APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

NRC Inspection Report: 50-285/89-50 License: 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: December 1, 1989, through January 15, 1990

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

Approved: for R P Mullikin 2/20/90
T. F. Westerman, Chief, Project Section B Date
Division of Reactor Projects

Inspection Summary

Inspection Conducted December 1, 1989, through January 15, 1990 (Report 50-285/89-50)

Areas Inspected: Routine, unannounced inspection of the areas discussed below.

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

- The inspectors evaluated the areas of: review of previously identified items; operational safety verification; plant tours; monthly maintenance; surveillance; security; and radiological protection observations; in-office review of licensee reports; cold weather preparations; housekeeping; and the fitness-for-duty program.

  Within these areas, it appeared that the licensee's actions met the appropriate regulatory requirements.

- A management meeting has been scheduled in NRC Headquarters to discuss the unresolved issues identified in paragraphs 4.a, 5, and 12.b. The issues

involve the status of the hydrogen purge, raw water, and containment spray systems. These issues remain unresolved pending the results of further licensee and NRC review.

- The licensee failed to make a 1-hour report to notify the NRC that the containment spray system could potentially be operated outside the established design basis, as required by 10 CFR Part 50.72. The licensee has taken appropriate actions to address this violation; therefore, a Notice of Violation was not issued in accordance with the criteria specified in Section V.A of Appendix A to 10 CFR Part 2 (NRC's Enforcement Policy).

- A review of the content of licensee applications for the amendment of Technical Specifications indicated that additional attention to detail during the preparation of amendment requests is needed to ensure that ambiguities and typographical errors are identified prior to submittal of the amendment requests to the NRC.

DETAILS

1. Persons Contacted

#R. Andrews, Division Manager, Quality and Environmental Affairs
J. Bobba, Supervisor, Radiation Protection
C. Brunnert, Supervisor, Operations Quality Assurance
#*J. Chase, Manager, Nuclear Licensing and Industry Affairs
*G. Cook, Acting Supervisor, Station Licensing
*M. Core, Supervisor, Maintenance
*D. Dale, Supervisor, Quality Control
#S. Gambhir, Division Manager, Production Engineering
#*W. Gates, Division Manager, Nuclear Operations
*C. Huang, Supervisor, Human Performance Evaluation
*R. Jaworski, Manager, Station Engineering
J. Kecy, Supervisor, Systems Engineering
L. Kusek, Manager, Nuclear Safety Review Group
*D. Lakin, Engineer, Nuclear Safety Review Group
*M. Lazar, Supervisor, Operations and Technical Training
*T. Matthews, Plant Licensing Engineer
#K. Morris, Division Manager, Nuclear Operations
*W. Orr, Manager, Quality Assurance and Quality Control
#*G. Peterson, Manager, Fort Calhoun Station
*R. Phelps, Manager, Design Engineering
*A. Richard, Assistant Manager, Fort Calhoun Station
*J. Sefick, Manager, Security Services
*R. Sexton, Supervisor, Radiation Protection
*C. Simmons, Station Licensing Engineer
*F. Smith, Plant Chemist
*J. Tills, Assistant Manager, Fort Calhoun Station
D. Trausch, Supervisor, Operations
S. Willrett, Manager, Administrative Services

NRC Personnel

#S. Collins, Director, Division of Reactor Projects (DRP), Region IV
#T. Westerman, Chief, Project Section B, DRP, Region IV
#R. Mullikin, Project Engineer, Region IV
#*P. Harrell, Senior Resident Inspector, FCS
#*T. Reis, Resident Inspector, FCS
#J. Jaudon, Deputy Director, Division of Reactor Safety, Region IV
#F. Hebdon, Director, Project Directorate IV, Office of Nuclear Reactor Regulation (NRR)
#A. Bournia, Project Manager, FCS, NRR

*Denotes attendance at the monthly exit interview.

#Denotes participation in the mid-SALP cycle conference call on December 6, 1989.

The inspectors also contacted other plant personnel.

2. Plant Status

During this inspection period, FCS operated at 100 percent power with the exception of 4 days. On January 5-8, 1990, power was decreased to 95 percent power to support moderator temperature coefficient testing. There were no challenges to safeguards equipment or reactor protection systems during this inspection period.

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

a. (Closed) Open Item 285/88201-14: Inadequate guidance given to quality control (QC) personnel for review of maintenance work orders (MWO).

The Operational Safety Team Inspection (OSTI) found that guidance provided to QC personnel for reviewing MWOs with regard to identifying QC hold points and performing QC inspections appeared to be weak. At the time of the performance of the OSTI, Appendix B to Procedure QDP-20, "Conduct of QC Inspections," specified that the QC inspector was required to check the methods for controlling quality (e.g., inspections, measurements, testing, cleaning, nondestructive examination, worker qualifications, and cleanliness controls) and to verify that the requirements were included in the work-control procedure. No other supplementary guidance was available to QC inspectors responsible for MWO review concerning inclusion of hold point inspections into work-control documentation.

In response to this OSTI concern, the licensee issued detailed instructions to address the review of MWOs, as well as maintenance and modification procedures. The instructions were provided in Procedures QCP-260, "Quality Control Review of Maintenance/Modification Procedures," and QCP-270, "Quality Control Review of Maintenance Work Orders." These procedures provided uniform guidance to QC inspectors on verification of hold points and how to incorporate hold points or other appropriate QC inspections, when not specified, in the work-control documentation being reviewed.

The inspector reviewed the procedures implemented in September 1989 and noted that the direction provided was responsive to the concerns identified by the OSTI. By interview of three QC inspectors, the inspector established that the new procedures had been effectively implemented into the work-control process.

Based on the actions taken by the licensee and the review performed by the inspector, this item is considered closed.

b. (Closed) Open Item 285/8909-01: Training on functional testing.

This item was related to a lack of training for engineering personnel on the proper method for establishing functional testing and test acceptance criteria. This item was identified during a review of the testing performed on the air-accumulator assemblies for Valves YCV-1045A and YCV-1045B (steam supply valves for the turbine-driven auxiliary feedwater pump).

To address this item, the licensee provided training to the appropriate engineering personnel. In addition, the licensee revised Procedure GEI-28, "Preparation of Installation and Test Procedures," to provide instructions for specifying functional testing and the establishment of acceptance criteria.

The inspector reviewed the training records for Course D-EGE-10, "GEI-28 Test/Installation Procedures," to verify that the appropriate personnel had attended the training. In addition, the inspector also reviewed Section A-9, "Air Accumulators," of Procedure GEI-28 to verify that adequate instructions had been provided. No problems were identified during the reviews.

c. (Closed) Violation 285/8926-02: Failure to document deficiencies.

In June 1989 the licensee was cited for failure to document and report a safety-related deficiency, discovered during the performance of surveillance testing. Specifically, the inspector observed that technicians encountered plugged instrumentation lines affecting a safety-related pressure transmitter during performance of Procedure ST-ISI-RW-3, "Raw Water Inservice Pump Test." The technicians were observed to have disassembled, flushed, and reinstalled the tubing without documenting or reporting the deficiency.

The licensee attributed the violation to a lack of guidance provided in Procedure SO-M-101, "Maintenance Work Control," that required timely identification and proper documentation of any deficient condition observed. From discussions with the licensee, the root cause of this violation appeared to be that experienced personnel, performing work within the "skill of the craft," encountered a deficiency, fixed it, and continued with their assignment, apparently unaware of their responsibility to document and report the deficiency.

To address recurrence of this problem, the licensee provided training to all craft personnel via a training hotline dated July 10, 1989, which reemphasized the need to document skill-of-the-craft activities. Additionally, Procedure ST-ISI-RW-3 was revised to provide detailed work instructions for cleaning the affected instrumentation lines since their clogging is a recurring problem.

The licensee's actions were responsive to the concerns addressed by this violation.

The actions taken by the licensee in response to previously identified items appeared to be conservative and provide adequate controls to prevent recurrence.

No further violations or deviations were identified.

4. Operational Safety Verification (71707)

The inspectors conducted reviews and observations of selected activities to verify that facility operations were performed in compliance with the appropriate regulatory requirements. The inspectors made control room observations to verify:

- Proper shift staffing was maintained and conduct of control room personnel was appropriate.
- Operator adherence to approved procedures and Technical Specification (TS) requirements was evident.
- Operability of instrumentation and controls 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.
- 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 a review of Emergency Operating Procedure (EOP) EOP-03, "Loss of Coolant Accident," on December 19, 1989, the inspector noted that Step 13.i of Attachment 1, "Containment Hydrogen," to EOP-03 stated that steps should be taken to have hydrogen recombiners made available and aligned for use. Step 14.a of Attachment 1 stated that

the recombiners shall be operated until the hydrogen concentration is less than 0.5 percent. The inspector was aware that the licensee did not have recombiners installed in the plant nor did the licensee have piping installed to connect a recombiner to the containment via an existing containment penetration.

The inspector requested that the plant licensing engineer provide a response as to why recombiners were addressed in EOP-03, considering that the equipment was not installed in the plant. The plant licensing engineer responded that the recombiners would be obtained from the Cooper Nuclear Station (CNS), approximately 100 miles south of FCS, and would be installed external to the containment for the control of hydrogen following a loss-of-coolant accident (LOCA). The plant licensing engineer further stated that instructions did not currently exist for connecting the recombiners to containment penetrations, but would be generated during an accident after the recombiners had been obtained. The inspector discussed the guidance provided in EOP-03 for use of recombiners with five licensed operators. In each case, the individuals confirmed that their licensed-operator training had instructed them that the recombiners could be obtained from the CNS.

On December 20, 1989, the inspector contacted NRC personnel at CNS to confirm the availability of recombiners. The NRC personnel stated that there were no recombiners installed at CNS, nor did CNS have recombiners available on site. The inspector provided the plant licensing engineer with this information.

On December 21, 1989, the plant licensing engineer provided an internal licensee memorandum dated November 30, 1989. The memorandum was generated by the licensee's Design Engineering Nuclear (DEN) organization to address the requirements for installation of permanent piping for the connection of external hydrogen recombiners. DEN was requested to determine the need for permanent piping based on a concern identified by the OPPD licensing staff with the licensee's capability of meeting the requirements stated in 10 CFR Part 50.44.

As a result of the review, DEN personnel determined that the use of recombiners at the FCS was not necessary. The basis of the conclusion was that a hydrogen purge system (HPS) had been installed to meet the requirements of a NUREG 0737 (TMI) action item. Therefore, in the DEN memorandum dated November 30, 1989, DEN personnel recommended that reference to the hydrogen recombiners in Procedures EOP-03 through EOP-07 and EOP-20 be deleted.

To support the DEN conclusion that the HPS was acceptable in lieu of recombiners, the plant licensing engineer provided the inspector with a copy of a letter from the NRC to OPPD, dated April 7, 1980. The letter stated that the licensee's installation of an HPS for postaccident hydrogen control met the regulatory requirements for a postaccident purge system.

On January 11, 1990, the plant review committee (PRC) approved changes to EOP-03, based on recommendations from the training organization, to clarify the steps referencing the hydrogen recombiners. Step 13.i of Attachment 1 to EOP-03 now states that personnel in the technical support center will be directed by the operations staff to obtain, install, and make the hydrogen recombiners ready for use. Step 14.a of Attachment 1 to EOP-03 now states that when the hydrogen recombiners are made available, operate the hydrogen recombiners until hydrogen concentration is less than 0.5 percent. Similar wording changes were also made to the other EOPs that referenced the use of hydrogen recombiners.

The licensee stated that the changes made to the wording of the EOP steps clarified that, if the recombiners were not available when required, then the operation's staff would use the HPS to reduce the postaccident hydrogen inventory in containment. Instructions for operation of the HPS are provided by Procedure OI-VA-1, "Heating, Cooling, and Ventilation-Normal Operation Containment." By the end of this inspection period, the licensee had not placed copies of the revised EOPs in the control room procedures manual. However, the licensee had notified the operations staff of the apparent inadequate steps contained in the EOPs.

During an inspection documented by NRC Inspection Report 50-285/89-40, NRC personnel identified deficiencies with the technical content of EOPs. As a result, a Notice of Violation (285/8940-01) was issued. During closeout of Violation 285/8940-01, Procedure EOP-03 will be reviewed to verify the technical adequacy.

Section 9.10.2.5 of the Updated Safety Analysis Report (USAR) describes the function and operation of the HPS. The system description states that the HPS is an engineered safety features (ESF) system. Section 6.1.1 of the USAR states that an ESF system is the designation given to systems and components provided to protect the public and plant personnel by minimizing both the extent and the effects of an accidental release of radioactive fission products from the reactor coolant system. The operability of the HPS is not addressed by TS; therefore, system testing is not currently included in the licensee's established surveillance testing program.

During discussions with the licensee, the inspector established that the licensee had determined that, if the HPS was appropriately classified as an ESF system, then the operability and testing of the HPS should be addressed by the TS.

This issue was also identified in the DEN memorandum issued on November 30, 1989. The memorandum stated that systems engineering should review the testing and inspection program for the HPS since this system is the only means of post-LOCA hydrogen control. The systems engineering group completed review of the HPS and documented the review in a memorandum dated December 29, 1989. The results of

the review indicated that the testing performed on the HPS was inadequate because:

- The manual HPS containment isolation valves had not been routinely cycled to verify operability from the remote handwheels located outside the room where the valves are installed.

- A full-flow test, with the system lined up to take a suction from the containment and discharge through the installed carbon filter, had not been performed.

- Testing to verify the methyl iodide removal capability of the installed carbon filter had not been performed in accordance with ANSI N-510.

The system engineer noted that other testing and maintenance had been routinely performed on the HPS as directed by the preventive maintenance (PM) program. The testing and maintenance included items such as verification of fan rotation, condition of the fan belts, lubrication adequacy of the fans, and measurement of the differential pressure across the carbon filter. Although additional testing appears to be appropriate, as discussed above, the system engineer stated that the HPS was capable of performing its intended function based on the routine PM activities performed on the system and engineering judgement.

A management meeting has been scheduled in NRC Headquarters to discuss the following items with the licensee:

- Basis for the hydrogen combiners being incorporated into the Fort Calhoun Emergency Operation Procedure (EOP) EOP-3 and operator training.

- Whether operability of the HPS is required to be verified.

- Inclusion of the HPS operability and testing requirements in the TS.

- Determination that hydrogen recombiners are not required to be installed at the FCS.

This issue remains unresolved pending the results of further NRC and licensee review. (285/8950-01)

b. During review of the shift supervisor's log, the inspector noted that between October 31 and November 24, 1989, the licensee failed to provide an adequate hourly fire watch patrol on four occasions. The fire watch patrols were established to meet the requirements specified in TS 2.19(7), that states, in part, that with a safety-related fire barrier nonfunctional, a fire detector on one

side of the fire barrier shall be verified to be functional and an hourly fire watch shall be established. On October 31, November 6, 20, and 24, 1989, the licensee identified that the fire watch patrol was not adequately performed due to the fire watch not checking all nonfunctional fire barriers during performance of the hourly patrol.

The licensee evaluated each nonfunctional fire barrier that was missed by the fire patrol. For each incident, the licensee took credit for having an individual (either a nonlicensed operator or a health physics (HP) technician) in the area because the individual would have detected any fires. Based on this conclusion, the incidents of missed fire watches were not reported to the NRC.

The inspector discussed the licensee's position with personnel in the Region IV office. Based on these discussions, it appeared that the licensee's position that the incidents were not reportable was acceptable.

On December 1, 1989, the inspector discussed the inadequate fire watch patrols with the licensee. At the time the information was provided to the licensee, security personnel had initiated actions to correct the problems with inadequate fire patrols since fire watch patrols are performed by security guards. Prior to implementation of the corrective actions, the fire watch patrol had not been provided a list of nonfunctional fire barriers that were required to be checked. In lieu of providing a list, the licensee expected that each fire watch patrol would remember the fire barriers that required checking. On November 30, 1989, the licensee implemented a program where the hourly fire patrol was provided a list of all the nonfunctional fire barriers. By implementation of this action, the patrol could verify that all barriers were checked.

During this inspection period, the inspector reviewed, on four occasions, the documentation associated with the performance of hourly fire patrols. During these reviews, no problems were identified.

The inspector reviewed the actions taken by the licensee and noted that the actions appeared to adequately address this problem associated with fire patrols not checking all nonfunctional fire barriers.

No violations or deviations were identified.

5. Plant Tours (71707)

The inspectors conducted plant tours to assess plant and equipment conditions. The following items were observed:

- General plant conditions, including operability of standby equipment, were satisfactory.

- Equipment was being maintained in proper condition.
- Valves and/or switches for safety-related systems were in the proper position.
- Plant housekeeping and cleanliness practices were being implemented.
- Performance of work activities was in accordance with approved procedures.
- Tag-out of equipment was performed properly.

Section 9.8.6 of the USAR describes the availability and reliability of the raw water (RW) system. The RW system was installed to provide for cooling capabilities for the component cooling water (CCW) system, which in turn, cools components installed in safety-related systems. Section 9.8.6 states, in part, that in the unlikely event that all RW pumps are unavailable, cooling water can be obtained from the Seismic Category I fire protection (FP) system and its diesel- or electric-driven fire pumps. This system interconnection would be made between the CCW heat exchangers and the local fire cabinets using fire hoses. Section 9.8.6 also states, in part, that calculations show that ample time is available for an operator to take corrective action (i.e., connect the fire hoses) and that the actions required by the operator are included in one of the licensee's abnormal operating procedures.

Procedure AOP-30, "Loss of Raw Water," is the abnormal operating procedure that addresses the loss of flow in the RW system. Procedure AOP-30 states that, in the event all four RW pumps are lost, the operator should install flanged fittings to any two of the four CCW heat exchanger drain valves and connect a 2 ½-inch hose from an FP cabinet to the flange. Procedure AOP-30 also states that, to meet the minimum cooling requirements, two heat exchangers must be connected to two fire cabinets.

The licensee maintained two flanges, for connecting the FP system to the CCW heat exchangers, staged adjacent to the fire hose cabinet. The flanges are staged for easy access by the operator in the event that RW system flow is lost.

During a plant tour on December 6, 1989, the inspector noted that one of the two flanges was missing from its normal storage location. Based on the flange being unavailable, it appeared that the licensee could not comply with the requirements stated in Procedure AOP-30.

During review of this apparent problem, the inspector noted that the operations staff identified that the flange was missing on December 4, 1989, as documented on Maintenance Work Request (MWR) 4125. Based on the issuance of MWR 4125, the licensee issued MWO 895654 to request that a new flange fitting be fabricated to replace the missing fitting. The fabrication of the flange fitting had not been completed when the inspector identified the apparent problem to the licensee on December 6, 1989.

Upon notification by the inspector, licensee personnel began a search for the missing flanged fitting. Approximately 3 hours after the search was initiated, the licensee found the fitting on a catwalk near the flange fitting storage location. The fitting was immediately replaced in its proper location.

The licensee evaluated the requirement for the FP system to act as a backup system for the RW system. In Calculation ES 88-18, issued on April 25, 1988, the licensee determined that cooling water from the FP system was required, if all RW system flow was lost, to maintain proper cooling capabilities for the nuclear detector wells, the only component identified in Calculation ES 88-18 that was adversely affected by the loss of RW flow. The conclusion provided in Calculation ES 88-18 stated that the FP system, crossconnected to the RW system via fire hoses, was capable of providing sufficient flow to maintain the temperature in the nuclear detector wells below 150°F, the limit established by TS 2.13.

In discussions with the inspector regarding the missing flange fitting, a licensing, reactor, and system engineer stated that the plant could be placed in hot shutdown without any flow in the RW system or any flow from the backup FP system. The licensee stated that the potential loss of the neutron detectors located in the nuclear detector wells would not affect the operations staff's capabilities of placing and maintaining the plant in hot shutdown. The assumptions made by the licensee were that no other accident occurred concurrently with the loss of RW system flow. This conclusion appeared to be different from the conclusion previously established by the licensee as a result of the generation of Calculation ES 88-18.

