

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: 50-285/88-07

License: DPR-40

Docket: 50-285

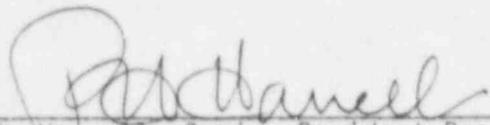
Licensee: Omaha Public Power District  
1623 Harney Street  
Omaha, Nebraska 68102

Facility Name: Fort Calhoun Station

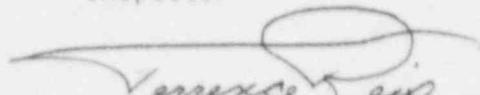
Inspection At: Fort Calhoun Station, Blair, Nebraska

Inspection Conducted: February 1-29, 1988

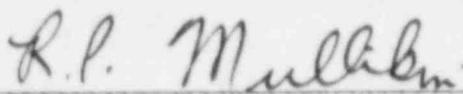
Inspector:

  
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P. H. Harrell, Senior Resident Reactor  
Inspector

3/7/88  
Date

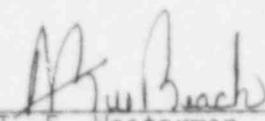
  
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T. Reis, Resident Reactor Inspector

3-7-88  
Date

  
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R. Mullikin, Project Engineer

3/22/88  
Date

Approved:

  
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T. F. Westerman, Chief, Projects  
\* Section B

3/25/88  
Date

Inspection SummaryInspection Conducted February 1-29, 1988 (Report 50-285/88-07)

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, and in-office review of periodic and special reports.

Results: Within the 10 areas inspected, 2 violations (failure to meet the fire brigade manning requirements, paragraph 4; and failure to follow procedures, paragraph 8) were identified.

DETAILS1. Persons Contacted

- \*R. Andrews, Division Manager, Nuclear Production
- \*W. Gates, Plant Manager
- \*W. Bateman, Supervisor, Procurement Quality Assurance
- C. Brunnert, Supervisor, Operations Quality Assurance
- \*M. Core, Supervisor, Maintenance
- T. Dexter, Supervisor, Security
- \*J. Fisicaro, Supervisor, Nuclear Regulatory and Industry Affairs
- J. Foley, Supervisor, I&C and Electrical Field Maintenance
- \*L. Gundrum, Plant Licensing Engineer
- \*B. Hansher, Plant Licensing Engineer
- \*M. Hendrickson, Manager, Civil Engineering, Generating Station Engineering
- \*R. Jaworski, Section Manager, Technical Services
- J. Key, Reactor Engineer
- L. Kusek, Supervisor, Operations
- \*J. Lechner, Acting Plant Engineer
- T. McIvor, Supervisor, Technical
- \*K. Morris, Division Manager, Quality Assurance and Regulatory Affairs
- \*T. Patterson, Supervisor, Technical
- \*G. Roach, Supervisor, Chemical and Radiation Protection
- \*J. Spilker, Senior Nuclear Production Engineer
- \*S. Willrett, Supervisor, Administrative Services and Security

\*Denotes attendance at the monthly exit interview.

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

2. Followup on Previously Identified Items

- a. (Open) Unresolved Item 4.5-3 of NRC Inspection Report 50-285/85-22: Fuse block enclosure not addressed by the fire hazards analysis.

This item identified a wooden fuse block enclosure installed in each battery room that was not addressed by the fire hazards analysis. No determination could be made as to the significance of the enclosure on the overall combustible loading for each battery room as the enclosures had not been included in the fire hazards analysis.

The licensee painted the untreated wooden enclosures with a fire-retardant paint to minimize the affect of the combustible enclosure on the overall combustible loading in the battery rooms. The NRC inspectors toured the battery rooms and verified the enclosures were painted. Based on this action, it appeared that the enclosures did not significantly increase the combustible loading for these rooms.

In October 1987, the licensee issued an updated fire hazards analysis to reflect changes in the plant since the last fire hazards analysis was issued. However, the updated analysis did not include the enclosures as combustible materials in the battery room fire areas. This item remains open pending a revision to the fire hazards analysis to evaluate the significance of the enclosures as combustibles in the battery room fire areas.

