U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-528/91-27, 50-529/91-27 and 50-530/91-27

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

Licensee: Arizona Public Service Company
P. O. Box 53999, Station 9012
Phoenix, Arizona 85072-3999

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

Inspection at: Wintersburg, Arizona

Inspection conducted: July 8, 1991 through July 18, 1991, and telephone conversations of August 12 through August 15, 1991.

Inspection by: M. Cillis, Senior Radiation Specialist — Date Signed 9/16/91

Approved by: G. P. Yuhas, Chief, Reactor Radiological Protection Branch — Date Signed 9/16/91

Summary:

Areas Inspected:

Routine unannounced inspection by one regionally based inspector of the chemistry, radiation protection and radwaste organization including training and qualifications of the staff. Radioactive liquid and gaseous waste systems were also inspected. Followup items were reviewed and tours of the licensee's facilities were conducted. Inspection modules 83722, 83723, 84724, 84725, 92700, and 92701 were addressed.

Results:

One non-cited violation involving the failure to comply with procedures during cutup of In-core Instrumentation (ICI) cables is discussed in Section 6, one open item involving trace concentrations of tritium identified in Sedimentation Basin No. 2 and the Circulating Water (CW) System is discussed in Section 4.C.5, and one unresolved item regarding the capability of the high range radiation monitoring system (RMS) to detect and measure concentrations of noble gas fission products in plant gaseous effluents during and following an accident is discussed in Section 6. In the areas inspected, the licensee's programs appeared adequate to accomplish their safety objectives.

DETAILS

1. Persons Contacted

a. Licensee

J. Levine, Vice President Nuclear production
*T. Shriver, Assistant Plant Manager, Unit 2
*T. Bradish, Compliance Manager
P. Hughes, Radiation Protection Manager
*J. Scott, General Manager, Site Chemistry
*D. Fuller, Chemistry Manager, Unit 1
*T. Hilmer, Radiation Protection Support Services Manager
P. Gauy, Chemistry Manager, Unit 3
*J. Albers, Radiation Protection Manager, Site Operations
*R. Sorensen, Chemistry Technical Services, Manager
*R. Fullmer, Quality Assurance & Monitoring Manager
W. Blaxton, Chemistry/RMS Supervisor, Unit 1
J. Santi, Chemistry Standards Engineer
J. Sills, Radiation Protection Technical Services Manager
*T. Murphy, Radiation Monitoring System (RMS)/Effluent Supervisor
W. Wattson, RMS, System Engineer
*M. Shea, Radiation Protection Manager, Unit 2
*R. Rouse, Compliance Supervisor
*G. Nelson, Radiation Protection Training Coordinator
*T. Warren, Chemistry Training Coordinator
*D. Larkin, Sr. Engineer, Compliance
*C. McClain, Technical Training Manager, Nuclear
*M. Karbassian, Site Nuclear Engineering Department Supervisor
T. Albrigo, OCS Engineering Supervisor
B. Berthlett,OCS Manager
*R. Pate, NED Supervisor
H. Mortazaui, NED Mechanical Engineer

b. Nuclear Regulatory Commission

*J. Melfi, Visiting Region V Resident Inspector

*Denotes those personnel in attendance at the exit interview held on July 18, 1991.

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

2. Radiation Protection, Plant Chemistry, and Radwaste: Organization and Management Controls

A. Organization

The licensee's chemistry, radiation protection, and radwaste organization and staffing levels were examined and were found to be in compliance with Technical Specifications (TS) 6.2, "Organization." No significant changes have occurred in the chemistry or the radiation protection organizations since September of 1990.

The Chemistry and Radiation Protection groups appear to be well organized with a manager, technical and engineering staff, supervisory and foremen staff, technicians and support personnel. Services provided by the support groups include implementation of the respiratory protection program, personnel dosimetry program, processing and shipping of radioactive waste, implementation of the ALARA program, and the implementation of the environmental monitoring program.

