

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Docket Nos. 50-528, 50-529, 50-530

Report Nos. 50-528/90-04, 50-529/90-04 and 50-530/90-04

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

Licensee: Arizona Public Service Company
P. O. Box 52034
Phoenix, Arizona 85072-2034

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

Inspection at: Wintersburg, Arizona

Inspection conducted: January 31, 1990 through February 2, 1990, February 5, 1990 through February 9, 1990, and February 12, 1990 through February 15, 1990

Inspection by:

F. Wenslawski
M. Cillis, Senior Radiation Specialist

3/2/90
Date Signed

M. D. Schuster
M. D. Schuster, Chief, Safeguards Section

3/2/90
Date Signed

L. C. Carson II
L. C. Carson, II, Radiation Specialist

3-1-90
Date Signed

Approved by:

F. A. Wenslawski
F. A. Wenslawski, Chief
Facilities Radiological Protection Section

3/2/90
Date Signed

Summary:

Inspection on January 31, 1990 through February 2, 1990, February 5, 1990 through February 9, 1990, and February 12, 1990 through February 15, 1990 (Report Nos. 50-528/90-04, 50-529/90-04 and 50-530/90-04)

Areas Inspected:

Special unannounced inspection by regionally based inspectors of onsite followup of nonroutine events; including followup on inspector identified items, followup on items of noncompliance, in-office review of special reports and a tour of the licensee's facilities. Inspection procedures 30703, 92700, 93702 92701, 92702 and 90713 were addressed.

9003210078 900305
PDR ADOCK 05000528
Q PDC



Results:

In the five areas addressed, one apparent violation involving the failure to properly control access to locked high radiation areas (LHRA) is discussed in paragraph 2 (this is considered a repeat violation). A non-cited violation involving an individual who had failed to perform an adequate survey upon exiting from a radiologically controlled area is discussed in paragraph 3. A concern was identified regarding timely repair of multipoint recorders (see paragraph 4 (g)). In the areas addressed, the licensee's programs appeared adequate to accomplish their safety objectives.



DETAILS

1. Persons Contacted

- *J. M. Levine, Vice President, Nuclear Production
- W. C. Marsh, Plant Director
- *P. W. Hughes, Radiation Protection & Chemistry Manager
- *R. J. Adney, Plant Manager, Unit 3
- *J. Y. Ong, Radiological Engineering Supervisor
- *T. P. Hilmer, Radwaste Support Manager
- *T. R. Bradish, Compliance Manager
- *J. S. Summy, I&C Engineering Evaluation Department (EED) Supervisor
- *C. R. Emmett, Management Services Senior Information Coordinator
- *K. Oberdorf, Radiation Protection Manager, Unit 1
- *A. G. Ogurek, Radiation Protection Manager, Unit 2
- W. E. Sneed, Radiation Protection Manager, Unit 3
- *W. E. Ide, Plant Manager, Unit 1
- *D. B. Fasnacht, Nuclear Construction Manager
- *J. M. Sills, Radiation Protection Standards Supervisor
- *D. R. Heinicke, Plant Manager, Unit 2
- *J. L. McGrath, QA/QC Supervisor
- *R. J. Rouse, Compliance Supervisor
- *J. F. Schmader, OCS Manager/ Acting S&ST Director
- C. F. Bonhoff, Lead Radwaste Technician
- R. A. Fongemic, Civil System Engineer

b. NRC

- *D. Coe, Resident Inspector
- *F. A. Wenslawski, Chief, Facilities Radiological Protection
Section, Region V Office

c. Contractors

- W. H. Barley, Bartlett Nuclear, Inc. - Acting Chemistry Standards
Supervisor
- C. A. Clark, Bartlett Nuclear, Inc. - Senior Radiation Protection
Technician (RPT)
- M. Lambert, IRM, Radiological Engineer

*Denotes those personnel in attendance at the exit interview held on February 9, 1990.

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

2. MC 92700 - Onsite Followup of Written Reports of Nonroutine Events at Power Reactor Facilities

(Closed) Licensee Event Report (LER) 1-89-021-L0: Inspection report 50-528/89-51 identifies two nonroutine events which the licensee had reported to the NRC's senior resident shortly after they occurred on



November 6, 1989, and November 9, 1989, respectively. The report also identifies some of the immediate corrective actions that were taken by the licensee to prevent recurrence and that a licensee investigation had been initiated to ascertain what had occurred.

LER 1-89-021-L0, dated December 6, 1989 and the results of the licensee's investigation documented in PVNGS Incident Investigation Report (IIR) #2-1-89-003, dated December 5, 1989 were subsequently submitted to the Region V Office pursuant to 10 CFR 50.73.

The LER reported the following:

- (a) On November 6, 1989, at approximately 0905 MST, a Unit 3 Radiation Protection Technician (RPT) discovered a Unit 3 Locked High Radiation Area (LHRA) gate unguarded and opened. The gate was last verified to be locked at approximately 0815 MST on November 6, 1989.
- (b) On November 9, 1989, at approximately 0745 MST, a Unit 1 RPT discovered a Unit 1 LHRA gate open and unguarded. The gate was last verified to be locked at approximately 2100 MST on November 8, 1989.
- (c) A similar event was previously reported in Unit 3 LER 88-005.
- (d) The individuals responsible for opening the Unit 1 and 3 LHRA gates had not been identified from the licensee's investigation. The investigation concluded that the root cause for the unauthorized openings was the intentional forcing of the gates by unknown individuals. It should be noted that the licensee's security department was involved in the investigation. Another root cause was attributed to the ineffectiveness of the locking mechanisms in preventing unauthorized, intentional opening of the gates with the use of common hand tools. The LER reported that the Unit 3 locking mechanism showed signs of tampering and that no authorized entries were made into the affected areas during the time interval between the LHRA door checks.
- (e) Not all corrective actions from the previous event reported in LER 88-005 had been completed at the time the events were discovered in Unit 3 or Unit 1. The LER added that the probability for the unauthorized opening of the LHRA gates may have been reduced if the site modifications from the previous event had been implemented.
- (f) A review of personnel exposure records did not disclose any abnormal exposures.
- (g) Nothing appeared to be missing from either area.
- (h) Chains and padlocks were installed on all LHRA gates. Additionally, administrative controls had been implemented in association with the chains and padlocks to ensure no individual would be prevented from exiting any LHRA.
- (i) On November 11, 1989, an APS memorandum, #260-00219-WCM/PWH, assigned an Incident Investigation Team (IIT) to conduct an

Investigation of the two LHRA events. The licensee's Security Group had been assigned as part of the IIT.

The inspectors conducted an examination of the two events during the inspection period. The scope of the examination and observations that were identified are as follows:

- (a) Review of the IIT's Incident Investigation Report (IIR) #2-1-89-003. It should be noted that the investigation was conducted in a timely manner and the scope and depth of the investigation was appropriate and thorough.
- (b) A physical inspection of the affected LHRAs and other LHRAs in all three Units was conducted. The inspectors noted that postings were consistent with 10 CFR Part 20.203 and Technical Specifications. The inspectors noted that there were some differences in the type of locksets and pick-plates installed in each of the three units (e.g., gate A-B07 located in Unit 3 had a lockset that was different from the locksets found on other LHRA in Unit 3 and Units 1 and 2, as well and the gates' pick-plates varied in all three units).
- (c) The review of Region V Inspection Report 50-530/88-33-01 and Civil Penalties (CP) package #EA-88-182, dated December 1, 1988, identified a similar event in which a worker used a screwdriver to open a LHRA gate located in Unit 3 on September 8, 1988. This event was reported in licensee LER 3-88-005. The licensee's corrective actions are described in Section II.C.4.4 through II.C.4.7 of the licensee's response to the CP, dated December 29, 1988. Corrective actions committed to included some administrative and hardware changes. All of the administrative changes had been completed prior to the recent events of November 6, 1989 and November 9, 1989. One item, (i.e., Section II.C.4.5) involving replacement of locking mechanisms had not been completed in any of the units as of February 9, 1990. A review of the licensee's proposed corrective actions discussed in their response to the CP was addressed in Region V Inspection Report 50-528/89-07. At that time the licensee's staff indicated that a site modification package to enhance LHRA gates with new locksets and pick-plates had been approved and that the installation of the site modification was to be implemented after receipt of the hardware which was expected to be received in May 1989.
- (d) The review of the December 5, 1989, IIR and a four-page licensee document that described the chronology of events, which started with the Unit 3 event of September 8, 1988, through July 1, 1990, disclosed that numerous delays had occurred in attempting to implement the site modifications. Some of the information contained in the IIR and the four-page document is as follows (this information appears to explain why the site modification was not performed in a timely manner):
 - o A system engineer (SE) recommended that Plant Change Request #88-13-ZZ-007, "Locksets for High Radiation Access Doors, " be assigned a priority "A2" category (Personnel Safety) to



enhance the LHRA gates with new locksets and pick-plates. The PCR was approved by the licensee's Plant Modification Committee on November 8, 1988, and then it was issued to a design engineer on December 14, 1988. A site-modification (S-Mod) #SM-ZZ-002, "Wire Mesh Gates Locking Assembly, Priority A2," was issued on March 7, 1989.

- The Planner Coordinator, did not perform a walkdown of the job as required by procedure. Nor was a construction walkdown performed by the licensee's Nuclear Engineering Department (NED) or Engineering Evaluation Department (EED) prior to the issuance of Revision '0' of the S-Mod.
- The licensee's Regulatory Commitment Tracking System (RCTS) #038589 assigned an implementation date of June 30, 1989, for the S-Mod.
- On April 14, 1989, licensee Quality Assurance audit report 89-008 identified that rooms needing doors or locks installed due to radiation levels being in excess of 1000 mrem/hr needed to be expedited.
- Several personnel changes occurred during the time between September 8, 1988 and February 9, 1990. Three different system engineers had been assigned to the project at different times during this time span. The responsible system engineer had a work load consisting of 400 Engineering Evaluation Requests (EER), fire door issues and ongoing plant demands. A new radiation protection manager reported to the site in March 1989. The job scope was changed on several occasions because of these personnel changes.
- The S-Mod was issued to the system engineer (SE) on April 19, 1989, where it remained until it was finally issued on September 19, 1989. During the subsequent initiation of the Work Request (WR) the SE did not indicate that a high priority was required for implementation of the S-Mod.
- There had been no verbal communications between NED and EED during the design phase of the S-Mod.
- The purchase requisitions for the S-Mod hardware were initiated on September 27, 1989 with a "need date" of October 27, 1989. The purchase orders were issued on November 14, 1989.
- The S-Mod, 03-SM-ZZ-002, had been signed-off as being completed on the affected Unit 3 LHRA gate (i.e., gate #A-B07) on November 1, 1989. An examination of the gate after the November 6, 1989, event revealed that the locking mechanism did not conform with the installation requirements specified in Work Order (WO) #00386258. One of the deficiencies noted was the failure to install the anti-pick plate as signed off in the WO. A Quality Deficiency Report and a Material Nonconformance Report were written against the WO. The licensee's staff



informed the inspectors that the sign-off of the S-Mod was an error. The staff stated that the lock smith had been assigned to repair the lockset which had been reported as being damaged. The S-Mod was signed-off after the repair work had been completed.

- ° The IIT members determined that the affected gates in both Unit 1 and 3 could easily be opened with a screwdriver. The gate in Unit 1 could be opened if the frame containing the striker plate were to be pulled away from the gate.
- (e) The initial priority "A2" assigned by the SE in the fall of 1988 was based on an event in which a person was locked in a High Radiation Area. The SE stated that the event had occurred sometime in 1987.
- (f) A review of EER #89-ZA-057 dated October 17, 1989, disclosed that two radiation protection technicians were unable to exit from a LHRA on October 12, 1989, due to jamming of the door. The IIT did not identify this event during their investigation of the November 6, 1989, event. This item was discussed at the exit interview. The inspector referenced 10 CFR 20.203(c)(3) which states in part that no individual will be prevented from leaving a High Radiation Area. This item will be examined during a subsequent inspection (50-530/90-04-02).

The above observations were discussed at the exit interview. The inspector informed the licensee that the events reported in LER 1-89-021 appeared to be an apparent violation that could have possibly been prevented with the timely installation of the new locking mechanisms and anti pick-plates as committed to in their response to an NOV for a previous violation of a similar nature (50-528/90-04-02).

The licensee staff acknowledged the apparent violation. The inspectors were informed that the hardware for performing the S-Mod was expected to arrive for implementation by approximately February 23, 1990. The licensee added that the Region V NRC staff would be informed of any further delays involving the installation of the S-Mod.

3. MC 93702 - Onsite Followup of Events at Operating Power Reactors

An examination of a personnel contamination incident that occurred in Unit 2 on January 8, 1990, was conducted. Four radwaste technicians (RWT) and one contractor radiation protection technician (CRPT) were involved in the incident. The RWTs will be generally referred to as RWT-1 through RWT-4.

The examination disclosed that the licensee's response to the contamination incident was both timely and thorough. Discussions were held with involved personnel and other licensee representatives. In addition the following procedures were reviewed:

- 75PR-ORP01, "Radiation Protection Program"
- 75AC-9RP01, "Radiation Exposure and Access Control"
- 75RP-9XC01, "Calibration and Response Check of Personnel Contamination Monitors"



75RP-9RP02, "Radioactive Contamination Control"
 75RP-9RP04, "Decontamination"
 75RP-9RP05, "Contamination Dose Evaluation"
 75RP-9RP06, "Hot Particle Control"
 75RP-9RP07, "Radiological Surveys"

Applicable radiation and contamination surveys and Radiation Exposure Permits (REP) #2-90-0052-A, "Packaging Low Level Trash in S.E.G. Boxes for Shipment" and 2-90-0052-B, "Packaging Hi Level Trash in S.E.G. Boxes for Shipment," were also reviewed. The examination revealed the following:

The licensee's staff had informed the NRC's senior resident inspector that RWT-1 had alarmed a portal radiation monitor at the Security Building egress point at the conclusion of his work shift. Security notified the Unit 2 radiation protection staff. Surveys of RWT-1, performed by the licensee's radiation protection staff, revealed that the RWT-1's shirt, trousers and jacket had varying levels of contamination on them. Additionally, RWT-1's right hand and forearm were contaminated. A 210,000 dpm hot particle was found on RWT-1's shirt sleeve and contamination levels of 4000-5000 dpm were detected on his hand and forearm. A 60,000 dpm hot particle was also found on RWT-1's trousers. The contaminant was later determined to be cobalt-60, as determined from a gamma isotopic analysis.

RWT-1's contaminated clothing was confiscated and his hand and forearm were decontaminated to non-detectable levels. RWT-1 was questioned about his work activities and was then given a whole body count (WBC) prior to being allowed to go home. The licensee's staff started to obtain radiation and contamination surveys in all of the areas where RWT-1 had been during the day and also made notifications to appropriate levels of management. The three other RWTs and the CRPT who had worked with RWT-1 during the day were contacted and directed to bring in all articles of clothing they had worn on January 8, 1990, when they reported back to work on the morning of January 9, 1990. The licensee assigned an Incident Investigation Team (IIT) to look into the matter. The licensee's security group was assigned to participate as an IIT member.

Detailed surveys were performed in all of the areas where the RWTs and the CRPT had been during the day until the time of their departure from the site. RWT-1 stated that he had successfully passed through the personnel PCM-1B radiation monitor located on the 140' elevation of the Auxiliary Building at the conclusion of his work assignment. He added that he and RWT-2 through RWT-4 had gone to Trailer 82 after they had exited from the Unit 2 Radiological Controlled Area (RCA). RWT-2 through RWT-4 had gone home first and RWT-1 was ready to depart for home when he was found to be contaminated at the Security Building egress point.

RWT-1 stated that he and the other involved workers had been assigned to remove packages of radioactive material from several LSA boxes and place them into a Conex box that was to be shipped to an



off-site vendor for further processing. The Conex box was located directly outside the truckbay roll up doorway. The material in the LSA boxes was being removed in accordance with the instructions on REP 2-89-0052-B. A work area, for controlling the possible spread of contamination, was established in the truckbay area on the 100' elevation of the Radwaste Building to perform the work. A layer of herculite was placed on the floor and a contamination area boundary was established around the LSA boxes. One of the other RWTs, who was fully clothed in anti-contamination clothing, was assigned to work inside the contamination area boundary. RWT-1 and two other RWTs and the CRPT worked outside of the contaminated area boundary. Their job was to support the individual working inside the contaminated area. RWT-1 stated that he had used a fork lift during the performance of the operation. The REP required that the removal of packaged material from an LSA box be discontinued if the CRPT found any contamination on any of the packages which were being surveyed. The instructions in the REP stated that no contaminated boxes were to be unloaded. After unloading the last LSA box, low levels of contamination (e.g., 10,000 dpm/100 cm²) were found on the Herculite deck at the Conex box opening by the CRPT. The contaminated portion was removed and the CRPT directed all of the RWTs to frisk themselves for contamination before they exited the RCA.

It should be noted that RWT-1 had taken a jacket into the RCA. RWT-1 remembered seeing his jacket lying on a gang box that was located in the truckbay area during a major portion of the work that was performed. Just prior to leaving, he placed the jacket on a small fork lift which he had used to move LSA boxes. RWT-1 stated he believed he carried his jacket out of the RCA, as opposed to wearing it.

RWT-1 stated that he did not frisk himself prior to leaving the truckbay area. After leaving the truckbay area he proceeded to the Radwaste Control Room located on the 120' elevation where he had to frisk his hands and feet prior to entering the room. He spent a short time in the area and proceeded to the 140' elevation of the Auxiliary Building so that he could exit the RCA. After exiting from the RCA he and RWT-2 through RWT-4 went to Trailer 82. RWT-1 informed the NRC inspectors that he checked himself with the PCM-1B Personnel Contamination Monitor and thought he may have frisked his personal jacket as is required by licensee procedures on the 140' elevation prior to leaving the RCA. He added that he may not have done a good frisk of his jacket.

The followup surveys disclosed that two chairs in Trailer 82 were contaminated. One chair had a 500,000 dpm hot particle. The other chair had contamination levels of 15,000 dpm. Contamination was also found where the LSA boxes had been located during the course of the work. The contamination was mainly in the form of hot particles. It should be noted that a similar radwaste operation was also performed on Friday, January 5, 1990. REP 2-89-0052-A was used to perform the work on January 5, 1990. RWT-1 stated that he had used the same fork lift to move boxes on January 5th. The work



on January 5th was performed just outside of the Radwaste Building's truckbay area. The licensee refers to the area as the Yard. The Yard was found to have hot particles levels ranging up to approximately 230,000 dpm in an isolated area where the work had been performed on January 5th and 8th. RWT-1 stated that the first LSA box opened on Friday was found to be contaminated to levels of approximately 75,000 dpm. The box was immediately sealed per the instructions of the REP. Remaining areas visited by the workers were not found to be contaminated. An isotopic analysis indicated that the contamination was principally particles (i.e., 'hot particles') of cobalt-60. Licensee surveys indicated that approximately 100 'hot particles' were found on personnel clothing, the fork lift, the Radwaste Yard, and in the truckbay where the work had been performed on January 8, 1990.

An article of clothing (i.e., inside shirt pocket) returned by one of the other RWTs was found with a hot particle of approximately 35,000 dpm. The RWT's home was surveyed and found to be free of contamination. The remaining two RWTs had trace amounts of contamination on the clothing they had returned. All individuals were given a WBC. The WBC results were negligible.

An immediate dose assessment of RWT-1's exposure was performed by the Unit 2 radiation protection staff on January 9, 1990. The estimated dose assigned was 2236 mrem to a small area of the skin of the whole body. The initial dose estimate was followed up with two more estimates that were performed by the licensee's radiological engineering staff. These estimates were performed on January 12, 1990 (517 mrem) and February 8, 1990 (4193 mrem). The latter dose estimate was based on a worst case scenario wherein the hottest particle found (500,000 dpm on chair) was assumed to be on the worker's skin from the time he exited the RCA until he alarmed the portal monitor at the security egress point. The licensee's values were compared to that of the Region V "Varskin" computer code, and the results were found to be similar using the worst case scenario. A final 'dose of record' for RWT-1 had still not been determined as of February 9, 1990. The inspectors informed the licensee's staff that their efforts to determine the dose estimates lacked timeliness and formality. The licensee's staff acknowledged the inspectors observation by stating that the concern would be evaluated.

The IIT's investigation was still in progress at the time of this inspection. The IIT had narrowed the most probable cause for the incident to the last item removed from the last LSA box. The item was a vacuum cleaner that had an unwrapped metal cable sling attached to it. The licensee's staff had to use the sling to remove the item from the LSA box. The IIT theorized that particles spewed to the adjacent areas from the sling as the item was removed from the LSA box. The licensee's staff added that the contamination was likely spread to the fork lift and a portion was transferred to RWT-1's jacket. It should be noted that continuous surveys performed as items were removed from the LSA boxes did not identify any loose contamination. RWT-1 informed the inspectors that the licensee's theory was plausible; however, he stated that another



possible source for the contamination may have been associated with the work that had been performed on Friday, January 5, 1990. The licensee had not determined an official source of the contamination for the incident as of February 9, 1990. The licensee informed the inspectors that they were not totally convinced about their theory and would probably conduct a further evaluation of the incident when time permits to substantiate their conclusions.

The IIT's investigation postulated that RWT-1 spread the contamination with his jacket. Licensee mockups disclosed that the contaminated jacket belonging to RWT-1 alarmed the PCM-1B and the contamination could be easily be detected with a frisker. The mockup was run several times, with the same results. RWT-1 had informed the licensee that he laid his jacket down in several locations during the performance of his work assignment on January 5th and again on January 8th. RWT-1 added that his jacket was laid on the fork lift at one time. The IIT noted that just holding the jacket at arms length away from the PCM-1B would not cause the monitor to alarm. The IIT determined that RWT-1 probably failed to perform a good frisk of his jacket or forgot to frisk it and thus spread the contamination that was found in Trailer 82. The other RWTs who visited Trailer 82 became contaminated after sitting in the same chair that was used by RWT-1. It was also concluded that the contamination on his jacket would have been detected if he had used the frisker on the 140' elevation to survey the jacket as he exited the RCA.

The licensee verified the calibration of all friskers and personnel monitors that may have been used by the workers involved in the incident. All instruments were found to be working satisfactory.

The licensee's corrective actions for preventing a recurrence were reviewed and found to be satisfactory. Corrective actions included the issuance of night orders to the plant staff and radiation protection staff reenforcing the need to require personnel to frisk themselves where the potential for contamination exists and for radiation protection to observe personnel for proper frisking as they exit from an RCA. Further corrective actions may occur when the licensee concludes its evaluation of the cause of the event.

It should be noted that 10 CFR 20.201, "Surveys," states in part that when appropriate, evaluations include a physical survey of the location of material and equipment and measurements of radiation or concentrations of radioactive material present. 10 CFR 20.201 goes on to state that each licensee shall make or cause to be made such surveys as may be necessary for the licensee to comply with the regulations in this part and are reasonable under the circumstances to evaluate the extent of the radiation hazard that may be present. The licensee was informed that failure of RWT-1 to perform an adequate survey upon exiting from the RCA was contrary to requirements of 10 CFR Part 20.201. However, the apparent violation is not being cited because the criteria specified in 10 CFR Part 2, Appendix C, Section V.G. of the Enforcement Policy were satisfied (NCV 50-529/90-04-03).



4. MC 92701 - Followup

- a. (Open) Followup Item 50-528/87-24-02 Inspection reports 50-528/87-24, 50-528/89-03 and 50-528/89-28 expressed concerns with respect to minimizing personnel contamination incidents. Licensee actions regarding this concern were reviewed during the inspection period.

The review disclosed that the licensee was giving the matter appropriate attention in preparation for the upcoming Unit 2 refueling outage that is scheduled to start during the last week of February 1990. This matter will remain open pending future review of possible changes in the frequency of contamination incidents during the Unit 2 refueling outage.

- b. (Open) Followup Item 50-528/89-07-02: The status of the licensee's plans for reorganizing their chemistry and radiation protection groups based on the recommendations resulting from an evaluation made in a licensee report, # 218-00670-JGH/WHB, dated February 13, 1989 was reviewed. The licensee had agreed to evaluate the long term corrective action that were proposed in the report by August 1, 1989.

The licensee informed Region V management during a Management Meeting held in the Region V Office in September of 1989, of their proposal to reorganize the chemistry and radiation protection groups similar to the recommendations discussed in the February 1989 report. The report recommended centralized control of the chemistry and radiation protection functions, rather than the current matrix arrangement. The licensee expected to implement these changes by January 1990; however, several changes in key management positions since the September 1989 meeting have delayed the reorganization in order to allow the new managers to evaluate the proposed changes.

Discussions held with the vice president of nuclear production and the radiation protection manager during this inspection disclosed that the licensee was expecting to obtain the final approvals for the proposed reorganization and to start the implementation by mid March 1990. These actions will be reviewed during a subsequent inspection.