During review of this issue, the inspector also identified additional concerns:

- The RW system installed at the FCS contains four pumps that provide flow to a common discharge header. The four pumps are installed in a single room located in the intake structure. The room is located directly below the floor level in the intake structure and has floor grating installed in the ceiling.

  Due to the configuration of the installation, the potential for common-mode failure of all four RW pumps exists due to flooding vulnerabilities in the room. Leakage in the RW header located inside the room or leakage from a system (e.g., FP system piping) located above the room could cause the room to fill with water, resulting in the loss of all four pumps.

  The RW pump room is installed with a level detector and a sump pump. The level detector provides an alarm in the control room to alert operations personnel of an increasing water level in the room. Upon receipt of the alarm, the operations staff could take actions to locate and isolate the leak in accordance with Procedure AOP-30. The

sump pump is a small capacity pump; therefore, the pump has a limited capability to remove water from the room in the event of a large leak.

- It was also noted that the licensee could not comply with the TS 2.0.1 requirement for loss of all RW flow, which requires that the plant be placed in cold shutdown when all flow is lost. Even with the backup flow from the FP system, the licensee cannot comply with the TS requirement since the licensee does not have the capability to place the plant in cold shutdown, due to a lack of cooling capability for the CCW heat exchangers.

A management meeting has been scheduled in NRC Headquarters to discuss the following items with the licensee:

- The licensee's ability to place and maintain the plant in hot shutdown with a loss of all cooling water, including FP system cooling water, to the CCW heat exchangers.

- The potential for common-mode failure of all four RW pumps due to flooding vulnerabilities in the pump room.

- The licensee's ability to place the plant in cold shutdown with a loss of RW flow to the CCW heat exchangers. FP system cooling water is assumed to be available for cold shutdown.

This issue remains unresolved pending the results of further NRC and licensee review. (285/8950-02)

No violations or deviations were identified.

6. Monthly Maintenance Observations (62703)

The inspectors observed selected station maintenance activities on safety-related systems and components. The following items were considered:

- 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.

- Functional testing and/or calibrations were performed prior to returning components or systems to service.

- QC 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:

- Spent fuel pool (SFP) cooling system maintenance (SP-SFP-9)
- Establishing and maintaining of freeze seals by vendor personnel (MD-RR-MX-1002)
- Replacement of the diesel-driven fire pump discharge header (MWO 895533)
- Repair of Radiation Monitor RM-063H (MWO 895561)

A discussion of each item is provided below:

a. On December 8 and 10, 1989, the inspector reviewed Procedures SP-SFP-9, "Spent Fuel Pool Cooling System Maintenance," and MD-RR-MX-1002, "Establishing and Maintaining Freeze Seals by Vendor Personnel," that were to be implemented for establishment of a freeze seal on an 8-inch stainless steel line in the SFP cooling system. The freeze seal was necessary for component isolation in order to perform corrective maintenance on the suction valves for the SFP pumps.

   The inspector verified that the licensee's procedures provided for:

   - An adequate supply of liquid nitrogen
   - Installation of the freeze pads by qualified individuals
   - A satisfactory contingency plan in the event of a failure of a freeze seal
   - Adequate communications between the work location and the control room
   - Pre-nondestructive and post-nondestructive examination of the freeze seal zone
   - Temperature monitoring equipment to verify seal formation and maintenance
   - Appropriate instructions for location of the nitrogen jacket

   The inspector utilized the technical guidance provided in Chapter 9900 of the NRC Inspection Manual as a guide for review of the licensee's procedures. The procedures were found to be technically sound and encompassing; however, the inspector noted that

the procedure required personnel to unnecessarily drain the upstream header after the freeze seal was established. The inspector noted that the suction line should be kept full of water so that, if the freeze seal began to fail, there would be a good chance to reestablish it. The system engineer agreed with the observation. The procedure was revised prior to issuance.

The inspector examined the licensee's safety analysis of the proposed work that concluded taking the SFP cooling system out of service and performing this work did not constitute an unreviewed safety question as defined by 10 CFR Part 50.59.

On December 13, 1989, the licensee implemented the procedures and established the freeze seal. However, maintenance personnel found they could not perform the valve repair due to boric acid crystallization and buildup in the pump casings. The boric acid crystallation prevented adequate draining of the necessary lines downstream of the freeze seal. Due to the length of time required to drain the line and the shortage of qualified personnel necessary to maintain the freeze seal, the repair attempt was abandoned. The licensee plans to attempt the repair of the suction valves during the week of January 15, 1990.

b. On January 9, 1990, the inspector observed portions of the hydrostatic testing of the replaced discharge header for the diesel-driven fire pump. The testing was performed in accordance with Procedure MWO 895533, "Replacement of Fire Pump Discharge Header." The hydrostatic test requirements were derived from National Fire Protection Association Code 24, "Standard for the Installation of Private Fire Service Mains and Their Appurtenances." The test was performed per the approved procedure by qualified technicians. The fire protection engineer was on site overseeing the testing and QC personnel were observed to have witnessed the testing as required by procedure.

c. On January 11, 1990, the inspector observed work in progress toward the installation of a third auxiliary feedwater pump. The work was in the preliminary stages and was being accomplished in accordance with Modification Request (MR) FC-88-17, "The Third Auxiliary Feedwater Pump." The inspector noted that the MR was authorized for use and verified that work was being accomplished in accordance with the MR and its associated field installation drawings. The inspector also noted that station modification engineers were on site coordinating the efforts of the construction company contracted to do the work. At the time the review was performed, much of the material was staged in laydown areas and prefabrication of piping runs had begun. Considering the magnitude of the project, the inspector considered the housekeeping in the area to be good. The inspector interviewed a foreman of the contractor crew and found him to be knowledgeable of housekeeping requirements per Procedure SO-G-6,

"Housekeeping." He indicated that his employees were trained to the general requirements of the procedure and that the worksite was policed prior to the end of each shift.

d. On December 8, 1989, the inspector observed maintenance activities on RM-063H. The maintenance was performed in accordance with MWO 895561. During observations made by the inspector, it appeared that the technician performing the maintenance complied with the instructions provided on the MWO. The technician was using test equipment that was in current calibration and appropriately completed the MWO to document the work that had been performed.

During observation of the maintenance activities performed by licensee personnel, the inspectors observed that the maintenance evolutions were performed in accordance with the appropriate regulatory requirements.

No violations or deviations were identified.

7. Monthly Surveillance Observations (61726)

The inspectors observed selected portions 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.
- TS LCOs were met.
- Removal and restoration of the affected system and/or component were accomplished.
- Test results conformed with TS and procedural requirements.
- Test results were reviewed by personnel other than the individual directing the test.
- Deficiencies identified during the testing were properly reviewed and resolved.
- 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 EDG 1 (ST-ESF-6)

- Operability verification for the core exit thermocouples (OP-ST-RX-003)

- Monthly testing of EDG 2 (ST-ESF-6)

A discussion of each surveillance observed is provided below:

a. On January 10, 1990, the inspector observed the regularly scheduled testing of EDG 1. The testing was performed in accordance with Procedure ST-ESF-6, "Monthly Testing of the Emergency Diesel Generator."