B. Staffing

Staffing needs had been periodically reviewed for adequacy by both the chemistry and radiation protection manager. APS management have been responsive to recommendations made by both the chemistry and radiation protection manager for enhancing staffing levels required to maintain effective chemistry and radiation protection programs.

All key positions in the chemistry group were filled. One key position (Radiation Protection Technical Services Manager) in the radiation protection organization has been filled by a contractor since March 1991. The Radiation Protection Manager informed the inspector several individuals were currently being considered for the position and that a selection was expected to be made shortly.

The Chemistry Manager informed the inspector that he had five approved chemistry technician positions to be filled. The five positions were being filled by contractor personnel. The Radiation Protection Manager stated that he had twenty-six approved radiation protection technician (RPT) positions and two professional positions (health physicists (HP)) to be filled. Contractor personnel were filling the RPT positions at the time of this inspection. The HP positions are new positions which were expected to be filled by November 1991.

Both managers stated that they currently had an adequate staff to support the work load during normal plant operations, and that the permanent staffing levels are normally augmented with qualified contract personnel during refueling outages and, as needed, to support unexpected demands.

C. Radiation Protection Manager/Chemistry Manager

A verification was made from discussions held with licensee representatives and a review of administrative procedures that the duties and responsibilities for both the Chemistry Manager and Radiation Protection Manager, and their respective organizations, are well defined and generally understood by all individuals. The following procedures were reviewed:

* 020G-9ZZ06, "Site Chemistry Organization and Responsibility Policy"
* 740G-0ZZ01, "Unit Chemistry Operations Department Organization and Responsibility Policy"
* 740G-0ZZ02, "Chemistry Technical Services Department Organization and Responsibility Policy"
* 750G-0RP01, "Radiation protection Organization"

* 750G-ORP02, "RP Operations Department Organization"
* 750G-ORP03, "RP Technical Services Department Organization"
* 750G-ORP04, "RP Support Services Department Organization"

D. Identification and Correction of Weaknesses

The examination revealed that APS management requires department managers, supervisors, foremen, and plant workers to be cognizant of ongoing activities through frequent plant tours. Additional overview of the chemistry and radiation protection programs are performed by the licensee's oversight group, internal audits and monitoring activities conducted by the Quality Assurance and Monitoring (QAM) group, INPO inspections, NRC inspections, and from internal chemistry and radiation protection surveillances.

E. Audits and Appraisal

Licensee audits and monitoring activities are discussed in Section 2.D, above, and Section 3, below.

The inspector concluded that the licensee's chemistry, radiation protection, and radwaste organizations were consistent with the Technical Specifications (TS) 6.2 and appeared to be capable of meeting the licensee's safety objectives. No violations or deviations were identified.

3. Training and Qualifications: General Employee Training, Radiation Safety, Plant Chemistry, Radwaste, and Transportation

An examination of the licensee's general employee training program (GET), and the training and qualification of the radiation safety, plant chemistry, radwaste and transportation staff was conducted for the purpose of verifying compliance with TS 6.3 and 6.4. The examination included a review of selected training lesson plans, training attendance records; including the attendance of the NRC inspector in a GET class, by direct observations, by tour of the training facilities, by a review of audit reports, from discussions held with various licensee representatives, by a review of procedures, and interviews held with the plant staff during tours.

The inspector noted that significant improvements had been made in the training programs. Applicable procedures had been revised to clearly define and enhance the various training programs. The licensee has now made it mandatory for all staff members to attend the required training programs prescribed in their procedures. Several audits have been conducted to verify that the qualifications and training programs for radiation protection and chemistry staff members were consistent with the TS and licensee procedures. A detailed audit of the training program was addressed in licensee audit report 90-011. The audit report concluded that the training programs were being adequately implemented and that personnel qualifications were in compliance with the TS.

The inspector also noted that training lesson plans are periodically reviewed for adequacy by the training staff and operating staff. This

has led to an overall improvement in the quality of the training that is provided.

Training coordinators are responsible for coordinating all training activities and ensuring staff members attend the required training. The following procedures were reviewed:

* 15AC-OTR01, "Personnel Qualification and Certification"
* 15AC-OTR09, "General Employee Training Program Description"
* 15DP-OTR35, "Chemistry Technician Qualification Requirements and Training Program Description"
* 15DP-OTR45, "Radiation Protection Technician Qualification Requirements and Training Program Description"
* 15DP-OTR56, "Radiation Monitoring System Technician Qualification Requirements and Training Program Description"
* 15GB-OTR08, "Supervisory and Managerial Training and Development

Long term contractors personnel (e.g.,greater than six months) participate in the licensee's training programs.

The inspector also verified that the qualifications of selected licensee and contractor chemistry and radiation protection personnel were in compliance with TS 6.3 and Regulatory Guide (RG) 1.8, "Qualifications and Training of Personnel for Nuclear Power Plants." Similar verifications were made by the licensee's quality assurance group in accordance with TS 6.5.3.5 (b), "Audits." TS 6.5.3.5 (b) 3 requires that the performance, training, and qualifications of the unit staff be audited once per twelve months.

The inspector concluded that the quality of the licensee's training programs had improved. No violations or deviations of NRC requirements were identified.

4. Liquids and Liquid Wastes

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).

A. Audits and Appraisal

The inspector reviewed the following audit and monitoring reports:

(a) Final Report to Arizona Public Service: December 1989 by T. P. Barton
(b) Audit Report 91-007: "Environmental/Effluents/Chemical Control, dated April 1991
(c) Sixty-five monitoring observations performed by the QA&M group between January 1,1991 and June 30, 1991. See note (1).

Item (a) provided the licensee with an in-depth overview of the radiation monitoring system (RMS) and of the RMS/Effluents organization. The report did not identify any violations of regulatory requirements; however, several recommendations were made for improvement of the calibration methodologies employed in the licensee's preventative maintenance program. One recommendation made was to use a Tc-99 source after detector set up with a Sr-90 source to verify that the low energy response is within an acceptable range. Current license practice is to use a Sr-90 source which is a high energy beta emitter. Uniform response to Tc-99 (85 KeV average) ensures acceptable response to Xe-133 (99 KeV average) and higher energies. A similar matter is discussed in Region V Inspection Report 50-528/90-51. The licensee's staff informed the inspector that the recommendation would probably be adopted.

Audits addressed in Item (b) focused in on training and qualifications of the unit staff. No significant findings were identified.

Monitoring observations assessed under item (c) included; the radiation protection program, chemistry/effluents, radwaste, and the meteorological tower.

The licensee's monitoring and surveillance activities covered a wide cross section of the areas that were examined by the inspector. Surveillance and monitoring findings were generally addressed in a timely manner.

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.

B. Changes

No major changes in the licensee's liquid radwaste system or facilities had occurred since the last inspection.

C. Effluents

The following areas were addressed during the inspection:

(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). Chemistry

The inspector verified that reactor coolant chemistry parameters for dissolved oxygen, chloride and fluoride specified in TS, Table 3.4-2 were not exceeded. The surveillances for verifying these parameters had been accomplished at more frequently than what is specified in the TS, Table 4.4-3.

(3). Specific Activity - Primary

TS 3/4.4.7 requires that the specific activity of the primary coolant be maintained to:

(a). Less than ore equal to 1.0 microcuries/gram Dose Equivalent Iodine-131, (DEI-131) and

(b). Less than or equal to 100/E-Bar microcuries/gram.

It should noted that the licensee has committed to conduct an orderly plant shut down if the primary coolant is found to be greater than 0.2 uCi/gm DEI-131 for more than 48 consecutive hours. The licensee's commitment is described in APS letter, No. 161-03873-WFC/MEP/KLMC, dated April 13, 1991. The letter provides the licensee's response to an NRC request for additional information on the Justification for Continued Operation (JCO) in the event of a potential for a small break loss of coolant accident due to a pipe rupture in the reactor coolant pump seal cooler.

The inspector verified that the specific activity of the primary coolant in each of the Units had been sampled and analyzed at the frequencies specified in TS, Table 4.4-4 and that no abnormal results were reported. The DEI-131 values were well below the 0.2 uCi/gm limit committed to by the licensee.

(4). Specific Activity - Secondary

TS 3.7.1.4 requires that the specific activity of the secondary coolant system shall be less than or equal to 0.10 uCi/gm DEI-131. TS 4.7.1.4 requires that the specific activity of the secondary coolant system shall be determined to be within the limit by the performance of the sampling and analysis program prescribed in Table 4.7-1.

A review of licensee sampling and analysis records for the period of August 1990 through June 1991 disclosed that the specific activity levels of the secondary coolant systems for all three Units were well below the TS limit.

(5) Tritium Concentrations in Sedimentation Basin No. 2

The inspector was informed of the possible presence of tritium in Sedimentation Basin #2 in concentrations greater than background. An Incident Investigation Report (IIR) no. 3-1-91-030, initiated on March 18,1991, documents the tritium found in the sedimentation basin. As a result of the IIR, samples were also obtained from the Circulating Water (CW) System and the Spray Ponds. The results of these samples also showed the possible presence of tritium being present of greater than background in the CW system. Tritium levels reported in sedimentation basin no. 2, ranged from 1.09 E-6 microcuries/milliliter (uCi/ml) to to 8.32 E-6 uCi/ml, and tritium level reported in the CW were reported as approximately 3.4 E-6 uCi/ml.

The identified levels of tritium are below 10 CFR Part 20, Appendix B, Table II values for tritium in unrestricted areas (3.00 E-3 uCi/ml) and also below the TS 3/4.12.1, Table 3.112-3 reporting level of 3.00 E-5 uCi/ml.

Normally, sedimentation basin #2 is sampled weekly for gamma isotopic analysis, quarterly for tritium analysis, and quarterly sludge for gamma isotopic analysis. None of the weekly samples analyzed from the period of 1990 through March 5, 1991, identified any gamma emitters. One sample taken on August 4, 1990, identified a trace amount of Cesium-137 (17 picoCuries/liter) and none of quarterly liquid samples until the March 5, 1991, samples showed tritium activity.

Inputs to the sedimentation basin area the site drainage ditches and yard storm drains.

As a result of this investigation a problem involving the ability of off-site lab and the licensee's chemistry group to adequately perform the low level tritium analysis was identified.

Possible sources of tritium to the Sedimentation Basin No. 2 and CW, were still being pursued at the time of this inspection. The licensee's chemistry staff felt that the real problem may be associated with their ability to accurately perform the low level tritium analysis and not due to the actual presence of tritium. This hypothesis was also being pursued at the time of this inspection. The licensee's staff were in the process of implementing the corrective actions resulting from the IIR. Corrective actions include the purchase of new analytical equipment and to collect additional samples for further studies. An authority on liquid scintillation counting was contacted for the purpose of assisting in the licensee's investigation. This item will be examined during a subsequent investigation (50-528/91-27-01).

The inspector concluded that the licensee's program in this area was capable of achieving its safety objectives.

5. Gaseous Waste System

A. Audits and Appraisal

This item is addressed in Section 4, above.

B. Changes

The licensee's staff reported that no major changes had been made to the gaseous waste system since this area was previously examined.

C. Instrumentation

The inspector verified that the surveillance requirements for radiation monitoring system (RMS) instrumentation were performed at the frequencies specified in TS 3/4.3.3. Applicable procedures associated with

performing the surveillances; such as, channel checks, source checks, channel calibration and channel functional tests, for the period of January 1990 to July 1991 were reviewed.

The licensee's staff reported that the reliability and operability of their TS RMS were maintained between 94.1% to 99.5% level for the period of January 1, 1991, through June 1, 1991. The licensee also reported that the number of Special Reports regarding the operability of their RMS had decreased from eleven in 1990 to only one for the year 1991 to date.

