

U.S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-528/92-20, 50-529/92-20, 50-530/92-20

License Nos. NPF-41, NPF-51, NPF-74

Licensee: Arizona Public Service Company
P. O. Box 53999, Sta. 9012
Phoenix, Arizona 85072-3999

Facility Name: Palo Verde Nuclear Generating Station Units 1, 2, and 3

Inspection at: Wintersburg, Arizona

Inspection Conducted: May 26-29, 1992

Inspected by:	<u>R. Bocanegra</u>	<u>6/10/92</u>
	R. Bocanegra, Radiation Specialist	Date Signed
Approved by:	<u>James H. Reese</u>	<u>6/11/92</u>
	James H. Reese, Chief	Date Signed
	Reactor Radiological Protection Branch	

Summary:

Areas Inspected: Routine, unannounced inspection of the licensee's radiation protection program during the Unit 1 refueling outage and tours of the licensee's facilities. Inspection procedure 84750 was used.

Results: Within the areas inspected, the licensee's radiation protection program met its objective of protecting radiation workers and maintaining occupational exposure as low as reasonably achievable (ALARA). The licensee implemented an effective ALARA program during the Unit 1 refueling outage. A licensee QA audit substantiated a previously identified NRC concern regarding a lack of attention to detail by radiation protection technicians. No violations were identified.



DETAILS

1. Persons Contacted

Licensee

- *K. Akers, QA Specialist, Quality Auditing and Monitoring
- *J. Albers, Manager, RP Operations
- *R. Bouquot, Supervisor, Quality Auditing and Monitoring
- *P. Coffin, Compliance Engineer
- *J. Draper, Site Representative, SCE, LADWD, PNM, SCPPA
- *R. Flood, Plant Manager, Unit 2
- *J. Gaffney, RP Supervisor, Unit 1
- *S. Gross, Site Engineer, El Paso Electric
- W. Hoey, Manager, RP Technical Service
- *P. Hughes, General Manager, Site Radiation protection
- *V. Huntsman, Manager, Radiation Protection Support Services
- A. Johnson, Supervisor, Compliance
- D. Kanitz, Engineer, Compliance
- M. Lantz, Supervisor, Dosimetry
- *S. Sawschenko, RP Supervisor, Unit 2
- J. Sills, RP Manager, Unit 1
- *M. Wagner, RP Supervisor, Unit 3

Nuclear Regulatory Commission

F. Ringwald, Resident Inspector

(*) Denotes the individuals that attended the exit meeting held May 29, 1992. The inspector also held discussions with other personnel during the inspection.

2. Occupational Exposure During Extended Outages (IP 83729)

a. Audits and Appraisals

The inspector reviewed the report of an audit of the radiation protection program. The audit was performed by the licensee's Quality Auditing and Monitoring (QA&M) group on May 6-26, 1992. The audit was performed to satisfy requirements found in Section 6.5.3.5.d of the Technical Specifications. The audit team leader stated that two auditors participating in the audit were experienced in radiation protection. The various deficiencies documented in the report were relatively minor, however, when taken as a whole, a more crucial issue was raised regarding the lack of attention to detail by RP technicians. This concern was previously identified by the NRC and documented in Inspection Report No. 50-528/92-02. No major safety significant issues were found. The inspector noted that the licensee was actively addressing the identified deficiencies.

Based on review of the audit report and discussions with the audit team leader, the inspector concluded that the audit met the requirement of Technical Specification Section 6.5.3.5.d.



b. Training and Qualifications

The inspector reviewed training and qualification records of selected radiation protection technicians, including contractors, that worked during the Unit 1 refueling outage. The inspector found that all the technicians met or exceeded ANSI 3.1 (1978) as required by Section 6.3.1 of the Technical Specifications.

c. ALARA Goals and Objectives

The Unit 1 refueling outage started February 15, 1992 and was initially scheduled to end April 24, 1992 (70 days). The actual ending date was May 23, 1992, or 29 days behind schedule. The reason for the extended time was due to increased work scope and difficulties encountered during steam generator tube plugging.

The licensee's personnel exposure goal for the Unit 1 refueling outage was 206 person-rem. Due to the 29 day extension to the outage, the actual exposure was 288 person-rem. The licensee's administrative policy does not allow for the exposure goal to be revised when the work scope increases. As a result, unanticipated work like removing a foreign object found in a steam generator, refueling mast breakdown, and pressurizer nozzle replacement work contributed to the over-goal exposures.

Personnel contamination events (77 events) during the outage were less than the goal indicating good contamination control. The inspector verified that the events were logged per procedure and that management review and close-out was timely.

d. External Exposure Control and Control of Radioactive Materials

The inspector, accompanied by licensee personnel, performed extensive inspections of the facilities and interviewed workers. Selected portions of the licensee's exposure control program were examined by the inspector to verify compliance with requirements found in Sections 6.11 and 6.12 of the Technical Specifications and 10 CRF Part 20.

The material condition and housekeeping was generally satisfactory in the Unit 1 and Unit 2 radiologically controlled areas (RCAs). A few areas were found where tools and materials were not stored in designated storage areas. Housekeeping in Unit 3 was exceptional compared to the other units. During a tour of the Unit 2 RCA yard, the inspector identified two instances where plastic wrapping used to confine loose contamination on sections of piping was not properly secured. The licensee corrected the discrepancies before the end of the inspection. Radiological surveys of the affected areas indicated no spread contamination.

The inspector verified that workers exceeding the 10 CFR 20.101(a) limits for the current quarter had a completed Form NRC-4 on file and that management review had been performed prior to exceeding 1.25 Rem exposure to the whole body.

The inspector found that the licensee's programs for exposure and radioactive materials control were being effectively implemented to meet their safety objective.

e. ALARA Program

The inspector examined the licensee's ALARA program implementation during the Unit 1 refueling outage.

The inspector noted that mockup training was provided for work that had a potential for significant exposure. Other elements of the licensee's ALARA program that helped maintain exposure ALARA during the outage included the use of temporary shielding, robots, and pre-job briefings.

The inspector reviewed exposure results for all outage related Radiation Exposure Permits (REPs) and noted that actual exposure for some jobs had significantly exceeded the estimated exposure. The extra person-rem expended for these jobs was related to increased work scope. For example, REP 1-92-3013A, "Fuel Movement and Associated Work," was initially estimated to require 100 mRem but actually took 1562 mRem because the refuelling mast broke and required extensive in-situ repairs. Another example was REP 1-92-3103B, "#1 S/G Tube Staking and Plugging," that required additional exposure when a reaming tool broke and became lodged in the steam generator.

Based on records review and personnel interviews, the inspector verified that management was aware of and involved in tracking personnel exposures and contamination events during the outage. RP supervisors were actively involved with pre-job mockup training and other ALARA activities.

The inspector concluded that the portions of the ALARA program examined, were implemented in accordance with the licensee's ALARA program procedure.

No violations or deviations were identified.

3. Exit Interview

The inspector met with the individuals denoted in Section 1 at the conclusion of the inspection on May 29, 1992. The scope and findings of the inspection were summarized. The licensee acknowledged the inspector's comments. At the conclusion of the meeting, the licensee did not identify as proprietary any material provided to or examined by the inspector.



JUN 11 1992

bcc w/enclosure:
Docket File
Project Inspector
Resident Inspector
G. Cook
B. Faulkenberry
J. Martin

bcc w/o enclosure:
M. Smith
J. Zollicoffer

RBocanegra
6/10/92

JReese
6/11/92

REQUEST COPY YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	REQUEST COPY YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
---	---

COPY TO PDR YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
--

100