- b. (Closed) Severity Level IV violation II.F.2.1 (Deficiency 5.2-1) of NRC Inspection Report 50-285/85-22: Failure to check and verify a computer calculation.

This item involved the failure of the licensee to verify a computer calculation generated by a contractor for the derating of electrical cables that were enclosed in a fire protection wrapping system. The cables were wrapped to meet the separation criteria specified in Appendix R to 10 CFR Part 50.

The NRC inspectors reviewed Calculation MR-FC-85-25, "Cable Ampacity Derating." This calculation was prepared by the licensee to verify that the wrapped cables were capable of performing their intended safety function. The calculation indicated that the cables were satisfactory for continued plant operation.

In discussions with licensee personnel, it was determined that the calculation provided by the contractor was intended for preliminary analysis only and was not intended to be a part of the design basis. The contractor's calculation was only to be used as an independent verification of the licensee's calculation.

The NRC inspectors reviewed Calculation MR-FC-85-25 and noted no problems. Based on the review, it appeared that the licensee had adequately established that the cables would adequately perform their intended function.

- c. (Closed) Severity Level IV violation 285/8702-03: Failure to maintain the procedure for alignment of the breakers on the 480-volt motor control centers (MCC) in an up-to-date condition.

This violation was related to the licensee's failure to maintain the procedure used for alignment of the breakers on the 480-volt MCCs in an up-to-date condition. In response to this violation, the licensee revised and reissued Checklist E of Procedure 01-EE-2, "480-Volt System (Normal Operation)," in May 1987 to correct the discrepancies noted during the walkdown performed by the NRC inspectors in January 1987.

During the July through August 1987 inspection period, the NRC inspectors performed a walkdown of the 480-volt electrical system using the revised checklist. As documented in NRC Inspection Report 50-285/87-20, this violation remained open pending the

issuance of another revision to Checklist E. The revision issued in May 1987 still contained deficiencies identified in January 1987 that had not been corrected.

The licensee issued another revision to Procedure OI-EE-2 in November 1987. This revision incorporated Checklists B, C, D, and E of Procedure OI-EE-2 into a single comprehensive checklist, designated as Checklist B. In December 1987, the NRC inspectors reviewed the revised Checklist B in conjunction with Figure 8.1-1 of the Updated Safety Analysis Report (USAR) and performed walkdowns of various MCCs. The NRC inspectors found that the revised checklist still did not provide adequate instructions for all the electrical breakers on the MCCs. The NRC inspectors noted that some safety-related loads were not included on the checklist and there was no overall defined scope as to what should be included on the checklist for normal operation of the 480-volt system.

The licensee performed a walkdown to determine the loads served by each MCC. Based on this walkdown, Checklist B of Procedure OI-EE-2 was re-revised and issued on January 29, 1988. The NRC inspectors reviewed the revision to Procedure OI-EE-2 and noted the safety-related loads that were omitted during the December 1987 review were included. The NRC inspectors also verified, by a review of selected loads, that the licensee had also included other loads in Procedure OI-EE-2, as appropriate. Based on the review of the revised procedure, it appears that the licensee has adequately addressed the concerns noted by the NRC inspectors during the previous procedure reviews and system walkdowns.

- d. (Closed) Severity Level IV violation 285/8710-06: Failure to maintain containment integrity.

This item involved the failure of the licensee to maintain containment integrity during refueling activities. Containment integrity was not reestablished after performing Procedure ST-DC-3, "DC Transfer Switches," in that containment. Isolation valves were automatically opened during transfer of the dc power supply and were not subsequently manually reclosed by the control room operators.

To prevent recurrence of this problem, the licensee issued a revision to Procedure ST-DC-3. The revision required that the test not be performed when containment integrity is required.

The NRC inspectors reviewed the procedure change made by the licensee to verify that the change adequately implemented appropriate corrective actions. By establishing a requirement that Procedure ST-DC-3 can not be performed when containment isolation is required, it appears that the licensee had taken appropriate actions to prevent recurrence of this problem related to loss of containment integrity.

- e. (Open) Open Item 285/8733-06: Freezing point of the antifreeze solution in the cooling water system for the security and technical support center (TSC) diesels was unknown.

This item was identified during the performance of a review to verify cold weather preparations had been established. During the review, the NRC inspectors noted that the licensee had not determined the freezing point of antifreeze solution in the TSC and security diesels.

In response to this concern, the licensee issued Maintenance Orders (MO) 875927 and 875928 to check the freezing point in the security and TSC diesels, respectively. In addition, the licensee issued MOs 875835 and 875836 to check the freezing points in Emergency Diesel Generator (EDG) 1 and 2, respectively. The results of the determination of the freezing point indicated the following: TSC diesel,  $-39^{\circ}\text{F}$ ; security diesel,  $-60^{\circ}\text{F}$ ; EDG 1,  $-28^{\circ}\text{F}$ ; and EDG 2,  $-33^{\circ}\text{F}$ . The licensee's engineering staff reviewed the data and determined that the results obtained indicated the operability of the four diesels was satisfactory.

The licensee had established requirements for routinely sampling and testing the antifreeze solution in EDG 1 and 2; however, no requirements exist for routine testing of the antifreeze solution in the security and TSC diesels. This item remains open pending the establishment of a routine testing program for the security and TSC diesels.

### 3. Licensee Event Report (LER) Followup

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 Technical Specifications (TS).

The LERs listed below are closed:

- |        |  |
|--------|--|
| 87-001 | Surveillance test performance error                                      |
| 87-018 | Inadequate sizing of the air accumulators for Valves HCV-385 and HCV-386 |

A discussion of the review performed by the NRC inspectors for each LER is provided below.

- a. LER 87-001 reported an event where two raw water pumps were out of service at the same time due to the performance of a surveillance test. The surveillance test removed one raw water pump from service when another pump was already out of service due to maintenance. This event caused entry into a TS limiting condition for operation.

As documented in NRC Inspection Report 50-285/87-15, the NRC inspectors performed a review of this event to address the specific concerns related to this event. During the review, the NRC inspectors noted that the licensee had not properly addressed the generic aspects of this event. The generic aspects were related to the need to review other surveillance tests to verify that the tests were adequate to prevent a recurrence of the event.

The licensee reviewed other surveillance procedures to determine whether or not changes should be made. Based on the review, the licensee issued a revision to Procedures ST-ESF-6, "Diesel Start and Diesel Fuel Oil Transfer Pump," ST-ESF-12, "SIRWT Temperature Indication and Alarm," and OI-SI-1, "Safety Injection-Normal Operation."

The NRC inspectors reviewed selected surveillance procedures to determine if a change was required and reviewed the procedure revisions issued by the licensee. Based on this review, it appeared that the licensee had taken appropriate actions to address the generic aspects of this event.

- b. LER 87-018 reported an event where it was discovered, during followup of a violation issued in NRC Inspection Report 50-285/85-22, that Valves HCV-385 and HCV-386 did not meet the defined operating criteria. The operating criteria was not met in that a single air accumulator supplied both valves causing the valves to be susceptible to a single failure, and the air accumulator may not have shut the valves within the 45-second time criteria specified in the accident analysis. The licensee performed testing to determine the stroke time of the valves. The test data indicated that the valve closing time was at or near 45 seconds.

The function of Valves HCV-385 and HCV-386 is to shut when the safety-injection system is automatically aligned to operate in the containment recirculation mode. The valves shut to prevent the radioactive water in containment from entering the safety injection and refueling water tank (SIRWT). If the valves failed to shut, the water entering the SIRWT would be contained within the auxiliary building. The auxiliary building ventilation radiation detectors would alarm to alert the operator to the presence of airborne contamination in the auxiliary building. The auxiliary building can be secured to prevent the discharge of the contamination to the environment.

To correct this apparent design deficiency, the licensee installed a separate air accumulator for each valve. The additional air accumulator was installed for Valve HCV-386 in accordance with Safety Related Design Change Order (SRDCO) 87-35, "Installation Procedure for an Air Accumulator for HCV-386." The accumulator size was verified to be adequate by performance of Calculation FC-00507, "Accumulator Sizing and Seismic Support for Subsystem IA-4407 and

IA-4408." The licensee tested the accumulator installation and verified that the closing times for both valves were approximately 35 seconds.

