10 CFR 50.55a

APS

A subsidiary of Pinnacle West Capital Corporation

Palo Verde Nuclear Generating Station

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102-06009-DCM/GAM
May 22, 2009

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

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 3
Docket No. STN 50-530
Inservice Testing Relief Request for High Pressure Safety Injection Pump Testing – Pump Relief Request PRR-08

Pursuant to 10 CFR 50.55a(a)(3)(ii), Arizona Public Service Company (APS) hereby requests NRC approval of the following request for relief from the comprehensive pump testing requirements of ASME/ANSI OM Code 2001 Edition, 2003 Addenda. The details of the 10 CFR 50.55a request are enclosed.

APS requests verbal authorization for this relief request by May 22, 2009. Verbal authorization is requested due to the unforeseen circumstances described below that would delay the timely resumption of PVNGS Unit 3 operation without this relief.

On May 20, 2009, during preparations to enter Mode 4 following the Unit 3 refueling outage, excessive seal leakage was discovered in the train B high pressure safety injection (HPSI) pump outboard seal. The HPSI B pump has been repaired. The post maintenance test required by the Code is a Comprehensive/Full Flow Test to demonstrate design basis capability. However, this comprehensive pump test would necessitate the removal of the reactor head to create the flow path needed to achieve the comprehensive flow rate. This test is normally performed with the reactor in the defueled state. The proposed relief would permit the alternative use of the HPSI pump recirculation path as the post maintenance test to demonstrate the HPSI pump design capability to support operability. Restoration of HPSI pump operability is required in order for Unit 3 to resume operation.

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No commitments are being made to the NRC by this letter. Should you need further information regarding this submittal, please contact Russell A. Stroud, Licensing Section Leader, at (623) 393-5111.

Sincerely,

DCM/SAB/GAM/gat

Enclosure: Inservice Testing Relief Request for High Pressure Safety Injection Pump Testing - Relief Request PRR-08

cc: E. E. Collins Jr. NRC Region IV Regional Administrator
J. R. Hall NRC NRR Project Manager
R. I. Treadway NRC Senior Resident Inspector

Enclosure

Inservice Testing Relief Request
for High Pressure Safety Injection Pump Testing
Relief Request PRR-08

Proposed Alternative
in Accordance with 10 CFR 50.55a(a)(3)(ii)

1. ASME Code Component(s) Affected

Pump 3MSIBP02 is the train B high pressure safety injection (HPSI) pump in Palo Verde Nuclear Generating Station (PVNGS) Unit 3. This is a safety-related centrifugal pump model 4X11CA-8 manufactured by Ingersol–Rand.

2. Applicable Code Edition and Addenda

ASME/ANSI OM Code 2001 Edition, 2003 Addenda.

3. Applicable Code Requirements

ISTB-3310 Effect of Pump Replacement, Repair, and Maintenance on Reference Values. When a reference value or set of values may have been affected by repair, replacement, or routine servicing of a pump, a new reference value or set of values shall be determined in accordance with ISTB-3300, or the previous value reconfirmed by a comprehensive or Group A test run before declaring the pump operable. The Owner shall determine whether the requirements of ISTB-3100, to reestablish reference values, apply. Deviations between the previous and new set of reference values shall be evaluated, and verification that the new values represent acceptable pump operation shall be placed in the record of tests (see ISTB-9000).

ISTB-3510 General (a) Accuracy - Instrument accuracy shall be within the limits of Table ISTB-3500-1. If a parameter is determined by analytical methods instead of measurement, then the determination shall meet the parameter accuracy requirement of Table ISTB-3500-1 (e.g., flow rate determination shall be accurate to within ± 2% of actual). For individual analog instruments, the required accuracy is percent of fullscale. For digital instruments, the required accuracy is over the calibrated range. For a combination of instruments, the required accuracy is loop accuracy.

Table ISTB-3500-1 Required Instrument Accuracy – Flow Rate for Comprehensive and Preservice Tests, ± 2%.

4. Reason for Request

During the current PVNGS Unit 3 refueling outage, the HPSI B pump outboard mechanical seal was replaced, which required the removal of the outboard bearing. A full flow comprehensive test was performed following that maintenance. During preparations to enter Mode 4 following the refueling outage, problems with the new mechanical seal were encountered, which required the installation of another new mechanical seal. Mechanical seal

replacement required removal of the outboard pump bearing. Palo Verde installed a new outboard bearing at the recommendation of the pump vendor, Flowserve.

This pump falls under the Group B categorization in the applicable ASME OM Code. ISTB-3310 requires that a comprehensive pump test be performed when a reference value may have been affected. In this case, vibration is the only reference value that is potentially impacted by the maintenance performed. Since the bearing and outboard mechanical seal are new, it is expected that vibration performance will change to some degree. It is unknown how much performance will change, if at all. Arizona Public Service Company (APS) is unable to determine, without creating a hardship, if the vibration parameter may be affected by the change to the degree necessary to require reestablishment of the reference values at the comprehensive test flow point.

APS is in the process of restarting PVNGS Unit 3 from a refueling outage and is presently in Mode 5. The HPSI pump comprehensive flow test would necessitate the removal of the reactor head to create an adequate flow path to achieve the comprehensive test flow rate. This test is normally performed with the reactor defueled. To perform the comprehensive flow rate test in the current plant conditions would require a temporary procedure change that would enable the test to be performed without removing the reactor head and defueling. The test would require a unique alignment. The control room operators would be required to quickly react in the event of an imbalance in the flow to the Reactor Coolant System (RCS) and letdown from the RCS in the event of a mismatch to prevent low temperature overpressurization.

The concern is that the risk of performing the test under the present conditions exceeds the safety benefit that the pump retest at full flow would provide if performed in strict accordance with the ASME OM Code rules. The purpose of performing the comprehensive pump test following maintenance is to determine if the vibration reference value has been impacted to the degree necessary that the acceptance criteria needs to be adjusted. Testing at lower flow values other than the comprehensive test flow rate can yield vibration information that will provide sufficient assurance that the pump would be able to perform its safety function if it were called upon. This is a one-time request until the comprehensive test is performed again in the next refueling outage.

5. Proposed Alternative and Basis for Use

The pump can be run on a larger (non-orifice) recirculation line to the Refueling Water Tank (RWT) safely during the present mode of operation. The flow rate using this path is at least 750 gpm. The flowmeter on this line has an accuracy of ± 5.0%, which is the best that can presently be achieved given the piping

geometry and technological limitations of the equipment available. The comprehensive pump test reference flow is 1040 gpm.

The pump will be run for a 1 hour period at normal recirculation flow (approximately 130 gpm) to verify acceptable seal operation. The oil will then be changed and the pump will be run for another 2 hours on the larger recirculation flow path of at least 750 gpm. The oil will then be changed a second time and the pump will be run for another 2 hours on the larger recirculation flow path to provide additional assurance of trouble free operation. Vibration data will be collected at initial start-up after stable flow conditions are achieved. During the subsequent pump runs data will be collected in the same manner.

The vibration data will be analyzed to ensure there are no indications of unacceptable pump performance and to ensure that the performance data is within the expected range. This will provide assurance that the equipment will continue to be operationally ready for the duration of the Unit 3 fuel cycle. During the next Unit 3 refueling outage, the comprehensive pump test will be run in accordance with ISTB-3310.

During the operating cycle, the quarterly Group B surveillance tests will be performed. Vibration data will be collected and spectrum analyses will be performed to provide assurance of continued pump operability.

6. Duration of Proposed Alternative

The duration of the proposed alternative will be for the fifteenth operating cycle of PVNGS Unit 3.