

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-285/88-27

License: DPR-40

Docket: 50-285

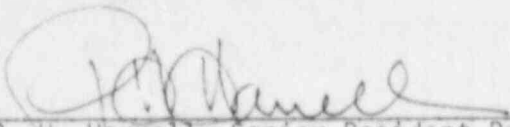
Licensee: Omaha Public Power District
1623 Harney Street
Omaha, Nebraska 68102

Facility Name: Fort Calhoun Station

Inspection At: Fort Calhoun Station, Blair, Nebraska

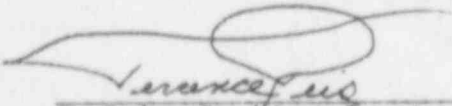
Inspection Conducted: August 1-31, 1988

Inspector:



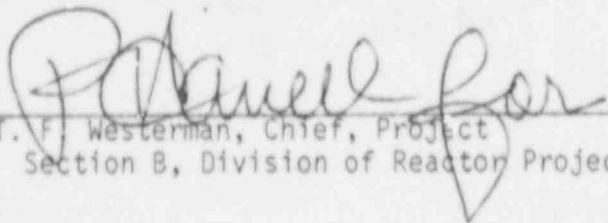
P. H. Harrell, Senior Resident Reactor
Inspector

9-12-88
Date



T. Reis, Resident Reactor Inspector

9-12-88
Date



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

9-21-88
Date

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Inspection Summary

Inspection Conducted August 1-31, 1988 (Report 50-285/88-27)

Areas Inspected: Routine, unannounced inspection including followup on previously identified items, licensee event report followup, operational safety verification, plant tours, safety-related system walkdown, monthly maintenance observations, monthly surveillance observations, security observations, radiological protection observations, in-office review of periodic and special reports, and review of licensee activities related to the instrument air water intrusion event.

Results: Within the 11 areas inspected, no violations or deviations were identified.

DETAILS

1. Persons Contacted

- *W. Gates, Plant Manager
- J. Adams, Reactor Engineer
- *J. Jobba, Supervisor, Radiation Protection
- C. Brunnert, Supervisor, Operations Quality Assurance
- T. Dexter, Supervisor, Security
- *J. Fisicaro, Supervisor, Nuclear Licensing and Industry Affairs
- *J. Gasper, Manager, Training
- *S. Gebers, Supervisor, Radiological Services
- *R. Jaworski, Manager, Station Engineering
- J. Kecz, Supervisor, System Engineering
- *R. Kellogg, Supervisor, Special Services
- *D. Matthews, Supervisor, Nuclear Licensing
- J. O'Connor, Plant Engineer
- *A. Richard, Manager, Quality Assurance and Quality Control
- C. Simmons, Plant Licensing Engineer
- *J. Smith, Manager, Security Services
- S. Trausch, Supervisor, Operations
- S. Willrett, Supervisor, Administrative Services

*Denotes attendance at the monthly exit interview.

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

2. Plant Status

During the period of August 1-16, 1988, the plant operated continuously at approximately 90 percent power. On August 16, 1988, power was reduced due to abnormally high river (condenser cooling water) temperatures and inefficiencies existing in the main condenser. The latter half of August, the plant operated continuously at approximately 80 percent power. The power level reduction to 80 percent was more than substantial to overcome the condenser inefficiencies. This power reduction was also initiated to extend the current refueling outage start date from September 3-23, 1988, due to high system power demand. No plant trips, safety system challenges, or other abnormal plant operations were experienced. On August 20, 1988, the FCS set a world record for pressurized light-water reactor plants by operating continuously at power for 440 days. At the end of this inspection period, the plant had operated continuously for 451 days.

3. Followup on Previously Identified Items (92701)

- a. (Closed) Severity Level IV Violation 285/8724-04: Control of Compressed Gas Cylinders in the Auxiliary Building - This violation

involved the licensee's failure to properly store compressed gas cylinders in the auxiliary building in accordance with established requirements.

To provide clear and concise instructions to plant personnel, the licensee issued a revision to Procedure SO-G-6, "Housekeeping." The revision provided instructions on the acceptable and approved methods to be used to store cylinders. The licensee provided training to the appropriate personnel on proper storage techniques.

The NRC inspector reviewed the revision to Procedure SO-G-6 issued by the licensee. The NRC inspector also verified that the appropriate personnel had been trained on the proper storage techniques. No problems were noted during the reviews.

During tours of the auxiliary building, the NRC inspectors routinely verify that gas cylinders were properly stored. No storage problems have been noted during these tours.

- b. (Closed) Severity Level IV Violation 285/8724-05: Control of the Erection of Scaffolding - This violation involved the licensee's failure to properly control the erection of scaffolding adjacent to safety-related equipment. The primary concern was that the scaffolding should be seismically installed so that the scaffolding would not collapse and damage safety-related equipment during a seismic event.

To provide instructions for the control of scaffolding, the licensee issued a revision to Procedure SO-O-25, "Temporary Modification Control." The procedure requires that a seismic analysis of the scaffolding be performed prior to the shift supervisor authorizing installation.

The NRC inspector reviewed Procedure SO-O-25 to verify that the proper controls for scaffolding seismic analysis and approval for installation had been provided. Based on the review, it appeared that the licensee had implemented proper controls.

Since the issuance of the procedure revision, the licensee has installed temporary scaffolding on one occasion. The NRC inspector reviewed the activities associated with the installation and noted no problems. The review performed by the NRC inspector is documented in paragraph 7.a of NRC Inspection Report 50-285/88-23.

- c. (Closed) Severity Level III Violation 283/8727-04 (Violation B.2.a): Inadequate Instructions Provided in Procedure ST-FP-5 - This violation was related to inadequate instructions provided in Procedure ST-FP-5. The inadequate instructions involved the failure to provide clear and concise directions to operations personnel for resetting the deluge valve on the emergency diesel generator (EDG) room dry-pipe system.

The NRC inspector reviewed the procedures listed below to verify adequate instructions had been provided.

<u>Number</u>	<u>Revision</u>	<u>Title</u>
MP-FP-7	3	Resetting of Diesel Generator Dry Pipe Deluge Valve After Trip or Tripping
ST-FP-5	5	Fire Protection-Auxiliary Building Sprinkler System Testing
CT-FP-11	3	Fire Protection-Functional Test of Diesel Generator Rooms Dry Pipe Deluge Valve

Based on the review performed by the NRC inspector of selected portions of the procedures listed above, it appeared that the licensee had provided adequate instructions to operations personnel. The NRC inspector also verified that the appropriate operations personnel had received training in the procedure changes issued by the licensee. No problems were noted during the reviews.

During routine observation of surveillance activities in June 1988, the testing of the deluge valves in accordance with Procedure ST-FP-11 was observed. No problems were noted during performance of the testing.

During followup on this violation, a number of other related aspects were considered to ensure comprehensive corrective actions had been taken. To ensure that personnel understand testing activities, the licensee established a program for prejob briefings for any surveillance tests performed at a frequency less than or equal to quarterly. This aspect was reviewed and is discussed in paragraph 13.1 of this report. Another aspect of this violation was the need for the licensee to ensure that all personnel followed procedures as written. In NRC Inspection Report 50-285/88-07, the NRC inspector issued Violation 285/8807-03. This violation cited the licensee for personnel not following procedures. The licensee has completed corrective actions to address the violation. The review of the violation is documented in paragraph 3.h of this report.

