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Palo Verde Nuclear
Generating Station

David Mauldin
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10CFR50.55a

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102-04359-CDM/SAB/RKB
October 12, 1999

U.S. Nuclear Regulatory Commission
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Dear Sirs:

References:

1. APS Letter No. 102-04095-WEI/AKK/MLG, dated March 17, 1998, from W.E. Ide, APS, to NRC, "Inservice Inspection Programs for Second 10-Year Interval."
2. Letter dated August 31, 1999, from N. Kalyanam, USNRC, to G. R. Overbeck, APS, "Palo Verde Nuclear Generating Station Units 1, 2 and 3 – Second 10-Year Interval Inservice Inspection – Request for Additional Information (TAC Nos. MA3559, MA3560, and MA3561)."

**Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2 and 3
Docket No. STN 50-528, 529 and 530
Response to PVNGS Units 1, 2 and 3 Second 10-Year Interval
Inservice Inspection Programs – Request for Additional Information
(RAI)**

In reference 1 above, Arizona Public Service Company (APS) submitted the PVNGS Units 1, 2 and 3 second 10-year interval Inservice Inspection (ISI) programs. The interval programs were accompanied by several requests for relief.

In reference 2 above, the NRC Staff requested APS to provide additional information related to several of the relief requests that accompanied the second 10-year interval ISI programs. APS' response to the NRC Staff's request is provided in enclosure 1.

Revised Relief Request No. 6 is provided in enclosure 2. Relief Request No. 6 has been revised to address those containment penetrating pressure retaining components for which code case N-522 does not specifically apply. APS is requesting the use of an alternative test method in lieu of the required system leakage and hydrostatic testing specified in IWC-5200 of Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code.

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RAI Response - Units 1, 2 and 3 Second Interval ISI Programs
Page 2

No commitments are being made to the NRC by this letter.

Should you have any questions, please contact Scott A. Bauer at (623) 393-5978.

