

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-528/89-25, 50-529/89-25 and 50-530/89-25

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
Phoenix, Arizona 85072-3999

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

Inspection at: Wintersburg, Arizona

Inspection Conducted: May 15-18, 1989

Inspected by:

G. P. Yuhas
G. P. Yuhas, Chief
Emergency Preparedness and Radiological
Protection Branch

6/1/89
Date Signed

Approved by:

Ross A. Scarano
Ross A. Scarano, Director
Division of Radiation Safety and Safeguards

6/2/89
Date Signed

Summary:

Area Inspected:

This was a special unannounced inspection by a regional based manager to review implementation of the occupational radiation protection program oversight function during outage conditions at Unit 1 and to review matters described in allegation RV-89-A-0025. Inspection procedures 30703, 83729 and 93001 were utilized.

Results: One apparent violation involving failure to post a high radiation area at Unit 1 was identified and one occupational health and safety concern related to egress from the Unit 1 containment building was brought to the licensees' attention (paragraph 2). No evidence to substantiate the concern expressed in allegation no. RV-89-A-0025 was identified. While the radiological controls program being implemented to support the Unit 1 outage was satisfactory, the level of management attention in developing and implementing the oversight function appears to have been less satisfactory. Specifically the lack of management direction, and poor communications early in the outage resulted in considerable frustration among work groups, declining morale in the radiation protection organization and the perception by some workers that they may be reprimanded for bringing safety concerns to the NRC's attention.

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DETAILS1. Persons Contacted:a. Licensee Representatives:

W. F. Conway, Executive Vice President, Nuclear
 D. B. Karner, Executive Vice President
 R. W. Waught, El Paso Electric, Assistant Vice President
 W. C. Marsh, Plant Director
 J. E. Kirby, Director
 C. N. Russo, Assistant Director, QA/QC
 W. E. Ide, Unit 1, Plant Manager
 T. Shriver, Compliance Manager
 K. Oberdorf, Unit 1, Radiation Protection Manager
 W. E. Sneed, Unit 3, Radiation Protection Manager
 P. W. Hughes, Central Radiation Protection and Chemistry Manager
 R. V. Warnock, Southern California Edison Company

b. NRC

T. Polich, Senior Resident Inspector
 D. Coe, Resident Inspector

In addition, the inspector met and held discussions with other licensee and contractor personnel.

2. Occupational Exposure During Outages (83729)

The focus of this inspection effort was to observe implementation of the licensee's radiation protection oversight program at Unit 1 under outage conditions. Unit 1 was shutdown on March 5, 1989. As of this inspection, the licensee was finalizing preparations to remove the reactor head and begin defueling.

The inspector toured Unit 1 turbine, auxiliary, fuel handling and containment buildings making radiation measurements with NRC ion-chamber survey instrument serial no. 15843, due for recalibration on July 18, 1989. The inspector observed the night shift turnover meeting at Unit 1 on the evening of May 15; accompanied the Unit 1 oversight technician on his tour of radiologically controlled areas, reviewed surveys, Radiation Exposure Authorizations, log books and discussed work activities with various individuals.

Findings:A. Oversight

The licensee contracted an outage work package that included contractor provided radiation protection technicians. The licensee established an oversight group composed of radiation protection technicians. Based on review of the "Oversight Log", "Guideline For



Tour Checklist" and memorandum to: Kris Oberdorf, Unit 1 Radiation Protection Manager, From: Gordon Nelson, RP Oversight Lead, dated May 10, 1989, several observations can be documented:

1. The oversight function was intended to provide continuous feedback to licensee management on the effectiveness of radiological controls.
2. The oversight function was not developed on paper prior to implementation. Methods and communication flow paths evolved in response to feedback.
3. Initial oversight findings resulted in considerable frustration. During the first period reported (March 18-28) 293 "items of concern" were documented. This was discussed in NRC Inspection Report No. 50-528/89-19. The licensee management response to the findings discussed in Inspection Report No. 50-528/89-19 was to correct the outstanding deficiencies, verbally modify the scope of oversight activities and to become more involved in the radiation protection function.
4. During the second period of oversight, April 28 through May 9, 1989, the number of identified concerns dropped to 142 according to the May 10, 1989 memorandum from Gordon Nelson to Kris Oberdorf. This memorandum provided an analysis of the type and significance of the findings and the status of corrective actions. The 50% decrease in the identified concerns was attributed to an influx of additional contract work force and increased experience gained by that work force in licensee procedures. According to the analysis, 26% of the findings involved posting and control of radiation areas, 16% contamination control, 12% radioactive material control, 10% radiation exposure permits, 10% housekeeping and the remainder spread in small percentages among other topical areas. The inspector's review of these "identified concerns" found that most involved compliance with licensee procedures and very few, perhaps two, involved potential technical specification high radiation area control issues. These two were being evaluated pursuant to the licensee's problem resolution system.
5. On May 3 and 4 meetings were held with the oversight crews to provide guidance with respect to management's expectations. A log book entry at 2130, May 3, describes the night crew's perception of the meeting (conducted by a contract health physicist) in positive terms. Four log book entries dated May 4 describe the day shift meeting conducted by the Unit 1 Radiation Protection Manager in negative terms. From the log entries it appeared to the inspector that management's message was for the oversight crews to focus on the "Big Picture" and corrective actions rather than on strict procedural compliance. The day shift log entries criticized radiation protection management for what the crew perceived to be a lack of clear direction.



