

January 9, 2009

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

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Subject: Relief Requests Associated with the Third and Fourth Inservice Inspection (ISI) Intervals and the First and Second Containment Inservice Inspection (CISI) Intervals – Relief Request I4R-44

- References:**
- 1) Letter from P. B. Cowan (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Submittal of Relief Requests Associated with the Third and Fourth Inservice Inspection (ISI) Intervals and the First and Second Containment Inservice Inspection (CISI) Intervals," dated February 29, 2008
 - 2) Letter from J. D. Hughey (U. S. Nuclear Regulatory Commission) to C. G. Pardee (Exelon Generation Company, LLC), "Peach Bottom Atomic Power Station, Units 2 and 3 – Request for Supplemental Information Regarding Relief Request I4R-44 (TAC NOS. MD8296 and MD8297)," dated May 7, 2008
 - 3) Letter from P. B. Cowan (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Response to Request for Supplemental Information Associated with Relief Request I4R-44," dated May 13, 2008
 - 4) Letter from J. D. Hughey (U. S. Nuclear Regulatory Commission) to C. G. Pardee (Exelon Generation Company, LLC), "Peach Bottom Atomic Power Station, Units 2 and 3: Request for Additional Information Regarding Relief Request CRR-13 Associated with the First and Second Containment Inservice Inspection Intervals (TAC NOS. MD8308 and MD8309)," dated July 9, 2008

- 5) Letter from P. B. Cowan (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Relief Requests Associated with the Third and Fourth Inservice Inspection (ISI) Intervals and the First and Second Containment Inservice Inspection (CISI) Intervals – Response to Request for Additional Information Concerning Relief Request CRR-13," dated August 4, 2008
- 6) Letter from J. D. Hughey (U. S. Nuclear Regulatory Commission) to C. G. Pardee (Exelon Generation Company, LLC), "Peach Bottom Atomic Power Station, Units 2 and 3: Request for Additional Information Regarding Relief Request CRR-13 Associated with the First and Second Containment Inservice Inspection Intervals (TAC NOS. MD8308 and MD8309)," dated October 2, 2008
- 7) Letter from J. D. Hughey (U. S. Nuclear Regulatory Commission) to C. G. Pardee (Exelon Generation Company, LLC), "Peach Bottom Atomic Power Station, Units 2 and 3: Request for Additional Information Regarding Relief Request I4R-47 Associated with the Fourth Inservice Inspection Interval (TAC NOS. MD8304 and MD8305)," dated October 2, 2008
- 8) Letter from P. B. Cowan (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Relief Requests Associated with the Third and Fourth Inservice Inspection (ISI) Intervals and the First and Second Containment Inservice Inspection (CISI) Intervals - Response to Request for Additional Information Concerning Relief Request CRR-13 and I4R-47, and Withdrawal of Relief Request I4R-08," dated October 9, 2008
- 9) Letter from P. B. Cowan (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Relief Requests Associated with the Third and Fourth Inservice Inspection (ISI) Intervals and the First and Second Containment Inservice Inspection (CISI) Intervals – Submittal of Revised Relief Request I4R-47," dated November 13, 2008
- 10) Letter from J. D. Hughey (U. S. Nuclear Regulatory Commission) to C. G. Pardee (Exelon Generation Company, LLC), "Peach Bottom Atomic Power Station, Units 2 and 3 - Request for Additional Information Regarding Relief Request I4R-44 (TAC NOS. MD8296 and MD8297)," dated December 18, 2008

In the Reference 1 letter, Exelon Generation Company, LLC (EGC) submitted for your review and approval relief requests associated with the third and fourth Inservice Inspection (ISI) intervals for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. Also included for your review and approval were relief requests associated with the first and second Containment Inservice Inspection (CISI) intervals for PBAPS, Units 2 and 3. References 2 through 9 involved NRC requests for additional information (and responses to same) associated with the Reference 1 submittal.

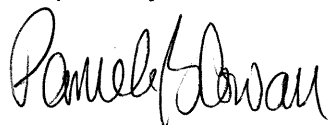
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In a conversation with the U.S. Nuclear Regulatory Commission staff on December 9, 2008, supplemental information was requested. This request is contained in the Reference 10 letter. Attached is our response to this request.

There are no regulatory commitments contained in this letter.

Should you have any questions concerning this letter, please contact Tom Loomis at (610) 765-5510.

Respectfully,



Pamela B. Cowan
Director – Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Attachment: Response to Request for Additional Information – Relief Request 14R-44

cc: S. J. Collins, Regional Administrator, Region I, USNRC
F. Bower, USNRC Senior Resident Inspector, PBAPS
J. Hughey, Project Manager, USNRC
S. T. Gray, State of Maryland
R. R. Janati, Commonwealth of Pennsylvania

Attachment

Response to Request for Additional Information – Relief Request I4R-44

**Response to Request for Additional Information
Relief Requests Associated with Third and Fourth
ISI Intervals and First and Second CISI Intervals - I4R-44
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Question:

The NRC has reviewed Exelon's submittal and has determined that additional information described below is needed to complete the review. The following question references information provided in the attachment to your May 13, 2008 letter.

