

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

SUBJECT: Responds to NRC 990831 RAI re plant first 10-year interval inservice insp program. Encl provides relief request 7, which has been revised by separating it into two relief requests.

NOTES: Standardized plant.

05000529 F

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL		RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	
	JAMERSON, C	1	1	KALYANAM, N	1	1
INTERNAL:	ACRS	1	1	<u>FILE CENTER 01</u>	1	1
	NUDOCS-ABSTRACT	1	1	OGC/RP	1	0
	RES/DET/ERAB	1	1	RES/DET/MEB	1	1
EXTERNAL:	LITCO ANDERSON	1	1	NOAC	1	1
	NRC PDR	1	1			

MICROFILMED

PLEASE HELP US TO REDUCE WASTE. TO HAVE YOUR NAME OR ORGANIZATION REMOVED FROM DISTRIBUTION LISTS OR REDUCE THE NUMBER OF COPIES RECEIVED BY YOU OR YOUR ORGANIZATION, CONTACT THE DOCUMENT CONTROL DESK (DCD) ON EXTENSION 415-2083

TOTAL NUMBER OF COPIES REQUIRED: LTTR 11 ENCL 10

may



Palo Verde Nuclear
Generating Station

David Mauldin
Vice President
Nuclear Engineering
and Support

10CFR50.55a

TEL (623) 393-5553
FAX (623) 393-6077

Mail Station 7605
P.O. Box 52034
Phoenix, AZ 85072-2034

102-04354-CDM/SAB/RKB
October 6, 1999

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-37
Washington, DC 20555-0001

Dear Sirs:

References:

1. APS Letter No. 102-04096-WEI/AKK/MLG, dated March 17, 1998, from W.E. Ide, APS, to NRC, "Unit 2 First 10-Year Inservice Inspection Program Revision."
2. Letter dated August 31, 1999, from N. Kalyanam, USNRC, to G. R. Overbeck, APS, "Palo Verde Nuclear Generating Station Unit 2 - First 10-Year Interval Inservice Inspection - Request for Additional Information (TAC No. MA5008)."

**Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 2
Docket No. STN 50-529
Response to Unit 2 First 10-Year Interval Inservice Inspection
Program - Request for Additional Information (RAI)**

In reference 1 above, Arizona Public Service Company (APS) submitted revision 2 to the PVNGS Unit 2 first 10-year interval Inservice Inspection (ISI) program. The revision was accompanied by several new or revised 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 Unit 2 first 10-year interval ISI program revision 2 submittal. APS' response to the NRC Staff's request is provided in enclosure 1.

Relief Request No. 7 has been revised by separating it into two relief requests. Relief Request No. 7(a) is for those penetrations where Code Case N-522 applies. Code Case N-522 has recently been incorporated for use in Regulatory Guide 1.147, Revision 12. Relief Request No. 7(a) is provided in enclosure 2.

9910130273 991006
PDR ADOCK 05000529
G PDR

1/1
A047

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
RAI Response - Unit 2 First Interval ISI Program
Page 2.

- Relief Request No. 7(b) is for those penetrations that have class piping on either side of the penetration (i.e., where 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. Relief Request No. 7(b) is provided in enclosure 3.

Relief Request No. 15 has been revised to request approval for the deferral of the required Unit 2 reactor head vent system exam to the first refueling outage of the second interval. Revised Relief Request No. 15 is provided in enclosure 4.