- c. (Closed) Unresolved Item 50-528/89-24-01: Inspection report 50-528/89-24 discusses a potential over exposure that was brought to the inspectors attention on June 13, 1989. The licensee had reported that a "fuel fragment" was found on a worker who had been staging equipment for inspection of a steam generator. The licensee's initial calculations which tend to be conservative placed the individuals dose to a small area of the skin at 9.7 rads. The fuel fragment was sent to Battelle Northwest Laboratories for an independent analysis and the licensee assigned an independent group to evaluate the incident.

A review of the evaluation described in a licensee report, # 222-00696-JMS-MWL, dated July 31, 1989, was performed by the



inspector. The licensee's evaluation placed the individuals exposure of record for this event at 3.542 rem from the fuel fragment to a small area of the skin. The total quarterly skin dose of record assigned to the individual for the second quarter of 1989 was 4.004 rem. A comparison of the licensee's calculation made by the inspector using the Varskin code did not disclose any anomalies. This matter is closed.

- d. (Closed) Unresolved Item 50-528/89-24-02: Inspection report 50-528/89-24 identified that the licensee could not accurately account for or determine the disposition of all nonexempt quantities of americium-241 (Am-241) sources that were received.

A review of an APS report, # 215-00821-JRM, dated October 4, 1989, disclosed that the licensee had completed a record search for all nonexempt quantities of Am-241 sources. This search included a revisit to the vendor used by the licensee to supply the sources. The licensee was able to verify that they had full accountability for all nonexempt quantities of Am-241 sources that they had received. The inspector verified the accuracy of the licensee's accountability records during the inspection. This matter is closed.

An unresolved item is one about which more information is required in order to ascertain whether it is an acceptable item, a violation or deviation.

- e. (Closed) Followup Item 50-528/89-51-03 This matter is addressed in paragraph 2, above. This matter is closed.
- f. (Open) Followup Item 50-530/89-07-03: During a tour of the Unit 3 control room on February 20, 1989, two NRC inspectors observed that the multipoint chart recorder 3J-SQA-RR-29 was tagged out of service. This chart recorder provided a continuous record of indication for radiation monitoring systems (RMS), RU-29, RU-31, RU-33, RU-37, RU-148 and RU-150, as discussed in Section 11.5 of the licensee's Updated Final Safety Analysis Report (UFSAR). Work Order #00334725 indicated that the recorder malfunction had occurred on January 17, 1989. This observation had been brought to the licensee's attention during the performance of Region V Inspection 50-530/89-07 at which time the licensee was informed that methods used to maintain records of continuous releases would be inspected during a future inspection.

During a tour of the Unit 2 control room during a management meeting held at the licensee's facility in the late fall of 1989, a NRC inspector observed that multipoint recorder 2J-SQA-RR-29 was also tagged out of service. An APS report, #204-00416-AGO, dated December 14, 1989, reported this problem was identified in an Engineering Evaluation Report (EER)-#89-SQ-054 that was written on April 4, 1989. The December report also provided a schedule for repairing the multipoint recorder and disclosed that a Plant Change Request (PCR) had been initiated to replace the recorders in all three units.



An examination of this followup item was conducted to determine the status of: (1) the multipoint recorders in all three units, (2) the methods used by the licensee in maintaining records during the period that the multipoint recorders are inoperative and (3) the status of the PCR. The examination included the following:

- Review of UFSAR, Section 11.5, "Process and Effluent Radiological and Sampling System"
- Review of EERs 89-SQ-054 dated April 18, 1989, and 89-SQ-170, dated December 13, 1989
- Review of Engineering Action Request (EAR) #89-1246
- Discussions with the licensee's staff.
- Review of a licensee document dated December 11, 1989, entitled: "Comments on RR-029"
- Review of the Technical Specifications

The examination disclosed the following:

- (1) The multipoint recorders for all three units were inoperative at the time of this inspection. Unit 3's recorder had been repaired within three days after the observation had been brought to the licensee's attention in February 1989. The Unit 3 recorder subsequently malfunctioned again sometime during August 1989. It was in the process of being repaired and was expected to be returned for installation on or about February 15, 1990.

Unit 2's recorder had also been inoperative since April 4, 1989. It was in the same state of repair as Unit 3's recorder.

Unit 1's recorder had been inoperative since approximately February 17, 1989. It too was in the same state of repair as Units 2 and 3.

