

June 30, 2008

Mr. Randall K. Edington  
Executive Vice President Nuclear/  
Chief Nuclear Officer  
Mail Station 7602  
Arizona Public Service Company  
P. O. Box 52034  
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SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 -  
GENERIC LETTER 2004-02, "POTENTIAL IMPACT OF DEBRIS BLOCKAGE  
ON EMERGENCY RECIRCULATION DURING DESIGN BASIS ACCIDENTS AT  
PRESSURIZED-WATER REACTORS," EXTENSION REQUEST APPROVAL  
(TAC NOS. MC4702, MC4703, AND MC4704)

Dear Mr. Edington:

Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," requested that all licensees complete actions related to the GL by December 31, 2007. By letter dated June 6, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML081700281), Arizona Public Service Company (APS), the licensee, requested an extension to the completion date for its corrective actions to be taken at the Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3. The stated intent of this extension was to allow APS additional time to complete the containment sump strainer test reports and update the design documentation to reflect the more conservative test criteria.

In the licensee's letter dated December 10, 2007 (ADAMS Accession No. ML073531095), APS requested an extension to June 30, 2008, to allow additional time 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). The U.S. Nuclear Regulatory Commission (NRC) approved the extension by letter dated December 27, 2007 (ADAMS Accession No. ML073600747), for the completion of the PVNGS sump clogging corrective actions from the GL 2004-02 due date of December 31, 2007, until June 30, 2008.

APS stated in its June 6, 2008, letter (ADAMS Accession No. ML081700281) the licensee has completed the installation of the new, larger containment sump strainers in all three PVNGS units. Plant-specific chemical effects testing of the strainer design was performed by the strainer vendor, Control Components, Inc. (CCI), in 2007. Additional testing was recently completed by CCI, and observed by representatives from the NRC and APS. The additional testing used more conservative parameters than the 2007 tests. The preliminary results from the recent tests confirmed the capability of the strainer design to perform its safety function.

In order to complete the containment sump strainer test reports and update the design documentation to reflect the more conservative test criteria, APS has requested to extend the commitment to complete the analysis and validation of containment sump strainers from

June 30, 2008, to September 30, 2008, and submit the final GL 2004-02 response within 45 days of completion of the analysis and validation. APS stated that the basis for the acceptability of this extension remains the same as the basis provided in APS's December 10, 2007, extension request and referred to in the December 27, 2007, NRC approval letter.

The NRC has based its reviews for granting extensions to the due date for completion of GL 2004-02 corrective actions on the criteria stated in SECY-06-0078. Specifically, an extension may be granted if:

- 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
- 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.

With regard to the first extension criterion, APS has previously provided a plant-specific technical/experimental plan to complete the GL 2004-02 corrective actions, as described in its December 10, 2007, letter. As described in the June 6, 2008, letter, APS has committed to complete the analysis and validation of containment sump strainers by September 30, 2008, and stated that all other planned corrective actions for PVNGS, Units 1, 2, and 3 are completed.

With regard to the second extension criterion, the NRC staff evaluation of the previous extension request concluded that APS had put mitigation measures in place to adequately reduce risk for the previous requested extension period (June 30, 2008). The installation of the larger surface area sump strainers on all units is the most significant of these mitigative measures. The new strainers have a surface area of approximately 3140 square feet with 1/12-inch holes compared with the original strainers design of 210 square feet and 1/8-inch holes. In addition, APS has removed all Fiberfrax insulation (a significant debris source) from all three units. PVNGS, Units 1, 2, and 3 use reflective metallic insulation as the primary insulation for the nuclear steam supply piping and vessels and do not have calcium-silicate insulation inside containment.

The NRC staff believes that APS has a reasonable plan for PVNGS, Units 1, 2, and 3 that should result in the completion of final GL 2004-02 corrective actions that provide acceptable strainer function with adequate margin for uncertainties. The additional time requested in the June 6, 2008, letter is considered to be of low safety concern given the mitigation measures and plant improvements already in place. In addition, the licensee has concluded that the preliminary test results indicate satisfactory strainer performance.

R. Edington

- 3 -

Based on the licensee having satisfactorily addressed the NRC GL 2004-02 due date extension criteria as discussed above, the NRC finds it is acceptable to extend the completion date for GL 2004-02 corrective actions associated with sump strainer confirmatory analysis and validation for PVNGS, Units 1, 2, and 3 to September 30, 2008. The licensee should submit the final GL 2004-02 response within 45 days of completion of the analysis and validation. While the NRC accepts this date as a reasonable allowance for contingencies regarding completion of remaining activities to address GL 2004-02, the NRC expects PVNGS, Units 1, 2, and 3 to place a high priority on completing remaining actions and updating the plants' licensing bases as soon as possible.

If you have any questions or comments regarding this approval, please contact Michael Markley at 301-415-5723.

Sincerely,

/RA/

Thomas G. Hiltz, Chief  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

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

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R. Edington

- 3 -

Based on the licensee having satisfactorily addressed the NRC GL 2004-02 due date extension criteria as discussed above, the NRC finds it is acceptable to extend the completion date for GL 2004-02 corrective actions associated with sump strainer confirmatory analysis and validation for PVNGS, Units 1, 2, and 3 to September 30, 2008. The licensee should submit the final GL 2004-02 response within 45 days of completion of the analysis and validation. While the NRC accepts this date as a reasonable allowance for contingencies regarding completion of remaining activities to address GL 2004-02, the NRC expects PVNGS, Units 1, 2, and 3 to place a high priority on completing remaining actions and updating the plants' licensing bases as soon as possible.

If you have any questions or comments regarding this approval, please contact Michael Markley at 301-415-5723.

Sincerely,

/RA/

Thomas G. Hiltz, Chief  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
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ADAMS Accession No.: ML081820639

\*memo dated

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Palo Verde Nuclear Generating Station

6/13/2008

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