

APPENDIX B

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

NRC Inspection Report: 50-285/89-33

Licensee: DPR-40

Docket: 50-285

Licensee: Omaha Public Power District (OPPD)
444 South 16th Street Mall
Omaha, Nebraska 68102-2247

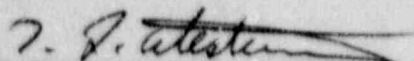
Facility Name: Fort Calhoun Station (FCS)

Inspection At: FCS, Blair, Nebraska

Inspection Conducted: September 1 through October 10, 1989

Inspectors: P. Harrell, Senior Resident Inspector
T. Reis, Resident Inspector
G. Pick, Resident Inspector

Approved:


T. F. Westerman, Chief, Project Section B
Division of Reactor Projects

10-31-89
Date

Inspection Summary

Inspection Conducted September 1 through October 10, 1989
(Report 50-285/89-33)

Areas Inspected: Routine, unannounced inspection including review of previously identified items; licensee event report followup; operational safety verification; plant tours; monthly maintenance observations; monthly surveillance observations; security observations; radiological protection observations; in-office review of periodic, special, and nonroutine event reports; and review of onsite events.

Results: During this inspection period, the inspectors reviewed the areas discussed below. The discussion provides an overall evaluation of each area.

The inspectors reviewed the actions taken by the licensee in response to previously identified items and a licensee event report. Based on reviews of the actions taken by the licensee, it appeared that the licensee had appropriately implemented both short- and long-term actions to prevent recurrence of the identified problems.

During observations of activities and evolutions performed by the operations staff, the inspectors noted no problems with the performance of the staff. It appeared that the licensee's operations staff adequately performed their duties to ensure safe plant operation. In response to the manual trip of the reactor that occurred on September 24, 1989, the inspector noted that the staff performed their duties and responsibilities in a professional manner.

The inspectors performed numerous tours of the plant during this inspection period. During the tours, no significant problems were noted. It appeared that housekeeping associated with the installation of a modification to the air system dryer was somewhat lacking but not to the degree that it constituted an industrial safety hazard. In most areas of the plant, the inspectors noted that the licensee is continuing the ongoing efforts to upgrade plant appearance.

Maintenance and surveillance activities were observed by the inspectors during this inspection period. During observation of these activities, the inspectors noted that the activities were performed adequately. A violation of the licensee's procedure issued to control the installation of deficiency tags, in conjunction with issuance of a maintenance work order (MWO), was identified. The inspector noted that a deficiency tag was not installed on the control room panel when Raw Water (RW) Pump AC-10C was removed from service. Due to the minor safety significance of this apparent violation for failure to follow procedure and the implementation of corrective actions by the licensee, the violation was not cited. This action was taken in accordance with the NRC's Enforcement Policy stated in Appendix C of 10 CFR Part 2.

From observations of security work activities, it appeared that the licensee was providing adequate security patrols and compensatory posts around the protected area perimeter during a period of heavy construction on the new security system. The security guard force was performing its duties adequately. One problem was identified with the access control of vehicles. As a result of the review of the problem, an apparent violation was documented and issued in NRC Inspection Report 50-285/89-35. Two additional violations were identified. One violation involved unauthorized announcement by security personnel of the arrival of an inspector on site, and the other violation involved inadequate control of security badges.

Based on the observations and reviews performed by the inspectors, it appeared that the licensee was implementing an effective radiological protection program.

Overall, the licensee's performance was adequate during this inspection period. The licensee has been proactive in identifying problems and has promptly implemented corrective actions to adequately resolve the problems. The licensee's staff continued to perform their duties adequately.

DETAILS

1. Persons Contacted

- *R. Andrews, Division Manager, Quality and Environmental Affairs
- *J. Bobba, Supervisor, Radiation Protection
- *C. Brunnert, Supervisor, Operations Quality Assurance
- *M. Burggraf, Nuclear Safety Review Specialist
- *J. Chase, Acting Manager, Nuclear Licensing and Industry Affairs
- *M. Core, Supervisor, Maintenance
- *J. Gasper, Manager, Training
- *L. Generetie, Acting Supervisor, Emergency Planning
- *R. Jaworski, Manager, Station Engineering
- *J. Kocy, Supervisor, System Engineering
- *S. Lindquist, Licensing Engineer
- *D. Matthews, Supervisor, Station Licensing
- *K. Morris, Division Manager, Nuclear Operations
- *G. Peterson, Manager, Fort Calhoun Station
- *A. Richard, Assistant Manager, Fort Calhoun Station
- *J. Sefick, Manager, Security Services
- *C. Simmons, Station Licensing Engineer
- *D. Trausch, Supervisor, Operations
- *S. Willrett, Manager, Administrative Services

*Denotes attendance at the monthly exit interview.

The inspectors also contacted other plant personnel, including operators, technicians, and administrative personnel.

2. Plant Status

At the beginning of this inspection period, the plant was operating at 100 percent power. On September 13, 1989, an apparent problem was identified with the reactor protection system (RPS) delta T power level indications. The indications were slightly different than the power level indicated by the nuclear instrumentation.

