U.S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos:	50-528/93-09, 50-529/93-09, and 50-530/93-09
Docket Nos:	50-528, 50-529, and 50-530
License Nos:	NPF-41, NPF-51, and NPF-74
Licensee:	Arizona Public Service Company P. O. Box 53999, Station 9082 Phoenix, Arizona 85072-3999
Facility Name:	Palo Verde Nuclear Generating Station Units 1, 2 and 3
Inspection at:	Palo Verde Nuclear Generating Station Units 1, 2, and 3 Wintersburg, Arizona
Inspection Dates:	March 1 through 5, 1993
Inspector:	Michael J. Royack, Reactor Inspector
Approved by:	W. P. Ang, Engineering Section Chief — Date Signed: 3-31-93

Inspection Summary:

An announced routine inspection was conducted at the Palo Verde Nuclear Generating Station during the period of March 1 through 5, 1993, (Report Nos. 50-528/93-09, 50-529/93-09, and 50-530/93-09).

Areas Inspected:

This announced routine engineering inspection reviewed: Palo Verde Nuclear Generating Station fire protection program implementation, followup of previously identified NRC inspection items, and onsite followup of a written report of a non-routine event. NRC Inspection Procedures 64704, 92701, and 92700, were used as guidance for this inspection.

Conclusion:

The licensee had made improvements within the area of fire protection. Improvements were noted in the areas of: fire department training program and procedures, fire department training, fire department emergency communications equipment, control of stored combustible materials in the units, fire protection program management, and maintenance of fire protection equipment for the fire department and in the units.

Increased management attention is required to ensure that adequate review of corrective actions is performed. This inspection and a recent previous NRC inspection (Report 50-528/529/530/92-43) identified closure of documents where corrective actions had not been fully completed.

Strengths and Weaknesses:

Strengths:

- The licensee had made improvements in their fire protection program. These improvements appeared to be the result of continued licensee management attention to the fire protection program.

- The licensee had an organized and qualified on site fire department.

Weaknesses:

- Closure of material non-conformance reports (MNCR's): Personnel closing MNCRs were not adequately verifying that corrective action dispositions were being completed as stated in all MNCR's.

Safety Issues Management System (SIMS) Item:

No SIMS items were reviewed during this inspection.

Significant Safety Matters:

No significant safety matters were identified during this inspection.

Summary of Violations or Deviations:

One violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," was identified during this inspection.

Open Item Summary:

The inspector closed one open item, opened one item, updated dated one item, and closed one LER.

Details

1. Persons Contacted

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

Arizona Public Service

J. Auston, Deputy Chief, Fire Protection Program
*B. Ballard, Director, Nuclear Executive Administration
*T. Bradish, Manager, Nuclear Regulatory Affairs
*R. Bouquot, Supervisor, QA Audits
*D. Crozier, Supervisor, Fire Department Administration
M. Czarnylns, Supervisor, Fire Protection Program
*D. Dailey, Principle Discipline Engineer, Fire Protection Engineering
*R. Fongemie, Engineering Supervisor, Fire Protection Support Services
*R. Fountain, Supervisor, QA Monitoring
A. Folley, Emergency Services Operator, Fire Protection
*F. Garrett, Manager, Fire Protection Program
*J. Irwin, Senior Engineer, Nuclear Regulatory Affairs
S. Koski, Discipline Engineer, Fire Protection Engineering
*W. Montefour, Owner Services Coordinator, Operations Review Group
*E. O'Neill, Senior QA Technical Specialist, QA Monitoring
*G. Overbeck, Director, Nuclear Engineering Department
*M. Powell, Manager, Fire Protection Support Services
*C. Russo, Manager, Quality Control Administration
*J. Stout, Supervisor, Fire Protection Maintenance
*J. Thompson, Technical Management Assistant, Plant Support Administration
D. Webb, Technical Advisor, Fire Protection Program

Non-APS Representatives

*J. Draper, Southern California Edison Site Representative, Operations Review Group
*F. Gowers, El Paso Electric Site Representative, Operations Review Group
*R. Henry, Salt River Project Site Representative, Management Services Administration

NRC

*W. Ang, Engineering Section Chief, Region V
*J. Sloan, Senior Resident Inspector, Palo Verde

* Denotes personnel in attendance at the exit meeting held on March 5, 1993.

