



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA STREET, N.W.  
 ATLANTA, GEORGIA 30323

MAY 10 1989

Report Nos.: 50-280/88-14 and 50-281/88-14

Licensee: Virginia Electric and Power Company  
 Glen Allen, VA 23060

Docket Nos.: 50-280 and 50-281

License Nos.: DPR-32 and DPR-37

Facility Name: Surry 1 and 2

Inspection Conducted: April 17-21, 1989

Inspector: George B. King 10 May 1989  
Date Signed  
 C. H. Bassett

Approved by: George B. King 10 May 1989  
Date Signed  
 W. P. Potger, Chief  
 Facilities Radiation Protection Section  
 Emergency Preparedness and Radiological Protection  
 Branch  
 Division of Radiation Safety and Safeguards

SUMMARY

Scope

This routine, unannounced inspection of the licensee's radiation protection program consisted of a review of items associated with the Performance Improvement Program (PIP) and followup on various previous enforcement items concerning: organization and management controls; training and qualifications; external and internal exposure control; and control of radioactive material and contamination, surveys, and monitoring. The inspection also included a review of an unresolved item (URI).

Results

Management and general employee support of the radiation protection program appears to be good. The licensee appears to have established an adequate program for identifying problems noted in the radiation protection and safety areas. The licensee's radiation protection program appears to be functioning as necessary to protect the health and safety of the occupational radiation workers. During the inspection, a possible weakness was noted in the audit program due to an apparent lack of a master schedule or matrix to ensure that all areas of the radiation protection program are audited on a periodic recurring basis. The licensee has completed various plans and reports, each containing recommendations or suggestions on ways to improve the radiation protection program. The NRC will follow the licensee's actions regarding these recommendations as an inspector followup item (IFI). No weaknesses were noted

in the area of regulatory compliance or in the area of compliance with the Technical Specification requirements.

However, within the areas inspected, the following licensee identified violations (LIVs) were identified:

- Failure to maintain the entrance to a high radiation area locked to prevent unauthorized entry.
- Failure to follow procedures by not following and enforcing the requirements of a Radiation Work Permit.
- Failure to label an incore detector, control the item, or have procedures to establish accountability for the detector.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*W. Benthall, Supervisor, Licensing
- R. Chase, Shift Supervisor, Health Physics
- \*W. Cook, Supervisor, Operations, Health Physics
- \*D. Erickson, Superintendent, Health Physics
- \*B. Garber, Supervisor, Technical Services, Health Physics
- E. Grecheck, Assistant Station Manager, Nuclear Safety and Licensing
- D. Hart, Supervisor, Quality Assurance
- \*M. Kansler, Station Manager
- \*G. Miller, Licensing Coordinator
- L. Morris, Supervisor, Radwaste and Decontamination, Health Physics
- A. Royal, Supervisor, Nuclear Training
- \*F. Thomasson, Supervisor, Corporate Health Physics
- \*F. Wolking, Senior Staff Health Physicist, Corporate

#### Westinghouse Employee

- G. Smith, Acting Supervisor, Radiological Engineering, Health Physics

Other licensee employees contacted during this inspection included engineers, security force personnel, technicians, and administrative personnel.

#### Nuclear Regulatory Commission

- \*W. Holland, Senior Resident Inspector
- L. Nicholson, Resident Inspector
- J. York, Resident Inspector

#### \*Attended exit interview

### 2. Organization and Management Controls - Occupational Exposure, Shipping, and Transportation (83750)

#### a. Organization

The licensee is required by Technical Specification (TS) 6.1 to implement the plant organization specified in TS Figures 6.1-2. The responsibilities, authority, and other management controls are further outlined in Chapters 12 and 13 of the Final Safety Analysis Report (FSAR). Technical Specification 6.1 also specifies the members of the Station Nuclear Safety and Operating Committee (SNSOC) and outlines its function and authority. Regulatory Guide 8.8 specifies certain functions and responsibilities to be assigned to the Radiation Protection Manager (RPM) and radiation protection responsibilities to be assigned to line management.

The inspector reviewed the plant organization with the RPM and members of the Health Physics (HP) staff to determine the degree of support received from members of management and from workers in other than HP organizations as well. It appeared that the support necessary to improve the radiation control program and implement the critical elements of the program was in place.

The new station HP organization, as discussed in NRC Inspection Report (IR) Nos. 50-280, 281/88-35 and further discussed in IR Nos. 50-280, 281/89-02, appeared to be functioning adequately. In an effort to further improve the functioning of the HP Radiological Engineering section, the licensee had transferred one person from the HP staff, one person from the corporate HP staff, and one person from the ALARA group to the section. The section was being supervised by a contractor and another contractor was also helping in the capacity of an engineer. The section's responsibilities were expanded to include support for the radioactive waste program (trash monitoring and segregation), support for the ALARA program, response to all HP-related station Deviation Reports (DRs) and other licensing commitments, and support for the HP technical and operations sections so that these groups could focus more fully on their jobs.

b. Staffing

TS 6.1 also specifies the minimum staffing for the plant. FSAR Chapters 12 and 13 outline further details on staffing as well.

The inspector reviewed the staffing level of the various sections within the HP organization and discussed the current level with licensee representatives. At the time of the inspection, of the 38 authorized HP positions (including shift supervisors, specialists and technicians), all but two specialist positions were filled. All the 18 authorized technician positions at the station were filled with personnel who were qualified to the requirements outlined by the American National Standards Institute (ANSI) Standard N18.1-1971. Due to the outage in progress, the licensee had augmented the number of authorized ANSI technicians by 17 and also was utilizing 15 junior technicians. The licensee had also acquired the help of 66 contractor HP technicians and other personnel who were assisting in decontamination efforts and onsite laundry facility operation.

c. Management Controls

The inspector reviewed the licensee's Radiation Problem Reports (RPRs) which were written by HP personnel and used to identify and document safety and radiological problems noted in the plant. It was noted that nearly 60 RPRs had been written for 1989 to date. Most of the problems outlined dealt with failure of personnel to comply with various procedure or radiation work permit (RWP) requirements. The inspector verified that adequate corrective actions had been initiated as a result of the findings. The inspector also reviewed

selected DRs written for 1989. These DRs are further outlined in Paragraphs 3, 4, and 5.

No violations or deviations were identified.

3. External Exposure Control and Personnel Dosimetry - Occupational Exposure, Shipping and Transportation (83750)

a. Personnel Dosimetry

10 CFR 20.202 requires each licensee to supply appropriate personnel monitoring equipment to specific individuals and requires the use of such equipment.

During tours of the radiation control area (RCA), the inspector observed personnel wearing the appropriate monitoring devices as required.

b. Control of High Radiation Areas

10 CFR 20.203 specifies posting and control requirements for radiation areas, high radiation areas, airborne radioactive areas, radioactive material areas, and radioactive material.

TS 6.4.B.1.b requires that the entrance to each radiation area in which the intensity of radiation is equal to or greater than 1,000 millirem per hour (mrem/hr) shall be provided with locked barricades to prevent unauthorized entry into these areas.

During plant tours, the inspector observed the licensee's posting and control of radiation, high radiation, airborne radioactivity, and radioactive material areas. The inspector determined that the posting and controls for the various RCAs were adequate.

The inspector reviewed station DR, Number S1-89-229, concerning a high radiation area that was not controlled as required. On January 30, 1989, during a walkdown of the Fuel Building, an HP technician was checking the integrity of the high radiation gate on the 27-foot elevation. As the technician pulled sharply on the lock and chain securing the gate, one of the links of the chain failed and the gate was thus found to be accessible. Another HP technician was summoned and the gate guarded until a new chain could be found to replace the broken one. The gate was then properly locked.

The licensee's investigation of the event revealed that the area was being maintained locked due to the presence and operation of ion exchange (IX) vessels in the basement of the Fuel Building. On January 30, 1989, two of the four IX vessels had readings (at a distance of 12 inches from the vessels) of 5 - 6 rem per hour. Two people had checked out the key to the area and had apparently locked

the gate with the padlock and chain without checking the integrity of the chain.

As corrective actions, the licensee performed a walkdown of all high radiation gates secured with a chain and padlock to ensure that no other chains with weak links were in use. The HP Operations Supervisor also addressed this issue in the HP Operations Shift Order Book (which is required to be read by all HP operations personnel). The Operations personnel, who had originally checked out the key to the area, were reprimanded by their supervisor. Installation of a new gate was not considered as a corrective action by the licensee since the gate involved in this incident is only maintained locked as the need arises. The long-term corrective actions contemplated by the licensee for securing other high radiation areas (as mentioned in IR Nos 50-280, 281/89-02) would not solve the problem. That solution involved submitting work requests to replace all the old gates with new gates having built-in locking mechanisms.

Failure of the licensee to comply with the requirements to maintain the entrances to high radiation areas locked to prevent unauthorized entry was identified as an apparent violation of TS 6.4.B. However, pursuant to 10 CFR 2, Appendix C.V.G, this issue was considered to be a licensee identified violation (LIV) and a Notice of Violation (NOV) was not issued due to the violation being (1) licensee identified, (2) of severity level IV or V, (3) not reportable, (4) corrected, and (5) not expected to have been preventable by corrective action for a previous violation (50-280, 281/89-14-01).

4. Internal Exposure Control and Assessment - Occupational Exposure, Shipping, and Transportation (83750)

a. Engineering Controls

10 CFR 20.103(b) requires the licensee to use process or other engineering controls, to the extent practical, to limit concentrations of radioactive material in air to levels below those specified in 10 CFR Part 20, Appendix B, Table 1, Column 1.

During tours of the RCA, the inspector observed the use of process control and engineering controls to limit airborne radioactive concentrations in the plant. The inspector also discussed the use of engineering controls with members of the Radiological Engineering section. It was noted that the Radiological Engineering section was placing emphasis on the use of process and/or engineering controls instead of respirators whenever a work package was submitted for review which required the use of respiratory protection.

b. Respiratory Protection

TS 6.4.D requires that radiation control procedures be followed.

Health Physics Procedure HP-5.3.20, "Initiating, Using, Extending, and Terminating an RWP," dated August 15, 1988, requires in step 4.3.2.a that radiation workers comply with the requirements, instructions, and precautions of the RWP and any ALARA requirements specified.

The inspector reviewed a station DR, Number S1-89-0251, regarding ingestion of radioactive material. On January 10, 1989, two contract mechanics were leaving the RCA through the Personnel Decontamination Area (PDA) using the whole body personnel monitors (PCM-1As). When the monitors alarmed, the individuals were surveyed with a frisker and count rates of approximately 100 counts per minute (cpm) were detected. The individuals were decontaminated using cleansing cream and a rag and the count rate decreased to below 100 cpm, although some activity was still detectable by the personnel monitor and when using a frisker. Later that same day, the individuals again alarmed the PCM-1As and an attempt was again made to decontaminate them. The HP shift supervisor became aware of the situation and the individuals were requested to get whole body counts (WBCs). The WBCs revealed that the mechanics had ingested radioactive material.

The licensee's investigation into the incident showed that, the day before, on January 9, 1989, the two contract mechanics had entered the "B" loop room in the Unit 1 containment to work on a valve. The RWP used required that they use respirators for the work but the contract HP technician covering the job informed them that they did not need respiratory protection. During the subsequent repair work, the individuals apparently ingested small amounts of Cobalt-60 (Co-60). One worker ingested approximately 0.186 microcuries (uCi) of activity while the other ingested approximately 0.076 uCi of activity. The contract HP technician later indicated that he thought that the RWP stated that the use of respirators was not specifically required but could be used "as per HP direction." He had covered similar work on other valves during the outage, had taken air samples during the work, and had never found any airborne radioactivity on any of the samples. He therefore felt that respirators would not be necessary due to past experience.

