

## NRR-PMDAPEm Resource

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**From:** Rankin, Jennivine  
**Sent:** Monday, March 24, 2014 9:17 AM  
**To:** David.kelsey@aps.com  
**Cc:** George, Andrea  
**Subject:** Palo Verde - Request for Additional Information regarding its PWR Internals Aging Management Program Plan (MF2554, 5, 6)  
**Attachments:** MF2554 RAI.docx

Mr. Kelsey,

By letter dated September 28, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML122780119), Arizona Public Service Company (the licensee) submitted its Pressurized Water Reactor (PWR) Internals Aging Management Program Plan, which credits the implementation of Materials Reliability Program (MRP)-227-A, "Pressurized Water Reactor (PWR) Internals Inspection and Evaluation Guidelines," for Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2 and 3. The MRP-227-A report and supporting reports were used as technical bases for developing the PVNGS aging management program.

The NRC staff has reviewed the information provided and determined that a request for additional information (RAI) is required in order to complete its review. The draft RAIs were transmitted to you on March 19, 2014. It was agreed that a response to these RAIs would be provided by May 21, 2014. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-1530 or via email at [Jennivine.rankin@nrc.gov](mailto:Jennivine.rankin@nrc.gov).

Thank you,  
Jennie

Jennie Rankin, Project Manager  
Palo Verde Nuclear Generating Station  
Plant Licensing Branch IV-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

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**From:** Rankin, Jennivine

**Created By:** Jennivine.Rankin@nrc.gov

**Recipients:**  
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Tracking Status: None  
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REQUEST FOR ADDITIONAL INFORMATION  
ON THE PROPOSED INTERNALS AGING MANAGEMENT PROGRAM PLAN  
FOR PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3  
DOCKET NOS. 50-528, 50-529, and 50-530  
(TAC NOS. MF2554, MF2555, MF2556)

**Background**

By letter dated September 28, 2012 (Agencywide Documents Access Management System (ADAMS) Accession No. ML122780119), Arizona Public Service Company (APS, the licensee) submitted its Pressurized Water Reactor (PWR) Internals Aging Management Program Plan, which credits the implementation of Materials Reliability Program (MRP)-227-A, "Pressurized Water Reactor (PWR) Internals Inspection and Evaluation Guidelines," for Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2 and 3. The MRP-227-A report and supporting reports were used as technical bases for developing the PVNGS aging management program (AMP). The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the MRP-227-A report and issued a final safety evaluation (SE) on December 16, 2011 (ADAMS Accession No. ML11308A770). Based on the review of PVNGS's AMP Plan, the NRC staff requires additional information to complete its review.

**Request for Additional Information**

In Section 5.1 of the submittal, the licensee addresses Action Item 1 of the NRC staff's SE for MRP-227-A by stating:

The assumptions regarding plant design and operating history made in MRP-191 [13] are appropriate for PVNGS. The FMECA and functionality analyses were based on the assumption of 30 years of operation with high leakage core loading patterns; therefore, PVNGS Units 1, 2, and 3 are bounded by the assumption in MRP-191 [13].

As discussed in Section 1.8.4.1 of this document, operations at PVNGS conform to the assumptions in Section 2.4 of MRP-227-A [3].

- PVNGS Units 1, 2, and 3 historic core management practices meet the requirements of MRP-227-A
- PVNGS Units 1, 2, and 3 operate as base load units
- No design changes were implemented beyond those identified in general industry guidance or recommended by the vendor (C-E or Westinghouse)

The NRC staff has determined that additional information, as discussed in References 1 and 2 below, should be provided to verify the applicability of MRP-227-A for each unit at PVNGS. The two specific generic issues that need to be addressed are summarized as follows:

1. Do the Reactor Vessel Internals (RVIs) for the units at PVNGS have any non-weld or bolting austenitic stainless steel components with 20% cold work or greater, and if so do

the affected components have operating stresses greater than 30 ksi? If so, perform a plant-specific evaluation to determine the aging management requirements for the affected components.

2. Have the units at PVNGS ever utilized atypical fuel design or fuel management that could make the assumptions of MRP-227-A regarding core loading/core design non-representative for that plant, including power changes/uprates? If so, describe how the differences were reconciled with the assumptions of MRP-227-A or provide a plant-specific aging management program for affected components as appropriate.

#### References

1. Meeting Summary EPRI-Westinghouse January 22-23, 2013, February 21, 2013 (ADAMS Accession No. ML13042A048)
2. 2/25/2013 Summary of Telecom with EPRI and Westinghouse Electric Company, March 15, 2013 (ADAMS Accession No. ML13067A262)