The NRC inspectors reviewed selected portions of SRDCO 87-35 and Calculation FC-00507. During review of this documentation, the NRC noted that the air accumulator had been seismically mounted, the tubing used to connect the valve and the accumulator was seismically supported, the size of the air accumulator was adequate, system components were purchased in accordance with the appropriate quality assurance requirements, and testing was performed to verify proper performance of the accumulator installation.

The NRC inspectors also noted that the licensee's assumption for proper operation of Valves HCV-385 and HCV-386 within the stated accident analysis required operator action. Operator action is required to manually shut Valves HCV-385 and HCV-386 to ensure that the valves stay shut for 1000 hours after initiation of the containment recirculation. The licensee was in the process of issuing a revision to Procedure EOP-20 "Functional Recovery Procedure" to provide instructions for operations personnel at the end of this inspection period. Because the licensee had not completed the revision to Procedure EOP-20, this item remains open pending approval and issuance of the procedure change. (285/8807-01)

To ensure that the air accumulators and associated valves continue to perform their intended function, the licensee issued a revision to Procedure ST-ISI-SI-1, "Safety Injection Valve Inservice Testing." This procedure requires a regularly scheduled surveillance test be performed to verify the adequacy of the installation by confirming that valve stroke time is less than 35 seconds. The NRC inspectors reviewed Procedure ST-ISI-SI-1 and determined that the procedure was adequate.

Based on the reviews performed by the NRC inspectors, as discussed above, it appeared that the licensee had taken appropriate action to correct the design deficiency for the air accumulators for Valves HCV-385 and HCV-386.

The licensee is continuing to review the adequacy of air accumulators for other safety-related valves. The results of the reviews performed by the licensee will be evaluated during close out of Deficiency 2.1-1 in NRC Inspection Report 50-285/85-22.

No violations or deviations were identified.

#### 4. Operational Safety Verification

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, administrative procedures, and the TS. The NRC inspectors made several control room observations to verify the following:

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

During a review of the level of the licensee's staffing to meet the requirements for manning the fire brigade, the NRC inspectors noted that the onsite staff was not adequate. TS 5.2.2.e states that a fire brigade consisting of five members shall be maintained on site at all times. Amendment 40 to the TS issued the fire protection safety evaluation report as part of the licensee's operating license. Section 6.1 of Amendment 40 states, in part, that a 5-man brigade be available onsite during all shifts and independent of demands placed on operating personnel and the security force in a fire situation.

The licensee's staffing included eight security guards and seven operators per shift that were qualified fire brigade members. The adequacy of staffing was reviewed by the NRC inspectors based on the assumption that a fire occurred in the control room. The duties of each onshift individual were: three operators to shut down the plant from remote locations, one operator to man the emergency notification system telephone as the declaration of an alert is required when evacuating the control room, five guards as an armed emergency response force, one guard to assist in plant shutdown, and one guard stationed on a compensatory measures post. With these individuals assigned duties other than the fire brigade, the remaining individuals, three operators and one security guard, were available for fire brigade duties.

By having only four individuals available for fire brigade duties, as discussed above, the licensee failed to meet the TS requirement for staffing of the fire brigade. This is an apparent violation.  
(285/8807-02)

During review of this item, the NRC inspectors and licensee personnel determined that the establishment of a compensatory measures post for a security guard caused the fire brigade to be one member short of its required complement. When the compensatory post was established in approximately June 1987, licensee personnel did not realize that the action affected fire brigade staffing and did not add an additional fire brigade member to each shift.

When the NRC inspectors notified the licensee of this problem, the licensee took immediate actions to ensure that fire brigade was staffed to meet TS requirements. This was done by reassigning the duties required of the security guard in the event the control room is evacuated to another individual. This allowed the security guard to participate in fire brigade activities without having concurrent duties. The NRC inspectors reviewed the actions taken by the licensee and it appeared that the fire brigade was fully staffed.

#### 5. Plant Tours

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.

