NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos.: 50-528/90-09, 50-529/90-09 and 50-530/90-09

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

Inspection at: Wintersburg, Arizona

Inspection Conducted: 12 through 16 February 1990

Inspector: J. Russell, Radiation Specialist — Date Signed 3-1-90

Approved by: F. Wenslawski, Chief, Facilities Radiological Protection Section — Date Signed 3/2/90

Summary:

Areas Inspected:

This was a routine, unannounced inspection of liquids and liquid wastes. The inspection included tours of the licensee's facilities. Inspection procedures 84723 and 30703 were covered.

Results:

In the areas inspected, the licensee's programs appeared adequate to the accomplishment of their safety objectives. No violations or deviations were identified. Questions regarding onsite disposal of materials were identified, necessitating further review of disposal methodologies (see paragraph 2.a.).

DETAILS

1. Persons Contacted

Licensee Personnel

W. Marsh, Plant Director
P. Hughes, Radiation Protection & Chemistry Manager
J. Mann, Central Radiation Protection Manager
R. Fulmer, Quality Assurance Manager
R. Adney, Unit 3 Plant Manager
D. Heinicke, Unit 2 Plant Manager
T. Bradish, Compliance Manager

NRC Personnel

D. Coe, Senior Resident Inspector

The above noted individuals were present at the exit interview on 16 February 1990. In addition to these, the inspector met and held discussions with other members of the licensee's staff.

2. Liquids and Liquid Wastes (84723)

a. Audits and Appraisals

The inspector reviewed Quality Assurance Audit Reports 89-015, 89-016 and 89-021 which covered areas of the liquid waste program. These were performed during the period June through September 1989.

Audit Report 89-015 identified three problems in the liquids and liquid wastes area involving potential failures to comply with 10 CFR 20.301 requirements and to adhere to environmental commitments. These involved the disposal of cooling tower sludge and rubbish & spent resin, which were contaminated with low levels of radioactivity, into the onsite sludge and rubbish landfills, respectively. Corrective Action Report CA89-0049 and Problem Resolution Sheets (PRSs) 336 and 338 were generated to document these problems. Their resolution had not been completed at the time of the inspection.

The cooling tower sludge matter was reported in LER 89-08 for Unit 1 but that with regard to the rubbish & resin was not reported. The audit identified sludge specific activities in the 0.1 picoCurie/mL range for Co-60, Mn-54 and Cs-137. Trash specific activities of 5 to 10 picoCuries/gram and resin specific activities of approximately 0.8 picoCurie/mL were identified. The inspector was informed by licensee management that secondary resins that may contain low levels of radioactivity were no longer being discarded into the onsite landfill but were being shipped to a licensed radioactive waste disposal facility. Notably, Unit 3 had needed to so dispose large quantities

of secondary resins subsequent to a steam generator tube leak in 1989. The only potentially contaminated resin that appeared to have been sent to the onsite landfill was approximately 500 gallons of secondary demineralizer resin from Unit 3 during April 1989. Trash with a specific activity less than 20 picoCuries/gm was still being sent to the landfill subsequent to release in accordance with licensee procedure 75RP-9ME04, "WCM Bag Monitor Operation." The bag monitor was found to be calibrated in accordance with procedure 75RP-9EQ11, "Calibration and Response Check of the N. N. C. Waste Curie Monitor," which provided an alarm setpoint of 20 picoCuries/gram but appeared to have a LLD in the range of a few picoCuries/gram. No specific documentation of the basis for the release limit was available. This matter was brought to licensee management attention during the course of the inspection. It appeared that further review was necessary to assure that the activity routinely identified in the rubbish, below the release limit of 20 picoCuries/gram, reflects only naturally occurring levels and not plant related contamination. This was considered an open item (50-528/90-09-01).

