
System[1]	Risk		Consequence Rank	Failure Potential		Code Category	Original			Interval 3 Update		
	Category	Rank		DMs	Rank		Weld Count	RI-ISI	Other[2]	Weld Count	RI-ISI	Other[2]
RCS	2	High	High	TASCS, TT	Medium	B-J	7	2		7	3	
RCS	2	High	High	TASCS	Medium	B-J	13	4		13	4	
RCS	2	High	High	TT (PWSCC)	Medium	B-F	1	0		1	1	
RCS	2	High	High	TT	Medium	B-J	11	2		11	2	
RCS	4 (2)	Medium (High)	High	None (PWSCC)	Low	B-F	19	14		20	8	
RCS	4	Medium	High	None	Low	B-J	205	29		223	26	
RCS	5	Medium	Medium	TASCS	Medium	B-J	20	2		20	2	
RCS	5	Medium	Medium	TT	Medium	B-J	45	5		44	5	
RCS	5	Medium	Medium	TT (PWSCC)	Medium	B-J	45	5		1	1	
RCS	6	Low	Medium	None	Low	B-J	61	0		61	0	
RCS	7	Low	Low	None	Low	B-J	15	0		15	0	
CVCS	6	Low	Medium	None	Low	B-J	47	0		47	0	
						C-F-1	231	0		18	0	
CVCS	6	Low	Low	TT	Medium	B-J	8	0		8	0	
CVCS	7	Low	Low	None	Low	B-J	30	0		30	0	
						C-F-1	0	0		235	0	
SIS	4	Medium	High	None	Low	B-J	79	7		79	7	
						C-F-1	98	11		136	18	
SIS	5	Medium	Medium	IGSCC	Medium	B-J	12	2		12	2	
SIS	6	Low	Medium	None	Low	B-J	95	0		95	0	
						C-F-1	596	0		425	0	
SIS	6	Low	Low	IGSCC	Medium	B-J	22	0		22	0	
SIS	7	Low	Low	None	Low	B-J	119	0		119	0	
						C-F-1	106	0		340	0	

CPNPP Unit 1 - Inspection Location Selection Comparison Between Original Approved and Updated RI-ISI Programs by Risk Category												
System[1]	**Risk**		**Consequence Rank**	**Failure Potential**		**Code Category**	**Original**			**Interval 3 Update**		
	Category	**Rank**		**DMs**	**Rank**		**Weld Count**	**RI-ISI**	**Other[2]**	**Weld Count**	**RI-ISI**	**Other[2]**
RHRS	4	Medium	High	None	Low	B-J	12	2		12	2	
						C-F-1	246	24		120	12	
RHRS	6	Low	Medium	None	Low	C-F-1	8	0		134	0	
CSS	4	Medium	High	None	Low	C-F-1	10	1		176	18	
CSS	6	Low	Medium	None	Low	C-F-1	178	0		125	0	
CSS	7	Low	Low	None	Low	C-F-1	234	0		357	0	
FWS	4 (1)	Medium (High)	High	None (FAC)	Low (High)	C-F-2	0	0		100	12	
FWS	5 (3)	Medium (High)	Medium	TASCS, (FAC)	Medium (High)	C-F-2	8	1		8	1	
FWS	6 (3)	Low (High)	Medium	None (FAC)	Low (High)	C-F-2	435	0		277	0	
MSS	6	Low	Medium	None	Low	C-F-2	165	0		170	0	
AFW	4 (1)	Medium (High)	High	None (FAC)	Low (High)	C-F-2	0	0	(3)	81	9	(3)
							3181	111		3542	133	
								change from original:			22	

Notes

1 Systems were described in Table 3.1-2 of the original submittal, with the exception of AFW - Auxiliary Feedwater. This ASME Code Class 2 system consists of 4 segments with 81 elements.

2 The column labeled "Other" is generally used to identify augmented inspection program locations that are credited beyond those locations selected per the RI-ISI process, as addressed in Section 3.6.5 of EPRI TR-112657. This option was not applicable for the CPNPP RI-ISI application. The "Other" column has been retained in this table solely for uniformity purposes with other RI-ISI application template submittals.