- d. (Closed) Severity Level III Violation 285/8727-05 (Violation B.2.b): Inadequate Instructions Provided in Procedure AOP-17 - This violation involved the failure of the licensee to provide adequate instructions in Procedure AOP-17, "Loss of Instrument Air," for operations personnel. The instructions did not adequately address the effect of the loss of instrument air for all safety-related systems and components.

Since the issuance of this violation, the licensee has issued six revisions to Procedure AOP-17. Although Revision 3 was issued to address the concerns identified by the NRC, the licensee has continued to upgrade Procedure AOP-17. The NRC inspector reviewed Revision 8 to the procedure and found that the procedure provided adequate instructions to operations personnel for the actions to be taken in the event that instrument air pressure is lost. The NRC inspector also verified that operations personnel had reviewed Revision 8 prior to its issue.

In addition to Procedure AOP-17, the licensee also reviewed Procedures OI-CA-1, OI-CA-2, and OI-CA-3 for adequacy. These three procedures provide instructions for routine system operation. A review of the licensee's corrective actions with respect to these procedures was performed by the NRC inspector. The review is documented in paragraph 13.c of NRC Inspection Report 50-285/88-23.

As noted in paragraph 3.c of this inspection report and in this paragraph, the licensee has experienced problems with the adequacy of procedures. To address this problem on a generic basis, the licensee has established a group, Project 1991, to address procedure adequacy. The Project 1991 group is currently in the process of reviewing all procedures for potential upgrade. The activities of Project 1991 are being tracked under another commitment made by the licensee.

- e. (Closed) Severity Level III Violation 285/8727-06 (Violation B.4): Failure to Issue a Policy on Operation of Plant Equipment by Nonoperations Personnel - This item was related to the absence of a licensee policy to address operation of plant equipment by personnel not in the operations department. The absence of a policy was one factor that contributed to the introduction of water into the instrument air system on August 25, 1987. This event occurred in the water plant and did not affect any safety-related equipment. See NRC Inspection Report 50-285/87-30 for a discussion of this event.

The licensee issued an internal memorandum (FC-2034-87) to all plant personnel on December 31, 1987. The memorandum stated that only operations personnel could operate plant equipment, except for the following activities.

- ° Chemists repositioning valves for primary and secondary sampling.
- ° I&C technicians operating root isolation valves for loop checks, calibrations, or other specified maintenance.

The licensee formalized the policy by revising Procedure 50-0-29, "Conduct of Operations." The revision included the exceptions described above, and also included the following exceptions where personnel not in the operations department are allowed to operate plant equipment.

- ° I&C technicians may reposition nitrogen valves when filling electrical penetrations or performing local leak rate tests.
- ° Personnel may reposition valves within the boundaries of an equipment tagout.
- ° Personnel may reposition valves on hose bibs for potable water, demineralized water, and service air.

The NRC inspector reviewed the policy implemented in Procedure SO-0-29 and it appeared that the licensee had taken appropriate exceptions to operation of plant equipment by personnel not in the operations department. The NRC inspectors routinely review plant activities to verify that nonoperations personnel are operating plant equipment within the established guidelines. No problems have been noted.

- f. (Closed) Unresolved Item 285/8733-06: Lack of a Program for Periodic Testing of the Antifreeze Solution in the Security and Technical Support Center (TSC) Diesel Generators - During an inspection of licensee cold weather preparations, the NRC inspector noted that the licensee had not determined the freezing point of the cooling water system for the security and TSC diesels. A subsequent review by the licensee revealed that procedures had not been issued to require testing of the cooling system freezing point.

The licensee issued Maintenance Orders (MO) 875927 and 875928 to check the specific gravity and freeze points of the respective coolants. Each was verified as satisfactory on January 7 and 8, 1988. To establish a program to check these parameters annually, the licensee has entered winterizing procedures into the preventive maintenance (PM) program. The coolant checks are now scheduled to be performed annually on October 30th.

Based on the review of the procedures and the automated PM schedule, it appeared that the licensee has taken adequate actions to include the verification of cooling water in the security and TSC diesel generators in its cold weather preparations.

- g. (Closed) Unresolved Item 285/8803-01: Operability of Containment Penetration Assembly F-11 - This unresolved item involved a concern as to the operability of Assembly F-11. The concern was identified because the NRC inspector noted that the internal pressure of the assembly was approximately 2 psig. The normal internal pressure of penetration assemblies is approximately 20 psig.

In response to this concern, the licensee contacted the assembly manufacturer, Conax Corporation, to determine if the low internal pressure affected the electrical equipment qualification of the assembly. Conax stated that an internal pressure was not required to be maintained in the assembly to maintain the qualification of the assembly.

On March 9, 1988, the licensee issued an evaluation that discussed the operability of the penetration. The evaluation included a review of the past local leakrate tests performed on Assembly F-11. For the tests reviewed, it was determined that no leakage was identified. The evaluation also noted that Assembly F-11 is a double-barrier canister penetration assembly. This type of construction provides a double-leakage barrier which would require a failure in two distinct barriers before containment integrity would be lost. Based on the reasons discussed above, the licensee concluded that Assembly F-11 was operable.

The NRC inspector reviewed the evaluation and other documentation related to the basis of the conclusions stated in the evaluation. During this review, no problems were noted.

On January 20, 1988, the licensee issued MO 880366 to re-surize Assembly F-11 to 20 psig and to verify the pressure in other assemblies was at least 20 psig. As a result, the pressure in Assemblies D-1 and D-7 was also increased to 20 psig. To ensure that the pressure in all assemblies is maintained at 20 psig, the licensee stated that a PM procedure would be issued to check the pressure in each assembly quarterly.

On June 20, 1988, the licensee formally issued Procedure PM-EE-PENT which provides instructions to record electrical penetration pressure gage readings into its automated, scheduling system. The automated program calls for the task to be performed every 30 days.

Based on the incorporation of Procedure PM-EE-PENT into the PM scheduling system and a review of the engineering analysis of containment integrity, this unresolved item is considered closed.

- h. (Closed) Severity Level IV Violation 285/8807-03: Failure to Follow Procedures as Written - This violation concerned three examples of Licensee personnel failing to adhere to procedures exactly as written as observed by the NRC inspector during an inspection performed in February 1988.

Specifically, during observation of Procedure ST-DC-2, the NRC inspector noted that an electrician performed a portion of Step 1.b.(5) prior to performing Step 1.b.(4). This action was not allowed by procedure. During observation of Procedure ST-ESF-6, the NRC inspector noted that during the portion of the test where the operator was required to unload the diesel generator, the operator temporarily set aside the procedure while concentrating on the control board. By doing this, he inadvertently skipped Step 17 which performed a checkout of the fuel oil transfer pumps. On another occasion, the NRC inspector observed a water plant operator timing the stroke cycle of raw water Valve HCV-2853 per Procedure ST-ISI-RW-1.

Procedurally, the operator was required to use a stopwatch. Instead, the operator used his personal wristwatch which did not have a stop function.

