

U. S. NUCLEAR REGULATORY COMMISSION
REGION V

Report Nos: 50-528/85-13, 50-529/85-17

Docket Nos: 50-528, 50-529

License Nos.: NPF-41; CPPR-142

Licensee: Arizona Nuclear Power Project
P. O. Box 52034
Phoenix, AZ. 85072-2034

Facility Name: Palo Verde Nuclear Generating Station Units 1 & 2

Inspection Conducted: April 29, - June 2, 1985

Inspectors:

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R. Zimmerman, Senior
Resident Inspector

7/02/85
Date Signed

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7/02/85
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Summary:

Inspection on April 29 - June 2, 1985 (Report Nos. 50-528/85-13 and 50-529/
85-17)

Areas Inspected: Routine, onsite, regular and backshift inspection by the three resident inspectors (Unit 1 - 283 hours; Unit 2 - 128 hours). Areas inspected included: review of plant activities, surveillance testing, plant maintenance, preoperational testing activities, allegation followup, Unit 1 license commitment followup, Engineered Safety Features (ESF) configurations, Licensee Event Reports, fitness for duty program; periodic and special reports and plant tours.

Results: Of the eleven areas inspected, no violations were identified.

DETAILS

1. Persons Contacted:

The below listed technical and supervisory personnel were among those contacted:

Arizona Nuclear Power Project (ANPP)

*R. Adney,	Operations Superintendent, Unit 2
J. Allen,	Operations Manager
L. Auterino,	Nuclear Steam Supply System Test Supervisor, Unit-2
*J. R. Bynum,	PVNGS Plant Manager
*J. Donahue,	Shift Test Director Supervisor
*W. Fernow,	Plant Services Manager
R. Gouge,	Operations Supervisor, Unit 1
F. Hicks,	Training Manager
*W. E. Ide,	Corporate Quality Assurance Manager
*D. B. Karner,	Assistant Vice President, Nuclear Production
R. Meyer	Fire Protection Supervisor
*D. Nelson,	Operations Security Manager
*R. Nelson,	Maintenance Manager
J. Pollard,	Operations Supervisor, Unit 2
*C. Russo,	Quality Audits Manager
T. Shriver,	Quality Systems and Engineering Manager
L. Souza,	Assistant Quality Assurance Manager
*E. E. Van Brunt, Jr.,	Executive Vice President
*R. Younger,	Operations Superintendent, Unit 1
*O. Zeringue,	Technical Support Manager

The inspectors also talked with other licensee and contractor personnel during the course of the inspection.

*Attended the Exit Meeting on June 5, 1985.

2. Review of Plant Activities (Including Initial Criticality at Unit 1)

- a. At the start of the inspection period Unit 1 was in Mode 4, and entered Mode 3 on April 29, 1985 for post core hot functional testing. Testing was completed on May 15, 1985. The plant was cooled down to Mode 5 on May 16 to replace two weeping pressurizer code safety valves and two main steam safety valves. The plant entered Mode 4 on May 20, and initial criticality was achieved at 1:45 AM, May 25 with the reactor coolant system at 320 F and 600 psi. Low power physics testing was performed from May 25 through June 1, 1985. Inspection findings and conclusions associated with the licensee's performance during initial criticality and low power physics testing will be documented in NRC Inspection Report 50-528/85-12.

Unit 2 continued to perform preoperational tests in preparation for the Hot Functional Test which is scheduled for June, 1985.

- b. An Unusual Event was declared on May 5, 1985 when the plant security computer did not return to service as expected after a planned electrical outage. All security compensatory measures were established as required by the station's security plan.