RAI-01: Based on the information provided, it appears that the licensee's PRA has been evaluated against ASME RA-Sb-2005, but not against the staff's regulatory positions contained in Appendix A of RG 1.200. In order for the staff to conclude that your PRA has been evaluated in accordance with RG 1.200, the staff positions in Appendix A need to be incorporated into your evaluation or these positions should be evaluated for impact (or lack of impact) on risk-informed inservice inspection. Please clarify how the licensee's evaluation process complies with RG 1.200 or provide an equivalent alternative.

Response:

The assessment of the updated PRA model that was completed in 2006 included an assessment against Addendum A of the ASME PRA standard (Reference 1 below) and the regulatory positions contained in Appendix A of RG 1.200, Rev. 0 (Reference 2 below) that were available at that time. The response provided to the previous RAI improperly indicated that this was against the requirements in Addendum B of the standard (Reference 3 below) and was silent regarding the inclusion of the requirements in Appendix A of RG 1.200. For the preparation of the initial RAI response, a review of Addendum B of the Standard and NRC issued clarifications (Reference 4 below) was performed and two new gaps were identified relating to 14 Supporting Requirements. These two new items were identified as Add #1 and Add #2 in the table assessing the relevance of the gaps to the RI-ISI process as provided in Exelon's May 13, 2008, letter.

Although a formal review of the changes to Appendix A of RG 1.200, Revision 1 (Reference 5 below) had not yet been performed at the time of the initial RAI response, a formal review has subsequently been performed and it has been determined that there are no additional issues in any of the NRC issue resolutions and clarifications in Appendix A of RG 1.200, Revision 1 that would impact the results of the initial assessment. Therefore, the PRA capability evaluation that was previously reported in our May 13, 2008, letter is consistent with Addendum B of the ASME PRA Standard, the criteria in RG 1.200, Revision 1 including the NRC positions stated in Appendix A of RG 1.200, Revision 1, and the NRC clarifications provided in Reference 4.

Question:

The first paragraph on page 4 of 7 of relief request I4R-44 states that, "The Consequence Evaluation, Degradation Mechanism, Risk Ranking, and Element Selection steps encompass the complete living program process applied under the Peach Bottom Atomic Power Station RI-ISI program."

RAI-02: Please provide a description of what was done to implement the above living RI-ISI program commitment in preparation for the request to extend this program into the fourth 10-year ISI interval. The description should specify those portions of the RI-ISI program process steps that were re-performed (e.g., scope definition, segment definition, consequence evaluation, failure probability estimation, element selection, etc.), and/or explain and justify what was done in lieu of re-performing those steps that were not re-performed.

Response:

For the fourth interval, the overall scope of the program is similar to the third interval. No new systems were added, nor have changes to how the evaluation methodology was applied been made, that affect the program scoping process. However, the RI-ISI program is required to be maintained (and has been maintained) as a living program assessing component and configuration changes and major PRA model revisions. With the exception of the latest outage on Unit 2 (P2R17, September 2008), routine plant modifications for both units have been reviewed. This review determined that no new welds were added and no existing welds were removed under recent plant modifications that would need to be incorporated into the RI-ISI program. Changes to the RI-ISI program resulting from a review of the P2R17 work will be assessed for any alteration in the RI-ISI population and examination scope prior to P2R18 (2010). Also, as part of the fourth interval update process, the consequence and degradation assignments have been reassessed, component risk rankings have been confirmed or updated, element selections have been adjusted, and the risk impact assessment has been revised. A summary of the results is contained in the response to RAI-03 below.

Question:

RAI-03: Are the inspection locations in the RI-ISI program that has been developed for the fourth interval the same locations as those in the program approved in the NRC staff's August 27, 2003, safety evaluation for the Peach Bottom third testing interval (ADAMS Accession Number ML032250066)? If not, please summarize the changes to the program and what caused those change.

Response:

As discussed above, the RI-ISI program has been maintained as a living program. During the fourth interval update, a new PRA model revision was incorporated into the program. As a result, some risk rankings were updated and element selections were modified accordingly. In addition, coverage limitations and plant modifications from the third interval were considered in the element selection review process. The changes in inspection locations from the third interval to the fourth interval are summarized below.