The licensee took several measures to correct this problem. The contract HP technician's employment at the station was terminated as disciplinary action. The HP operations staff was informed of the incident and notified that failure to follow RWP requirements would result in strict disciplinary action. A revision to the HP procedure governing actions to be taken at the PDA following alarm of the PCM-1As subsequent to decontamination efforts was also initiated. The change required the technician covering the PDA exit to notify the HP shift supervisor in instances when an individual continues to

alarm the PCM-1A following decontamination attempts. If the activity is less than 100 cpm using a frisker but the PCM-1A still shows a positive indication, the HP shift supervisor must then give authorization to release the individual from the PDA.

The inspector reviewed the licensee's data and calculations of the Maximum Permissible Concentration-hours (MPC-hrs) for each mechanic. One worker was assigned 22.7 MPC-hrs exposure and the other was assigned 6.44 MPC-hrs. These calculated exposures appeared to be adequate based on the WBC results and the time factor involved (the WBCs were taken 26.5 hours following the time of the probable ingestion).

Failure to follow and enforce the requirements of the RWP was identified as an apparent violation of TS 6.4.D. However, pursuant to 10 CFR 2, Appendix C.V.G, this issue was considered as an LIV and no NOV was issued (50-280, 281/89-14-02).

5. Control of Radioactive Material and Contamination, Surveys, and Monitoring - Occupational Exposure, Shipping, and Transportation (83750)

a. Plant Surveys

10 CFR 20.201(b) requires each licensee to make or cause to be made such surveys as (1) may be necessary for the licensee to comply with the regulations in this part and (2) are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present.

The licensee is required by 10 CFR 20.401 and 20.403 to maintain records of such surveys necessary to show compliance with regulatory limits. Survey methods and instrumentation are outlined in Chapter 12 of the FSAR.

During plant tours, the inspector reviewed radiation level and contamination survey results posted outside various area and cubicles. The inspector verified these radiation levels using NRC instrumentation. The inspector also reviewed selected records of radiation and contamination surveys performed during the inspection.

b. Personnel and Material Release Surveys

During tours of the facility, the inspector observed the exit of workers and the movement of material from contamination control to clean areas to determine if proper frisking was performed by the workers and if proper direct and removable contamination surveys were performed on materials. The inspector determined that frisking and material release surveys were adequate.

c. Instrumentation

During plant tours, the inspector observed the use of survey instruments by station and contractor personnel. The inspector examined the calibration stickers on radiation protection instruments in use by various personnel and at various areas throughout the plant. All instruments examined were within the dates of calibration as indicated on the calibration stickers. There appeared to be an adequate supply of instruments which were being maintained properly.

d. Control of Special Nuclear Material

10 CFR 20.203(f)(1) requires that each container of licensed material shall bear a durable, clearly visible label identifying the radioactive contents.

10 CFR 20.207 requires that licensed materials stored in an unrestricted area shall be secured from unauthorized removal from the place of storage.

10 CFR 70.51(c) requires that the licensee establish, maintain, and follow written material control and accounting procedures which are sufficient to enable the licensee to account for the special nuclear material (SNM) in his possession under license.

The inspector reviewed a station DR, Number S1-80-570, which outlined the discovery of an incore detector assembly in the licensee's training center. On March 6, 1989, an operator receiving training at the station training center noted the incore detector assembly in the training area. The detector was not labeled, locked in a storage area, and no procedure could be located that specified the control and accountability required for such material.

Following an investigation of the event, the licensee determined that the incore detector assembly had been checked out from the warehouse following an incident involving an incore detector in March of 1988. The detector assembly had been used in a mockup of a Unit 2 detector drive unit. This mockup was used during the investigation that followed the incore detector incident. It has been used since as a training aid during General Employee Training (GET) and other classes which discussed the previous incident and ways to avoid such problems.

As corrective actions, the licensee had the fission detector portion of the detector assembly cut off. The detector was then replaced with an imitation which had been fabricated to look like the actual item. The fission detector, along with other detector assemblies which had been located in the warehouse, was moved to an area that was locked with a padlock and key controlled by HP. A procedure was developed to provide control and accountability for the detectors and other SNM as well. The procedure, SUADM-0-28, "Physical Inventory of

Special Nuclear Material (SNM) Detectors and Other SNM Sources," appeared to be adequate.

Failure of the licensee to label the incore detector assembly, control it as required, or have procedures to establish accountability for the detector was identified as an apparent violation of 10 CFR 20.203(f)(1), 20.207, and 70.51(c). However, pursuant to 10 CFR 2, Appendix C.V.G, this issue was considered an LIV and no NOV was issued (50-280, 281-89-14-03).

6. Audits - Occupational Exposure, Shipping, and Transportation (83750)

The inspector discussed the audit and surveillance efforts related to the radiation protection program with licensee representatives. The inspector reviewed the following audits:

- Process Control Program/ODCM, S87-17, conducted in June and July 1987.
- Nuclear Training ADM 02-04-10, S88-02, conducted October 17 - 28, 1988.
- Health Physics and Radiological Environmental Monitoring, S88-19, conducted April 18 - May 9, 1988.
- Process Control Program, S89-11, conducted January 16 - 20, 1989.
- Radiation Protection Program, S89-19, conducted April 10 - 28, 1989 (in progress at the time of the inspection).

The scope, depth, findings, and evaluation of the corrective actions taken in response to the findings were reviewed and appeared adequate.

Through discussions with licensee representatives and review of the audits, the inspector noted that the station's auditing methodology had changed. Prior to 1988, the licensee, as a company, had performed audits at each reactor site and at the corporate offices on different schedules. Subsequent to 1988, a program of "concurrent" auditing was initiated. Using this program, each power plant and the corporate office performs audits of the same general area (i.e. HP, Maintenance, Operations, etc.), simultaneously. This allows each audit group to share current findings and provides the opportunity for each audit group to look for similar problems at their respective location.

The inspector also noted that more emphasis was being placed by the auditors on evaluating the responses to the audit findings, as well as the corrective actions taken. This was being done to ensure that the response and corrective actions were adequate and would prevent recurrence. Also, findings were not being closed out simply based on development of a new procedure or some similar approach of correcting the problem identified. The findings were being held open pending evaluation by the auditors of the actual implementation and effectiveness of the corrective action.

During discussions with licensee representatives, the subject of a master audit schedule or matrix was reviewed. Such a matrix is generally used to ensure that all aspects of the program being audited are reviewed on a periodic recurring basis. The licensee indicated that no such master plan existed at the station for the execution of Quality Assurance (QA) audits. Other licensee representatives indicated that a master plan did exist for the corporate audits. The inspector indicated that, if no such plan existed, this was a possible program weakness that should be corrected. The licensee acknowledged this and indicated that they would investigate the matter.

No violations or deviations were identified.

7. Licensee Reports/Plans Concerning Improvements to the Radiation Protection Program (RPP) (92706)

The inspector reviewed recent plans developed by the licensee to improve the RPP at the station. Recent reports and assessments concerning the station RPP were also reviewed. These reports/plans were:

- "Source Term Reduction Plan," developed by the Corporate HP Staff and dated October 20, 1988.
- "Radiation Protection Program 1988 Annual Assessment Report," prepared by the Corporate HP staff and dated March 10, 1989.
- "Leak and Containment Area Tracking Report," prepared the HP Radwaste/Decon Supervisor and dated April 3, 1989.
- "HP Delegation Evaluation of the Japanese Atomic Power Company's Tsuruga Nuclear Power Station," compiled by the North Anna RPM and dated April 5, 1989.
- "An Assessment of the Radiological Controls Program At the Surry Power Station," prepared by the Corporate Radiological Assessor and dated April 6, 1989.

All of these reports and plans contained various recommendations and/or suggestions to improve the RPP at the station. Because the licensee had not had the time or opportunity to respond to each of these recommendations prior to the inspection, it had not been decided course of action the licensee would take to implement or reject them. The licensee was informed that their actions concerning these recommendations would be tracked by the NRC as an Inspector Followup Item (IFI) (50-280, 281/89-14-04).

## 8. Action of Previous Inspection Findings (92701, 92702)

- a. (Closed) Violation (VIO) 50-280, 281/87-35-01: Failure to Follow Contaminated Material Control Procedure.

