



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

March 19, 2010

Mr. Charles G. Pardee  
President and Chief Nuclear Officer  
Exelon Generation Company, LLC  
200 Exelon Way  
Kennett Square, PA 19348

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3: REQUEST FOR ADDITIONAL INFORMATION REGARDING REQUESTS FOR RELIEF I3R-48 AND I3R-49 (TAC NOS. MD2154 AND MD2155)

Dear Mr. Pardee:

By letter to the Nuclear Regulatory Commission (NRC) dated August 19, 2009,<sup>1</sup> Exelon Generation Company, LLC, (Exelon) submitted Requests for Relief (RR) I3R-48 and I3R-49 from the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. The requests for relief are for the third 10-year inservice inspection (ISI) interval, in which the licensee adopted the 1989 Edition with no Addenda of ASME Code Section XI as the Code of Record. The NRC staff has reviewed the request submitted by the licensee and has identified a need for additional information as set forth in the Enclosure.

The draft questions were sent to Mr. Tom Loomis of your staff to ensure that the questions were understandable, the regulatory basis for the questions was clear, and to determine if the information was previously docketed. A teleconference was held between Exelon and NRC staff on March 5, 2010, regarding the questions. During this teleconference, Mr. Loomis confirmed that Exelon will provide a response by April 30, 2010.

Please note that if you do not respond to this letter by the agreed upon date above or provide an acceptable alternate date in writing, we may reject your application for amendment under the provisions of Title 10 of the *Code of Federal Regulations*, Section 2.108.

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<sup>1</sup> Agencywide Documents Access and Management System (ADAMS) Accession No. ML092390585.

C. Pardee

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If you have any questions, please contact John Hughey at (301) 415-3204.

Sincerely,

A handwritten signature in black ink, appearing to read "John D. Hughey". The signature is written in a cursive style with a large initial "J" and "H".

John D. Hughey, Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-277 and 50-278

Enclosure: As stated

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION  
REGARDING THE THIRD 10-YEAR INSERVICE INSPECTION  
INTERVAL REQUESTS FOR RELIEF I3R-48 AND I3R-49  
PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3  
DOCKET NOS. 50-277 AND 50-278

By letter to the Nuclear Regulatory Commission (NRC) dated August 19, 2009,<sup>1</sup> Exelon Generation Company, LLC, (Exelon) submitted Requests for Relief (RR) I3R-48 and I3R-49 from the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. The requests for relief are for the third 10-year inservice inspection (ISI) interval, in which the licensee adopted the 1989 Edition with no Addenda of ASME Code Section XI as the Code of Record. The Nuclear Regulatory Commission (NRC) staff has determined that in order for the NRC staff to complete its evaluation, response to the following request for additional information (RAI) questions is required.

**General – Information Required on Requests for Relief I3R-48 and I3R-49, ASME Code, Section XI, Examination Categories B-A, B-D, and B-K, Items B1.22, B3.90, B3.100, and B10.10 (PBAPS, Units 2 and 3)**

RAI 1: The licensee has provided some limited written descriptions and drawings depicting interferences that cause scanning difficulties due to insulation brackets and rings, and the proximity of mirror insulation. However, no discussion of why this insulation cannot be removed is given. Please discuss whether the limited examinations caused by interference from the insulation cannot be remedied by removal of the subject insulation and supporting appurtenances in all cases.

**Request for Relief I3R-48, Part A, ASME Code, Section XI, Examination Category B-A, Items B1.12, B1.22, and B1.30, Pressure Retaining Welds in Reactor Vessel PBAPS, Units 2 and 3)**

**Reactor Pressure Vessel (RPV) Longitudinal Shell Welds (RPV-V1B and RPV-3A/B/C, PBAPS, Unit 2)**

RAI 2: Attachment A10 of the licensee's submittal for RPV Longitudinal Shell Weld RPV-V1B states that an indication was found to be allowable in accordance with the 1980 Edition of the ASME Code. It is unclear why the licensee is using the 1980 Edition of the ASME Code here, while the stated ASME Code of Record for the third interval is the 1989 Edition. Please confirm the ASME Code of Record for the third 10-year interval inservice inspection program at PBAPS, Unit 2, and discuss the use of the earlier ASME Code reference.