During observation of the testing in the control room and in the EDG 1 room, the inspector noted that the operations staff performed the procedure, as written. During performance of the test, no problems were encountered by operations personnel.

As discussed in paragraph 12.c of this inspection report, the licensee had installed a heat source for the solenoids used to operate the inlet air dampers for EDG 1. The inspector checked the operation of the heat source and noted no problems.

Based on the observations made by the inspector, it appeared that the testing was adequately completed to verify operability of EDG 1. The inspector also noted that the test procedure documentation was properly completed.

b. On December 20, 1989, the inspector observed the performance of Procedure OP-ST-RX-003, "Core Exit Thermocouples," used to verify proper operability of the thermocouples. The inspector noted that the individual performed the procedure, as written. After completion of the testing, the individual verified that the test results complied with the acceptance criteria provided in the procedure.

The inspector performed a review to verify that the acceptance criteria provided in the procedure adequately reflected the requirements provided in TS 2.21, "Postaccident Monitoring Instrumentation." No problems were noted by the inspector with the procedural requirements or during observation of the test performance.

c. On January 3, 1990, the inspector observed portions of the monthly testing of EDG 2 in accordance with Procedure ST-ESF-6. The inspector observed system engineering and electrical maintenance install and obtain data from a chart recorder, oscilloscope, and other monitoring equipment in order to examine EDG 2 static exciter voltages.

In early 1989 the licensee experienced an anomaly with EDG 2 testing in that, upon initial start, the voltmeter measuring generator output

would peg high, indicating voltage in excess of 6000 volts. The voltage was observed to be high for 10-40 seconds and then decay to the appropriate 4160-volt range.

During the performance of testing in February through May 1989, the problem recurred. In February, March, and April 1989, several calibrations and mechanical evolutions were performed in an attempt to correct the problem; however, none of the attempts were successful. In May 1989 an open resistor was found in the static exciter and the resistor was replaced. The licensee considered the problem to be fixed. However, during testing later that month, the voltage pegged high again.

Engineers from General Electric (GE), the static exciter vendor, were summoned to investigate the problem. The GE representative felt that the problem stemmed from contamination under the wiper brush of the auto voltage adjustment potentiometer. This resulted in open circuits in various spots on the potentiometer. This in turn, resulted in a loss of feedback to the voltage regulator when full excitation was applied to the generator.

The contacts were cleaned and the problem appeared to be corrected. Between May 17 and 21, 1989, EDG 2 was started and operated at rated voltage ten times without any overvoltage conditions occurring.

In May, June, and July 1989, successful routine surveillance testing was performed with no overvoltage exhibited. In August 1989, the problem recurred. The potentiometer contacts were again cleaned and the EDG 2 testing was successfully completed. In October 1989 a new potentiometer was received, dedicated, and installed. Subsequent testing revealed no overvoltage conditions. In November 1989 the spiking recurred, indicating the problem was not entirely with the potentiometer.

During testing of EDG 2 on January 3, 1990, the spiking recurred. System engineering is currently comparing the EDG 2 traces obtained with those from recent testing of EDG 1, which has never exhibited the problem. No conclusions have yet been reached.

Each time the spiking has occurred, it has subsided and regulated the EDG output voltage adequately within 10-40 seconds. Therefore, system engineering does not consider the operability of EDG 2 to be in question. This anomaly was discussed with specialists from the Division of Reactor Safety, Region IV, who concurred that the problem did not affect the operability of EDG 2. The inspector noted that system engineering has been perseverant and thorough in their investigation of this recurring problem.

Based on the observations made by the inspectors, it appeared that the licensee was adequately implementing the surveillance testing program.

No violations or deviations were identified.

8. Security Observations (71707)

The inspectors verified that the physical security plan was being implemented by 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.
- 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 properly functioning for assessment of possible intrusions.

It appeared, based on the observations made by the inspectors, that the physical security plan was adequately implemented.

No violations or deviations were identified.

9. Radiological Protection Observations (71707)

The inspectors verified that selected activities of the licensee's radiological protection program were implemented. The activities listed below were observed and/or reviewed:

- 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 radiation controlled areas (RCA) were wearing the required personnel monitoring equipment and protective clothing.
- Personnel properly frisked prior to exiting an RCA.
- Radiation and/or contaminated areas were properly posted and controlled.

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

No violations or deviations were identified.

10. In-Office Review of Licensee Reports (90712 and 90713)

In-office review of licensee reports was performed to verify the following:

- 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.
- Correspondence did not contain any information that should be classified as an abnormal occurrence or required additional reactive inspection.
- Correspondence did not contain incorrect, inadequate, or incomplete information.

During review of correspondence issued by the licensee, the following items were noted:

a. During review of the application for amendment of the operating license for TS 2.2(1), the inspector noted that the application stated that a minimum of 10,000 gallons of water, at refueling boron concentration, be available from the safety injection and refueling water storage tank (SIRWT). The application stated that the minimum volume in the SIRWT was required whenever fuel was in the reactor.

The inspector noted that the application for amendment appeared confusing since TS 2.3(1)(a) required a minimum of 283,000 gallons of boric acid solution in the SIRWT whenever the reactor is critical. It appeared that the requirements of TS 2.2(1) and 2.3(1)(a) were in conflict since TS 2.2(1) did not specify the appropriate plant modes where the 10,000-gallon requirement was applicable.

The inspector discussed this item with the licensee. The licensee stated that, based on the wording, the operations staff could be confused as to what plant modes the requirements of TS 2.2(1) apply. The licensee stated that a revision to the application for amendment would be issued in the near future to specify the plant modes applicable to TS 2.2(1). This item remains an inspector followup item pending resubmittal of the application for amendment by the licensee. (285/8950-03)

b. During review of the application for amendment of the operating license for TS 3.16, the inspector noted that an apparent typographical error existed. As written, TS 3.16(1)(a) provided inaccurate criteria for the testing of the portion of the shutdown cooling system outside of containment in that it stated that the piping shall be tested at 250 psig or a refueling interval. The inspector discussed this with the Manager, Nuclear Licensing and Industry Affairs, who agreed to amend the submittal to specify what testing shall be performed. This item is considered an inspector followup item pending submittal of a revised amendment by the licensee. (285/8950-04)

The licensee's TS contain numerous administrative errors, two of which are described above. Considering this, it is apparent that the licensee should provide more attention to detail during the preparation of amendment requests. NRR has been notified of the issues discussed above.

No violations or deviations were identified.