The licensee reduced power to 70 percent on September 13, 1989, in accordance with the actions required by Technical Specification (TS) 2.15 after declaring Channels A and B of the RPS inoperable. The anomaly disappeared when power was reduced, but the plant remained at approximately 70 percent power while the licensee investigated the problem. On September 24, 1989, the temperature indication for the upper thrust bearing on Reactor Coolant Pump (RCP) RC-3C was abnormally high. An orderly shutdown was commenced but the plant was tripped manually from 7 percent power when temperatures indicated that bearing failure was imminent. Investigation found the bearing had not failed, but the electrical cabling from the resistance temperature detector was defective. The problem was corrected.

After a shutdown of approximately 4 days, a plant startup was initiated on September 28, 1989, and power was escalated to 70 percent power where it remained until October 5, 1989. On this day, the licensee lifted a self-imposed 70 percent power limit and increased power to 99 percent. The plant remained at 99 percent power until the end of this inspection period.

3. Review of Previously Identified Items (92701 and 92702)

a. (Closed) Violation 285/8846-02: Failure to follow procedure.

This item involved two examples of the licensee's failure to follow procedures. The two examples are discussed below:

- (1) The first example involved the failure of licensee personnel to follow the procedure provided for maintaining system cleanliness during a modification to the instrument air system. Specifically, the inspector noted lengths of piping and system components were left unattended and the piping and component openings were not sealed.

To address this violation, the licensee determined that the cause was the unfamiliarity of the personnel involved with the requirements of Procedure SO-M-30, "System Cleanliness." To correct this problem, the licensee provided refresher training for all maintenance, quality assurance (QA), quality control, construction, and warehouse personnel. The training was designed to reinforce the requirements for piping and component storage.

The inspector reviewed the actions taken by the licensee and it appeared that the actions adequately addressed this problem. A sample review was performed by the inspector to verify that the appropriate personnel had been provided the training. No problems were noted.

With respect to this specific violation, licensee quality control personnel performed an inspection of the interior of the piping and components installed in the instrument air system to verify that foreign material had not been inadvertently introduced into the system. The inspection was performed in accordance with Procedure QDP-20, "Conduct of QC Inspection," and was documented in Modification Request (MR) FC-88-11, "Penetration M-73 Upgrade." The inspector reviewed the documentation and noted no problems.

During plant tours conducted since this violation was identified, the inspector has observed the installation of piping and components. During these observations, no problems were noted with respect to maintaining system cleanliness.

- (2) The second example involved the failure of licensee personnel to follow the procedure for storage of material in temporary critical quality element (CQE) areas. The licensee uses the designation of CQE to indicate safety-related items. The problems associated with storage of CQE material in permanent and temporary storage areas has been an ongoing problem. Concerns were identified with the storage of material in permanent areas in NRC Inspection Report 50-285/89-09.

To address this ongoing problem, the licensee revised Procedure SO-G-22, "Receiving, Shipping, Stores Control, and Storage of Critical Element and Radioactive Material Packaging, Fire Protection Material, and Limited CQE," to establish specific requirements for access controls to storage areas and identification of a specific individual with the responsibility to ensure that the areas are maintained in accordance with the requirements.

The inspector has toured the plant numerous times since the issuance of this violation. During the tours, the storage of CQE material was specifically reviewed. No problems were noted.

Based on the reviews performed by the inspector, as discussed above, this item is considered closed.

- b. (Closed) Unresolved Item 285/8921-01: Movement of spent fuel into Region 2 of the spent fuel pool (SFP).

This item involved a concern identified by an inspector where the licensee was moving spent fuel from the reactor vessel directly into Region 2 of the SFP. This appeared to be contrary to Amendment 75 of the TS.

The inspector forwarded the concern to the NRC's Office of Nuclear Reactor Regulation (NRR) for review. In a letter dated July 19, 1989, NRR stated that the staff had approved the licensee's practice of moving spent fuel directly to Region 2. The approval was based on the fact that the licensee performed independent verifications of fuel burnup.

Based on the review and concurrence of NRR with the licensee's practice of fuel handling, this item is considered closed.

- c. (Closed) Open Item 285/8922-01: Validation and verification of the Emergency Assessment of Gaseous and Liquid Effluents (EAGLE) program.

This item involved the actions to be taken by the licensee to validate and verify the EAGLE computer program used for dose assessment calculations.

The licensee performed the validation and verification activities in accordance with the Verification and Validation Test Plan issued in June 1989. The plan described the actions to be taken to verify the accuracy of the EAGLE program. Based on the results of the plan, the licensee concluded that the EAGLE program was ready for use.

The inspector reviewed the plan used by the licensee to ascertain the accuracy of the program. No problems were noted.

- d. (Closed) Unresolved Item 285/88201-23: Interaction of the QA organization with the surveillance testing program.

This item involved a review of the audits performed by the QA organization by an inspector. A review of the audit performed by QA on Surveillance Test ST-DC-1, "Station Batteries," indicated no problems were identified. A review of Surveillance Test ST-DC-1 by an inspector indicated that the acceptance criteria had been deleted without formal review or approval by the plant review committee and was the subject of a previous violation.

To address this item, the licensee took actions to provide additional guidance to QA auditors. The guidance provided instructions for observing maintenance and surveillance activities with specific directions on verification of procedural compliance, review of the qualifications of the personnel performing the evolution, and verification that tests results were acceptable based on the stated acceptance criteria. The elements to be reviewed are provided in the QA surveillance plan that is specifically developed for each audit performed.

