U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-528/82-24

Docket No. 50-528 License No. CPPR-141 Safeguards Group

Licensee: Arizona Public Service Company
P. O. Box 21666
Phoenix, Arizona 85036

Facility Name: Palo Verde Nuclear Generating Station - Unit 1.

Inspection at: Palo Verde Site - Wintersburg, Arizona

Inspection conducted: September 27 - October 1, 1982

Inspectors: F. A. Wenslawski 10/28/82
for H. S. North, Radiation Specialist Date Signed

Date Signed

Approved by: F. A. Wenslawski 10/28/82
F. A. Wenslawski, Chief, Reactor Radiation Protection Section Date Signed

Approved by:
H. E. Book, Chief, Radiological Safety Branch Date Signed

H. E. Book 10/29/82
Date Signed

Summary:

Inspection September 27 - October 1, 1982 (Report No. 50-528/82-24)

Areas Inspected: Routine, unannounced inspection by a regionally based inspector of radiation protection organization and staffing, RWP training, facilities, liquid rad waste system components, gaseous radwaste system components, radiation protection procedures, followup on IE Circulars and Information Notices and a facility tour. The inspector was accompanied during the last two days by the Director, Division of Radiological Safety and Safeguards Programs, Region V. The inspection involved 36 hours onsite by the inspector.

Results: In the 8 areas inspected, no items of noncompliance or deviations were identified.

RV Form 219 (2)

DETAILS

1. Persons Contacted

Arizona Public Service Company (APS)

C. Andognini, Vice President, Electric Operations
*J. Allen, Technical Support Manager
J. Brooks, General Training Instructor
*L. Brown, Radiation Protection and Chemistry Manager
S. Frost, Nuclear Operations Support Supervisor (TELEPHONE)
F. Hicks, Training Manager
*B. Jordan, Licensing Engineer
*R. Kramer, Licensing Supervisor
J. McDuffee, Radiation Protection Supervisor
G. Roettger, Senior Radiation Protection Technician (RPT) Radwaste
W. Rogers, Supervising Radiation Physicist, Radwaste
J. Schlag, Supervising Radiation Physicist, Unit 1
J. Vorhees, Nuclear Operations Support Manager
J. Watson, RPT, Entry Level
B. Wilkins, RPT, Entry Level
L. Yows, (Emergency Planner) On Site Emergency Coordinator

Bechtel

L. Afek, Engineer (TELEPHONE)
F. Grisbaum, Engineer (TELEPHONE)

*Denotes attendance at the exit interview on October 1, 1982.

2. Organization and Staffing

The Radiation Protection and Chemistry organization remains as previously described in Inspection Report No. 50-528/82-11. Shifts in personnel within the Radiation Protection group have resulted in a reduction in the number of ANSI qualified RPTs assigned to the Unit-1 staff. Former RPTs assigned to Unit-1 have moved to positions in Radiological Engineering, Emergency Planning (Site) and Radwaste. The Unit-1 Radiation Protection staff, reporting to the Radiation Protection Supervisor thru the Unit-1 Supervising Radiation Physicist presently consists of seven ANS/3.1-1978 qualified RPTs including three seniors. Five additional ANSI qualified technicians are required to meet the FSAR identified Unit-1 staffing level. The licensee is continuing an active recruiting effort. The licensee is currently evaluating significant Unit RPT staffing increases above the FSAR described levels.

The Radwaste group reporting through a Supervising Radiation Physicist (Radwaste) to the Radiation Protection Supervisor includes five ANS/3.1-1978 qualified RPT's including two seniors. One of the five RPT's had accepted an offer but had not reported for duty at the time of the inspection. One additional RPT is required to bring the ANSI qualified Unit-1, RPT(Radwaste) staff to planned staffing levels. In addition, the licensee has on staff six entry level RPT's assigned to the Radwaste group. Five of these individuals hold A.A. or A.S., 2 year degrees, in nuclear technology from academic institutions. The sixth has similiar academic training and plant experience and will have three years experience including training in January, 1983. Senior RPTs are so designated based on length of service and experience factors.