This violation dealt with discovery of contaminated items inside of a storage cabinet located in an uncontaminated area. The finding was not closed originally due to a similar finding that was noted during a subsequent inspection. The licensee was then requested to take further action to correct this problem. In response to VIO 50-280, 281/88-35-02 (the similar finding), dated December 9, 1988, the licensee indicated that containers of radioactive material located in uncontaminated areas were surveyed and no unbagged items or loose surface contamination was detected. Another action taken was to secure all radioactive material storage containers with locks controlled by HP. Instructions were posted on the storage containers to notify individuals that HP would be required to provide access to the containers. Training was also provided during GET to review and emphasize the procedural requirements for proper handling and storage of radioactive materials. The inspector reviewed the licensee's actions and, during tours of the RCA, verified that radioactive material storage containers/cabinets were locked and the instructions posted on the outside. Lesson plans for GET instruction were also reviewed and found to be adequate.

- b. (Closed) VIO 50-280, 281/88-35-01: Failure to Operate Supplied Air Hoods Within Certified Pressure Ranges for Length of Hose Used and to Use Air Supply Hose Not Certified for the Respirator.

During an inspection, an inspector found that the licensee was using an air supply pressure for supplied air hoods below that which was required and certified for the length of hose being used. It was also noted that air supply hoses in use were not approved on the respirator certification form for those respirators being used. In a response to the problem, dated November 9, 1988, the licensee indicated that they had removed the equipment from service and had replaced the uncertified air supply hoses. They had also recalibrated the equipment, inspected the remaining units at the station to ensure no other problems existed, and changed the procedure governing the use of the respiratory equipment so the problem would not recur. The inspector verified that these corrective actions had been performed and reviewed the procedure. The procedure appeared to be adequate.

- c. (Closed) VIO 50-280, 281/88-35-02: Failure to Comply with Procedures for Controlling Contaminated Material.

The inspector verified that the licensee had taken the corrective actions stated in their response dated December 9, 1988. This item is discussed more fully in Paragraph 8.a above.

- d. (Closed) VIO 50-280, 281/88-42-01: Failure to Follow Radiation Control Procedures when Exiting the Site Using the Portal Monitors.

Licensee personnel had been noted exiting the site through alarming or non-functional portal monitors. In a response dated November 29, 1988, the licensee indicated that a security officer would be posted at the exits to prevent personnel from exiting following a portal monitor alarm. Also, audible and visual alarms were installed inside the enclosed security booths at the exits to alert security to the problem. The old electrical components of the portal monitors were replaced. The licensee determined that, under certain conditions, the old components were giving spurious alarms. As a further precaution against personnel exiting through a portal monitor that was not functioning, the licensee installed a chain on each monitor. The chain was installed at such a height that, when placed across the exit portal, a person would have difficulty not noticing it or trying to exit underneath it. The inspector reviewed the licensee actions and verified that they had been taken as indicated in the response.

- e. (Closed) VIO 50-280, 281/88-49-01: Failure to Make an Adequate Evaluation of the Radiation Hazards Present During Decontamination of the Unit 1 Reactor Cavity.

Decontamination efforts in the Unit 1 reactor cavity had produced rags reading several rem per hour. This had not been adequately evaluated prior to the work. In a response to the violation dated February 27, 1989, the licensee indicated that several actions to correct this problem had been initiated. A new multiple/special dosimetry procedure, HP-5.1.22, "Dosimetry Requirements For Work Under A RWP," was written to provide added guidance for HP technicians in determining when extra dosimetry was needed. The licensee and contractor HP technicians were given training on the new procedure. HP shift supervisors were also required to complete a form, "RWP Special Instruction Sheet," which required them to be more involved in the RWP writing process and aware of the circumstances of each. HP technicians were also given reinstruction on developing RWPs based current job assessments and current survey results as well as past history. The inspector reviewed the licensee's actions and verified that they had been completed. The inspector also verified that the RWP Special Instruction Sheet was being completed as required, reviewed the new procedure, HP-5.1.22, and found it to be adequate.

- f. (Closed) VIO 50-280, 281/88-49-02: Failure to Follow the Procedure for Attaching Temporary Shielding to Piping.

