

May 16, 1997

Mr. James M. Levine
Executive Vice President, Nuclear
Arizona Public Service Company
Post Office Box 53999
Phoenix, Arizona 85072-3999

SUBJECT: ENVIRONMENTAL ASSESSMENT OF REQUEST FOR EXEMPTION FROM 10 CFR 70.24
CRITICALITY ACCIDENT REQUIREMENTS - PALO VERDE NUCLEAR GENERATING
STATION UNIT NO. 1 (TAC NO. M98290), UNIT NO. 2 (TAC NO. M98291),
AND UNIT NO. 3 (TAC NO. M28292)

Dear Mr. Levine:

Enclosed for your information is a copy of an "Environmental Assessment and
Finding of No Significant Impact." This assessment relates to your
application dated March 28, 1997, which requested an exemption from certain
requirements of 10 CFR 70.24, "Criticality Accident Requirements."

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

Sincerely,

Original Signed By
James W. Clifford, Senior Project Manager
Project Directorate IV-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

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

Enclosure: Environmental Assessment

cc w/encl: See next page

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Mr. James M. Levine

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May 16, 1997

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UNITED STATES NUCLEAR REGULATORY COMMISSIONARIZONA PUBLIC SERVICE COMPANYDOCKET NOS. STN 50-528, STN-529, AND STN-530PALO VERDE NUCLEAR GENERATING STATION, UNIT NOS. 1, 2, AND 3ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an exemption from certain requirements of its regulations for Facility Operating License Nos. NPF-41, NPF-51, and NPF-74, issued to Arizona Public Service Company (the licensee), for operation of the Palo Verde Nuclear Generating Station Unit Nos. 1, 2, and 3, located in Maricopa County, Arizona.

ENVIRONMENTAL ASSESSMENTIdentification of Proposed Action:

The proposed action would exempt Arizona Public Service Company from the requirements of 10 CFR 70.24, which requires a monitoring system that will energize clear audible alarms if accidental criticality occurs in each area in which special nuclear material is handled, used, or stored. The proposed action would also exempt the licensee from the requirements to maintain emergency procedures for each area in which this licensed special nuclear material is handled, used, or stored to ensure that all personnel withdraw to an area of safety upon the sounding of the alarm, to familiarize personnel with the evacuation plan, and to designate responsible individuals for determining the cause of the alarm, and to place radiation survey instruments in accessible locations for use in such an emergency.

The proposed action is in accordance with the licensee's application for exemption dated March 28, 1997.

The Need for the Proposed Action:

Power reactor license applicants are evaluated for the safe handling, use, and storage of special nuclear material. The proposed exemption from criticality accident requirements is based on the original design for radiation monitoring at Palo Verde Nuclear Generating Station, Unit Nos. 1, 2, and 3 (PVNGS) as discussed in the NUREG-0857, "Safety Evaluation Report Related to the Operation of Palo Verde Nuclear Generating Station, Units 1, 2, and 3." The exemption was granted with the original Part 70 license, for the PVNGS units, but it expired with the issuance of the Part 50 licenses when the exemption was inadvertently not included in those licenses. Therefore, the exemption is needed to clearly define the design of the plant as evaluated and approved for licensing.

Environmental Impacts of the Proposed Action:

The Commission has completed its evaluation of the proposed action and concludes that there is no significant environmental impact if the exemption is granted. Inadvertent or accidental criticality will be precluded through compliance with the Palo Verde Technical Specifications, the design of the fuel storage racks providing geometric spacing of fuel assemblies in their storage locations, and administrative controls imposed on fuel handling procedures. Technical Specifications requirements specify reactivity limits for the fuel storage racks and minimum spacing between the fuel assemblies in the storage racks.

Appendix A of 10 CFR Part 50, - General Design Criteria for Nuclear Power Plants, Criterion 62, requires the criticality in the fuel storage and handling system shall be prevented by physical systems or processes, preferably by use of geometrically-safe configurations. This is met at PVNGS,

as identified in the Technical Specifications and the Updated Final Safety Analysis Report (UFSAR). PVNGS Technical Specifications Section 5.3.1.3, states that the new fuel storage racks are designed and shall be maintained with Keff less than or equal to 0.95, if fully flooded with unborated water, and less than or equal to 0.98, if moderated by aqueous foam, and a nominal 17-inch center to center distance between fuel assemblies placed in the storage racks. UFSAR Section 9.1.1.1, New Fuel Storage Design Bases, states that accidental criticality shall be prevented for the most reactive arrangement of new fuel stored, with optimum moderation, by assuring that Keff is less than 0.98, under normal and accident conditions. UFSAR Section 9.1.1.3, Safety Evaluation, states that the new fuel rack design and location ensures that the design bases of Section 9.1.1.1 are met.

The proposed exemption would not result in any significant radiological impacts. The proposed exemption would not affect radiological plant effluent nor cause any significant occupational exposures since the Technical Specifications, design controls (including geometric spacing of fuel assembly storage spaces) and administrative controls preclude inadvertent criticality. The amount of radioactive waste would not be changed by the proposed exemption.

The proposed exemption does not result in any significant non-radiological environmental impacts. The proposed exemption involves features located entirely within the restricted area as defined in 10 CFR Part 20. It does not affect non-radiological plant effluents and has no other environmental impact. Accordingly, the Commission concludes that there are no significant non-radiological environmental impacts associated with the proposed action.

Alternatives to the Proposed Action:

Since the Commission has concluded that there is no measurable environmental impact associated with the proposed action, any alternatives with equal or greater environmental impact need not be evaluated. As an alternative to the proposed exemption, the staff considered denial of the requested exemption. Denial of the request 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:

This action does not involve the use of any resources not previously considered in the "Final Environmental Statement Related to the Operation of Palo Verde Nuclear Generating Station, Units 1, 2, and 3," dated February 1982, (NUREG-0841).

Agencies and Persons Consulted:

In accordance with its stated policy, on April 3, 1997, 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

Based upon the environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the Commission 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 28, 1997, which is available for public inspection at the Commission's Public Document Room, which is located at The

Gelman Building, 2120 L Street, NW., Washington, D. C., and at the local public document room located at the Phoenix Public Library, 1221, N. Central Avenue, Phoenix, Arizona 85004.

Dated at Rockville, Maryland, this 16th day of May 1997.

FOR THE NUCLEAR REGULATORY COMMISSION



James Clifford, Senior Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation