U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-528/90-51, 50-529/90-51 and 50-530/90-51

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

Licensee: Arizona Public Service Company
P. O. Box 52034
Phoenix, Arizona 85072-3999

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

Inspection at: Wintersburg, Arizona

Inspection conducted: October 22, 1990 through November 1, 1990

Inspection by: M. Cillis — 12/13/90
M. Cillis, Senior Radiation Specialist — Date Signed

Approved by: M. Cillis for — 12/13/90
G. P. Yuhas, Chief — Date Signed
Reactor Radiological Protection Branch

Summary:

Areas Inspected:

Routine unannounced inspection by one regionally based inspector of radioactive waste systems, including followup items and tours of the licensee's facilities. Inspection modules 84750, 92701, 92702, 92700 and 83729 were addressed.

Results:

In the areas inspected, the licensee's programs appeared adequate to accomplish their safety objectives. Three weaknesses were identified in the areas of management of liquid effluent and management of releases made via the Boric Acid Concentrator (see Section 2) and alarm set point determinations (see Section 3).

DETAILS

1. Persons Contacted

A. Licensee

*J. M. Levine, Vice President Nuclear production
*T. M. Shriver, Assistant Plant Manager, Unit 2
*W. C. Marsh, Plant Director, Nuclear Production
T. R. Bradish, Compliance Manager
*J. A. Scott, General Manager, Site Chemistry
*D. M. Fuller, Chemistry Manager, Unit 1
*L. D. Johnson, Chemistry Manager, Unit 2
*P. A. Gauy, Chemistry Manager, Unit 3
*J. P. Albers, Radiation Protection Manager, Site Operations
*R. D Sorensen, Chemistry Technical Services, Manager
T. H. Valley, Chemistry, Technical Services, Advisor
J. B. Cedarquist, Site Chemistry Technical Assistant
*W. H. Blaxton, Chemistry/RMS Supervisor, Unit 1
J. R. Santi, Chemistry Supervisor, Unit 2
D. L. Sneed, Chemistry Supervisor, Unit 2
H. J. Hurley, Chemistry Supervisor, Unit 3
*J. M. Sills, Radiation Protection Technical Services Manager
*T. W. Murphy, Radiation Monitoring System (RMS)/Effluent Supervisor
H. D. Ingalsbe, Radiation Support Services Supervisor
*C. A. McClain, Training Supervisor
*T. P. Hilmer, Radwaste Support Manager
K. Oberdorf, Radiation Protection Manager, Unit 1
*W. E. Sneed, Radiation Protection Manager, Unit 3
M. S. Burns, Manager, Operations Computer Software

B. Contractors

*W. H. Barley, Bartlett Nuclear, Inc. - Acting Technical Services Manager, Site RP
W. Wattson, Impell, Inc. - Radiation Monitoring System (RMS) Consultant

*Denotes those personnel in attendance at the exit interview held on November 1, 1990.

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

2. Radioactive Waste Systems, Water Chemistry, and Radiological Environmental Monitoring (MC 84750)

This program area was reviewed by observation, review of applicable procedures and records, and interviews with responsible personnel. In addition a walkdown inspection of the Unit 2 heating, ventilation and air-conditioning (HVAC) systems and the condenser vacuum pump/gland seal exhaust and plant vent radiation monitoring systems (RMS) was conducted.

Audits and Appraisals

The inspector reviewed licensee monitoring and surveillance reports of activities conducted in 1990. The scope of licensee's monitoring and surveillance activities included:

- o Implementation of the Offsite Dose Calculation Manual (ODCM)
- o Implementation of the radiological environmental monitoring program
- o Implementation of the effluent/radiation monitoring system program
- o Solid waste program
- o Radioactive material control and transportation
- o Posting and control of radiation/contaminated areas

The inspector noted that over 200 individual monitoring/surveillances had been conducted in the above areas by members from the licensee's quality assurance (QA) organization, effluent/RMS group and the radiation protection support services group in 1990. The inspector concluded that the monitoring and surveillance activities covered a wide cross section of the areas that were examined. Surveillance and monitoring findings were generally addressed in a timely manner. The surveillance/monitoring reports did not identify any regulatory violations.

The inspector concluded that the licensee's audit and monitoring activities provided ANPP management with a viable tool for measuring the licensee's performance in the areas that were appraised.

Changes

No major changes to the licensee's chemistry facilities had occurred since the last inspection. One organizational change was announced during the inspection. The Unit 2 Radiation Protection Manager (RPM) was assigned to the licensee's corporate oversite group effective November 5, 1990. A new RPM, meeting the qualifications of Regulatory Guide (RG) 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," was immediately assigned to fill the vacant RPM's position.

Procedures

This item is discussed in Section 3 of Region V Inspection Report 50-528/90-43.

Program Implementation

The following areas were addressed during the inspection:

A. Post Accident Sampling System:

The licensee's program for assuring compliance with TS 6.8.4.e, "Post-Accident Sampling" under accident conditions was examined.

The examination included a review of applicable procedures and training records and observations of the Unit 2 staff performing a monthly surveillance test (ST) of the post-accident sampling system (PASS) pursuant to procedure 74ST-9SS04, "Pass Functional Test."

The objective of the surveillance test was to verify operability of the PASS by obtaining a PASS sample and comparing the PASS results with the results of routine sample analyses. The monthly ST is performed to verify the capability to obtain a reactor coolant, containment atmosphere and safety injection A and B samples. The inspector noted that the results of the monthly surveillance were within the acceptance criteria that is established in the ST procedure.

The licensee's PASS program also includes provisions for performing an 18 month surveillance pursuant to licensee procedure 74ST-9SS03, "Post Accident Sampling System Surveillance" for all PASS samples, such as:

The inspector verified that the 18 month surveillances for Units 1,2 and 3 had been satisfactorily performed for the period of 1988 to date.

The inspector noted that the licensee also maintain a PASS simulator which is used for training and maintaining the qualifications of PASS users. Continuing training of all PASS users was verified to have been provided at the six month frequency specified in licensee procedures. The following training lesson plans were reviewed:

NCP04-01-RP-001-001, "Post Accident Simulator and Analysis"
NCP01-01-RC-001-H001, "Introduction to Post Accident Sampling"
NCP04-J-001-90, "Job Performance Measure"
NCA04-01-H01, "Post Accident Sampling System Simulator and Analysis"

The inspector also verified that the licensee's PASS program included provisions for performing maintenance of sampling and analysis equipment. Additional PASS program procedures that were reviewed during the inspection are as follows:

74OP-3SS02, "Operation of the Post Accident Sampling System"
74CH-9XC13, "Analytical Instrument Calibration Verification"
74CH-9XC33, "Post Accident Radioactive Sampling Analysis and Handling"

The inspector concluded that the licensee's PASS program was consistent with TS 6.8.4.e.

B. Process Control Program (PCP)

The inspector reviewed applicable procedures and records associated with the licensee's approved PCP. No significant changes have occurred since the PCP was previously examined. The inspector concluded that the licensee's PCP was consistent with TS 6.13.

C. Plant Systems: Air Cleaning System

The inspector verified that the surveillance requirements for the control room essential filtration system, ESF pump room air exhaust cleanup system and the fuel building essential ventilation system

were performed at the frequencies specified in TS 3/4.7.7, 3/4.7.8 and 3/4.9.12. Applicable procedures associated with performing the ST's to verify system operability and testing; such as, flow, carbon analysis, pressure drop checks and DOP testing of HEPA filters, for the period of 1989 and 1990 were reviewed. The inspector concluded that the licensee's surveillance programs for these systems satisfied the TS requirements.

D. Radiation Monitoring Systems (RMS)

1. Surveillance Tests

The inspector verified that the surveillance requirements for radiation monitoring instrumentation were performed at the frequencies specified in TS 3/4.3.3. Applicable procedures associated with performing the ST; such as, channel checks, source checks, channel calibration and channel functional tests, for the period of 1989 and 1990 to date were reviewed. It should be noted that the definition for "Channel Calibration" provided under TS 1.4 states:

"A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping, or total channel steps such that the entire channel is calibrated." It should also be noted that Table Notation (3) of TS Table 4.3-8 states:

"The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards (NBS) or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used."

The inspector noted the following:

The effluent noble gas detectors at PVNGS are calibrated by adjusting the high voltage and determining the detector response plateau with a single reference standard that was provided by the vendor. The standard source provided is a Sr-90 source which is a high energy beta emitter. The calibration does not include provisions for verifying the detectors response to lower energies; such as, to Xenon-133. To close the loop the licensee's staff were in the process of procuring a Dupont standard beta source set for each unit. These source sets include National Bureau of Standards (NBS)

traceable planchette sources of C-14, Tc-99, Pm-147, Cl-36, Bi-210 and Sr-90 which are of the same configuration as those used by the vendor during the original energy response testing of the licensee's RMS. Upon receipt of the sources, the licensee's staff plans to perform an evaluation of the RMS energy response to the lower energy sources and then include the use of lower energy source; such as, Tc-99 into their current surveillance test program.

2. Alarm Set-point Determinations

This item is discussed in Section 3 under open item number 50-528/90-43-03.

E. Solid Waste Program

Selected records associated with the licensee's processing and storage of solid radioactive wastes were examined. No significant changes had occurred since this subject matter was last examined.

The examination disclosed that the licensee had assigned a Waste Minimization Task Force Group the responsibility of evaluating methods for the plant staff to minimize in the generation of solid and liquid wastes. Licensee management felt that improvements in this area were needed in order to meet their ALARA program goals.

The inspector concluded that the licensee's solid waste program was consistent with TS 3/4.11.3 and the licensee's Commission approved Process Controlled Program.

F. Radioactive Effluent

1. Discharges to Evaporation Ponds

Selected records involving the release of liquid effluent to the evaporation ponds were reviewed and were found to be consistent with TS 3/4.11.1.

2. Contaminated Chemical Waste Neutralizer Tank (CWNT)

The licensee 's staff informed the inspector that low levels of contamination (e.g., 1E-7 micocuries per milliliter (uCi/ml) of Sb-124 and 6E-8 uCi/ml of Cs-137) was found in the Chemical Waste Neutralization Tank (CWNT) between the period of October 12-14, 1990. Normally the contents of the CWNT are released to the evaporation ponds via the retention basin; however, after discovery of the contamination the liquid effluent was diverted to licensee's radwaste system and an investigation was initiated to determination the source for the contamination that was found. The inspector noted that the release limit for these nuclides are 5E-7 uCi/ml.

The inspector concluded that the licensee surveillance program involving the disposition of contaminated liquid effluent found in the CWNT were consistent with TS 4.11.1.1.1 and 4.11.1.1.2.

3. Boric Acid Concentrator Releases

An examination of effluent releases via the boric acid concentrator (BAC) was conducted. The examination included a walkdown of the BAC, ventilation system and plant vent monitoring system, review of selected records associated with BAC releases and discussion with the licensee's staff. Records reviewed included audit reports, release permits, applicable procedures and monitoring reports. The inspector noted that Table 11.3-7 of PVNGS updated FSAR projects 325,000 gallons/year/unit of distillate vapor are released from the BAC. Section 11.1.3.2.3 of the FSAR states that plant tritium activity is reduced as a result of either decay or airborne release through plant ventilation systems and BAC distillate vapor. FSAR 11.1.6 further states that noble gases dissolved in the liquid leakage are assumed to become airborne as they are for other buildings' leakage and that a partitioning factor of 0.0001 is conservatively assumed for calculating airborne activities of other isotopes from plant liquid leakage. The FSAR goes on to state that airborne releases are handled by the appropriate ventilation systems and the activity in the plant is monitored by area radiation and airborne monitors before release from the plant. FSAR Table 11.2-10 presents a list of expected activity at various point in the liquid radwaste system (LRS). It was noted that the table presumes easily detectable levels of radioactive materials in the LRS distillate, implying that carryover from the evaporator can be anticipated.

Regulatory Guide (RG) 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluent From Light-Water-Cooled Nuclear Power Plants", Section C.2 states in part: Measurements of effluent volume, rates of release, and specific radionuclides should be made, insofar as practicable, at point(s) which would provide data that are most representative of effluent releases to the plant environs. Section C.3 of the RG states: Effluent monitoring is required to (a) demonstrate compliance with TS and/or 10 CFR Part 20 effluent limits, (b) allow evaluation of performance of containment, waste treatment; and effluent controls, and (c) permit evaluation of environmental impact and estimation of doses to the public.

TS 4.11.2.1.2 states: The dose rate due to iodine-131, Iodine 133, Tritium and all radionuclides in particulate form with half-lifes greater than 8 days in gaseous effluent shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM by obtaining representative samples and performing the analyses in accordance with the

sampling and analysis program specified in Table 4.11-2. Table 4.11-2 requires that both grab and continuous samples be obtained for releases via the plant vent. Table 4.11-2 requires that the grab sample analysis check for principal gamma emitters, H-3, I-131 and I-133 and that the continuous sample analysis also check the same parameters and that the continuous composite sample analysis check for gross alpha and Sr-89 and Sr-90. Footnote (g) of Table 4.11-2 requires that that other peaks which are measurable and identifiable, together with the listed listed gamma emitters for which the LLD specification applies (e.g., Kr-87, Kr-88,Xe-133, Xe-133m,Xe-135,Xe-138, Mn-54, Fe-59, CO-58, CO-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144), shall also be identified and reported in the Semiannual Radioactive Effluent Release Report.

The review revealed the following:

(a). All releases from the BAC are presumed to be only tritium; therefore, the licensee only samples and analyzes releases made via the BAC for tritium. Principal gamma emitters (e.g., particulates) and iodines releases via the BAC are presumed to be monitored by the plant vent RMS which has an LLD approximately 1E-13 uCi/ml. Without data available to defend the tritium only assumptions, other radioactive contaminants can be distilled into the steam or carried over with the steam and be released with the tritium. The licensee uses the BAC to process large volume of reactor coolant from the Chemical Volume and Control System (CVCS). Generally a one milliliter sample is taken from the BAC prior to each release of liquids from the CVCS holdup tank. The sample is only analyzed for tritium. The following data provides the volumes of liquid effluent releases made from the BAC for 1987, 1988 and 1989:

Year	Unit	Gallons	Total Curies (Tritium)
1987	1	2.31E6#	2.63E2
1987	2	1.31E6#	3.67E2
1987	3	0.26E6	3.10E0
	Totals	3.88E6	6.61E2
1988	1	1.16E6#	2.61E2
1988	2	9.04E5#	2.53E2
1988	3	7.45E5#	3.76E2*
	Totals	2.81E6	8.90E2
1989	1	5.79E5#	1.38E2
1989	2	8.88E5#	3.59E2*
1989	3	7.56E5#	1.07E2
	Total	2.22E6+	6.04E2

+ Although it appears that the volumes of liquids processed in 1989 represents a decrease from 1988, it should be noted that all three Units had been shut down for extended refueling outages during 1989.

* It should also be noted that Table 11.3-6 assumes that tritium releases via the BAC should not exceed 3.3E2 Ci/Yr.

Exceeds values listed in FSAR Table 11.3-7.

The above observation was discussed with the licensee's staff and at the exit interview. The licensee informed the inspector that a task force had been assigned to evaluate methods for improving the management of liquid effluent. The inspector informed the licensee that this item would be examined during a future inspection (50-528/90-51-01).

(b). Discussions with various members of the licensee's staff disclosed that the CVCS is not normally sampled when ever the BAC is used to process liquids from the CVCS holdup tank. Periodic samples have been taken from the CVCS holdup tank and the BAC distillates during the processing of reactor coolant. These samples indicated a significant level of radioactivity in the holdup tank and in the distillate. The sample results were not factored into the release permit.

A sample taken from the CVCS holdup tank on October 30, 1990 when a release was in progress via the Unit 1 BAC showed the following activity levels:

Radionuclide	Time Corrected Activity uCi/ml
Co-58	3.988E-4
Co-60	1.679E-4
Cs-134	1.863E-3
Cs-137	2.860E-3
I-131	7.862E-5
Mn-54	1.973E-5
Nb-95	3.133E-5

The licensee's staff was not able to obtain a distillate sample during the release of October 30, 1990; however, a distillate sample taken on September 16,1990, during a release from Unit 1 showed the following:

Radionuclide	Time Corrected Activity uCi/ml
Cs-134	1.388E-5
Cs-137	1.733E-5
Xe-133	2.047E-4
Xe-135	2.020E-6

The gross gamma activity detected was reported as 1.65E-3 uCi/ml.

A gamma isotopic analyses of a distillate sample taken during a BAC release from Unit 2 on April 11, 1989, showed the following activity levels:

Radionuclide	Time Corrected Activity uCi/ml
Cs-134	3.348E-6
Co-58	1.650E-6
Co-60	5.770E-7
Cs-137	6.498E-6
I-131	3.877E-7
Mn-54	1.001E-7
Nb-95	1.295E-7
Sb-124	1.684E-6
Xe-133	9.545E-7

When mixed with the exhaust air from the radwaste and auxiliary buildings, the radioactivity levels have stayed below the LLD of the Plant Vent Monitor, RU-143.

The inspector concluded that the above samples probably represent the worst case from the few samples that were taken from the CVCS holdup tank and BAC distillates during the releases from the BAC.

(c). The licensee's staff had conducted an evaluation of BAC releases at Unit 1 by obtaining samples from the plant vent duct during a release that was in progress via the BAC on February 21, 1986. The study was accomplished for the purpose of determining if there was a need to include particulate and iodine results on release permits. The licensee's evaluation concluded that only a tritium sample was needed since sample results were reported as Minimum Detectable Activity (MDA). The evaluation did not indicate what activity levels were detected in the CVCS holdup tank or BAC distillates.

(d). The following statement was reported to the licensee from a vendor audit report that was submitted to the licensee on February 18, 1985:

"In general, the sample types listed do not all correspond to the types listed in the RETS gaseous sampling and analysis table. The continuous release source prerelease permits should include, in addition to the samples listed, the most recent results for tritium, strontium, particulates, and iodines available from the given release point. WGDT releases require (according to the RETS) only a gas sample. BAC discharges are not in the RETS table at all, but good practice seem to call for a principal gamma emitters analysis, as well as tritium."

The following statement was reported to the licensee from another vendor audit that was performed in February of 1989:

"Description of Area Requiring Improvement: All releases from the BAC are presumed to be only tritium. No historical documentation is available or no routine data is gathered to defend this position." The vendor audit report goes on to make the following statement:

"Without data available to periodically defend the tritium only position, other radioactive contaminants can be distilled into the steam (or carried over with the steam) and be released with the tritium. Though these contaminants (at least particulates and iodines) will be monitored at the plant vent, there are two major issues for consideration: (1) The projected release was not conservative since other isotopes were released and not included in the dose assessment, and (2) Significant dilution in the plant vent (3000 lbs/hr of steam into the 107,000 cfm of air) will most likely reduce the ability to detect most isotopes via routine techniques."

The latter audit report recommended that a study be performed of BAC releases. Procedure 75RP-9ZZ92, "Gaseous Radioactive Release Permits and Offsite Dose Assessment", Rev 7, was developed to incorporate the recommendations made by the vendor audit performed in 1989. The procedure received approval from the licensee's Plant Review Group on April 6, 1989; however, the procedure was never implemented. The licensee's staff was unable to tell the inspector why the procedure was not implemented.

The above findings were brought to the attention of the licensee's staff during the inspection and at the exit interview. An evaluation was conducted by the licensee's staff during the inspection period and was provided to the inspector on the day of the exit. The licensee's evaluation shows that plant vent monitor should detect the release of any radioactivity above the LLD values made via the BAC. Although the licensee's evaluation appeared to be conservative, a calculation performed by the inspector using the data collected from the BAC distillates indicated levels may have been

released above the plant vent monitors' average LLD value of 1E-13 uCi/ml and were not detected by the plant vent monitor. The inspector' calculation considered the partitioning value given in the FSAR and the distillate activity levels that were reported on September 16, 1990; whereas, the licensee' evaluation used a much lower value (e.g., 5E-7 uCi/ml) for the the distillate values in their evaluation.

The inspector also calculated the potential offsite dose to the maximum exposed individual from release of vapor exhaust from the BAC. The calculation employed a licensee survey of a vapor distillate sample collected at Unit 1 on September 16, 1990. The sample contained 1.39E-5 uCi/ml of Cs-134 and 1.73E-5 of Cs-137. The calculation disclosed that the vapor could pose a significant offsite dose, exceeding the TS limits, if partitioning and condensation in the plant ventilation system were minimal. The detection limits used for plant vent monitoring appeared to be adequate to detect such significant concentrations from the BAC if they were indeed present in the plant effluent.

The licensee informed the inspector that they would conduct a further evaluation of BAC releases. The inspector informed the licensee that this item would discussed with NRR and would be examined during a future inspection (50-528/90-51-02).

3. Followup (MC 92701)

The following provides a status of followup items that were were reviewed during the inspection period:

Open Items 50-528/IN-90-31, 50-528/IN-90-33, 50-528/IN-90-35, 50-528/IN-90-44, 50-528/IN-90-48, 50-528/IN-90-51, 50-529/IN-90-31, 50-529/IN-90-33, 50-529/IN-90-35, 50-530/IN-90-31, 50-530/IN-90-33 AND M50-530/IN-90-35 (Closed): The inspector verified that the licensee had received the listed Information Notices (IN) and had either completed an evaluation or were in the process of performing an evaluation of the INs in accordance with established procedures. This matter is closed.

Open Item 50-528/87-24-02 (Closed): Inspection reports 50-528/87-24, 50-528/89-03, 50-528/89-28 and 50-528/90-04 identified concerns with respect to minimizing personnel contamination incidents. Licensee action regarding this concern were reviewed during the inspection period.

The review found significant improvements in the reduction of personnel contamination incidents. Management involvement and a personnel contamination reduction awareness program established during the 1989 refueling outages at all three Units was successful in reducing the numbers of personnel contamination incidents. Lessons learned from the outages has lead the licensee to believe that the total will be further reduced in 1991. The licensee's Business Plan presented by plant management has set 1991 goals for personnel contamination at a lower value than was achieved in 1989 and 1990. This matter has been

satisfactorily addressed by the licensee and is therefore considered to be closed.

Open Item 50-528/89-07-02 (Closed): Inspection report 50-528/89-07 identified that the licensee had committed to establish a schedule of actions to be taken to enhance radiological control/chemistry procedures and for reorganization of the chemistry and radiation protection groups. This commitment was made in March of 1989.

ANPP letter, # 218-00753-JGH/JTR/PWH, dated July 31, 1989, provides a schedule for implementing the March 1989 commitments.

The commitments made in the July 31, 1989, letter were verified during this and previous inspections that were conducted by the Region V staff since August 1989. Enhancements of both radiological control and chemistry program implementing procedures have been ongoing since August of 1989. In addition, the reorganization of the radiation protection and chemistry group is discussed in Region V Inspection Reports 50-528/90-27, 50-528/90-43 and was also recently discussed at a management meeting held at the Region V office on November 5, 1990. The licensee's action regarding this matter is considered to be satisfactory. This matter is closed.

Open Item 50-530/90-04-02 (Closed): Inspection report 50-528/90-04 disclosed that Engineering Evaluation Report # 89-ZA-057 identified that two radiation protection technicians were unable to exit from a locked high radiation area on October 12, 1989, due to a jamming door lock.

A review of APS letter, # 222--01061-MDS/MHS, disclosed that the licensee had taken appropriate corrective action by installing an improved door latching/locking mechanism on all locked high radiation area doors in all three units. The modification is expected to prevent a recurrence of the event. This matter is closed.

Open Item 50-530/90-10-SO (Closed): An examination of appropriate records was performed to verify that the installation of containment high-range radiation monitors had been installed pursuant to NUREG 0737, Attachment 3 recommendations.

The examination disclosed that in-containment high range monitors, RU-148 and RU-149, had been installed and maintained in accordance with established station procedures since January 1987. The records indicate that the monitors meet the recommendation of NUREG 0737. This matter is closed.

Open Item 50-528-90-43-03 (Open): A discussion related to the licensee's program for establishing "alarm set points" for Area Radiation Monitoring Systems (RMS) is provided in Section 3 of Region V Inspection Report 50-528/90-43. The report identifies that licensee procedure 75RP-9ZZ89, "Radiation Monitor Alarm Set Point Determination", Rev 4, did not provide clear and concise guidelines for determining the alarm set points. A further review of this item was conducted during this inspection period.

The licensee's evaluation of this item was in progress at the time of this inspection. Their evaluation had discovered that the alarm set point for radiation monitor RU-7 was improperly set. RU-7 monitors the auxiliary steam condensate returning from the boric acid concentrator and the LRS evaporator before it leaves the receiver tank. Table 11.5-1 lists an alarm set point of 2E-6 uCi/ml. The licensee investigation disclosed that the alarm set point was set at 6E-4 uCi/ml or approximately 300 times higher than background. The non conservative set point had been set at this value since March of 1987. Monthly surveillances that were performed since March of 1987, failed to identify that RU-7's alarm set point was set too high. Immediate action was taken by the licensee to readjust RU-7's alarm set point to three times background value and to verify the adequacy of alarm set points for all RMS at Units 1, 2 and 3. The licensee's staff found other alarm set points that appeared to be set too high. All TS RMS alarm set points were found to be correct.