The inspector also verified that the alarm/trip setpoint determinations for the RMS instrument channels shown in TS, Tables 3.3-6 and 3.3-12 were performed in accordance with the methodology specified in the Offsite Dose Calculation Manual (ODCM) and applicable procedures. The inspector noted that a significant improvement had been made in this area since the previous inspection.

The inspector examined actions taken by the licensee in response to a 10 CFR Part 21 report from Amalgamated Services Incorporated regarding non-qualified power supply being used in a single channel area radiation monitor (SCAM). The licensee had performed a walkdown of their Supply System Warehouse and quarantined 25 power supplies. The warehouse have been instructed to control the release of the subject power supplies pending notification from ASI authorizing their release.

D. 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 surveillancees to verify system operability and testing; such as, flow, carbon analysis, pressure drop checks and DOP testing of HEPA filters, for the period of 1990 through June 1991 were reviewed. The inspector concluded that the licensee's surveillance programs for these systems satisfied the TS requirements. No violations or deviations were identified.

E. Meteorological Instrumentation

The inspector verified that the surveillance requirements prescribed in TS 4.3.3.4 for the meteorological instrumentation were performed at the frequencies specified in TS Table 4.3-5. Meteorological surveillance procedures were reviewed. Procedures reviewed were as follows:

* 36MT-9RG01, "Meteorological Systems Weekly Check"
* 36MT-9RG03, "Meteorological System Calibration"
* 36ST-9RG02, "Meteorological System Calibration (Redundant System)"
* 36ST-9RG03, "Meteorological System Calibration (Primary System)"

The inspector concluded that the licensee's surveillance and maintenance program for the meteorological instrumentation was in compliance with the TS requirements.

The inspector concluded that the licensee's program was capable of achieving its safety objectives.

6. Followup Items

Item 50-528/90-51-01 (Closed): This item concerned the management of large volumes of water and liquid waste effluents processed for reuse or released to the evaporation ponds or from the boric acid concentrator (BAC). Region V Inspection Report 50-528/90-51 cites the BAC liquid waste influent volumes as an area of concern. The status of this concern was examined during this inspection. The inspection report identified that volumes of liquid waste released by way of BAC for 1987, 1988, and 1989, were approximately 2.2 to 3.88 times higher than what is projected (3.25E5 gals/year/unit) in Table 11.3-7 of the updated Final Safety Analysis Report (UFSAR). BAC volumes released during 1990 were also approximately 2.86 times higher than the projections given in the UFSAR and it appears that it will be slightly higher than they were in 1990.

In response to the concern, the licensee has created a Water Management Task Force (WMTF) to specifically address site water management issues. The examination disclosed the following:

* The task force consist of key management and technical representatives from each unit, site engineering, site chemistry and the water reclamation facility.

  The task force developed a charter which is the development of a site Water Management Program. The program includes the identification of specific water management issues and the development of short and long range plans to properly disposition each identified issue according to its priority and the availability of site resources.

* The WMTF convened for the first time on April 14, 1991, and have met weekly since the first meeting was held. Meeting minutes are documented. An "Open Issues List" is used to track the status of recommendations for liquid waste reductions that are made by the WMTF.

* The task WMTF has developed a charter which is identified as an action plan (AP) in licensee letter #040-00885-TAS, dated May 9, 1991. The AP addresses eight separate water management concerns which are evaluated by the WMTF group.

* All information pertaining to the WMTF group activities are routed to both unit management and site management.

The NRC inspector attended a weekly WMTF meeting which was held during this inspection period. While no significant progress has been made in reducing the volume of liquid effluents released from BAC, substantial

reductions have occurred in other areas because of recommendations made by WMTF group. The WMTF group stated that they were continuing to evaluate methods for reducing BAC releases.

The inspector concluded the WMTF group had an aggressive agenda for dealing with the water management program. The inspector commended the group for the progress made to date. This item will be periodically examined during routine inspections.

Item 50-528/91-20-01, 50-529/91-20-01, and 50-530/91-20-01 (Closed): This item concerns licensee Materials Nonconformance Report (MNCR), No. 91-SQ-9010, which states that the NUREG 0737 post accident effluent radiation monitors (RU-142, RU-144, and RU-146) would be incapable of monitoring releases to the UFSAR range of 1E5 uCi/cc if that concentration was actually present in the process due background radiation levels; however, the monitors are capable of monitoring releases under all design basis accidents. The MNCR suggests that if a monitor location is sufficiently close to the sample duct, and if the duct is filled with a total activity of 1E5 uCi/cc then the background shine would "blind" the detector. Ducts of interest include plant vent, condenser air removal and fuel building.

A meeting was held with the licensee's staff to determine the status of the MNCR. The licensee reported that an action plan was formulated. The action plan is as follows.

* Formalize the calculations in the MNCR which demonstrates operability under all design basis accidents. This first option included Licensing providing an assessment as to the possibility of taking exception to Regulatory Guide 1.97 and NUREG 0737 range requirements.

* Perform an analysis to determine what are the upper limits of accurate measurement range for the monitors.

* Make modifications to the equipment to bring them in compliance.

All work related to the assessment of these options are expected to conclude by the end of October 1991.

To date, the calculations had been formalized and have been assessed by Licensing. The licensee's Licensing group concluded that the chances of successfully pursuing an exception to the post accident monitoring range requirements were not promising.

A telephone discussion was held with the licensee's staff on September 11, 1991, to address the status of the corrective actions that were formulated. The inspector was informed that the preliminary calculations show that the licensee's RMS would be capable of complying with NUREG 0737 and RG 1.97 requirements. The licensee staff member stated that they were in the process of having the calculations carefully reviewed by an independent group. The inspector asked if they would be able retrieve RMS samples during a design basis accident and still be able to comply with 10 CFR Part 50, Appendix A, Criterion 19 for maintaining personnel

exposures of less than 5 rem whole body. The licensee's staff stated that he was not sure if such a determination had been included in their recent calculations.

Presently, the licensee's Nuclear Engineering Department are evaluating modifications to the equipment as part of Plant Change Request (PRC) 85-13-SQ-037. This evaluation is expected to be completed by the end of October 1991.

This matter is considered as unresolved pending the completion of the licensee's evaluation of this item (50-528/91-27-03).

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations or deviations.

Item 50-530/91-17-01 (Closed): This item concerns a section of an In-Core Instrument (ICI) cable with radiation levels of 10 rem/hr to 8000 rem/hr which was discovered by the licensee's radiation protection staff while performing surveys during decontamination of the 114 foot cavity level, Unit 3. The licensee initiated an Incident Investigation Report (IIR) for determination of root cause for misplacing the cable in the cavity. The results of the licensee's investigation was examined during the inspection.

The examination included a review of Problem Resolution Sheet (PRS) 0001537 and IIR 3-3-91-021 and discussions with the licensee's staff.

The examination disclosed the following:

ICI cutup activities began on April 9, 1991, and completed on April on April 12, 1991. The trash cans containing the cutup ICI cable pieces were moved to the fuel building for storage in the spent fuel pool. On April 29, 1991, immediately after the closure head reactor head was set on the vessel, the radiation protection group noted a 50 rem/hr hot spot near the intermediate fuel racks located at the edge of the canal deep end.