In addition to the development of specific surveillance plans, the licensee revised Procedures QDP-6, "Conduct of Audits," and QDP-7, "Conduct of QA Surveillances," to address the elements to be included in the surveillance plan. These procedure revisions were completed to upgrade the overall quality of the QA organization's auditing program for surveillance testing.

The inspector reviewed the actions taken by the licensee to address this item. The inspector also reviewed a sample of completed QA surveillance audits to verify adequacy. No problems were noted during the reviews.

During review of the actions taken by the licensee to address previously identified items, the inspectors noted that the licensee had taken the appropriate actions to resolve the identified concerns. The actions taken by the licensee appeared to be conservative and provide adequate controls to prevent recurrence.

No violations or deviations were identified.

4. Licensee Event Report (LER) Followup (92700)

Through direct observation, discussions with licensee personnel, and review of records, the following event report was reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished.

LER 89-011 reported an event where an hourly firewatch patrol was not performed for a nonfunctional fire barrier in accordance with TS 2.19(7). The patrol was missed for approximately 5 days because the list of nonfunctional fire barriers being used by the fire patrol was not a formally controlled list. The nonfunctional fire barrier did not appear on the uncontrolled list. Since this event, the licensee has experienced additional problems in not performing fire patrols. NRC Inspection Reports 50-285/89-26 and 50-285/89-32 provide the details of the problems.

To resolve the ongoing problems with establishing and maintaining fire patrols, the licensee extensively revised Procedure SO-G-58, "Control of Fire Protection System Impairments," and Form FC-100, "Hourly Firewatch Patrol Log." The revisions to the documentation were made to establish an adequate method for establishing and maintaining hourly fire watches. The newly established system prohibited the use of uncontrolled lists for establishing and maintaining fire patrols.

The inspector reviewed the revisions made by the licensee to verify adequacy. It appeared, based on this review, that the licensee had established an adequate system to address their ongoing problems with fire patrol watches. This LER is considered closed.

Based on the reviews performed by the inspector, as described above, it appeared that the licensee took appropriate actions in response to the identified event. Corrective actions were provided and implementation of controls to prevent recurrence of the event were adequately addressed.

No violations or deviations were identified.

5. Operational Safety Verification (71707)

The inspectors conducted reviews and observations of selected activities to verify that facility operations were performed in conformance with the requirements established under 10 CFR, the licensee's administrative procedures, and the TS. The inspectors made several control room observations to verify the following:

- ° Proper shift staffing was maintained and conduct of control room personnel was appropriate.
- ° Operator adherence to approved procedures and TS requirements was evident.

- Operability of reactor protective system, engineered safeguards equipment, and the safety parameter display system was maintained. If not, the appropriate TS limiting condition for operation (LCO) was met.
- Logs, records, recorder traces, annunciators, panel indications, and switch positions complied with the appropriate requirements.
- Proper return to service of components was performed.
- MWOs were initiated for equipment in need of maintenance.
- Management personnel toured the control room on a regular basis.
- Control room access was properly controlled.
- Control room annunciator status was reviewed to verify operator awareness of plant conditions.
- Mechanical and electrical temporary modification logs were properly maintained.
- Engineered safeguards systems were properly aligned for the specific plant condition.

During review of this inspection area, the inspectors identified the following items:

- a. During the review of Procedures AOP-6, "Forced Evacuation of the Control Room Due to Fire," and AOP-7, "Forced Evacuation of the Control Room," an inspector noted that the titles used to designate individual licensed operator responsibilities were not consistent. For example, Procedure AOP-6 used licensed senior operator (LSO) to designate the senior operator in the control room; whereas, Procedure AOP-7 used the designation of reactor operator to refer to this same individual.

In review of this apparent discrepancy, the inspector noted that the licensee had changed the titles of control room personnel in approximately June 1987. It appeared that the licensee had not updated Procedure AOP-7 to reflect the change in licensed operator titles.

In response to this apparent discrepancy, the licensee revised and reissued Procedure AOP-7 on September 30, 1989. The licensee also reviewed other abnormal and emergency operating procedures to verify that the proper titles had been included, if appropriate. The licensee stated that additional problems were identified and corrected.

The inspector reviewed the revision of Procedure AOP-7 and did not identify additional problems. The inspector also reviewed a selected sample of other procedures. No additional problems were noted.

- b. During review of the licensee's Radiological Emergency Response Plan (RERP), the inspector noted that it appeared that the licensee was not complying with all elements contained in the plan. Specifically, the RERP states in Section 1.4.1 of Appendix J that all individuals inside the restricted area are required to wear personnel monitoring devices capable of measuring the dose received from external sources of ionizing radiation. Restricted area used in this context is shown in Figure 1.2-2 of the Updated Safety Analysis Report as the protected area site boundary.

On September 12, 1989, the inspector randomly surveyed personnel inside the restricted area and noted that six of ten personnel did not possess a personnel monitoring device. In addition, the inspector surveyed personnel assigned emergency response duties and noted that three of eight individuals did not have monitoring devices. These personnel lacked monitoring devices because a device had not been issued to them.

