

REQUEST FOR ADDITIONAL INFORMATION

ARIZONA PUBLIC SERVICE COMPANY, ET. AL.

PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2 AND 3

DOCKET NOS. STN 50-528, 50-529, AND 50-530

LICENSE AMENDMENT REQUEST FOR ONE-TIME ILRT INTERVAL EXTENSIONS

TAC NOS. MD9807, MD9808, AND MD9809

By letter dated October 1, 2008, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML082820029), Arizona Public Service Company (APS, the licensee) requested a one-time, five-year extension to each of the current 10-year intervals for the performance of the Containment Integrated Leakage Rate Test at the Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2 and 3. The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the information provided and determined that the additional information specified below is needed for the staff to complete its evaluation of the amendment request.

1.0 Leak Rate Testing

10 CFR Part 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water Cooled Power Reactors," specifies requirements for periodic testing of the leak tightness of the containment and its penetrations. The Type A Containment Integrated Leak Rate Test (ILRT), the Type B and Type C Local Leak Rate Tests (LLRT), and Containment In-Service Inspection (CISI) program collectively ensure leak-tight integrity and structural integrity of the containment.

- 1.1. In your October 1, 2008, amendment request, Enclosure 1, Section 3.6.1, you provide the results of past ILRTs for each unit. You also state in that section that additional local leak rate testing (LLRT) results have not shown any indication of significant change in containment leak tight capability. The most recent ILRT results provided appear to be from 8-1/2 to 9 years ago.
 - a. Please provide a summary table for Type B and Type C tests. The table should include dates and results of past tests, and all future scheduled tests to be performed prior to and during the requested five-year extension period of the ILRT interval. Also provide the Type B and Type C (LLRT) combined leakage rate totals associated with the ILRT historical test results and for subsequent refueling outages where these totals were summed. As found totals as a percentage of L_a would be preferred, but where not readily available, please provide as left totals indicated as such. The information should also show a comparison of the Type B and Type C test results to the allowable leakage rate values specified in the plant Technical Specifications.
 - b. Please describe any changes in test or calculation methodology that might affect comparison of ILRT results with those of earlier ILRTs, other than the changes in test pressure.
 - c. Please provide the as-found and as-left Type A test results and their comparison

with the allowable leakage rate values specified in the plant Technical Specifications.

- 1.2. In accordance with Regulatory Position C.3 of Regulatory Guide 1.163, visual examination of accessible interior and exterior surfaces of the containment should be conducted prior to initiating a Type A test, and during two other refueling outages before the next Type A test based on a ten-year ILRT interval. Considering the PVNGS Units 1, 2 and 3 IWL and IWE inspection intervals, please describe, with a schedule, how you would supplement this ten-year interval-based visual inspection requirement for the requested 15-year ILRT interval.
- 1.3. As required by 10 CFR 50.55a(b)(2)(viii)(E), for Class CC applications, the licensee shall evaluate the acceptability of inaccessible areas when conditions exist in accessible areas that could indicate the presence of or result in degradation to such inaccessible areas. If there were any instances of such conditions, please discuss the findings and corresponding corrective actions.
- 1.4. Section 3.6.4.7 of Enclosure 1 of the amendment request refers to the 1/4 inch thick liner on top of the containment basemat and the liner in the reactor pit cavity and recirculation sumps as inaccessible areas of the containment liner that are currently identified and evaluated. Please discuss the conditions that have been identified that required evaluation of these inaccessible areas.
- 1.5. Section 3.10.1 of Enclosure 1 of the amendment request states that expansion bellows are not utilized in the design of the mechanical penetrations at PVNGS. Enclosure 1 also states that the bellows used as part of the fuel transfer tube penetration assembly do not form part of the containment building vessel or pressure boundary. Please discuss the inspection, testing (including test interval) and operating experience with regard to detection of leakage through the fuel transfer tube penetration assembly.
- 1.6. Section 3.10.2 of Enclosure 1 of the amendment request states that a moisture barrier is not utilized in the design of the interface between the containment liner and the concrete basemat at PVNGS. Relative to NRC Information Notice 2004-09, "Corrosion of Steel Containment and Containment Liner", please discuss the operating experience and inspection results at PVNGS Units 1, 2, and 3.

2.0. Risk Analysis

- 2.1. The lack of an internal flood model is an open Fact & Observation from the 1999 peer review of the PVNGS Probabilistic Risk Assessment (PRA), and is identified in the Internal Events Model Self Assessment Evaluation (Enclosure 1, Attachment 5) as one deficiency in the PRA with respect to meeting Regulatory Guide (RG) 1.200 criteria. The internal flooding screening analysis completed for Palo Verde to address Generic Letter (GL) 88-20 is used as the main basis for the determination that the Core Damage Frequency (CDF) contribution of internal flooding is expected to be minimal. Your evaluation of the internal flooding item in Enclosure 1, Attachment 5, of your submittal states, "To date, no information that contradicts the IPE [Individual Plant Examination] has been identified." Please elaborate on what sources of information were used to confirm the continued validity of the IPE screening analysis for internal floods (e.g., review of plant and industry operating experience, updated pipe break frequencies).

- 2.2. The internal events model self assessment evaluation discusses 34 items that do not meet RG 1.200 capability Category II requirements for the PRA, and evaluates each individually with respect to the item's impact on the integrated leakage rate test (ILRT) surveillance interval extension request. Note that the NRC considers capability Category I sufficient for ILRT extension applications. Please provide an evaluation of the cumulative impact on the ILRT extension request of all the items that do not meet capability Category I (e.g., the cumulative impact of all the phenomena and uncertainties that are not modeled).