U. S. NUCLEAR REGULATORY COMMISSION
REGION III

Report No. 50-263/92017(DRS)

Docket No. 50-263 License No: DPR-22

Licensee: The Northern States Power Company
414 Nicollet Mall
Minneapolis, MN 55401

Facility Name: Monticello Nuclear Generating Station

Inspection At: Monticello, MN

Inspection Conducted: December 7 through December 11, 1992

Inspectors: D. Butler — Date: 12/22/92

T. Tella — Date: 12/22/92

Approved By: R. Westberg, Team Leader, Division of Reactor Safety — Date: 12/22/92

Inspection Summary:

Inspection on December 7-11, 1992 (Report Nos. 50-263/92017(DRS)

Areas Inspected: Announced followup inspection of previously identified EDSFI findings conducted in accordance with Temporary Instruction (TI) 2515/111.

Results: Five previously identified inspection findings were closed. During the course of the inspection, the following was noted:

- The items in the EDSFI report that were categorized as weaknesses had been addressed by the licensee with good results.
- The licensee had undertaken numerous positive initiatives relative to the electrical distribution system and the engineering department.

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DETAILS

1.0 Personnel Contacted

Northern States Power Company

*W. Hill, Plant Manager
*B. Day, General Superintendent Engineering
*M. Hammer, General Superintendent Maintenance
*J. Swailes, General Superintendent Operations
*D. Carsen, General Superintendent Engineering, NPD
*S. Engelke, Superintendent Electrical and Instrumentation
*D. Olson, Superintendent Electrical Engineering
*G. Bart, Superintendent Site PSQA
*S. Hammer, Superintendent Turbine Systems
*W. Boehme, Shift Manager
*J. Anderson, Acting Supervisor Technical Services
*P. Burke, Supervising Engineer DBD
*S. Porter, Senior Production Engineer
*J. Anderson, Production Engineer
*M. Engen, Licensing Engineer

U. S. Nuclear Regulatory Commission (NRC)

*S. Ray, Senior Resident Inspector
*W. Stearns, Resident Inspector

* Indicates those attending the exit meeting on December 11, 1992.

2.0 (Closed) Temporary Instruction (2515/111)

The primary objective of this inspection was to assess the adequacy of the licensee's corrective actions for safety-significant findings identified during the EDSFI. The secondary objective was to assess the engineering and technical support (E&TS) function with respect to the EDSFI findings.

a. Corrective action

The inspectors determined that the licensee had taken adequate corrective action for the previous inspection findings. The documentation presented for close out of the findings was auditable, complete, and thorough. The items inspected and the inspectors' comments are contained in Section 3 of this report.

b. Engineering and Technical Support

The inspectors noted that items identified as weaknesses in the EDSFI report had also been addressed by the licensee. The inspectors reviewed this information with acceptable results. The inspectors also noted numerous positive initiatives by the licensee relative to the electrical distribution system and the engineering department. The following was observed:

1) The "AFAULT" software program was purchased and implemented during the second quarter of 1991. This program provides for the analysis of fault currents at all points of the modeled electrical system.

2) The Component History and Maintenance Planning System (CHAMPS) software program was purchased and is currently in the implementation process for the Preventive Maintenance/ Maintenance Improvement Program. The plant expects to have this program implemented by the end of 1993. The program is expected to help the plant staff in areas such as: maintenance history; PM program; work control; identification of parts and components; interfaces to plant documents; and engineering information. In addition, the program can also generate repetitive work orders, overdue tasks, manpower and material forecasts, and reservation of parts for specific tasks.

3) A drawing as-built program was implemented in 1987. Computer Aided Design (CAD) software was purchased in the second quarter of 1992 and implemented for the design control program. To date, 400 of 1200 construction file drawings have been scanned into the system. The plant tentatively plans to have all construction file drawings completed by the end of 1994.

4) NSP has initiated a Relay Replacement Program for the trending of relay failures and replacement before end of life. Approximately 60 relays were changed out during the 1991 refueling outage as a result of this program.

5) Progress has been made in the Design Basis Reconstitution Program. Three electrical systems have been completed to date (125Vdc, 250Vdc, and Station Black Out) and five are near completion.

6) NSP has purchased thermography equipment for predictive type maintenance inspection of equipment. To date, inspections have been completed on EDG temperature profiles, post maintenance testing of the new security battery, cable tray loading, and the 1R Reserve Transformer. The current plan is to have the formalized program in place at the end of 1993.

7) NSP has taken over the AC and DC load studies and Fuse/Breaker Coordination programs from the Architect Engineer (A/E).

8) The cable and raceway schedule computerization has been completed. Cable Trac was purchased in 1986 and implemented between 1986 and 1989. In 1989, the Interim Cable and Raceway Information System was developed. It was fully implemented in the second quarter of 1992.

9) The engineering department was reorganized. The Nuclear Project Department (NPD) now reports to the General Site Manager, instead of a corporate manager. This change meant that the NPD engineers now fall under the site training requirements and participate in the Technical Staff Training Program, including qualification and examination.

10) Reliance on outside A/E design help has been reduced from 90% to approximately 30%. The A/E is presently used for specialty tasks where the plant lacks the necessary in-house experience.

