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WILLIAM L. STEWART
EXECUTIVE VICE PRESIDENT
NUCLEAR

102-03091-WLS/AKK/DLK
August 23, 1994

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U. S. Nuclear Regulatory Commission
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Reference: Letter 102-03072-WLS/AKK/PJC dated August 1, 1994, from W. L. Stewart, Executive Vice President, Nuclear, APS, to U. S. Nuclear Regulatory Commission, Document Control Desk, "Reply to Notice of Violation 50-530/94-13-02 and Notice of Deviation 50-528/94-13-01"

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Reply to Notice of Violations 50-528/529/530/94-12-01,
50-530/94-12-03, 50-530/94-12-04, and 50-528/529/530/94-12-05
File: 94-070-026

Arizona Public Service Company (APS) has reviewed NRC Inspection Report 50-528/529/530/94-12 and the Notice of Violations (NOV) dated July 24, 1994. Pursuant to the provisions of 10 CFR 2.201, APS' responses are enclosed. Enclosure 1 to this letter is a restatement of the NOV's. APS' responses are provided in Enclosure 2.

Throughout the inspection report, the NRC team noted that the APS testing programs and administrative procedures appear to be well defined, and the NRC has credited APS for performing aggressive assessments in the retest area and aggressively monitoring the implementation and effectiveness of the corrective actions taken. However, a need exists for additional attention to program implementation, primarily testing.

In an effort to resolve these concerns and to improve on the implementation of the existing Test Program, APS recognized that the program required clear ownership and selected as the Test Program Leader, the Director, System Engineering. The Test Program Leader is ultimately responsible for ensuring effective program implementation and making necessary improvements. This responsibility would include setting and reinforcing the standards and expectations of the Test Program, and developing a team concept across organizational boundaries to ensure these expectations are understood and met. In addition, the Test Program Leader will monitor the performance of the

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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Reply to NOVs 50-528/529/530/94-12-01, 50-530/94-12-03, 50-530/94-12-04,
and 50-528/529/530/94-12-05
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program, periodically evaluate the program (self-assessment), and make appropriate adjustments as necessary.

APS recognized the need for improved effectiveness of the Corrective Action Program, which the NRC also identified during this inspection. As discussed in the referenced response to a previous NOV, action assignments and implementation schedules are being developed. As part of the improved corrective action program, effectiveness reviews following the completion of corrective actions are expected to be performed to ensure that the implementation of the Test Program, as well as other key programs, fulfills the program's intent and expectations as defined by the procedures.

Should you have any questions, please contact Angela K. Krainik at (602) 393-5421.

Sincerely,

WLS/AKK/DLK/rv

Enclosures:

1. Restatement of Notice of Violations
2. Reply to Notice of Violations "

cc: L. J. Callan
K. E. Perkins
B. E. Holian
K. E. Johnston

ENCLOSURE 1

RESTATEMENT OF NOTICE OF VIOLATIONS

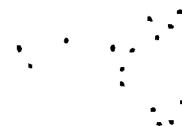
50-528/529/530/94-12-01, 50-530/94-12-03, 50-530/94-12-04, AND

50-528/529/530/94-12-05.

NRC INSPECTION CONDUCTED APRIL 25 THROUGH

MAY 27, 1994

INSPECTION REPORT NOS. 50-528/529/530/94-12



**Restatement of Notice of Violations 50-528/529/530/94-12-01,
50-530/94-12-03, 50-530/94-12-04, and 50-528/529/530/94-12-05**

During an NRC inspection conducted on April 25 through May 27, 1994, four violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedures for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, the violations are listed below:

- A. Section 3.9.8.2 of the Palo Verde, Unit 3, Technical Specifications states that two independent shutdown cooling loops shall be operable and at least one shutdown cooling loop shall be in operation when the unit is in Mode 6 with the water level less than 23 feet above the top of the reactor pressure vessel flange.

Section 1.19 of the Technical Specification states that a component shall be operable when it is capable of performing its specified function, and when electrical power and other necessary auxiliary equipment are capable of performing their related support functions.

Action a of Technical Specification 3.9.8.2 states that, when less than the required shutdown cooling loops are operable, immediate action shall be initiated to return the required loops to operable status, or to establish at least 23 feet of water above the reactor pressure vessel flange, as soon as possible.

Contrary to the above, the feeder breaker for the Train A low pressure safety injection pump was racked into the test position on May 12, 1994, rendering the associated shutdown cooling loop inoperable, and immediate action was not initiated to restore the shutdown cooling loop to service or to establish at least 23 feet of water above the reactor pressure vessel flange.

This is a Severity Level IV violation, applicable to Unit 3 (Supplement I) (530/9412-03).

- B. Criterion XI of 10 CFR 50, Appendix B, "Test Control," requires that a test program be established to assure that required testing is identified and performed in accordance with written procedures which incorporate the requirements and acceptance limits contained in applicable design documents.

Contrary to this requirement, test procedures did not incorporate appropriate acceptance criteria as follows:

1. Post-maintenance or post-modification testing after the following changes in motor-operated valve operator gear ratios was performed using normal inservice tests, which verified that valve stroke time was still within operational limits, but did not confirm that the desired change in stroke time had actually been accomplished:
 - Gear ratio changes to decrease the closing time of Auxiliary Feedwater Discharge Isolation Valve JAFBUV0034 and JAFBUV0035 from 14.5 to 13.5 seconds, performed pursuant to LDCP 1/2/3LM-AF-102, completed in Unit 3 on May 19, 1994, respectively.
 - Gear ratio changes to increase valve opening time from 3.5 to 4.5 seconds for certain motor-operated valve operators specified in Work Order 00660155, completed on May 18, 1994.
 - Gear ratio changes for reactor coolant pump controlled bleedoff valves, to increase their closing times from 6.5 to 11 seconds, pursuant to Work Orders 00653367, 00653513, 00653521, and 00653523, completed between May 4 and 17, 1994.
2. As of May 12, 1994, Procedure 32ST-9ZZ03, "Surveillance Test Procedures for Class 4160 Bus Undervoltage Relays," Revision 5.06, contained inappropriate criteria for verifying and establishing the setpoints for the degraded voltage relays, in that these criteria would have permitted degraded voltage relay setpoints to be left or established at values as low as 3150 volts, although licensee design documents showed that setpoints at or near 3744 volts were required to provide acceptable voltage to safety-related components.
3. As of April 29, 1994, Surveillance Procedures 43ST-3SP-02 [sic], Revision 3, and 43ST-3SW04 [sic], Revision 2, which stated as their purpose to verify operability of the essential spray pond pumps and essential cooling water pumps, respectively, included acceptance criteria which monitored for degradation of pump performance from expected values, but did not verify the ability of the pumps to satisfy their design or

operational performance requirements.