Based on the results of the survey, it appeared that the licensee did not comply with all requirements stated in Section 1.4.1 of Appendix J to the RERP. This is an apparent violation.
(285/8933-01)

When the inspector notified the licensee of this problem, a revision to the emergency plan was initiated. The licensee issued a plan revision and changed the requirement from issuance of monitoring devices for all personnel inside the restricted area to issuance of monitoring devices to selected personnel inside the restricted area. The term "selected personnel" was defined in the plan revision as those individuals meeting the conditions specified in 10 CFR Part 20.202, TS 5.11, and in station radiation procedures. These personnel are the individuals that routinely work inside the plant radiological controlled area (RCA). Since this newly designated group constitutes a smaller population than was previously addressed by the plan, it is not apparent that the licensee has not reduced the effectiveness of the emergency plan.

The licensee revised the plan without prior NRC approval; therefore, the licensee may not have complied with 10 CFR Part 50.54(q). This regulation requires that prior NRC approval be obtained before making a revision that reduces the effectiveness of the RERP. In response to the violation discussed above, the licensee will be requested to address whether or not the effectiveness of the plan was reduced when the change to Section 1.4.1 of Appendix J was instituted.

6. Plant Tours (71707)

The inspectors conducted plant tours at various times to assess plant and equipment conditions. The following items were observed during the tours:

- General plant conditions, including operability of standby equipment, were satisfactory.
- Equipment was being maintained in proper condition, without fluid leaks and excessive vibration.
- Valves and/or switches for safety-related systems were in the proper position.
- Plant housekeeping and cleanliness practices were observed, including no fire hazards and the control of combustible material.
- Performance of work activities was in accordance with approved procedures.
- Portable gas cylinders were properly stored to prevent possible missile hazards.
- Tag-out of equipment was performed properly.
- Management personnel toured the operating spaces on a regular basis.

During tours of the plant, the inspectors noted the items listed below:

- a. During a plant tour in July 1989, an inspector noted that the position indicators for RW discharge Valves RW-2850, RW-2851, RW-2852, and RW-2853 indicated an open position which was 180 degrees out from the open position which was die cast on the valve operator body. On September 13, 1989, the licensee provided an explanation for the apparent anomaly. The justification was documented in Licensee Memorandum PED-SYE-89-898J.

The licensee explained that the most common application of these valve operators was for valve assemblies that were designed for air pressure to open and spring force to close. The design application of these valves in the RW system is air pressure to close and spring force to open. This application accounts for the location of the open position indicators being 180 degrees out from the diecast open indication.

The inspector reviewed Licensee Memorandum PED-SYE-89-898J in conjunction with the vendor technical manual and found the licensee's justification to be technically acceptable and the application of the valve operator to be recognized by the vendor.

- b. On September 14, 1989, the inspector noted that the radiological control sign on Door 1009-1 had become weathered and was unreadable. Door 1009-1 is an outside roll-up door for access to the containment equipment hatch area. This door is maintained locked by the security organization; therefore, routine access and egress through the door is not possible.

Upon notification by the inspector, the licensee stated the sign on the door would be immediately reposted. The inspector verified that the sign had been reposted. A survey was performed of signs posted on other outside doors. No problems were noted.

- c. On September 14, 1989, the inspector noted that the frisker stations located in the RCA of the auxiliary building did not have instructions posted. Instructions should have been posted to direct the user on the proper method of using the frisker and to provide instructions on what actions to take in the event that the user detected contamination on his/her clothing or body.

Upon notification by the inspector, the licensee immediately posted instructions at all frisker stations. The inspector verified that the licensee had posted the instructions.

- d. In NRC Inspection Report 50-285/89-32, the inspector noted that, as a result of the installation of MR-FC-87-020, "Installation of Control Room Ventilation," Room 81 and portions of the electrical penetration areas were cluttered with tools, work supplies, and trash. The majority of MR-FC-87-020 has been completed and the affected areas were cleaned up. However, work associated with Modification MR-FC-88-049, "Installation of the Plant Air Dryer," that was actively proceeding in Room 19, indicated a lack of attention to housekeeping. Room 19 contains safety-related and fire protection equipment that should be protected from construction activities. The inspector did not note any work practices that would directly damage equipment, but was concerned that proper attention to such protection was not apparent. The inspector notified licensee management of the concern. The licensee designated the Industrial Safety Coordinator to train the crafts in the appropriate housekeeping requirements. The inspector noted an improvement in housekeeping in the area after the training had been completed.

The results of the plant tours performed by the inspectors indicated that the licensee is providing adequate attention to the physical condition of the plant. Work continues on painting and clear up of the plant to improve the overall appearance. Except for a few areas, plant housekeeping has been very good.

No violations or deviations were identified.

7. Monthly Maintenance Observations (62703)

The inspectors observed selected station maintenance activities on safety-related systems and components to verify that maintenance was conducted in accordance with approved procedures, regulatory requirements, and the TS. The following items were considered during the observations:

- The TS LCOs were met while systems or components were removed from service.
- Approvals were obtained prior to initiating the work.
- Activities were accomplished using approved MWOs and were inspected, as applicable.
- Functional testing and/or calibrations were performed prior to returning components or systems to service.
- Quality control records were maintained.
- Activities were accomplished by qualified personnel.
- Parts and materials used were properly certified.
- Radiological and fire prevention controls were implemented.

