



A subsidiary of Pinnacle West Capital Corporation

Palo Verde Nuclear  
Generating Station

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102-05831-DCM/RJR  
March 14, 2008

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

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Units 1, 2, and 3  
Docket Nos. STN 50-528, 50-529 and 50-530  
Third Ten-Year Interval Inservice Inspection Program Update and  
Relief Request 38**

In accordance with 10 CFR 50.55a(g), Arizona Public Service Company (APS) is required to update the PVNGS Inservice Inspection (ISI) program once every ten years. The ISI program complies with the latest edition and addenda of the American Society of Mechanical Engineers (ASME) Section XI Code incorporated by reference in 10 CFR 50.55a one year prior to the start of the interval per 10 CFR 50.55a(g)(4)(ii). The Third ISI Inspection Intervals for the PVNGS units are shown below. Accordingly, the 2001 Edition with the 2003 Addenda of ASME Section XI is the Code that will be used for the Third Ten-Year ISI Program.

Third Interval Dates:

Unit 2 – March 18, 2007, through March 17, 2017, first implementation U2R14, spring 2008.

Unit 3 – January 11, 2008, through January 10, 2018, first implementation U3R14, fall 2008.

Unit 1 – July 18, 2008, through July 17, 2018, first implementation 1R15, spring 2010. The refueling outage (1R14) in the fall of 2008 will be used to complete required second interval examinations.

At PVNGS, each unit has a separate program which will be implemented prior to its first required examination of the third interval and will be available on site, or upon request, APS will provide a copy to the NRC in accordance with Section IWA-1400(c) of the ASME Code.

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Additionally, APS is submitting Relief Request 38, pursuant to 10 CFR 50.55a(g)(5)(iv) for the Unit 2 second ISI interval. The enclosed Relief Request 38 is requesting relief from Code requirements which have been determined to be impractical.

This letter does not make any commitments to the NRC. If you have any questions or require additional information, please contact Glenn A. Michael at (623) 393-5750.

Sincerely,



For D. MINS

DCM/TNW/GAM/RJR/gat

Enclosure

cc: E. E. Collins, Jr. NRC Region IV Regional Administrator  
M. T. Markley NRC NRR Project Manager  
G. G. Warnick NRC Senior Resident Inspector for PVNGS

**ENCLOSURE**

**Relief Request 38**

**Relief Request No. 38**  
**Relief Request in Accordance with 10 CFR 50.55a(g)(5)(iii)**  
**Inservice Testing Impracticality – Unit 2 Second Inspection Interval**

**ASME Code Components Affected**

Category	Item	Description
B-A	B1.22	RV Lower Head Meridional Weld
B-D	B3.110	Pressurizer Nozzle to Vessel Welds
B-H	B8.20	Pressurizer - Integrally Welded Attachment
B-J	B9.11	NPS 4 in. or Larger - Circumferential Welds
C-C	C 3.20	Piping - Integrally Welded Attachments
B-C	C 3.30	Pump - Integrally Welded Attachments
C-F-1	C 5.11	Piping Welds $\geq$ 3/8 in. Nominal Wall Thickness for Piping > NPS 4 in. - Circumferential Welds
C-F-1	C 5.21	Piping Welds $\geq$ 1/5 in. Nominal Wall Thickness for Piping > NPS 2 in. and < 4 in. - Circumferential Weld

Code Class: 1 and 2

**Applicable Code Additions and Addenda**

Second 10-year Inservice Inspection Interval Code for Palo Verde Nuclear Generating Station (PVNGS) for Unit 2: American Society of Mechanical Engineers (ASME) Code, Section XI, 1992 Edition, 1992 Addenda

**Applicable Code Requirement**

IWB-2500 and IWC- 2500 of ASME Section XI, 1992 Edition, 1992 Addenda defines that certain welds and components to be examined will essentially be 100% examined. This would pertain to Categories B-A, B-D, B-H, B-J, C-C, C-F-1 for this request for relief.

**Proposed Alternative**

A request for relief for these requirements is being requested because of the configuration of the plant and geometric shape that causes the examination limitation.

Item 1: B1.22 - Reactor Vessel lower head meridional weld (1-1) examination is limited to approximately 22% of the Code volume coverage, due to geometric constraints of the in-core instrumentation penetrations and flow skirt. Previously submitted as Relief Request 13 and approved April 14, 2000 (ADAMS Accession Number ML003704271) for the first interval. The second interval performance was deferred until the spring 2008 refueling outage (Relief request 34, approved May 16, 2007, ADAMS Accession Number ML07114003). When performed during U2R14, the maximum permissible coverage will be obtained.

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Item 2: B3.110 - Pressurizer nozzle Zone 5 welds 5-10 and 5-13 were limited to an average of 83% Code volume coverage because of limited access based on geometric constraints of the nozzle. The radius portion of the nozzle and the curvature of the Pressurizer head limited some angles of sound to portions of the inside diameter. This is a new request for the second interval as a result of the ultrasonic equipment used for the examination.

