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SUBJECT: Forwards two relief requests relating to reactor vessel examinations.

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102-04333 – CDM/SAB/RKB
August 24, 1999

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Dear Sirs:

- Reference:
- 1) APS Letter No. 102-04312-WEI/SAB/RKB, dated July 16, 1999, from W. E. Ide, APS, to NRC, "Unit 1 First 10-Year Interval Inservice Inspection (ISI) Program – Revision 2."
 - 2) 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."
 - 3) APS Letter No. 102-04269-WEI/AKK/TNW, dated April 13, 1999, from W. E. Ide, APS, to NRC, "Second Inservice Inspection (ISI) Interval – (Relief Request No. 10)."

**Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2 and 3
Docket Nos. STN 50-528/529/530
Second Inservice Inspection Interval - (New Relief Request Nos. 13
and 14; Withdrawal of Relief Request No. 10)**

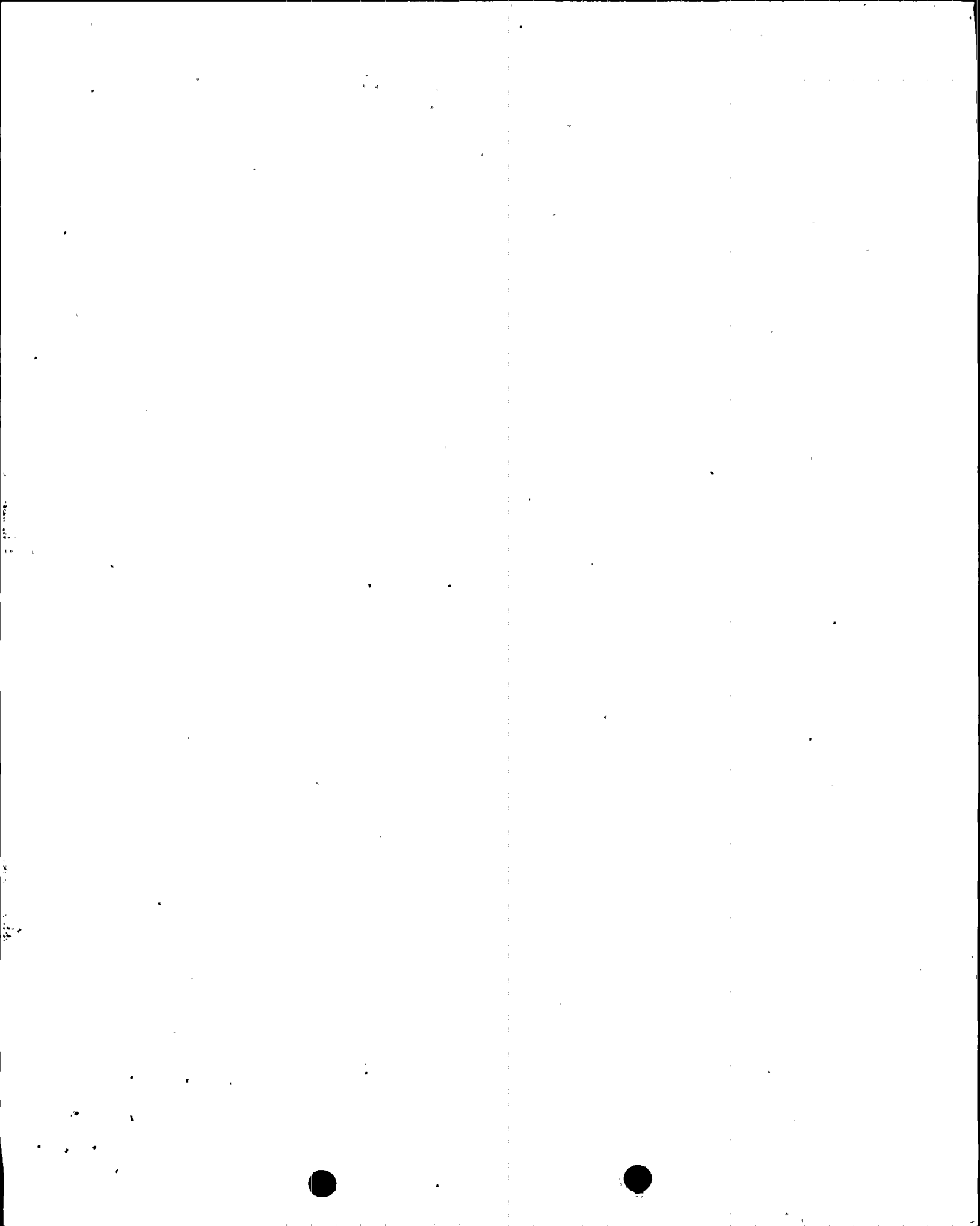
Pursuant to 10 CFR 50.55a(g)(5)(iv), Arizona Public Service Company (APS) hereby submits two requests for relief from the Inservice Inspection (ISI) requirements of 10 CFR 50.55a(g) and the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI. The relief requests are related to reactor vessel examinations.