11. Mid-SALP Cycle Review (35002)

On December 6, 1989, a telephone conference was held between the licensee, Region IV, and NRC Headquarters personnel to discuss the NRC's evaluation of the licensee's performance. The evaluation was performed as the mid-SALP (Systematic Assessment of Licensee Performance) cycle review. The licensee's current SALP cycle extends from May 1, 1989, to April 30, 1990.

The NRC conducts a mid-SALP cycle review to provide feedback to the licensee on the current status of their performance in each SALP functional area.

The licensee and NRC personnel participating in the telephone conference are listed in paragraph 1 of this inspection report. The outline of topics discussed during the mid-SALP cycle review is provided as Appendix B to this inspection report.

No violations or deviations were identified.

12. Onsite Followup of Events (93702)

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

a. On December 12, 1989, the licensee notified the inspector of an event where an individual failed to comply with the requirements for entry into a high radiation area (HRA). The event occurred on December 11, 1989.

During the performance of an hourly fire watch patrol by a security guard, the guard entered Room 7 in the RCA to verify that no fires were present. The door to Room 7 was posted as an HRA.

TS 5.11 and Procedure RP-204, "Radiological Area Control," require that entry not be made into an HRA unless one of the following conditions is met: (1) the individual possesses a radiation monitoring device that continuously indicates the radiation dose rate in the area, (2) the individual is equipped with an alarming dosimeter that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received, or (3) an individual qualified in radiation protection procedures, who is equipped with a dose rate instrument, accompanies the individual. The security guard failed to meet any of the requirements stated above when entering the HRA.

The security guard's failure to comply with the HRA entry requirements was identified by an HP technician when the guard exited the HRA. The guard immediately notified the HP supervisor. The guard was wearing the normally issued thermoluminescent and self-reading pocket chamber dosimeter devices during the event. However, the additional radiological controls required by TS 5.11 were not met. The guard's self-reading dosimeter indicated that she received a total radiation dose during the tour of the RCA of less than 5 mRem.

The licensee has experienced a previous problem with individuals entering HRAs without complying with the radiological protection posting requirements. In January 1989 two individuals entered an HRA to perform maintenance and did not comply with the radiological posting. The details of this previous event are discussed in NRC Inspection Report 50-285/89-04. To address this event, the licensee implemented corrective actions by stopping all work in the RCA and requiring that all radiation workers be retrained in the area of HP requirements. The licensee also upgraded the general employee training courses to provide additional emphasis on the requirements for entry into and working in the RCA.

During discussions between the security guard and licensee management, the licensee determined that the guard had observed the HRA posting but stated "that it just didn't register." The licensee also determined that the guard was aware of the event in January 1989, involving the entry into an HRA by maintenance personnel, and had recently completed the general employee requalification training course. As a result of the licensee's investigation of this event, the guard's employment with OPPD was terminated.

To address this event, the plant manager stopped all work, other than essential activities, in the RCA and required that all personnel be retrained prior to reentering the RCA. This action was taken by the plant manager to reemphasize the requirements for entry into the RCA. The inspectors attended the required training and noted that the information provided appeared to reinforce the rules with respect to compliance with radiological protection requirements. The training not only included the requirements for entering an HRA, but also included a discussion of other aspects of radiological protection requirements.

On January 10, 1990, the licensee issued LER 89-023 to address this event. A review of this event by NRC personnel from the Division of Radiation Safety and Safeguards will be performed during routine followup on LER 89-023 to verify the adequacy and completeness of licensee corrective actions.

b. As a result of the licensee's review of NRC Information Notice 89-73, "Overpressurization of Low Pressure Systems," the licensee discovered that its operational procedures allowed the use of the containment system (CS) system in a manner that appeared to be outside its design basis. Original design documentation indicated that the piping from the containment sump to the suction of the CS pumps was rated at a pressure of 66 psig at 350°F. Licensee procedures and the TS authorized operation of the CS system in the shutdown cooling mode, where entry conditions are 250 psig and 300°F.

The licensee took credit for the CS pumps being redundant to the low-pressure safety injection (LPSI) pumps in its response to IE Bulletin (IEB) 80-12, "Decay Heat Removal System Operability," issued in May 1980. The licensee's response to IEB 80-12, dated June 26, 1980, stated that use of the CS pumps would be restricted to times when primary pressure was below 150 psig. Subsequently, an application for amendment to the operating licensee was submitted by the licensee on November 14, 1980, which designated the CS pumps and the associated piping as equivalent to the LPSI flow path for decay heat removal purposes. The pressure limitation for CS system usage identified by the licensee in response to IEB 80-12 was not included in the amendment request. The licensee's amendment request was approved by the NRC on February 10, 1981.

The inspector identified the following concerns related to this issue:

- The licensee had previously analyzed the CS system and determined that the system was rated at a pressure of 66 psig at 350 degrees Fahrenheit. The licensee failed to place operational restrictions on the system when a request for amendment of the license was submitted to the NRC.

- TS 2.1.1 and licensee procedures allowed operation of the CS system in the shutdown cooling mode entry conditions (250 psig and 300 degrees Fahrenheit). Operation of the CS system under these conditions could have damaged the system piping and/or components with the potential for an intersystem LOCA.

A management meeting has been scheduled in NRC Headquarters to discuss the concerns addressed above. This issue remains unresolved pending further NRC and licensee review. (285/8950-05)

As immediate corrective action, the licensee cancelled the operational procedures that allowed use of the CS pumps for shutdown cooling. The deleted procedures were OI-SC-3, "Alternate Shutdown Cooling Utilizing Containment Spray Pumps," and OI-SC-4, "Termination of Alternate Shutdown Cooling." Additionally, Operations Memorandum 89-05, "Use of Containment Spray Pumps for Shutdown Cooling," was issued on December 22, 1989, directing the control room operators not to use the CS pumps for shutdown cooling purposes unless the temperature in the reactor coolant system is less than 120 degrees Fahrenheit and vented to the atmosphere.

The licensee reviewed operational logs and found no documentation that indicated that the CS system had been used for shutdown cooling, except during depressurized conditions. Based on the documentation reviewed, the licensee stated that it did not appear that the CS piping had been subjected to pressures and temperatures greater than its design basis values. Also, the licensee noted that the subject piping had been hydrostatically tested each refueling outage and the CS pumps have been operationally tested each month.

The licensee is reanalyzing the CS system configuration to determine if the CS system can withstand the pressure and thermal loading associated with shutdown cooling entry conditions. If an analysis cannot support utilization of the system for shutdown cooling, the licensee will request the TS be amended to either delete reference to the CS system or specify limits as to when the CS system can be used for shutdown cooling.

It is commendable that the licensee discovered this design deficiency and took timely actions to institute corrective measures. However, it appeared that the licensee may have a weakness in addressing reportability requirements for nonconforming conditions. For instance, upon design engineering's confirmation that the affected system was not designed for shutdown cooling mode of operation, system engineering readily recommended to the PRC that the applicable procedures be deleted, and this action was promptly taken. It appeared, however, that the licensee failed to identify the condition as being outside the design basis and, therefore, reportable in accordance with 10 CFR Part 50.72.