4. Surveillance Test 73ST-3DG01, Revision 5, performed in Unit 3 on May 12, 1994, included inappropriate acceptance criteria to perform the 18-month verification required by Technical Specification 4.8.1.1.2.d.9 that the auto-connected loads to each diesel generator do not exceed the continuous rating of 5500 kW, in that the acceptance criteria did not account for the operation of several safety-related components at less than their design electrical loading during the test.
5. The acceptance criteria for post-maintenance testing following preventive maintenance on Unit 1 control room outside air intake Damper 1MHJB-M03, conducted on February 15, 1994, were not sufficiently specific to verify that the damper actuating linkage had been properly reconnected, with the result that the damper was inoperable until May 10, 1994.

This is a Severity Level IV violation, applicable to Units 1, 2, and 3 (Supplement I) (528;529;530/9412-01).

- C. Criterion XI of 10 CFR 50, Appendix B, "Test Control," requires that a test program be established to assure that required testing is identified and performed in accordance with written test procedures, and that the test program include, as appropriate, operational tests of components during nuclear power plant operation.

Paragraph 3.6.1.3 of the Palo Verde Nuclear Generating Station Operations Quality Assurance Plan states that, "The test program shall cover all required tests including: ...e. Tests to demonstrate satisfactory performance following plant maintenance..."

Contrary to this requirement, appropriate testing to demonstrate satisfactory performance of the Unit 3 Train A diesel generator combustion air intake valve was not performed after the completion of preventive maintenance on April 24, 1994, in that additional maintenance steps following the specified retest invalidated the retest results. As a result, the valve was left in an inoperable configuration and failed during an integrated engineered safety features test on May 12, 1994.

This is a Severity Level IV violation, applicable to Unit 3 (Supplement I) (530/9412-04).

- D. Section 10 CFR 50.59 of the NRC Regulations, states in (a)(1) that the holder of a license may make changes in the facility as described in the safety analysis report, without prior Commission approval, unless the proposed change involves a change in the Technical Specifications or an unreviewed safety question; in (a)(2) that a proposed change shall be deemed to involve an unreviewed safety question "(iii) if the margin of safety as defined in the basis for any technical specification is reduced"; and in (b)(1) that records must include a written safety evaluation which provides the bases for the determination that the change does not involve an unreviewed safety question.

Contrary to these requirements:

1. The performance requirements for Valves SGA-UV135 [sic] and SGA-UV138, motor-operated steam stop valves to the Train A auxiliary feedwater pump turbine in all three units, were changed to require that the valves leak (to keep downstream steam piping warm) in order for the auxiliary feedwater pump to be operable. Although this represented a change to the facility as described in the Table 6.2.4-1 of the UFSAR, which identifies these valves as containment isolation valves, the screening performed on August 13, 1993 [sic], concluded that no change to the facility as described in the FSAR was involved, and a written safety evaluation was not performed to provide the bases for the determination that the change did not involve an unreviewed safety question.
2. The licensee changed the minimum required spray inventory in 1993, based on Calculation 13-MC-SP-307, to 26 days from the 27 days specified in the bases for Technical Specification 3/4.7.5. This represented a decrease in the margin of safety as defined in the Technical Specification bases, and prior Commission approval of this change was not requested.

This is a Severity Level IV violation, applicable to Units 1, 2, and 3 (Supplement I) (528;529;530/9412-05).

ENCLOSURE 2

REPLY TO NOTICE OF VIOLATIONS

50-528/529/530/94-12-01, 50-530/94-12-03, 50-530/94-12-04, AND

50-528/529/530/94-12-05

NRC INSPECTION CONDUCTED APRIL 25 THROUGH

MAY 27, 1994

INSPECTION REPORT NOs. 50-528/529/530/94-12

Reply to Notice of Violation (A) 50-530/94-12-03Reason for the Violation

APS admits the violation.

During refueling outages, in order to prevent 4.16 kV Low Pressure Safety Injection (LPSI) pump starts while performing Integrated Safeguards Testing, control room operators would rack the pump feeder breaker down into the in-test position. Neither the LPSI pump nor its associated shutdown cooling train were considered inoperable because reasonable assurance existed that credit for manual operator action could be taken in that the breaker could be racked back in within the time period required (i.e., three hours) to initiate shutdown cooling. APS' position was not consistent with the NRC team's position that the associated shutdown cooling train was inoperable because electrical power was not available to the LPSI pump with the breaker racked into the in-test position.

Corrective Actions Taken and Results Achieved

APS' position on crediting manual operator action to maintain systems, structures, and components operable was re-evaluated. As part of the evaluation, several nuclear utilities were surveyed to determine whether APS' position was consistent with those reputed as best practice plants. The survey results indicated that most utilities do credit

manual operator action on manually operated systems while maintaining the systems operable. However, most utilities would have considered the LPSI pump inoperable with the breaker racked into the in-test position. Based on the NRC team's interpretation regarding racked out breakers, and in order to be consistent with best practice plants, APS' operability determination position has been revised. Credit for manual operator action can no longer be taken to maintain 4.16 kV pumps operable when its associated 4.16 kV breaker is taken out of service or racked into the in-test position.

Guidance for use of manual action to maintain operability, has been incorporated into procedure 40DP-9OP26, "Operability Determination."

Corrective Actions That Will Be Taken To Avoid Further Violations

Training is being provided to the licensed operators on procedure 40DP-9OP26, "Operability Determination," with emphasis on APS' revised position, as part of continuing training. Training will be completed by September 30, 1994.

Date When Full Compliance Will Be Achieved

Full compliance was achieved on May 12, 1994, when the 4.16 kV LPSI pump breakers were racked back into position. In addition, APS will submit a Licensee Event Report within 30 days to comply with the reporting requirements of 10 CFR 50.73(a)(2)(i)(B), to report a condition prohibited by the plant's Technical Specifications.

Reply to Notice of Violation (B) 50-528/529/530/94-12-01**Reason for the Violation**

The NOV cites seven examples, within five subsections of violations of Criterion XI of 10 CFR 50, Appendix B where post-maintenance, post-modification, preventive maintenance, and surveillance testing procedures did not incorporate appropriate acceptance criteria. APS admits the overall violation, however, there is some disagreement on three of the examples. While each example can be attributed to one or more reasons, collectively, the reason for the violation is failure to develop acceptance criteria that adequately verifies that the desired results of maintenance, modifications, and testing are achieved.

The first example discusses the use ASME Section XI inservice testing (IST) acceptance criteria to verify that Motor Operated Valve (MOV) gear ratio changes were implemented on 3JAFBUV0034 and 3JAFBUV0035 as specified in a design change package. The reason for this example of the violation was a procedural deficiency in that calculated stroke times for use as acceptance criteria on gear ratio changes were not included in the post-maintenance retest matrix in 39AC-9ZZ02, "Valve Services Maintenance." The MOV stroke times available for use as acceptance criteria, at the time the modification was developed, were defined in the IST Program. APS agrees with the conclusion that the design change package did not incorporate appropriate acceptance criteria.



