Docket Nos.: 50-528, 50-529
and 50-530

Mr. E. E. Van Brunt, Jr.
Executive Vice President
Arizona Nuclear Power Project
Post Office Box 52034
Phoenix, Arizona 85072-2034

Dear Mr. Van Brunt:

SUBJECT: ASME SECTION XI PUMP AND VALVE INSERVICE TESTING PROGRAM - PALO VERDE, UNITS 1, 2 AND 3

By letter dated August 11, 1986, you submitted unit specific Pump and Valve Inservice Testing Programs for Palo Verde.

As a result of the staff's review of the submittal, we have determined the need for additional information. The specific information required is identified in the enclosed request.

We ask that your provide the requested information so that we may complete the review of your inservice testing programs. In order to ensure a complete understanding of what is required, the staff and its consultant are prepared to meet with your staff to discuss the questions and your proposed responses.

Please advise us within two weeks of receipt of this letter as to when you would be ready to meet with the staff regarding this matter. If you have any questions concerning this letter, you should contact me.

Sincerely,

E. A. Licitra, Project Manager
PWR Project Directorate No. 7
Division of PWR Licensing-B

Enclosure:
As stated

cc: See next page

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Mr. E. E. Van Brunt, Jr.
Arizona Nuclear Power Project

Palo Verde

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PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3
IST PROGRAMS (REVISION 0) REVIEW
REQUEST FOR ADDITIONAL INFORMATION

I. VALVE TESTING PROGRAM

A. General Comments and Questions

1. The NRC position for inservice testing of valves identified to be tested during cold shutdown is that testing shall commence no later than 48 hours after reaching the cold shutdown condition rather than the 72 hours specified in the Palo Verde IST program.

2. Are all valves that are Appendix J, Type C, leak rate tested included in the IST program and categorized A or A/C?

3. The NRC has concluded that the applicable leak test procedures and requirements for containment isolation valves are determined by 10 CFR 50 Appendix J, however, the applicant must comply with the Analysis of Leakage Rates and Corrective Action requirements of Section XI, paragraphs IWV-3426 and 3427 (see valve relief request no. 41).

4. The note on page 7, Section 2.3.K states that testing of specific valves during cold shutdown is not required if plant operating conditions will not permit the testing of those valves. It is the staff position that specific requests for relief should be provided for any valves that fall into this category.

5. Are there any valves in the air/nitrogen supply to the MSIVs and main feedwater isolation valves whose failure could prevent these isolation valves from performing their safety related functions?

6. A general relief from Code requirements cannot be granted for as yet unspecified valves (Refer to Valve Relief Request No. 42). If a problem does arise with testing any particular valves, then a specific request for relief should be submitted for those valves giving the detailed justification which should include the radiation field intensity, the time required to perform the testing, and any other pertinent information that should be considered when evaluating the request.

7. The NRC staff position is that relief may be obtained from the trending requirements of Section XI [Paragraph IWV-3417(a)] for rapid acting valves, however, in order to obtain this relief the licensee is required to assign a maximum limiting stroke time of 2 seconds to those valves and perform corrective action as required by IWV-3417(b) if the measured stroke times exceed the 2 second limit. Valve Relief Request No. 40 is not in compliance with this staff position.

8. When flow through a check valve is used to indicate a full-stroke exercise of the valve disk, the NRC staff position is that verification of the maximum flow rate identified in any of the plant's safety analyses through the valve would be an adequate demonstration of the full-stroke requirements. Any flow rate less than this will be considered partial-stroke exercising unless it can be shown (by some means such as measurement of the differential pressure across the valve), that the check valve's disk position at the lower flow rate would permit maximum required flow through the valve. Does the Palo Verde IST program conform to this staff position?

9. Valve relief request no. 43 is not necessary and should be deleted, if routine operational testing of check valves during the course of normal plant operation complies with the requirements of Section XI of the Code.

10. Concerning valve relief request no. 19, provide a more specific technical justification for not full-stroke exercising valves GAE-V011, GAE-V015, IAE-V021, and WCE-V039 quarterly or during cold shutdown.

11. Are all valves with a required fail-safe position tested to the requirements of IWV-3415?

B. Auxiliary Feedwater System

1. Review the safety function of valves AF-V012 and V096 (figure AFP-001; G-6 and G-7) to determine if they should be included in the IST program.