- c. Plant Tours

The following plant areas at Units 1 and 2 were toured by the inspector during the inspection:

- o Auxiliary Building
- o Containment Building
- o Control Complex Building
- o Diesel Generator Building
- o Radwaste Building
- o Technical Support Center
- o Turbine Building
- o Yard Area and Perimeter

- d. The following areas were observed during the tours:

1. Operating Logs and Records. Records were reviewed against Technical Specification and administrative control procedure requirements. During a review of Unit 1 Control Room and Unit logs, the inspector noted that some Technical Specification action statement times were not being recorded in both logs as required by Administrative Control Procedure 40AC-9ZZ02, Conduct of Shift Operations. The licensee representative stated that the above procedure would be revised so that the action statement times would be required to be recorded only in the Unit log. This item will remain open pending inspector review of the procedure change (85-13-01).
2. Monitoring Instrumentation. Process instruments were observed for correlation between channels and for conformance with Technical Specification requirements.
3. Shift Manning. Control room and shift manning were observed for conformance with 10 CFR 50.54 (k), Technical Specifications, and administrative procedures.
4. Equipment Lineups. Valve and electrical breakers were verified to be in the position or condition required by Technical Specifications and by plant lineup procedures for the applicable plant mode. This verification included routine control board indication reviews and conduct of partial system lineups. Details as provided in paragraph 4.
5. Equipment Tagging. Selected equipment, for which tagging requests had been initiated, was observed to verify that tags were in place and the equipment in the condition specified.

6. Fire Protection. Fire fighting equipment and controls were observed for conformance with Technical Specifications and administrative procedures.
7. Plant Chemistry. Chemical analysis results were reviewed for conformance with Technical Specifications and administrative control procedures.
8. Security. Activities observed for conformance with regulatory requirements, implementation of the site security plan, and administrative procedures included vehicle and personnel access, and protected and vital area integrity.
9. Plant Housekeeping. Plant conditions and material/equipment storage were observed to determine the general state of cleanliness, housekeeping and adherence to fire protection requirements.

No violations or deviations were identified.

3. Surveillance Testing - Unit 1

- a. Surveillance tests required to be performed by the Technical Specifications were reviewed on a sampling basis to verify that:
 - 1) the surveillance tests were correctly included on the facility schedule;
 - 2) a technically adequate procedure existed for performance of the surveillance tests;
 - 3) the surveillance tests had been performed at the frequency specified in the Technical Specifications; and
 - 4) test results satisfied acceptance criteria or were properly dispositioned.

The following completed surveillance tests were reviewed:

41ST-1ZZ16	Routine Surveillance Daily Midnight Log, performed May 6, 9, 13, 1985.
41ST-1ZZ18	Routine Surveillance Mode 1-4 logs, performed May 4, 9, 16, 1985.
41ST-1ZZ19	Routine Surveillance Mode 5-6 performed March 20, and May 19, 1985.
41ST-1RC02	RCS Water Inventory Balance performed April 23 and June 1, 1985.
41ST-1AF02	Auxiliary Feedwater Pump AFP-P01 operability performed May 2, 1985.

During the review of the RCS water inventory balance, the inspector noted an inconsistency in the gallons/percent level between the Appendix C - Volume Control Tank (VCT) Volume versus Percent Level Chart provided in 41ST-1RC02, and that derived in a calculation of volume from the Tank Curve Book located in the Control Room. The inspector calculated that the Appendix C chart would indicate higher total leakage than the tank curve book derivation, which would be conservative; however not accurate. The inspector discussed the matter with licensee representatives and stated that the inconsistency should be evaluated and corrected promptly, if necessary, to

provide an accurate assessment of total RCS leakage. Similarly the Pressurizer, Reactor Drain Tank and Equipment Drain Tank procedural charts for volume/percent level should be reviewed to ensure their accuracy. The licensee's representative acknowledged the inspector's comments and started an immediate review of the leakage procedure. This item remains unresolved pending completion of the licensee's actions and subsequent inspector review (85-13-02).

- b. Portions of the following surveillance tests were observed to verify that: 1) testing was being accomplished by qualified personnel in accordance with approved, technically adequate procedures; 2) the system was properly returned to service; and 3) measuring and test equipment satisfied calibration requirements.