Specifically, Relief Request No. 13, provided in enclosure 1, requests relief from the IWB-5220 and Table IWB-2500-1 requirements to perform VT-2 examinations of the reactor vessel at no less than normal operating pressure. This examination is impractical due to extreme temperatures and high radiation in certain areas requiring personnel occupancy in order to complete this exam. This relief request is similar to Relief Request No. 16, submitted in reference 1 above.

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Second ISI Interval - Relief Request Nos. 13 and 14
Page 2

Relief Request No. 14, provided in enclosure 2, requests relief from the IWB-2500, Table IWB-2500-1 requirement to perform volumetric examinations of the meridional reactor head welds with 100 percent coverage of the accessible weld length. Due to physical and technological limitations, examining 100 percent of weld areas is not possible. This relief request is similar to Relief Request No. 13, submitted in reference 1 above.

In reference 2 above, APS submitted the updated ISI Program for the second 10-year interval. The second interval ISI program included a request to use the 1992 Edition including the 1992 Addenda of the ASME Code, Section XI. Approval of the second 10-year interval program and its associated relief requests is currently under review by the NRC staff. The requirements for which APS is requesting relief are contained in both the 1989 Edition (i.e., the latest edition approved by the NRC) and the 1992 Edition, 1992 Addenda. APS is requesting that these relief requests be approved with the remainder of the second 10-year interval ISI program relief requests and relief be granted from the requirements of the 1992 Edition, 1992 Addenda, of ASME Section XI.

In addition to requesting NRC staff approval of Relief Request Nos. 13 and 14, APS hereby withdraws Relief Request No. 10 for the second 10-year interval ISI program which was submitted in reference 3 above. In a telephone conversation held with the NRC staff on July 30, 1999, it was confirmed that Section XI of the ASME Code allowed for limiting the extent of visual examinations following repair or replacement activities to only those components that were repaired or replaced. Therefore, Relief Request No. 10 is not necessary and is hereby withdrawn.

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,



CDM/SAB/RKB/rjh

Enclosures

cc: E. W. Merschoff
N. Kalyanam
J. H. Moorman



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ENCLOSURE 1

ASME SECTION XI RELIEF REQUEST NO. 13

TO THE SECOND 10 YEAR ISI INTERVAL

FOR THE PALO VERDE NUCLEAR GENERATING STATION



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Relief Request No. 13

Restricted Access under the Rx Vessel for VT-2 Exam

Code Class 1
Code Reference IWB-5200, 1989 Edition, ASME Section XI
IWB-5200, 1992 Edition, 1992 Addenda, ASME Section XI
Examination Category B-P
Item Numbers B15.10 and B15.11
Component Description Reactor Vessel
PVNGS Units ALL

Requirement IWB-5210 and Table IWB-2500-1 of ASME Section XI, require that the reactor vessel [Category B-P, Items B15.10 and B15.11] be VT-2 examined at a test pressure not less than the nominal operating pressure associated with 100 percent rated reactor power, to identify leakage.

Alternate Testing PVNGS will conduct VT-2 examinations on all portions of the reactor vessel, which are accessible during Mode 3 without endangering personnel from undue heat or radiation exposure.

However, in lieu of performing VT-2 visual exams in areas that are hazardous to personnel (i.e., under the reactor vessel), PVNGS will monitor for reactor vessel leakage using leak detection methods provided in the design of the plant.

Basis For Relief Pursuant to 10 CFR 50.55a (g)(5)(iv), relief is requested on the basis that conformance with the code requirement is impractical. Specifically, relief is requested from the requirement to visually inspect the entire reactor vessel while pressurized to the pressure associated with 100 percent rated reactor power based on design limitations which create personnel hazards in certain areas required to be examined.

The requirement to VT-2 examine the reactor vessel is to ensure that the vessel has been reassembled correctly and that no leakage is present. Because the walls of the reactor vessel are essentially vertical, the code allows the examination to be limited to the lowest elevation where leakage will accumulate [IWA-5242(a)]. In addition the code requires that the surrounding areas, including floor areas, be inspected

Relief Request No. 13 (continued)

for evidence of leakage [IWA-5242 (b)].