No violations or deviations were identified.

#### 6. Safety-Related System Walkdown

The NRC inspectors 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.

- Auxiliary feedwater system (Procedure OI-FW-4, Checklist A, Revision 31, and Drawings 11405-M-254, Revision 63, and 11405-M-253, Revision 58)

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

No violations or deviations were identified.

#### 7. Monthly Maintenance Observations

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 inspectors reviewed and/or observed the following maintenance activities:

- MO 880525, "Charging Pump CH-1A Breaker Not Working Properly." This MO was initiated because CH-1A had been tripping off line for no apparent reason. The problem was presumed to be associated with the breaker itself. On February 10, 1988, the NRC inspectors observed portions of the troubleshooting performed on the CH-1A breaker. The NRC inspectors noted that the work was being performed in an approved critical quality equipment storage area. The personnel performing the work were qualified electrical maintenance technicians and a maintenance engineer was present to assist in the troubleshooting. The NRC inspectors reviewed the MO and verified proper authorization

had been obtained to perform the work. The NRC inspectors also verified that proper tags had been hung to identify that the equipment was out of service.

- Preventative Maintenance (PM) 880930, "Raw Water Pump Vibration Testing." On February 8, 1988, the NRC inspectors observed an electrician taking vibration readings on raw water pump C. The inspectors noted that the technician was using an approved procedure and had a calibrated instrument to take readings.
- MO 880340, "Repair Latches, Knobs, and Closures on Station Doors for the Month of February." The NRC inspectors witnessed maintenance personnel repairing a key card lock on the door that provided access from the northeast turbine building to the switchgear room. The NRC inspectors reviewed the MO and noted it was properly filled out and authorized. The NRC inspectors also noted that a security guard was properly posted as a compensatory measure while the door was undergoing repair.
- MO 880579, "Remove and Repair VA-12A Fan/Motor Assembly." The neutron detector well cooling fan, VA-12A, failed in early February. The licensee decided to remove the fan from containment, and to repair and reinstall it to minimize the risk of exceeding the temperature limits specified in TS 2.13 for the concrete surrounding the neutron detector cooling wells. Prior to performing the task, the licensee surveyed the area for gamma and neutron dose rates to develop man-rem estimates. The NRC inspectors reviewed the man-rem estimates with appropriate licensee personnel. Based on the review, it appeared the licensee employed appropriate measures to obtain reliable dose rates.

Reactor power was reduced to 35 percent to remove the unit. The area was shielded with water bottles to reduce the neutron flux at the work site. The unit was removed, repaired per an approved procedure, reinstalled, and returned to service the following day.

- MO 880467, "Leaking Air Regulator to HCV-2893." The NRC inspectors witnessed an instrumentation and control technician remove a leaking air regulator in the instrument air system for Valve HCV-2893, the raw water backup inlet isolation valve. The NRC inspectors noted that the technician had a properly authorized MO and completed the work in accordance with the instruction provided by the MO.

No violations or deviations were identified.

#### 8. Monthly Surveillance Observations

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 testing of the pressurizer pressure channel check (ST-ESF-1)
- Quarterly inservice testing of the raw water system valves (ST-ISI-RW-1)
- Biannual testing and loading of the emergency diesel generator (ST-ESF-6)
- Monthly test of the station battery chargers (ST-DC-2)
- Quarterly inservice testing of the main steam isolation valves to the turbine driven auxiliary feedwater pump (ST-ISI-MS-1)
- Quarterly inservice testing of the chemical and volume control system valves (ST-ISI-CVCS-1)

During observation of the above surveillance tests, the NRC inspectors noted three examples where licensee personnel did not strictly adhere to approved station procedures. The examples are discussed below.

The NRC inspectors observed a water plant operator timing the stroke cycle of raw water Valve HCV-2853 per 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. The NRC inspectors noted that, upon realizing the noncompliance, the operator stopped, obtained a stopwatch, and reperformed the test on Valve HCV-2853 as well as other valves he had timed prior to the arrival of the NRC inspectors.