In NRC Inspection Report 50-285/88-07, the NRC inspector documented that the three examples of procedural noncompliance did not affect the safe operation of the plant. However, it was felt they were illustrative of what was perceived as inattention to detail and failure to follow procedures.

At the time of the violation, Procedure S0-G-7 controlled the use of procedures. Procedure S0-G-7 stated, in part, that it is the responsibility of every individual performing activities to follow procedures exactly as written and strict adherence to all procedures is absolutely required. Based on interviews with licensee personnel, it was evident that general awareness of the stringent requirements of Procedure S0-G-7 did not exist.

To reemphasize the requirement for strict procedural compliance and to correct the deficiency of general unawareness with the requirement, the plant manager issued a memorandum, dated February 16, 1988, to all department heads to stress that strict compliance with all procedures is mandatory. To disseminate this information to all station personnel, a videotape concerning the necessity to strict adherence to procedures has been incorporated into the general employee training (GET) program. All personnel with unescorted access to the plant are required to attend this training on an annual basis.

To improve procedures such that procedural compliance is achievable without seriously impairing the productive effort, the licensee has instituted a procedures upgrade project which includes the development of a procedure writer's guide to provide guidance from a human factors perspective. The procedures upgrade program is a part of the licensee's long-term Project 1991. In the interim, personnel have been instructed, in cases where procedures cannot be followed exactly as written, to suspend work and institute on-the-spot procedure changes. The NRC inspectors note increased utilization of this technique in the field since this violation was issued.

Based on the action of the plant manager reiterating the necessity for procedural compliance with their personnel, documented attendance of personnel at these meetings, incorporating these requirements into the GET program, and the increased evidence of the use of on-the-spot procedure changes, it appears the licensee has adequately addressed the concern of procedural noncompliance and reversed the trend to what was perceived as inattention to detail and failure to follow procedures.

- i. (Closed) Open Item 285/8813-01: Lack of a Policy Concerning and the Training of General Maintenance Personnel Regarding Painting in

Enclosed Areas - This concern was identified when the NRC inspector encountered general maintenance personnel painting in the raw water pump bays using combustible paint in a warm, nonventilated environment. The raw water pump bays are normally open to the intake structure atmosphere; however, at the time the concern was identified, the overhead vents were sealed off to accommodate maintenance on the circulating water traveling screens in the overhead. The situation created an environment in the pump bays that was considered questionable from habitability, fire protection, and equipment protection standpoint.

The licensee agreed to formulate a policy and train the general maintenance personnel on the necessary precautions to be taken when painting in enclosed areas.

On August 15, 1988, the NRC inspector reviewed Procedure MP-COATINGS-1, "Application of Protective Coatings Outside Containment," for the application of coatings outside of containment. The procedure defines and specifies confined or limited ventilation space and clearly provides instructions for the temporary ventilation of these spaces.

Additionally, the NRC inspector reviewed verification sheets that the new procedure had been reviewed by general maintenance personnel. No problems were noted during the reviews.

- j. (Closed) Open Item 285/8815-03: Review of the Seismic Calculations for the Safety-Related Air Accumulator Assemblies - This item involved the submission of the seismic calculations for the accumulator assemblies to the NRC's Office of Nuclear Reactor Regulation (NRR) for review. The calculations were submitted by the licensee in a letter dated November 20, 1987.

NRR reviewed the submission made by the licensee. Based on the submission and subsequent discussions with licensee personnel, NRR arrived at the conclusions listed below. The conclusions were documented in a letter dated July 28, 1988.

- o At the time of the plant design, all safety-related valves were required to be seismically qualified.
- o Although Appendix B to 10 CFR Part 50 was in effect at the time of plant construction, specific guidelines on the maintenance of equipment seismic qualification did not exist.
- o The licensee is presently undertaking an extensive program to reconstitute the design basis and will continue to attempt to locate any information to substantiate the statements made in the Updated Safety Analysis Report.

- ° Most of the equipment installed in the plant is in service in other nuclear, as well as fossil, units which either have adequate documentation or have survived ground shaking of actual strong earthquakes in the past.
- ° The site is located in a relatively low seismicity zone as compared to some other nuclear facilities.

Based on these conclusions, NRR approved a licensee proposal to delay the resolution of the seismic qualification of equipment until Unresolved Safety Issue (USI) A-46 has been resolved. The proposal was approved based on the conditions stated below:

- ° Should an earthquake of design acceleration level or higher occur, all safety-related equipment in the plant shall undergo an intensive inspection and evaluation for structural integrity.
- ° For active components, the licensee shall ensure the functional operability of the components prior to restart of the plant.
- ° Once the generic resolution of USI A-46 is complete, the licensee will pursue an aggressive schedule for implementation of the resolution commitments.

Based on the review and conclusions presented by NRR, this item is considered closed. The subject of seismic qualification of the accumulator assemblies will be reviewed during the resolution of USI A-46.

- k. (Closed) Unresolved Item 285/8815-04: Preparation of a Calculation to Verify Accumulator Size - This item was related to a licensee commitment to generate a calculation to verify that the size of the air accumulators for the safety-injection and refueling water tank (SIRWT) level controllers (bubblers) was adequate.

The licensee generated a calculation (ES-87-40) to verify the size of the accumulators. The calculation was generated by licensee personnel and independently reviewed by a licensee contractor. The results indicated that the accumulators are sized to provide air flow to the SIRWT bubblers for greater than 12 hours. An operational requirement of 12 hours for the accumulators was previously established by the licensee to ensure that the bubblers are functional in response to the design basis accident.

The NRC inspector reviewed Calculation ES-87-40 to verify that the licensee had adequately established that the accumulators were properly sized. No problems were noted during review of the calculation.

- l. (Closed) Open Item 285/8815-08: Licensee to Submit a Revision to the Inservice Testing (IST) Program - This item was related to an error

made by the licensee when a revision to the IST program was submitted on December 16, 1987. The error involved the licensee stating that the check valves for the air accumulators for Valves HCV-238 and HCV-239 would be tested quarterly. The check valves are located inside the biological shield and the licensee did not intend that the plant would be shut down to test the check valves.

On July 29, 1988, the licensee submitted a revision to the IST program. This revision changed the program to require the check valves be tested during each cold shutdown.

The NRC inspector reviewed the revised IST program and verified that the frequency of testing the check valves had been changed to cold shutdown.

- m. (Closed) Open Item 285/8815-12: Review of the Safety Analysis for Operability (SAO) Generated by the Licensee - This open item involved an SAO generated by the licensee to evaluate the operability of specific valves in the instrument air system. The operability of the specific valves was required to be reviewed by the licensee since the licensee had not performed testing of the valves to verify that the valves could meet their established design requirements.

To address operability of the valves, the licensee issued an SAO (OSAR 87-10) to justify continued plant operation. The SAO reviewed the status of each valve and provided justification as to why plant operation should continue.

OSAR 87-10 was forwarded by Region IV to NRR for an evaluation to verify that NRR concurred with the conclusions presented by the licensee. NRR reviewed OSAR 87-10 and concluded that the licensee was in compliance with the applicable rules and regulations, and continued safe operation of the plant was justified. During review of OSAR 87-10, NRR noted that the information provided was generally underdeveloped and required numerous telephone calls to the licensee to determine the specific details of how the licensee reached the conclusions stated in OSAR 87-10. The licensee made a commitment (Item No. I.B.2.b, Project No. I.C.10 and I.C.11) in response to the instrument air water intrusion event to upgrade the process used to develop SAOs. A review of the SAO process will be performed during followup on the commitment made by the licensee.

The NRC inspector previously reviewed the SAO issued by the licensee. The results of the review are documented in NRC Inspection Report 50-285/88-15.

- n. (Closed) Open Item 285/8819-01: Relabeling of Instrument Air Components - This item involved the failure of the licensee to relabel components in the instrument air system after a system change was

made. The system change involved changing the air supply for the EDG rooms deluge valve from the instrument air system to the plant air system.

The licensee relabeled the affected components to indicate the components are installed in the plant air system. The NRC inspector reviewed the new labels added by the licensee and verified the tagging had been adequately performed. No problems were noted.

o. (Closed) Unresolved Item 285/8819-02: Apparent Failure of a Licensed Operator to Receive Training on System Design Change Information -

This unresolved item concerned the apparent failure of a licensed operator to receive training in system design change information. On June 27, 1988, the NRC inspector attended the pretest briefing for the annual functional test of the dry pipe deluge valve for the EDG rooms as required by Procedure S7-FP-11. During performance of this test in July 1987, water from the fire water system entered the instrument air system and ultimately caused EDG 2 to shut down. Since the 1987 event, instrument air no longer services this system, as it has been replaced by service air. During the pretest briefing, the NRC inspector noted that an onshift licensed operator was not aware that instrument air no longer serviced the deluge valve. This indicated an apparent weakness in the licensed operator training program.

On August 4, 1988, a staff member of the training department presented the NRC inspector with a lesson plan and lesson notes pertinent to the design change, as well as verification that the licensed operator attended a lecture on the material. From the material and verification presented to the NRC inspector, it is apparent that the licensed individual did receive training on the system design change but was not able to recall the training. It should be noted that the NRC inspector questioned three other onshift licensed operators as to their knowledge of the system. All three were aware of the design change which had been implemented. Based on the information presented, this unresolved item is considered closed.

The NRC inspector performed a review to verify that the licensee had establish a program to ensure training is provided to licensed operators for all temporary modifications. The NRC inspector reviewed the Training Program Master Plan for licensed operator requalification and found that formal training is required for all permanent plant modifications but not necessarily required for temporary modifications. The manner in which information is disseminated to licensed operators on temporary modifications is through the shift turnover sheet, Form FC-95, which requires operators to review the current temporary modifications log to be aware of all current modifications. Additionally, the NRC inspector reviewed Procedure SO-0-25, "Temporary Modification Control," which requires the cognizant engineer, for temporary modifications of

14 days duration or longer, to mark up a copy of the applicable drawing or wiring diagram to reflect the current arrangement and enter these corrected drawings into official distribution.

Based on the review, it appeared that the licensee had established an adequate program for ensuring that information on temporary modifications was disseminated to the licensed operators.

- p. (Open) Open Item 285/8823-06: Upgrade of the PM Program for the Instrument Air System - This open item involved implementation of an upgrade of the PM program for the instrument air system based on recommendations made by the licensee's consultant. The recommendations included routine blowdown of system accumulators and low points, and routine rebuilding of system regulators.

Subsequent to the issuance of this open item, the licensee contacted the consultant to discuss the recommendations. The consultant stated that as long as the system dew point was maintained within the stated design basis, periodic blowdowns would not be required. However, should another water intrusion event occur, the consultant stated that blowdowns should be immediately initiated.

With respect to the air regulators, the licensee issued an internal memorandum (FC-1589-88) that stated the regulators would be rebuilt or replaced on a regular basis. The memorandum also stated that the rebuild or replace program would be established prior to the end of the 1988 refueling outage and the rebuild or replace programs would begin in 1989.

The NRC inspector reviewed the evaluation performed by the licensee. It appears, based on the licensee's demonstrated capability to maintain the system within design limits, that periodic blow down of the system is not required.

This item remains open pending the inclusion of the air regulators in the PM program and the rebuilding or replacement of the regulators.

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

Through direct observation, discussions with licensee personnel, and review of records, the following event reports were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with the Technical Specifications (TS).

The LERs listed below are closed:

- ° 87-025 Shutdown of EDG 2 Due to High Coolant Temperatures
- ° 87-033 Water Intrusion into the Instrument Air System

A discussion of the review performed by the NRC inspector for each LER is provided below:

LER 87-025 reported an event where EDG 2 tripped off due to high temperatures in the cooling water system. The high temperatures were caused by the failure of the radiator exhaust damper to open. The radiator exhaust damper failed to open due to the presence of water in the air accumulator. LER 88-033 reported an event where water was inadvertently introduced into the instrument air system from the fire water system.

Both of the events described above were reported to describe an event where fire water was inadvertently introduced into the instrument air system. The corrective actions described by the licensee in the LERs have previously been reviewed during followup on the water intrusion event. The followup performed by NRC inspectors is discussed in NRC Inspection Reports 50-285/87-27, 50-285/87-30, and 50-285/88-15. Because the elements provided in the LERs have been reviewed and enforcement action taken as appropriate, these two LERs are considered closed.

No violations or deviations were identified.

5. Operational Safety Verification (71707)

The NRC 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 NRC inspectors made several control room observations to verify the following:

- o Proper shift staffing
- o Operator adherence to approved procedures and TS requirements
- o Operability of reactor protective system and engineered safeguards equipment
- o Logs, records, recorder traces, annunciators, panel indications, and switch positions complied with the appropriate requirements
- o Proper return to service of components
- o MOs initiated for equipment in need of maintenance
- o Appropriate conduct of control room and other licensed operators
- o Management personnel toured the control room on a regular basis

The following items were reviewed during this inspection period:

- a. On August 16, 1988, a licensee contractor notified the licensee that the control system for the EDG 2 fresh-air dampers may not meet the requirements of Appendix R to 10 CFR Part 50 for alternate safe shutdown capability. The discrepancy was noted by the contractor during a review of the draft design basis document.

During the review, the contractor identified a design error in an electrical conductor, used to control the position of the EDG 2 fresh-air dampers, that is installed in the control room and is used to provide the control room operators with a method of operating the dampers. If control room evacuation is required due to a fire, the EDGs are started and loaded locally in the EDG rooms. If the fire in the control room was a "smart" fire, the conductor could become shorted and could cause the fresh air dampers to go shut. The existence of this installation does not comply with the requirements of Appendix R in that the capability to perform a remote shutdown of the plant can be affected by a fire in the control room.

The licensee, in response to this identified problem, opened and tagged the power supply breaker for the dampers. This action caused the dampers to open and stay open. With the breaker open, a fire in the control room will not affect operation of the breakers.

As a permanent correction for this problem, the licensee made a change to Procedure AOP-6, "Evacuation of the Control Room." The change required that an operator open the electrical supply breaker for the EDG 2 dampers if the control room had to be evacuated.

The NRC inspector reviewed the actions taken by the licensee to address this concern. It appeared that the licensee had taken timely proactive measures to ensure that a fire in the control room would not adversely affect operation of EDG 2. No problems were noted during the review.