11) NSP has a stated goal of reducing the use of augmented staff personnel (contractors). To this end, the NPD electrical group was enlarged by three full time staff members in 1992.

3.0 Licensee Action on Previously Identified Inspection Findings

a. (Closed) Open Item (263/90018-01(DRS)) - Monitoring of the Division II 250Vdc battery room temperature. If the battery temperatures fall below 60 degrees F, the battery capacity could be in an unanalyzed condition.

The licensee installed a modification which included a battery room low temperature alarm (local window No. 242-A-25), set at 67.5 degrees F. This will also give a control room group alarm. The operators verify this battery room temperature on a daily basis and will notify the heating and ventilation system engineer and battery system engineer if the temperature falls below 65 degrees F.

The inspector verified the installation of the alarm and reviewed the control room logs relative to battery room temperature with acceptable results. This item is considered closed.

b. (Closed) Unresolved Item (263/90018-02(DRS)) - During the EDSFI, the team noted that controlled drawings of modifications that were installed in the field did not reflect the as-built condition of the plant. The licensee issued non conformance report No. 90-048 to resolve these discrepancies. The licensee subsequently notified the team that wiring of the conductors on relay Nos. 10A-92b, 10A-24b, and 10A-26b did not conform to applicable design drawings.

Several corrective actions had been taken by the licensee. For example:

1) A project for as-built verification of Class 1E electrical drawings had been initiated. Out of 20 safety related panels in the control room, 7 panels have been verified for as-built condition. The discrepancies identified had been corrected. Similarly, out of 51 other safety related panels in the plant, 9 important panels have been verified for conformance with the drawings. The licensee estimated that about 80 per cent of the as-built effort had been completed.

Appropriate corrective actions had been taken. All the discrepancies identified in the EDSFI report had been reconciled.

2) The construction file drawings, kept in the shift engineers office and used for plant operation, were verified to be correct. Procedure No. 4AWI2.04.02 was issued to establish criteria for new drawings to be included in the construction file. The modification and work procedures also included steps to conduct as-built verification prior to performing electrical work on any safety related panel in the plant

3) A drafting section was established to revise the drawings on a Computer Aided Design (Auto CAD) program to improve drawings and the turnaround time in issuing drawing revisions after a plant modification.

4) In addition, the licensee issued procedures to prevent placing three conductors on one terminal and prohibiting the use of wire nuts in safety related circuits. No examples of this type were observed.

The inspectors walked down sections of panels, Nos. C05, C253A, and C303A, and verified correct wiring, fuse sizes, and settings on time delay relays. The inspectors did not identify any discrepancies between the drawings and the as-built wiring or settings. This item is considered closed.

c. (Closed) Unresolved Item (263/90018-03(DRS)) - The EDSFI determined that the degraded voltage setpoint was not based on a setpoint methodology that addressed all known instrumentation errors.

The licensee revised Calculation No. CA-92-220, Revision 0, "Degraded Voltage Setpoint Calculation," to determine the degraded voltage loop accuracy and to assure that the Technical Specification (TS) setpoint (3897 to 3933 Volts) would not be exceeded.

The inspectors reviewed the results and concluded that the licensee's setpoint methodology was adequate and that an "as-left" setpoint of 3916.85 to 3920.35 Volts should prevent the instrument loop from exceeding the TS setpoint over its calibration interval. This item is considered closed.

d. (Closed) Unresolved Item (263/90018-04(DRS)) - The EDSFI determined that the licensee's testing program did not verify the slow bus transfer logic from transformer No. 1R to transformer No. 1AR and subsequent loading of the 1AR transformer by the safety buses. The 1AR transformer has limited capacity and functions as a backup source for the safety buses. However, credit for the slow bus transfer to mitigate a design basis accident was not assumed in the safety analyses.

The licensee successfully tested the logic in surveillance procedure No. 1390, "1AR Transfer Logic Test," and adequately demonstrated the loading capability of the 1AR transformer in surveillance test No. 0036-2, "ECCS Automatic Initiation Test, Including Loss of Auxiliary Power." In addition, the licensee committed to test the slow bus transfer logic on a periodic basis.

The inspectors reviewed the licensee's testing methodology and concluded that the licensee adequately addressed this issue. This item is considered closed.

e. (Closed) Violation (263/90018-05(DRS)) - The EDSFI identified two pressure indicators that had been recently calibrated and were left exceeding their as-left calibration tolerances.

The licensee revised procedure No. ICM-01.01, "Instrument Control Manual," to notify the I&C supervisor or I&C coordinator when calibration data were found outside their calibration tolerance. For safety related components, data found outside their calibration tolerance limits were reported as a non-conforming item. For all non-safety related instruments, data found outside of their calibration limits were reported as an I&C discrepancy notification item. I&C supervisors were tasked with evaluating the out-of-tolerance condition impact on equipment operability.

The inspectors reviewed approximately 100 calibration records and concluded that the licensee had implemented adequate corrective actions to prevent recurrence of this violation. This item is considered closed.

4.0 Exit Interview

The inspectors conducted an exit meeting on December 11, 1992, at the Monticello site to discuss the major areas reviewed during the inspection and the inspection findings. NRC personnel and licensee representatives who attended this meeting are documented in Section 1 of this report. The licensee did not identify any documents or processes as proprietary.