6. On May 9, 1989, Region V was advised by the licensee that it intended to reprimand the four individuals on the day shift oversight crew for their May 4, 1989 log entries. The licensee representatives stated that they believed the log entries were insubordinate and contrary to section 7.0, Instruction For Log Entries, Procedure 75RP-9RP10, Conduct of Radiation Protection Operations. Two workers were given letters of reprimand, one worker was counseled and the lead technician was given a day off with pay to consider whether she wished to remain in a supervisory role.
7. Based on discussions with several individuals, the inspector concluded that the reprimands of the Unit 1 day shift oversight crew were common knowledge. Some individuals felt that the reprimands were motivated by the oversight crew's willingness to bring its safety concerns to an NRC inspector's attention rather than by the log book entries. Some individuals perceived that the message of the reprimands was to discourage employees from communicating safety concerns to the NRC. Others felt that the message was to not document adverse findings.
8. From discussions with some of the individuals reprimanded, the inspector learned that the reprimands are being appealed through the company process. The inspector informed the individuals of the provisions of 10 CFR 50.7, Employee Protection. The individuals stated their continuing commitment to carry out their oversight responsibilities and to document their findings, although with less enthusiasm.
9. In another log book entitled Supervisory Overview, an entry dated March 9, 1989 by the Unit 1 Radiation Protection Manager stated in part that "Serious problems, criticisms, and personnel problems requiring discipline should be communicated in a letter to me." The day shift oversight lead technician was aware of this entry, but felt the Oversight Log was not an official log book as defined in section 3.0 of 75RP-9RP10.
10. On May 17, 1989, the Radiation Protection and Chemistry Manager and the Unit 1 Radiation Protection Manager (RPM) held a meeting with contractor and licensee radiation protection personnel to discuss the oversight function. The day shift oversight crew was not asked to attend, which according to the Unit 1 RPM was an oversight.
11. There presently are three radiation support contractors on site. From discussions with representatives of these groups the inspector perceived some resentment towards the oversight crews and some reluctance by contractors on the oversight crews to document deficiencies by fellow contractors.
12. The inspector observed the night shift oversight crew at work on the evening of May 15, 1989. During tours of the auxiliary and fuel handling building the oversight technician performed

his assignment in a professional manner. He identified several minor examples of conditions not consistent with the licensee's procedures. These were either immediately corrected or brought to the attention of the balance of plant radiation protection coordinator.

At one point during this tour the inspector measured higher radiation levels than would be expected based on the "Caution Radiation Area" posting at the entrance 40' elevation auxiliary building "A" safety injection pipe chase room. The inspector and the oversight technician conducted independent radiation surveys and confirmed radiation levels up to 110 mrem/hr at 18" from the safety injection piping. One passage way within the room had dose rates between 100 and 150 mrem/hr accessible to the whole body as measured with licensee survey instruments serial nos. 2702 and 3309 and documented as survey report no. 1-89-05185. Unit 1 Technical Specification 6.12 states in part that: "In lieu of the 'control device' or 'alarm signal' required by paragraph 20.203(c)(2) of 10 CFR Part 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area...." The oversight technician immediately posted the entrances to this area with "Caution High Radiation Area" signs and informed the balance of plant coordinator. Following completion of the tour the inspector and oversight technician reviewed survey report no. 1-89-04974 performed at 0530 May 13, 1989.

Survey record no. 1-89-04974 dated May 13, 1989 indicates a radiation survey was performed which resulted in downgrading the control of this area from a "Locked High Radiation Area" to a "Radiation Area". The intensity of radiation recorded on this survey was much less than the intensity measured on May 15, 1989. The Unit 1 Shift Supervisor informed the inspector there had not been changes in operational configuration or plant transients since May 13 which would explain the change in dose rates. As of the exit interview, the licensee had not determined why this area was improperly posted. Failure to post a high radiation area is an apparent violation of Technical Specification 6.12 (50-528/89-25-01).

