



A subsidiary of Pinnacle West Capital Corporation

Palo Verde Nuclear
Generating Station

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ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 2 and 3
Docket Nos. STN 50-529 and 50-530
Request for Relief from the American Society of Mechanical Engineers
(ASME) Code, Section XI, Reactor Vessel Weld Inspection Frequency –
Relief Request No. 44

As permitted by 10 CFR 50.55a(a)(3)(ii), Arizona Public Service Company (APS) hereby requests Nuclear Regulatory Commission (NRC) approval to increase the interval for performing the inservice inspection program required visual examinations of the reactor pressure vessel (RPV). If approved, the visual examinations will coincide with the volumetric examination for ASME examination categories B-A and B-D reactor vessel welds supported by Relief Request No. 40. In accordance with 10 CFR 50.55a(a)(3)(ii), the proposed relief is requested because compliance with the specified requirements would result in hardship without a compensating increase in the level of quality or safety. Discussion of the specific hardship that supports this request is included in the enclosure to this letter.

Approval of the proposed ASME Code relief is requested by August 30, 2010. No commitments are being made to the NRC by this letter. Should you need further information regarding this relief request, please contact Russell A. Stroud, Licensing Section Leader, at (623) 393-5111.

Sincerely,

DCM/RAS/RJR/gat

Enclosure: Relief Request No. 44

cc: E. E. Collins Jr. NRC Region IV Regional Administrator
J. R. Hall NRC NRR Project Manager
R. I. Treadway NRC Senior Resident Inspector

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A047
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ENCLOSURE

Relief Request No. 44

**10 CFR 50.55a Relief Request Number 44
Palo Verde Units 2 and 3**

**Proposed Alternative
in Accordance with 10 CFR 50.55a(a)(3)(ii)
--Hardship or Unusual Difficulty
without Compensating Increase in Level of Quality or Safety--**

1.0 ASME Code Component(s) Affected

Code Class: 1

Examination Category	Item No.	Description
B-N-2	B13.60	Interior Attachments Beyond Beltline Region
B-N-3	B13.70	Core Support Structure

2.0 Applicable Code Edition and Addenda

The third 10-year Interval Inservice Inspection (ISI) Program Plan was prepared to comply with the 2001 Edition and 2003 Addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code (hereafter Code).

3.0 Applicable Code Requirement

Subarticle IWA-2432, "Inspection Program B," states, in part, that the inspection intervals shall comply with the following, except as modified by IWA-2430(d), and that inspection intervals are 10 years.

Subarticle IWA-2430, "Inspection Intervals," (d) states, in part, that for components inspected under Program B, each of the inspection intervals may be extended or decreased by as much as one year. Adjustments shall not cause successive intervals to be altered by more than one year from the original pattern of intervals.

Subarticle IWB-2412, "Inspection Program B," requires volumetric examination of essentially 100% of the reactor pressure vessel pressure-retaining welds identified in Table IWB-2500-1 once every 10-year interval.

Table IWB-2500-1, "Examination Categories," for Categories B-N-2 and B-N-3, item numbers B13.60 and B13.70, requires a visual examination of the accessible interior attachment welds beyond the beltline region and a visual examination of the accessible core support structure surfaces of the reactor pressure vessel once each 10-year interval.

4.0 Reason for Request

APS is requesting approval to increase the interval for performing the Palo Verde Unit 2 and 3 inservice inspection program required visual examinations of the reactor pressure vessel (RPV) because compliance with the specified requirements would result in hardship without a compensating increase in the level of quality or safety. The increased inspection interval would align the visual examinations of the interior attachments beyond the beltline region and core support structure (examination categories B-N-2 and B-N-3) with the volumetric examinations of categories B-A and B-D RPV welds.

The volumetric examinations of categories B-A and B-D RPV welds are addressed in APS Relief Request (RR) No. 40 (ADAMS Accession No. ML091870432), wherein APS proposed deferral of the volumetric examinations based upon WCAP-16168-NP-A, Revision 2. In RR No. 40, APS proposed 2016, 2027 and 2028 as the years in which future inspections of the examination categories B-A and B-D RPV welds will be performed in Units 1, 2, and 3, respectively.

Since the core support barrel must be removed to facilitate the B-N-2 and B-N-3 category visual examinations, APS has historically performed them during the same outage as categories B-A and B-D volumetric weld examinations. Performing the visual and volumetric examinations during the same refueling outage will result in a significant reduction in radiation exposure since the RPV internals will only be removed once to accommodate both examinations. Approval of this relief request will also result in significant savings in outage duration since the equipment and personnel used for the Category B-A and B-D volumetric examinations can be used for the Category B-N-2 and B-N-3 examinations.

5.0 Proposed Alternative and Basis for Use

The category B-N-2 and B-N-3 welds were last examined:

Unit 1 summer 2007
Unit 2 spring 2008
Unit 3 spring 2009

APS will be performing the next Unit 1 category B-N-2 and B-N-3 visual examinations in conjunction with the category B-A and B-D volumetric examination in 2016. No relief is required for the Unit 1 examination since it is being performed within the required ASME Code interval. APS is proposing to perform the next Unit 2 and Unit 3 category B-N-2 and B-N-3 visual examinations in conjunction with the category B-A and B-D volumetric examinations scheduled in 2027 and 2028, respectively.

The visual examinations of the interior attachments beyond the beltline region and core support structure require fuel and core support barrel removal from the RPV.

An unnecessary risk is created by removal of the core barrel more than once within an inspection interval for the sole purpose of performing a visual examination. Further, the radiation exposure to perform the ASME Examination Category B-N-2 and B-N-3 examinations would essentially double if the subject examinations were performed at a time different from the RPV shell, lower head, and nozzle weld examinations.

The visual examinations of the RPV interior attachments beyond the beltline region and core support structure have been performed several times at Palo Verde with no relevant indications noted during the examinations. The Unit 2 and Unit 3 visual examinations were last performed in 2008 and 2009, respectively, with acceptable results. A review of industry surveys reveal these examinations have been performed many times by the industry with no significant findings.

APS will continue to perform the ASME Examination Category B-N-1 visual examinations which include the space above and below the reactor core that is made accessible for examination by the removal of components during normal refueling outages. This examination is required once each period and will provide reasonable assurance of structural integrity.

6.0 Duration of Proposed Alternative

This request proposes deferral of the visual examination requirement for the Palo Verde Unit 2 and 3 RPV interior attachments beyond the beltline region and core support structure identified in Section 1.0 of this request until 2027 for Unit 2 and 2028 for Unit 3, plus or minus one refueling cycle.

7.0 Conclusion

10 CFR 50.55a(a)(3) states:

“Proposed alternatives to the requirements of paragraphs (c), (d), (e), (f), (g), and (h) of this section or portions thereof may be used when authorized by the Director, Office of Nuclear Reactor Regulation, or Director, Office of New Reactors, as appropriate. The applicant shall demonstrate that:

- (i) The proposed alternatives would provide an acceptable level of quality and safety, or
- (ii) Compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.”

Deferring the inspection of the B-N-2 and B-N-3 welds as proposed reduces the frequency that the RPV lower internals need to be removed and is requested on the basis that compliance with the specified requirements would result in hardship

or unusual difficulty without a compensating increase in the level of quality and safety.

8.0 Precedent

Calvert Cliffs Relief Requests ISI-020 and ISI-021

On February 18, 2009, the NRC staff provided verbal approval for the subject relief requests in support of the then ongoing refueling outage (ADAMS Accession No. ML090490853). Final approval was granted on April 8, 2009 (ADAMS Accession No. ML090920077).

DC Cook Relief Requests ISIR-29 and ISIR-30

On March 13, 2009, the NRC staff provided verbal authorization for the proposed alternative (ADAMS Accession No. ML090720704). Final approval was granted on June 8, 2009 (ADAMS Accession Nos. ML091260163 and ML091320549).

As documented in the DC Cook Safety Evaluation for ISIR-30: Based on Office of General Council current guidance, the NRC staff will grant ISI interval extensions for the Category B-A and B-D components on an interval-by-interval basis (i.e., only a facility's current ISI interval will be extended for up to 20 years). To extend each subsequent ISI interval from 10 to 20 years, a licensee will have to resubmit the requested alternative for NRC review and approval. This position also pertains to extending the interval for Category B-N-2 and B-N-3 components, as this extension is being based on the Category B-A and B-D examination interval.