Item 3: B8.20 - The Pressurizer to Skirt weld (5-1) is inaccessible for surface examination from the inside due to radiation, insulation, heaters, and drain lines. A surface examination was performed from outside surface and an ultrasonic examination was performed from the outside surface to augment the surface examination. The ultrasonic examination was limited to 50% for the surface examination and approximately 57% Code volume coverage for the volumetric examination, due to the configuration. Previously submitted as Relief Request 14B and approved April 14, 2000 (ADAMS Accession Number ML003704271).

Item 4: Several category B-J and C-F-1 butt welds were only accessible from one side of the weld due to configuration problems. Additionally, 10 CFR 50.55a(b)(1)(xv)(A)(2) states that where examination from both sides is not possible on austenitic welds or dissimilar metal welds, full coverage credit from a single side may be claimed only after completing a successful single-sided Appendix VIII demonstration using flaws on the opposite side of the weld. Only 50% Code volume coverage was credited due to single sided examination of austenitic stainless steel welds e.g.; obstruction from valves. This is a new request for the second interval. The following are butt welds with only single sided access:

<u>ITEM NO.</u>	<u>ZONE</u>	<u>ITEM ID</u>
B 9.11	22	22-11
	23	23-4, 23-6
	24	24-6, 24-14, 24-16, 24-19
	25	25-4, 25-6
	26	26-6, 26-17
	29	29-2, 29-3
C 5.11	63	63-4
	77	77-7, 77-14
	84	84-12
	85	85-46
	97	77-27
	100	70-121
C 5.21	77	77-16
	84	84-3
	106	106-1, 106-21, 106-64, 106-68
	107	107-1, 107-11,
	110	110-17, 110-52
	115	115-13, 115-20
	118	118-49
119	119-52, 119-53	

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**Item 5:** C3.20 - The lug of support 2SI107H022 integral attachment is made inaccessible by structural steel and a wall penetration. One lug is inside a wall penetration and the base material between the lug and the penetration is obstructed by structural steel. Code coverage is limited to approximately 46% due to configuration. This is a new request for second interval as this examination was exempt in the first interval.

**Item 6:** C3.30 - The HPSI Pump A support integral attachments (116-1B, 116-1C) have restricted access due to the structural base support material. The bottom of the lug welds are sitting on the structural steel and the base material adjacent to the weld is inaccessible. Code coverage is limited to approximately 72% due to configuration. This is a new request for second interval as this examination was exempt in the first interval.

### **Basis For Relief**

**Item 1:** The Reactor Pressure Vessel lower head meridional weld is limited by physical constraints. Figure 1 depicts the interferences that create the limitations. Much of the weld is physically inaccessible for volumetric examination using current examination technology. Alternative examinations have been reviewed, however, examination technology beyond that currently being used does not support better coverage of this weld. The Lower head meridional weld will be examined to the extent possible during 2R14, per Relief Request 34.

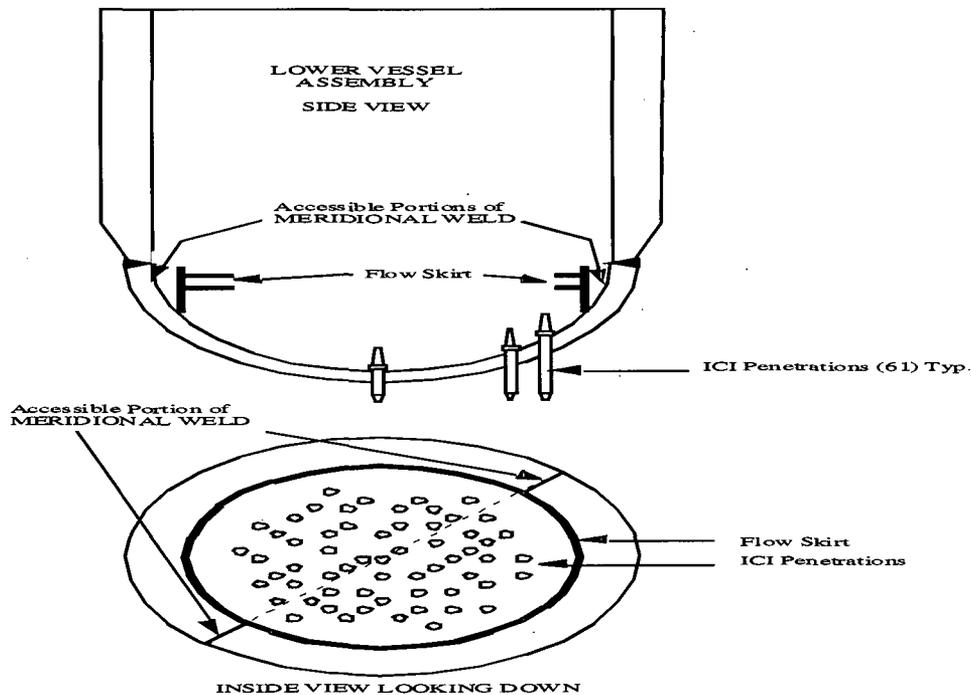


Figure 1

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Item 2: The examiner performed a coverage calculation that identified that the examination did not achieve >90% coverage. All accessible surfaces were scanned in multi directions to obtain the maximum coverage within the available configuration and transducer/equipment used.