During a previous inspection, problems had been noted with lead shielding that was improperly attached to piping. In the licensee's response dated February 27, 1989, the licensee indicated that the shielding had been removed and installed properly. The licensee also committed to perform a QA review of all the temporary shielding

packages that were still in use at that time. Of 25 shielded components inspected, 19 discrepancies or variations from the installation instructions were identified. The licensee determined that one of several, or a combination of errors likely contributed to the unacceptable shielding condition. The Station Manager issued a memorandum to all employees recounting the problems found and reemphasizing the need for installing shielding properly and performing all jobs correctly the first time.

- g. (Closed) Unresolved Item (URI) 50-280, 281/89-02-01: Failure to Adequately Evaluate the Radiation Hazards Present Prior and Incident to Welding Work in the Unit 1 Conoseal Area.

This URI was opened as a result of the inspector's review of a licensee station DR. The DR had identified an inadequate evaluation of a job resulting in the failure to use special or multiple dosimetry. The inspector left the item as a URI pending the licensee's response to a previous violation (50-280, 281/88-49-01) for the same type of a problem. The licensee's response to that violation had been determined to be acceptable (see Paragraph 8.e), and, therefore, this violation is closed based on that response dated February 27, 1989.

## 9. Facility Statistics

### a. Annual and Outage Personnel Dose

In 1987, the station's cumulative personnel dose was 356 person-rem per reactor as compared to the Pressurized Water Reactor (PWR) national average of 369 person-rem/reactor. The station's 1988 yearly total, including both outage and non-outage exposure, was approximately 728 person-rem/reactor while the annual goal had been set at 734 person-rem/reactor. As of April 20, 1989, the licensee had expended a total of 172 person-rem per reactor. The 1989 goal, which had been set prior to the extended outage in progress, was 251 person-rem/reactor. The licensee indicated that they would probably exceed their goal for 1989 due to the unanticipated outage of both units.

#### (1) Personnel Contamination Events (PCEs)

During 1988, the licensee had experienced a total of 226 skin and 275 clothing contaminations compared to a total of 174 skin and 319 clothing contaminations for 1987. As of April 20, 1989, the number of PCEs stood at 31 skin and 30 clothing contaminations.

#### (2) Solid Radioactive Waste

Licensee representatives indicated that approximately 25,000 cubic feet (ft<sup>3</sup>) of solid radioactive waste had been

shipped to waste collectors or burial sites during 1988 containing 193 curies of activity. During 1989, as of April 20, the licensee had shipped approximately 7,250 ft<sup>3</sup> of solid waste containing about 500 curies of activity.

(3) Area Contamination Control

At the end of 1987, the licensee maintained approximately 22,400 square feet (ft<sup>2</sup>) within the RCA, excluding the containment buildings, as contaminated. This represented about 24 percent (%) of the total 92,000 ft<sup>2</sup> within the RCA. As of December 31, 1988, approximately 20,630 ft<sup>2</sup> were being controlled as contaminated area or about 23% of the RCA. As of April 20, 1989, the square footage of contaminated area had been reduced to 18,595 or about 20% of the RCA. This represents an acceptable reduction when considering that the station is still in the midst of a dual unit outage.

No violations or deviations were identified.

10. Exit Interview

The inspection scope and findings were summarized on April 21, 1989, with those persons indicated in Paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during the inspection.

<u>Item Number</u>	<u>Description and Reference</u>
50-280, 281/89-14-01	LIV - Failure to maintain the entrance to a high radiation area locked to prevent unauthorized entry (Paragraph 3.b).
50-280, 281/89-14-02	LIV - Failure to follow procedure by not following and enforcing the requirements of an RWP (Paragraph 4.b).
50-280, 281/89-14-03	LIV - Failure to label an incore detector, control it, or have procedures to establish accountability for the detector (Paragraph 5.d).
50-280, 281/89-14-04	IFI - Followup on the licensee's actions in response to various recommendations made in licensee plans/reports to improve the RPP at the station (Paragraph 7).

Licensee management was informed that the items discussed in Paragraph 8 were considered closed.