The licensee had contacted the State of Arizona in the matter of low level contamination in the onsite landfills and was pursuing discussions to resolve the situation. The cooling tower sludge matter was discussed with licensee management during the course of the inspection and at the exit interview. It will be reviewed further during followup of the associated LER as open item 50-528/89-08-LO. The matter of the potential disposal of plant related activity in trash & secondary resin was discussed with licensee management during the course of the inspection and at the exit interview. It also required further review and is also considered an open item (50-530/90-09-01).

Audit Report 89-016 identified a problem involving the disposal of sewage treatment plant sludge, with respect to the situation identified in Information Notice (IN) 88-22, "Disposal of Sludge from Onsite Sewage Treatment Facilities at Nuclear Power Plants." The audit noted that, once or twice a week, 5000 gallon shipments of sludge are sent to an offsite landfill for disposal but that the sludge was only sampled for radioactivity once a month. The audit noted that this sampling did not appear to be representative and was a potential failure to comply with the requirements of 10 CFR 20.201, Surveys. The response to the QA finding stated that the sludge was not expected to be contaminated as there were no interfacing, contaminated systems therefore any contaminating radioactivity would have had to be accidentally introduced. This appeared to miss the point of the IN and the QA finding in that sewage sludge at most plants is not normally expected to be contaminated but should be representatively sampled to assure this prior to offsite disposal. This matter requires further review and is considered an open item (50-528/90-09-02).

The licensee seemed to be maintaining their previous level of performance in this area and their program appeared adequate to the

accomplishment of its safety objectives. No violations or deviations were identified.

b. Changes

Changes in the organization, personnel, facilities, equipment, program and procedures were discussed with the cognizant area supervisors and managers. Numerous changes were identified as pending in the organizations responsible for radiation protection, chemistry and effluents; but had not yet been accomplished. Changes were also being planned for the "Offsite Dose Calculation Manual" (ODCM), as a result of Generic Letter 89-01, and for the removal of the Radiological Effluent Technical Specifications from the Technical Specifications (TS); but these also had not yet been accomplished.

Operation of the Liquid Waste Management System appeared to be essentially as described in the Updated Final Safety Analysis Report (UFSAR), Section 11.2, however, the licensee had identified discrepancies between the description of liquids management in the UFSAR and the requirements of TS 3/4.11, "Radioactive Effluents." Specifically, the UFSAR stated that no radioactive liquids are discharged to the onsite evaporation ponds but TS 3/4.11 provided a LLD for the concentration of radioactivity in liquid discharges, tacitly allowing release of contaminated liquids to the evaporation ponds below that level. Preliminary licensee environmental sampling results from 1989 were reviewed and were fount to indicate low levels of activity in sediment from the evaporation ponds, retention basins and sedimentation basin #2. The licensee had documented this situation on Engineering Evaluation Request #89-OW-004 and was still pursuing resolution of the matter at the time of the inspection. Both the ODCM and the UFSAR appeared to require changes, to reflect the current low levels of activity in the evaporation ponds, and in accordance with the requirements of 10 CFR 50.71(e), for periodically updating the FSAR. This matter was discussed during the course of the inspection and at the exit interview.

A change to procedure 75RP-9RP09, "Vehicle, Equipment and Material Release from the RCA," which allowed release of bulk materials, was identified. This change, completed in May 1989, allowed release if a 2000 second count of a 1 L marinelli sample showed no detectable activity. No specific basis documentation could be provided to the inspector to support this criterium. The isotopic LLDs associated with the methodology were reviewed and were found to be comparable to those required for environmental samples by TS Table 4.12-1 with the exceptions of the LLDs for Zn-65, Cs-134 and Cs-135, which were higher. During the course of the inspection and at the exit interview, the inspector noted that the criteria for release of bulk materials should be sufficient to show that plant related activity is not contained in the material, i.e. that activity levels are comparable to normal, environmental levels of the specific nuclides in the particular waste stream. Therefore, an evaluation and documentation are needed to support setting this limit. This matter

requires further review and is considered an open item (50-528/90-09-04).