- (2) The licensee's Engineering Evaluation Department (EED) prepared EER-89-SQ-054 on April 19, 1989. The EER was forwarded to the licensee's Nuclear Engineering Department (NED) for disposition. The EER identified that the multipoint recorders in each of the Units were obsolete and no spare parts or qualified vendors for purchasing Quality Class Q parts were available. The EER did not make it clear that the recorders in all three Units were in need of repairs. NED did not realize that the recorders were in need of repairs until Engineering Action Request (EAR)-89-1246 was issued on June 20, 1989. The EAR requested NED to provide EED with the status of their evaluation and recommendations for the disposition of EER-89-SQ-054. No further action was taken until approximately December 1, 1989, at which time NED responded to the request made by EAR-89-1246. NED responded by instructing EED to take



whatever action was necessary to repair each of the unit recorders while NED continued to pursue the long term corrective actions involving the subsequent replacement multipoint recorders. Discussions held with a representative from EED disclosed that the communication, related to the repair of the affected multipoint recorders, between EED and NED during the period of April-December 1989 was poor. The EED representative stated that action to repair the multipoint recorders could have been initiated as early as April 1989, if there had been better communications between EED and NED.

- (3) EER #89-SQ-170, dated and signed approximately 10 months (December 1989) after the original problem with the Unit 3 multipoint recorder was brought to the licensee's attention, provided an engineering evaluation related to the multipoint recorders. The evaluation stated: (a) the minicomputer provided information similar to that of RR-29 and (b) that the multipoint recorders had been previously identified as being unreliable due to the lack of spare parts. Discussions with the licensee's staff disclosed that the purpose for the EER was to identify that the multipoint recorder did not actually perform any specific safety function and that the affected RMS could function with or without the multipoint recorders. The inspector informed the licensee's staff that this action appeared to be untimely in view of the fact that the original problem had been identified in February 1989.

The above observation were brought to the licensee's attention at the exit interview. The inspectors informed the licensee that the actions to repair the multipoint recorder were not timely and represented poor interface between EED and NED.

The licensee acknowledged the inspectors observation by stating that changes to improve the method for handling such problems were in progress. The licensee stated it would take approximately one year to permanently replace the obsolete multipoint recorders and that the Region V staff would be informed of any further delays in installing the recorders after they are returned on February 15, 1990. This item will be reviewed during a subsequent inspection.

5. MC 92702 - Followup on Corrective Actions for Violations and Deviations

(Closed) Enforcement Item 50-530/88-33-01: This item is addressed in paragraph 2, above. This matter is closed.

6. MC 90713 and MC 92700 In-office and Onsite Review of Periodic and Special Reports

(Closed) Special Reports and Licensee Event Reports: The following Licensee Special Reports and Licensee Event Reports were reviewed in-office.



SPECIAL REPORTS:

Unit 1: SR-89-003-Y2
SR-89-005-Y1

Unit 2: SR-88-006-Y1
SR-89-004-Y1
SR-89-007-Y0
SR-89-008-Y1
SR-89-009-Y1
SR-89-010-Y0
SR-89-011-Y0

Unit 3: SR-89-003-Y0
SR-89-006-Y1
SR-89-008-Y0
SR-89-009-Y0

LERs:

Unit 1: 1-89-006-L0
1-89-006-L1

Unit 2: 2-89-009-L0

Unit 3: 3-89-009-L1

Corrective actions for some of the problems identified in the reports were still in progress because of unexpected delays in obtaining parts and stabilizing work priorities. The delays were discussed with the licensee's staff. The inspector concluded that the licensee's staff was cognizant of the delays and was taking appropriate steps to expedite the completion of the corrective actions. No other concerns were identified.

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

7. Facility Tours

Tours of all three units were conducted during the inspection period. The Radwaste and Auxiliary Buildings of each unit were included in the tours. The following observations were made:

- (a) Posting and labeling practices were consistent with 10 CFR Parts 19.11 and 20.203.
- (b) All portable instruments observed were in current calibration.
- (c) Cleanliness in all three units was excellent.

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

8. MC 30703 - Exit Interview

The inspectors met with the licensee representatives, denoted in Section 1, at the conclusion of the onsite inspection on February 9, 1990. The scope and findings of the inspection were summarized.

The repeat violation discussed in Section 2 and the NCV discussed in Section 3 were brought to the licensee's attention.

1