PVNGS cannot comply with the code requirements to perform this inspection in Mode 3 because of high area temperatures and very high radiation areas.

The exams require personnel to access areas where radiation fields are between 2 to 12 Rem/hour.

Accessing the bottom of the reactor vessel to assess accumulated leakage, while the system is depressurized, is physically possible with the limitations noted above. However, PVNGS is constructed in such a way that reactor vessel leakage which would accumulate at the bottom of the insulation around the vessel or on the floor cannot be distinguished from leakage from other sources such as leakage from the pool seals.

While direct visual examination may detect gross leakage, more sensitive methods of detecting leakage from the reactor vessel are available, as discussed below, which do not endanger plant personnel.

Additional information

Reactor coolant system (RCS) pressure boundary leakage is monitored by the control room staff in several different ways:

1. Monitoring of the space between the double O-ring seal on the reactor vessel closure head.
2. Containment atmosphere particulate radioactivity monitoring.
3. Containment atmosphere gaseous radioactivity monitoring.
4. Containment relative humidity monitoring.
5. Containment sump level rate of change and discharge monitoring.
6. RCS water inventory balance measurements.

Technical Specification 3.4.14, RCS Operation Leakage, allows for only 1 gpm unidentified leakage and no pressure boundary leakage. The first four methods, above, 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 the plant must be shut down to Mode 5 within 36 hours.



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Relief Request No. 13 (continued)

PVNGS believes that the RCS leakage monitoring performed by the control room staff satisfies the requirement for detection of RCS pressure boundary leakage from the reactor vessel. Performing a VT-2 exam on the bottom of the reactor vessel would not provide better information than is possible by other means and does not warrant the risk of injury to plant personnel from extreme heat and high radiation exposure.

Approval. Relief is requested in accordance with 10 CFR 50.55a (g)(5)(iv). This examination is impractical due to extreme temperatures and very high radiation in certain areas requiring personnel occupancy in order to complete this exam.

References

1. ASME Section XI, Rules for Inspection and Testing of Components of Light Water Cooled Plants 1992 Edition and Addenda.
2. ASME Section XI, Rules for Inspection and Testing of Components of Light Water Cooled Plants 1989 Edition.



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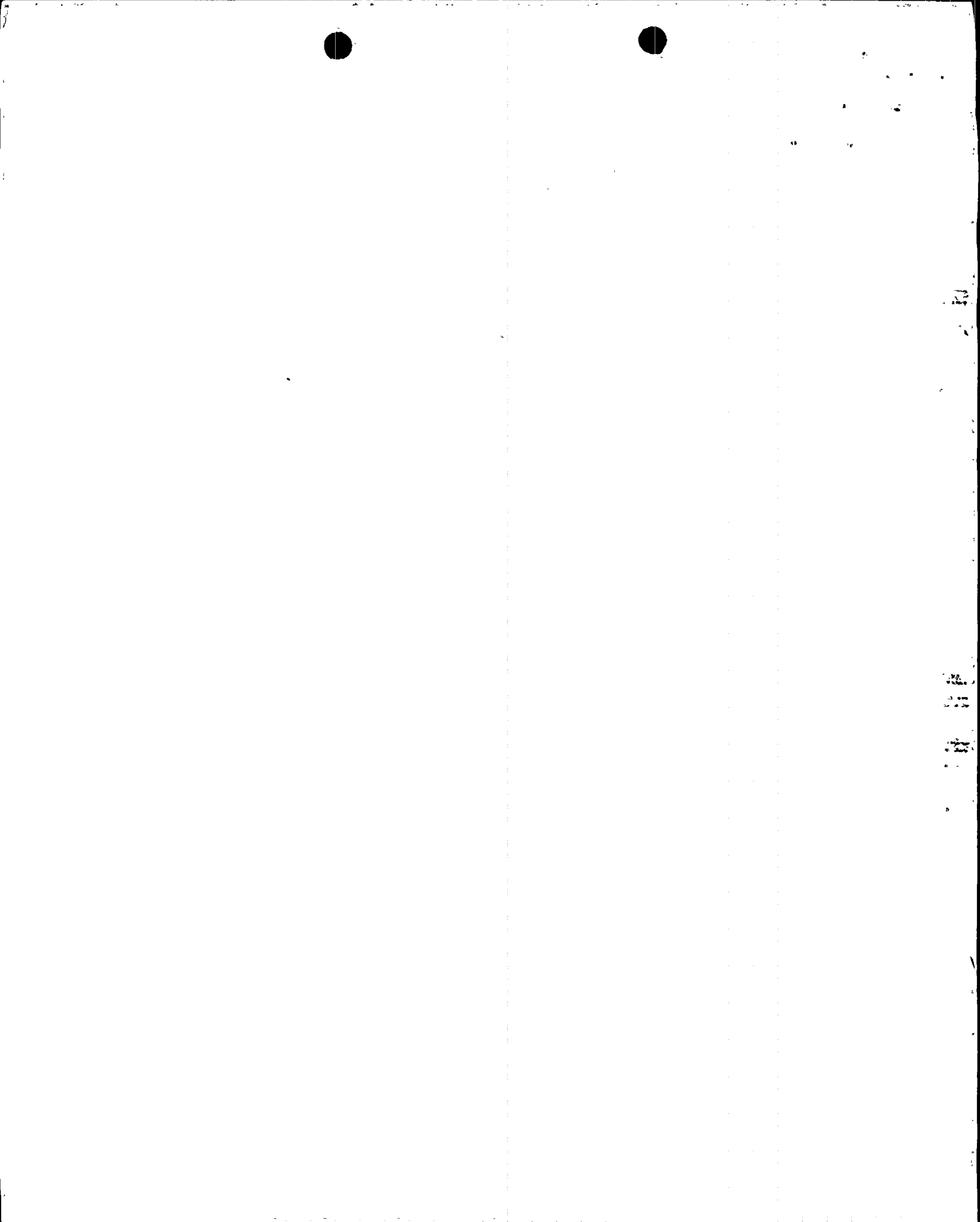
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ENCLOSURE 2