2. Review the safety function of valves AF-V005 and V009 (figure AFP-001; E-7 and C-7) to determine if they should be included in the IST program.

3. Provide a more specific technical justification for not full-stroke exercising valves AFA-V015 and AFB-V024 during cold shutdown.

4. Provide a more specific technical justification for not full-stroke exercising valves AFA-V079 and AFB-V080 during cold shutdown.

5. Provide a more specific technical justification for not full-stroke exercising valves AFA-V007, AFB-V022, AFA-V137, and AFB-V138 quarterly.

C. Chemical and Volume Control System

1. Review the safety function of valves CH-V154 and V155 (figure CHP-002; B-13) and CH-HV524 (figure CHP-001; E-15) to determine if they should be included in the IST program.

2. Review the safety function of valve PCN-V215 to determine if it should be included in the IST program.

3. Does valve CHE-PDV240 have a required fail-safe position?

4.. Does valve CHN-V118 perform any safety function in the closed position? If so, how is this valve verified closed?

5. Provide a more specific technical justification for not full-stroke exercising valves CHA-V177, V190, HV536, and CHN-UV514 during cold shutdown.

6. What alternate methods have been considered to verify that valves CHB-V305 and CHA-V306 full-stroke open?

7. Provide the P&ID that shows valve CHE-HV239.

8. Provide a more specific technical justification for not full-stroke exercising valve CHE-V440 during cold shutdown.

9. Is RCS charging expected to be stopped during <u>each</u> cold shutdown to allow testing of valve CHN-UV501?

10. How is valve CHE-V435 verified to full-stroke open quarterly?

11. How is valve CHN-V835 verified to full-stroke closed during cold shutdown?

12. Provide a more specific technical justification for not full-stroke exercising valves CHB-UV515, CHA-UV516, and CHB-UV523 during cold shutdown.

13. Why was the exercise test for valve CHN-V494 deleted from the IST program?

D. <u>Containment Purge System</u>

1. Are valves CPA-UV4A, UV4B, CPB-UV5A, and UV5B full-stroke exercised quarterly?

E. <u>Condensate Transfer System</u>

1. Provide a more technical justification for not full-stroke exercising valves CTA-V016 and CTB-V020 quarterly.

2. Review the safety function of valves CT-V037 and V038 (figure CTP-001; C-4 and B-4) to determine if they should be included in the IST program.

F. Diesel Generator System

1. Review the safety function of valves DGA-V002, V003, and V-006 and DGB-V011, V012, and V015 to determine if they should be included in the IST program.

2. Provide P&ID's 01-M-DGP-001, sheets 6 and 8.

G. Essential Chilled Water System

1. Review the safety function of valves ECA-V041 and ECB-V072 to determine if they should be included in the IST program.

2. Do valves EC-TV29 and TV30 (figure ECP-001; E-7 and E-3) have a required fail-safe position?

H. Essential Cooling Water System

1. Review the safety function of valves EWA-V018, EWB-V029, V077, EWA-V079, EWB-V080, and EWA-V103 to determine if they should be included in the IST program.

2. Provide a more specific technical justification for not full-stroke exercising valves EWA-UV65 and UV145 quarterly.

I. HVAC Containment Building System

1. What is the basis for assigning a maximum stroke time of one second to valves HCB-UV44, HCA-UV45, UV46, and HCB-UV47 (see relief request no. 40)?

J. Containment Hydrogen Control System

1. Do valves HPA-V002 and HPB-V004 perform any safety function in the open position?

2. What is the basis for assigning a maximum stroke time of one second to valves HPA-HV7A, HV7B, HPB-HV8A, and HV8B (see relief request no. 40)?

K. Instrument and Service Air System

1. Provide a more specific technical justification for not full-stroke exercising valve IAE-UV2 quarterly.

L. Main Steam System

1. How are valves SGA-V043, V044, SGE-V887, and V888 verified to full-stroke open quarterly during plant operation? Do these valves perform any safety function in the closed position?

2. Review the safety functions of the following valves to determine if they should be included in the IST program.

Valve	Location (figure SGP-001)
PV306A	A-11
V350	A-10
PV306B	A-13
V360	A-12
PV313B	G-13
V339	G-12
PV313A	H-12
V334	H-11
V346	G-12
V348	G-12
V357	A-12
V358	A-12

3. Provide a more specific technical justification for not full-stroke exercising valves SGB-HV178, SGA-HV179, HV184, and SGB-HV185 quarterly.