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<sup>1</sup> Agencywide Documents Access and Management System (ADAMS) Accession No. ML092390585.

RAI 3: The limitations specified for RPV Longitudinal Welds RPV-V3A, -B and -C are stated as being caused by the core spray and feedwater spargers. It is unclear how these components interfere with the examination since no description of the ultrasonic (UT) scanning apparatus and no drawings or sketches were provided of the interferences caused by these components. Please submit detailed and specific information to support the basis for limited examination for RPV Longitudinal Welds RPV-V3A, -B, and -C. Include descriptions (written and/or sketches, as necessary) and as applicable, describe nondestructive examination (NDE) equipment to show accessibility limitations.

RPV Closure and Bottom Head Meridional Welds (CH-MA, RPV-MC, RPV-ME, and RPV-MF (PBAPS, Unit 3))

RAI 4: For RPV Closure Head Meridional Weld CH-MA, the examination was limited due to the closure head lifting lugs. However, sufficient discussion (written and sketches) of scanning limitations has not been included. For each of the techniques applied, describe specifically how the lifting lugs impacted the volumetric coverage. The licensee should also verify and state whether indications were found during the ultrasonic examinations, as it is not clearly stated in the submittal.

RAI 5: From the sketches provided for RPV Bottom Head Meridional Weld RPV-MC, it is unclear why the examination length of the weld is only 56 inches as opposed to 59 inches for welds RPV-MA and RPV-MB. From the sketch provided, there does not appear to be any additional limitations. Please provide a more detailed description explaining this difference.

RAI 6: The licensee noted for RPV Bottom Head Meridional Welds RPV-ME and RPV-MF that no scanning was performed inside the vessel support skirt due to As Low As Reasonably Achievable (ALARA) radiation exposure considerations. Please provide an estimate of the additional radiation dose that would be received if the examination were conducted from the inside of the vessel support skirt. Also, discuss whether visual examination, either remote or direct, could be used to augment the inaccessible portion of the welds on the inside of the RPV support skirt.

RPV Shell-to-Flange Weld (RPV-C6 (PBAPS, Units 2 and 3))

RAI 7: The licensee stated that the examinations of the RPV shell-to-flange welds were performed to requirements contained in ASME Code, Section XI, Appendix VIII per the performance demonstration initiative (PDI) program. According to Article I-2110 of ASME Code, Section XI, Appendix I, shell-to-flange welds are excluded from the requirements of ASME Code, Section XI, Appendix VIII. Please verify and state the appropriate ASME Code section that was followed for this examination category. If ASME Code, Section XI, Appendix VIII qualified techniques were applied, please discuss whether this alternative was approved by the NRC.

RAI 8: On the sketch provided (PBAPS, Unit 2 only) for RPV Shell-to-Flange Weld RPV-C6, there appears to be a vertical section examined in addition to the shell-to-flange weld. Please verify that this section was not included in the total exam coverage and re-submit a correct coverage sketch.

**Request for Relief I3R-48, Part B, ASME Code, Section XI, Examination Category B-A, Item B1.51, Pressure Retaining Welds in Reactor Vessel (PBAPS, Unit 2)**

RAI 9: On RPV shell course number 2, the licensee requested relief from examining 100% of the ASME Code-required volume for repair Weld RPV-RW1 due to limitations caused by proximity of a jet pump riser bracket. On the sketch provided, there was a second repair weld that is not mentioned in the text of the request for relief. Please verify and state whether full volumetric ASME Code coverage was obtained for the second repair weld.