ASME SECTION XI RELIEF REQUEST NO. 14

TO THE SECOND 10 YEAR ISI INTERVAL

FOR THE PALO VERDE NUCLEAR GENERATING STATION



Relief Request No. 14
Reactor Vessel Head and Closure Head Weld Coverage

Code Class	1
Code Reference	IWB-2500, 1989 Edition, ASME Section XI IWB-2500, 1992 Edition, 1992 Addenda, ASME Section XI
Examination Category	B-A
Item Numbers	B1.22
Component Description	Reactor Vessel Closure Head
PVNGS Units	ALL
Requirement	IWB-2500, Table IWB-2500-1, Category B-A, Item B1.22 requires the meridional head welds to be volumetrically examined for 100 percent of the accessible weld length.
Alternate Testing	The ultrasonic examinations of the closure head meridional weld will be performed to the extent possible. A sketch showing exam limitations is attached. The maximum possible coverage is estimated to be approximately 31% for the closure head meridional weld.
Basis For Relief	These examinations are limited by physical constraints. The sketches attached depict the limitation.
Additional Information	Due to the configuration of the CEDM nozzles with the addition of the support skirt surrounding them, access to the closure head meridional weld is significantly limited. Much of the weld is physically inaccessible using current examination technology. Alternative examination methods have been reviewed, however, exam technology beyond that currently being used is limited. In addition, the radiation exposure rates while working on the closure head are approximately 2 to 4 Rem/hr.
Approval	Relief is requested in accordance with 10 CFR 50.55a(g)(5)(iv). Design and geometry limitations that preclude examination of 100 percent of the closure head meridional weld, make this examination requirement impractical.

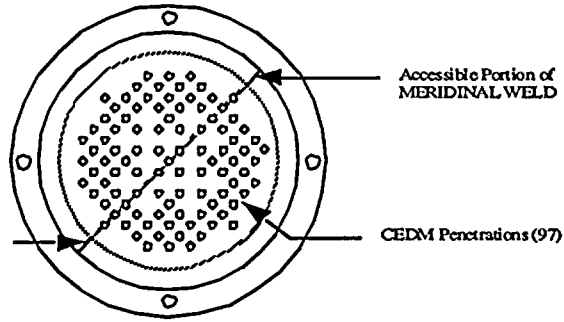


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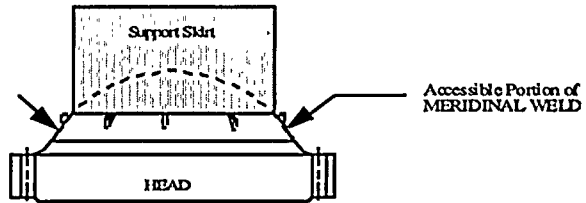
References

1. ASME Section XI, Division 1, Rules for Inspection and Testing of Components of Light Water Cooled Plants 1992 Edition and Addenda.
2. ASME Section XI, Division 1, Rules for Inspection and Testing of Components of Light Water Cooled Plants 1989 Edition.





CLOSURE HEAD
TOP VIEW



CLOSURE HEAD
SIDE VIEW

CLOSURE HEAD



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