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The second example discusses a gear ratio change implemented on 3JSGAUV0134 under Work Order (WO) 00660155. The operator for 3JSGAUV0134 is a Direct Current (DC) motor. The expected increase in valve stroke time as a result of the gear ratio change was 1.5 seconds. Changes in packing loads, bus voltage, and line pressure result in significant changes in DC MOV stroke times. Calculating an actual stroke time to determine an associated acceptance criteria, that could detect a 1.5 second stroke time difference and definitively conclude that the stroke time difference was the result of the gear ratio change directly, is not feasible. Specific steps in the body of the WO provided assurance that the intended maintenance was correctly accomplished. As-found and as-left MOVATS test data, along with inspection steps that documented the number of teeth on the original and replacement gears, were included in Section 3.0, "Instructions," and satisfied the intent of a meaningful post maintenance retest. APS disagrees with the conclusion that WO 00660155 did not incorporate appropriate acceptance criteria.

The third example discusses gear ratio changes performed on four reactor coolant pump controlled bleedoff valves, to increase their closing time from 6.5 to 11 seconds. Work was completed under WOs 00653367, 00653513, 00653521, and 00653523. Inspection Report 50-528/529/530/94-12, Section 3.2.1, indicates that "...the post-maintenance testing specified in the work instructions was to verify a closing stroke time of less than 12 seconds (there was no existing inservice test for these valves, so existing inservice testing acceptance criteria could not be used)." The retest section of the WOs listed



above contained a specific step to ensure that the MOVATS as-left testing was completed with satisfactory results, and approved by Valve Services Engineering. The WOs required that the as-left stroke time be recorded and contained a note that stated "Anticipated static time is approx 11 sec." There is no reference in the work instruction section of the WOs to an acceptance criteria less than 12 seconds. APS disagrees with the conclusion that WOs 00653367, 00653513, 00653521, and 00653523 did not incorporate appropriate acceptance criteria.

The fourth example discusses the acceptance criteria in Surveillance Test (ST) 32ST-9ZZ03, "Surveillance Test Procedure for Class 4160 Bus Undervoltage Relays." APS recognizes that the setpoints specified in Technical Specifications for the degraded voltage relays are not correct. A Technical Specification amendment request has been submitted to correct the degraded voltage relay setpoints and is waiting for NRC approval prior to changing the acceptance criteria in 32ST-9ZZ03. APS has been administratively controlling the as-left degraded voltage relay setpoints at the high end of the acceptance criteria band. This issue and interim resolution was the subject of a previous non-cited violation (528/91-35-01), in which APS was encouraged to continue the practice until the licensing basis for the setpoint was resolved. APS agrees that 32ST-9ZZ03 does not contain appropriate acceptance criteria. APS disagrees with the conclusion that administratively controlling the degraded voltage relay setpoints at the high end of the band, until the Technical Specification amendment request is approved, is an example of an additional violation of 10 CFR 50, Appendix B, Criterion XI. A

historical review of the degraded voltage relay settings confirmed that the administrative controls were effective in ensuring that the relays were being properly set at the high end of the band.

The fifth example discusses the use of IST acceptance criteria in Surveillance Tests 43ST-3SP02, "Essential Spray Pond Pump Operability 4.0.5," and 43ST-3EW02, "Essential Cooling Water Pump Operability 4.0.5," to verify Essential Spray Pond (SP) and Essential Cooling Water (EW) pump operability. Technical Specifications do not specify design/operational performance limits for either the SP or EW pumps. The STs incorrectly stated that the purpose of the test was to verify pump operability. In actuality, the purpose of the test was to verify that the SP and EW Pumps met the IST surveillance requirements. Since design/operational limits were not specified in Technical Specifications, routine verification of pump operability based on acceptance criteria derived from system design/operational limits was not considered a surveillance requirement and not included in the 43ST-3SP02 or 43ST-3EW02. The reason for this example of the violation was a procedural deficiency in that performance requirements, not specifically defined in Technical Specifications, were not included in the STs. APS agrees with the conclusion that 43ST-3SP02 and 43ST-3EW02 did not incorporate appropriate acceptance criteria.

The sixth example discusses an eighteen month surveillance requirement to verify that auto-connected loads to each diesel generator do not exceed the continuous rating of

5500 kW. Step 8.8.28 of procedure 73ST-3DG01, "Class 1E Diesel Generator and Integrated Safeguards Surveillance Test" verifies that auto-connected diesel generated loads do not exceed 5500 kW under test conditions. APS agrees with the conclusion that 73ST-3DG01 did not incorporate appropriate acceptance criteria. Test conditions differ from design accident conditions in that several operating pumps are lined up on minimum flow recirculation (establishing design accident conditions during the performance of 73ST-3DG01 is not practical). As a result, the auto-connected diesel generator loads are substantially less than 5500 kW. The reason for this example of the violation was a procedural deficiency in that a surveillance requirement was developed for a design consideration which could not readily be demonstrated under normal operating or testing conditions and the test procedure did not compensate for the difference with respect to the reduced loading under test conditions.

The seventh example discusses a post-maintenance test that failed to verify that a control room damper and actuator had been correctly reassembled following preventive maintenance. The post-maintenance test relied on control room position indication (which was sensed off the damper actuator) instead of actual damper position. The mechanical linkage between the actuator and the damper was not properly reconnected following the maintenance activity and as a result of the inadequate post-maintenance test, remained undetected until the next quarterly preventive maintenance task was performed on the damper. The reasons for this example of the violation were personnel error by maintenance technicians who improperly reassembled the damper (i.e., the

actuator linkage was not connected to the damper) following preventive maintenance and procedural deficiency in that the retest involved observation of remote control room indication which sensed the position of the actuator not the position of the damper. APS agrees with the conclusion that the preventive maintenance task did not incorporate appropriate acceptance criteria.

Corrective Actions Taken and Results Achieved

From a generic perspective, the following corrective actions have been taken. These actions were taken prior to the special testing programs team inspection as a result of APS self-assessments.

- A revised approach to post-modification testing (design validation testing) was developed. The new design validation testing approach was implemented in December 1993, and training was provided to individuals involved in post-modification testing.
- Training was provided to plant personnel involved in post-maintenance testing to reinforce the purpose and proper methods to develop and implement post-maintenance testing.

The following corrective actions have been taken to address the specific examples:

- Procedure 39AC-9ZZ02 was revised. Stroke time acceptance testing must be considered following any motor pinion, worm shaft, or worm gear replacement. (Example 1)
- Procedure 32MT-9ZZ56, "Motor Operator Valve Testing Using MOVATS Series 3000/3386 Systems" was revised. As-found and as-left stroke times are compared and Valve Services Engineering is required to review significant stroke time differences and verify MOV stroke time acceptability. (Example 1)
- Procedure 32ST-9ZZ03 was revised to proceduralized a caution to set the degraded voltage relays at the high end of the band. (This is an interim action taken until the Technical Specification amendment request is approved by the NRC and 32ST-9ZZ03 is revised to incorporate the approved appropriate acceptance criteria). (Example 4)
- Diesel Generator Loading Calculation, "13-EC-MA-221" was reviewed to verify auto-connected loads were accounted for and did not exceed 5500 kW under worst case accident conditions. (Example 6)

- A Licensee Event Report (LER) 528/94-004-00, "Control Room Isolation Damper Not Reconnected Following Preventive Maintenance" was submitted to report a condition prohibited by Technical Specifications. Specific corrective actions such as changes made to the preventive maintenance task have been completed and were documented in the LER. (Example 7)

Corrective Actions That Will Be Taken To Avoid Further Violations

To avoid further violations for failing to incorporate appropriate acceptance criteria in testing documents, a single point owner of the Test Program (Test Program Leader) was established. The Test Program Leader will ensure portions of the Test Program, such as the development and incorporation of appropriate acceptance criteria into testing documents, are effectively implemented. The Test Program Leader will set and reinforce the standards and expectations of the Test Program, providing consistency across organizational boundaries. The actions listed below will be completed by November 15, 1994.