**Request for Relief I3R-48, Part C, ASME Code, Section XI, Examination Category B-D, Item B3.100, Full Penetration Welded Nozzles in Vessels (PBAPS, Unit 3)**

RAI 10: The licensee has requested relief regarding, the inspection of the main recirculation inlet nozzle inner radii listed in Table RAI 10 below for PBAPS, Unit 3. The licensee specifies that Zone 1 (Z1) is restricted due to an insulation support ring and Zone 2 (Z2) is not restricted. The licensee did not provide a description of the difference between Zone 1 and Zone 2 for these welds. The licensee should submit a description (written and/or sketches) of the different zones and why the total exam coverage of Zones 1 and 2 is not combined.

Table RAI 10 – ASME Code, Section XI, Examination Category B-D (PBAPS, Unit 3)			
Code Item	Weld ID	Weld Type	Coverage Obtained
B3.100	N2A-IRS	Main Recirc Inlet Nozzle Inner Radius	Z1=74.7% Z2=100%
B3.100	N2B-IRS	Main Recirc Inlet Nozzle Inner Radius	Z1=75.3% Z2=100%
B3.100	N2C-IRS	Main Recirc Inlet Nozzle Inner Radius	Z1=83.3% Z2=100%
B3.100	N2G-IRS	Main Recirc Inlet Nozzle Inner Radius	Z1=76.0% Z2=100.0%

**Request for Relief I3R-49, Part A, ASME Code, Examination Category B-K, Items B10.10 and B10.20, Integral Attachments for Class 1 Vessels, Piping, Pumps, and Valves (PBAPS, Units 2 and 3)**

RAI 11: The licensee invoked ASME Code Case N-509, which lists Examination Category B-K, and provides alternative requirements for integral attachments of vessels, piping, pumps, and valves. ASME Code Case N-509, "Alternative Rules for the Selection and Examination of Class 1, 2, and 3 Integrally Welded Attachments, Section XI, Division 1," is conditionally acceptable according to an earlier revision of Regulatory Guide 1.147 (RG 1.147), "Inservice Inspection Code Case Acceptability." The NRC condition

for acceptable use was that a minimum 10% sample of integrally welded attachments for each item in each ASME Code class shall be examined during each interval. State whether the ASME Code Case N-509 condition for acceptance was applied for all Class 1 integral attachment welds.

Vessel Integral Attachments (Support-4(IA) and Support-5(IA)), PBAPS, Unit 2

RAI 12: The total volumetric examination coverage on vessel Integral Attachments Supports-4(IA) and -5(IA), for PBAPS, Unit 2, was 50% each. This is much less than similar vessel integral attachment supports listed in Tables RAI 12.1 and RAI 12.2, including the same components in PBAPS, Unit 3. It is unclear why the identical supports on PBAPS, Unit 3 do not have the same surface coverage. Provide a more detailed description (written and/or sketches) of why there is a difference in examination coverage.

<b>Table RAI 12.1 – ASME Code, Section XI, Examination Category B-K (PBAPS, Unit 2)</b>			
<b>Code Item</b>	<b>Weld ID</b>	<b>Weld Type</b>	<b>Coverage Obtained</b>
B10.10	SUPPORT-1(IA)	Stab Bar @ 0-degree	76.0%
B10.10	SUPPORT-2(IA)	Stab Bar @ 45-degree	76.0%
B10.10	SUPPORT-3(IA)	Stab Bar @ 90-degree	76.0%
B10.10	SUPPORT-4(IA)	Stab Bar @ 135-degree	50.0%
B10.10	SUPPORT-5(IA)	Stab Bar @ 180-degree	50.0%
B10.10	SUPPORT-6(IA)	Stab Bar @ 215-degree	76.0%
B10.10	SUPPORT-7(IA)	Stab Bar @ 270-degree	76.0%
B10.10	SUPPORT-8(IA)	Stab Bar @ 315-degree	76.0%
B10.20	12DCN-H152(IA)	Integral Attachment	75.0%
B10.20	H1A(IA)	Integral Attachment	70.31%
B10.20	HD4(IA)	Integral Attachment	60.7%