13. On May 17 the inspector made a tour of the Unit 1 reactor containment building. Several observations were brought to the licensee's attention. The radiological controls appeared adequate. No exits were marked and access to exits where the exit or way to reach it was not immediately visible to occupants, were not marked (for example inside the biological shield wall). The Plant Director was informed of the requirements expressed in 29 CFR 1910.37(q) (50-528/89-25-02). Lastly the inspector pointed out potential problems associated with using a single hose clamp to secure the clear plastic tubing used for reactor water level indication. The Unit 1 Plant Manager indicated the hose clamp arrangement was acceptable to him.



14. Although an article recently published in the Palo Verde Radiation Protection Information Notice provided an excellent synopsis of October 13, 1988 revision of the NRC Enforcement Policy, none of the oversight crews indicated they had received any specific training on how to assure the necessary information is collected and measures taken to allow NRC to exercise enforcement discretion.

B. Conclusions

1. The licensee is implementing an adequate occupational radiation protection control program.
2. The oversight function is effective in improving performance and minimizing occupational exposure to workers.
3. Inadequate management attention in development and implementation of the oversight function resulted in significant frustration by members of the licensee and contractor staffs.
4. Disciplinary action taken against members of the day shift oversight crew has been perceived by some individuals as a message not to bring safety concerns to the NRC inspector's attention.

3. Allegation RV-89-A-0025

During the period of this inspection Region V received a letter dated May 11, 1989 concerning a possible unreported exposure of a radiation protection technician involved in the transfer of a Unit 3 reactor coolant pump impeller into a decontamination tank located at Unit 2 on a night shift.

The allegor stated that a radiation protection technician (A) worked within three feet of the impeller reading up to 50 rem/hr at contact for 10-15 minutes with no dosimetry. The allegor suggested that technician (B) delivered a dosimetry pack to (A) immediately after the impeller was placed in the decontamination tank and that technicians (C) and (D) were informed of the situation. The allegor stated that (D) informed the lead technician and the lead technician reported to the Unit 2 Radiation Protection Manager but that no dose assessment was made.

The allegor noted that this matter should have been reported through the Palo Verde chain-of-command, but that it was important to remain anonymous due to a fear of retribution.

A. Findings

1. Radiation Exposure Permit No. 3-89-0059-A, R. P. Coverage of Impeller Decon, requires a TLD and 0-200 mr dosimeters.

2. Computerized access logs show that A and B worked in the same location, during the same period of time, under REP No. 3-89-0059-A.
3. Radiation Survey records show predecontamination dose rates up to 50 rem/hr at contact and 5 rem/hr at three feet from the impellers.
4. Review of video tapes of this work activity shows that radiation protection technicians briefly approached the impellers, but the film does not permit the viewer to confirm whether dosimetry was being worn.
5. Pocket dosimeter readings recorded for the period that A and B worked together show 20 mrem for A and 10 mrem for B.
6. The inspector telephoned B at home on May 16, 1989, and confirmed the individual's identity by requesting B's TLD number. The inspector identified himself as an NRC employee and informed B of B's responsibility to answer questions honestly. B stated that he worked the impeller decontamination job with A but that radiation protection technicians were not required to wear special dosimetry packs, and that B never provided A with dosimetry during the job. B was not aware of any instance where A did not wear dosimetry during that task.
7. The inspector then called A at home and followed the same procedure. A stated that he worked the impeller job, that he wore regular dosimetry, and that B never approached him during the job to provide him dosimetry.
8. On May 17, 1989 the inspector discussed this matter with D. D confirmed that he worked the same job with A, B and C. D had no recollection of any matter involving a failure to wear dosimetry.
9. Several individuals contacted during review of this matter indicated that morale in the radiation protection organization was particularly low.
10. In discussions with licensee representatives, the inspector was informed that the licensee's "Quality Hot Line" has only received four radiological inputs this year.

B. Conclusions

1. While the allegation correctly describes the work activities of A and B, the inspector was unable to substantiate any unmonitored or unreported exposure of A associated with this specific task.
2. The allegeder's statement regarding reluctance to report this concern through the licensee's chain-of-command is not in the interest of safety, and should be of concern to the licensee.



4. Exit Interview

The inspector met with the individuals noted in paragraph 1 at the conclusion of the inspection on May 18, 1989. The scope and findings of the inspection were summarized.

The inspector reaffirmed the importance of an oversight function in verifying implementation of the licensee's radiation protection program during outage conditions.

The inspector was critical of management's involvement in assuring quality implementation of the oversight function. The inspector advised the licensee representatives of his perception that morale was declining and that workers do not feel they can bring safety concerns to their supervisor's attention and that the licensee's "Quality Hot Line" is not responsive.

The licensee was fully aware of the problems in implementing the oversight function and is developing ways to improve the willingness of workers to bring their concerns to the licensee's attention.

The inspector did not specifically address the chilling effect of the oversight disciplinary action on worker's willingness to bring concerns to NRC's attention. This matter will be addressed by NRC management in a future visit planned for May 22 and 23, 1989.

