



10CFR 50.55a

February 7, 2018

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Peach Bottom Atomic Power Station (PBAPS) Unit 3  
Renewed Facility Operating License No.  
DPR-56 NRC Docket No. 50-278

Subject: Submittal of the InService Inspection (ISI) Owner's Activity Report (OAR)  
for the 21<sup>st</sup> Refueling Outage for Unit 3

Attached is the ISI Owner's Activity Report covering ISI activities associated with the third period of the current ISI inspection interval for Unit 3. This report is submitted pursuant to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for the Inservice Inspection of Nuclear Power Plant Components," Article IWA-6200, "Requirements" (2001 Edition through 2003 Addenda) and ASME Code Case N-532-5 (Repair/Replacement Activity Documentation Requirements and Inservice Inspection Summary Report Preparation and Submission, Section XI, Division 1).

If you have any questions or require additional information, feel free to contact Bryce Sessions at 717-456-3863 or Brian Mast at 717-456-4283.

Sincerely,

A handwritten signature in black ink, appearing to read 'Matthew J. Herr'.

cc: Matthew J. Herr  
Plant Manager  
Peach Bottom Atomic Power Station  
Attachment

cc: US NRC, Administrator, Region 1  
US NRC, Senior Resident Inspector  
R. R. Janati, Commonwealth of Pennsylvania  
S. T. Gray, State of Maryland  
B. Watkins, PSEG, Financial Control and Co-owner Affairs

CCN: 18-16

## FORM OAR-1 OWNER'S ACTIVITY REPORT

Report Number P3R21

Plant Peach Bottom Atomic Power Station, 1848 Lay Road, Delta, PA 17314

Unit No. 3 Commercial Service Date December 23, 1974 Refueling Outage Number P3R21  
(if applicable)

Current Inspection Interval ISI = Fourth Inspection Interval / CISI = Second Inspection Interval  
(1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, other)

Current Inspection Period ISI = Third Inspection Period / CISI = Third Inspection Period  
(1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>)

Edition and Addenda of Section XI applicable to the Inspection Plans ASME Section XI 2001 Ed. through 2003 Add.

Date and Revision of Inspection Plans ISI Program Plan (PBT05.033), Rev. 4 (09/02/2014)

Edition and Addenda of Section XI applicable to repair/replacement activities, if different than the inspection plans Same as above

Code Cases used: N-432-1, N-460, N-504-4, N-508-4, N-513-3, N-513-4, N-516-3, N-517-1, N-526, N-528-1, N-532-5, N-552, N-566-2, N-578-1, N-586-1, N-597-2, N-600, N-606-1, N-613-1, N-624, N-629, N-638-4, N-639, N-641, N-649, N-651, N-652-1, N-661-1, N-661-2, N-666, N-685, N-686-1, N-695, N-696, N-700, N-705, N-730, N-733, N-735, N-751, N-753, N-786

### CERTIFICATE OF CONFORMANCE

I certify that (a) the statements made in this report are correct; (b) the examinations and tests, meet the Inspection Plan as required by the ASME Code, Section XI; and (c) the repair/replacement activities and evaluations supporting the completion of P3R21  
conform to the requirements of Section XI  
(refueling outage number)

Signed R. E. Moore, ISI Program Owner  
(Owner or Owner's designee. Title)

Date 02/07/2018

### CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by The Hartford Steam Boiler Inspection and Insurance Company of Hartford, Connecticut have inspected the items described in this Owner's Activity Report, and state that, to the best of my knowledge and belief, the Owner has performed all activities represented by this report in accordance with the requirements of Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied concerning the repair/replacement activities and evaluation described in this report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Roger Blawie  
(Inspector's Signature)

Commissions

NB 13328 ANI

(National Board Number and Endorsement)

Date

2/7/2018

**TABLE 1**  
**ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRED EVALUATION  
FOR CONTINUED SERVICE**

Examination Category	Examination Item Number	Item Description	Evaluation Description
E-A	E1.30	Drywell Interior Moisture Barrier	Relevant Condition- Moisture barrier sealant disbondment was identified. A repair was completed and an inaccessible moisture barrier review was documented in EC 621863 (Ref IR 04066968)

**TABLE 2**  
**ABSTRACT OF ASME REPAIRS/REPLACEMENTS ACTIVITIES REQUIRED FOR CONTINUED SERVICE**  
**FOR PEACH BOTTOM ATOMIC POWER STATION, UNIT NO. 3**  
**OCTOBER 23, 2015 TO November 9, 2017**  
**( END OF P3R21 REFUEL OUTAGE )**