The inspectors also interviewed other licensee personnel during the inspection.

2. Onsite Review of Non-Routine Events (92700):

a. (Closed) Licensee Event Report (LER) 529/90-09-L1, Report on Fire Barrier Inspection:

LER Background

Prior to a Unit 2 eighteen month fire barrier/penetration licensee inspection, a Quality Assurance group (QA) audit of the Palo Verde fire barrier program was performed. Licensee QA auditors identified that some sealed penetrations were not identified on design drawings, and that specific inspection acceptance criteria had not been established for some penetration types. The licensee QA auditors also found programmatic concerns that included discrepancies between drawings and seal schedules, and that some functional requirements, qualification, and installation records were not retrievable.

Licensee Actions

In response to the licensee QA audit findings the licensee developed a fire barrier and penetration seal adequacy verification program. In accordance with the licensee fire barrier and penetration seal adequacy verification program and a schedule provided to the NRC in a March 16, 1990 letter (APS letter no. 102-01635-WFC/TRB/RJR), a 100 percent inspection of Palo Verde Units 1, 2, and 3 fire barrier and sealed penetrations were performed. The inspection visually compared barriers and penetrations to establish acceptance criteria and was used to obtain baseline data for resolving identified programmatic concerns. The licensee inspection used generic conservative acceptance criteria to perform this inspection.

The licensee inspection of approximately 10,000 individual equipment identification points (walls, penetrations, barriers, seals, etc.) for Units 1, 2, and 3, identified 1,437 instances where the inspection acceptance criteria was not met or the installed configuration requirements were not clear. These discrepancies were documented in material non-conformance reports (MNCRs), in accordance with the inspection procedure. A total of 579 MNCRs were issued for the three units. Licensee inspection discrepancies included chipped concrete barriers, concrete barriers with non-through-wall holes of varying depth, silicon seal shrinkage, excessive gaps in damming material, cracked thermo-lag, improperly sealed spare conduits, and improperly installed flashing around ventilation duct penetration seals. Approximately one third of the licensee identified deficiencies were evaluated by licensee engineering for reportability. The licensee reportability review concluded that no condition had been identified which would have adversely affected the ability to achieve and maintain safe shutdown in the event of a fire.

However, since all of the discrepancies were not evaluated for reportability the licensee concluded that an LER should be issued to cover all of the items. The licensee issued LER 50-529-90-09-1 and proceeded to take corrective actions for the discrepancies.

NRC Inspection of Licensee LER Actions

Reportability

The inspector randomly sampled and reviewed 27 licensee MNCRs, that resulted from the fire barrier and sealed penetration inspection, for reportability. The inspector reviewed the MNCRs for reportability in accordance with requirements of 10 CFR 50.73, 10 CFR 50 Appendix R, Palo Verde Updated Safety Analysis Report (Appendix 9B), and Palo Verde Unit 2 Technical Specification (section 6.9.3).

MNCR Closure

The inspector randomly selected 15 completed MNCRs to verify that rework or repair of discrepancies were completed as defined in the MNCR disposition and two MNCRs awaiting for repair work to be completed to verify determinations of non-reportability. The 15 randomly selected MNCRs were verified as complete by Quality Control (QC) inspector signatures. Of the 15 completed MNCR packages the inspector found that 11 of the 15 packages appeared to be completed as required. Two of the packages could not be verified due to lack of accessibility to penetration seals during this inspection (scaffolding was not available for access). Corrective action for two of the MNCR's were not completed as required by the MNCR disposition.