The Unit Radwaste group is assigned responsibility for the operational aspects of the liquid, gaseous and solid radwaste systems. The radwaste RPT's have been specifically selected with emphasis on equipment and system operations in addition to radiation protection training and experience.

The onsite radiological engineering staff reporting to the Radiation Protection Supervisor consists of a Lead Radiation Physicist and four radiological engineers and one support RPT. Individuals in this group presently have assignments in the areas of health physics including, dosimetry, instrument calibration, respiratory protection, the Chemical Radiological Computer System (CRACS), environmental, licensee commitments, RETS tracking and various back up assignments. Two of these engineers will be spending five weeks at Kaman Science Corporation for training during the factory acceptance tests of the Radiation Monitoring System (RMS). Two engineers will receive training on the CRACS at the TEC facilities for technical input and in support of procedure preparation. Delivery of both systems is expected before January, 1983.

A Site Emergency Planning group consisting of two radiological engineers reporting to the Radiation Protection Supervisor has been established.

Because of difficulties in meeting planned RPT staffing goals and the necessity to complete required site specific training and qualification, the licensee plans to employ 15 contract ANS/3.1-1978 qualified RPT's and three contract supervisors for shift work to support the licensees activities from fuel receipt (planned January 17, 1983) thru fuel loading. At the time of the inspection requests for bids had been submitted to a number of firms. Acceptable contract technicians must satisfy the following requirements: resume review with reference verification, satisfactory completion of a 100 question examination balanced between practice and theory and an oral interview. The licensee has challenged the examination using recent graduates from 2 year technician training institutions

and obtained scores of 60-70 percent. The examination is believed to adequately identify the absence of practical experience. Acceptable contract technician candidates must complete the licensee's Site Access Training (SAT) and Radiological Work Practices (RWP) training, referenced in Inspection Report No. 50-528/82-11 paragraph 5 and paragraph 3 of this report, and be respirator qualified.

The licensee is currently evaluating the assignment of responsibility for Water Reclaimation Facility chemistry to the Chemistry Supervisor in the Nuclear Operations organization.

No items of noncompliance or deviations were identified.

3. Training

The inspector observed the first day of the two day Radiological Work Practices (RWP) training. The course addressed measurements and units, nuclear decay and radiation fundamentals, biological effects of radiation, dose control and personnel dosimetry, ALARA philosophy and techniques and contamination control. The material covered was effectively presented at a level appropriate for inexperienced workers. In that portion of the instruction observed, the training satisfied the requirements of 10 CFR 19.12 Instructions to workers.

No items of noncompliance or deviations were identified.

4. Facilities - Chemistry and Radiation Protection

At the time of the inspection the licensee had been afforded beneficial occupancy of the chemistry and radiation protection facilities in the auxiliary building. The licensee had not occupied the facilities because the requisite services, water, sewers, power and HVAC were not functional.

No items of noncompliance or deviations were identified.

5. Equipment - Major Components Liquid Radwaste System

Installed equipment name plate data was compared with FSAR (Amendment 4, May 1981) Table 11.2-1 Liquid Radwaste System (LRS) Equipment Descriptions. During the examination a number of departures from the FSAR descriptions were observed. The list of identified discrepancies which follows is not necessarily complete in that name plate data did not in all cases fully address all descriptive items shown in Table 11.2-1. Only discrepant, missing or unspecified data is reported. In the case of tank volumes, the licensee reported that strapping to establish actual volumes is being conducted.

Component

Table 11.2-1 Description	Name Plate deviations from Table 11.2-1
High TDS Holdup Tanks (T-01 A,B) **Low TDS Holdup Tank (T-01 C)**	
Design P/T - 15 psig/250F	Max Design P/T - Atmos./150F
Operating P/T - Atmos./80F	Not Specified
Material - 304SS	Not Specified
Concentrate Monitor Tanks (T-03 A,B)	
Installation not complete	
Caustic Storage Tank (T-08)	
Design P/T - 15 psig/250F	Working P/T - 15 psig/120F
Operating P/T - Atmos/115F	
Caustic Batch Tank (T-10)	
Design P/T - 15 psig/250F	Max. Working P - Atmos.
Operating P/T - Atmos/115F	(Temp. not specified)
Acid Storage Tank (T-06)	
Design P/T - 15 psig/250F	Specified as 15psig/120F
Operating P/T - Atmos/80F	(Design-Operating not specified)
Acid Batch Tank (T-09)	
Design P/T - 15 psig/250F	Max working - 15 psig
Operating P/T - Atmos/80F	(Temp. not specified)
Recycle Monitor Tanks (T-04 A,B)	
Design P/T - 15 psig/250F	Atmos/150F
Operating P/T - Atmos/80F	Not Specified
Material - 304SS	Not Specified
LRS Holdup Pumps (P-01 A,B,C)	
Design P/T - 98 psig/150F	Max. Working 275 psi at 100F
Chemical Drain Pumps (P-02 A,B)	
Design P/T - 74 psig/150F	Max. Working 275 psig at 100F
Anti-Foam Pump (P-07)	
Design P/T - 85 psig/175F	Max. 93 psi-T not specified
Material - 316 SS	Not Specified

Recycle Monitor Pump (P-03)

Design P/T - 52 psig/150F	250 psi/100F

LRS Evaporator Main Recycle Pump (P-08)

Design P/T - 40 psig/250F	Not Specified

LRS Evaporator Distillate Pumps (P-09 A,B)

Design P/T - 34 psig/250F	Not Specified
Motor rpm/bhp - 3500/20	3500/5

LRS Evaporator Concentrate Pumps (P-10 A,B)

Design P/T - 35 psig/224F	Not Specified
Motor rpm/bhp - 1750/0.5	1750/2

LRS Steam Condensate Pump (P-11)

Capacity - 22,000 lb/hr	40 gpm
Design P/T - 35 psig/281F	Not Specified

Concentrate Monitor Tank Pumps (P-04 A,B)

(Installation not complete)

Design P/T - 43 psig/170F	Max. Allowable P/T - 275 psi at 100F
Material - 316L SS	W20
Motor rpm/bhp - 3600/5	1770/30

The name plate data on the Evaporator (Ecodyne, Unitech Division) was not examined because of difficult access. The inspection verified that the LRS included the major components identified in the FSAR.

No items of noncompliance or deviations were identified. The apparent discrepancies were discussed with the licensee during the exit interview.

6. Equipment - Major Components Gaseous Radwaste System

Installed equipment name plate data was compared with FSAR (no amendment or date shown) Table 11.3-1 Gaseous Radwaste System Process Equipment Description.

It was noted that the makers label on the Gas Surge Tank and the three Waste Gas Decay Tanks did not identify the tank volume. The licensee stated that tank volumes would be verified by strapping. The name plate data on the two waste gas compressors did not identify

flow rate or design pressure or temperature. The inspection verified that the Gaseous Radwaste System included the major components described in the FASR. Verification that system component specifications are as described in the FSAR will be conducted during a subsequent inspection (81-24-01).

Based on the available information no items of noncompliance or deviations were identified.

7. Radiation Protection Procedures

Selected reviewed and approved procedures were examined for implementation of and compatibility with the FSAR and NRC regulations. The procedures examined included:

Procedure No.	Rev. No.	Title
75PR-0ZZ01	Rev. 0	Radiation Protection Program
75PR-0ZZ02	Rev. 1	Respiratory Protection Program
75AC-9ZZ01	Rev. 0	Radiation Exposure Authorization, Permits and Control
75RP-9ZZ01	Rev. 0	Self-Indicating Dosimetry Issue
75RP-9ZZ15	Rev. 1	TLD Temporary Badge Service
75RP-9ZZ34	Rev. 0	Respirator Maintenance, Inspection and Repair
75RP-9ZZ61	Rev. 0	Radioactive Material Storage and Control

No items of noncompliance or deviations were identified.

8. Followup on IE Circulars and Information Notices

The licensee has assigned responsibility for distriubtuion and documentation of Circulars and Information Notices to their headquarters based Nuclear Operations Support group. Receipt, review for applicability and action if appropriate on the following items for Docket Nos. 50-528, 50-529 and 50-530, was verified by telephone from the Palo Verde site.

IE Circular No. 81-07	Control of Radioactively Contaminated Material (IC-81-07 closed)
IE Circular No. 81-09	Containment Effluent Water that Bypasses Radioactivity Monitor (IC-81-09 closed)

IE Information Notices

No. 81-36, Part 3, Supp. No. 1	Clarification of Placement of Personnel Monitoring Devices for External Radiation (IN-81-36 closed)
No. 82-18	Assessment of Intakes of Radioactive Material by Workers (FW-06-16 closed)
No. 82-31	Over Exposure of Diver During Work in Fuel Storage Pool (IN-82-31 closed)
No. 82-36	Respirator Users Warning for Certain 5-minute Emergency Escape Self-Contained Breathing Apparatus (IN-82-36 closed)

No items of noncompliance or deviations were identified.

9. Facility Tour

During the inspection the inspector toured the contaminated laundry, radwaste areas including liquid, gaseous and solid, chemistry and radiation protection facilities and other areas in the auxiliary building, the control room, portions of the containment and turbine building and the calibration facility.

It was noted that a Stock Equipment Company, dry waste compactor has been positioned in the radwaste facilities. The unit is equipped with an exhaust fan and a HEPA filter enclosure. Ducting to the radwaste building exhaust system is provided. This equipment is specified in FSAR Section 11.4.2.2 H.

It was noted that four dry cleaning type laundry machines, "Radkleen", Model 30, Health Physics Systems, Inc. with individual vent hoods have been positioned in the laundry facility as described in FSAR Section 12.5.2.3.

No items of noncompliance or deviations were identified.

10. Exit Interview

The results of the inspection were discussed with the individuals denoted in paragraph 1 at the conclusion of the inspection. The licensee was informed that no items of noncompliance or deviations had been identified. The inspectors comments addressed the following specific topics:

1. The difficulties in RPT staffing and the proposed use of contract technicians to support fuel receipt and activities through fuel loading were acknowledge. The inspector commented that this appeared to be an acceptable technique to permit the completion of new hire RPT training and qualification.

2. The inspector stated that inability to obtain effective occupancy of the chemistry and radiation protection facilities in the auxiliary building, appeared to be approaching a critical stage. The inability to install, calibrate and gain experience in operation of equipment is rapidly approaching the point where an impact on the proposed fuel load date is a distinct possibility.

3. The first day of RWP training was well organized and presented and satisfied the requirements of 10 CFR 19.12. The inspector stated his intent to attend the second day of RWP training as well as the radiation protection portion of SAT during a subsequent inspection. (82-11-01)

4. The inconsistences between the FSAR Equipment Descriptions and the installed LRS equipment (paragraph 5) were described in general. The licensee was informed that specific inconsistences would be identified in the inspection report. The licensee stated that the portion of the FSAR related to the radwaste systems was outdated and scheduled to be revised by amendment 10 with a planned issue in January, 1983. The licensee was informed that the radwaste system would be reexamined following the issuance of the revised FSAR.

5. With respect to the radwaste systems, the licensee was informed that, such devices as level or pressure gauges and flow meters used for evaluation of releases, are expected to recieve initial and systematic recalibration and further that pump flow specifications cannot be used as a basis of release calculation if flow rate measurements are required.

6. In response to a question raised concerning the absence of heat tracing of iodine monitor sampling lines during the previous inspection (IE Inspection Report No. 50-528/82-11 paragraph 8) the licensee responded to the inspector with a copy of an internal memorandum forwarded under separate cover date July 29, 1982. The response stated generally that heat tracing had been evaluated and that the result was that it was the licensee's opinion that the sampling lines were adequate as designed without the addition of heat tracing. In response to the licensee statement the inspector commented that no commitment for heat tracing is contained in the FSAR and further no NRC requirement for such an addition exists. The inspector informed the licensee that during the monitoring system calibration process an evaluation of sampling efficiency including iodine and particulate line losses will be expected.