SYSTEM 01: Main Steam (MS)		Flaw or Relevant	
Code	Repair, Replacement, or Corrective Measure	Item Description (component I.D.)	Condition Found
Class	Measure	During Scheduled	
1	Replacement	HV-3-01A-83B/84B	Section XI Exam
1	Replacement	HV-3-01A-83C/84C	Or Test
			Date
			Complete
			R&R Plan # and W/O #
			11/8/2017 17-113, 04704234
			11/8/2017 17-119, 04703245
SYSTEM 06: Feedwater (FW)		Flaw or Relevant	
Code	Repair, Replacement, or Corrective Measure	Item Description (component I.D.)	Condition Found
Class	Measure	During Scheduled	
1	Replacement	CHK-3-06-28A	Section XI Exam
			Or Test
			Date
			Complete
			R&R Plan # and W/O #
			11/2/2017 17-007, 04231966
SYSTEM 10: Residual Heat Removal (RHR)		Flaw or Relevant	
Code	Repair, Replacement, or Corrective Measure	Item Description (component I.D.)	Condition Found
Class	Measure	During Scheduled	
2	Replacement	PB-3-10-3CE024	Section XI Exam
			Or Test
			Date
			Complete
			R&R Plan # and W/O #
			3/9/2017 16-132, 04247809
SYSTEM 11: Standby Liquid Control (SBLC)		Flaw or Relevant	
Code	Repair, Replacement, or Corrective Measure	Item Description (component I.D.)	Condition Found
Class	Measure	During Scheduled	
2	Replacement	XV-3-11-14A	Section XI Exam
			Or Test
			Date
			Complete
			R&R Plan # and W/O #
			11/5/2017 17-047, 04305384
SYSTEM 13: REACTOR CORE ISOLATION COOLING (RCIC)		Flaw or Relevant	
Code	Repair, Replacement, or Corrective Measure	Item Description (component I.D.)	Condition Found
Class	Measure	During Scheduled	
1	Replacement	Piping ISO-3-13-13-T01	Section XI Exam
2	Replacement	CHK-3-13B-40	Or Test
2	Replacement	CHK-3-13B-19	Date
			Complete
			R&R Plan # and W/O #
			11/5/2017 17-118, 04609525
			3/1/2017 16-130, 04229593
			3/1/2017 16-131, 04231968

SYSTEM 14: Core Spray (CS)				Flaw or Relevant Condition Found During Scheduled Section XI Exam	Date	R&R Plan # and W/O #
Code Class	Repair, Replacement, or Corrective Measure	Item Description (component I.D.)	Description Of Work Performed	Or Test	Complete	
2	Replacement	HV-3-14-39014A	Replacement of HV-3-14-39014A	No	11/1/2017	16-139, 04181656
2	Replacement	RV-3-14-020B	Replacement of RV-3-14-020B	No	6/13/2017	16-080, 04246944
2	Replacement	RV-3-14-020A	Replacement of RV-3-14-020A	No	6/6/2017	16-138, 04246919

  

SYSTEM 23: HIGH PRESSURE COOLING INJECTION (HPCI)				Flaw or Relevant Condition Found During Scheduled Section XI Exam	Date	R&R Plan # and W/O #
Code Class	Repair, Replacement, or Corrective Measure	Item Description (component I.D.)	Description Of Work Performed	Or Test	Complete	
2	Replacement	CHK-3-23C-65	Replaced CHK-3-23C-65	No	11/7/2017	17-048, 04608061
2	Replacement	VRV-3-23C-5998A/B	Replaced VRV-3-23C-5998A/B	No	1/25/2017	15-215, 04177334

  

SYSTEM 65A: HYDRAULIC SNUBBERS				Flaw or Relevant Condition Found During Scheduled Section XI Exam	Date	R&R Plan # and W/O #
Code Class	Repair, Replacement, or Corrective Measure	Item Description (component I.D.)	Description Of Work Performed	Or Test	Complete	
2	Replacement	1-DB-S-414	Replace hydraulic snubber 1-DB-S-414	No	11/2/2017	17-083, 04622940
2	Replacement	1-DB-S-415	Replace hydraulic snubber 1-DB-S-415	No	11/2/2017	17-084, 04622941
2	Replacement	7-DB-S-11	Replace hydraulic snubber 7-DB-S-11	No	11/1/2017	17-088, 04622944
2	Replacement	7-DB-S-14	Replace hydraulic snubber 7-DB-S-14	No	10/27/2017	17-111, 04616704

  

SYSTEM 65B: MECHANICAL SNUBBERS				Flaw or Relevant Condition Found During Scheduled Section XI Exam	Date	R&R Plan # and W/O #
Code Class	Repair, Replacement, or Corrective Measure	Item Description (component I.D.)	Description Of Work Performed	Or Test	Complete	
2	Replacement	10-GB-S-81	Replace mechanical snubber 10-GB-S-81	No	10/25/2017	17-072, 04618481

