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 AUTH.NAME AUTHOR AFFILIATION  
 LEVINE,J.M. Arizona Public Service Co. (formerly Arizona Nuclear Power  
 RECIP.NAME RECIPIENT AFFILIATION  
 MARTIN,J.B. Region 5 (Post 820201)

SUBJECT: Forwards request for temporary waiver of compliance from TS  
 Surveillance Requirements 4.3.1.1,Table 4.3-1 Number 1.B-2 &  
 4.0.2 for periodicity.

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JAMES M. LEVINE  
VICE PRESIDENT  
NUCLEAR PRODUCTION

102-02142-JML/TRB/NLT  
May 7, 1992

Mr. John B. Martin  
Regional Administrator, Region V  
U. S. Nuclear Regulatory Commission  
1450 Maria Lane, Suite 210  
Walnut Creek, CA 94596-5368

Dear Mr. Martin:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Unit 3  
Docket No. STN 50-530  
Request for Temporary Waiver of Compliance  
from Technical Specifications  
File: 92-056-026**

Arizona Public Service Company (APS) hereby provides the written justification of the request for a Temporary Waiver of Compliance from PVNGS Unit 3 Technical Specification Surveillance Requirements 4.3.1.1 Table 4.3-1, #1.B-2 and 4.0.2. provided verbally to the NRC at approximately 7:00 p.m. MST, on May 6, 1992. The NRC Region V subsequently granted the Temporary Waiver of Compliance at approximately 7:45 p.m. MST, on May 6, 1992. A 24 hour extension interval was granted which began at 8:05 p.m. MST, May 6, 1992, and will end at 8:05 p.m. MST, May 7, 1992.

The Temporary Waiver of Compliance was requested to prevent an unnecessary plant shutdown to Mode 3 while Unit 3 was in an "Alert" status and to provide an additional 24 hours beyond the currently allowed frequency interval to perform the Logarithmic Power Functional Test as required by Unit 3 Technical Specification Surveillance Requirement 4.3.1.1 Table 4.3-1, #1.B-2. The Surveillance Test could not be performed because APS had committed to perform no testing or maintenance that could affect plant operations while in the "Alert" status. Consequently, a Temporary Waiver of Compliance was also requested from Surveillance Requirement 4.0.2, since Unit 3 would not meet the periodicity requirement. Increasing the surveillance test interval minimized the possibility for an inadvertent plant transient during surveillance testing while Unit 3 was in an "Alert" status due to a large number of inoperable plant annunciators.

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Mr. John B. Martin  
U. S. Nuclear Regulatory Commission  
Temporary Waiver of Compliance  
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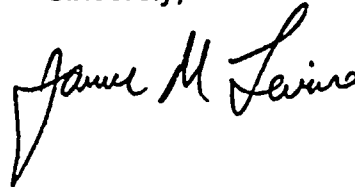
102-02142-JML/TRB/NLT  
May 7, 1992

The Plant Review Board has reviewed the basis for this Request for Temporary Waiver of Compliance and has determined that the extension does not constitute an unreviewed safety question or create a nuclear safety hazard.

Pursuant to 10 CFR 50.91(b)(1), a copy of this request is being forwarded to the Arizona Radiation Regulatory Agency.

If you have any questions, please contact Thomas R. Bradish at (602) 393-5421.

Sincerely,

A handwritten signature in black ink, appearing to read "James M. Levine". The signature is written in a cursive style with a large, stylized initial "J".

JML/TRB/NLT/pmm

Enclosure

cc: Document Control Desk  
C. M. Trammell  
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W. A. Wright



**ENCLOSURE**

**ARIZONA PUBLIC SERVICE COMPANY REQUEST FOR  
TEMPORARY WAIVER OF COMPLIANCE**

**PALO VERDE NUCLEAR GENERATING STATION UNIT 3**

**SURVEILLANCE REQUIREMENT 4.3.1.1 TABLE 4.3-1, #I.B-2  
FUNCTIONAL TEST FREQUENCY EXTENSION FOR  
REACTOR PROTECTIVE INSTRUMENTATION - LOGARITHMIC POWER LEVEL**