The two MNCRs that were not completed as required in the disposition of the MNCR were: Unit 1 MNCR 90-FI-1403 and Unit 2 MNCR 90-FI-0099. Both of the MNCRs dispositions required that spare conduit penetrations have metal plugs installed on both ends of the conduit penetration in accordance with APS drawing 13-E-ZAC-050, "Conduit and Tray Notes, Symbols, and Details," note 3.23. Both of the MNCRs were signed off by QC as being completed, indicating that conduit plugs had been installed on both ends of the conduit penetrations. However, both of the MNCRs had one penetration which had not had a plug installed on both ends of the conduit.

Conclusions

LER

The inspector concluded that the licensee had correctly determined that the discrepancies found in fire barrier and penetration seals were not reportable and that the licensee was taking actions to correct identified anomalies. This LER is closed.

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Conclusions

LER

The inspector concluded that the licensee had correctly determined that the discrepancies found in fire barrier and penetration seals were not reportable and that the licensee was taking actions to correct identified anomalies. This LER is closed.

MNCR Closure

The inspector concluded that the licensee had not fully implemented actions to adequately correct deficiencies identified in an MNCR and had incorrectly signed MNCRs as being completed when they were not. This is a violation of 10 CFR 50, Appendix B, Criterion XVI "Corrective Actions" (Violation 50-528 and 529/93-09-01).

3. Previously Identified Inspection Follow-up Items (92701):

a. (Closed) Inspection Follow-up Item 50-528/91-21-02: Directional Alignment of Thermal Fire Detectors and Water Spray Nozzles

Original NRC Inspection Follow-up Item

During a Unit 3 turbine building walkdown the inspectors noted fire protection system configuration control concerns associated with the water spray nozzles protecting the turbine bearings and the thermal fire detectors installed over the main feedwater pumps. Future inspections were considered necessary to assess whether the licensee's programs were sufficiently complete in providing details regarding the directional alignment of spray nozzles and detection equipment.

Licensee's Actions in Response to the Follow-up Item

The licensee reviewed and tracked this item under regulatory commitment tracking system (RCTS) item numbers 040661.01 and 0400661.02. The licensee reviewed the inspector concern and concluded that procedures were in place to provide guidance to personnel for inspecting, confirming, and reporting of directional alignment of fire protection spray nozzles and detection equipment.

Inspector Review of Follow-up Item

The inspector reviewed procedures 36MT-9QK21, Rev. 1, 36MT-9QK23, Rev. 3 and 14FT-9FP46, Rev. 2, "Fire Detection/Protection System Functional Test - Alison Model A888-M134A, Fire Detection/Protection System Functional Test - Alison Model A888-M135, and 18 Month Deluge System Spray Nozzle Inspection" respectively. The inspector confirmed that the procedures had statements which required specific actions to be taken when fire protection equipment (thermal detectors and/or fire suppression equipment deficiencies (such as misalignment) are encountered. The statements included: confirmation that fire detection and protection equipment were returned to design configuration upon completion of maintenance, and that if problems recurred a visual inspection, by the fire department, would be performed weekly. The inspector verified that the fire department reviewed any work orders which affected fire protection equipment, suppression or detection. The inspector verified that requirements for fire department review of work orders

were in licensee procedures 30DP-9WP03, Rev. 2, Work Scheduling, 30DP-9MP01, Rev. 04.09, Conduct of Maintenance, 14DP-0FP09, Rev. 04.03, Conduct of Fire Shift Operations, and 30DP-9WP01, Rev. Rev.3, Work Initiation.

Additionally the inspector verified correct positioning of fire thermal detectors and fire suppression spray nozzles for the Unit 2 and 3 turbine generator, and the Unit 3 main feedwater pumps and turbines (A and B).

The inspector concluded that licensee procedures provided adequate guidance to ensure that directional alignment of spray nozzles and detection equipment were maintained, and that spray nozzles and detection equipment were being maintained in their proper alignment. This item is closed.