- Section 17.2 of the Updated Final Safety Analysis Report will be revised to assign responsibility for the testing program to the Director, System Engineering.
- The Test Program will be documented in an appropriate procedure.

Procedures 4(X)ST-(X)SP02 and 4(X)ST-(X)EW02 will be revised to include appropriate acceptance criteria (derived from design/operational performance data) and instrument uncertainty allowances by October 25, 1994. The revised procedures will also include clarification relative to the purpose of the tests. (Example 5)

Procedures 73ST-(X)DG01 will be revised prior to performing the surveillance during each units' next refueling outage (1R5, 2R5, and 3R5). The revised procedures will contain appropriate acceptance criteria for verifying the auto-connected diesel generator loads do not exceed 5500 kW. In the future, APS may pursue a Technical Specification change to delete the surveillance requirement to verify the auto-connected diesel generator loads do not exceed 5500 kW. This surveillance requirement is no longer included in the Standard Technical Specifications. (Example 6)

Date When Full Compliance Will Be Achieved

For the first example, full compliance was achieved on June 3, 1994, when new stroke times for 3JAFBUV0034 and 3JAFBUV0035 were calculated and included in 39AC-9ZZ02.

For the second example, APS was in full compliance at all times.

For the third example, APS was in full compliance at all times.

For the fourth example, APS will be in full compliance within 30 days following the approval of the Technical Specification amendment requests submitted to correct the degraded voltage relay setpoints. Following approval of the Technical Specification amendment request, APS will revise 32ST-9ZZ03 and incorporate the approved range for setting the degraded voltage relays.

For the fifth example, APS will be in full compliance October 25, 1994, when 4(X)ST-(X)SP02 and 4(X)ST-(X)EW02 are revised to include appropriate acceptance criteria and include an allowance for instrument error.

For the sixth example, APS will be in full compliance prior to performing 73ST-(X)DG01 during each units' next refueling outage (1R5, 2R5, and 3R5).

For the seventh example, full compliance was achieved on May 10, 1994, when the actuator was stroked, the linkage was reconnected, the revised retest was completed, and the damper was declared operable.

Reply to Notice of Violation (C) 50-530/94-12-04Reason for the Violation

The reason for the violation was personnel error by maintenance technicians who performed work steps out of sequence rendering the valve inoperable. Following reassembly of the butterfly valve, mechanical maintenance technicians performed the retest of the valve, out of sequence, and verified that it was working properly. Subsequent to the reassembly, electrical maintenance technicians installed the limit switches for the same valve, but failed to perform the retest because the steps were already signed off.

Contributing to the event was the retest step, which was in the body of the work document, was not included or referenced in the retest section.

Corrective Actions Taken and Results Achieved

The maintenance instruction writer's guide was updated to require that retests be either listed or referenced in the retest section of the work documents, ensuring that retests are performed when work is completed.

The master work document was modified such that a caution step was added to ensure that the butterfly linkage was properly installed, and the retest was restated in the retest section.

Corrective Actions That Will Be Taken To Avoid Further Violations

No further corrective action is required

Date When Full Compliance Will Be Achieved

Full compliance was achieved on May 11, 1994, when the retest step was reperformed and the butterfly valve was restored to operable status.

Reply to Notice of Violation (D) 50-528/529/530/94-12-05Reason for the Violation

APS admits the violation.

The NOV cites two examples of violations of 10 CFR 50.59. The first example occurred when the motor-operated steam stop valves' performance requirements were expanded without explicitly addressing the containment isolation function of the valves. The 10 CFR 50.59 screening concluded that no change to the facility as described in the UFSAR, was involved. As a result, a written safety evaluation was not performed to provide the basis for the determination that a change did not involve an unreviewed safety question. The second example was that the minimum required spray inventory was changed from 27 days to 26 days representing a decrease in the margin of safety as defined in the Technical Specification bases and prior Commission approval of this change was not requested. While either example can be attributed to one or more causes, collectively, the reason for the violation is a weakness in the implementation of the 10 CFR 50.59 program at PVNGS. An evaluation performed by Nuclear Assurance identified that screenings do not always consider a broad based perspective. In addition, the NRC stated that there is not a clear understanding of what an unreviewed safety question is.



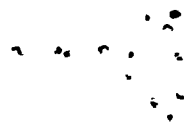
Corrective Actions Taken and Results Achieved

The Department Leader, Nuclear Regulatory Affairs, is designated as the 10 CFR 50.59 Program Leader and is ultimately responsible for ensuring appropriate program implementation effectiveness and necessary improvements. In order to reinforce the expectations of the 10 CFR 50.59 Program, the administrative procedure has been strengthened to ensure appropriate program implementation effectiveness and to more clearly communicate the regulatory requirements and APS' expectations for performing 10 CFR 50.59 screenings and evaluations. Qualified 10 CFR 50.59 screeners, evaluators, and reviewers have been notified of the findings identified by both the NRC and Nuclear Assurance.

The 10 CFR 50.59 evaluation for the change to the spray pond availability has been revised to identify that the change is a reduction in the margin of safety.

Corrective Actions That Will Be Taken To Avoid Further Violations

The 10 CFR 50.59 evaluations for the auxiliary feedwater (AFW) valves are being revised to incorporate the valves' containment isolation requirements. These changes are expected to be completed by September 13, 1994.



Requalification training for 10 CFR 50.59 screeners, evaluators, and reviewers is being developed. The requalification training will include a discussion of industry and PVNGS experience, examples of well written and poorly written 10 CFR 50.59 screenings and evaluations, including unreviewed safety questions, and a discussion of management's expectations regarding the importance and rigor for 10 CFR 50.59 compliance. The requalification training is expected to be completed by January 1995.

Date When Full Compliance Will Be Achieved

Full compliance will be achieved on or before September 13, 1994, when the 10 CFR 50.59 evaluations for the AFW valves are completed.



PRIORITY 1
(ACCELERATED RIDS PROCESSING)

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

SESSION NBR: 9408300070 DOC. DATE: 94/08/23 NOTARIZED: NO DOCKET #
ACIL: STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528
STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529
STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Publi 05000530
AUTH. NAME AUTHOR AFFILIATION
STEWART, W.L. Arizona Public Service Co. (formerly Arizona Nuclear Power
RECIP. NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Responds to NRC 940724 ltr re violations noted in insp repts
50-528/94-12, 50-529/94-12 & 50-530/94-12. Corrective actions:
revised approach to post-mod testing developed & training
provided to individuals involved in post-mod testing.