36ST-9ZZ01	Post Accident Monitoring Instrument Calibration observed May 1, 1985.
41ST-1ZZ18	Routine Surveillance Mode 1-4 observed May 7, 1985.
36ST-9SB30	PPS Input Loop Calibration observed May 7, 1985.
41ST-1DG02	"B" Diesel Generator Functional Test observed May 9, 1985.

No violations or deviations were identified.

4. Engineered Safety Features System Walk Down - Unit 1

Engineered Safety Feature Systems were walked down by the inspector to confirm that the systems were aligned in accordance with procedures 41OP-1SI01 "Shutdown Cooling Initiation", 41OP-1DG01 "Emergency Diesel Generator A", and 41OP-1DG02 "Emergency Diesel Generator B". During the walk down of the systems, items such as hangers, supports, electrical cabinets, and cables were inspected to determine that they were operable and in condition to perform their required functions. The inspector also verified that the system valves were in the required position and locked as appropriate. The local and remote position indication and controls were also confirmed to be in the required position and operable. Portions of the following systems were walked down on May 15 and 28, 1985:

High Pressure Safety Injection Trains "A" and "B"
 Low Pressure Safety Injection Trains "A" and "B"
 Containment Spray Systems Trains "A" and "B"
 Diesel Generator Trains "A" and "B"

On May 28, the inspector noted that the motor operated valve LPSI/ Containment Spray Pump Train A cross connect valve, V685, was in the correct position (closed); however, the hand wheel was not locked as required by PVNGS Administrative Control Procedure 40AC-0ZZ06. Upon notification to the Operations Department the hand wheel was immediately locked. The inspector considered this instance to be an isolated case, but stated that implementation of locked valve controls will continue to be reviewed as part of the routine inspection program.

The inspector also noted at this time that a closed out Nonconformance Report (NCR) tag was still affixed to Valve V685. A similar NCR tag was subsequently found on the High Pressure Safety Injection (HPSI) flow

indicator sensing lines. These NCR tags were brought to the attention of licensee management. The licensee informed the inspector that this problem was recently identified by the Quality Assurance Monitoring Group in their Monitoring Report SM-85-0336 dated May 24, 1985. The Quality Assurance monitoring group committed to having the system walked down and invalid tags identified and removed by June 15, 1985. This item will remain open pending followup of the licensee's actions by the inspector (85-13-03).

During the system walkdowns, the inspector noted an excessive number of leaking valves in the Auxiliary Building and Penetration Rooms. The inspector expressed a concern to licensee management that the leaks could lead to radiological difficulties particularly in controlling the spread of contamination in the future. The effects of valve leakage on in-plant radiological conditions will continue to be assessed as part of the routine inspection program.

No violations or deviations were identified.

5. Unit 1 License Commitment Followup:

The licensee's actions regarding the following license commitments were reviewed by the inspector and found acceptable. The reference in parentheses corresponds to the Operating License condition.

a. Response to Salem ATWS Event (2.C.16)

The inspector's review of the licensee's procedures that described the programmatic controls which implement the considerations contained in Generic Letter #83-28 dealing with the Salem ATWS event is documented in NRC inspection report number 50-528/84-51. Since issuance of the report the licensee has made additional commitments to the NRC dealing with reactor restart evaluation criteria, restart review responsibilities, equipment performance evaluations, reactor trip breaker preventative maintenance, and reactor trip breaker surveillance tests. Based on a review of operating, maintenance and surveillance test procedures, the inspector confirmed that the additional commitments have been included in plant procedures. One item dealt with confirmation of system performance with design required clarification, and will be added to the trip evaluation portion of the post trip review procedure.

b. Seismic Qualification and Pump and Valve Operability (2.C.18.b)

This commitment deals in part with the requirement to complete the operability qualification of the containment sump return check valves and the steam bypass supply check valves to the turbine driven auxiliary feedwater pump.