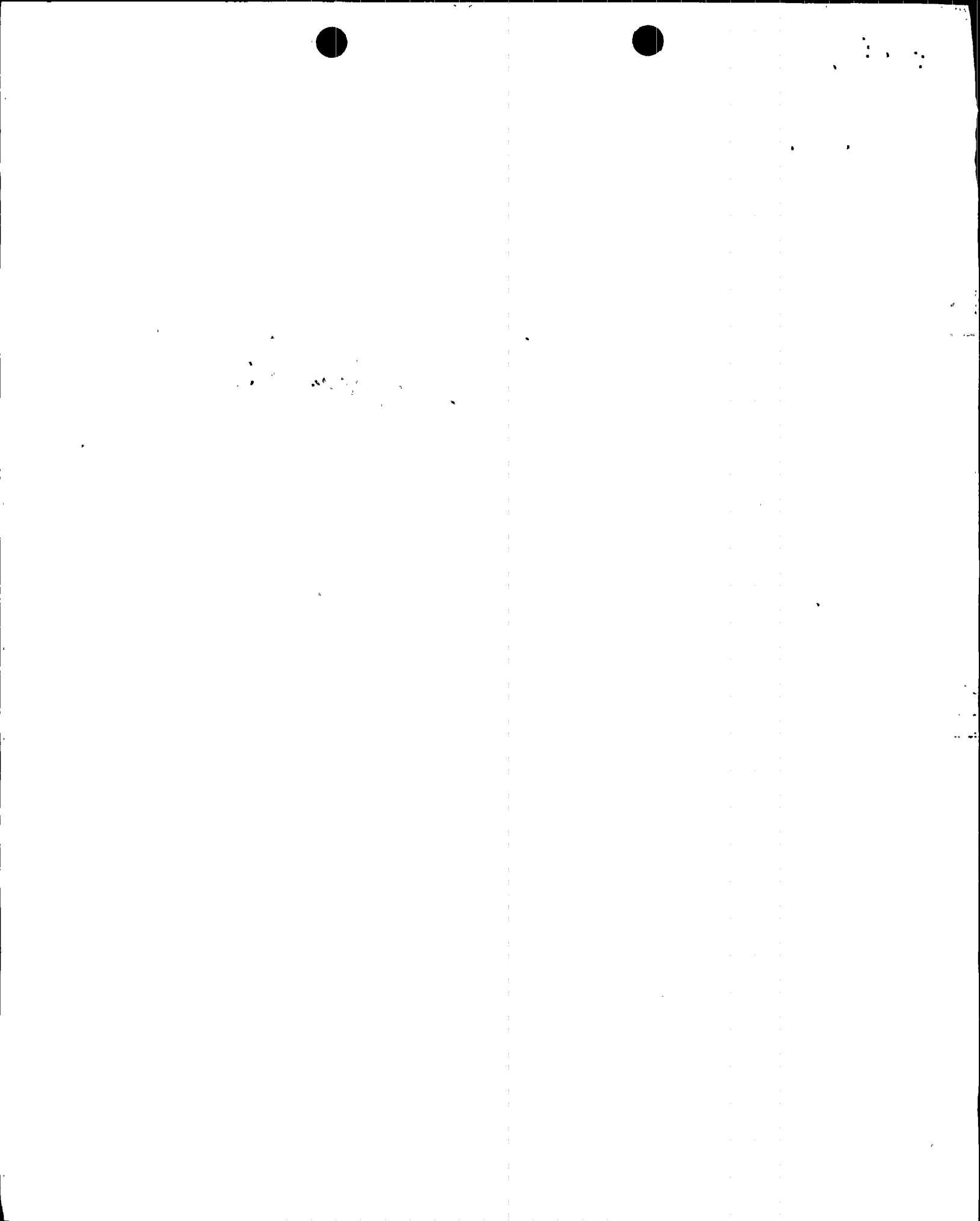
Sincerely,

A handwritten signature in cursive script, appearing to read "David Pauldin".

CDM/SAB/RKB/

Enclosures

cc:	E. W. Merschoff	[Region IV Administrator]
	N. Kalyanam	[NRR – Project Manager]
	J. H. Moorman	[Senior Resident Inspector]



ENCLOSURE 1

APS RESPONSE TO RAI

SECOND 10 – YEAR INTERVAL ISI PROGRAMS

ASME SECTION XI

FOR PALO VERDE NUCLEAR GENERATING STATION

UNITS 1, 2 and 3

SECOND 10-YEAR INTERVAL INSERVICE INSPECTION

PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2 AND 3

REQUEST FOR ADDITIONAL INFORMATION

TAC NUMBERS MA3559, MA3560 AND MA3561

- 2.1 Request for Relief No. 1 proposes to use the 1992 Edition with the 1992 Addenda in lieu of the 1989 Edition, which is currently the latest Code approved in the Regulations. The licensee's basis stated that "A detailed itemized listing (provided by another utility) of the differences between Code years has been previously reviewed and found to be an acceptable level of quality and safety." To date, the staff is unaware of another utility that has been authorized to use the 1992 Edition with the 1992 Addenda (Entergy Operations, Inc. was allowed to use the 1992 Edition with portions of the 1993 Addenda), and it is required that each licensee submit a detailed comparison supporting the licensee's basis for this type of proposed alternative. Therefore, provide a detailed comparison of the Code changes between the 1989 Edition and the 1992 Edition/Addenda and describe how each change provides an acceptable level of quality and safety pursuant to 10 CFR 50.55a(a)(3)(i).

APS RESPONSE:

APS hereby withdraws Relief Request No. 1. In Federal Register, Vol. 64, No. 183, Pages 51370 through 51400, dated September 22, 1999, the NRC has amended its regulations to incorporate by reference more recent editions and addenda of the ASME Boiler and Pressure Vessel Code. The amended regulations [10 CFR 50.55a(b)(2)] now reference ASME Section XI editions through the 1995 edition and addenda through the 1996 addenda. Therefore, NRC staff approval to implement the 1992 edition, 1992 addenda is no longer required.

- 2.2 Request for Relief No. 3 proposed to use the 1992 Edition with the 1992 Addenda for the repair and replacement of Code items. It appears that this proposed alternative is redundant and should be covered by Request for Relief No. 1, which generically proposes to use the 1992 edition/addenda. It is unclear why Request for Relief No. 3 is necessary. Provide clarification regarding the scope of this request for relief. If it is determined that this request is necessary, provide a detailed comparison of the Code changes between the 1989 Edition and the 1992

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Second 10-Year Interval ISI Program
RAI Response
(Continued)

Edition/Addenda and describe how each change provides an acceptable level of quality and safety pursuant to 10 CFR 50.55a(a)(3)(i).

APS RESPONSE:

APS hereby withdraws Relief Request No.3. ASME Section XI, IWA-4170(a) states that the Owners Section XI Repair and Replacement program shall correspond with the Edition and Addenda specified in the inservice inspection program applicable to the inspection interval. Therefore, NRC Staff approval of Relief Request No. 3 is not necessary.

- 2.3 Request for Relief No. 4, proposes to perform the Code-required VT-3 visual examination of component supports to the extent practical without removing insulation. However, the proposed alternative is not adequately justified. To be found acceptable, describe how the proposed alternative provides an acceptable level of quality and safety. If the proposed alternative includes an expanded examination sample, confirm and describe the expanded examination sample.

APS RESPONSE:

The requirements of ASME Section XI implicitly assume that insulation will be removed, as necessary, to perform volumetric and surface examinations. Removal of insulation generally is not required to perform visual examinations unless the results of in-service inspections detect unacceptable conditions that require corrective measures. The objective of the VT-3 visual examinations required for the subject examination categories is to determine the general mechanical and structural conditions of components and their supports, such as the presence of loose parts, debris, or abnormal corrosion products, wear, erosion, corrosion, and the loss of integrity at bolted or welded connections.

The staff's interpretation for APS' first interval ISI program approval of the same Relief Request [reference letter dated October 21, 1987, from E. A. Licitra, NRC, to E. E. Van Brundt, Jr., APS, Inservice Inspection Programs – Palo Verde, Units 1, 2 and 3 (TAC Nos. 56661, 62797, and 64909)] was that the ASME Council did not intend for insulation to be removed to conduct VT-3 visual examinations. The requirements of ASME Section XI do not require removal of insulation that would result in a violation of the Technical Specification, such as solid fire-resistant foam assemblies or insulation located at fire stops.

Second 10-Year Interval ISI Program
RAI Response
(Continued)

For component supports, subparagraph IWF-1300 (e) contains the following definition: "Where the mechanical connection of a non-integral support is buried within the component insulation, the support boundary may extend from the surface of the component insulation provided the support either carries the weight of the component or serves as a structural restraint in compression".

The staff previously evaluated APS's conservative program for the examination of component supports, and determined that this program provides an acceptable level of quality and safety and is an acceptable alternative to an analysis based on IWF-1300 (e). Therefore, relief should be granted as requested permitting APS to examine the support components and integral attachments without removing insulation.

- 2.4 Request for Relief No. 6 proposes an alternative to the pressure testing requirements of the Code and Code Case N-498-1 for containment penetrations. The proposed alternative appears to be similar to Code Case N-522 *Pressure Testing of Containment Penetration Piping*, which specifies that 10 CFR 50, Appendix J testing may be used as an alternative to Section XI pressure tests for certain containment penetration piping. Other plants have been allowed to use Code Case N-522 when the Appendix J testing is performed at no less than the peak calculated containment pressure, and procedures and techniques capable of detecting and locating through-wall leakage are used. Is Code Case N-522 applicable for all of the subject piping? If Code Case N-522 is applicable, confirm that the Appendix J testing will be performed at no less than the peak calculated containment pressure and will use procedures and techniques capable of detecting and locating through-wall leakage. If Code Case N-522 is not applicable, describe why the Code requirements cannot be met, and how the use of Appendix J testing provides an acceptable level of quality and safety.

APS RESPONSE:

Enclosed is revised relief request No. 6 for the 2nd ISI Interval. Code case N-522 has been incorporated into Regulatory Guide 1.147, Revision 12, therefore the relief request has been revised to reflect only those penetrations which have class piping on either side of the penetration (i.e., where Code Case N-522 does not specifically apply).

Second 10-Year Interval ISI Program
RAI Response
(Continued)

For the components listed in revised Relief Request No. 6, APS believes that it is reasonable to request an alternative test method based on Code Case N-522 methodology. The Hydrogen Control System (HP) is designed to monitor the hydrogen concentrations in the containment building following a LOCA. The penetration isolates on a Containment Isolation Actuation Signal (CIAS) and is then reopened remotely by the control room operators. As such, the highest pressure the system would be subjected to would be less than containment peak pressure. These penetrations receive an Appendix J test. The test is performed at higher than containment peak pressure and is performed using procedures and techniques capable of detecting and locating through-wall leakage.