DISTRIBUTION CODE: IE01D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 27
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NOTES: STANDARDIZED PLANT 05000528
Standardized plant. 05000529
Standardized plant. 05000530

RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
PD4-2 PD	1 1	HOLIAN, B	1 1
TRAN, L	1 1		
INTERNAL: ACRS	2 2	AEOD/DEIB	1 1
AEOD/SPD/RAB	1 1	AEOD/SPD/RRAB	1 1
AEOD/TTC	1 1	DEDRO	1 1
NRR/DORS/OEAB	1 1	NRR/DRCH/HHFB	1 1
NRR/PMAS/IRCB-E	1 1	NUDOCS-ABSTRACT	1 1
OE DIR	1 1	OGC/HDS2	1 1
REG FILE 02	1 1	RES/HFB	1 1
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EXECUTIVE VICE PRESIDENT
NUCLEAR

102-03091-WLS/AKK/DLK
August 23, 1994

U. S. Nuclear Regulatory Commission
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Reference: Letter 102-03072-WLS/AKK/PJC dated August 1, 1994, from W. L. Stewart, Executive Vice President, Nuclear, APS, to U. S. Nuclear Regulatory Commission, Document Control Desk, " Reply to Notice of Violation 50-530/94-13-02 and Notice of Deviation 50-528/94-13-01"

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Reply to Notice of Violations 50-528/529/530/94-12-01,
50-530/94-12-03, 50-530/94-12-04, and 50-528/529/530/94-12-05
File: 94-070-026

Arizona Public Service Company (APS) has reviewed NRC Inspection Report 50-528/529/530/94-12 and the Notice of Violations (NOV) dated July 24, 1994. Pursuant to the provisions of 10 CFR 2.201, APS' responses are enclosed. Enclosure 1 to this letter is a restatement of the NOV's. APS' responses are provided in Enclosure 2.

Throughout the inspection report, the NRC team noted that the APS testing programs and administrative procedures appear to be well defined, and the NRC has credited APS for performing aggressive assessments in the retest area and aggressively monitoring the implementation and effectiveness of the corrective actions taken. However, a need exists for additional attention to program implementation, primarily testing.

In an effort to resolve these concerns and to improve on the implementation of the existing Test Program, APS recognized that the program required clear ownership and selected as the Test Program Leader, the Director, System Engineering. The Test Program Leader is ultimately responsible for ensuring effective program implementation and making necessary improvements. This responsibility would include setting and reinforcing the standards and expectations of the Test Program, and developing a team concept across organizational boundaries to ensure these expectations are understood and met. In addition, the Test Program Leader will monitor the performance of the

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U. S. Nuclear Regulatory Commission

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Reply to NOVs 50-528/529/530/94-12-01, 50-530/94-12-03, 50-530/94-12-04,
and 50-528/529/530/94-12-05

Page 2

program, periodically evaluate the program (self-assessment), and make appropriate adjustments as necessary.

APS recognized the need for improved effectiveness of the Corrective Action Program, which the NRC also identified during this inspection. As discussed in the referenced response to a previous NOV, action assignments and implementation schedules are being developed. As part of the improved corrective action program, effectiveness reviews following the completion of corrective actions are expected to be performed to ensure that the implementation of the Test Program, as well as other key programs, fulfills the program's intent and expectations as defined by the procedures.

Should you have any questions, please contact Angela K. Krainik at (602) 393-5421.

Sincerely,



WLS/AKK/DLK/rv

Enclosures:

1. Restatement of Notice of Violations
2. Reply to Notice of Violations

cc: L. J. Callan
K. E. Perkins
B. E. Holian
K. E. Johnston



ENCLOSURE 1

RESTATEMENT OF NOTICE OF VIOLATIONS

50-528/529/530/94-12-01, 50-530/94-12-03, 50-530/94-12-04, AND

50-528/529/530/94-12-05

NRC INSPECTION CONDUCTED APRIL 25 THROUGH

MAY 27, 1994

INSPECTION REPORT NOS. 50-528/529/530/94-12



**Restatement of Notice of Violations 50-528/529/530/94-12-01,
50-530/94-12-03, 50-530/94-12-04, and 50-528/529/530/94-12-05**

During an NRC inspection conducted on April 25 through May 27, 1994, four violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedures for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, the violations are listed below:

- A. Section 3.9.8.2 of the Palo Verde, Unit 3, Technical Specifications states that two independent shutdown cooling loops shall be operable and at least one shutdown cooling loop shall be in operation when the unit is in Mode 6 with the water level less than 23 feet above the top of the reactor pressure vessel flange.

Section 1.19 of the Technical Specification states that a component shall be operable when it is capable of performing its specified function, and when electrical power and other necessary auxiliary equipment are capable of performing their related support functions.

Action a of Technical Specification 3.9.8.2 states that, when less than the required shutdown cooling loops are operable, immediate action shall be initiated to return the required loops to operable status, or to establish at least 23 feet of water above the reactor pressure vessel flange, as soon as possible.

Contrary to the above, the feeder breaker for the Train A low pressure safety injection pump was racked into the test position on May 12, 1994, rendering the associated shutdown cooling loop inoperable, and immediate action was not initiated to restore the shutdown cooling loop to service or to establish at least 23 feet of water above the reactor pressure vessel flange.

This is a Severity Level IV violation, applicable to Unit 3 (Supplement I) (530/9412-03).



- B. Criterion XI of 10 CFR 50, Appendix B, "Test Control," requires that a test program be established to assure that required testing is identified and performed in accordance with written procedures which incorporate the requirements and acceptance limits contained in applicable design documents.

Contrary to this requirement, test procedures did not incorporate appropriate acceptance criteria as follows:

1. Post-maintenance or post-modification testing after the following changes in motor-operated valve operator gear ratios was performed using normal inservice tests, which verified that valve stroke time was still within operational limits, but did not confirm that the desired change in stroke time had actually been accomplished:
 - Gear ratio changes to decrease the closing time of Auxiliary Feedwater Discharge Isolation Valve JAFBUV0034 and JAFBUV0035 from 14.5 to 13.5 seconds, performed pursuant to LDCP 1/2/3LM-AF-102, completed in Unit 3 on May 19, 1994, respectively.
 - Gear ratio changes to increase valve opening time from 3.5 to 4.5 seconds for certain motor-operated valve operators specified in Work Order 00660155, completed on May 18, 1994.
 - Gear ratio changes for reactor coolant pump controlled bleedoff valves, to increase their closing times from 6.5 to 11 seconds, pursuant to Work Orders 00653367, 00653513, 00653521, and 00653523, completed between May 4 and 17, 1994.
2. As of May 12, 1994, Procedure 32ST-9ZZ03, "Surveillance Test Procedures for Class 4160 Bus Undervoltage Relays," Revision 5.06, contained inappropriate criteria for verifying and establishing the setpoints for the degraded voltage relays, in that these criteria would have permitted degraded voltage relay setpoints to be left or established at values as low as 3150 volts, although licensee design documents showed that setpoints at or near 3744 volts were required to provide acceptable voltage to safety-related components.
3. As of April 29, 1994, Surveillance Procedures 43ST-3SP-02 [sic], Revision 3, and 43ST-3SW04 [sic], Revision 2, which stated as their purpose to verify operability of the essential spray pond pumps and essential cooling water pumps, respectively, included acceptance criteria which monitored for degradation of pump performance from expected values, but did not verify the ability of the pumps to satisfy their design or



operational performance requirements.