The inspector reviewed the original copy of procedure 75RP-9ZZ89, Rev 0 and concluded that it provided much clearer instructions for performing alarm set point determination than the current revision (e.g., Rev 4) does. The licensee's staff was not aware as to why the original issue was changed. The inspector noted an additional weakness in that current methods for controlling and establishing RMS alarm set points values does not adequately document the basis for set point changes and is lack in establishing setpoint histories for cross referencing current set point values. The licensee staff had come to the same conclusion during their investigation and had taken appropriate action to evaluate these procedural deficiencies. This matter will be examined during a subsequent review of open item 50-528/90-43-03.

4. Followup on Corrective Actions for Violations and Deviations (MC 92702)
Enforcement Item 50-528/90-23-01 (Closed): This item involved a mechanical maintenance foreman who entered a posted high radiation area without an alarming dosimeter that was required by the radiological exposure permit.

The inspector verified that the corrective actions described in the licensee's timely response of September 24, 1990, to the Notice of Violation regarding this matter had been completed. This matter is closed.

5. Onsite Followup of Written Reports of Nonroutine Events at Power Reactors (MC 92700)

Special Reports (SRs) and Licensee Event Reports (LERs) (Closed): The following SRs and LERs were reviewed during the inspection period:

SPECIAL REPORTS:	Unit 1:	SR 89-007-Y0
		SR 90-001-Y0
		SR 90-003-Y0
		SR 90-004-Y0
		SR 90-006-Y0

	Unit 2:	SR 90-004-Y0 SR 90-005-Y0
	Unit 3:	SR 90-001-Y0 SR 90-004-Y0
LERs:	Unit 1:	LER 89-003-L2
	Unit 2:	LER 89-005-L2 LER 90-003-L1
	Unit 3:	LER 89-003-L0 LER 89-005-L1

Corrective actions for the above listed SRs and LERs were verified during the inspection period. The corrective actions appeared to adequately address the root cause. The inspector noted that 80 % of the SRs are similar in nature (e.g., radiation monitoring system inoperable for greater than 72 hours) and continue to address the same root cause discussed in Region V inspection report 50-528/90-27. This observation was brought to the licensee's attention during the inspection. The licensee's staff informed the inspector that one short and two long term actions had been initiated to eliminate the recurring problem. The short term actions are expected to be completed by November 15, 1990. One long term action to enhance RMS surveillance test procedures is expected to be completed by late 1991 and the other action involving a design change package, #1,2,3 FJ-SQ-060, to' separate the low and high ranges of the RMS so that RMS surveillance testing can be accomplished in less than 72 hours is expected to be accomplish in 1992.

The licensee's program in this subject area appeared capable of meeting its safety objectives. The above SRs and LERs are closed.

6. Facility Tours (MC 83729)

Tours of the licensee's facilities were conducted during the inspection period. Radioactive waste storage areas and the radioactive material receipt areas at the warehouse were included in the tours. Independent radiation measurements were made using an ion chamber survey instrument, Model RO-2, serial number 2691, due for calibration on January 5, 1991. The following observations were made:

(a) Posting and labeling practices were consistent with 10 CFR Parts 19.11 and 20.203.

(b) Work practices observed were in accordance with applicable radiation exposure permits and the licensee's ALARA program.

(c) Cleanliness in the areas that were toured was excellent.

(d) All portable instruments observed were in current calibration.

(e) All personnel observed in the licensee's controlled areas were equipped with appropriate dosimetry devices.

The licensee's program in this subject area appeared capable of meeting its safety objectives. No violations or deviations were identified.

7. Exit Interview (MC 84750)

The inspector met with the individuals denoted in paragraph 1 at the conclusion of the inspection on November 1, 1990. The scope and findings of the inspection were summarized. The weaknesses described in Section 2 and 3 involving management of liquid effluent, releases from the BAC, and alarm set point determinations of RMS the were brought to licensee's attention. The licensee acknowledged the inspector's observations by stating that an evaluation of the findings would be performed.