No violations or deviations were identified.

b. (Open) Inspection Follow-up Item 50-528/91-21-03: Identification of 10 CFR 50 Appendix R and Regulatory Guide 1.75 Fire Barriers

Original NRC Follow-up Item

During walkdowns of electrical raceway thermo-lag fire barrier enclosures required for 10 CFR 50, Appendix R compliance, there appeared to be confusion in some plant areas by the licensee staff in identifying thermo-lag fire barrier enclosures required for Appendix R and those required for Regulatory Guide (RG) 1.75, Physical Independence of Electrical Systems. Appendix R fire barriers have a specified fire rating, dependent upon the period of resistance to a standard fire exposure, one hour or three hours as applicable for fire protection to ensure safe shutdown capability. Regulatory Guide 1.75 barriers, required for electrical separation, are not fire rated, nor are the barrier structures required to be maintained at the same quality level of integrity as Appendix R barriers. The inspectors were concerned that without in-plant identification of these barriers, the safety significance of these barriers and the importance of their integrity would not be recognized by non-fire protection personnel. The licensee concurred with the inspectors finding and indicated that they would develop a method to field identify the Appendix R fire barriers and those required to meet RG 1.75. Verification of licensee field identification of Appendix R thermo-lag fire barriers and RG 1.75 was the follow-up item.

Licensee's Actions in Response to the Follow-up Item

The licensee was addressing this issue under regulatory commitment tracking system (RCTS) commitment number 040662, action 1.

The licensee preliminary determination indicated that marking Appendix R and RG 1.75 barriers may not be necessary, since design

drawings were being developed to identify Appendix R fire barriers and RG 1.75 barriers. Additionally, licensee consideration was being given to adding surveillance of thermo-lag RG 1.75 barriers to procedure 14FT-9FP67 Rev. 0, Thermo-lag Fire Barrier Surveillance. The licensee had not completed their review and closure of this item at the time of this inspection.

Inspector Review of Follow-up Item

The inspector concluded that since the licensee had not completed their review of this follow-up item the item will remain open.

No violations or d.. ations were identified.

4. Fire Protection (64704)

a. Qualifications

Fire Department Personnel Qualifications

The inspector reviewed licensee fire department personnel qualification records to verify that fire department personnel were qualified in accordance with licensee procedures. Qualification requirements were defined in licensee procedure 14DP-0TR01, Rev. 0, Fire Department Training Program Description, and administrative procedure 14DP-0TR02, Rev. 3, Fire Department Training Program Administration.

The inspector reviewed qualification records for seven of the 24 fire department on shift fire fighting personnel. The inspector found that the seven fire department personnel met or exceeded the minimum qualification requirements of licensee procedures.

Fire Team Advisor Qualifications

Fire team advisors (FTA) are NRC licensed (reactor and senior reactor) operators who serve as advisors to fire department personnel in the event of a fire. Qualification and training requirements were defined in licensee procedure 15DP-0TR62, Rev. 0, "Fire Team Advisor - Training Program Description.

The inspector reviewed FTA training records for ten NRC licensed operators qualified as FTAs. The inspector found that the ten operators had current NRC licenses and had received required initial and annual update training for FTAs in accordance with procedure 15DP-0TR62, Rev. 0, "Fire Team Advisor - Training Program Description.

The inspector concluded that fire department personnel were qualified for their present positions and that fire team advisors were qualified and had received initial and update

training in accordance with licensee fire protection program requirements.

b. Training

Fire Department Personnel

The inspector reviewed training records for seven of the 24 on shift fire department personnel. The inspector reviewed the records to determine if fire department personnel were initially trained and were receiving periodic update training in accordance with licensee procedure 14DP-0TR01, Rev. 0, "Fire Department Training Program Description and 10 CFR 50, Appendix R, section I, "Fire Brigade Training."