**AND**

**SURVEILLANCE REQUIREMENT 4.0.2 FOR PERIODICITY**





**REQUEST FOR TEMPORARY WAIVER OF COMPLIANCE  
SURVEILLANCE REQUIREMENT 4.3.1.1 TABLE 4.3-1, #I.B-2  
AND SURVEILLANCE REQUIREMENT 4.0.2 FOR PERIODICITY**

**REQUIREMENTS FOR WHICH THE WAIVER IS REQUESTED**

**SURVEILLANCE REQUIREMENT INTERVAL 4.3.1.1 TABLE 4.3-1, #I.B-2**

Surveillance Requirement 4.3.1.1 specifies that each reactor's protective instrumentation channel be demonstrated operable by the performance of the channel check, channel calibration, and functional test for the modes and frequencies shown in Table 4.3-1. Table 4.3-1, item #I.B-2 requires that a high logarithmic power level functional test be performed on a monthly interval. The objective of the functional test is to demonstrate, using built-in test features, that the Excore Nuclear Instrumentation System Safety Channels for Log Power are functionally operable. These channels provide the inputs for the Plant Protection System (PPS) Parameter 2 Bistable which provides the High Log Power Trip.

Arizona Public Service Company (APS) requests a Temporary Waiver of Compliance to the requirement for performing the functional test on a 30-day interval, and a 24 hour extension to the allowed interval time beginning at 8:05 p.m. MST, May 6, 1992, and ending at 8:05 p.m. MST, May 7, 1992.

**SURVEILLANCE REQUIREMENT 4.0.2 FOR PERIODICITY**

Surveillance Requirement 4.0.2 specifies that each surveillance requirement be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.

Arizona Public Service Company (APS) requests a Temporary Waiver of Compliance to Surveillance Requirement 4.0.2 for performing the functional test (prescribed by requirement 4.3.1.1 Table 4.3-1, #IB-2) within the specified surveillance interval and maximum allowable extension of 25 percent. As described herein, APS requests a 24 hour extension to the allowed interval time beginning at 8:05 p.m. MST, May 6, 1992, and ending at 8:05 p.m. MST, May 7, 1992.

**NEED FOR PROMPT ACTION**

PVNGS Unit 3 was originally scheduled to perform the Logarithmic Power Functional Test (36ST-3SE06) on April 28, 1992, which would have been at approximately 100% of the 30 day frequency interval. Coincidentally, the 18-Month Logarithmic Power Calibration

Test (36ST-3SE01) was due at approximately the same time. As a result, the calibration was performed and the functional test was delayed approximately 4 days. Data collected during performance of 36ST-3SE01 necessitated changes to 36ST-3SE06 prior to performance of the functional test. This process took until Sunday, May 3, 1992.

On Sunday, May 3, 1992, CPC Channel "A" had been declared "inoperable" for reasons unrelated to logarithmic power functionality. As a result, the Logarithmic Power Functional Test was delayed until such a time that CPC Channel "A" could be restored.

At approximately 4:36 a.m. MST on May 4, 1992, while PVNGS Unit 3 was operating at 100% power, a 24 VDC alarm lead came in contact with its associated 480 VAC bus during the performance of an electrical work order to verify the configuration of the alarm switch being used in lighting load center 3E-NGN-L18. This caused a loss of the RK (non-safety) annunciator functions and Plant Computer Core Operation Limit Supervisory System (PC COLSS). The plant remained in a stable condition with the Core Monitoring Computer Core Operating Limit Supervisory System (CMC COLSS) in service. Safety-Related Annunciators were not affected.

At approximately 7:08 a.m. MST on May 4, 1992, CMC COLSS stopped calculating due to continuing degradation of the Plant Computer functions. Plant personnel decreased reactor power to approximately 70% power in compliance with Technical Specifications. The Plant Computer operation continued to degrade and at approximately 8:19 MST it was determined that the Plant Computer could not be relied upon and an "Alert" was declared in accordance with PVNGS Procedure EPIP-02.

At approximately 2:47 p.m. MST on May 4, 1992, the Plant Computer was restored and CMC COLSS was declared operable. PC COLSS was restored a few minutes later. The "Alert" status was maintained pending troubleshooting and repair of the plant annunciator system.