4. Surveillance Test 73ST-3DG01, Revision 5, performed in Unit 3 on May 12, 1994, included inappropriate acceptance criteria to perform the 18-month verification required by Technical Specification 4.8.1.1.2.d.9 that the auto-connected loads to each diesel generator do not exceed the continuous rating of 5500 kW, in that the acceptance criteria did not account for the operation of several safety-related components at less than their design electrical loading during the test.
5. The acceptance criteria for post-maintenance testing following preventive maintenance on Unit 1 control room outside air intake Damper 1MHJB-M03, conducted on February 15, 1994, were not sufficiently specific to verify that the damper actuating linkage had been properly reconnected, with the result that the damper was inoperable until May 10, 1994.

This is a Severity Level IV violation, applicable to Units 1, 2, and 3 (Supplement I) (528;529;530/9412-01).

- C. Criterion XI of 10 CFR 50, Appendix B, "Test Control," requires that a test program be established to assure that required testing is identified and performed in accordance with written test procedures, and that the test program include, as appropriate, operational tests of components during nuclear power plant operation.

Paragraph 3.6.1.3 of the Palo Verde Nuclear Generating Station Operations Quality Assurance Plan states that, "The test program shall cover all required tests including: ...e. Tests to demonstrate satisfactory performance following plant maintenance..."

Contrary to this requirement, appropriate testing to demonstrate satisfactory performance of the Unit 3 Train A diesel generator combustion air intake valve was not performed after the completion of preventive maintenance on April 24, 1994, in that additional maintenance steps following the specified retest invalidated the retest results. As a result, the valve was left in an inoperable configuration and failed during an integrated engineered safety features test on May 12, 1994.

This is a Severity Level IV violation, applicable to Unit 3 (Supplement I) (530/9412-04).



- D. Section 10 CFR 50.59 of the NRC Regulations, states in (a)(1) that the holder of a license may make changes in the facility as described in the safety analysis report, without prior Commission approval, unless the proposed change involves a change in the Technical Specifications or an unreviewed safety question; in (a)(2) that a proposed change shall be deemed to involve an unreviewed safety question "(iii) if the margin of safety as defined in the basis for any technical specification is reduced"; and in (b)(1) that records must include a written safety evaluation which provides the bases for the determination that the change does not involve an unreviewed safety question.

Contrary to these requirements:

1. The performance requirements for Valves SGA-UV135 [sic] and SGA-UV138, motor-operated steam stop valves to the Train A auxiliary feedwater pump turbine in all three units, were changed to require that the valves leak (to keep downstream steam piping warm) in order for the auxiliary feedwater pump to be operable. Although this represented a change to the facility as described in the Table 6.2.4-1 of the UFSAR, which identifies these valves as containment isolation valves, the screening performed on August 13, 1993 [sic], concluded that no change to the facility as described in the FSAR was involved, and a written safety evaluation was not performed to provide the bases for the determination that the change did not involve an unreviewed safety question.
2. The licensee changed the minimum required spray inventory in 1993, based on Calculation 13-MC-SP-307, to 26 days from the 27 days specified in the bases for Technical Specification 3/4.7.5. This represented a decrease in the margin of safety as defined in the Technical Specification bases, and prior Commission approval of this change was not requested.

This is a Severity Level IV violation, applicable to Units 1, 2, and 3 (Supplement I) (528;529;530/9412-05).



ENCLOSURE 2

REPLY TO NOTICE OF VIOLATIONS

50-528/529/530/94-12-01, 50-530/94-12-03, 50-530/94-12-04, AND

50-528/529/530/94-12-05

NRC INSPECTION CONDUCTED APRIL 25 THROUGH

MAY 27, 1994

INSPECTION REPORT NOs. 50-528/529/530/94-12



Reply to Notice of Violation (A) 50-530/94-12-03

Reason for the Violation

APS admits the violation.

During refueling outages, in order to prevent 4.16 kV Low Pressure Safety Injection (LPSI) pump starts while performing Integrated Safeguards Testing, control room operators would rack the pump feeder breaker down into the in-test position. Neither the LPSI pump nor its associated shutdown cooling train were considered inoperable because reasonable assurance existed that credit for manual operator action could be taken in that the breaker could be racked back in within the time period required (i.e., three hours) to initiate shutdown cooling. APS' position was not consistent with the NRC team's position that the associated shutdown cooling train was inoperable because electrical power was not available to the LPSI pump with the breaker racked into the in-test position.

Corrective Actions Taken and Results Achieved

APS' position on crediting manual operator action to maintain systems, structures, and components operable was re-evaluated. As part of the evaluation, several nuclear utilities were surveyed to determine whether APS' position was consistent with those reputed as best practice plants. The survey results indicated that most utilities do credit



manual operator action on manually operated systems while maintaining the systems operable. However, most utilities would have considered the LPSI pump inoperable with the breaker racked into the in-test position. Based on the NRC team's interpretation regarding racked out breakers, and in order to be consistent with best practice plants, APS' operability determination position has been revised. Credit for manual operator action can no longer be taken to maintain 4.16 kV pumps operable when its associated 4.16 kV breaker is taken out of service or racked into the in-test position.

Guidance for use of manual action to maintain operability, has been incorporated into procedure 40DP-9OP26, "Operability Determination."

Corrective Actions That Will Be Taken To Avoid Further Violations

Training is being provided to the licensed operators on procedure 40DP-9OP26, "Operability Determination," with emphasis on APS' revised position, as part of continuing training. Training will be completed by September 30, 1994.



Date When Full Compliance Will Be Achieved

Full compliance was achieved on May 12, 1994, when the 4.16 kV LPSI pump breakers were racked back into position. In addition, APS will submit a Licensee Event Report within 30 days to comply with the reporting requirements of 10 CFR 50.73(a)(2)(i)(B), to report a condition prohibited by the plant's Technical Specifications.

Reply to Notice of Violation (B) 50-528/529/530/94-12-01

Reason for the Violation

The NOV cites seven examples, within five subsections of violations of Criterion XI of 10 CFR 50, Appendix B where post-maintenance, post-modification, preventive maintenance, and surveillance testing procedures did not incorporate appropriate acceptance criteria. APS admits the overall violation, however, there is some disagreement on three of the examples. While each example can be attributed to one or more reasons, collectively, the reason for the violation is failure to develop acceptance criteria that adequately verifies that the desired results of maintenance, modifications, and testing are achieved.

