

December 27, 2007

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

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 –
APPROVAL OF EXTENSION REQUEST FOR COMMITMENTS RE: GENERIC
LETTER 2004-02, "POTENTIAL IMPACT OF DEBRIS BLOCKAGE ON
EMERGENCY RECIRCULATION DURING DESIGN BASIS ACCIDENTS AT
PRESSURIZED WATER REACTORS" (TAC NOS. MC4702, MC4703, AND
MC4704)

Dear Mr. Edington:

By letter dated December 10, 2007, Arizona Public Service Company (APS) submitted a request for extension to complete certain commitments for the Palo Verde Nuclear Generating Station (Palo Verde), Units 1, 2, and 3, related to Nuclear Regulatory Commission (NRC) Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors," from December 31, 2007, to June 30, 2008. In that letter, APS requests an extension of the final confirmatory testing, analysis, and validation of containment sump strainers due to a number of issues including competing vendor resources on closure issues and various revisions of the guidance documents providing the methodologies for performing and validating these tests. APS states that this request is consistent with Case 2 in the NRC letter dated November 8, 2007, to the Nuclear Energy Institute. The APS request was clarified during discussions with Mr. Glenn Michael and others of your staff on December 18, 2007.

The NRC staff has reviewed the information provided and determined that the APS commitment to complete the containment sump confirmatory testing, analysis, and validation for Palo Verde, Units, 1, 2, and 3, by June 30, 2008, is acceptable. The NRC also accepts the APS commitment to submit the information from the testing, analysis, and validation within 90 days of their completion. The NRC staff's evaluation supporting acceptance of your request is enclosed. This acceptance does not extend the NRC-approved completion due date for the Unit 2 sump strainer modification scheduled for the spring 2008 refueling outage.

R. Edington

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If you have any questions, please contact me at 301-415-5723.

Sincerely,

/RA by Jack Donohew for/

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

Docket Nos. 50-528, 50-529, and 50-530

Enclosure: Request for Additional Information

cc w/encl: See next page

R. Edington

- 2 -

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Michael T. Markley, Senior Project Manager
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ADAMS Accession No.: ML073600747

(* SE input memo

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DATE	12/27/07	12/27/07	12/21/07	12/27/07

OFFICIAL AGENCY RECORD

EVALUATION FOR APPROVAL OF EXTENSION REQUEST

ARIZONA PUBLIC SERVICE COMPANY

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

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

By letter dated December 10, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML073531095), Arizona Public Service Company (APS, the licensee) submitted a request for extension to complete certain commitments for the Palo Verde Nuclear Generating Station (PVGNS, Palo Verde), Units 1, 2, and 3, related to Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors," from December 31, 2007, to June 30, 2008. In that letter, APS requests extension of the final confirmatory testing, analysis, and validation of containment sump strainers due to a number of issues including competing vendor resources on closure issues and various revisions of the guidance documents providing the methodologies for performing and validating these tests. APS stated that this request is consistent with Case 2 in the NRC letter dated November 8, 2007, to the Nuclear Energy Institute (ADAMS Accession No. ML073060581).

The APS request was clarified during discussions with Mr. Glenn Michael and others of the APS staff on December 18, 2007. These APS representatives clarified that the physical strainer testing was complete and that the finalization of the test report and the certification of strainer performance work remained to be completed. APS stated that they do not anticipate the need for any additional testing. However, the final test results need to be reconciled with the previously completed down-stream effects analyses (including pump seal and cyclone separator evaluations) and emergency core cooling system (ECCS) pump net positive suction head (NPSH) calculations.

As stated in SECY-06-0078 (ADAMS Accession No. ML053620174), "Status of Resolution of GSI-191, 'Assessment of [effect of] Debris Accumulation on PWR Sump Performance,'" proposed extensions to permit changes at the next outage of opportunity after December 2007 may be acceptable if, based on the licensee's request, the staff determines that:

1. The licensee has a plant-specific technical/experimental plan with milestones and schedule to address outstanding technical issues with enough margin to account for uncertainties, and
2. The licensee identifies mitigative measures to be put in place prior to December 31, 2007, and adequately describes how these mitigative measures will minimize the risk of degraded ECCS and containment spray system (CSS) functions during the extension period.

SECY-06-0078 also states that for proposed extensions beyond several months, a licensee's request will more likely be accepted if the proposed mitigative measures include temporary physical improvements to the ECCS sump or materials inside containment to better ensure a high level of ECCS sump performance.

Enclosure

In regard to the first criterion for approving an extension, APS has a plant-specific plan to complete the GL 2004-02 required corrective actions by June 30, 2008. Specifically, APS plans to complete the strainer head-loss test report and validate the design inputs used in the downstream evaluations (including pump seal and cyclone separator acceptability) by June 30, 2008. APS is confident that no additional modifications will be required to complete corrective actions for GL 2004-02.

In regard to the second criterion for approving an extension, APS has stated that the following modifications, mitigating measures, compensatory measures, and/or favorable conditions are in effect at PVNGS, minimizing the risk of degraded ECCS and CSS functions during the extension period:

1. The new sump strainers were installed in Palo Verde Unit 1, and installation in Unit 3 will be completed during the current refueling outage (before December 31, 2007). The new sump strainers will be installed in Unit 2 during the spring 2008 refueling outage (to be completed by approximately May 15, 2008), as allowed by the extension approved by the NRC in a letter to APS dated December 13, 2006 (ADAMS Accession No. ML063400177).
2. The new sump strainers have a surface area of approximately 3140 ft² compared with the 210 ft² area in the old strainers.
3. The new strainers have a nominal hole size of 1/12 inch compared with 1/8 inch for the old strainers.
4. The installed Fiberfrax insulation, which is a significant debris source, has been removed from Palo Verde Units 1 and 2, and is being removed from Unit 3 during the current refueling outage (before December 31, 2007). (Note: Palo Verde uses reflective metallic insulation as the primary insulation for the nuclear steam supply piping and vessels.)
5. Compensatory operator actions in response to NRC Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors," have been implemented.
6. Changes in programs and procedures to ensure and/or enhance the control of transportable debris (e.g., insulation, signs, and foreign materials) in containment have been implemented in all three units.
7. Although Palo Verde uses trisodium phosphate as a containment sump pool pH buffer, no calcium silicate insulation material is used in containment that might react to form calcium phosphate precipitate.
8. The new strainer confirmatory head-loss testing, capture ratio verification and chemical effects margin validation have been preliminarily completed. They show a head-loss margin of greater than 4 feet at elevated LOCA [loss-of-coolant accident] temperatures. APS expects the final analyzed tests will verify the acceptability of new sump strainer design margins, without further modification.

The NRC has confidence that the licensee has a plan that should result in demonstration of acceptable strainer function with adequate margin for uncertainties. Further, the NRC has concluded that APS has put mitigation measures in place to adequately reduce risk for the six-month extension period. Therefore, it is acceptable for APS to complete the containment sump strainer confirmatory testing, analysis, and validation for Palo Verde, Units 1, 2 and 3, by June 30, 2008, and to submit the information within 90 days of their completion.

While the NRC accepts this date as reasonable allowance for contingencies regarding completion of remaining activities to address GL 2004-02, the NRC expects APS to place a high priority on completing remaining actions and updating the plants' licensing bases as soon as possible. This acceptance does not extend the NRC acceptance of completion due date for the Unit 2 sump strainer modification scheduled for the spring 2008 refueling outage, previously approved in NRC letter dated December 13, 2006 (ADAMS Accession No. ML063400177).

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Date: December 27, 2007

Palo Verde Nuclear Generating Station

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