APS informed the NRC that no testing or maintenance that could affect plant operations would be performed at PVNGS while Unit 3 is in the "Alert" status. This suspension of testing or maintenance that could affect plant operations applies to all three units. The need for prompt action is the 30-day interval requirement to perform the Logarithmic Power Functional Test (36ST-3SE06) in accordance with Surveillance Requirement 4.3.1.1, Table 4.3-1, Item #I.B.2. This test was last performed on March 29, 1992, at 2:05 p.m. MST. APS will exceed the Technical Specification 4.0.2 allowed 25% extension time at 8:05 p.m. MST, on May 6, 1992. The testing will not be accomplished by this time.

A Temporary Waiver of Compliance to Surveillance Requirements 4.3.1.1 Table 4.3-1, Item #I.B.2 and 4.0.2 is being requested to prevent an unnecessary plant shutdown to Mode 3 while Unit 3 is in an "Alert" status and extension of the surveillance interval for 24 hours.



## COMPENSATORY MEASURES

No compensatory measures are required based upon actual measurements derived from surveillance tests performed in Unit 3 over the past few years. Instrument drift occurring in the Unit 3 PPS channels for an additional 24 hours will be negligible, and will not cause the setpoint value to exceed the allowable calculated value. However, following the termination of the "Alert," Unit 3 will not exceed 70% power pending completion of the Surveillance Test.

*NOTE: At approximately 11:21 p.m. MST, on May 6, 1992, Unit 3 terminated the "Alert" classification and entered Mode 3 at approximately 4:19 a.m. MST, on May 7, 1992. The Logarithmic Power Functional Test 36ST-3SE06 is currently ongoing and is expected to be completed by approximately 5:30 p.m. MST, on May 7, 1992.*

## JUSTIFICATION FOR AND DURATION OF THE REQUEST

The extension of the allowed interval for performing the Logarithmic Power Functional Test for a period of 24 hours will provide sufficient time for the performance of the surveillance test. APS has committed to perform no testing or maintenance that could affect plant operations while Unit 3 is in the "Alert" status. Thus, failure to grant an extension will require an unnecessary plant shutdown while Unit 3 is in the "Alert" status.

Additionally, performing the functional test increases the potential for an inadvertent plant transient and consequent challenge to safety systems. Increasing the surveillance test interval minimizes the possibility for an inadvertent plant transient during surveillance testing while Unit 3 is in an "Alert" status, and plant annunciators not fully restored. All 4 Logarithmic Power Channels are currently operable.

Based upon actual measurements derived from surveillance tests performed in Unit 3 over the past few years, instrument drift occurring in the Unit 3 PPS channels for a period of 24 hours will be negligible, and will not cause the setpoint value to exceed the allowable calculated value.

## EVALUATION OF THE SAFETY SIGNIFICANCE AND BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATION

The High Logarithmic Power Level trip input into the PPS has been manually bypassed pursuant to Table 3.3-1 Table Notation (a) and will not initiate a trip signal. This instrumentation is not used by the Reactor Protection System in the current plant condition.

Combustion Engineering (CE), under contract to the CE Owners Group (CEOG), evaluated the impact of extending the surveillance test intervals for selected RPS and ESFAS components. This analysis is documented in CEN-327, "RPS/ESFAS Extended Test Interval Evaluation." The analysis supported extending Surveillance Test Intervals from monthly to quarterly. The Reactor Protective Instrumentation for Logarithmic Power Level was included in this analysis.

The analysis results presented in CEN-327 and CEN-327, Supplement 1 demonstrate that the surveillance test intervals (STI) for RPS and ESFAS components can be increased without increasing public risk. In fact, for the test intervals proposed, the overall impact is a slight decrease in public risk as measured by a net decrease in core melt frequency. Extending the test interval does not change the trip per test frequency, but it does reduce the trip per year frequency.

This Temporary Waiver of Compliance for a surveillance test interval extension has two slight effects with opposing impacts on core melt risk. The first impact is a slight increase in core melt frequency that results from the increased unavailability of the instrumentation in question. The unavailability of the tested instrumentation components is translated to result in a failure of the reactor to trip, an Anticipated Transient Without a Scram. The opposing impact is the corresponding reduction in core melt frequency that would result due to the reduced exposure of the plant to test induced transients.