The inspectors observed the following maintenance activities:

- Erection of scaffolding for repair of Level Controller LCV-1173 (MWO 890669)
- Adjustment of the impeller on RW Pump AC-10C (MWO 894581)
- Repair of Level Controller LCV-1173 (MWO 890589)
- Cleaning of RW Heat Exchanger AC-1B (MWO 893850)
- Installation of a plant air dryer (MR-FC-88-049)

A discussion of each item is provided below:

- a. On September 18, 1989, the inspector reviewed the instructions and installation of the scaffolding provided for maintenance on Level Controller LCV-1173. The instructions for installation of the scaffolding were provided on MWO 890669.

The inspector noted that the scaffolding, erected adjacent to the emergency feedwater storage tank, had been installed in accordance with MWO 890669. The instructions provided were clear and useable. The inspector noted no problems.

The review of the erection of scaffolding in safety-related areas was performed to verify compliance with the licensee's established program. The program was instituted in response to previous violations identified by the inspector.

- b. On September 18, 1989, the inspector observed portions of, and reviewed the completed documentation for, repair of RW Pump AC-10C, as documented on MWO 894581. The repairs were initiated due to the failure of the pump to meet the acceptance criteria provided by the inservice testing program.

During observation of the maintenance activities, the inspector noted that maintenance personnel performed their duties in a professional manner and followed the procedure, as written. The inspector noted that the system engineer was at the job site to provide technical assistance, as required.

The inspector noted that MWO 894581 was initiated on September 12, 1989, and that on September 14, 1989, a green deficiency tag was not installed on the panel in the control room to alert operations personnel of the inoperability of Pump AC-10C. This is contrary to paragraph 6.1.4 of Procedure SO-M-101, "Maintenance Work Control," which states, in part, that a deficiency tag will proceed or coincide with initiation of an MWO. In addition, paragraph 6.2.6 of Procedure SO-M-101 states, in part, that a licensed operator will ensure the completion and affixing of a deficiency tag to the control panel device. A danger tag had been installed on the control panel, local control switch, and breaker to prevent inadvertent operation.

TS 5.8.1 states, in part, that written procedures shall be established, implemented, and maintained that meet or exceed the minimum requirements of ANSI 18.7-1972. Section 5.1.2 of ANSI 18.7-1972 states, in part, that procedures shall be followed. With respect to installing a deficiency tag on the panel in the control room for Pump AC-10C, in conjunction with the initiation of MWO 894581, it appeared that the licensee failed to follow the requirements stated in Procedures SO-M-101.

The inspector notified the licensee of this apparent problem. The licensee took corrective actions by reiterating the requirement for the installation of deficiency tags in its formal shift operations turnover on September 19, 1989. In addition, the Supervisor, Maintenance retrained all foremen on the deficiency tag requirement on September 21, 1989, during the morning production meeting.

Normally, a Notice of Violation would be issued for failure to comply with the requirements stated in Procedure SO-M-101; however, the issue had minor safety significance, the licensee took prompt action to correct the problem, and corrective action was completed prior to the end of this inspection period. Therefore, a violation is not

being cited in accordance with the criteria specified in Section V.A of the NRC's Enforcement Policy (Appendix C to 10 CFR Part 2).

- c. On September 18, 1989, the inspector observed portions of the maintenance activities on Level Controller LCV-1173. The maintenance was performed in accordance with the instructions provided on MWO 890589.

During observation of the activities, the inspector noted that the craftspersons performed their duties in a professional manner and followed their procedural instructions, as written. The inspector also verified that postmaintenance testing was performed to verify operability of the component. No problems were identified during review of this maintenance activity.

- d. On several occasions during this inspection period, the inspector observed the cleaning of RW Heat Exchanger AC-1B in accordance with the instructions provided by MWO 893850. As discussed in paragraph 12.c, the heat exchanger required cleaning due to the accumulation of debris, thereby affecting its cooling capability. When the licensee opened the inlet side of the waterbox, craftsmen found the waterbox approximately 30 percent plugged with sand, fine pebbles and small chunks of tree bark. There was no evidence of biofouling and the tubes were relatively clean.

The inspector verified that the heat exchanger was properly tagged and logged out-of-service. Additionally, it was verified that the licensee had established compensatory measures for the fire barrier which was breached to drain the heat exchanger. No problems were noted.

- e. At various times during this inspection period, the inspector observed work in progress for installation of a new plant air dryer per instructions provided by MR-FC-88-049. The inspector noted that procedures and engineering drawings were in use, quality control personnel were routinely present, and supervision and engineering frequented the job site. The inspector notified the Assistant Plant Manager about questionable uses of ladders on the job. The concerns identified by the inspector included securing ladders to cable trays and supporting ladders with plant piping. The ladder usage was determined by the licensee to be unacceptable and the situation was corrected by the performance of additional craft training by the Industrial Safety Coordinator. After the training was completed, no additional problems were noted.