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,

David Mauldin

CDM/SAB/RKB/kg

Enclosure

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

ENCLOSURE 1

APS RESPONSE TO RAI

FIRST 10 – YEAR INTERVAL ISI PROGRAM

ASME SECTION XI

FOR PALO VERDE NUCLEAR GENERATING STATION

UNIT 2

FIRST 10-YEAR INTERVAL INSERVICE INSPECTION

PALO VERDE NUCLEAR GENERATING STATION, UNIT 2

REQUEST FOR ADDITIONAL INFORMATION

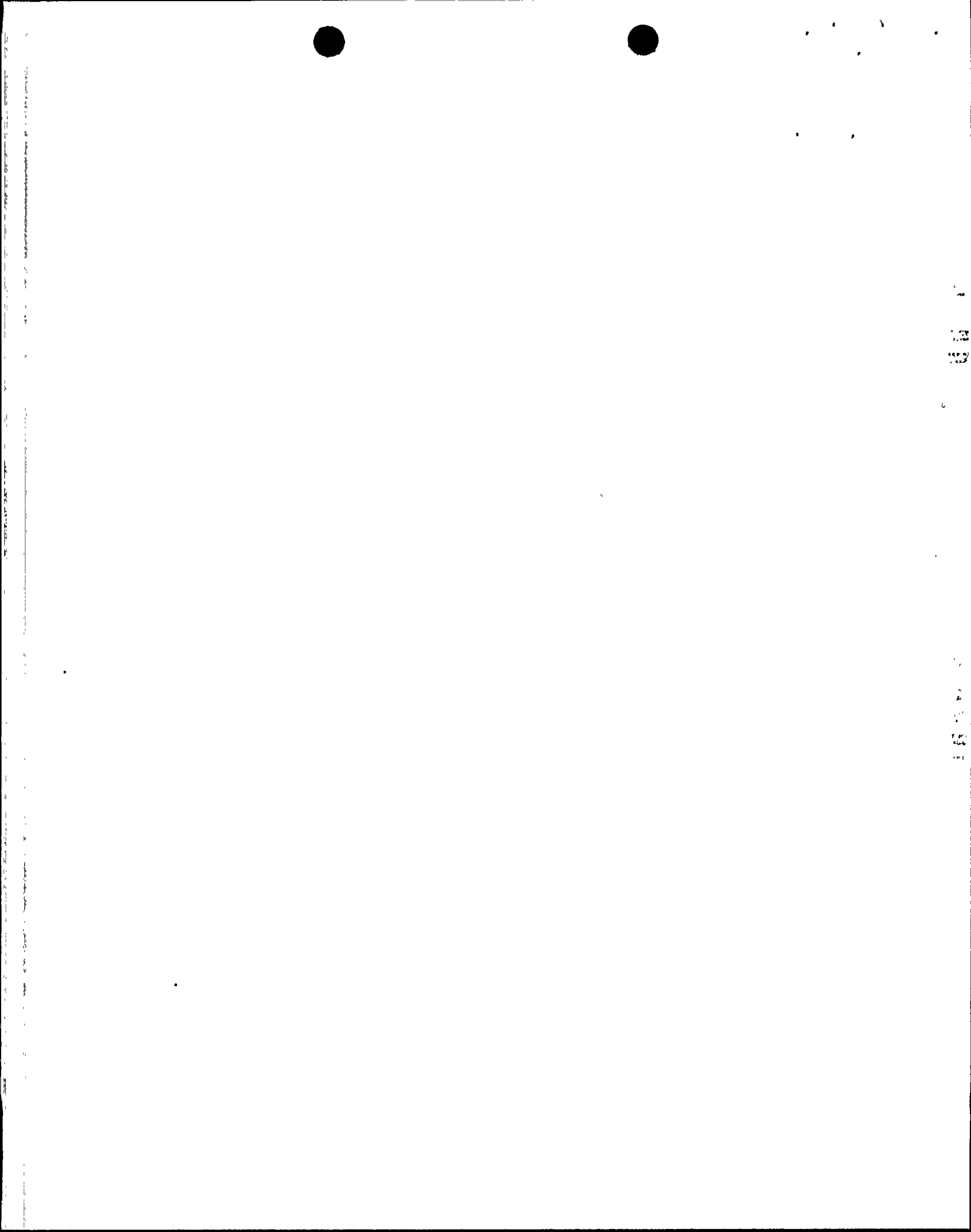
TAC NUMBER MA5008

- 2.1 Request for Relief No. 7 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. The original relief request (Revision 1) was "applicable only to portions of piping systems that are classified ASME due to penetration of containment building liner plate." 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. It is unclear whether Code Case N-522 is applicable for all of the subject piping. If Code Case N-522 is applicable, based on the aforementioned request, 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, i.e., portions of the subject piping are Code Class beyond the segment that penetrates containment, 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:

Relief Request No. 7 has been revised. The revised relief request has been separated into Relief Request Nos. 7a and 7b, which take the place of Relief Request No. 7.

