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

March 18, 2013

Mr. Randall K. Edington
Executive Vice President Nuclear/
Chief Nuclear Officer
Mail Station 7602
Arizona Public Service Company
P.O. Box 52034
Phoenix, AZ 85072-2034

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNIT 3 – REVIEW OF THE 2012 STEAM GENERATOR TUBE INSPECTIONS DURING REFUELING OUTAGE 16 (TAC NO. ME9412)

Dear Mr. Edington:

By letter dated August 7, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12242A249), Arizona Public Service Company (the licensee) submitted information to the U.S. Nuclear Regulatory Commission (NRC) summarizing the results of the 2012 steam generator tube inspections at the Palo Verde Nuclear Generating Station (PVNGS), Unit 3. These inspections were performed during the 16th refueling outage of PVNGS, Unit 3.

The NRC staff has completed its review of the submittals and concludes that the licensee provided the information required by its technical specifications. No additional follow-up is required at this time. The results of the NRC staff's review and observations are enclosed.

If you have any questions, please contact me at (301) 415-1530 or via e-mail at Jennivine.Rankin@nrc.gov.

Sincerely,

Jennivine K. Rankin, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. STN 50-530

Enclosure:
As stated

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OFFICE OF NUCLEAR REACTOR REGULATION

REVIEW OF RESULTS OF 2012 STEAM GENERATOR TUBE

INSERVICE INSPECTIONS PERFORMED DURING REFUELING OUTAGE 16

PALO VERDE NUCLEAR GENERATING STATION, UNIT 3

DOCKET NO. STN 50-530

By letter dated August 7, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12242A249), Arizona Public Service Company (the licensee) submitted information to the U.S. Regulatory Commission (NRC) summarizing the results of the 2012 steam generator (SG) tube inspections at the Palo Verde Nuclear Generating Station (PVNGS), Unit 3. These inspections were performed during the 16th refueling outage (RFO 16) of PVNGS, Unit 3. The licensee provided clarifying information via telephone conference on December 18 and 20, 2012, as detailed below.

PVNGS, Unit 3 has two replacement SGs manufactured by Ansaldo. Each SG has 12,580 thermally treated Alloy 690 tubes with an outside diameter of 0.75 inches and a wall thickness of 0.042 inches. Ferritic stainless steel eggcrate tube supports, diagonal bars, and vertical straps support the tubes at various locations.

The licensee provided the scope, extent, methods, and results of its SG tube inspections in the document referenced above. In addition, the licensee described corrective actions (i.e., tube plugging) taken in response to the inspection findings.

Based on the review of the information provided, the NRC staff has the following observations and comments:

- During the telephone conference on December 18, 2012, the licensee clarified information regarding the submitted SG tube inspection report dated August 7, 2012. Specifically, the licensee clarified that the numbers in parentheses (in Table 2 of the inspection report) represented the quantities of tubes, and that the remaining numbers in Table 2 represented the quantities of indications. In addition, the licensee clarified that the acronym HR, noted in Appendix D of the submittal dated August 7, 2012, indicated "History Review" and that the acronym QET was linked to the acronym RBD. The QET code indicated the quality of the eddy current data is suspect and that the extent of the examinations that were planned were not achieved. The RBD code indicated "Retest Bad Data." The licensee also stated that any "I" codes in Appendices B and C (i.e., NQI – non-quantifiable indication, DSI – distorted support signal with indication, and DTI – distorted top of tubesheet with indication) were dispositioned as NDF (no degradation found) codes.

- During the telephone conference on December 20, 2012, the licensee stated that in future submittals, Table 2 of the SG tube inspection report would include the

Enclosure

number of indications and the number of tubes with indications in order to provide greater clarity of the inspection results.

- During the RFO 15 SG tube inspections for Unit 3, the licensee reported four welds (two per SG) between the blowdown patch plate and the lower divide plate lug were completely cracked (see the licensee's letter dated May 5, 2011, available at ADAMS Accession No. ML11136A106). This was similar to the cracking found in Unit 1 and Unit 2 at PVNGS. As stated in the Request for Additional Information response for Unit 1 dated April 22, 2011 (ADAMS Accession No. ML111250573), and in the NRC review of the RFO 15 Unit 3 SG tube inspection report dated August 4, 2011 (ADAMS Accession No. ML112060490), the licensee would perform inspections of the blowdown patch plates to examine the remaining welds, verify that they are intact, and that the cracked welds are not disintegrating or forming a loose parts concern. During the RFO 16 of PVNGS, Unit 3, the licensee confirmed that the cracked weld material on the four blowdown patch plates (two per SG) found were still intact and a loose parts condition was not being created.

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by its technical specifications. In addition, the staff concludes that there are no technical issues that warrant follow-up action at this time since the inspections appear to be consistent with the objective of detecting potential tube degradation and that inspection results appear to be consistent with industry operating experience at similarly designed and operated units.

March 18, 2013

Mr. Randall K. Edington
Executive Vice President Nuclear/
Chief Nuclear Officer
Mail Station 7602
Arizona Public Service Company
P.O. Box 52034
Phoenix, AZ 85072-2034

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNIT 3 – REVIEW OF THE 2012 STEAM GENERATOR TUBE INSPECTIONS DURING REFUELING OUTAGE 16 (TAC NO. ME9412)

Dear Mr. Edington:

By letter dated August 7, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12242A249), Arizona Public Service Company (the licensee) submitted information to the U.S. Nuclear Regulatory Commission (NRC) summarizing the results of the 2012 steam generator tube inspections at the Palo Verde Nuclear Generating Station (PVNGS), Unit 3. These inspections were performed during the 16th refueling outage of PVNGS, Unit 3.

The NRC staff has completed its review of the submittals and concludes that the licensee provided the information required by its technical specifications. No additional follow-up is required at this time. The results of the NRC staff's review and observations are enclosed.

If you have any questions, please contact me at (301) 415-1530 or via e-mail at Jennivine.Rankin@nrc.gov.

Sincerely,

/RA/

Jennivine K. Rankin, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. STN 50-530

Enclosure:
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ADAMS Accession No. ML13064A178 ***via memo dated**

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