<b>Table RAI 12.2 - ASME Code, Section XI, Examination Category B-K (PBAPS, Unit 3)</b>			
<b>Code Item</b>	<b>Weld ID</b>	<b>Weld Type</b>	<b>Coverage Obtained</b>
B10.10	SUPPORT-1(IA)	Stab Bar @ 0-degree	76.0%
B10.10	SUPPORT-2(IA)	Stab Bar @ 45-degree	76.0%
B10.10	SUPPORT-3(IA)	Stab Bar @ 90-degree	76.0%
B10.10	SUPPORT-4(IA)	Stab Bar @ 135-degree	77.0%
B10.10	SUPPORT-5(IA)	Stab Bar @ 180-degree	77.0%
B10.10	SUPPORT-6(IA)	Stab Bar @ 215-degree	77.0%

<b>Code Item</b>	<b>Weld ID</b>	<b>Weld Type</b>	<b>Coverage Obtained</b>
B10.10	SUPPORT-7(IA)	Stab Bar @ 270-degree	76.0%
B10.10	SUPPORT-8(IA)	Stab Bar @ 315-degree	76.0%
B10.20	23DBN-H51(IA)	Integral Attachment	86.67%
B10.20	6DD-H58(IA)	Integral Attachment	86.67%
B10.20	GC1(IA)	Integral Attachment	17.0%

Piping Integral Attachment GC1(IA), (PBAPS, Unit 3)

RAI 13: The total examination coverage provided by the licensee was 17% for the Main Steam Piping Integral Attachment Weld GC1(IA), which is significantly less than all the other piping integral attachments that have limitations from hanger clamps. The drawing provided was of poor quality which made it difficult to determine where the hanger clamp interfered with the inspection of the Main Steam Piping Integral Attachment Weld GC1(IA). Please provide sketches/drawings or a more detailed description of why there is a significant reduction in examination coverage for this weld.

**Request for Relief I3R-49, Part B, ASME Code, Section XI, Examination Category C-C, Items C3.20 and C3.30, Integral Attachments for Class 2 Vessels, Piping, Pumps, and Valves (PBAPS, Units 2 and 3)**

RAI 14: The licensee invoked ASME Code Case N-509, which lists ASME Code, Section XI, Examination Category C-C, and states requirements for integral attachments for vessels, piping, pumps, and valves. ASME Code Case N-509 is conditionally acceptable according to an earlier revision of RG 1.147. The NRC condition for acceptable use was that a minimum 10% sample of integrally welded attachments for each item in each ASME Code class shall be examined during each interval. State whether the ASME Code Case N-509 condition for acceptance was applied for all Class 2 integral attachment welds.

Residual Heat Removal (RHR) Piping Integral Attachment Weld 10GB-H78(IA) (PBAPS, Unit 3)

RAI 15: From the sketch and coverage calculation sheet provided by the licensee, it is unclear why zone area B was affected by the hanger clamp. From the sketch, the hanger clamp appears to only affect portions of zone areas A and C and all of D. Please provide an explanation of why zone area B was affected by the hanger clamp.

RHR Pump Support Weld (2BP35) (PBAPS, Unit 2)

RAI 16: The licensee has provided technical descriptions and sketches; however, it is not clear from the licensee's submittal how the pump support segments are inaccessible. For example, the sketches do not provide dimensions, a clear marking of each segment, or any other details of why 2 of the 3 segments are inaccessible. Please submit detailed and specific information to support the basis for inaccessibility of the pump support attachment, including descriptions (written and/or sketches, as necessary).

C. Pardee

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If you have any questions, please contact John Hughey at (301) 415-3204.

Sincerely,

*/ra/*

John D. Hughey, Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-277 and 50-278

Enclosure: As stated

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