UNIT 2 SELECTION SUMMARY

Risk Rank	Interval 3 Exams (RI-ISI Rev. 0)	Interval 4 Exams (RI-ISI Rev. 1)	Items Affecting Changes
High	32	32	<ul style="list-style-type: none"> ▪ Limited Exam Coverage ▪ Plant/Component Modifications ▪ PRA Model Revisions¹
Medium	71	76	<ul style="list-style-type: none"> ▪ Limited Exam Coverage ▪ Plant/Component Modifications ▪ PRA Model Revisions¹
Total	103	108	
¹ Latest incorporated revision is PRA Model PB205C			

UNIT 3 SELECTION SUMMARY

Risk Rank	Interval 3 Exams (RI-ISI Rev. 0)	Interval 4 Exams (RI-ISI Rev. 1)	Items Affecting Changes
High	35	34	<ul style="list-style-type: none"> ▪ Limited Exam Coverage ▪ Plant/Component Modifications ▪ PRA Model Revisions²
Medium	72	76	<ul style="list-style-type: none"> ▪ Limited Exam Coverage ▪ Plant/Component Modifications ▪ PRA Model Revisions²
Total	107	110	
² Latest incorporated revision is PRA Model PB205C			

Limited Exam Coverage – The welds selected for examination were changed in some cases to optimize examination code coverage.

Plant Modifications – As discussed in the RAI-02 response above, no plant modifications were performed that impacted the RI-ISI program.

PRA Model Revisions – The Peach Bottom PRA Model applicable to the RI-ISI update was revised in October 2006. Some of the more significant updates made in this revision included revising initiating event data utilizing the latest Peach Bottom operating experience, revising component failure data including extensive use of plant-specific component failure data gathered from the Peach Bottom Maintenance Rule Program, and incorporating an extensive Human Reliability Analysis (HRA) re-assessment using the Exelon standard HRA methodology as well as operating crew interviews using the latest Emergency Operating Procedures and support procedures.

Question:

Paragraph 5.0(b) on page 4 of 7 of relief request I4R-44 discusses the degradation-specific inspection requirements and examination methods and discusses the guidance of both EPRI TR-112657 and Code Case N-578-1 (Risk-Informed Requirements for Class 1, 2, 3 Piping, Method B, Section XI, Division 1, March 28, 2000).

RAI-04: Please clarify which guidance was used to determine the examination methods and the examination volumes to be used for specific degradation mechanisms.

Response:

As requested in Paragraph 5.0(b) of Relief Request I4R-44, Table 1 of Code Case N-578-1 is used to define Examination Category R-A and assign specific Item Numbers based on the degradation mechanism assigned per the requirement of the EPRI TR-112657. Based on the Item Number, Table 1 of the Code Case will also be used to determine the required Examination Methods. Once the method is determined, the EPRI TR-112657 process is continued for the purpose of defining the applicable examination volumes for each specific degradation mechanism. These volumes are defined using the figures in Section 4 of the EPRI TR. To fill in some gaps in the EPRI TR (e.g., the Exam Category/Item, elements with no degradation mechanism assigned, socket weld examination method), Table 1 of the Code Case with its applicable notes is utilized. This approach is consistent with the current approved program and no changes are being requested as to how the RI-ISI process is being implemented.

Question:

RAI-05: Provide information regarding: examinations/system/components/degradation mechanisms/class, etc. The information should show a summary of the changes in inspections from the Section XI program and changes from the previous RI-ISI program to the proposed RI-ISI program. Similar information was provided in Tables 2 and 3 of the Byron Station submittal dated September 7, 2007 (ADAMS Accession No. ML072530024).

Response:

A summary of the changes to inspection locations between the original RI-ISI Program implemented in the third interval and the revised program prepared for the fourth interval is contained in the response to question RAI-03 above. Based on a teleconference with the staff reviewers on December 9, 2008, the inspection changes are further compared in the tables below.

UNIT 2 SELECTION COMPARISON

Risk Category	RI-ISI Element Populations	Minimum Elements to Select for Interval 4	RI-ISI Elements Selected for Interval 4 (RI-ISI Rev. 1)	RI-ISI Elements Selected for Interval 3 (RI-ISI Rev. 0)	Section XI Welds Selected for Interval 3 (Pre-RI-ISI)
1	51	12.8	13	13	17
2	44	11.0	12	12	12
3	22	5.5	7	7	5
4	675	67.5	73	69	125
5	12	1.2	3	2	1
TOTALS:	804	98.0	108	103	160

UNIT 3 SELECTION COMPARISON

Risk Category	RI-ISI Element Populations	Minimum Elements to Select for Interval 4	RI-ISI Elements Selected for Interval 4 (RI-ISI Rev. 1)	RI-ISI Elements Selected for Interval 3 (RI-ISI Rev. 0)	Section XI Welds Selected for Interval 3 (Pre-RI-ISI)
1	54	13.5	14	14	20
2	37	9.3	12	11	14
3	23	5.8	8	10	4
4	708	70.8	74	71	149
5	10	1.0	2	1	2
TOTALS:	832	100.4	110	107	189

References:

1. 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.
2. 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 For Trial Use, February 2004.
3. 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.
4. U.S. Nuclear Regulatory Commission Memorandum to Michael T. Lesar from Farouk Eltawila, "Notice of Clarification to Revision 1 of Regulatory Guide 1.200," for publication as a Federal Register Notice, July 27, 2007.
5. 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, Revision 1, January 2007.