The inspection reviewed the test records which documented the performance of the referenced valves. Each of the tests confirmed that valve operation was as required.

No violations or deviations were identified.

6. Plant Maintenance - Unit 1

- a. During the inspection period, the inspector observed maintenance and problem investigation activities to verify compliance with regulatory requirements, compliance with administrative and maintenance procedures, required QA/QC involvement, proper use of safety tags, proper equipment alignment and use of jumpers, and personnel qualifications. The inspector verified reportability, as required by Technical Specifications for these activities, was correct.
- b. The inspector witnessed portions of the following maintenance activities:
 - o Troubleshooting of a Post Accident Monitoring System ground on May 1, 1985.
 - o Testing of the Control Element Drive Mechanisms per 73HF-1SF11 on May 7, 1985.
 - o Troubleshooting of the "B" Diesel Generator Start Circuitry on May 9, 1985.
 - o Troubleshooting an excore neutron channel "B" log power instrument incorrect reading on May 14, 1985.
 - o Replacement of the vacuum pump on a containment hydrogen monitor per CWO 85903 on May 16, 1985.

No violations or deviations were identified.

7. Review of Preoperational Testing Activities - Unit 2

a. Major Test Activities

The major preoperational test activities in progress during the reporting period were associated with the testing of the Main Feedwater System, Auxiliary Feedwater System, DC Battery System, Chemical and Volume Control System and the Diesel Generator System.

b. Preoperational Test Witnessing

The inspector witnessed portions of the following tests:

93PE-2PK01	- Class 1E 125V DC Power System
91PE-2SP01	- Essential Spray Pond System
91PE-2SG04	- Steam Generator Isolations
91PE-2CH08	- Reactor Drain Tank and Equipment Drain Tank Pumps
92PE-2SB10-1	- Reactor Protection System

The inspector verified that approved procedures were used, test personnel were knowledgeable of the test requirements, and data was properly collected. Procedure changes and test exceptions were identified and significant events were recorded in the test log. Other test related activities such as the use of calibrated M&TE and completion of test prerequisites were also verified to have been accomplished in accordance with administrative control procedures.

c. Nonconformance Condition During Preoperational Testing

During the inspection period, the inspector reviewed a concern that all nonconformance conditions were not being resolved prior to the start of the preoperational test of the subsystem which contained the nonconformance condition. The inspector discussed the matter with Startup and Quality Assurance representatives who confirmed the inspector's understanding that only those nonconformances which impacted on the test validity were required to be completed prior to conducting the portion of the test that would be affected, and that the evaluation of which nonconformances would impact on the preoperational test validity was the responsibility of the Startup engineer in charge of the test.

Based on discussions with APS this program requirement was developed early in the onset of the preoperational test program to implement the following paragraph 17.2.15 FSAR statement "Nonconformance identified prior to the start of a preoperational test will be resolved (i.e. dispositioned prior to the start of the test." Preoperational test program controls also require the retesting of affected portions of systems after resolution of NCR's which are identified after a system is initially tested.

Prior to the start of a preoperational test, all open NCRs associated with a system to be tested were reviewed by the principal Startup Engineer and those affecting the validity of the test results were dispositioned prior to the start of the test. This review was documented in the test packages. The licensee has taken action to submit an FSAR change to clarify the handling of nonconformance conditions as it applies to the preoperational test program and plans to issue additional guidance to the field.

d. Diesel Generator Testing

During the testing of the "B" Diesel Generator, the startup engineer heard anomalous noises from the vicinity of the number 5 cylinder during the shutdown of the engine. An inspection of the cylinder revealed a cracked rocker arm which the licensee believes was caused by an improper installation of the cylinder push rod at the vendor's shop. The rocker area was replaced and the engine retested satisfactorily. This engine had been tested with 300 starts at the vendor's plant. The licensee reported this to the NRC on May 28, 1985 and it will be followed up in a subsequent inspection.