- b. During an inspection performed from August 8 through August 12, 1988, by NRC Region IV inspectors, an inspector requested calculations to verify that the safety-injection pumps could pump water at a temperature of 40°F. TS 2.3 states that the minimum allowable temperature for the SIRWT is 40°F. The SIRWT would normally supply water to the safety-injection pumps during a design basis accident. For this reason, the NRC inspector was concerned that the SIRWT would be at a temperature of 40°F, as allowed by TS 2.3, and that the safety-injection pumps would not be capable of pumping water at this temperature.

The licensee performed a document review and was able to verify that the safety-injection pumps had been successfully tested using water at 54°F, but could not confirm that the pumps had been tested using water at 40°F. During a review of the documentation, the licensee confirmed that the pumps failed a test when water at 46°F was used.

To address this concern, the licensee reviewed control room logs to determine the lowest temperature that had been recorded for the SIRWT temperature. The licensee confirmed that the lowest temperature recorded was 64°F. Based on the information discussed above, the licensee initiated a self-imposed higher limit for the SIRWT temperature. The licensee issued an operations memorandum to raise the lower temperature limit for the SIRWT from 40°F to 60°F. By imposing this administrative limit, the licensee will ensure that the temperature of the SIRWT will be maintained above the temperature at which the pumps had been successfully tested.

The NRC inspector reviewed the actions taken by the licensee. It appeared that the actions were conservative and adequately addressed the NRC inspector's concerns. No problems were noted during the review.

The licensee is currently reviewing TS 2.3 to determine whether or not to submit an amendment request to change the lower limit of the SIRWT to 60°F.

No violations or deviations were identified.

6. Plant Tours (71707)

The NRC 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.
- ° 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 a tour of the plant, the NRC inspector noted that the operations department had posted a sign throughout the plant. The sign was posted to thank all personnel for their efforts in providing support to the operations department that resulted in the longest continuous operation at

power for any pressurized light-water reactor (LWR). On August 20, 1988, the FCS broke the existing world record for LWRs by operating continuously for 440 days. The posting of the sign by the operations department is an indication that the licensee was taking actions to promote the cooperation between the various licensee organizations. The lack of intraorganizational support was a concern identified in the latest systematic assessment of licensee performance (SALP) report.

No violations or deviations were identified.

7. Safety-Related System Walkdown (71710)

The NRC inspector walked down accessible portions of the following safety-related system to verify system operability. Operability was determined by verification of selected valve and switch positions. The system was walked down using the drawings and procedure noted.

- Emergency Diesel Generator 2 Support Systems (Procedure OI-DG-2, Revision 28; and Drawings B120F07001, Revision 6; B120F03001, Revision 7; and B120F04002, Revision 3)

During the walkdown, the NRC inspector noted no discrepancies between the drawings, procedure, and plant as-built conditions for the selected areas checked.

No violations or deviations were identified.

8. Monthly Maintenance Observations (62703)

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

- The TS limiting conditions for operation were met while systems or components were removed from service.
- Approvals were obtained prior to initiating the work.
- Activities were accomplished using approved MOs 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 NRC inspector reviewed and/or observed the following maintenance activities:

- Repair bearings on Component Cooling Water (CCW) Pump AC-3A (MO 883287)
- Mechanical installation and test procedure for an air compressor (MR-FC-87-32)

A discussion of each item is provided below:

- a. On August 3, 1988, the NRC inspector observed the return-to-service of CCW Pump AC-3A. CCW Pump AC-3A had been declared inoperable because its motor current was running high and upon investigation the licensee discovered that the pump shaft bearings were running hot. Machinists repacked the bearings under authorization of MO 883287. The NRC inspector observed the preliminary run-in of the pump and monitoring of the temperature of the replaced bearing with the use of a contact pyrometer.
- b. On August 12, 1988, the NRC inspector reviewed plant modification Procedure MR-FC-87-32. The procedure provided instructions for installing, connecting, and testing of the air compressor used to operate the deluge valve for the EDG rooms. The NRC inspector found the package to include a safety review, detailed work instructions, and postinstallation testing instructions. Based on the review, it appeared that Procedure MR-FC-87-32 provided adequate instructions for installation of the air compressor.

On August 15, 1988, the licensee completed construction of a new warehouse. The warehouse is now partially located within the protected area boundary and provides access without personnel having to leave the protected area. The old warehouse was located outside the protected area. The new warehouse should promote efficiency of the licensee's maintenance staff as maintenance personnel will not have to exit the protected area to obtain spare parts. The efficiency of the maintenance staff was a concern addressed in the last issue of the SALP report.

No violations or deviations were identified.

9. Monthly Surveillance Observations (61726)

The NRC inspectors observed selected portions of the performance of, and/or reviewed, completed documentation for the TS-required surveillance testing on safety-related systems and components. The NRC inspectors verified the following items during the testing:

- Testing was performed by qualified personnel using approved procedures.

- Test instrumentation was calibrated.
- The TS limiting conditions for operation 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.

The NRC inspectors observed and/or reviewed the documentation for the following surveillance test activities. The procedures used for the test activities are noted in parenthesis.

- Monthly test of the reactor coolant system low-flow trip (ST-RPS-3)
- Quarterly test of the main steam valves (ST-ISI-MS-1)
- Monthly testing of the primary power-operated relief and safety valve tailpipe temperature monitor (ST-TEMP-1)

A discussion of each surveillance observed is provided below:

- a. On August 9, 1988, the NRC inspector observed an I&C technician performing the monthly functional check of the reactor coolant low-flow trip of the reactor protection system. During performance of the procedure, the technician reached a sequence of steps which could not be performed exactly as written. The technician terminated the test, returned the system to operation, and initiated a procedure field change to accommodate current conditions. The procedure was changed and the test reinitiated and completed on August 10, 1988, in the absence of the NRC inspector.
- b. On August 16, 1988, the NRC inspector witnessed the inservice testing of the air-operated Valve YCV-1045A which serves as an isolation valve for steam from Steam Generator A to the steam-driven auxiliary feedwater pump. The valve fails open on a loss of air pressure. An accumulator is installed to hold the valve shut in the event of a loss of instrument air pressure. The NRC inspector witnessed the testing of check Valve IV-1045A-C, associated with the accumulator. It exhibited no leakage in a soap bubble test. The NRC inspector also witnessed the stroke timing of Valve YCV-1045A in both the open and closed directions. In each direction, the stroke time was less than 50 percent of the required maximum. The NRC inspector witnessed the system returned to normal operating condition and the normal operating lineup verified by a quality control inspector.

- c. On August 18, 1988, the NRC inspector independently verified, via the instructions in Procedure ST-TEMP-1, that the tailpipe temperatures for the primary power-operated relief and safety valves were within acceptable ranges. This procedure involved only reading and recording the respective temperatures.

In addition to the above surveillance testing reviews, the NRC inspector also reviewed the completed surveillance tests listed below. The tests were reviewed to verify that prejob briefings had been performed. This review was performed as a followup to a commitment made by the licensee as discussed in paragraph 13.1 of this inspection report. During the review, the inspector also verified the overall adequacy of the completed tests. No problems were noted.