Relief Request No. 7a lists the penetrations for which Code Case N-522 applies. Code Case N-522 has recently been incorporated into Regulatory Guide 1.147, Revision 12. However, Code Case N-522 was not approved for use during the first 10-year ISI interval. Therefore, APS is requesting relief to take credit for Appendix J testing of containment penetrations that have non-class piping on either side of the penetration.



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

Relief Request No. 7b lists penetrations that have class piping on either side of the penetration. Code Case N-522 is not applicable for these penetrations since it only allows for penetrations that have non-class piping on either side of the penetration. However, APS believes that it is reasonable for the specified penetrations, to request the use of an alternative test method using the same methodology as 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 believes that this test is comparable to any inservice inspection pressure test that could be performed and provides an acceptable level of quality and safety.

- 2.2 Request for Relief No. 12 proposes to perform VT-2 visual examination of the small portion of pipe between two Class 1 isolation valves, or between a valve and a blind flange, with the first valve closed. If the first isolation valve is closed, and if the valve is not leaking, the subject pipe segment should not be pressurized. It is unclear what size, and function, the subject piping segments represent, e.g., vent or drain piping, instrumentation, etc. The licensee has described the burden associated with pressurizing these pipe segments, however, in order to authorize the proposed alternative, reasonable assurance of operational readiness is necessary. Please provide information that will describe how the proposed alternative will provide reasonable assurance of operational readiness.

APS RESPONSE:

The function of the subject piping segments is 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.

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

- 2.3 Request for Relief No. 15 proposes to perform the VT-2 visual examination on selected portions of the Reactor Vessel Head Vent System with the valves closed to system pressure. The licensee has described the burden associated with pressurizing this portion of the system, however, in order to authorize the proposed alternative, reasonable assurance of operational readiness is necessary. Please provide information that will describe how the proposed alternative will provide reasonable assurance of operational readiness.

APS RESPONSE:

Relief Request No.15 has been revised to defer the first interval examinations to the first refueling outage of the second interval. Due to a long refueling outage in Unit 1, Unit 2 became the lead Unit for implementing the ISI Program Plan. Prior to the end of the first interval for Unit 2, it was determined that it would require impractical plant evolutions to perform the required pressure test on the reactor head vent system. Therefore, Relief Request No. 15 was originally written for Unit 2 to request relief not to perform the exam. Subsequent engineering evaluation determined that the examination could be performed and the test was completed in Unit 3 (1st interval test) as required. The test was then performed at the earliest possible opportunity in Unit 2, which was the first refueling outage of the second interval (Unit 2 8th Refueling Outage). In addition, the required test for Unit 1 will be performed during the 8th Refueling Outage (reference Unit 1 Relief Request No.11, submitted per APS Letter 102-04312-WEI/SAB/RKB, dated July 16, 1999). Enclosure 4 contains revised Relief Request No. 15.

ENCLOSURE 2

RELIEF REQUEST NO. 7(a)

FIRST 10 – YEAR INTERVAL ISI PROGRAM

ASME SECTION XI

FOR PALO VERDE NUCLEAR GENERATING STATION

UNITS 1, 2 and 3

Relief Request No. 7(a)

Examination of Piping Systems Penetrating Containment which have Non-Class Piping on Both Sides of the Penetration (1st Interval)

Code Class 2

Code Reference ASME Section XI, Division 1, 1980 Edition, 1981 Addenda, 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, 1980 Edition, 1981 Addenda, Subsection IWC-5200, Table IWC-2500-1 require the performance of a VT-2 examination performed during a system pressure test at or near the end of the first inspection interval.

Alternate Testing Perform 10CFR-50 Appendix J testing.