The inspector found that the fire department personnel had received initial and periodic update training in accordance with licensee procedure 14DP-0TR01, Rev. 0,"Fire Department Training Program Description, and that the training met the requirements of "10 CFR 50, Appendix R, section I, "Fire Brigade Training."

The inspector found that the fire department training records were up to date. The inspector also noted that fire department personnel training records were presently being manually maintained and updated. Fire department personnel training records were previously maintained on a corporate computer tracking system. The licensee stated that a new computer program to track and record fire department personnel training was being developed.

Fire Team Advisor Training

See fire team advisor qualifications paragraph above.

The inspector concluded that licensee fire department personnel and FTAs were receiving initial and update training in accordance with licensee fire protection program procedures and 10 CFR 50 Appendix R. Fire department training records were current.

c. Fire Drills

10 CFR 50, Appendix R requires that fire drills be performed in the plant so that the fire brigade can practice as a team. The inspector reviewed Palo Verde Fire department fire drill records to determine if fire drills for each fire department shift were being performed to meet the requirements of 10 CFR 50, Appendix R.

The inspector reviewed Palo Verde Fire department drill records for the 1991 and 1992 period and found that unannounced fire

drills were being held on a quarterly basis for each fire department shift. Each fire department shift fire fighter participated in at least two drills per year. Fire drills were also conducted on back shifts. Each drill record reviewed by the inspector was preplanned, and included training objectives and standards for evaluation. Fire department response time, fire team strategies, and fire team member equipment usage were evaluated each drill. Each drill had team and individual team member evaluation comments, and a critique that was performed by a panel following the drill.

Additionally, the inspector confirmed that the licensee fire department held a minimum of one fire drill with each Palo Verde fire department shift and the Phoenix Fire Department each year. Licensee procedure 14DP-0TR01, Rev. 0, "Fire Department Training Program Description" required one drill per year to be run with the Phoenix Fire Department.

The inspector concluded that fire drills were conducted in accordance with licensee fire protection program procedures and 10 CFR 50 Appendix R.

d. Unannounced Fire Drill

The inspector observed an unannounced fire drill during the inspection. The scenario was an electrical fire in load center NGN-L10T resulting from a ground fault. Load center NGN-L10T was located in Unit 3 on the 120' level of the auxiliary building, zone 47B. In addition FPN-V315, isolation actuation valve for the 120' elevation penetration room sprinkler, was tagged out. The drill was initiated in the control room by a fire team observer indicating that there was an alarm on panel E45 for zone 47B and a subsequent alarm on panel E09D. Control room personnel dispatched an auxiliary operator (AO) to check the potential fire area.

During the drill the inspector evaluated the fire department, the control room, the AO, and the fire team advisor for performance in the following areas:

- Fire department response time
- Proper utilization of protective clothing
- Proper utilization of self contained breathing apparatus (SCBA)
- Proper deployment and utilization of fire hoses
- Proper entry into the fire area
- Fire Chief directions, accuracy, effectiveness
- Communications with control room and fire fighting team
- Use of fire fighting pre-plans/strategies
- Checks for fire extension
- Smoke removal
- Use of manual fire fighting equipment

Auxiliary Operator

The inspector noted that the AO sent to investigate the alarm, properly investigated alternate access to the penetration room when informed that the normal access was hot to the touch. The AOs report to the control room was accurate and timely, indicating understanding of conditions, equipment in the area, and proper procedures.

Fire Team Advisor

The inspector noted that the FTA arrived on the scene with the fire department, was properly suited with protective clothing, had the proper FTA vest identifying him as the FTA, and had a SCBA mask on without hook up to compressed air bottle (see comments in SCBA paragraph below). The FTA communicated equipment conditions, status, and requests to the control room as necessary. The FTA properly advised the sector commander (fire team leader) of equipment locations in the penetration area and confirmed an alternate access path.