4. Provide a more specific technical justification for not full-stroke exercising valves SGA-UV134A and UV138A quarterly.

5. Provide the technical justification for not full-stroke exercising valves SGE-UV170, UV171, UV180, and UV181 quarterly.

6. Are valves SGA-UV1133, UV1134, SGB-UV1135A, UV1135B, UV1136A, and UV1136B full-stroke exercised quarterly in accordance with the requirements of Section XI? If so, what is the purpose of relief request no. 27?

7. Do valves SGE-V642, V652, V653, and V693 perform any safety function in the open position? How is <u>each</u> of these valves verified to close during cold shutdown testing?

8. What is the basis for assigning a maximum stroke time of one second to valves SGB-HV200 and HV201 (see relief request no. 40)?

9. Provide the technical justification for not full-stroke exercising valves SGB-UV132, UV137, SGA-UV174, and UV177 quarterly.

10. Review the safety functions of valves SG-V002, V008, V431, and V432 (figure SGP-002; F-15 and B-15) to determine if they should be included in the IST program.

11. Do valves SG-FV1113 and FV1123 (figure SGP-002; H-14 and D-14) have a required fail-safe position?

N. Safety Injection and Shutdown Cooling System

1. How are valves SIA-V120 and SIB-V130 full-stroke exercised quarterly?

2. How are valves SIB-V484 and SIA-V485 full-stroke exercised quarterly?

3. What are the consequences of valves SIB-UV659 or SIA-UV660 failing closed during their quarterly testing?

4. What alternate methods have been considered for full-stroke exercising valves SIA-V205 and SIB-V206 during cold shutdowns or refueling outages?

5. How are valves SIA-V434 and SIB-V446 full-stroke exercised quarterly?

6. Is valve SI-V463 (figure SIP-001; D-8) Appendix J, Type C, leak rate tested?

7. Provide a more specific technical justification for not full-stroke exercising valve SIA-V164 and SIB-V165 during cold shutdowns. What alternate methods have been considered for full-stroke exercising these valves?

8. The NRC staff has approved valve sample disassembly/inspection for full-stroke exercising check valves on a refueling outage frequency. Provide a more specific technical justification for not full-stroke exercising valves SIE-V215, V225, V235, and V245 during refueling outages.

9. How are valves SIE-V217, V227, V237, and V247 verified to full-stroke open utilizing RCS shutdown cooling?

10. Provide a more specific technical justification for not full-stroke exercising valves SIA-V522, V523, SIB-V532, and V533 during cold shutdowns.

11. Are the following valves Appendix J, Type C, leak rate tested?

SIB-UV615	SIB-UV616
SIA-UV617	SIB-UV625
SIB-UV626	SIA-UV627
SIA-UV635	SIB-UV636
SIA-UV637	SIA-UV645
SIB-UV646	SIA-UV647

12. What are the consequences of valves SIB-HV690 and SIA-HV691 failing open during their quarterly testing?

13. How is full-stroke exercising verified for <u>each</u> of valves SIE-V540, V541, V542, and V543?

14. Provide a more specific technical justification for not full-stroke exercising valves SIA-HV605, HV606, HV607, HV608, SIB-HV-613, HV-623, HV-633, and HV-643 during cold shutdown.

II. PUMP TESTING PROGRAM

1. What alternative tests have been considered to detect any mechanical degradation of the diesel generator fuel oil transfer pumps?

2. How is the operational readiness of the diesel generator jacket water cooling pump, lube oil pump, and fuel oil booster pump ascertained during the monthly diesel generator technical specification surveillance test?

3. Concerning pump relief request no. 1; Section XI, Paragraph IWP-3100 requires that both pump differential pressure and flow rate to be measured.

4. Review the safety functions of the boric acid makeup pumps to determine if they should be included in the IST program.

5. Review the safety functions of the fuel pool cooling pumps to determine if they should be included in the IST program.

6. Table IWP-3100-1 requires the measurement of pump flow rate; why is this parameter listed as being observed in the pump listings?

7. Concerning pump relief request no. 6, lack of proper flow measurement instrumentation does not negate the Code requirement that flow be measured.