Component Applicability	Pen#	Class*	Service	P&ID	LINE_#
	6	N	Demineralized Water	DWP-002	E-DW055-HCBA
	7	N	Fire Protection Water	FPP-006	E-FP095-HLBB
	9	N	Radwaste Drain	RDP-001	N-RD259-HCBA
	25A	N	Radiation Monitor Inlet	HCP-001	N-HC008-HCBA
	25B	N	Radiation Monitor Outlet	HCP-001	N-HC008-HCBA
	29	N	Low Pressure Nitrogen Supply	GAP-001	E-GA009-HBBA
	30	N	High Pressure Nitrogen Supply	GAP-001	E-GA002-GBBA
	31	N	Instrument Air Supply	IAP-003	E-IA069-HCBA
	33	N	Nuclear Cooling Water Supply	NCP-003	E-NC135-HLBB
	34	N	Nuclear Cooling Water Return	NCP-003	E-NC135-HLBB
	44	N	Reactor Drain Tank Drain	CHP-003	N-CH283-HCBA
	45	N	Reactor Drain Tank Make-up Water	CHP-003	N-CH275-HCBA
	50	N	Refueling Cavity Drain Line	PCP-001	E-PC073-HCBA
	51	N	Refueling Cavity Recirculation Line	PCP-001	E-PC072-HCBA
	52	N	Reactor Drain Tank Vent Header	GRP-001	E-GR001-HCBA
	56	N	Containment Building Purge Supply	CPP-001	N-CP005-HLBB
	57	N	Containment Building Purge Exhaust	CPP-001	N-CP007-HLBB
	58	N	Containment Building Test Connection	CLP-001	E-CL001-HLBB

Relief Request No. 7(a)
First 10-Year Interval ISI Program
(Continued)

59	N	Service Air Supply	IAP-002	E-IA080-HBBA
60	N	Normal Chilled Water Supply	WCP-001	E-WC039-HLBB
61	N	Normal Chilled Water Return	WCP-001	E-WC042-HLBB
62B	N	Containment Building ILRT Connection	CLP-001	E-CL009-HLBB
62C	N	Containment Building ILRT Connection	CLP-001	E-CL008-HLBB
78	N	Containment Building Purge Supply	CPP-001	N-CP006-HLBB
79	N	Containment Building Purge Exhaust	CPP-001	N-CP008-HLBB

*Class of Piping on either side of the 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, Appendix J 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 has deemed this acceptable provided the following conditions are met:

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. 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, 1980 Edition, Winter 1981 Addenda.
2. ASME Code Case N-522
3. Regulatory Guide 1.147, Revision 12, dated May 1999

ENCLOSURE 3

RELIEF REQUEST NO. 7(b)

FIRST 10 – YEAR INTERVAL ISI PROGRAM

ASME SECTION XI

FOR PALO VERDE NUCLEAR GENERATING STATION

UNITS 1, 2 and 3

Relief Request No. 7(b)

Examination of Piping Systems Penetrating Containment which have Class Piping on Both Sides of the Penetration (1st Interval).

Code Class 2

Code Reference ASME Section XI, Division 1, 1980 Ed, 1981 Addenda, 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, 1980 Edition, 1981 Addenda, Subsection IWC-5200, Table IWC-2500-1 require the performance of a VT-2 examination performed during a system leakage test each inservice 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 the 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

47
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

Relief Request No. 7(b)
First 10-Year Interval ISI Program
(Continued)

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 has deemed this acceptable provided the following conditions are met:

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, 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 which 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.

Relief Request No. 7(b)
First 10-Year Interval ISI Program
(Continued)

References

1. ASME Section XI, Division 1, 1980 Ed, 1981 Addenda, Subsection IWC-5200.
2. ASME Code Case N-522
3. Regulatory Guide 1.147, Revision 12, dated May 1999

ENCLOSURE 4

RELIEF REQUEST NO. 15 - REVISION 1

FIRST 10 – YEAR INTERVAL ISI PROGRAM

ASME SECTION XI

FOR PALO VERDE NUCLEAR GENERATING STATION

UNIT 2

Relief Request No. 15 – Revision 1

Reactor Head Vent System

Code Class 1 and 2

Code Reference ASME Section XI, Division 1, 1980 Edition, 1981 Addenda, IWA-5200, IWB-5200 and IWC-5200.