3 Due to a change in ASME Section XI Code criteria, 4" NPS Class 2 auxiliary feedwater piping was added to the ISI Program, and therefore the RI-ISI Program, for the first time during the second RI- ISI period. As such, there were no welds associated with this piping during the original RI-ISI application.

Summary Statement of Comanche Peak Nuclear Power Plant (CPNPP) PRA Model Capability for Use in Risk-Informed Inservice Inspection Program Licensing Actions

Introduction

Comanche Peak Nuclear Power Plant (CPNPP) employs a multi-faceted approach to establishing and maintaining the technical adequacy and plant fidelity of the PRA models for the operating CPNPP units. This approach includes both a proceduralized PRA maintenance and update process, and the use of self-assessments and independent peer reviews. The following information describes this approach as it applies to the CPNPP PRA.

PRA Maintenance and Update

The CPNPP risk management process ensures that the applicable PRA model remains an accurate reflection of the as-built and as-operated plants. This process is defined in the CPNPP risk management program, which consists of a governing procedure ECE-2.15 "Risk and Reliability Functions" and subordinate implementation documents. CPNPP desktop instruction R&R-DI-009, "Maintenance and Update of PRA Models" delineates the responsibilities and guidelines for updating the full power internal events PRA models at CPNPP. The overall CPNPP risk management program, including R&R-DI-009, defines the process for implementing regularly scheduled and interim PRA model updates, for tracking issues identified as potentially affecting the PRA models (e.g., due to changes in the plant, errors or limitations identified in the model, industry operational experience), and for controlling the model and associated computer files. To ensure that the current PRA model remains an accurate reflection of the as-built, as-operated plant, the following activities are routinely performed:

- Design changes and procedure changes are reviewed for their impact on the PRA model.
- Impacts to the design basis documents (or calculations when specifically cited by the PRA) are reviewed for their potential impact on the PRA model.
- Maintenance unavailabilities are captured.
- Plant specific initiating event frequencies, failure rates, and maintenance unavailabilities are updated approximately every 5-7 years.

In addition to these activities, CPNPP risk management procedures/desktop instructions provide the guidance for particular risk management and PRA quality and maintenance activities. This guidance includes:

- Documentation of the PRA model, PRA products, and bases documents.
- The approach for controlling electronic storage of Risk Management (RM) products including PRA update information, PRA models, and PRA applications.

- Guidelines for updating the full power, internal events PRA models for CPNPP.
- Guidance for use of quantitative and qualitative risk models in support of the On-Line Work Control Process Program for risk evaluations for maintenance tasks (corrective maintenance, preventive maintenance, minor maintenance, surveillance tests and modifications) on systems, structures, and components (SSCs) within the scope of the Maintenance Rule [10CFR50.65 (a)(4)].

In accordance with this guidance, regularly scheduled PRA model updates nominally occur on an approximately 5-7 year cycle; longer intervals may be justified if it can be shown that the PRA continues to adequately represent the as-built, as-operated plant. CPNPP performed a regularly scheduled update to the Rev. 3 CPNPP PRA model in 2004. Rev. 3D of the PRA model, from 2009, was used in this Request and incorporated minor changes since the Rev. 3 update.

PRA Self Assessment and Peer Review

Several assessments of technical capability have been made, and continue to be planned, for the CPNPP PRA models. These assessments are as follows:

- An independent PRA peer review was conducted under the auspices of the Westinghouse Owners Group (WOG) in 2002, following the Industry PRA Peer Review process [1].
- In 2004 a self assessment of the Systems Analysis (SY) element of the PRA model was done against the ASME PRA Standard [2] prior to the 2004 update. No gaps were identified relative to technical adequacy.
- In 2004 during the update process a self assessment was performed with two industry peer reviewers using the WOG peer review process. This review included an assessment of the PRA model maintenance and update process and the loss of offsite power calculation and convolution data.. Results confirmed the technical adequacy of the CPNPP PRA model, with certain changes to the model that were incorporated during the update, and that the model would be maintained in a manner that would support risk informed applications.
- Following the Rev. 3 PRA model update a focused peer review was completed by two outside consultants utilizing the quantification elements of the ASME PRA standard [2A]. The review focused on the RCP Seal LOCA model, the thermal hydraulic analyses associated with the RCP Seal LOCA scenarios, Loss of offsite power model changes, and the quantification process. No category A or B Facts & Observations (F&Os) were identified in the review and all other F&O items were resolved in a subsequent update.
- During April 2006, the CPNPP PRA model results were evaluated in the WOG PRA cross-

comparisons study performed in support of implementation of the mitigating systems performance indicator (MSPI) process. Results of this cross-comparison are presented in WCAP-16464 [4]. Noted in this document was the fact that, after allowing for plant-specific features, there are no MSPI cross-comparison outliers for CPNPP.