The personnel who had performed the ICI cutups between the period of April 9-12, 1991, reported that they had trial fitted the cutter assembly to the top of the trash can prior to installing the trash can in the intermediate fuel rack, the cutter did not align up with the pins on the trash can after installation. The reason for the malfunction was verified to be the fit of the trash can in the intermediate fuel rack below the lead-in at the top of the rack. Since the cause was understood and the cutter appeared to be working properly while resting on top of the fuel rack, the Shift Leader decided to proceed with the cutup even though the tooling did not function as designed. Evidence indicates that during the cutup, one of the "hot" ends missed the trash can while being inserted through the cutter funnel. It was pushed down into the clearance between the trash can and the intermediate fuel rack where it remained until it was found on April 29. The root cause was determined to be:

(a) Step 8.6.6 of procedure 78CP-9RI01, Removal and Cutup of Incore Instrument (ICI) Assemblies" was not followed. Step 8.6.6 states in part: "Using the tool handling poles install the hydraulic (ICI) cutter assembly on top of the "hot end" waste container." The licensee's investigation determined that the cutter assembly could not be installed as designed. It was installed on the the intermediate storage rack instead. This provided a sufficient gap between the cutter and trash can such that the ICI section could be inserted outside the trash can but inside the intermediate rack. Since the intermediate storage rack and trash can was not visible to the individuals performing the work, the IIR determined that the ICI cutup assembly was left in the intermediate storage rack at the completion of the ICI cutup activities.

(b) The workers failed to follow procedure 78CP-9RI01.

(c) The design of the ICI cutter did not take into account the fact that the top of the trash can is below the top of the intermediate storage rack.

(d) Poor lighting and visibility when the cutter is installed in that the trash can and intermediate storage rack location that the ICI cutter is installed are not visible to an observer.

The IIR concluded that the incident represented a potential for a serious over exposure if it had not been for the radiological controls that were in place and the diligence of radiation protection and ALARA group personnel that first identified the problem and were able to recover the cutup ICI assembly without further incident. The IIR appeared to adequately address the need for implementing appropriate corrective actions for preventing a recurrence of the incident.

This violation is not being cited because the criteria specified in Section V.A. of the enforcement policy were satisfied (50-530/91-33-02).

7. Onsite Followup of Written Report of Nonroutine Events at Power Reactors

Item 50-528/88-09-Y5 (Closed): This fifth supplement to the 1988 Special Report (SR) informed NRC that a radioactive effluent monitor design change package (DCP) development date had been extended. The original SR had concerned spurious output pulses, or "spiking," generated by the detectors. The licensee's investigation determined the cause to be "ground looping." Temporary modifications were made on nine monitors had eliminated the spiking by removing the capacitive feedback path. The permanent repair was to be conducted 90 days after receipt of a particular kind of wiring insulation. Discussions with the licensee's compliance staff disclosed that the insulation was received on July 11, 1991, and the the DCP would be completed by October 11, 1991. This matter is closed.

Licensee Event Report (LER) 91-06-L0 (Closed): This item involves LER 91-06-L0 which was prepared and submitted in accordance with 10 CFR Part 50.73. The LER identified that an ESF actuation occurred due to a radiation monitor failure. The LER states that on May 17, 1991, while

Unit 1 was in Mode 1 at approximately 100 percent power, a spurious Train "B" containment purge isolation actuation signal was initiated on the balance of plant engineered safety features actuation system (CPIAS). This resulted in a designed cross-trip of Train "A" CPIAS and Trains "A" and "B" of the control room essential filtration actuation signal (CREFAS). The actuation occurred when the Train "B" power access purge area radiation monitor (RU-38) spiked, went off line, and was unreachable from the radiation monitoring System (RMS) data control unit (DCU). No containment purge was in progress at the time of the occurrence. Radiation protection personnel verified that no abnormal radiation levels existed in the vicinity of RU-38.

The cause of the event was a malfunctioning central processing unit and random access memory board on the Train "A" power access purge radiation monitor RU-38. As corrective actions the boards were replaced. The new boards have upgraded components with higher demonstrated reliability. A similar event had been reported in LER 50-530/90-01. This matter is closed.

8. Facility Tours

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 36100 x-ray/gamma radiation survey meter, serial number 11108, due for calibration on November 11, 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.

9. Exit Interview

The inspector met with the individuals denoted in paragraph 1 at the conclusion of the inspection on July 18,1991. The scope and findings of the inspection were summarized. The licensee was informed of the non-cited violation discussed in Section 6.