The licensee seemed to be maintaining their previous level of performance in this area and their program appeared adequate to the accomplishment of its safety objectives. No violations or deviations were identified.

c. Effluents

The "Semiannual Radioactive Effluent Release Report" for January through June 1989 was reviewed and noted that there are no liquid effluents from the PVNGS site, that liquid discharges to the onsite evaporation ponds have been limited to activities less than those specified in TS 3.11.1.1 and that the dose commitment to a member of the public was less than the limits of TS 3.11.1.2. As noted above, low levels of contamination have been detected in the onsite evaporation ponds, the retention basins, and sedimentation basin #2. Environmental sampling results from these areas for 1989 were reviewed and the sampling and analysis methodology were discussed with the licensee's contract laboratory.

Liquid Radwaste System (LRS) operation was reviewed with the operations organization for each unit and liquid sampling and resin and sludge processing were discussed with the radiation protection, chemistry and radwaste organizations. It appeared that the LRSs were being operated essentially as described in the UFSAR with the exception that no distinction was made between high and low Total Dissolved Solids (TDS) influents and all liquid was run through the evaporators. The UFSAR described operation of the LRS as having two influent streams, low and high TDS, the low being immediately routed to the demineralizers and the high to the evaporator.

The primary sources of liquid and solid wastes appeared to be essentially as described in the UFSAR. Some off-normal events have resulted in increases in these volumes. As noted above, steam generator tube leaks, particularly at Unit 3 during 1989, have resulted in significant quantities of secondary resins being contaminated and necessitating their disposal as radioactive waste. These leaks had been repaired. Also, during March 1989 at Unit 1, backleakage through the post-accident RCS hot leg sample line was found to have contaminated a portion of the normally uncontaminated Demineralized Water System. Modifications were being evaluated to prevent future backleakage.

The following current procedures were reviewed:

74ST-9ZZ02	"Chemical Waste Neutralization Tank Surveillance Test"
74ST-9ZZ03	"Liquid Holdup Tank Surveillance Test"
76CP-9NP05	"Radwaste Solidification System Operating Procedure"
76CP-9NP06	"Operating Procedure - Resin Drying"

74CH-9XC33	"Post Accident Radioactive Sampling, Analysis and Handling"
74ST-9SS02	"Post Accident Sampling System Leakage Monitoring"
75AC-9RP17	"Performance of the Radiological Environmental Monitoring Program (REMP)"
75RP-0EN03	"Water, Food Product and Sediment Sample Collection"

These appeared adequate to program requirements. No unmonitored release paths were identified and, as there were no liquid effluents from the site, 10 CFR 50, Appendix I, objectives for liquids did not appear to be applicable.

The licensee seemed to be maintaining their previous level of performance in this area and their program appeared adequate to the accomplishment of its safety objectives. No violations or deviations were identified.

d. Instruments

Select liquid process monitor channel calibrations from the essential cooling water and nuclear cooling water system monitors, performed from December 1988 to date, were reviewed. The records appeared to be complete and adequate. The licensee had no liquid effluent monitors and there were no TSs associated with the noted process monitors.

Select surveillances from July and August 1989, in accordance with the requirements of TS 4.11.1.1.1 for Units 2 & 3, were reviewed and appeared complete and adequate. Select contingent sampling surveillances were also reviewed. Select surveillances from January and February 1990, performed in accordance with the requirements of TS 4.11.1.3 for each unit, were reviewed and appeared complete and adequate. It was noted that the surveillance required by TS 4.11.1.2 were not performed as there have been no liquid effluents from the site. All records appeared to be complete and timely.

The licensee seemed to be maintaining their previous level of performance in this area and their program appeared adequate to the accomplishment of its safety objectives. No violations or deviations were identified.

3. Exit Interview (30703)

The inspector met with the licensee representatives, denoted in paragraph 1, at the conclusion of the inspection on 16 February 1990. The scope and findings of the inspection were summarized.