

October 10, 2001

Mr. Gregg R. Overbeck  
Senior Vice President, Nuclear  
Arizona Public Service Company  
P. O. Box 52034  
Phoenix, AZ 85072-2034

SUBJECT: ENVIRONMENTAL ASSESSMENT REGARDING EXEMPTION EXTENSION  
REQUEST - LEAD TEST ASSEMBLY FOR PALO VERDE NUCLEAR  
GENERATING STATION, UNIT 3 (TAC NO. MB1343)

Dear Mr. Overbeck:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for exemption dated March 2, 2001, as supplemented on August 28, 2001, and September 25, 2001. The proposed exemption would allow continued testing of a lead fuel assembly (LFA) containing fuel rods fabricated with an advanced zirconium based cladding material.

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,  
**/RA by Stephen Dembek for/**

L. Raynard Wharton, Project Manager, Section 2  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. STN 50-530

Enclosure: Environmental Assessment

cc w/encl: See next page

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DATE	10/9/01	10/9/01	10/9/01	10/10/01	10/10/01

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Palo Verde Generating Station, Units 1, 2, and 3

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UNITED STATES NUCLEAR REGULATORY COMMISSION

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

PALO VERDE NUCLEAR GENERATING STATION, UNIT 3

DOCKET NO. STN 50-530

ENVIRONMENTAL ASSESSMENT AND FINDING OF

NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an exemption from Title 10 of the *Code of Federal Regulations* (10 CFR) Parts 50.44, 50.46, and Part 50, Appendix K for Facility Operating License No. NPF-74, issued to Arizona Public Service Company (APS or the licensee), for operation of the Palo Verde Nuclear Generating Station, Unit 3 (PVNGS), located in Maricopa County, Arizona. Therefore, as required by 10 CFR 51.21, the NRC is issuing this environmental assessment and finding of no significant impact.

ENVIRONMENTAL ASSESSMENT

Identification of the Proposed Action:

The proposed action would continue to temporarily exempt Arizona Public Service Company from requirements of 10 CFR 50.44, 10 CFR 50.46, and 10 CFR 50, Appendix K for PVNGS, Unit 3. The *Code of Federal Regulations* specifically refers to or presumes use of zircaloy or ZIRLO cladding for controlling hydrogen generation, emergency core cooling system performance, and bounding post-loss-of-coolant accident (LOCA) scenarios. The proposed action would allow APS to continue testing a lead fuel assembly (LFA) containing fuel rods fabricated with an advanced zirconium based cladding material, Alloy A. The cladding material had been previously approved for limited use and testing at PVNGS for seven cycles of burnup,

which ended with Cycle 9 for Unit 3. The proposed action would allow the Unit 3 LFA to continue an additional cycle to Cycle 10 (U3C10).

The proposed action is in accordance with the licensee's application dated March 2, 2001, as supplemented by letters dated August 28, 2001, and September 25, 2001.

The Need for the Proposed Action:

The proposed action is needed because Alloy A does not fall within the specifically defined cladding material stated in the *Code of Federal Regulations*. The proposed exemption is based on the latest Westinghouse report documenting the results of data confirming the superior performance of Alloy A and justifying the continued irradiation of this clad material in Unit 3 Cycle 10, "Performance of Alloy A Clad Rods and LFA in Palo Verde Unit 3," February 2001. The first and second exemptions allowing use of Alloy A were based on Westinghouse Report CEN-411(V)-P, "Safety Evaluation Report for Use of Advanced Zirconium Based Cladding Materials in PVNGS Unit 3 Batch F Demonstration Assemblies," December 1991, and Westinghouse Report CEN-429-P, "Safety Analysis Report for Use of Advanced Zirconium Based Cladding Material in PVNGS Unit 3 Lead Fuel Assemblies," August 1996, respectively. The reports described, and the staff agrees, that the intent of the regulations would continue to be met since Alloy A falls within the range of the properties for Zircaloy 4. Thus, the proposed action is necessary to allow the irradiation of the LFA containing Alloy A.

Environmental Impacts of the Proposed Action:

The NRC has completed its evaluation of the proposed action and concludes that there is no significant environmental impact if the exemption is granted. The predicted chemical, mechanical, and material performance characteristics of Alloy A cladding have been within those approved for zircaloy cladding over the past seven cycles. A detailed analysis will be performed on the assembly prior to its use in U3C10. Additionally, a poolside inspection will be

performed prior to the assembly being reloaded. The lead fuel assembly will be placed in a core location which does not experience the highest power density throughout the cycle. Therefore, continued use of the LFA in Cycle 10, and the proposed exemption will not present any undue risk to public health and safety.

The proposed action will not significantly increase the probability or consequences of accidents, no changes are being made in the types of effluents that may be released off site, and there is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential nonradiological impacts, the proposed action does not have a potential to affect any historic sites. It does not affect nonradiological plant effluents and has no other environmental impact. Therefore, there are no significant nonradiological environmental impacts associated with the proposed action.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action.

Environmental Impacts of the Alternatives to the Proposed Action:

As an alternative to the proposed action, the staff considered denial of the proposed action (i.e., the "no-action" alternative). Denial of the application would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources:

The action does not involve the use of any different resource than those previously considered in the Final Environmental Statement for the Palo Verde, Unit 3, dated February 1982 (NUREG-0841).

Agencies and Persons Consulted:

On October 9, 2001, the staff consulted with the Arizona State official, Mr. William Wright of the Arizona Radiation Regulatory Agency, regarding the environmental impact of the proposed action. The State official had no comments.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated March 2, 2001, as supplemented by letters dated August 28, 2001, and September 25, 2001. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the ADAMS Public Library component on the NRC Web site, <http://www.nrc.gov> (the Public Electronic Reading Room). If you do not have access to ADAMS or if there are problems in accessing the documents located

in ADAMS, contact the NRC PDR Reference staff at 1-800-397-4209, or 301-415-4737, or by e-mail at [pdr@nrc.gov](mailto:pdr@nrc.gov).

Dated at Rockville, Maryland, this 10<sup>th</sup> day of October 2001.

FOR THE NUCLEAR REGULATORY COMMISSION

***/RA/***

Stephen Dembek, Chief, Section 2  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation