

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-528/85-09, 50-529/85-12

Docket Nos. 50-528, 50-529

License Nos. CPPR-142, NPF-34

Licensee: Arizona Public Service Company
P. O. Box 21666
Phoenix, Arizona 85836

Facility Name: Palo Verde Nuclear Generating Station - Unit 1 and 2

Inspection at: Palo Verde Site - Wintersburg, Arizona

Inspection Conducted: March 18-21, 1985

Inspector: Conrad L Sherman
C. Sherman, Radiation Specialist

April 10, 1985
Date Signed

Approved By: GP Yunas
G. P. Yunas, Chief
Facilities Radiological Protection Section

4/10/85
Date Signed

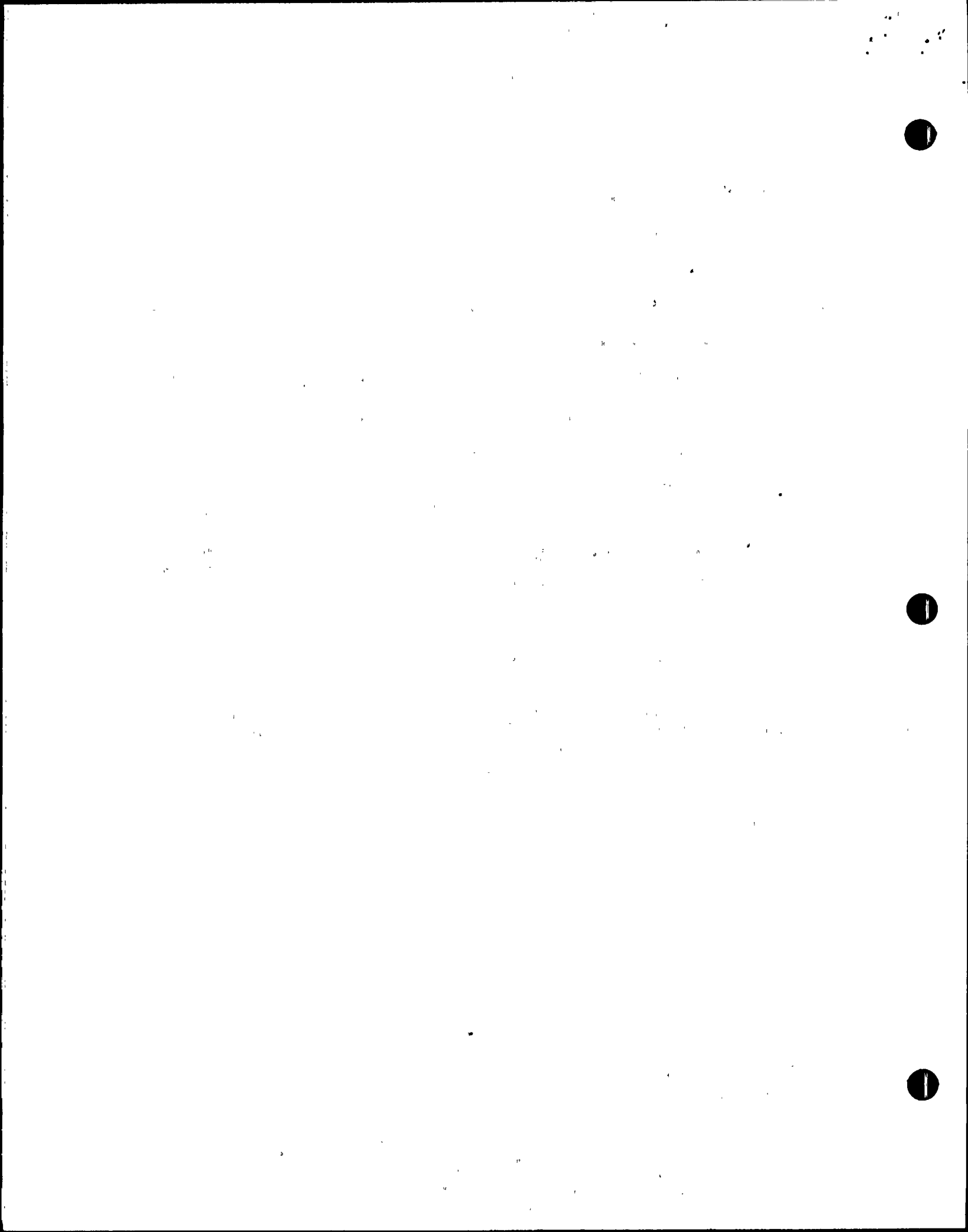
Summary:

Inspection during the period of March 18-21, 1985 (Report No. 50-528/85-09, 50-529/85-12)

Areas Inspected: Routine unannounced inspection of Unit 1 startup testing program for radiation protection and chemistry; Unit 2 preoperational test program for radiation protection, staffing, and training. This inspection involved 36 hours onsite by one regionally based inspector.

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

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DETAILS

1. Persons Contacted

Arizona Public Service (APS)

- *L. Souza, Assistant Corporate QA/QC Manager
- *J. Bynum, Plant Manager
- *T. Warren, Chemistry Supervisor
- *M. Bimson, Quality Assurance
- *W. Doyle, Radiation Protection Supervisor, Unit 2
- *B. Tweedy, Startup
- *G. Perkins, Manager, Radiological Services
- *J. Cederquist, Manager, Chemical Services
- *L. Brown, Manager, Radiation Protection and Chemistry
- *T. Bloom, Licensing Engineer
- *C. Russo, Manager, Quality Audits and Monitoring
- *J. Mann, Corporate Health Physics Supervisor
- K. Oberdorf, Radiation Protection Supervisor, Unit 1

*Denotes those individuals participating in the exit interview on March 21, 1985.

2. Radiation Protection and Chemistry, Organization and Management Control

a. Organization, Responsibility and Authority

This area has been previously examined for Unit 1. Organization for Chemical Services, Radiological Services and Radioactive Materials Control remain as described in NRC Inspection Report 50-528/84-31, 50-529/84-25.

b. Staffing

Methods to recruit, train and supervise technicians for the Unit 2 chemistry and radiation protection areas were examined. The licensee generally recruits ANSI qualified personnel with commercial nuclear or Navy nuclear experience. An individual must be approved for hire by the supervisor and one level of management. Supervisory hires require approval of a vice president. The radiation protection and chemistry sections have formal procedures documenting the qualification requirements for technicians.

The chemistry section procedure is 74CH9ZZ98 Rev. 2, 'Chemistry Section Training'. This procedure provides detailed lists of knowledge items and practical factors in the general areas of laboratory work, plant system knowledge, plant system operation, technical specifications and laboratory quality control.

Contractor personnel are used to satisfy staffing requirements until permanent APS personnel can be hired. The licensee uses only ANSI qualified persons to meet their staffing requirements.

Position descriptions (PD) for the Unit Radiation Protection Supervisor were compared with responsibilities described in 75PR-0ZZ01, 'Radiation Protection Program'. Responsibilities assigned in 75PR-0ZZ01 are described in the position description. Other responsibilities for the Unit Supervisor are described in 75PR-0ZZ02, 'Respiratory Protection Program' 75PR-0ZZ04, 'Radioactive Materials Control Program', 75PR9ZZ03, 'ALARA Program' 75AC-9ZZ02, 'Gaseous Radioactive Effluent Release Administrative Control', et al. Examination of these documents revealed the following observations which were identified to the licensee:

Responsibilities under Section 4.9 of 75PR-0ZZ02 are not described in the PD. This section describes respiratory program responsibilities.

Responsibility of step 4.2.5.1 of 75PR-0ZZ04 regarding the concept of maintaining releases ALARA is not consistent with the PD.

c. Audits

Audit requirements are contained in Technical Specification (TS) section 6.5, 'Review and Audit'. Required audits include the ODCM and implementing procedures, the process control program and implementing procedures, the Pre-planned Alternate Sampling Program and activities described in the Operations Quality Assurance Manual (OQAM). Appendix I of the OQAM identified QA criteria to be applied to important safety items. Included are radwaste and radiation protection.

The inspector examined the licensee's Corporate Quality Assurance Audit Schedule for 1984 and 1985. This schedule provides for audits of required areas as specified in the TS.

The licensee's corporate quality assurance department issued QA document 85-CQA-153, subject: "Mission Statement". This document addressed the subject of auditor technical ability. The intent of the QA organization as evidenced by this letter is to have auditors qualified to the same standard as the production organization in the areas of health physics, chemistry and radwaste.

The licensee's program also includes a quality monitoring function. This group performs observations of work activities in progress under the corporate organization. This program examines activities in the health physics and chemistry areas. The licensee qualifies monitors in the same manner as auditors.

d. Communication to Employees

The chemistry and radiation protection sections have implemented methods for assuring that employees are informed of changes to programs, policies and procedures.

The chemistry section issues a required reading notice for each new procedure or procedure revision. This notice is issued by the unit

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supervisor. This requirement is described in 74CH-9ZZ98 Rev. 2, 'Chemistry Section Training', section 7.3.

The radiation protection section required reading notice is issued by the Radiological Services Manager. The inspector reviewed two required reading notices, PVNGS-GDP-M85-004 dated January 14, 1985 identified 51 procedures, PVNGS-GDP-M85-015, dated February 1, 1984, for contractor employees not qualified for shift assignment identified 30 procedures for review.

e. Documentation and Implementation

Procedures, methods, systems and responsibilities of individuals and organizations in the areas of chemistry, radiation protection and radwaste are described in the 74 and 75 series of documents. No outstanding items in these areas remain for unit one. No additional programmatic problems were identified in the area of organization and management control during this inspection.

No violations or deviations were identified.

3. Radiation Protection and Chemistry: Training and Qualification

a. Training and Qualification Program

This program has been inspected during the preoperational phase for unit one. Procedure 75PR-OZZ01 'Radiation Protection Program' section 5.4 describes general radiation protection training and retraining requirements for permanent and temporary plant personnel. Site access training and radiological work practices training were examined as described in NRC inspection report 50-528/83-35, 50-529/83-16. This report also described satisfactory training to meet 10 CFR 19.12 and the guidance of Regulatory Guide 8.13, 8.24 and 8.27. This inspection report also identified an open item (50-528/83-35-02) in the area of escort responsibility.

The inspector was informed that visitors may enter areas controlled for the purpose of protection from radiation if accompanied by an escort without being trained pursuant to 10 CFR 19.12.

The inspector pointed out to the licensee representative that part 19.12 contained specific training requirements and that no provision is made for waiving these when a visitor is escorted. The importance of documenting any training provided visitors was also stated.

b. Education and Experience

The education and experience qualifications for the Unit 2 licensee personnel for chemistry and radiation protection were examined.

Qualifications of six personnel and three newly hired personnel in radiation protection are summarized as follows.

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Individual A: 5 years HP experience prior to APS; 1 year HP training
 Individual B: 1½ years experience offsite, 1½ years APS; 1½ years HP training
 Individual C: 6 years HP experience prior to APS; 1 year HP training
 Individual D: 10 years HP experience prior to APS; 1 year HP training
 Individual E: 11 years HP experience prior to APS; 1 year HP training
 Individual F: 4 years HP experience prior to APS; 1 year HP training
 Individual G: 6 years HP experience prior to APS; 1 year HP training
 Individual H: 5 years HP experience prior to APS; 1 year HP training
 Individual I: 3 years HP experience prior to APS; 1 year HP training

These individuals meet the ANSI/ANS-3.1-1978 criteria of two years of working experience in their specialty (4.5.2) and one year of related technical training. The unit 2 supervisor was found to meet the requirement (4.3.2) of 4 years of experience in health physics.

The qualifications for unit 2 chemistry personnel were examined and also found to meet the criteria of ANSI/ANS-3.1-1978.

The training records for three unit 2 maintenance supervisors were examined for training in the health physics area.

The following courses were provided to maintenance supervisors:

Respiratory Protection;
 ALARA for Supervisors and Foremen;
 Radiation Work Practice Training;
 Emergency Plan Training.

The inspector noted that one individual received a waiver of the ALARA for supervisors course. Inquiry into the reason for the waiver revealed that a waiver was not granted and that the entry was in error. This observation was identified to the licensee.

Training requirements for RP and chemistry personnel are described in 83TR-9ZZ02 Rev. 0, 'Chemistry and Radiation Protection Training.' Inspection activities in this area are described in NRC Inspection Report 50-528/84-13, 50-529/84-10 and 50-528/84-32, 50-529/84-25. These reports note satisfactory implementation of the retraining and replacement program.

No unacceptable findings were identified related to training and qualification of chemistry and RP personnel for unit 2. No violations or deviations were identified.

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4. Control of Radioactive Material and Contamination, Surveys and Monitoring

The licensee's program for control of RAM was examined as related to unit 2.

a. Installed Radiation Monitors

The Area Radiation Monitor (ARM) system test procedures and calibration techniques have been examined in conjunction with the Unit 1 inspection program. Alarm response procedures were examined as described in NRC Inspection Report 50-528/84-64.

Process and effluent monitors have been extensively reviewed in conjunction with the unit 1 inspection program.

Procedures have been established by the licensee for implementing T.S. required surveillances. These tests, examined by the inspector are identified as follows:

- 36ST9SQ01 - RMS Functional Test;
- 36ST9SQ02 - RMS Calibration Test;
- 36ST9SQ03 - Prior to Purge/Release RMS Functional Test;
- 36ST9SQ04 - RMS Quarterly Functional Test;
- 41ST1SQ02 - Radioactive Gaseous Effluent Instrument Channel Check;
- 41ST1SQ03 - Radioactive Gaseous Effluent Instrument Source Check.

These procedures appeared adequate to implement the required tests.

The licensee's program to verify calibrations and determine alarm setpoints has been previously examined as described in NRC Inspection Report 50-528/84-64.

b. Portable Instrumentation

The inspector reviewed adequacy of instrumentation provided for unit 2 by examining instrument inventory records at the licensee calibration facility. The licensee's inventory meets commitments identified in chapter 12 of the FSAR.

Procedures have been developed for radiation instrument calibration and performance check. Calibration techniques, ranges and sources were examined and considered adequate. The licensee has provisions for calibrating the high range instruments at the midpoint of the highest scale. Procedure 75RP9XC06, 75RP9XC07 regarding portable instrument calibration were examined and found adequate. The licensee has adequate instrumentation to calibrate air sampler devices. Procedure 75RP9XC05 has been implemented to describe calibration and maintenance of these devices. The licensee utilized a vendor service to calibrate neutron monitoring devices.

The licensee has assigned a lead technician and two additional technicians to the instrument calibration facility.

THE STATE OF TEXAS, COUNTY OF DALLAS.

I, the undersigned, a Notary Public in and for the State of Texas, do hereby certify that the foregoing is a true and correct copy of the original of the same as the same appears in my records.

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A list of emergency plan instrumentation was provided for the inspectors review. The following numbers and types of instruments are dedicated for emergency plan use.

Ion Chamber	-	12
Frisker	-	14
GM Survey	-	5
Air Samplers	-	15
Dosimeters	-	250

These instruments are maintained on a quarterly changeout schedule.

The licensee's test and calibration program was found in substantial agreement with ANSI N323-1978, 'Radiation Protection Instrumentation Test and Calibration'.

c. Radioactive Material Control

The licensee program for radioactive source control and contamination control is contained in the following procedures:

75PROZZ01	-	Radiation Protection Program
75AC9ZZ04	-	Shipment Receipt and Storage of RAM
75AC9ZZ09	-	Source Control
75AC9ZZ13	-	Document Control
75AC9ZZ03	-	Radioactive Contamination Control
75RP0ZZ07	-	Control of a Contaminated Clean System
75RP1ZZ02	-	Packaged Radioactive Waste Classification
75RP9XC01	-	Calibration...Portal Monitor
75RP9ZZ46	-	Radioactive Contamination Survey Procedure
75RP9ZZ56	-	Receipt of Radioactive Material
75RP9ZZ57	-	Packaging, Marking and Labeling of Radioactive Material
75RP9ZZ61	-	Radioactive Material Storage and Control
75RP9ZZ78	-	Decontamination
75RP9XC08	-	Leak Testing and Inventory of Radioactive Sources
75AC92Z17	-	Radiological Survey Schedule

Based on examination of selected procedures the following items are noted:

- The licensee has established procedural requirements for frisking;
- Contamination limits for clean, contaminated and highly contaminated areas have been established;
- Posting requirements for these areas have been established;
- Measures to prevent spread of contamination are included in procedures;
- Procedural guidance on skin contamination is provided;
- Skin and clothing contamination limits are provided;
- Source storage, labeling and posting requirements are established in procedures;
- A source accountability program has been proceduralized;

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- Contamination survey frequencies have been proceduralized;
- A detailed procedure is provided for calibration of the portal monitor;
- Leak test guidance is provided;
- Contamination survey procedure provides adequate guidance on taking and evaluating smears.

Procedures described above appeared to provide an acceptable program for source and contamination control. No statements contrary to the requirements of Title 10 were identified.

Licensee representatives indicated that a radwaste reduction program is being developed.

d. Radiation Surveys

NRC requirements to perform radiation surveys to assure compliance with dose limits are contained in § 20.201 and the facility T.S. FSAR Chapter 12.5.3.1 briefly describes the survey program. The licensee's program meets the FSAR commitments and is consistent with Title 10 requirements. Survey frequencies described by 75AC-9ZZ17 are as follows:

<u>Location</u>	<u>Frequency</u>
Control Room	Weekly
Calibration Facility	Weekly
Site & Protected Area Boundary	Quarterly
Control Building	Quarterly
Turbine Building	Monthly
Radwaste Building	*
Fuel Building	*
Auxiliary Building	*

- * Daily for high occupancy or traffic
- Weekly for moderate occupancy or traffic
- Monthly for light occupancy or traffic

The procedure does not give special attention to step off pads, exit areas or eating areas.

Guidance on when surveys should be performed is provided in the licensee's station procedures and in instructions for the radiological protection section. Section procedure RP-012, 'REP surveys' provides criteria for when surveys are needed and when routine survey data may be used for REP issuance. Also provided is guidance on when air samples are required for REP issuance. The inspector noted RP-012 states that for work in known airborne conditions, continuous breathing zone air samples will be run while work is in progress.

The inspector noted that the licensee has on site approximately 75 high volume air samplers which are generally used for short sample periods and 16 low volume air samplers which are suited to

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continuous sampling. The inappropriate mix of high and low volume air samplers to support RP-012 was pointed out to licensee representatives.

Procedure 75RP9Z246, 'Radioactive Contamination Survey Procedure' and Procedure 75RP-9ZZ47, 'Radiation Survey Procedure' provide survey guidance. Prerequisites for 75RP-9ZZ47 include response and battery check of the instrument. The procedure provides details on general area surveys, beta dose rate surveys and documentation. The inspector noted that guidance on when to perform beta surveys did not appear to be available in any procedure. This was identified at the exit meeting.

Procedure 75RP-9ZZ44, 'Radiation Exposure Permits' and 75AC-9ZZ01, 'Radiation Exposure Authorization, Permits and Control' describe the licensee requirements for Radiation Exposure Permit (REP) issuance, authorization and termination.

Licensee procedures also provide for review of survey results, REP's, Radiation Protection Logs and other records. Procedures provide for identification, documentation and notification to supervision of abnormal radiological conditions.

Procedure 75RP-9ZZ48, 'Airborne Radioactivity Sampling and Measurement' provides instruction on obtaining and analyzing airborne radioisotope concentrations. Techniques are provided for particulate, iodine and gaseous activity sampling. Methods for gross activity calculation, half life and long-lived alpha activity are provided.

Based on review of selected procedures, the licensee's program for radiation survey frequency, conduct, evaluation, and review appeared consistent with NRC requirements and FSAR commitments.

Based on review of procedures discussion with personnel and review of inspection findings for unit 1, the inspector found that:

adequate procedures for radiation monitoring system calibration, testing and use have been developed;

adequate types and numbers of portable radiation monitoring instrumentation are available for unit 2 operation;

provisions for control of contamination and radioactive sources have been developed consistent with NRC requirements and guidance;

provisions for radiation surveys have been established consistent with NRC requirements.

No violations or deviations were identified.

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5. Facilities

- a. The licensee calibration facility was examined. The facility is so located as to not interfere with low level counting equipment. Calibration facilities are provided or planned for beta, gamma and neutron sources and for airflow measurement. Additional equipment including pulse generators, oscilloscope, volt meters, condenser R meter and computer is also provided.
- b. A decontamination facility in Unit 2 has been established and stocked with equipment and supplies.

No violations or deviations were identified.

6. Maintaining Exposure ALARA

Management policy statements common to the site are described in NRC Inspection Report 50-528/84-05. Review of the ALARA program is described in NRC Inspection Reports 50-528/84-05, -13, -31, -49.

The licensee's ALARA program is described in 75PR-9ZZ03. This procedure describes responsibilities for corporate, managerial, supervisory personnel, individual workers and organizational groups. The procedure describes six points of the APS management policy towards ALARA. These include formal audits to determine effectiveness of exposure reduction; training and retraining; delegation of authority to the Manager of Radiation Protection and Chemistry and his staff to prevent unsafe radiological practices and stop work authority.

Responsibility for the Manager of Nuclear Operation includes supporting the Manager of Radiation Protection and Chemistry, ensuring all station personnel support the ALARA Program and review and approval of ALARA goals. Responsibilities stated in 75PR-9ZZ03 are consistent with those of NRC Regulatory Guide 8.8 section C.1.b.

Responsibilities of the Manager of Radiation Protection and Chemistry include:

authority to report to higher management practices which exceed his authority to correct;

participation in design modification review of station facilities;

ensuring that locations, operations and conditions that have potential to cause significant exposure are identified and controlled;

conducting the station exposure control program;

developing plans, procedures and methods for maintaining exposure ALARA;

reviewing, commenting on and recommending changes in station procedures;

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other responsibilities are also identified.

Responsibilities of the RPM are consistent with those in section c.1.b. of regulatory guide 8.8.

The procedure assigns responsibilities to station supervision in support of the ALARA program.

ALARA implementing procedures examined include:

75RP-9ZZ93	-	Procedure Review (ALARA);
75RP-9ZZ94	-	ALARA Pre-Job Review;
75RP-9ZZ95	-	ALARA Inspections;
75RP-9ZZ96	-	Exposure Tracking (ALARA);
75RP-9ZZ97	-	ALARA Post Job Review;
75RP-9ZZ98	-	Preparation of ALARA Reports;
75RP-9ZZ99	-	ALARA Design Review;
75AC-9ZZ05	-	ALARA Committee;
75AC-9ZZ06	-	ALARA Review;
75AC-9ZZ08	-	ALARA Reports;

These procedures provide for the following:

Review of ALARA reports, exposures, problem reports methods for maintaining exposure ALARA, dose estimates, pre and post job evaluations and proposed station modifications;

ALARA review of all design or equipment modifications inside the radiologically controlled area (RCA);

ALARA review of all procedures involving work in the RCA;

Generation and Review of ALARA problem reports;

Criteria for requiring a formal ALARA review when the REP is generated;

ALARA pre-job review form and instructions;

Inspection of jobs with exposure expected to exceed one man-rem by the ALARA staff;

Tracking of exposure by job, unit and station;

Review of design and equipment modifications;

Preparation of post-job and annual reports.

Goals and objectives are included in the responsibilities section of 75PR-9ZZ03, 'ALARA Program'. The responsibility for establishing goals is given to the ALARA committee.

Based on review of the licensee's ALARA procedures, the inspector concluded the licensee has developed an ALARA program consistent with NRC guidance in this area.



The following information was obtained from the records of the
 Department of the Interior, Bureau of Land Management, regarding
 the land parcels described herein. The information is being
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 land parcels.

No violations or deviations were identified.

7. Unit One Startup Program

a. Radiation Protection Startup

The licensee has developed a procedure to implement the CESSAR § 14.2.12.5.10, "Biological Shield Survey Test" commitment. The test procedure, 75PA-1ZZ01, 'Biological Shield Survey' incorporates the general guidance of ANSI/ANS 6.3.1-1980, 'Program for Testing Radiation Shields in Light-Water Reactors.' The A/E has provided a comprehensive document, 'PVNGS Bioshield Survey Plan' which provides suggested survey locations, expected dose rates, data forms and special cautions. The inspector also examined 72PA-1ZZ01, 'Power Ascension Test Controlling Document'. This document provides for performance of the Biological Shield Survey at power levels listed in the CESSAR and provides for review of test results by the Test Result Review Group (TRRG) before progressing to the next power plateau. Procedure 75PA-1ZZ01 provides acceptance criteria for radiation levels. These are the radiation zone criteria from the FSAR.

With respect to the Biological Shield Survey procedure the inspector noted the following:

The procedure does not mention a requirement to compare survey data to design data, however the A/E has provided this information to the licensee.

The survey identifies approximately 125 points in containment, 180 points in the Auxiliary and Radwaste Buildings and 35 miscellaneous locations, that will be surveyed.

Conduct of the survey is described in step 8.1.1. This step states in part, "The shield survey requires a general area radiation survey in the room or area and a more detailed survey around penetrations, shield plugs or other areas where there may be streaming through the shielding."

ANSI standard 6.3.1-1980 provides more explicit guidance for shield testing, this guidance was also provided in the PVNGS Bioshield Survey Plan supplied by the A/E. ANSI 6.3.1 describes suitable techniques for scanning bioshield walls in a repetitive pattern. These shield tests are described in section 5.3 of ANSI 6.3.1 and state that measurements shall be made with the detector as close to the shield section as possible and that scanning paths are not more than one meter apart.

The inspector discussed with licensee representatives, requirements of the ANSI standard and the need for more detailed guidance on survey technique. The inspector also noted that while the procedure identifies the need to survey penetrations, these are not identified in the procedure nor does the Shield Test Data Sheet, Appendix C of 75PA1ZZ01 provides a specific place to identify penetration dose



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rates. The licensee stated that surveys of all accessible penetrations would be performed.

These matters were discussed with the licensee representatives at the exit interview. Subsequent to the inspection, this matter was discussed with the Radiological Services Manager. This individual stated that additional steps were being planned to improve the survey.

b. Radwaste Startup

The inspection examined the licensee's chemistry and radiochemistry test program and program to verify calibrations of effluent monitors.

1. Chemistry and Radiochemistry

The following test procedures were examined:

74HF-1SS01	-	Post Core HFT Chemistry Test;
74HF-1SS02	-	Pre Core and Post Core Chemistry Specifications and Analysis Frequencies;
74HF-1SS03	-	PASS Test
74PA-1SS01	-	RSC and Secondary Chemistry and Radiochemistry Test
44ST-1SS01	-	PASS Surveillance

74HF-1SS01 and 74HF-1SS02 provide sample frequencies and acceptance criteria for chemistry parameters. 74HF1SS03 provides for flow verification, analyzer operational tests, verification of operability in computer and manual control modes, comparison of PASS samples to the routine samples and acceptance criteria for PASS analysis. Acceptance criteria are consistent with NRC guidance for this system. 74PA-1SS01 is the power ascension test of chemistry. This test is performed as specified in control document 72PA-1ZZ01, 'Power Ascension Test Controlling Document', which calls for test 74PA-1SS01 to be conducted at zero power and at 6%, 10%, 20%, 50%, 80% and 100% of rated power. Preliminary review of test results by the TRRG is required at 20%, 50% and 100% power. Objectives of 74PA-1SS01 are to verify sample procedures, verify chemistry is maintained within technical specification limits and to verify proper operation of the process monitor and the gas stripper effluent monitor.

Tests are conducted on the RCS, condensate, feedwater and steam generator blowdown systems. The test procedure includes acceptance criteria.

The test procedure is consistent with section 14.2.12.5.5 of the CESSAR and guidance of regulatory guide 1.68 revision 2.



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2. Technical Specification

The inspector examined 74ST-1RC01, 'RCS Chemistry Surveillance Test,' 74ST-1RC02, 'RCS Specific Activity Surveillance Test' which implement T.S. 3/4.4.6 and T.S. 3/4.4.7 respectively. Procedures appeared consistent with the T.S.

The licensee has developed procedures for radiochemistry determinations required to meet specification 3/4.4.6 and 3/4.4.7. Procedures implementing T.S. requirements for effluents are described below in (3).

3. Effluent Monitors

The licensee's program to establish the veracity of effluent monitor calibrations has been examined and found acceptable as described in NRC Inspection Report 50-528/84-64.

Procedure 75AC9ZZ02, 'Gaseous Radioactive Effluent Release Administrative Control' assigns the responsibility to verify calibration during power ascension and periodically thereafter to the Unit Radiation Protection Supervisor. This procedure also implements the T.S. 3.11 dose and dose rate release limits and governs the station release permit program.

Controlling document 72PA-1ZZ01 calls for verification of calibration of effluent monitors at 6%, 20%, 50%, 80% and 100% of full power. TRRG review is not required for this test.

4. Waste System Tests

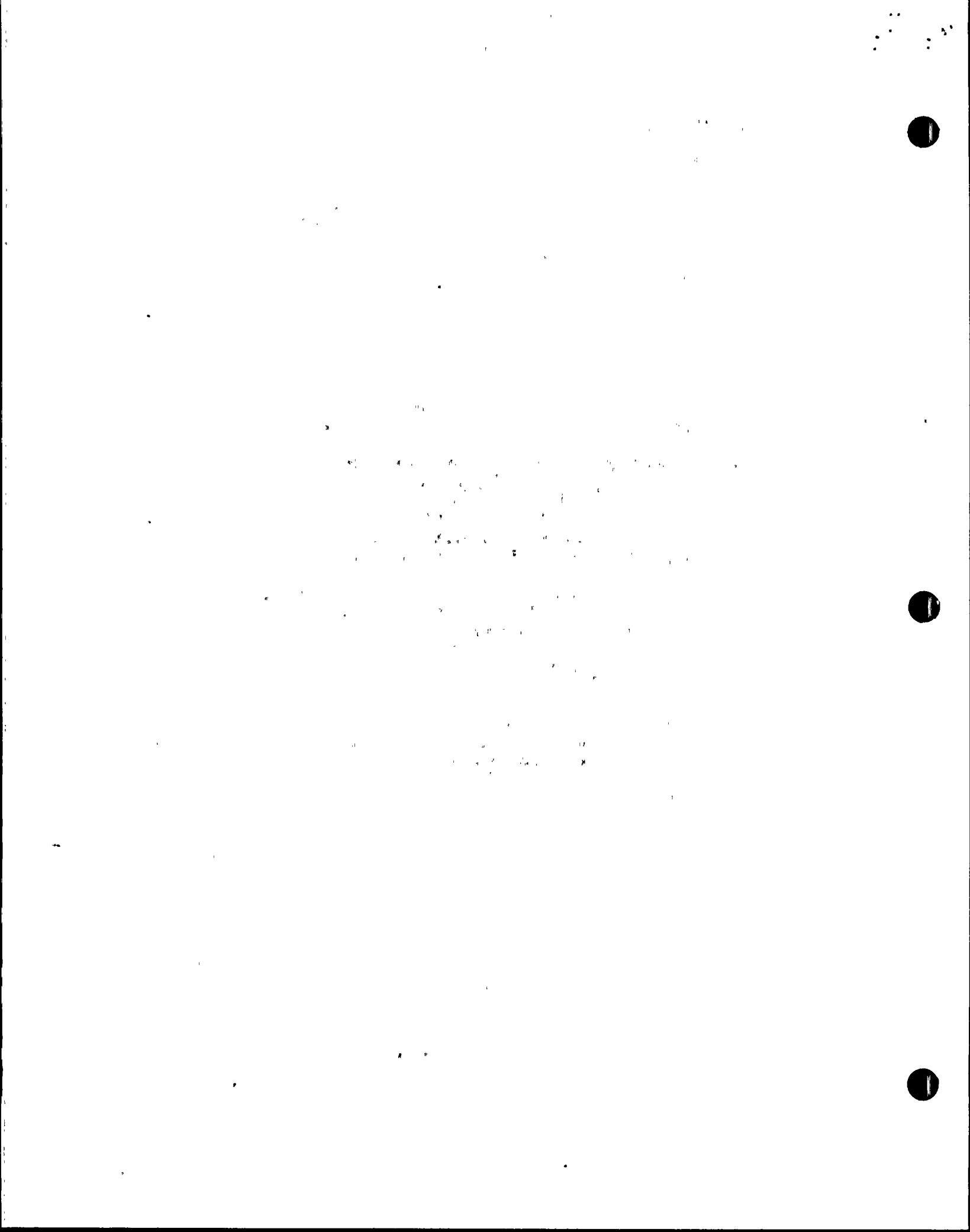
Solid, liquid and gaseous radioactive waste systems were tested during the preoperational test phase. Preoperational testing of these systems was examined as described in NRC Inspection Report Nos. 50-528/84-57, -52 and 83-35.

5. Other Streams

The licensee has established chemistry procedure 74CH-9XC16, 'Sampling Analytical Schedule'. This procedure includes sampling and gross radioactivity analysis for the following:

- Condensate Storage Tank;
- Demineralized Water Storage Tank;
- Spent Fuel Pool;
- Closed Cooling Water Systems;
- Auxiliary Boiler Blowdown;
- Circulating Water;
- Oily Waste System.

The inspector noted that the following systems were not included in 74CH-9XC16 for activity analysis:



Turbine Cooling Water
 Domestic Water
 Plant Cooling Water
 Essential Spray Pond
 Sanitary Drainage and Treatment
 Normal Chilled Water

Inspection and Enforcement Bulletin No. 80-10, 'Contamination of Nonradioactive System...' states in part, "...special consideration should be given to the following systems: auxiliary boiler system, demineralized water system, isolation condenser system, PWR secondary water clean up system, instrument air system and the sanitary waste system. 2. Establish a routine sampling...to promptly identify contaminating events...including releases to on-site...retention ponds...."

No action was required of facilities possessing a construction permit. This matter was not brought to the attention of the licensee during the inspection. The Chemistry Services Manager was contacted subsequent to the inspection, at this time he noted that 74CH-9XC16 was undergoing revision and the systems noted would likely be incorporated in the procedure.

No violations or deviations were identified.

8. Independent Effort

a. Secondary Chemistry Control Program

The licensee's program required by T.S. 6.8.4.c Secondary Water Chemistry was examined.

T.S. 6.8.4.c defines six points to be included in the program. The inspector discussed these points with the licensee representative and reviewed the implementing procedures identified below:

<u>T.S. Section</u>	<u>Procedure No.</u>	<u>Title</u>
6.8.4.C.	(1) 74CH-9XC16	Sampling and Analytical Schedule
	(2) 74CH-9ZZ**	
	(3) 74OP-1SC02	Secondary Sampling Instructions
	(4) 74CH-9ZZ99	Records and Reports
	(5) 74AC-9ZZ04	Systems Chemistry Specifications
	(6) 74AC-9ZZ03	Chemistry Control Instruction

** Analytical procedures are established for each critical variable in the 9ZZ series of chemistry procedures.

The basis for the program is the CE (vendor) recommendation and the Steam Generator Owners Group (SGOG) Secondary Water Chemistry Guidelines. Critical variables identified for steam generator blowdown include: ph; cation conductivity; sodium; chloride; silica; sulfate. Procedure 74AC-9ZZ04 provides 5 graded action



levels having progressively prompt action requirements to return systems to within specification.

b. Preplanned Alternate Sampling Program (PASP)

Technical Specification 6.16.1 states that the PASP shall be approved by the NRC prior to implementation. Technical Specification 3.3.3.9 action 42 or action 37 could require initiation of the PASP.

The need to promptly submit the PASP was identified to licensee personnel.

c. Chemistry Staffing

A chemistry section manpower requirements analysis completed in March, 1984 and updated to include additional requirements for radwaste and effluent sampling and analysis shows that 20-22 technicians per unit will be necessary to perform the required work.

The licensee presently has authorized positions for 13 technicians and two lead technicians. The licensee has pending plans to increase the staffing level of each unit to 19 technicians and two leads.

Licensee representatives have indicated that any shortage in manpower will not impact the chemistry program until after reaching 5% power.

The licensee is using contractor personnel to meet their manpower needs to support Unit 1 power ascension.

The inspector noted at the exit interview, his intention to closely follow the staffing situation.

No violations or deviations were identified.

9. Exit Interview

The scope and findings of the inspection were discussed on March 21, 1985 with the licensee representatives denoted in paragraph 1.

The following items were discussed at this time:

Procedure for performing power ascension test radiation surveys was not well defined and penetration surveys to be performed were not identified in the procedure;

Radiation protection procedures did provide specific guidance on when to perform non penetrating radiation surveys;

Compliance with §19.12 for visitors escorted to restricted areas;

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Anticipated chemistry staffing problems;

Preplanned alternate sampling program not yet submitted for approval.

The licensee noted the inspector's concerns but did not offer any formal commitments.

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