Item 3: Pressurizer skirt weld (5-40), Section XI requires a surface examination from the inside diameter and outside diameter side of the weld. Access to the inside diameter to perform surface examination is limited due to the configuration. Ultrasonic examination was also performed from the outside diameter to augment the surface examination and was limited to 85% volumetric coverage due to geometric constraints of the bottom head of the Pressurizer. Scanning could only be performed from the skirt side. Figure 2 identifies the basis for the limitations for both surface and volumetric examinations.

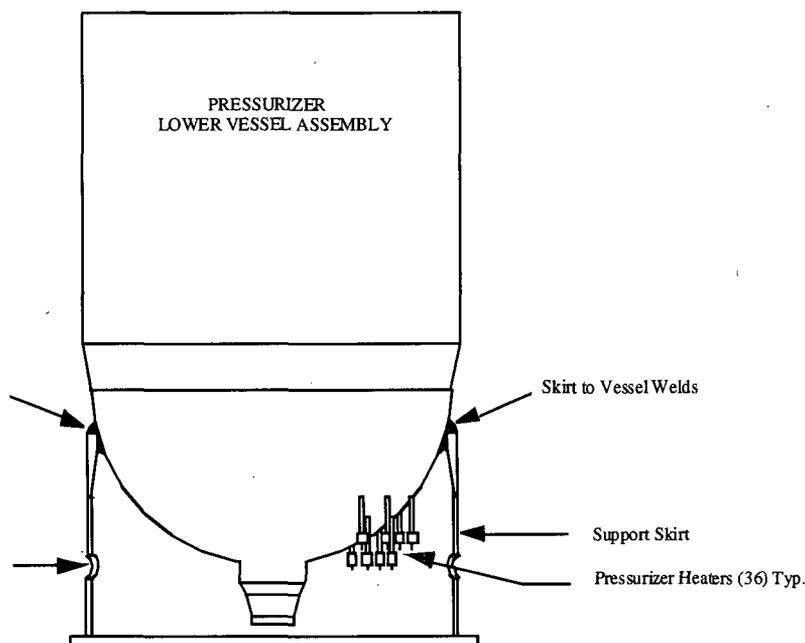


Figure 2

Item 4: 10 CFR 50.55a(b)(2)(xv)(A)(2) states, "Where examination from both sides is not possible on austenitic welds or dissimilar metal welds, full coverage credit from a single side may be claimed only after completing a successful single-sided Appendix VIII demonstration using flaws on the opposite side of the weld". This was somewhat demonstrated with qualification of examiners where flaws detected on single-sided coupons are on the opposite side. However, the Appendix VIII PDI examinations resulted in 50% coverage is attainable. Pending new techniques, this is the most coverage attainable. Thus far, no service induced defects or discontinuities have been identified in these welds or other similar two sided access welds with 100% coverage.

Item 5: The integral attachment for component support SI-107-H-022 consists of two shear lugs, one on each side of a support member, just before the pipe enters a

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wall penetration. One of the lugs is inside the wall penetration and the other lug is accessible on 3 sides of the lug. The remaining side is very close to the structural member and is not accessible for surface examination. As defined in ASME Section XI, IWC-1223, integral attachments encapsulated by guard pipe are exempt from examination. When only one lug is considered, Code coverage changes to approximately 81%. It would cause an undue burden on the plant to disassemble the support to make the inaccessible portion accessible when there have been no abnormal conditions noted at this location.

Item 6: The integral attachment for component support 116-1B and 116-1C consists of a three-sided support lug with the bottom of the lugs sitting on a structural member, limiting access to a portion of the bottom weld and adjacent base material. All support lugs on the HPSI pumps (8) were examined during the second interval and there have been no abnormal conditions noted at these locations. It would cause an undue burden on the plant to disassemble the support or remove the pump to allow access to the inaccessible portion of the attachment.

### Conclusion

In conclusion, items 1 through 6 were examined to the fullest extent possible. In some cases, the examination frequency was changed to invoke extra examinations. Therefore, in accordance with 10 CFR 50.55a(g)(5)(iv) APS is requesting relief from conformance with the above Code requirements which have been determined to be impractical for items 1, 2, 3, 4, 5 and 6.