Fire Department Response Time

The fire department responded to the fire alarm and was at the scene within a reasonable response time, approximately 10 minutes. The inspector noted that the response time could have been less during an actual fire since alternate emergency entrances to the area would have been used, eliminating several flights of stairs. The licensee stated that personnel alternate emergency entrances are not used during drills to minimize the impact on operations, security, and health physics. The inspector discussed alternate emergency entrances with fire department, security, operations, and health physics personnel.

The inspector concluded that personnel were familiar with alternate emergency entrances and that in an actual emergency condition these entrances would be used.

Fire Department Protective Clothing

The inspector observed that fire department personnel arrived on the fire drill scene with properly donned protective clothing such as hard hats, gloves, boots, coats, and communications equipment. The protective clothing appeared to be in good condition.

SCBA Equipment

Fire department personnel had properly donned their SCBA equipment and were wearing the masks during the drill. The SCBA equipment appeared to be in good condition with air

bottles charged to 4100 to 4500 psig. However, the inspector noted that fire department personnel and the FTA did not have the SCBA masks hooked up to the compressed air bottles.

The inspector was informed that the site respiratory air compressor was not operable due to pressure readings exceeding those in procedure 75RP-9EE08, Rev. 1, Filling Breathing Air Cylinders. SCBA air bottles were refilled using the compressor under a temporary approved procedure action (TAPA) 01.01 on February 5, 1993. Since the compressor was considered inoperable, no further filling of SCBA bottles had occurred and therefore fire department personnel were requested not to use SCBA air bottles during drills. Compressed air bottles were to be saved to maintain a required six hour reserve air supply in accordance with Updated Safety Analysis Report (UFSAR) table 9B.3-1 sheet 32 of 68. The inspector requested the analysis verifying that the required number of stored compressed air bottles required by procedure 75RP-9EE02, Rev 2, Respiratory Equipment Maintenance, Inspection and Repair, would meet the six hour reserve air supply requirement.

The licensee provided results of licensee engineering study 13-MS-A64 that verified that there was sufficient reserve air for six hours of fire fighting conditions. The licensee also stated that a temporary approved procedure action (TAPA), number 01.02 was issued for procedure 75RP-9EE08, Rev. 1 allowing operation of the respiratory protection air compressor to fill breathing air cylinders. TAPA 01.02 would be in effect until the respiratory protection air compressor was repaired.

The inspector noted that the use of SCBA masks without compressed air bottles hooked up will cause the re-breathing of air in the mask. Re-breathing of air in the mask during strenuous activity could cause drill team members to become weak, disoriented, or pass out from lack of sufficient oxygen. Licensee fire department training personnel agreed, and indicated that when not using air bottles the drill team members would not be required to wear the SCBA mask. The inspector verified that reducing protective clothing or equipment requirements, for fire department members during fire drills, was acceptable and in accordance with licensee procedure 14DP-0TR04, Rev. 0, Minimum Fire Team Standards.

The inspector concluded fire department personnel were properly using SCBA equipment and that the licensee had demonstrated that there was a sufficient reserve air for six hours of fire fighting conditions on site.

Fire Department Entry Into Fire Area and Sector Commander Control

The fire department entered the fire area using pre-plans and

strategies. The inspector noted that the Sector Commander had brought extra carbon dioxide bottles from other remote areas as a backup to carbon dioxide bottles within the fire area. The inspector also noted that proper command and control was maintained by the Sector Commander, carbon dioxide was used to extinguish the electrical fire with fire hoses as backup to address any other potential fires in the area. In general, fire hoses were flaked out properly allowing unobstructed entrance to the fire drill area. Radio communications were not used in the penetration area due to RFI (radio frequency interference) restrictions. Smoke removal by available plant ventilation systems was requested. Fire extension into other areas was verified.

The inspector concluded that the Sector Commander exhibited proper command and control of the scenario, and that the methods used to address the fire drill scenario were proper.