Examination Category B-P, C-H

Item Numbers B15.51 and C7.40

Component Description Pressure Retaining Components

PVNGS Unit 2

Requirement ASME Section XI, Division 1, 1980 Edition, 1981 Addenda, IWA-5200, IWB-5200 and IWC-5200, Table IWB-2500-1, Table IWC-2500-1 and Code Case N-498, require the performance of a VT-2 systems leakage test (Class 1) and a system pressure test (Class 2) at or near the end of the first inspection interval.

Alternate Testing Defer the performance of the VT-2 System Leakage Test and System Pressure Test Examinations of the ASME Class 1 and Class 2 Reactor Head Vent System lines to the first refueling outage of the second 10-year interval. In accordance with IWB-2412, the one-year period extension for Unit 2 ends 03/17/98 and the U2R8 outage was scheduled from 03/27/99 to 05/02/99. This delayed the exams approximately 386 days beyond the ASME Section XI allowable extension. The deferral of these exams will not be credited toward exams for the second interval. The affected portions of the vent lines are as follows:

Relief Request No. 15 – Revision 1
First 10-Year Interval ISI Program
(Continued)

ASME Class	System	Line No.	Line Size	P&ID No.	Valve No.
1	RC	RC-179	1"	RCP-001	HV108 to HV109
2	RC	RC-144 & RC-146	1'	RCP-001	HV101, HV102, HV103, HV105 HV106 and HV109

**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.

PVNGS believes that deferring this examination provided an acceptable level of quality and safety for the following reasons.

Containment entries are typically made on a quarterly basis for other plant maintenance. A general inspection for leakage is performed during those entries per PVNGS's procedure 40DP-9ZZ01, Containment Entry in Modes 1 Through 4. Furthermore, RCS pressure boundary leakage is monitored by the control room staff in several additional ways.

1. Containment atmosphere particulate radioactivity monitoring.
2. Containment atmosphere gaseous radioactivity monitoring.
3. Containment relative humidity monitoring.
4. Containment sump level rates of change and discharge monitoring.
5. RCS water inventory balance measurements.

Technical Specification 3.4.14, RCS Operational Leakage, allows for only 1 gpm unidentified leakage and no pressure boundary leakage. The first three methods of monitoring RCS leakage provide continuous monitoring with alarms. Sump levels are monitored every hour and the RCS water inventory balance is performed every three days. If greater than 1 gpm leakage is detected, the leakage must be reduced to within limits within four hours or action must be taken to be in Mode 5 within 36 hours.

Relief Request No. 15 – Revision 1
First 10-Year Interval ISI Program
(Continued)

PVNGS believes that the system pressure monitoring and the several methods for detecting RCS leakage provide an adequate level of safety to justify deferring the pressure test for 386 days. Additionally, these required examinations were successfully completed in Unit 3 without any abnormal indications noted.

**Additional
Information**

APS is requesting relief to defer the first interval examinations to the first refueling outage of the second interval. Due to a long refueling outage in Unit 1, Unit 2 has become the lead Unit for implementing the ISI Program Plan. Prior to the end of Interval 1 for Unit 2, it was determined that it would require plant evolutions outside of normal operating practice to perform the required pressure test on the reactor head vent system. Therefore, Relief Request No. 15 was written for Unit 2. Subsequent evaluation determined that the examination could be accomplished. The test was subsequently performed at the next opportunity (Unit 3 Seventh Refueling Outage – U3R7). This relief request was then revised to reflect APS' ability to perform the exam and the exam for Unit 2 was completed at the earliest opportunity (U2R8).

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, 1980 Edition, Winter 1981 Addenda.
2. ASME Code Case N-498.