- o Fire Detection Zones Calibration (ST-FD-1)
- o Full-flow Test of the Motor-driven Fire Pump (ST-FP-4)
- o Containment Isolation Valve Leakrate Test (ST-CONT-3)
- o Fire Barrier Penetration Inspection (ST-FP-9)
- o Fire Protection - Functional Test of EDG Deluge Valve (ST-FP-11)
- o Chemical and Volume Control Valves Inservice Testing (ST-ISI-CVCS-1)
- o Component Cooling Valves Inservice Testing (ST-ISI-CC-1)
- o Component Cooling Water Pump Inservice Testing (ST-ISI-CC-3)
- o Waste Disposal Valves Inservice Testing (ST-ISI-WD-1)
- o Refueling System Interlocks (ST-FH-1)
- o Leakage Test of the Waste Gas System (ST-WG-1)
- o Toxic Gas Monitors (ST-TGM-1)

No violations or deviations were identified.

10. Security Observations (71881)

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

- o The security organization was properly manned.
- o Personnel within the protected area (PA) displayed their identification badges.
- o Vehicles were properly authorized, searched, and escorted or controlled within the PA.
- o Persons and packages were properly cleared and checked before entry into the PA was permitted.
- o The effectiveness of the security program was maintained when security equipment failure or impairment required compensatory measures to be employed.
- o 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.

On August 19, 1988, the licensee issued a security bulletin to address the announcement of the arrival of NRC personnel on site. The bulletin stated that security personnel shall not announce the arrival of NRC personnel. The bulletin also states that security personnel shall not announce the arrival on site of licensee management personnel. This bulletin was issued in anticipation of a pending rule change to 10 CFR Part 50 becoming effective which will prohibit the announcement of the arrival of an NRC inspector on site.

No violations or deviations were identified.

11. Radiological Protection Observations (71709)

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

No violations or deviations were identified.

12. In-office Review of Periodic and Special Reports (90713)

In-office review of periodic and special reports was performed by the NRC resident inspectors and/or the NRC Fort Calhoun project engineer 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.
- Determination that planned corrective actions were adequate for resolution of identified problems.
- Determination as to whether any information contained in the correspondence report should be classified as an abnormal occurrence.
- Correspondence did not contain incorrect, inadequate, or incomplete information.

The NRC inspectors reviewed the following correspondence:

- July Monthly Operating Report, dated August 12, 1988
- Monthly Operations Report for July 1988, undated
- Revision of the Inservice Inspection Program Plan for the Fort Calhoun Station, dated July 29, 1988
- Relief Request from ASME Boiler and Pressure Vessel Code Section XI, dated July 29, 1988
- Response to Generic Letter 88-13, dated August 31, 1988
- Improvements in the Licensed Operator Requalification Training Program, dated August 30, 1988
- Implementation of a Commitment Tracking System, dated August 30, 1988
- Additional Information for Response to NRC Generic Letter 88-05, dated August 31, 1988
- Supplemental Reports Identified in LERs, dated August 30, 1988

No violations or deviations were identified.

13. Review of Licensee Activities Related to the Instrument Air Water Intrusion Event (92701)

On July 6, 1987, the licensee experienced an event where water from the fire water system entered the instrument air system. On November 13, 1987, a conference was held at the NRC Headquarters Office to discuss the NRC's concerns related to the event and the licensee's corrective actions that would be taken in response to the concerns. The licensee, in a letter dated November 20, 1987, submitted written confirmation of the corrective actions that they would implement.

On February 22, 1988, the NRC issued a Notice of Violation and Proposed Imposition of Civil Penalty based on the results of followup NRC

inspections on the instrument air event. The results of the inspections performed by the NRC are documented in NRC Inspection Reports 50-285/87-27 and 50-285/87-30. On April 27, 1988, the licensee responded to the Notice of Violation. In this response, in addition to addressing the specific violations contained in the Notice, the licensee provided a status of the actions related to commitments made during the conference on November 13, 1987. The purpose of this portion of this inspection was to verify that the licensee had adequately implemented those commitments. A discussion of each commitment reviewed is provided below:

a. Conduct Employee/Management Conferences (Item No. I.B.3.a, IA Project No. I.C.8)

This item was related to the licensee's commitment to conduct small group meetings between employees and management personnel. The meetings were held so management could communicate their expectations and so employees could discuss their safety and personal concerns directly with management.

The licensee conducted the first series of meetings with appropriate OPPD personnel in January and February 1988. A followup series of meetings was conducted with personnel in April 1988.

The NRC inspector reviewed documentation to verify that all appropriate personnel had attended the small group meetings. During the review, the NRC inspector noted that all but nine people had attended the second session. The licensee stated that the nine individuals would be provided with a small group meeting in the near future.

The NRC inspector discussed the results of the small group meetings with various OPPD personnel. Generally, the personnel felt that they were able to express concerns at the meetings and get management response to the concerns. Many individuals felt that the meetings improved communications between management and employees.

This item is considered closed.

b. Issuance of a Policy Statement Concerning Equipment Operation by Nonoperations Personnel (Item No. I.B.4.a, IA Project No. I.C.6 and I.C.7)

This item was related to a commitment made by the licensee to issue a policy statement on operation of plant equipment and components by personnel not in the operations department.

This item was formally issued as Violation 285/8727-06 in NRC Inspection Report 50-285/87-27. This violation was reviewed and is discussed in paragraph 3.e of this inspection report.

This item is considered closed.

c. Perform Cleaning and Flushing of the IA System (Item No. II.A.3.a, IA Project No. I.A.27)

This item involved a licensee commitment to evaluate the need to clean and flush the IA system. Cleaning and flushing the system was proposed by the licensee to ensure that particulates and moisture were removed.

The licensee performed an evaluation of all the data collected thus far on the status of the instrument air system. The data included measurement of the system dew point, sampling the system for particulates, disassembly of valves to check for corrosion products, and inspection of the filters contained in the air regulators installed on the valves. Based on the results obtained from examination of the IA system, the licensee concluded that a cleaning and flushing of the system was not required. The conclusion reached by the licensee is documented in an internal licensee memorandum (FC-1047-88) issued on May 24, 1988.

The NRC inspector has reviewed a wide variety of actions performed by the licensee in response to the instrument air event. The activities reviewed are documented in this section of this report and in NRC Inspection Report 50-285/88-23. Based on the review performed by the NRC inspector and a review of the evaluation performed by the licensee, it appeared that the conclusion reached by the licensee related to cleaning and flushing the system was appropriate.

During the upcoming refueling outage, the licensee plans on disassembling additional air-operated valves to check for abnormalities. See paragraph 13.q of this inspection report. The NRC inspectors will review licensee activities in this area. If appropriate, further discussions will be held with the licensee on the need to clean and flush the system based on the results of the valve teardown inspections.

This item is considered closed.

d. Testing of Safety-Related Valves Not in the Inservice Inspection Program (Item No. II.A.4.a, IA Project No. None)

This item is related to a commitment made by the licensee to test air-operated, safety-related valves that were not in the inservice inspection program. The purpose of the tests was to determine, through cycling of the valves, whether or not the valves had been degraded due to the intrusion of water into the IA system.

To test the 38 valves selected by the licensee as a representative sample, Procedure SP-STROKE-1, "Inservice Testing of Air-Operated, CQE Valves," was issued. The procedure established requirements for the valves to be cycled on a monthly basis and the cycle time

recorded. The data has been recorded for the valves each month since December 1987 and the data has been trended for review by the IA system engineer.