This Temporary Waiver of Compliance for a surveillance test interval extension does not involve any changes in equipment and will not alter the manner in which the plant will be operated. For this reason, this Temporary Waiver of Compliance will not create the possibility of a new or different kind of accident from any previously evaluated.

No margin of safety will be reduced. There are no changes to the equipment or plant operations that will result. The only impact of this Temporary Waiver of Compliance is the development of a more appropriate balance between increased core melt risk due to slightly increased equipment unavailability and reduced core melt risk due to a reduction in plant exposure to test-induced transients. Extension of the allowed surveillance interval will result in an overall improvement in safety due to the fact that all RPS channels will remain operable and no testing will be performed while Unit 3 is in the "Alert" plant status. The conclusions of the accident analyses in the PVNGS Updated Final Safety Analysis Report remain valid and the safety limits continue to be met. Margins of safety are, therefore, not significantly reduced.

The extension of this surveillance interval is considered to have negligible safety significance based on the results of the CEN-327 study described below. The study supported extension of all RPS and ESFAS surveillance intervals (except for Reactor Trip Breakers and Automatic Actuation Logic surveillance intervals), and was based on an increase to 120 days. Though the study resulted in a few changes to the RPS setpoints,



the new setpoints were based on instrument drift values for extending all RPS surveillance intervals to 120 days (except for Reactor Trip Breakers).

In CEN-327, four RPS fault tree models developed previously for the CEOG were expanded to cover all RPS electronic trip parameters. The models represent the four basic RPS designs supplied by CE. The Palo Verde RPS design was one of the models. The new models were then used to determine the RPS reliability for the current and proposed test interval. The model took into account: common mode failures, operator errors, reduced redundancy, and random component failures. The study results show that for the RPS, the decrease in core melt frequency attributable to the reduced exposure to test-induced transients is  $2.76 \times 10^{-7}$  per year for a 90-day test interval for all parameters and approximately  $2.6 \times 10^{-7}$  per year for a combination of 60 and 90-day test intervals. The increase in core melt frequency due to the increase in system unavailability is less than  $2.6 \times 10^{-7}$  per year.

SER "RPS/ESFAS Extended Test Interval Evaluation" was issued by the NRC in November 1989. The NRC found that CEN-327 and its Supplement were acceptable for justifying the proposed extensions in STI for the RPS and ESFAS. The NRC agreed that the STI for the RPS and for ESFAS could be extended for all CE plants (except Maine Yankee) to the requested interval contingent on the licensee in each case confirming that instrument drift occurring over the proposed STI would not cause the setpoint values to exceed those assumed in the safety analysis and specified in the Technical Specifications.

APS has performed the drift setpoint analysis to demonstrate that the expected instrumentation drift during a 120-day test interval will not result in the setpoint exceeding technical specification limits. Calculation 13-JC-SB-200, "Plant Protection System Bistable Drift Analysis" was issued in April 1992. The calculation evaluated the effects of an extended surveillance test interval on the setpoint drift of the Plant Protection System (PPS). As-found and as-left data was extracted from previous monthly surveillance tests performed from 1987 through 1990. A 120-day interval was selected as a conservative 90-day interval with a tolerance greater than or equal to 1.25 times the time period per setpoint methodology ( $90 \times 1.25 = 112.5$ ) or a 120-day interval with no tolerance.

The instrument drift values were used to re-calculate PPS uncertainties and error values. The new uncertainties and error values were then used to calculate new PPS setpoints where necessary. The High Logarithmic Power Level trip setpoint did not require a change and a change to a 120-day test interval is justifiable.





## ENVIRONMENTAL IMPACT CONSIDERATION DETERMINATION

The proposed Temporary Waiver of Compliance request does not involve an unreviewed environmental question because operation of PVNGS Unit 3 with an extended Surveillance Requirement Interval would not:

- A. Result in a significant increase in any adverse environmental impact previously evaluated in the Final Environmental Statement as modified by the Staff's testimony to the Atomic Safety and Licensing Board; or
- B. Result in a significant change in effluent or power levels; or
- C. Result in matters not previously reviewed in the licensing basis for PVNGS which may have a significant environmental impact.

As discussed above, no significant reduction in the margin of safety and no new accidents are introduced by this Temporary Waiver of Compliance. This Temporary Waiver of Compliance does not significantly affect effluent or power levels, and has no environmental impact.