During observation of the maintenance activities performed by licensee personnel, the inspectors observed that the maintenance evolutions were performed in accordance with the appropriate procedures, as written. The inspectors also noted that the crafts adequately performed their duties. An apparent violation was identified with respect to the licensee failing to follow the procedure that addressed the installation of deficiency

tags. The violation was not cited due to the minor safety significance and the corrective actions taken by the licensee.

8. Monthly Surveillance Observations (61726)

The inspectors observed selected portions of the performance of TS-required surveillance testing on safety-related systems and components. The inspectors verified the following items during the testing:

- ° Testing was performed by qualified personnel using approved procedures.
- ° Test instrumentation was calibrated.
- ° The TS LCOs were met.
- ° Removal and restoration of the affected system and/or component were accomplished.
- ° Test results conformed with TS and procedure requirements.
- ° Test results were reviewed by personnel other than the individual directing the test.
- ° Deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.
- ° Testing was performed on schedule and complied with the TS-required frequency.

The inspectors observed the following surveillance test activities. The procedures used for the test activities are noted in parenthesis:

- ° Monthly testing of Emergency Diesel Generator (EDG) 2 (ST-ESF-6)
- ° Postmaintenance testing of RW Pump AC-10C (ST-RW-3)
- ° Daily verification of shutdown margin (ST-SDM-1)

A discussion of each surveillance observed is provided below:

- a. On September 6, 1989, the inspector observed portions of the performance of Procedure ST-ESF-6, "Monthly Testing of the Diesel Generator," for EDG 2. The testing was performed by a licensed operator, with assistance from an LSO. The test was performed in accordance with the documented instructions.

Concurrent with the testing, systems engineering personnel measured various parameters related to the diesel engine thermal output, cooling capability, and ambient temperature to obtain data for the continuing study of the elevated jacket cooling water temperature

problem. The inspector observed that the data was obtained in a controlled manner with calibrated instrumentation.

- b. On September 18, 1989, the inspector observed the postmaintenance testing of RW Pump AC-10C in accordance with the instructions provided in Procedure ST-RW-3, "Raw Water Pump Inservice Inspection." As discussed in paragraph 7.b of this inspection report, maintenance was performed on Pump AC-10C because the pump failed its surveillance test.

The inspector noted that the operators in the control room conducting the test performed their duties in a professional manner. The inspector also noted that the craftsmen taking vibration readings on the pump performed the evolution in accordance with procedural instructions. No problems were noted during the observations made by the inspector.

As a result of the performance of the surveillance test, the licensee determined that Pump AC-10C was not operable. A discussion of the licensee's subsequent actions is provided in paragraph 12.c of this inspection report.

- c. On September 27, 1989, the inspector reviewed completed Procedure ST-SDM-1, "Shutdown Margin Verification." This test was performed by the shift technical advisor to verify that sufficient negative reactivity was available to shut down the reactor under design basis conditions. No problems were noted with the calculation.

Based on the observations made by the inspectors, it appeared that the licensee was adequately implementing an effective surveillance testing program. In each test observed, the inspectors noted that licensee personnel were performing the testing evolutions in accordance with the appropriate procedure, as written.

No violations or deviations were identified.

9. Security Observations (71707)

The inspectors verified that the physical security plan was being implemented by selected observation of the following items:

- ° The security organization was properly manned.
- ° Personnel within the protected area (PA) displayed their identification badges.
- ° Vehicles were properly authorized, searched, and escorted or controlled within the PA.

- Persons and packages were properly cleared and checked before entry into the PA was permitted.
- The effectiveness of the security program was maintained when security equipment failure or impairment required compensatory measures to be employed.
- The PA barrier was maintained and the isolation zone kept free of transient material.
- The vital area barriers were maintained and not compromised by breaches or weaknesses.
- Illumination in the PA was adequate to observe the appropriate areas at night.
- Security monitors at the secondary and central alarm stations were functioning properly for assessment of possible intrusions.

During the observation of security activities, the following items were noted:

- a. On September 5, 1989, the inspector attended a briefing on the new security system that was provided by the security organization. The briefing was provided for all plant personnel and was given to instruct personnel on the operation and use of the new security system. The system is currently planned to be initially activated in October 1989 and be fully operational by December 1989.

The inspector noted that the briefing provided by security was informative, accurate, and addressed all the concerns identified by plant personnel attending the briefing session. Based on the presentation of the information, it is anticipated that minimum problems will be encountered when the transfer is made from the old to the new security system.

- b. On September 18, 1989, the inspector arrived on site at approximately 9:30 p.m. to observe licensee activities related to problems with the RW system. The inspector was standing at the badge issuance window when he overheard an individual announce on the security intercom radios that the inspector was on site and everyone should be alert.

Section 50.70(b)(4) of 10 CFR Part 50 and Section 7.1 of Procedure SECOP-6 state that the arrival of an NRC inspector shall not be announced or otherwise communicated to others without the inspector's approval. The announcement of the arrival of the inspector is an apparent violation. (285/8933-02)

In response to this apparent violation, the licensee issued Security Bulletin FC-89-73 to reinstruct security personnel of the requirement of not announcing the arrival of NRC personnel. However, the

licensee had not taken action, prior to the end of this inspection period, to ensure that all other plant personnel were aware of this regulation. Since the security bulletin was issued, no additional problems were identified.