PVNGS believes that this test meets or exceeds the requirements of any inservice inspection pressure test that could be performed and provides an acceptable level of quality and safety.

- 2.5 Request for Relief No. 9 proposes an alternative to the pressure testing requirements of the Code and Code Case N-498-1 for a number of Class 1 piping segments downstream of the first isolation valve. Describe the size and extent of the piping segments contained in this request for relief.

APS RESPONSE:

The functions of the subject piping segments are venting and draining. The piping between the first isolation valve and the second isolation valve/blind flange are all one inch or less NPS and extend less than two feet. None of these valves are procedurally required to be opened during normal operations at normal pressure. The valves are closed to achieve operational readiness. Therefore, the line segments downstream of the first isolation valve serve no operational function and do not impact the system operational readiness.

ENCLOSURE 2

RELIEF REQUEST NO. 6 - REVISION 1

SECOND 10 – YEAR INTERVAL ISI PROGRAMS

ASME SECTION XI

FOR PALO VERDE NUCLEAR GENERATING STATION

UNITS 1, 2 and 3

Relief Request No. 6, Revision 1

Examination of Piping Systems Penetrating Containment

which have Class piping on both sides of the Penetration (2nd Interval)

Code Class 2
Code Reference ASME Section XI, Division 1, 1992 Ed, 1992A, Subsection IWC-5200.
Examination Category C-H
Item Numbers C7.40
Component Description Pressure Retaining Components
PVNGS Units ALL

Requirement ASME Section XI, Division 1, 1992 Ed, 1992A, Subsections IWC-5200, Table IWC-2500-1 require the performance of a VT-2 examination performed during a system leakage test each inspection period and a system hydrostatic test at or near the end of the inspection interval.

Alternate Testing Perform 10CFR-50 Appendix J testing.

Component Applicability	Pen#	Class*	Service	P&ID	LINE_#
	35	2	Hydrogen Control System Exhaust	HPP-001	A-001-HCBA-2
	36	2	Hydrogen Control System Exhaust	HPP-001	B-002-HCBA-2
	38	2	Hydrogen Control System Supply	HPP-001	A-003-HCBA-2
	39	2	Hydrogen Control System Supply	HPP-001	B-004-HCBA-2

*Class of piping on either side of penetration

Basis For Relief Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested from the code requirements stated above on the basis that the proposed alternative would provide an acceptable level of quality and safety.

Code Case N-522, which has been incorporated into Regulatory Guide 1.147, Revision 12, states that using 10 CFR 50, Appenix J testing is an acceptable alternative to pressure testing piping that penetrates containment when the piping and isolation valves that are part of the containment system are Class 2, but the balance of the piping system is outside the scope of Section XI. The NRC Staff has deemed this acceptable provided the following conditions are met:



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Relief Request No. 6, Revision 1
Second 10-Year Interval ISI Program
(Continued)

The test should be conducted at the peak containment pressure and the test procedure should permit the detection and location of through-wall leakage in containment isolation valves (CIVs) and pipe segments between CIVs.

The PVNGS Appendix J testing meets these conditions.

Code Case N-522 cannot be applied in this case without a request for relief because it only allows for penetrations that have non-class piping on either side of the penetration.

However, in this specific case APS believes that it is reasonable to apply the same philosophy used for Code Case N-522. The Hydrogen Control System (HP) is designed to monitor the hydrogen concentrations in the containment building following a LOCA. The penetration isolates on a Containment Isolation Actuation Signal (CIAS) and is then reopened remotely by the control room operators. As such, the highest pressure the system would be subjected to would be less than containment peak pressure. These penetrations receive an Appendix J test. The test is performed at higher than containment peak pressure and is performed using procedures and techniques capable of detecting and locating through-wall leakage. PVNGS feels that this test meets or exceeds the requirements of any inservice inspection pressure test that could be performed.

Therefore PVNGS believes that the proposed alternative provides an acceptable level of quality and safety.

Approval

In accordance with 10 CFR 50.55a(a)(3)(i), relief is requested from the code requirements on the basis that the proposed alternative would provide an acceptable level of quality and safety.

References

1. ASME Section XI, Division 1, 1992 Ed, 1992A, Subsection IWC-5200.
2. ASME Code Case N-522
3. Regulatory Guide 1.147, Revision 12, dated May 1999