The licensee issued a 1-hour report pursuant to 10 CFR Part 50.72 on the evening of December 21, 1989, after the inspector informed the plant manager that NRR, Region IV, and the inspector considered the licensee to be outside the design basis for the use of the CS system for shutdown cooling operations. The PRC had convened, recognized, and taken corrective action on the problem as early as December 7, 1989. Per Part 50.72, issues of this nature are to be reported within 1 hour of discovery. In subsequent discussions, licensee management indicated that the condition was not reported because they felt the criterion of Part 50.72 were not met for being outside the design basis. The licensee stated that, although procedures and TS would have allowed operation outside the design basis, there was no indication the plant had operated in this mode.

Normally, a Notice of Violation would be issued for failure to promptly report a condition outside the design basis of the plant in accordance with Part 50.72. However, it is considered to be an isolated Severity Level V violation. The condition was reported, although late, the licensee instituted corrective actions, and it was not a willful violation. Therefore, the 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).

On November 17, 1989, the licensee issued Procedure PED-OP-19, "Evaluation of Potentially Reportable Conditions." This procedure defined licensee policy and provided a method to evaluate conditions discovered by design engineering for potential reportability. The inspector reviewed the procedure and considered the structured format to provide an adequate process for determining reportability that should preclude future errors in reportability determination.

c. On December 13, 1989, during the performance of Procedure ST-ESF-6 for EDG 1, a control room operator alertly noted that the response of the air inlet dampers, which supply combustion and cooling air from the outside environment to the EDG, appeared to be sluggish. There was no definitive response time specified for the dampers in the procedure. The dampers are air-operated by a solenoid and piston mechanism and are an air-to-shut, fail-open design.

On December 14, 1989, an operability test was reperformed on EDG 1 due to an unrelated anomaly. At that time, one of the two inlet dampers failed to open and EDG 1 was declared inoperable.

Maintenance personnel removed, inspected, and reinstalled the solenoid- and piston-operator assemblies. No problems were noted other than the solenoid was sluggish. It was noted that when the solenoids were warmed up, the response was normal.

Upon investigation, systems engineering discovered that the EDG 1 solenoids were not properly suited for outdoor ambient air service conditions as they were rated for operation at a temperature range

of 32°F to 77°F. Systems engineering determined that the solenoids for EDG 2 were unaffected because the solenoids were located inside the EDG 2 room and were not affected by outside ambient temperatures.

On December 15, 1989, a temperature recorder was placed in the EDG 1 room and the dampers were failed open. With the dampers open, a temperature survey of the room was performed and ambient temperature was found to be 49°F with no localized temperatures below freezing. While in this condition, EDG 1 was declared operable.

Coincident with the licensee's approach to make EDG 1 operable by failing open the dampers, systems engineering analyzed EDG components that could be affected by lower room temperatures. It was found that EDG operability was affected by the starting air system that utilizes nondry air and thus risks freezing at temperatures below 32°F. Therefore, systems engineering determined that EDG 1 could remain operable with the dampers failed open provided room temperatures remained above freezing. Engineering recommended that the room ambient temperature be maintained at a minimum temperature of approximately 40°F utilizing existing room heaters.

The PRC reviewed the recommendations made by engineering and modified the recommendations, with engineering concurrence, by allowing temperatures to drop below 32°F, without declaring EDG 1 inoperable, provided:

- Jacket water and lube oil temperatures were maintained within specification.

- Air starting system accumulators were blown down every 2 hours to verify no accumulation of moisture or condensation.

On December 16, 1989, outside air temperatures dropped to approximately -20°F, resulting in some localized EDG 1 room temperatures as low as 19°F. EDG 1 was declared inoperable because temperatures in the room where less than 32 degrees Fahrenheit.

On December 19, 1989, an insulated aluminum box containing electrical resistance heaters was installed around the solenoid valves with a thermocouple readout remotely stationed in the EDG 1 room. The licensee implemented administrative controls to ensure that the temperatures were recorded hourly and that the solenoids were maintained at a temperature greater than 32°F. On December 20, 1989, the inspector reviewed the installation of the insulated boxes when the outside air temperature was approximately -20°F and found that the heaters were maintaining the solenoids at approximately 60°F.

Temporary Modification TM-89-E-026, "Heat Source for Solenoids YCV-871G-20 and YCV-872H-20," authorized installation of the heated, insulated boxes. The inspector reviewed the design of the modification and its associated safety review that concluded that

the installation did not constitute an unreviewed safety question. The heat source was approximately 75 watts, powered by a nonvital source and thermostatically controlled. The temporary modification is currently scheduled for removal in April 1990. The operations staff monitors the status of the modification hourly to verify continued operability.

As permanent corrective action, the licensee is in the process of installing air dryers on the starting air systems for EDGs 1 and 2. Additionally, the licensee was pursuing purchasing and installing solenoids for EDG 1 that will operate over an acceptable temperature range. The completion of these permanent modifications is considered an inspector followup item. (285/8950-06)

The FCS is undergoing a design basis reconstitution program. System Design Basis Document 112, "Emergency Diesel Generators," has been completed. The inspector was concerned as to why the misapplication of the solenoid installation was not identified during the reconstitution effort. The licensee stated that a review of the reconstitution process would be made to determine why the apparent misapplication of the solenoid valves had not been identified when the design basis review was performed. The licensee stated that any actions identified during the review that would improve the reconstitution program would be implemented.

13. Cold Weather Preparations (71714)

The inspectors toured various plant areas and reviewed documentation to verify that the licensee had taken measures established by the PM program to ensure that systems affected by extreme cold weather were properly protected. The items observed and/or reviewed by the inspectors are listed below:

- The freezing point of the cooling systems for the plant emergency, security, and fire water pump diesels had been tested to verify that an adequate amount of antifreeze was present in the cooling systems.
- The steam supply to the condensate storage tank had been initiated.
- Fire water system piping had been dug up for repair of a leaking pipe. The trench containing the piping was covered and heat supplied to the area to prevent the freezing of the piping.
- The stop log used to divert the plant cooling water outflow from downstream to upstream of the intake structure was installed. The flow is diverted to prevent ice floes from clogging the intake structure grids.

Based on a review of the physical plant and documentation, it appeared that the licensee had taken the appropriate actions to ensure that plant

equipment was winterized. The weather has been extremely cold over the past few weeks and the licensee has not experienced any equipment problems.

No violations or deviations were identified.

14. Housekeeping (54834)

During this inspection period, the inspector examined the licensee's housekeeping program. The program was governed by licensee Procedure SO-G-6, "Housekeeping." The purpose of the procedure was threefold: (1) to assign specific responsibilities for maintaining a clean facility, (2) to minimize combustible materials stored in safety-related areas, and (3) to ensure that material deficiencies, industrial safety hazards, cleanliness and housekeeping deficiencies, and radiological protection deficiencies were identified and corrected.