The first example discusses the use ASME Section XI inservice testing (IST) acceptance criteria to verify that Motor Operated Valve (MOV) gear ratio changes were implemented on 3JAFBUV0034 and 3JAFBUV0035 as specified in a design change package. The reason for this example of the violation was a procedural deficiency in that calculated stroke times for use as acceptance criteria on gear ratio changes were not included in the post-maintenance retest matrix in 39AC-9ZZ02, "Valve Services Maintenance." The MOV stroke times available for use as acceptance criteria, at the time the modification was developed, were defined in the IST Program. APS agrees with the conclusion that the design change package did not incorporate appropriate acceptance criteria.



The second example discusses a gear ratio change implemented on 3JSGAUV0134 under Work Order (WO) 00660155. The operator for 3JSGAUV0134 is a Direct Current (DC) motor. The expected increase in valve stroke time as a result of the gear ratio change was 1.5 seconds. Changes in packing loads, bus voltage, and line pressure result in significant changes in DC MOV stroke times. Calculating an actual stroke time to determine an associated acceptance criteria, that could detect a 1.5 second stroke time difference and definitively conclude that the stroke time difference was the result of the gear ratio change directly, is not feasible. Specific steps in the body of the WO provided assurance that the intended maintenance was correctly accomplished. As-found and as-left MOVATS test data, along with inspection steps that documented the number of teeth on the original and replacement gears, were included in Section 3.0, "Instructions," and satisfied the intent of a meaningful post maintenance retest. APS disagrees with the conclusion that WO 00660155 did not incorporate appropriate acceptance criteria.

The third example discusses gear ratio changes performed on four reactor coolant pump controlled bleedoff valves, to increase their closing time from 6.5 to 11 seconds. Work was completed under WOs 00653367, 00653513, 00653521, and 00653523. Inspection Report 50-528/529/530/94-12, Section 3.2.1, indicates that "...the post-maintenance testing specified in the work instructions was to verify a closing stroke time of less than 12 seconds (there was no existing inservice test for these valves, so existing inservice testing acceptance criteria could not be used)." The retest section of the WOs listed



above contained a specific step to ensure that the MOVATS as-left testing was completed with satisfactory results, and approved by Valve Services Engineering. The WOs required that the as-left stroke time be recorded and contained a note that stated "Anticipated static time is approx 11 sec." There is no reference in the work instruction section of the WOs to an acceptance criteria less than 12 seconds. APS disagrees with the conclusion that WOs 00653367, 00653513, 00653521, and 00653523 did not incorporate appropriate acceptance criteria.

The fourth example discusses the acceptance criteria in Surveillance Test (ST) 32ST-9ZZ03, "Surveillance Test Procedure for Class 4160 Bus Undervoltage Relays." APS recognizes that the setpoints specified in Technical Specifications for the degraded voltage relays are not correct. A Technical Specification amendment request has been submitted to correct the degraded voltage relay setpoints and is waiting for NRC approval prior to changing the acceptance criteria in 32ST-9ZZ03. APS has been administratively controlling the as-left degraded voltage relay setpoints at the high end of the acceptance criteria band. This issue and interim resolution was the subject of a previous non-cited violation (528/91-35-01), in which APS was encouraged to continue the practice until the licensing basis for the setpoint was resolved. APS agrees that 32ST-9ZZ03 does not contain appropriate acceptance criteria. APS disagrees with the conclusion that administratively controlling the degraded voltage relay setpoints at the high end of the band, until the Technical Specification amendment request is approved, is an example of an additional violation of 10 CFR 50, Appendix B, Criterion XI. A



historical review of the degraded voltage relay settings confirmed that the administrative controls were effective in ensuring that the relays were being properly set at the high end of the band.

The fifth example discusses the use of IST acceptance criteria in Surveillance Tests 43ST-3SP02, "Essential Spray Pond Pump Operability 4.0.5," and 43ST-3EW02, "Essential Cooling Water Pump Operability 4.0.5," to verify Essential Spray Pond (SP) and Essential Cooling Water (EW) pump operability. Technical Specifications do not specify design/operational performance limits for either the SP or EW pumps. The STs incorrectly stated that the purpose of the test was to verify pump operability. In actuality, the purpose of the test was to verify that the SP and EW Pumps met the IST surveillance requirements. Since design/operational limits were not specified in Technical Specifications, routine verification of pump operability based on acceptance criteria derived from system design/operational limits was not considered a surveillance requirement and not included in the 43ST-3SP02 or 43ST-3EW02. The reason for this example of the violation was a procedural deficiency in that performance requirements, not specifically defined in Technical Specifications, were not included in the STs. APS agrees with the conclusion that 43ST-3SP02 and 43ST-3EW02 did not incorporate appropriate acceptance criteria.

The sixth example discusses an eighteen month surveillance requirement to verify that auto-connected loads to each diesel generator do not exceed the continuous rating of



5500 kW. Step 8.8.28 of procedure 73ST-3DG01, "Class 1E Diesel Generator and Integrated Safeguards Surveillance Test" verifies that auto-connected diesel generated loads do not exceed 5500 kW under test conditions. APS agrees with the conclusion that 73ST-3DG01 did not incorporate appropriate acceptance criteria. Test conditions differ from design accident conditions in that several operating pumps are lined up on minimum flow recirculation (establishing design accident conditions during the performance of 73ST-3DG01 is not practical). As a result, the auto-connected diesel generator loads are substantially less than 5500 kW. The reason for this example of the violation was a procedural deficiency in that a surveillance requirement was developed for a design consideration which could not readily be demonstrated under normal operating or testing conditions and the test procedure did not compensate for the difference with respect to the reduced loading under test conditions.

The seventh example discusses a post-maintenance test that failed to verify that a control room damper and actuator had been correctly reassembled following preventive maintenance. The post-maintenance test relied on control room position indication (which was sensed off the damper actuator) instead of actual damper position. The mechanical linkage between the actuator and the damper was not properly reconnected following the maintenance activity and as a result of the inadequate post-maintenance test, remained undetected until the next quarterly preventive maintenance task was performed on the damper. The reasons for this example of the violation were personnel error by maintenance technicians who improperly reassembled the damper (i.e., the



actuator linkage was not connected to the damper) following preventive maintenance and procedural deficiency in that the retest involved observation of remote control room indication which sensed the position of the actuator not the position of the damper. APS agrees with the conclusion that the preventive maintenance task did not incorporate appropriate acceptance criteria.

Corrective Actions Taken and Results Achieved

From a generic perspective, the following corrective actions have been taken. These actions were taken prior to the special testing programs team inspection as a result of APS self-assessments.

- A revised approach to post-modification testing (design validation testing) was developed. The new design validation testing approach was implemented in December 1993, and training was provided to individuals involved in post-modification testing.
- Training was provided to plant personnel involved in post-maintenance testing to reinforce the purpose and proper methods to develop and implement post-maintenance testing.