- In 2009, a gap analysis was performed against the available versions of the ASME PRA Standard [6] and Regulatory Guide 1.200, Rev. 1 [3]. The assessment reviewed the extent to which the gaps existed and a PRA model update is in progress and will address the gaps that were identified.

A summary of the disposition of the 2002 Industry Peer Review facts and observations (F&Os) for the CPNPP models was documented as part of the statement of PRA capability in the MSPI Bases Document [5]. As noted in that document all significance level A and B F&Os were addressed and closed out with the completion of the current model of record.

A gap analysis for the Rev. 3C CPNPP PRA models was completed in 2009 and was documented in R&R-PN-202 [8]. The gap analysis was performed against the available version of the ASME PRA Standard [6] and Regulatory Guide 1.200, Rev. 1 [3]. This gap analysis defined a number supporting requirements from the ASME Standard [6] for which potential gaps to the ASME PRA Standard were identified. The model of record Rev. 3D is used and only includes minor changes associated with the Unit 1 steam generator replacement and the Unit 1 and 2 power uprates since the Rev. 3C model and therefore the gap assessment remains valid. Additionally, EPRI TR-1018427 [7] defines the specific capability category requirements necessary for the PRA model to be used in the RI-ISI program. Therefore, the attached Appendix 1 "Status of Open Gaps to Capability Category Identified by EPRI TR-1018427" only lists the gaps that are defined as nonconforming to the RI-ISI program, by the EPRI TR. The appendix also includes a description of the gap's potential impact on the RI-ISI program and a discussion, if any necessary, of the sensitivity study performed.

General Conclusion Regarding PRA Capability

The CPNPP PRA maintenance and update processes and technical capability evaluations described above provide a robust basis for concluding that the PRA is suitable for use in risk-informed licensing actions. As specific risk-informed PRA applications are performed, remaining gaps to specific requirements in the PRA standard will be reviewed to determine which, if any, would merit application-specific sensitivity studies in the presentation of the application results. The specific gaps that could impact the RI-ISI are discussed in the next section and are summarized in Appendix 1.

Assessment of PRA Capability Needed for Risk-Informed Inservice Inspection

In the risk-informed in-service inspection (RI-ISI) program at CPNPP, the EPRI RI-ISI methodology [9] is used to define alternative in-service inspection requirements. Plant-specific PRA-derived risk significance information is used during the RI-ISI plan development to support the consequence assessment, risk ranking and delta risk evaluation steps.

The importance of PRA consequence results, and therefore the necessary scope of PRA technical capability, is tempered by two processes in the EPRI methodology.

First, PRA consequence results are binned into one of three conditional core damage probability (CCDP) and conditional large early release probability (CLERP) ranges before any welds are chosen for RI-ISI inspection. Table 2 illustrates the binning process.

Table 2 – Consequence Results Binning Groups

Consequence Category	CCDP Range	CLERP Range
High	CCDP > 1E-4	CLERP > 1E-5
Medium	1E-6 < CCDP < 1E-4	1E-7 < CLERP < 1E-5
Low	CCDP < 1E-6	CLERP < 1E-7

The risk importance of a weld is therefore not tied directly to a specific PRA result. Instead, it depends only on the range in which the PRA result falls. The wide binning provided in the methodology generally reduces the significance of specific PRA results.

Secondly, the influence of specific PRA consequence results is further reduced by the joint consideration of the weld failure potential via a non-PRA-dependent damage mechanism assessment. The results of the consequence assessment and the damage mechanism assessment are combined to determine the risk ranking of each pipe segment (and ultimately each element) according to the EPRI Risk Matrix. The Risk Matrix, which equally takes both assessments into consideration, is reproduced below.