Other Plant Personnel

The inspector noted that at the initiation of the drill, fire team instructors questioned electrical maintenance personnel, security, and health physics in adjacent areas about what their duties and actions would be. All personnel questioned were able to define their required duties and actions.

The inspector concluded that fire department instructors, maintenance, health physics, and security personnel were aware of their responsibilities and required actions for reporting, and handling of fire conditions.

The inspector concluded that the overall performance of the fire department, AO, FTA, and fire department drill instructors was satisfactory.

No violations or deviations were identified.

e. Plant Tour and Inspection of Fire Protection Features

The inspector toured Units 1, 2, and 3 control, auxiliary, and turbine buildings, and main steam support structure areas with Palo Verde fire protection engineering staff and fire department staff.

During the tours, the inspector visually inspected fire protection equipment/features provided in the areas. Specifically the following were items were inspected:

- Lack of transient combustibles including flammable and combustible liquids
- Hot work permits for welding, cutting, grinding, and open flames
- Good housekeeping
- Fire detection equipment operable and unobstructed
- Water fire suppression spray headers unobstructed
- Portable fire extinguisher operability (current inspections)
- Automatic suppression systems operable and in good material condition
- Fire barriers (doors, penetration seals) operable
- Emergency light positioning adequate

Tour Observations

The inspector observed the following:

Transient Combustibles and Housekeeping

The licensee was following procedure 14AC-OFP03, Rev 2, Control of Transient Combustibles, except for one case. In that instance, a fire department emergency service officer (ESO) performed a walkdown, in accordance with procedure 14DP-FP001, Rev. 02.01, Fire Prevention Inspection, and identified a violation. The ESO identified a wooden cable spool which had not been treated with fire retardant in the unit 3 upper cable spreading room. The fire department ESO and NRC inspector noted that the wooden roll was storing cable for work in progress, however the condition was reported and action was taken to remove the spool. The inspector did not identify any other violations of the procedure.

The inspector concluded that housekeeping was satisfactory and that the licensee was adequately controlling transient combustible materials in the plants.

Hot Work Permits and Fire Barriers

The inspector reviewed licensee procedure 14AC-OFP06, Rev. 03.01, Hot Work Permit, and reviewed control room records for hot work permits. The inspector identified one hot work permit with work in progress. The hot work permit was issued for Unit 1 under work order WO 568717, a door repair. The work order also included an open door permit FRA-ZJ-169. Both the hot work permit and the open door permit were properly posted and documented. The inspector noted that a security guard was posted as required for the open security/fire barrier door.

The inspector reviewed licensee procedure 14AC-OFP01, Rev. 03.02, Fire System Impairment and a listing of fire program/system impairments for unit 1. The inspector selected six impairments of approximately 275 impairments which required compensatory measures. The six selected impairments required hourly fire watches to check

the areas. The log numbers that were selected were 90123, 90405, 92448, 92579, 92141, and 92488. The inspector verified by observation that fire watches were inspecting the required areas on an hourly basis.

The inspector did not observe any other fire barrier impairments which were not identified on the licensee fire impairment log.

The inspector concluded that the licensee was issuing and controlling hot work and open door permits in accordance with licensee procedures and that compensatory actions for fire barrier impairments were being properly implemented.

Fire Detection and Suppression Equipment

During the walk down of Units 1, 2, and 3 the inspector observed that fire detection and suppression appeared to be in working order. Deluge and spray systems were properly aligned and equipment in good repair. The inspector did not identify any deluge or spray headers that were impaired in accordance with procedure 14AC-OFP01, Rev. 03.02, Fire System Impairment.

The inspector and a licensee fire protection program engineer identified that a vertical pipe support for a 1 1/2" sprinkler line for safety related cable tray 2EZA1DCTKBL was not connected and hanging from the sprinkler pipe. The licensee acknowledged that the hanger was not attached. The licensee issued MNCR 93-FP-2025 to correct the problem. The inspector considered this a licensee identified problem and of minor safety significance, therefore, no further action NRC inspection action is required.