## EC 621863

### PEDM Evaluation:

#### Scope:

During 3R21, ISI inspection at the Unit 3 drywell floor, Elevation 119'-11", revealed that the "moisture barrier" sealant at the interface of the steel drywell shell with the perimeter of the concrete floor slab had disbanded in some areas. Specifically, the inspection report states that the sealant had separated for a length of 11'-8", from azimuth 225 degrees to azimuth 270 degrees. The condition will be repaired in accordance with the existing design information, so engineering input is not required for the repairs. This evaluation provides an assessment of the potential effects on the containment due to the failed moisture barrier, as required by ER-AA-330-007 section 4.11.

#### Evaluation:

This same condition was evaluated during 3R20. Although the amount and location of the separation was different, the assessment of the condition is essentially the same. A summary of that evaluation's technical justification is provided here, with the complete text from previous IR 2561844 copied below.

The drywell is a steel containment vessel with varying thickness. The thickness for each section is designed to provide the needed capacity for all pressure, weight, thermal, seismic and other stresses. This thickness must be monitored to ensure that sufficient capacity remains throughout its design life. The bottom portion of the drywell is considered to be "inaccessible" because it is adjacent to concrete on both sides. Since the thickness and condition of the steel in this area can not be directly measured or visually monitored, this evaluation provides a qualitative assessment of the potential for material loss due to corrosion from exposure to water.

The "moisture barrier" addressed here is a sealant applied to the perimeter of the drywell concrete floor, at its interface with the steel drywell shell. That sealant, along with the coating applied to the concrete's top surface, is intended to prevent water or moisture from coming into contact with the drywell shell below the elevation of the floor surface. Corrosion in this area would be difficult to detect due to its inaccessibility. With the damage discovered to the sealant during 3R21 and the known leakage in the drywell, it must be assumed that water has infiltrated the interface of the concrete and the drywell shell to some degree. The potential for this to cause corrosion of the drywell shell is therefore assessed.

The chemistry of the concrete is very basic (high pH), which protects the steel in contact with it from rusting, much like the rebar contained within concrete is protected from rusting. This is described in more detail in previous IR 2561844 and its attachment. In addition, oxygen must be present for the drywell steel to oxidize. The drywell is purged with nitrogen most of the time, limiting the presence of oxygen. The area of drywell steel that would have the highest exposure, and therefore vulnerability to moisture and oxygen would be at the location of the moisture barrier. This location is exposed to oxygen during a refueling outage, and is where water leakage in the drywell could collect (in the areas of a damaged moisture barrier). The inaccessible portion of the drywell below the floor's surface could also be exposed to moisture, but it would not have as much exposure to oxygen, if at all. This line of highest vulnerability is typically

observed with submerged steel, having rust at the water line but not above or below it. There is no visual evidence of any significant corrosion in the areas where the moisture barrier has separated. Since this is the most likely area for corrosion, it can be concluded that the area beneath the level of the floor is in as good of a condition as the exposed areas, or better.

Conclusion:

The failed portion of moisture barrier and the resulting potential for water having seeped into the interface between the floor slab and the drywell shell does not present a threat of any significant corrosion occurring to the drywell shell. The deficiencies in the moisture barrier must be corrected to prevent further exposure, but no corrective or further investigative actions are warranted with regard to the possible infiltration of water.

Administrative:

This is a technical evaluation prepared in accordance with CC-AA-309-101. It addresses safety related equipment and therefore requires an independent review, manager approval and transmittal to Records Management. Based on a review of CC-AA-102, this evaluation has no program, procedure or other documentation impacts, and does not require interface review by any other group. The floor configuration will be returned to its intended design condition as shown on drawing S-193. Application of HU-AA-1212 indicated the highest applicable consequence risk factor has a medium severity level, and two human performance and process risk factors are applicable to the scope of this evaluation. Therefore the risk rank is 1, and existing process reviews are appropriate. This evaluation is not complex and no supplemental reviews are required; however, an interface review by the site ASME XI program engineer will be performed.

References:

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1. Drawing S-188 rev. 3
2. Drawing S-193 rev. 4
3. Drawing M-519 rev. 9
4. Procedure ER-AA-330-007 rev. 11
5. Superseded Specification A-00024 rev. 3
6. Oyster Creek technical paper in support of OC ECR 06-00879
7. ASME Section XI 2001 edition
8. Passport AR 2561844
9. Passport AR 2569613
10. Passport AR 4066968
11. Passport EC 619221 (Braidwood)

Attachments:

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1. Previous Tech Eval and its attachment in IR 2561844 A03 (8 pages)