- c. On September 28, 1989, an NRC employee, with expired general employee training (GET), was issued a security badge granting him unescorted access to all areas of the FCS.

Section 7.2.3.1 of the licensee's Site Security Plan states, in part, that NRC employees will be provided unescorted access to the FCS upon verification of their identity and successful completion of the GET program. An NRC employee, whose GET qualifications had expired in April 1989, was granted unescorted access to the facility. This is an apparent violation. (285/8933-03)

The licensee immediately performed an audit of active badges and found 12 additional NRC and 14 other personnel whose GET qualifications had expired. All these badges were immediately pulled.

In reviewing the requirements of this incident, the inspector noted that the licensee's Site Security Plan, revised in March 1989, did not address that the granting of unescorted access to the plant is conditional on maintaining GET qualifications current. The Manager, Security Services reviewed the plan and stated that the plan appeared to be deficient in addressing GET qualifications. The manager stated that a plan change would be submitted in the near future.

- d. During this inspection period, an apparent violation was identified with the access controls of vehicles. A discussion of the violation is provided in NRC Inspection Report 50-285/88-35.

It appeared, based on the observations made by the inspectors, that the licensee's guard force was adequately performing its duties, except for the problems discussed above. The security system is currently being modified and the extent of the modifications require extensive compensatory measures be taken. The inspectors noted that the compensatory measures have been very good and appear to adequately compensate for all security system degradations.

10. Radiological Protection Observations (71707)

The inspectors verified that selected activities of the licensee's radiological protection program were implemented in conformance with the facility policies and procedures and in compliance with regulatory requirements. The activities listed below were observed and/or reviewed:

- ° Health physics (HP) supervisory personnel conducted plant tours to check on activities in progress.

- HP technicians were using calibrated instrumentation.
- Radiation work permits contained the appropriate information to ensure that work was performed in a safe and controlled manner.
- Personnel in the RCA were wearing the required personnel monitoring equipment and protective clothing, and were properly frisked prior to exiting an RCA.
- Radiation and/or contaminated areas were properly posted and controlled based on the activity levels within the area.

On August 21, 1989, the inspectors attended the GET accelerated requalification class. The inspectors noted that the handouts provided by the training department for GET Level I (site specific information) and GET Level II (radiation worker information) contained out-of-date information. A discussion of the specific concerns identified by the inspectors was provided in NRC Inspection Report 50-285/89-32. The licensee stated that the training material was under revision.

In September 1989, the licensee issued revisions to the GET Levels I and II training material. The inspector reviewed the training handouts and noted that it appeared that the handouts were up-to-date with respect to current plant practices.

Eased on the observations and reviews performed by the inspectors, it appeared that the licensee was implementing an effective radiological protection program. The performance of the HP technicians was noted to be adequate.

No violations or deviations were identified.

11. In-Office Review of Periodic, Special, and Nonroutine Event Reports (90712 and 90713)

In-office review of periodic, special, and nonroutine event reports was performed by the inspectors to verify the following, as appropriate:

- Correspondence included the information required by appropriate NRC requirements.
- Test results and supporting information were consistent with design predictions and specifications.
- Planned corrective actions were adequate for resolution of identified problems.
- Whether or not any information contained in the correspondence report should be classified as an abnormal occurrence or additional reactive inspection is warranted.

- Correspondence did not contain incorrect, inadequate, or incomplete information.

The inspectors reviewed the following correspondence:

- Analysis for Uncapped Containment Instrument Line, dated September 1, 1989
- Special Report on Inoperability of Wide-Range Noble Gas Stack Monitors RM-063L, RM-063M, and RM-063H for Postaccident Monitoring, dated August 31, 1989
- Auxiliary Feedwater Pump FW-10 Outside Design Basis (LER 89-016, Revision 1), dated September 1, 1989
- Resolution of HED 93 Regarding Indicator Light Bulb Issue, dated August 31, 1989
- Request for Enforcement Discretion Relative to the Control Room HVAC System, dated August 28, 1989
- Failure to Conduct Hourly Firewatch Patrol Due to Procedural Inadequacies (LER 89-018), dated September 14, 1989
- August Monthly Operating Report, dated September 14, 1989
- Monthly Operations Report for August 1989, undated

No violations or deviations were identified.

12. Review of Onsite Events (93702)

During this inspection period, the inspectors reviewed the events discussed below:

- a. On September 13, 1989, the licensee experienced a problem with all four channels of the RPS. The power level indicated by the delta T power meter was as high as 4 percent different than the power level indicated by the nuclear power instrumentation. For Channels A and B, the delta T power meter indicated up to 4 percent less than nuclear power. For Channels C and D, the delta T meter indicated up to 4 percent above nuclear power.

Due to the deviation between the indicated delta T and nuclear power levels, the operations staff performed an extensive review of the appropriate plant systems to verify that no system problems existed. The review included an analysis of core performance. No problems were identified.

As a conservative approach toward operation of the plant, licensee management declared RPS Channels A and B inoperable because these two

channels indicated a power level less than that indicated by the nuclear instrumentation. A short time after declaring the RPS channels inoperable, a power reduction to less than 70 percent was initiated. The power reduction was required by Table 2-2 of TS 2.15.