The following corrective actions have been taken to address the specific examples:

- Procedure 39AC-9ZZ02 was revised. Stroke time acceptance testing must be considered following any motor pinion, worm shaft, or worm gear replacement. (Example 1)
- Procedure 32MT-9ZZ56, "Motor Operator Valve Testing Using MOVATS Series 3000/3386 Systems" was revised. As-found and as-left stroke times are compared and Valve Services Engineering is required to review significant stroke time differences and verify MOV stroke time acceptability. (Example 1)
- Procedure 32ST-9ZZ03 was revised to proceduralized a caution to set the degraded voltage relays at the high end of the band. (This is an interim action taken until the Technical Specification amendment request is approved by the NRC and 32ST-9ZZ03 is revised to incorporate the approved appropriate acceptance criteria). (Example 4)
- Diesel Generator Loading Calculation, "13-EC-MA-221" was reviewed to verify auto-connected loads were accounted for and did not exceed 5500 kW under worst case accident conditions. (Example 6)



- A Licensee Event Report (LER) 528/94-004-00, "Control Room Isolation Damper Not Reconnected Following Preventive Maintenance" was submitted to report a condition prohibited by Technical Specifications. Specific corrective actions such as changes made to the preventive maintenance task have been completed and were documented in the LER. (Example 7)

Corrective Actions That Will Be Taken To Avoid Further Violations

To avoid further violations for failing to incorporate appropriate acceptance criteria in testing documents, a single point owner of the Test Program (Test Program Leader) was established. The Test Program Leader will ensure portions of the Test Program, such as the development and incorporation of appropriate acceptance criteria into testing documents, are effectively implemented. The Test Program Leader will set and reinforce the standards and expectations of the Test Program, providing consistency across organizational boundaries. The actions listed below will be completed by November 15, 1994.

- Section 17.2 of the Updated Final Safety Analysis Report will be revised to assign responsibility for the testing program to the Director, System Engineering.
- The Test Program will be documented in an appropriate procedure.

Procedures 4(X)ST-(X)SP02 and 4(X)ST-(X)EW02 will be revised to include appropriate acceptance criteria (derived from design/operational performance data) and instrument uncertainty allowances by October 25, 1994. The revised procedures will also include clarification relative to the purpose of the tests. (Example 5)

Procedures 73ST-(X)DG01 will be revised prior to performing the surveillance during each units' next refueling outage (1R5, 2R5, and 3R5). The revised procedures will contain appropriate acceptance criteria for verifying the auto-connected diesel generator loads do not exceed 5500 kW. In the future, APS may pursue a Technical Specification change to delete the surveillance requirement to verify the auto-connected diesel generator loads do not exceed 5500 kW. This surveillance requirement is no longer included in the Standard Technical Specifications. (Example 6)

Date When Full Compliance Will Be Achieved

For the first example, full compliance was achieved on June 3, 1994, when new stroke times for 3JAFBUV0034 and 3JAFBUV0035 were calculated and included in 39AC-9ZZ02.

For the second example, APS was in full compliance at all times.

For the third example, APS was in full compliance at all times.



For the fourth example, APS will be in full compliance within 30 days following the approval of the Technical Specification amendment requests submitted to correct the degraded voltage relay setpoints. Following approval of the Technical Specification amendment request, APS will revise 32ST-9ZZ03 and incorporate the approved range for setting the degraded voltage relays.

For the fifth example, APS will be in full compliance October 25, 1994, when 4(X)ST-(X)SP02 and 4(X)ST-(X)EW02 are revised to include appropriate acceptance criteria and include an allowance for instrument error.

For the sixth example, APS will be in full compliance prior to performing 73ST-(X)DG01 during each units' next refueling outage (1R5, 2R5, and 3R5).

For the seventh example, full compliance was achieved on May 10, 1994, when the actuator was stroked, the linkage was reconnected, the revised retest was completed, and the damper was declared operable.



Reply to Notice of Violation (C) 50-530/94-12-04

Reason for the Violation

The reason for the violation was personnel error by maintenance technicians who performed work steps out of sequence rendering the valve inoperable. Following reassembly of the butterfly valve, mechanical maintenance technicians performed the retest of the valve, out of sequence, and verified that it was working properly. Subsequent to the reassembly, electrical maintenance technicians installed the limit switches for the same valve, but failed to perform the retest because the steps were already signed off.

Contributing to the event was the retest step, which was in the body of the work document, was not included or referenced in the retest section.

Corrective Actions Taken and Results Achieved

The maintenance instruction writer's guide was updated to require that retests be either listed or referenced in the retest section of the work documents, ensuring that retests are performed when work is completed.



The master work document was modified such that a caution step was added to ensure that the butterfly linkage was properly installed, and the retest was restated in the retest section.

Corrective Actions That Will Be Taken To Avoid Further Violations

No further corrective action is required

Date When Full Compliance Will Be Achieved

Full compliance was achieved on May 11, 1994, when the retest step was reperformed and the butterfly valve was restored to operable status.



Reply to Notice of Violation (D) 50-528/529/530/94-12-05

Reason for the Violation

APS admits the violation.

The NOV cites two examples of violations of 10 CFR 50.59. The first example occurred when the motor-operated steam stop valves' performance requirements were expanded without explicitly addressing the containment isolation function of the valves. The 10 CFR 50.59 screening concluded that no change to the facility as described in the UFSAR, was involved. As a result, a written safety evaluation was not performed to provide the basis for the determination that a change did not involve an unreviewed safety question. The second example was that the minimum required spray inventory was changed from 27 days to 26 days representing a decrease in the margin of safety as defined in the Technical Specification bases and prior Commission approval of this change was not requested. While either example can be attributed to one or more causes, collectively, the reason for the violation is a weakness in the implementation of the 10 CFR 50.59 program at PVNGS. An evaluation performed by Nuclear Assurance identified that screenings do not always consider a broad based perspective. In addition, the NRC stated that there is not a clear understanding of what an unreviewed safety question is.



Corrective Actions Taken and Results Achieved

The Department Leader, Nuclear Regulatory Affairs, is designated as the 10 CFR 50.59 Program Leader and is ultimately responsible for ensuring appropriate program implementation effectiveness and necessary improvements. In order to reinforce the expectations of the 10 CFR 50.59 Program, the administrative procedure has been strengthened to ensure appropriate program implementation effectiveness and to more clearly communicate the regulatory requirements and APS' expectations for performing 10 CFR 50.59 screenings and evaluations. Qualified 10 CFR 50.59 screeners, evaluators, and reviewers have been notified of the findings identified by both the NRC and Nuclear Assurance.

The 10 CFR 50.59 evaluation for the change to the spray pond availability has been revised to identify that the change is a reduction in the margin of safety.

Corrective Actions That Will Be Taken To Avoid Further Violations

The 10 CFR 50.59 evaluations for the auxiliary feedwater (AFW) valves are being revised to incorporate the valves' containment isolation requirements. These changes are expected to be completed by September 13, 1994.



Requalification training for 10 CFR 50.59 screeners, evaluators, and reviewers is being developed. The requalification training will include a discussion of industry and PVNGS experience, examples of well written and poorly written 10 CFR 50.59 screenings and evaluations, including unreviewed safety questions, and a discussion of management's expectations regarding the importance and rigor for 10 CFR 50.59 compliance. The requalification training is expected to be completed by January 1995.

Date When Full Compliance Will Be Achieved

Full compliance will be achieved on or before September 13, 1994, when the 10 CFR 50.59 evaluations for the AFW valves are completed.