8. Allegations and Inspection Findings

CHARACTERIZATION (RV-84A-0087 Subpart)

On March 28, 1985 an allegation was received regarding a dead weight tester believed to have been manufactured by Ametek, which had been dropped resulting in a bent column during the 1980 - 1981 time frame. The tester was sent to the vendor for repair, and was subsequently returned with a recommendation that it be scrapped due to the severity of damage. The licensee then sent it to another firm located on the west

coast, believed to be Gage Repair Service, that certified the instrument and returned it to the site where it was placed back in service. The dead weight tester in question was believed to have a white ball on top.

IMPLIED SIGNIFICANCE TO PLANT DESIGN, CONSTRUCTION OR OPERATION

The use of a damaged or improperly calibrated dead weight tester to calibrate process instrumentation would cause instruments to give erroneous readings. This in turn could defeat the function of instrumentation designed to indicate or actuate safety related equipment at required process parameter settings.

ASSESSMENT OF SAFETY SIGNIFICANCE

Based on discussions with plant staff and a review of documentation by the inspector, the following information was obtained. Twelve dead weight testers were in service during the period in question (1979-1982). Eight were controlled by the APS M&TE laboratory and four were controlled by the Bechtel M&TE. All of the testers were manufactured by Ametek.

A review of records of the APS controlled testers disclosed no record of damage or equipment returned to Ametek for damage repair. The testers were routinely returned to Ametek for recalibration. Several units were found out of tolerance, requiring adjustment or component replacement. The corrective actions were based on normal usage and wear according to the APS M&TE supervisor and the Ametek documented problem descriptions.

Of the four testers controlled by Bechtel, two utilize hydraulic pressure and two utilize pneumatic pressure (in the pneumatic design a ceramic white ball functions as the surface area to which force is applied). A review by the inspector of documentation associated with the four Bechtel Ametek testers identified only one tester, serial number S/M9302 (hydraulic unit) issued for use on January 22, 1979, as having been damaged shortly after issuance to the field. The instrument's weight tube which supports the weights was damaged and the dead weight tester was shipped to the Ametek company for recalibration. A purchase order was issued for recalibration of the tester on March 1, 1979. The tester could not be recalibrated without being repaired, so APS modified its purchase requisition to include repair of the tester. A copy of the revised purchase requisition was reviewed by the inspector. After being repaired and recalibrated, the tester was returned and received on site on May 4, 1979. Copies of the certification of accuracy for both the 0.01 square inch cylinder and the 0.10 square inch cylinder which are components of the tester and which are used in conjunction with the weight tube were received on site and attested to the required accuracy of the tester. The inspector observed copies of these certifications.

The inspector also observed the notes of recent telephone communications between APS and Ametek in which the Ametek representative reviewed his files and was able to retrieve information substantiating the repair and calibration of tester No. S/M9302. The Ametek representative's review of records could not identify any other testers that had been returned or, received because of damage. This information substantiated the inspectors observations during his review of Bechtel records.

Upon expiration of its calibration period, the tester which had been repaired and calibrated by Ametek was calibrated by another testing firm, Gauge Repair Service of Inglewood, California. A Certification of Accuracy was issued on April 29, 1982. The tester is still located on site and in use.

STAFF POSITION

The inspector could not substantiate the allegation. A damaged dead weight tester which fits the description provided was identified and records were available to indicate the instrument was repaired. Certificates of calibration accuracy were also on record to substantiate proper operation of the instrument.

ACTION REQUIRED

None.

