



DPR-44 Operating License 2.C(15)(g)

January 23, 2019

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

Peach Bottom Atomic Power Station, Unit 2
Renewed Facility Operating License No. DPR-44
NRC Docket No. 50-277

Subject: Results of Visual Inspections of Unit 2 Replacement Steam Dryer in the Second Refueling Outage After Reaching EPU Conditions

References: 1. WCAP-17635-P, Rev. 3, Peach Bottom Atomic Power Station Units 2 and 3 Replacement Steam Dryer Comprehensive Vibration Assessment Program (CVAP), April 2014.
2. PBAPS Extended Power Uprate License Amendment Request - Supplement 24 - Response to Request for Additional Information, dated April 11, 2014.
3. NRC - Issuance of Amendments - PBAPS Units 2 and 3 Extended Power Uprate, License Amendments 293/296 (including NRC Safety Evaluation Report), dated August 25, 2014.
4. Peach Bottom Atomic Power Station, Unit 2 – Results of Visual Inspections of Replacement Steam Dryer, Letter from Exelon to NRC dated December 7, 2016, ML16342B621

Enclosed is a summary of the results of the visual inspections of the Unit 2 Replacement Steam Dryer that were performed during the second refueling outage after reaching EPU conditions (P2R22). The inspections are required to be performed following the guidelines of WCAP-17635-P in accordance with Operating License Section 2.C(15)(f). This second report is being submitted pursuant to Operating License Condition 2.C(15)(g) which requires that the results of the inspection be submitted in a report within 90 days following startup from each of the first two respective refueling outages.

The inspection was performed in accordance with WCAP-17635, Rev. 3 (Reference 1) which was submitted to the NRC in the Reference 2 letter and referenced by the NRC in the NRC Safety Evaluation Report for Extended Power Uprate (Reference 3).

There are no new regulatory commitments contained in this letter.

If you have any questions concerning this letter, please contact Randal Schmidt at (610) 765-5236.

A handwritten signature in black ink, appearing to read "Patrick D. Navin", written over a horizontal line.

Patrick D. Navin
Site Vice President
Peach Bottom Atomic Power Station

U.S. Nuclear Regulatory Commission
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CCN: 19-15

Attachment - Peach Bottom Unit 2 Steam Dryer Inspection Results from the Second Refueling
Outage Following Installation of Steam Dryer and Implementation of Extended Power Uprate

cc: Regional Administrator, Region I USNRC
USNRC Senior Resident Inspector, PBAPS
D. J., Allard, Pennsylvania Bureau of Radiation Protection
D. Tancabel, State of Maryland

ATTACHMENT

**Peach Bottom Unit 2 Steam Dryer Inspection Results from the Second Refueling Outage
Following Installation of Steam Dryer and Implementation of Extended Power Uprate**

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Purpose:

This report provides the results of the visual inspections of the Replacement Steam Dryer (RSD) as required by the Peach Bottom Unit 2 Renewed Facility Operating License No DPR-44, License Condition 2.C(15)(g). This license condition requires that the results of the inspection be submitted in a report within 90 days following startup from each of the first two respective refueling outages. This report covers the second refueling outage inspection.

Summary:

The Unit 2 Replacement Steam Dryer was inspected during the fall 2018 refueling outage, P2R22, in October 2018. This was the second refueling outage following installation of the RSD in November 2014, P2R20, and operation at Extended Power Uprate (EPU) conditions since May 2015. The inspections were performed in accordance with the requirements of WCAP-17635-P and recommendations from the manufacturer, Westinghouse. The inspection scope was defined based upon Operating Experience (OE) for the Westinghouse steam dryer design from previous installations, high cyclical stress locations determined from the dryer acoustic analysis, similarities to BWRVIP-139-A inspection locations and finally, by higher stress locations where solution annealing or polishing of structural welds had not been performed during fabrication. A total of 152 inspections were performed.

All observations were acceptable for the structural components and welds inspected. In total, nine non-structural indications were identified. Four indications were initially found in P2R21 and five additional indications were newly identified in P2R22. All indications have no impact on the structural qualification of the steam dryer. These will be discussed further in the next section of this report.

Inspection Results:

Nine indications were found at two general locations: five were associated with AA 335740 W7 fillet weld for the hold down rod and lifting rod interface to the support ring, and four were associated with the Seismic Block.

In the previous outage, four indications were found associated with the AA 335740 W7 fillet weld for the hold down rod interface to the support ring. Re-inspections from this outage found no change in the hold down rod interface indications. This outage's inspections found one additional indication at the AA 335740 W7 fillet weld associated with the lifting rod interface to the support ring. This new indication at the lifting rod interface is similar to the hold down rod interface indications found previously. All indications were confirmed not to extend into the rods.

Four new indications were found on the four seismic blocks. Wear was identified on the contact areas where the seismic blocks sit on the RPV Steam Dryer Support Brackets when the RSD is installed in the reactor.

Disposition of Indications:

AA 335740 W7 fillet welds for the hold down rod and lifting rod are non-structural welds and

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were used for positioning and anti-rotation during construction. In that function, as construction welds, they do not carry primary load. The lifting rod's function is dryer installation lifting operation. The hold down rod function is hold down of the dryer during faulted condition load and possible lifting of the dryer. The hold down rod and lifting rod function does not depend on the non-structural AA 335740 W7 fillet welds. During plant operation, the positioning at the top and bottom of these rods is guaranteed by the threaded portions of the rod; and the anti-rotation is maintained by a bracket welded to the rod. These indications do not impact the functions of the lifting and hold down rods.

The AA 335740 W7 non-structural welds are not credited to show ASME III Code compliance for the lifting or hold down function. The purpose for including this weld in the inspection plan was primarily due to its inclusion in BWRVIP-139-A, which requires inspection of similar locations on GE steam dryer based on previous operating experience. Based on review of the purpose of the fillet welds, the critical aspect of the inspection for the rod attachment to the ring is the integrity of the threaded connection at the ring attachment location. The inspection has confirmed no crack extension into the rod, and no crack extension into the rod is anticipated.

A bracket welded near the top of the rod maintains position, prevents rotation and assures thread engagement, thus eliminating any risk for loose parts. The design stress margins for the bracket remain unchanged by the cracking of the construction fillet welds at the bottom support ring location.

No repair is required to the non-structural fillet welds of the rods. The AA 335740 W7 weld indications will be re-inspected in future outages to confirm no crack extension into the rod at the ring attachment location.

The function of the seismic block is to transfer lateral and radial loads from RSD to RPV steam dryer support brackets during normal operations and transient events. The wear found on the contact point of the seismic block to RPV bracket is considered slight wear. This new contact wear is considered normal following installation of a new steam dryer on the existing RPV support brackets. This amount of wear does not impact the function of the seismic blocks and does not impact the RSD overall. This area will be periodically inspected to monitor the wear. No repair is required.

Conclusion:

An inspection of the Peach Bottom Unit 2 Replaced Steam Dryer was performed during the fall 2018 refueling outage P2R22. This was the second refueling outage inspection following implementation of EPU. The inspection included visual inspection of all the inspection locations required by the Facility Operating License Condition 2.C(15)(f) for the Replacement Steam Dryer. Additional locations were also inspected. All observations were acceptable for the structural components and welds inspected. There were five non-structural welds found with indications and were determined to be acceptable with future inspections required. Also, four seismic blocks exhibited signs of wear at the contact areas with the RPV Steam Dryer support brackets. This was also determined to be acceptable with future monitoring.