The IA system engineer has reviewed the data and determined that no degradation of valve operation has occurred since data trending was initiated. During cycling of the valves, minor problems were encountered. The problems included items such as the valve packing being too tight, air regulators leaking slightly, and valves sticking. The licensee issued MOs and immediately repaired the minor problems. The licensee stated that the problems encountered would not have prevented the valve from performing its intended safety function.

The NRC inspector reviewed Procedure SP-STROKE-1, Revision 4, and the trending data recorded by the licensee. Based on this review, it appeared that the licensee had established an appropriate program for testing the valves. In addition, a review of the trending data appeared to indicate that none of the valves had degraded due to the presence of water in the IA system.

During the upcoming refueling outage, the licensee plans on reviewing the recorded data to determine whether or not to continue cycling the valves. The NRC inspector will review the evaluation when completed by the licensee. This is considered an open item pending completion of the review. (285/8827-01)

e. Increased Frequency of Cycling of Valves in the Inservice Inspection Program (Item No. II.A.4.b, IA Submittal No. I.A.9)

This item was related to a commitment made by the licensee to increase the frequency of cycling of valves in the inservice inspection program. Valves that were normally cycled on a quarterly basis were decreased to a cycling frequency of monthly. The increased frequency was performed to determine whether or not the valve was affected by the introduction of water into the instrument air system.

The licensee changed the inservice inspection schedule to require that safety-related, air-operated valves were cycled each month versus each quarter. Each valve was cycled in accordance with the instructions provided in the previously existing test procedure that was issued for each valve. Each time a valve was cycled, the time required for cycling was recorded and compared against the acceptance criteria provided in the test procedure. The data obtained was recorded for trending purposes by the licensee. Based on the data recorded to date, no detrimental affects have been identified by the licensee.

The NRC inspector reviewed a sampling of the valve cycling tests performed by the licensee. During the review, the NRC inspector

verified that the testing was performed on a monthly basis and that the timing recorded for valve cycling complied with the established acceptance criteria. No problems were noted during the review.

During the upcoming refueling outage, the licensee plans on reviewing the recorded data to determine whether or not to continue cycling the valves at a monthly frequency. The NRC inspector will review the evaluation when completed by the licensee. This is considered an open item pending completion of the review. (285/8827-02)

This item is considered closed.

- f. Update the Inservice Inspection Plan (Item No. II.A.4.d, IA Project No. None)

This item is related to a licensee commitment to issue a revision to the inservice inspection (ISI) plan for review and approval by the NRC. The update of the ISI plan was to be performed to include the accumulator assembly check valves.

This item was formally issued as Open Item 285/8815-02 in NRC Inspection Report 50-285/88-15. This item will be reviewed during the followup inspection on the open item.

This item is considered closed.

- g. Assessment of Instrument Air System Design to Current Industry Standards (Item No. II.A.5.b, IA Project No. I.A.14)

This item was related to the licensee obtaining the services of a consulting firm to assess the design of the IA system against current industry standards.

Since the occurrence of the instrument air event, the IA system has been reviewed by two engineering firms and a firm specializing in the sale of IA systems. These three firms performed four separate reviews of the system. During the reviews, the consulting firms identified a number of recommendations for upgrading the system.

The licensee evaluated the reviews performed by the consultants and concluded that, with specific system modifications, the IA system complies with all industry standards. The evaluation performed by the licensee is documented in an internal memo (PED-FC-88-468). The modifications to be performed to the IA system are being tracked by other commitments made by the licensee.

The NRC inspector reviewed the evaluation performed by the licensee. Based on the discussion provided by the licensee, it appeared that the consultants performed an adequate, indepth review of the IA system. The system is designed design, maintenance, operation,

and testing aspects. The NRC inspector will review implementation of the recommended modifications during followup on the specific licensee commitments.

This item is considered closed.

- h. Formation of an Instrument Air Steering Committee (Item No. II.B.1.c, IA Project No. None)

This item involved a commitment to establish an IA steering committee. The committee was established to monitor and coordinate resources, activities, and information to provide timely response to commitments made as a result of the instrument air water intrusion event.

The committee established by the licensee included members from engineering, licensing, training, and an upper-level management individual as chairman. The committee met on a monthly basis and discussed the status of each item related to commitments made as a result of the IA event. The committee established a tracking system to ensure each item was completed in a timely manner.

The NRC inspector reviewed a sampling of minutes from meeting held by the committee. Based on this review, it appeared that the committee functioned effectively in tracking each commitment and providing timely close out of each item. The licensee stated that this committee would be disbanded when each item has been fully addressed.

This item is considered closed.

- i. Upgrade General Employee Training for Safety Awareness (Item No. II.B.2.a, IA Project No. I.C.9)

This item involved a commitment made by the licensee to upgrade general employee training (GET) to increase safety awareness. The method of instruction to be employed was the preparation of a video tape.

The NRC inspector attended GET in July 1988. During the class, the instructor played a video tape that featured the plant manager. The tape effectively stressed the need for safety awareness. In discussions with training personnel, it was established that the tape is played for all general employee training classes.

This item is considered closed.

- j. Provide Training in Field Observations (Item No. II.B.2.b, IA Project No. I.C.15)

This item is related to a licensee commitment to train personnel in the methodology for field observations. The intent of providing the

training is to provide personnel with the capability to assess the effectiveness of general employee training (GET) and verify that GET results in improved safety consciousness and procedural compliance through observations in the field.

To establish a training program for observation training, the licensee issued the following documents.

<u>Number</u>	<u>Title</u>
NA	Training Development Plan for the Observation Training Program
10-36-01	Instructor Handbook for Introduction to Observation Training
10-36-02	Instructor Handbook for Four Steps of an Observation
10-36-03	Instructor Handbook for Observation Training Videotape Exercise
10-36-01	Student Handbook for Introduction to Observation Training

The licensee has provided training for most of the appropriate division heads, supervisors, and foremen. The licensee stated that training for the remaining management personnel would be performed in the near future.

The NRC inspector reviewed the lesson plans and student handout listed above. Based on the review, it appeared that appropriate instructional material had been developed. The NRC inspector also reviewed the attendance lists and noted that most of the management personnel had attended the training.

This item is considered closed.

k. Upgrade of Lesson Plans (Item No. II.B.2.C, IA Project No. I.C.12)

This item was related to a commitment to upgrade the lesson plans used in the licensed-operator training program. The lesson plans are to be upgraded on an ongoing basis and are to be upgraded to emphasize the unique features of systems which have the potential for detracting from the safety of the plant.

To ensure that lesson plans are upgraded during the next routine revision, the licensee revised the training administrative procedures. The procedures were revised to emphasize that lesson plans include a discussion of the unique system features. The administrative procedures revised by the licensee are listed below:

<u>Number</u>	<u>Title</u>
TAP-2	Training Program Requirements: Identification, Analysis, Approval, and Authorization
TAP-3	Training Program Design
TAP-4	Training Program Development
TAP-7	Revision of Training Programs
TAP-17	Review of Training Programs

The NRC inspector reviewed the changes made to the training administrative procedures. Based on this review, it appeared that the licensee has established a program to ensure that lesson plans are upgraded on an ongoing basis.

This item is considered closed.

