April 28, 2008

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 2 – RESULTS OF 13TH STEAM GENERATOR TUBE INSPECTION (TAC NO. MD5982)

Dear Mr. Edington:

By letter dated February 9, 2007, and supplemented by letters dated May 3, 2007, and March 5, 2008, Arizona Public Service Company (APS, the licensee) submitted information pertaining to its 2006 steam generator (SG) tube inspections for the Palo Verde Nuclear Generating Station (Palo Verde), Unit 2, Facility Operating License No. NPF-51. These inspections were performed during the 13th refueling outage of Unit 2.

Based on a review of the material provided by APS, the U.S. Nuclear Regulatory Commission (NRC) staff concludes that the licensee provided the information required for SG tube inspections by the plant technical specifications. In addition, the NRC staff did not identify any issues that warrant follow-up at this time. The NRC staff's evaluation of the APS reports is enclosed.

Sincerely,

/RA/

Michael T. Markley, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. STN 50-529

Enclosure: Safety Evaluation

cc w/encl: See next page

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ADAMS Accession No.: ML081150648 (*) SE input memo

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STAFF EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO RESULTS OF 13TH STEAM GENERATOR

TUBE INSERVICE INSPECTION

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

PALO VERDE NUCLEAR GENERATING STATION, UNIT 2

DOCKET NO. STN 50-529

1.0 INTRODUCTION

By letter dated February 9, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML070510481), and supplemented by letters dated May 3, 2007 (ADAMS Accession No. ML071360096), and March 5, 2008 (ADAMS Accession No. ML080740050), Arizona Public Service Company (APS, the licensee) submitted information pertaining to its 2006 steam generator (SG) tube inspections for the Palo Verde Nuclear Generating Station (Palo Verde), Unit 2, Facility Operating License No. NPF-51. These inspections were performed during the 13th refueling outage of Unit 2. The U.S. Nuclear Regulatory Commission (NRC) staff issued a request for additional information dated January 9, 2008 (ADAMS Accession No. ML073460517), and the licensee provided additional information in the APS letter dated March 5, 2008.

Palo Verde Unit 2 has two Combustion Engineering System 80 SGs. There are 12,580 thermally treated Alloy 690 tubes in each SG. The tubes have an outside diameter of 0.75 inches and a wall thickness of 0.042 inches. Ferritic stainless steel egg-crate tube supports, diagonal bars, and/or vertical straps support the tubes at various locations.

2.0 REGULATORY EVALUATION

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

The following observations are noted in regard to the licensee's 2006 inspections:

- One loose part (a small wire) was only detected through visual examination and not during the eddy current inspections. This wire was in SG 21. The small size of the wire may explain why it was not detected by the bobbin probe. The wire could not be retrieved and future trending of this location will be performed during the Unit 2 Refueling Outage 14 inspection.

- One sludge rock and one piece of flexitallic gasket could not be removed from SG 22. There was no tube wear associated with these foreign objects.

- The U-bends in the low row tubes (rows 1 through 3) were not inspected during the 2006 outage; however, the licensee has plans to inspect the U-bend region of these tubes during the next outage (U2R14).

- The maximum measured through-wall depth following cycle 13 (U2R13) was slightly greater than a projection performed following the previous inspection (U2R12) despite using a highly conservative growth rate to project the U2R13 results.

3.0 CONCLUSION

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by their technical specifications. In addition, the NRC 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 the inspection results appear to be consistent with industry operating experience at similarly designed and operated units.

Principal Contributor: K. Karwoski

Date: April 28, 2008