POTENTIAL FOR PIPE RUPTURE PER DEGRADATION MECHANISM SCREENING CRITERIA	CONSEQUENCES OF PIPE RUPTURE IMPACTS ON CONDITIONAL CORE DAMAGE PROBABILITY AND LARGE EARLY RELEASE PROBABILITY			
	NONE	LOW	MEDIUM	HIGH
HIGH FLOW ACCELERATED CORROSION	LOW Category 7	MEDIUM Category 5	HIGH Category 3	HIGH Category 1
MEDIUM OTHER DEGRADATION MECHANISMS	LOW Category 7	LOW Category 6	MEDIUM Category 5	HIGH Category 2
LOW NO DEGRADATION MECHANISMS	LOW Category 7	LOW Category 7	LOW Category 6	MEDIUM Category 4

These facets of the methodology reduce the influence of specific PRA results on the final list of candidate welds.

The limited use of specific PRA results in the RI-ISI process is also reflected in the risk-informed license application guidance provided in Regulatory Guide 1.174 [10]. Section 2.2.6 of Regulatory Guide 1.174 provides the following insight into PRA capability requirements for this type of application:

> *There are, however, some applications that, because of the nature of the proposed change, have a limited impact on risk, and this is reflected in the impact on the elements of the risk model.*
>
> *An example is risk-informed inservice inspection (RI-ISI). In this application, risk significance was used as one criterion for selecting pipe segments to be periodically examined for cracking. During the staff review it became clear that a high level of emphasis on PRA technical acceptability was not necessary. Therefore, the staff review of plant-specific RI-ISI typically will include only a limited scope review of PRA technical acceptability.*

Further, Table 1.3-1 of the ASME PRA Standard' [6] identifies the bases for PRA capability categories. The bases for Capability Category I for scope and level of detail attributes of the PRA states:

> *Resolution and specificity sufficient to identify the relative importance of the contributors at the system or train level including associated human actions.*

Based on the above, in general, Capability Category I should be sufficient for PRA quality for a RI-ISI application.

However, based on the EPRI TR-1018427 [7] a more specific list of capability category requirements has been developed for the RI-ISI program defining which of the ASME PRA Standard [6] supporting requirements should fall under categories I, II, or III. Reviewing the list of supporting requirements for the RI-ISI program listed in the TR it is noted that the internal flooding requirements are included, but at CPNPP the RI-ISI was developed using insights from the plant's deterministic flooding analysis in lieu of the PRA internal flooding model and its results. Therefore the internal flooding technical supporting requirements are not applicable to the PRA analysis for the CPNPP RI-ISI program.

Reviewing the CPNPP GAP Analysis [8] against the EPRI TR-1018427 [7], there are four potential gaps to the technical supporting requirements were identified in the PRA model; the gaps are listed in Appendix 1 of this letter. Two of the gaps, DA-C11 and LE-F1b, were determined to be caused by conservative data/analysis methods that have not been updated recently. As these gaps were determined to be conservative they have no negative impact to the RI-ISI program. The other two gaps, SY-A22 and DA-C15, are related to the use of hardware fault recovery and were subject to a sensitivity analysis to assess their impact to the RI-ISI program. The sensitivity study removed the recoveries for hardware failures and the results of the study showed no consequence segments increased in PRA risk ranking. Therefore, because there were no consequences risk ranking category increases seen in the sensitivity results, there is no impact from the two technical supporting requirement gaps, SY-A22 and DA-C15, to the RI-ISI program.

There were several other documentation issues that were identified in the gap analysis there were re-verified to be only documentation issues and not a gap for a technical supporting requirement. These are not included in Appendix 1 as they are documentation issues only and have no impact to the PRA results for the RI-ISI program.

The EPRI methodology further provides an alternate means to estimate the pipe rupture consequence, namely lookup tables. Although these lookup tables were not used, the impact of the loss of systems or trains is done in a generic (not plant-specific) fashion for this alternative method. This allowable alternative underscores the relatively low dependence of the process on specific PRA capabilities.