1. Provide Prejob Briefings for Surveillance Tests (Item No. II.B.2.d, IA Project No. None)

This item involved a commitment made by the licensee related to providing prejob briefings prior to the performance of surveillance tests. The briefings were to be provided for testing done at a frequency less than quarterly.

To address this item, the licensee revised each appropriate surveillance test to require that a prejob briefing be given. A written verification of performance of the briefing was also provided in each appropriate test.

To ensure that any new surveillance test contains a requirement for a briefing, if appropriate, the licensee revised Procedure SO-G-23, "Surveillance Test Program." The revised procedure established a requirement for the inclusion of a briefing in all surveillance tests that have a frequency less than or equal to quarterly. The NRC inspector reviewed a sampling of completed surveillance tests that were performed at a frequency less than quarterly. See paragraph 9 of this inspection report for a list of the surveillance tests reviewed by the NRC inspector. The tests were reviewed to verify that a prejob briefing had been performed. The NRC inspector also attended two prejob briefings to verify that the briefings were adequate. The NRC inspector reviewed Procedure SO-G-23 to verify that the licensee had provided proper instructions for the preparation of surveillance tests. No problems were noted during any of these reviews.

This item is considered closed.

- m. Reemphasize Communications with the NRC (Item No. None, IA Project No. None)

This item involved a commitment made by the licensee to reemphasize the requirement to notify the NRC of onsite events. The need to reemphasize communications was due to the failure of the licensee to notify the NRC of the instrument air water intrusion event.

To reemphasize communications with the NRC, the plant manager issued a memorandum (FC-1786-87) to the shift supervisors, licensed senior operators, and shift technical advisors. The memorandum stated the NRC should be notified promptly after any event.

The NRC inspector reviewed the memorandum and noted that it provided the proper perspective for notification of the NRC. Since issuance of the memorandum, the licensee has experienced a number of events where the notification of the NRC was required. In each instance, the licensee promptly notified the NRC.

This item is considered closed.

- n. Dampers for the EDGs to be Added to the ISI Program (Item No. None, IA Project No. None)

This item involved a commitment made by the licensee to add the fresh-air dampers (YCV-871A, YCV-871B, YCV-871C, YCV-871D, YCV-871G, and YCV-871H) for the EDGs to the ISI program. The licensee made the commitment to ensure that damper operation was verified on a regular basis to ensure proper operation.

The licensee, after a review performed subsequent to making the commitment, has opted not to include the dampers in the ISI program. Instead, the licensee has included the dampers in the PM program.

The NRC inspector previously reviewed the program implemented by the licensee. The details of the review are provided in paragraph 13.j of NRC Inspection Report 50-285/88-23.

This item is considered closed.

- o. Testing of the Accumulator Assembly Check Valves (Item No. None, IA Project No. None)

This item involved a commitment to test all check valves installed as part of the accumulator assembly on safety-related valves.

This item was formally issued as Violation 285/8727-03 (Violation B.1) in NRC Inspection Report 50-285/87-27. The commitment identified by this item will be reviewed during followup on the violation.

This item is considered closed.

p. Provide Indepth Operator Training for the IA System (Item No. None, IA Project No. None)

This item involved a commitment to provide indepth training to licensed operators on the function and operation of the IA system.

The licensee provided additional indepth training by classroom discussions and/or individual review of the following items:

- LER 87-033, "Water Intrusion Into the Air System"
- Nuclear Network Entry OE-2262, "Failure of Safety Systems Due to Unintentional Introduction of Water into the Instrument Air System at Fort Calhoun"
- Conference, November 13, 1987, Meeting Summary
- Presentation given on air system problems at American Nuclear Society Meeting on November 19, 1987
- NRC Inspection Reports 50-285/87-27 and 50-285/87-30
- LER 87-025, "Emergency Diesel Generator Shutdown on High Coolant Temperature"

The NRC inspector reviewed the material provided to the licensed operators. Based on the review, it appeared that the licensee had provided training to the licensed operators that covered all aspects of the water intrusion event. The NRC inspector also reviewed the documentation of operator attendance in classroom presentations and in individual review of the information provided. No problems were noted during the review.

This item is considered closed.

q. Outage and Postoutage Activities to be Performed on the IA System

As a result of reviews performed by consultants and licensee personnel, a number of activities were identified that can be completed only when the plant is shut down. The activities are related to system modification and inspection. Each item is discussed below:

- A valve teardown program has been initiated and will continue during the upcoming outage in accordance with a commitment (Item No. II.A.3.b, IA Project No. I.A.1, I.A.2, and I.A.3) made by the licensee. The valve teardown program was initiated to determine if damage occurred to valves that had been exposed to water.

- o The licensee identified valves in the ISI program that need to be cycled and timed to verify proper operation. Three valves were identified that could not be cycled until the plant was placed in cold shutdown. The licensee made a commitment (Item No. II.A.4.C, IA Project No. I.A.20) to cycle the valves during the upcoming refueling outage.
- o Due to the problems experienced with the inoperability of the control mechanism for the EDG air dampers, the licensee made a commitment (Item No. II.A.5.a, IA Project No. I.A.24 and I.A.25) to replace the damper control mechanism.
- o To protect individual components from potential damage due to particulates in the IA system, the licensee committed (Item No. II.A.5.e, IA Project No. I.A.17, I.A.18, and I.A.22) to install filters upstream of all air-operated valves that currently do not have filters.
- o To ensure that all air systems are not susceptible to water intrusion, the licensee made a commitment (Item No. II.A.5.f, IA Project No. I.A.21) to disconnect the interface between the plant air system and the fire water system. The plant air system is currently isolated from the IA system. The fire water deluge system will be supplied with air from its own air compressor system.
- o To upgrade the IA system to a higher level of operating efficiency, the licensee committed, in response to a consultant recommendation, to install a smaller micron filter on the discharge of the air dryers. This modification is currently planned to be performed as an on-line modification during 1989.
- o The licensee's consultant also recommended that the licensee install a new dryer to enhance the performance capabilities of the IA system. The installation of a new dryer will be performed as an on-line modification during 1989.

The seven items listed above represent commitments made by the licensee to modify or inspect the IA system and are not tracked by findings in an NRC inspection report. The items have been collected in this report and are designated as an open item for tracking purposes. (285/8827-03)

The items listed above are considered closed as followup will be performed under the identified open item.

14. Public SALP Meeting (94703)

On August 19, 1988, a public meeting was held at the licensee's emergency operations facility in Omaha, Nebraska. The meeting was held to discuss the Systematic Assessment of Licensee Performance (SALP) report issued on

July 29, 1988. The meeting was attended by the NRC Region IV regional administrator, upper-level management from the Region IV office, a representative from NRR, the president of OPPD, and upper-level management from OPPD. Also in attendance were the local news media and individuals from the public.

Prior to the SALP meeting, the NRC personnel met with officials from the states of Nebraska and Iowa. The meeting was held to brief the state representatives on the mission of the NRC and how the NRC fulfills its mission. NRC personnel also discussed the SALP report with the state representatives.

15. Exit Interview (30703)

The NRC inspectors met with Mr. W. G. Gates (Plant Manager) and other members of the licensee staff at the end of this inspection. At this meeting, the NRC inspector summarized the scope of the inspection and the findings.