The NRC inspectors witnessed the performance of ST-ESF-6. During the portion of the procedure 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 over Step 17 which performed a checkout of the fuel oil transfer pumps. The NRC inspectors alerted the operator of the omitted step and they were subsequently performed prior to shutting down the diesel. The NRC inspectors noted that performing these steps just prior to shutting down the diesel is allowed by procedure. However, it is apparent from the scenario that the steps were simply overlooked.

During observation of ST-DC-2, the NRC inspectors 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. The NRC inspectors noted that the performance of these steps out-of-sequence posed no safety significance.

Section 5.8.1 of the TS states, in part, that written procedures shall be established, implemented, and maintained that meet or exceed the minimum requirements of ANSI 18.7-1972.

Section 5.1.2 of ANSI 18.7-1972 states, in part, that procedures shall be followed and the requirements for use of procedures shall be prescribed in writing.

Section 2.4 of Procedure SO-G-7 states, 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.

Contrary to the above, as described in the three examples discussed above, individuals failed to follow surveillance test procedures exactly as written. This is an apparent violation. (285/8807-03)

The preceding three examples of procedural noncompliance did not affect the safe operation of the plant. However, they are illustrative of what was perceived as frequent inattention to detail and failure to follow procedures. Four operations personnel were questioned and it was noted that they were unfamiliar with the stringent requirement of Section 2.4 of Procedure SO-G-7, which states that strict adherence to all procedures is absolutely required.

Upon notification of the three problems by the NRC inspectors, the licensee issued a memo, dated February 16, 1988, to all department heads to stress that verbatim compliance with all procedures is mandatory. Each department head then discussed the philosophy issued by the plant manager with the individuals assigned to their departments.

9. Security Observations

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

- ° The security organization was properly manned.
- ° Personnel within the protected area (PA) displayed their identification badges.
- ° Vehicles were properly authorized, searched, and escorted or controlled within the PA.
- ° Persons and packages were properly cleared and checked before entry into the PA was permitted.
- ° The effectiveness of the security program was maintained when security equipment failure or impairment required compensatory measures to be employed.
- ° The PA barrier was maintained and the isolation zone kept free of transient material.
- ° The vital area barriers were maintained and not compromised by breaches or weaknesses.
- ° Illumination in the PA was adequate to observe the appropriate areas at night.
- ° Security monitors at the secondary and central alarm stations were functioning properly for assessment of possible intrusions.

On February 27, 1988, the licensee identified an event where a loss of compensatory measures occurred due to a nuclear watch officer (NWO) sleeping on watch. The NWO was immediately relieved of his duties and replaced with another qualified individual. The licensee took action to prevent recurrence by reducing the frequency of watchstander radio checks from 30 to 15 minutes. In addition, the licensee also established a program where the security officer-in-charge performs random tours of all compensatory posts. The licensee reported the event to the NRC in accordance with the requirements of the physical security plan. No prior violations had been identified by the NRC that were similar to this event.

The NRC inspectors reviewed the actions taken by the licensee. Based on this review, it appeared that the licensee had taken actions to correct the event and had taken actions to prevent recurrence.

No violations or deviations were identified.

10. Radiological Protection Observations

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 and 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.

11. In-office Review of Periodic and Special Reports

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 should be classified as an abnormal occurrence.
- ° Correspondence did not contain incorrect, inadequate, or incomplete information.

The NRC inspectors reviewed the following:

- ° Additional questions on OPPD response to Generic Letter 86-06, dated February 4, 1988
- ° Monthly operations report for January 1988, undated

- January monthly operating report, dated February 12, 1988
- Threshold levels for the Fort Calhoun internals vibration monitoring system dated February 25, 1988

During review of reports, NRC personnel identified a 10 CFR Part 21 report submitted by a utility that appeared to be applicable to the licensee's facility. The NRC resident inspectors provided a copy of the report to the plant licensing engineer for review of applicability by the licensee. The report (Reference 87-74) was issued by the Northern States Power Company and discussed problems with abrasive damage to the leads of Limitorque valves.

No violations or deviations were identified.

## 12. Exit Interview

The NRC inspectors met with you and other members of your staff at the end of this inspection. At this meeting, the NRC inspectors summarized the scope of the inspection and the findings.