Through training and cross-reference of Procedure SO-G-6 with other procedures for maintenance, modification, and chemical control; the licensee has integrated housekeeping activities into the day-to-day operations.

The inspector considered the licensee's procedural controls for housekeeping to be sound, encompassing, and for the most part, effectively implemented. Occasional breakdowns have been noted, but these were normally associated with maintenance and/or modification activities.

The inspector noted that general housekeeping, plant industrial safety, and work control practices have markedly improved over the past year. This can be attributed to the assignment of an assistant plant manager and an industrial safety coordinator with primary responsibilities in these areas. The inspector noted that the licensee had implemented an effective housekeeping and industrial safety program.

No violations or deviations were identified.

15. Review of the Fitness-for-Duty (FFD) Program (2515/104)

On June 7, 1989, the NRC published the final rule (10 CFR Part 26) and statement of policy on FFD programs for commercial nuclear power reactors, with an effective date for program implementation of January 3, 1990. Part 26 requires appropriate FFD awareness training for employees and specific training for supervisors and escorts. In accordance with the rule, initial training was to be completed prior to assignment of duties within the scope of the rule.

On December 7, 1989, the inspector attended and participated in an 8-hour course for licensee supervisors on the FFD program. The course, "Continued Behavior Observation Program (CBO)," provided participants with the ability to:

- Identify managerial or supervisory roles in implementing OPPD's CBO program.
- Identify the roles of OPPD's FFD personnel, medical, and employee assistance program (EAP) staffs.
- Identify drugs and indications of the use, sale, or possession of drugs in the workplace.
- Implement supervisory techniques for detecting degradation in performance, impairment, or changes in employee behavior.
- Demonstrate ability for initiating appropriate corrective actions including intervention and referral to OPPD's EAP.

The licensee hired, as a permanent staff employee, an individual with extensive law enforcement and drug and alcohol abuse counseling experience to provide training and direction to the FFD, CBO, and EAP programs. The individual has been certified by the state of Nebraska as an alcohol and drug abuse counselor.

The objectives of the course were met through the use of lectures, physical displays of drugs and drug paraphernalia, video tapes, participant interactions, text, and mockup scenarios. The inspector used the applicable portion of NRC Temporary Instruction (TI) 2515/104, "Fitness-For-Duty-Inspection of Initial Training Programs," as a guide in surveying the course.

On December 22, 1989, the inspector learned that the training programs required for general employee awareness and the responsibilities of escorts within the FFD program had not yet been finalized. The inspector did, however, audit the presentation given to employees in their initial or annual general employee training course. This presentation was designed to make employees aware of the reasons for the existing FFD program prior to implementation of the rule. The presentation was in the form of a 30-minute generic videotape produced by the Bureau of National Affairs and entitled, "Straight Dope on Drug Testing." The film provided the student with insights as to why drug testing was necessary in the workplace today, but did not cover the attributes designated in the applicable section of TI 2515/104. At the time, the revised curriculum, designed to provide compliance with Part 26, was scheduled to begin presentation on January 3, 1990.

The videotape presentation, coupled with the distributed pamphlet describing OPPD's site specific FFD program, was established by OPPD to satisfy the requirements set forth in Part 26 for policy communications and awareness training. This presentation or an alternate program given when the licensee first instituted its random drug testing policy in April 1989 was attended by all personnel with unescorted access to the FCS. The inspector did not attend the April 1989 session.

On January 9, 1990, the inspector attended the revised presentation of FFD training designed for general employee awareness and escort training. This training consisted of a 1-hour, licensee produced videotape with the concepts reinforced through a workbook. The revised curriculum was implemented by OPPD to meet the requirements set forth in Part 26 for escort and general awareness training. All badged individuals are currently scheduled to complete this training by January 15, 1990. In order to comply with the rule requiring those with escort responsibilities to be trained by January 3, 1990, or prior to assignment of duties within the scope of the rule, the licensee established administrative controls to deny escort responsibilities to those individuals not trained by January 3, 1990.

No violations or deviations were identified.

16. Exit Interview

The inspectors met with Mr. W. G. Gates, (Division Manager, Nuclear Operations) and other members of the licensee staff on January 19, 1990. 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.

Subsequent to the inspection period, a management meeting was scheduled with the licensee to discuss the unresolved items discussed in paragraphs 4.a, 5, and 12.b of this inspection report.

APPENDIX B

MID-SALP CYCLE REVIEW OUTLINE

FORT CALHOUN

DECEMBER 6, 1989

1. PLANT OPERATIONS

   a. Procedural compliance notably improved
   b. Operations staff performance excellent
      - Handling of RCP high bearing temperature
   c. Addressing plant problems timely
   d. Issues needing attention
      (1) Management determinations of operability
      (2) Actions required when entering an LCO
         (a) Actions
         (b) LCO 2.0.1 UE/reportability
         (c) No voluntary entry into LCO 2.0.1

2. RADIOLOGICAL CONTROLS

   a. No significant problems
   b. Improvement continues in program upgrade
   c. New procedures issued per radiological enhancement program

3. MAINTENANCE AND SURVEILLANCE

   a. Plant equipment adequately maintained and surveilled
   b. Issues needing attention
      (1) I&C maintenance staffing
      (2) Postmaintenance testing and tagging controls (RW heat exchanger)
      (3) Emphasis on DBR verification of surveillance tests (auxiliary feed pump)
      (4) Missing surveillance test packages
      (5) Documented basis for waiver of test requirements

4. EMERGENCY PREPAREDNESS

   a. EP program being upgraded
   b. Issues needing attention
      - Weaknesses identified during last annual exercise

5. SECURITY

   a. Extensive upgrading of security system in progress
   b. Compensatory measures adequate
   c. Instituting proprietary guard force
   d. Contraband searches productive
   e. Issues needing attention
      (1) Day-to-day implementation of security plan

(a) Search and safeguards information areas
(b) Recent enforcement
(2) Schedule for completion of security system upgrade

6. ENGINEERING AND TECHNICAL SUPPORT

a. System engineer concept significant improvement
b. PRA team inspection generally favorable
c. New manager of licensed operator training positive impact
d. Issues needing attention
(1) Part 50.59 evaluations
(2) Fuse control
(3) Breaker coordination study
(4) Prompt action in EOP and AOP upgrade weaknesses
(5) Technical adequacy of procedures (SEP item)
(6) Trend of missed fire watches continues

7. SAFETY ASSESSMENT/QUALITY VERIFICATION

a. Performance adequate
b. Issues needing attention
(1) Dedicated commercial procurement
(2) Prompt action on the SEP V&V inspection open items
(3) NRR submittals