The inspector found that cable tray "Protecto" wire thermal detectors were installed criss-cross across the cabling as required, and that fire suppression sprinkler headers were properly aligned and unobstructed on cable trays.

The inspector concluded that the licensee was satisfactorily maintaining fire protection and detection equipment.

Portable Fire Extinguisher Operability

The inspector sampled approximately 50 portable carbon dioxide fire extinguishers, for material condition, seal, and inspection date. The inspector did not identify any carbon dioxide portable fire extinguisher that had material defects, broken seals, or past due inspection dates.

The inspector concluded that the licensee was performing adequate maintenance and inspection of portable carbon dioxide fire extinguishers.

Emergency Light Positioning

The inspector and a licensee fire protection program engineer or a fire department emergency services officer observed approximately 100 emergency light fixtures required to illuminate safe shutdown area access or equipment. The inspector found three lights which were not focused on their target area. The three lights were, Unit 2, 2E-SAL-72C-07-087-01, and 2E-SAL-72A-03-088-12, and Unit 3, 3E-SGL-D80-05-100-06. The inspector noted that light, 2E-SAL-72A-03-088-12 was in an area where maintenance was occurring directly around the light fixture. Emergency light fixture, 3E-SGL-D80-05-100-06, was being tested by a emergency lighting discharge surveillance test. The discharge test required removal of portions of the fixture. The inspector verified, by observation, that the three emergency lights found misaligned, would still have provided adequate lighting in the area to perform emergency operations or access and egress.

The inspector concluded that the licensee had an adequate program to assure that emergency lighting for safe shutdown operation is maintained in their proper positions.

f. Fire Protection Quality Assurance

The inspector verified that annual and biennial audits of the fire protection program were performed by the licensee and reviewed the audit reports.

The annual audit Report (92-018) was performed from September 8 through October 27, 1992, by the Quality Audits and Monitoring Department (QA&M). Audit report 91-014 documented the biennial review performed from August 12 through October 4, 1991 by the QA&M department.

The inspector concluded that the audits provided a comprehensive evaluation and assessment of the performance and effectiveness of the licensee's fire protection program.

g. Management Observations

Palo Verde procedure 02GB-0M001, Rev. 1, Management Observation Program, provides formal guidelines for management personnel to directly observe personnel in the organization, and to ensure that management expectations and standards were understood and implemented, as well as to provided feedback to personnel. As part of the Palo Verde fire protection program the Fire Protection Manager was required to perform periodic walk through of the units for areas of concern to fire protection.

The inspector reviewed two Palo Verde fire protection management

observation program reports to verify that the plant observation tours were being performed in accordance with procedure 02GB-OM001, Rev. 1. The two management observation reports sampled were dated December 29, 1992 and February 5, 1993.

The inspector found that the reports were comprehensive and that they identified areas of concern to fire protection and plant operations.

The inspector followed up on one item in the December report to determine if the conditions had been corrected.

The December report identified that Unit 3, 140' corridor building cable riser room J-321 was being used as a storage area. Part of the materials being stored within cable riser room were combustible. The report identified that a unit trip could occur if there was a fire in this area and therefore all materials must be removed.

The inspector toured cable riser rooms in units 1, 2, and 3 and found all rooms to be free of stored and combustible materials.

The inspector concluded that the fire protection program manager was performing routine management tours of the facilities as required by Palo Verde procedure 02GB-OM001, Rev. 1, and that corrective actions were being taken for items identified.

No violations or deviations were identified.

5. Exit Meeting

An exit meeting was held with persons noted in paragraph 1 of this report on March 5, 1993. During this meeting the scope of the inspection and the resultant findings were discussed. Licensee management present at the meeting indicated that they understood the concerns presented and that there was no further questions at that time. At the conclusion of the meeting the inspector requested that the licensee identify any documents given to the inspector that might be proprietary so that they could be returned. The licensee indicated that there were no documents that were proprietary.