



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 16, 2010

Mr. Randall K. Edington
Executive Vice President Nuclear/
Chief Nuclear Officer
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 –
ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT
IMPACT (TAC NOS. ME0703, ME0704, AND ME0705)

Dear Mr. Edington:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to an application for exemption submitted by the Arizona Public Service Company (APS) on February 19, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML090641014), as supplemented by letter dated December 22, 2009 (ADAMS Accession No. ML100040069), for the Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3. The proposed exemption would exempt APS from certain requirements of Title 10 of the *Code of Federal Regulations*, Part 50, Appendix G, "Fracture Toughness Requirements," to allow the application of the methodology in Combustion Engineering Topical Report NPSD-683-A, Revision 6, "Development of a RCS [Reactor Coolant System] Pressure and Temperature Limits Report (PTLR) for the Removal of P-T [Pressure Temperature] Limits and LTOP [Low-Temperature Overpressure Protection] Requirements from the Technical Specifications," for the calculation of stress intensity factors due to internal pressure loadings (K_{IM}).

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

Sincerely,

A handwritten signature in black ink that reads "James R. Hall".

James R. Hall, Senior Project Manager
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

Enclosure:
Environmental Assessment

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UNITED STATES NUCLEAR REGULATORY COMMISSION
ARIZONA PUBLIC SERVICE COMPANY, ET AL.
DOCKET NOS. STN 50-528, STN 50-529, AND STN 50-530
PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3
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) Part 50, Appendix G, "Fracture Toughness Requirements," for Facility Operating License Nos. NPF-41, NPF-51, and NPF-74, issued to the Arizona Public Service Company (APS, or the licensee), for operation of the Palo Verde Nuclear Generating Station (PVNGS, the facility), Units 1, 2, and 3, respectively, 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:

By letter dated February 19, 2009, as supplemented by letter dated December 22, 2009, the licensee submitted a license amendment request where, among other changes, the licensee requested the use of an alternate methodology for calculating the stress intensity factor K_{IM} due to internal pressure loading. As specified in the NRC safety evaluation approving Combustion Engineering (CE) Topical Report NPSD-683-A, Revision 6, "Development of a RCS [Reactor Coolant System] Pressure and Temperature Limits Report (PTLR) for the removal of P-T [Pressure Temperature] Limits and LTOP [Low-Temperature Overpressure Protection] Requirements from the Technical Specifications," dated March 16, 2001, the licensee's

application included a request for an exemption from the requirements of 10 CFR Part 50, Appendix G for pressure temperature (P-T) limits, since the alternate methodology applies the CE Nuclear Steam Supply System method for calculating K_{IM} stress intensity values.

The proposed action would exempt the licensee from certain requirements of Appendix G to 10 CFR Part 50 to allow the application of the methodology in CE NPSD-683-A, Revision 6, for the calculation of flaw stress intensity factors due to internal pressure loadings (K_{IM}).

The Need for the Proposed Action:

The exemption is needed to allow the licensee to use an alternate methodology to meet the fracture toughness requirements for the reactor coolant pressure boundary. In the considering the exemption request, the staff has determined that, pursuant to 10 CFR 50.12(a)(2)(ii), the application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the rule, based on the alternate methodology proposed by the licensee. The proposed action would revise the currently-approved methodology for P-T limit calculations to incorporate the methodology approved for use in CE NPSD-683-A, Revision 6. The topical report allows the use of an alternate methodology to calculate the flaw stress intensity factors due to internal pressure loadings (K_{IM}). Specifically, the exemption is needed because the methodology in CE NPSD-683-A, Revision 6, could not be shown to be conservative with respect to the methodology for the determination of K_{IM} provided in Editions and Addenda of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, Appendix G, through the 1995 Edition and 1996 Addenda (the latest Edition and Addenda of the ASME Code which had been incorporated into 10 CFR 50.55a at the time of the staff's review of CE NPSD-683-A, Revision 6). Therefore, the licensee submitted an exemption request, consistent with the requirements of 10 CFR 50.60, to apply the

K_{IM} calculational methodology of CE NPSD-683-A, Revision 6, as part of the PVNGS, Units 1, 2, and 3, PTLR methodology.

Environmental Impacts of the Proposed Action:

The NRC has completed its evaluation of the proposed action and concludes that the use of the alternate methodology described above would provide an adequate margin of safety against brittle failure of the reactor pressure vessels at PVNGS, Units 1, 2 and 3. The proposed change does not involve any replacement or modification of plant components and no changes are proposed in the operation of PVNGS. Therefore the staff concludes that the use of an alternate methodology as described in the licensee's request would not significantly affect plant safety and would not have a significant adverse affect on the probability of an accident occurring.

The proposed action will not result in any non-radiological impacts or radiological impacts. The proposed action does not result in changes to the operation of the plant and supporting facilities, land use, or water use, nor does it result in changes to the quality or quantity of non-radiological and radiological effluents. No impacts are expected to the air or ambient air quality. No impacts are expected to aquatic or terrestrial habitats or species, or to threatened, endangered, or protected species. No impacts are expected to historic and cultural resources, or to socioeconomic resources. Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action.

The details of the staff's safety evaluation will be provided in the exemption to 10 CFR 50, Appendix G, which will allow the use of the methodology in Topical Report CE NPSD-683-A, Revision 6, to calculate the flaw stress intensity factors due to internal pressure loadings (K_{IM}). The exemption will be issued in a future letter to the licensee.

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 resources than those previously considered in the Final Environmental Statement for the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, NUREG-0841, dated February 1982.

Agencies and Persons Consulted:

In accordance with its stated policy, on February 12, 2010, the staff consulted with the Arizona State official, Mr. Aubrey Godwin 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

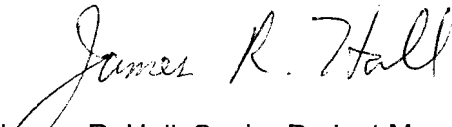
On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee’s letters dated February 19 and December 22, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML090641014 and ML10040069, respectively). Documents may be examined, and/or copied for a fee, at the NRC’s Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the ADAMS Public

Electronic Reading Room on the Internet at the NRC Web site, <http://www.nrc.gov/reading-room/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC PDR Reference staff by telephone at 1-800-397-4209 or 301-415-4737, or send an e-mail to pdr.resource@nrc.gov.

Dated at Rockville, Maryland, this 16th day of February 2010.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink that reads "James R. Hall". The signature is written in a cursive style with a large initial "J" and "H".

James R. Hall, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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Executive Vice President Nuclear/
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Sincerely,
/RA/

James R. Hall, Senior Project Manager
Plant Licensing Branch IV
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Docket Nos. STN 50-528, STN 50-529,
and STN 50-530

Enclosure:

Environmental Assessment
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ADAMS Accession Nos. Letter ML100320569

EA FRN ML100320592

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