At the end of this inspection period, the staff was still in the process of evaluating the actions taken by the licensee in response to the RPS anomaly. The staff's review will be completed during the next inspection period and the results will be fully documented in NRC Inspection Report 50-285/89-38.

- b. On September 24, 1989, the operations shift supervisor initiated a plant shutdown due to a problem with elevated temperatures on the RCP RC-3C upper thrust bearing assembly. The inspector observed the shutdown from the control room and noted that the shutdown was performed in a safe, controlled, and planned manner. The operations crew was observed to perform as a cohesive unit, with the shift supervisor making the technical decisions and providing guidance and the LSO directing the shutdown with the appropriate procedures.

The inspector observed one apparent weakness during the shutdown. An oncoming licensed operator decided to reset the emergency response facility data acquisition system display for the RCP RC-3C bearing temperature. This action resulted in a momentary loss of pump bearing temperature indication that was being closely monitored by the operators. By the time the pump bearing temperature was recalled on the computer, the temperature had increased by approximately 70°F. The shift supervisor immediately directed the LSO to trip the reactor. After the manual reactor trip, the operations crew, under direction of the LSO, efficiently performed the requirements of Procedures EOP-00, "Standard Posttrip Actions," and EOP-01, "Reactor Trip Recovery."

The licensee determined that the abnormally high bearing temperatures were caused by a faulty electrical conductor for the bearing resistance temperature detector. The licensee repaired the conductor and the temperature indication returned to normal.

- c. NRC Inspection Reports 50-285/89-23 and 50-285/89-32 provided discussions of degraded RW pumps and fouling of the RW/component cooling water (CCW) heat exchangers that resulted in a condition where insufficient flow was available to provide cooling for the design basis accident (DBA) for elevated river temperatures. The DBA analysis was originally performed assuming flow through two RW pumps and three RW/CCW heat exchangers. To ensure sufficient flow would be available to meet the revised DBA conditions, the licensee implemented administrative controls to maintain four heat exchangers in service.

An additional RW system deficiency became apparent during this inspection period. On September 11, 1989, Procedure ST-ISI-RW-3,

"Raw Water Pump Inservice Inspection," was performed for Pump AC-10C. The pump exhibited unacceptable performance and was declared inoperable. After repair attempts, the pump was retested and failed to meet the acceptance criteria provided in the surveillance test. Pumps AC-10A, AC-10B, and AC-10D performed satisfactorily when tested in accordance with Procedure ST-ISI-RW-3.

TS 2.4 requires that the reactor be placed in hot shutdown if the pump cannot be returned to operability within 7 days. The licensee justified that, although Pump AC-10C could not meet its own surveillance testing acceptance criteria, it performed sufficiently in conjunction with Pump AC-10A, such that the required flow could be delivered to one train of the RW system to meet DBA conditions. Therefore, Pump AC-10C was declared operable based on its capability to perform its intended safety function. This rationale for determination of operability was acceptable per Section XI of the ASME Code.

An independent assessment of the licensee's adherence to Section XI of the ASME Code relative to work performed on the RW system was conducted by an NRC Region IV specialist. The results of this inspection indicated that the licensee complied with the appropriate requirements of the Code. The results are documented in NRC Inspection Report 50-285/89-30.

The licensee implemented administrative controls to establish that Pump AC-10C was only considered operable provided Pump AC-10A was operable since both pumps are required to obtain sufficient RW flow. The controls also stated that if Pump AC-10A became inoperable, then Pump AC-10C would also be considered inoperable. Therefore, the licensee would enter the TS LCO for two inoperable pumps if Pump AC-10A becomes inoperable.

In response to problems identified with RW flow rates, the licensee initiated a routine air sparging program for the RW/CCW heat exchangers. The program was instituted to ensure that debris would not collect in the RW side of the heat exchangers. By September 20, 1989, the licensee had made sufficient progress in its heat exchanger sparging program and river temperatures had declined sufficiently such that DBA flow could be maintained with three of four RW/CCW heat exchangers in service. Therefore, Heat Exchanger AC-1B was isolated, drained, and cleaned to remove obstructions.

On September 29, 1989, Heat Exchanger AC-1B was returned to service. Subsequent testing found significantly improved RW system flow through the cleaned heat exchanger. At the end of this inspection period, Heat Exchanger AC-1B was again taken out of service to perform eddy current testing on the tubes. The licensee has committed to clean the remaining RW heat exchangers during the next refueling outage.

No violations or deviations were identified.

13. Examination of Cable Splices (37700)

During this inspection period, the inspector examined the licensee's use of electrical conductor splices in cable trays. The licensee had committed to install splices only at containment penetrations, at locations documented on engineering drawings, or where specifically authorized by engineering.

The inspector physically examined numerous splices in trays at containment penetrations and found that they were readily traceable and well documented on the penetration wiring diagrams. General notes on the individual penetration diagrams referenced the engineering drawing and procedure used for installation of the splices.

No violations or deviations were identified.

14. Exit Interview

The inspectors met with Mr. K. J. Morris (Division Manager, Nuclear Operations) and other members of the licensee staff on October 10, 1989. The meeting attendees are listed in paragraph 1 of this inspection report. At this meeting, the inspectors summarized the scope of the inspection and the findings. During the exit meeting, the licensee did not identify any proprietary information to the inspectors.