In addition to the above, it is noted that welds are not eliminated from the ISI program solely on the basis of risk information. The risk significance of a weld may fall from Medium Risk Ranking to Low Risk Ranking, resulting in it not being a candidate for inspection. However, it remains in the program, and if, in the future, the assessment of its ranking changes (either by damage mechanism or PRA risk) then it can again become a candidate for inspection. If a weld is determined, outside the PRA evaluation, to be susceptible to flow-accelerated corrosion

(FAC), inter-granular stress corrosion cracking (IGSCC) or microbiological induced cracking (MIC) in the absence of any other damage mechanism, then it moves into an "augmented" program where it is monitored for those special damage mechanisms. That occurs regardless of what the Risk Ranking of the weld is determined to be.

Conclusion Regarding PRA Capability for Risk-Informed ISI

The CPNPP PRA model continues to be suitable for use in the RI-ISI application. This conclusion is based on:

- the PRA maintenance and update processes in place,
- the PRA technical capability evaluations that have been performed and are being planned, and
- the RI-ISI process considerations, as noted above, that demonstrate the relatively limited reliance of the process on PRA capability.

---

[1] Table A-1 of Regulatory Guide 1.200 identifies the NRC staff position as "No objection" to Section 1.3 of the ASME PRA Standard, which contains Table 1.3-1.

References

1. NEI-00-02, "Probabilistic Risk Assessment (PRA) Peer Review Process Guidance," Rev. A3.

2. American Society of Mechanical Engineers, Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications, ASME Ra-Sa-2002, New York, New York, April 2002.

2A. American Society of Mechanical Engineers, Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications, ASME Ra-Sa-2003, New York, New York, December 2003.

3. U.S. Nuclear Regulatory Commission, An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities, Regulatory Guide 1.200, Rev. 1, January 2007.

4. WCAP-16464-NP, "Westinghouse Owner's Group Mitigating Systems Performance Index Cross Comparison," Revision 0, August 2005.

5. Comanche Peak Nuclear Power Plant, Reactor Oversight Program (ROP) Mitigating Systems Performance Index (MSPI) Bases Document, R&R-PN-112, Rev. 3, December 2008.

6. American Society of Mechanical Engineers, Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications, ASME RA-Sb-2005, New York, New York, December 2005.

7. Electric Power Research Institute, Nondestructive Evaluation: Probabilistic Risk Assessment Technical Adequacy Guidance for Risk-Informed In-Service Inspection Programs, EPRI TR-1018427, Palo Alto, CA 2008.

8. Comanche Peak Nuclear Power Plant, R.G. 1.200 Compliance, R&R-PN-202, May 2009.

9. Revised Risk-Informed Inservice Inspection Evaluation Procedure, EPRI TR-112657, Revision B-A, December 1999.

10. U.S. Nuclear Regulatory Commission, An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis, Regulatory Guide 1.174, Revision 1, November 2002.

Appendix 1 – Status of Open Gaps to Capability Category Identified by EPRI TR-1018427[2]

Title	Description of Gap	Applicable SRs	Current Status / Comment	Importance to RI-ISI
1	Modeling of the repair of hardware faults with limited justification and supporting data.	SY-A22 DA-C15	Open – These will be addressed in the next PRA model update which is currently ongoing.	None - A sensitivity study was performed to check for any impacts to the overall risk ranking. In the sensitivity study all hardware recoveries were not allowed. Based on this revised data without recovery, there were no increases to the segment consequence risk categories and therefore no impact to the RI-ISI.
2	Data analysis is overestimating the test and maintenance unavailability of components in the model. (actual unavailability is lower than the data reflects)	DA-C11	Open – This will be addressed in the next PRA model update which is currently ongoing.	None – This is conservative data that has no significant impact on RI-ISI.
3	Current LERF analysis has not significantly changed from the IPE and is seen as likely over conservative.	LE-F1b	Open – This will be addressed in the next PRA model update which is currently ongoing.	None – This is conservative analysis and has no significant impact on RI-ISI.

[2] The gap analysis is conducted independently of RI-ISI and is based on comparing the PRA model against the supporting requirements of ASME PRA standard. The completed gap analysis was then compared to the EPRI TR-1018427 and the remaining identified gaps that did not meet the TR and were verified not to be documentation gaps were placed in this Appendix 1.