9. Fitness For Duty

The inspector reviewed the results of an investigation initiated by the licensee and the Arizona Department of Public Service which culminated on May 13, 1985 in the arrest of six site employees for the sale of illegal drugs, principally marijuana and cocaine. The sales took place outside the protected area. Thirteen additional site employees were suspended on May 14, 1985 pending further licensee investigation into possession of illegal drugs outside the protected area. On May 21, 1985 four of the thirteen suspended were terminated for possession in the owner controlled property-parking lot outside the protected area. The remaining nine site employees returned to work on May 21, 1985; however, four of the nine individuals perform safety related work and were required to satisfy a urinalysis prior to resumption of those tasks.

The inspector compared the licensee's actions in the above investigation to ANPP policy and implementing procedure 1P703.00 and 1P703.14 which detail the Fitness for Duty Program. The inspector then compared the ANPP policies against the Edison Electric Institute (EEI) Guide to Effective Drug and Alcohol Policy Development which is endorsed by the Nuclear Utility Management and Human Resources Committee (NUMARC). NUMARC has had significant involvement in providing policy and guidance regarding Fitness for Duty to the industry. As a result of the above review, the inspector reached the following conclusions:

- o The licensee's drug investigation appeared well organized and implemented. The existing policy and guidelines regarding the use of drugs off the owner controlled property was limited, requiring considerable licensee deliberation in determining the appropriate personnel actions.
- o Based on discussions with members of Quality Assurance management, the inspector considered appropriate the ongoing actions being taken to ensure that safety was not compromised through work performed by those individuals implicated by the investigation. Actions included interviews with immediate supervision regarding employee performance

and scope of safety-related work activities, if any. Where appropriate, work and/or surveillance testing documentation was reviewed to ensure equipment reliability. No discrepancies were identified during the licensee's review.

- o The ANPP policy and implementing procedures for 1) fitness for duty and 2) drug and alcohol abuse are in substantial agreement with the EEI guidelines.
- o Policy communication to employees warrants improvement. Employees have not been given a copy of the ANPP policy as recommended by EEI. Similarly, the use of bulletin boards and routine site publications are other recommended communication means which have not been used to date.

The licensee desires to complete supervisory training, currently underway on the fitness for duty policy and behavioral reliability, prior to starting extensive employee education so supervisory personnel can respond more efficiently to employee questions.

The inspector will continue to follow the licensee's efforts in training and communicating company fitness for duty policy to site employees. Additionally, revisions to the policy and implementing procedures as a result of experience gained during the recent drug investigation will also be reviewed. (85-13-04)

10. Review of Periodic and Special Reports

Periodic and special reports submitted by the licensee pursuant to Technical Specifications 6.9.1 and 6.9.3 were reviewed by the inspector.

This review included the following considerations: the report contained the information required to be reported by NRC requirements; test results and/or supporting information were consistent with design predictions and performance specifications; and the validity of the reported information. Within the scope of the above, the following reports were reviewed by the inspector.

- o Monthly Operating Reports for April 1985.
- o Notification of Unusual Event of May 5, 1985.

11. Licensed and Non Licensed Training and Retraining

Formal training sessions required by 83TR-0ZZ04 "General Employee Training Pathway" and 82TR-9ZZ03 "Requalification for Licensed Operator Retraining" were monitored by the inspector. The inspector verified that plant personnel who required access into the controlled areas of the plant received training in areas of administrative controls and procedures, radiological health and safety, industrial safety, controlled access and security procedures, and the emergency plan. The inspector also verified that the licensee had prepared a schedule for conducting retraining lectures and that management approved lesson plans were used in the presentation of the retraining lectures. The inspector monitored

several lectures in the General Employee Training and Retraining areas and will continue to monitor training and retraining in the future.

No violations or deviations were identified.

13. Unresolved Items

An unresolved item is a matter about which more information is required in order to ascertain whether it is an acceptable item, an open item, a deviation, or a violation.

12. Exit Meeting

The inspector met with licensee management representatives periodically during the inspection and held an exit on June 5, 1985. The scope of the inspection and the inspector's findings, as noted in this report, were discussed and acknowledged by the licensee representatives.