

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-282/95005; 50-306/95005(DRP)

Docket Nos. 50-282; 50-306

License Nos. DPR-42; DPR-60

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

Facility Name: Prairie Island Nuclear Generating Plant

Inspection At: Prairie Island Site, Red Wing, MN

Inspection Conducted: January 24 through March 27, 1995

Inspectors: M. L. Dapas S. Ray
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Wayne D. Knopp, Chief
Reactor Projects Section 2A

4/5/95
Date

Inspection Summary: Inspection on January 24 through March 27, 1995
(Report No. 50-282/95005; 50-306/95005(DRP))

Areas Inspected: Routine, unannounced safety inspection by resident inspectors of licensee followup on previously identified items, operational safety verification, engineered safety feature systems, current material condition and plant housekeeping, radiological controls, security, licensee event report followup, maintenance activities, surveillance activities, engineering and technical support, and self-assessment.

Results: Within the eleven areas inspected, three non-cited violations were identified. One violation involved the failure to submit the procedures used to perform analytical evaluations of flaw indications in welds for No. 11 and No. 12 steam generators, until approximately six months after the flaw evaluation was initially performed (paragraph 2.b). The second violation involved the inoperability of No. 121 safeguards traveling screen (paragraph 4.c). The third violation involved the inoperability of the continuous air monitor for the spent fuel pool normal ventilation system (paragraph 4.d). An unresolved item was identified that pertained to the operability status of Unit 1 Train B charging pumps with the D2 emergency diesel generator and Train A charging pump inoperable (paragraph 3.a). An inspection followup item was identified that pertained to online maintenance for Unit 1 Train A safety injection and residual heat removal systems (paragraph 5.a).

The following is a summary of the licensee's performance during this inspection period:

Operations

Overall performance in this area was good. An unresolved item was identified regarding the operability status of No. 11 and No. 13 charging pumps with the D2 emergency diesel generator and No. 12 charging pump inoperable (paragraph 3.a).

Maintenance and Surveillance

Overall performance in this area was mixed. A non-cited violation was identified regarding the inoperability of No. 121 safeguards traveling screen (paragraph 4.c). A number of events involving configuration control issues have occurred in the last several months (paragraph 4.c). An inspection followup item was identified relating to online maintenance practices when one train of the safety injection and residual heat removal systems were removed from service (paragraph 5.a).

Engineering and Technical Support

Overall performance in this area was good. Effective assessment was evident in the identification and evaluation of an operability concern with the Unit 1 and Unit 2 containment hydrogen sensors (paragraph 3.b). A non-cited violation was identified for the failure to submit procedures, used to perform analytical evaluations of flaw indications in welds for No. 11 and No. 12 steam generators, for NRC approval until approximately six months after the flaw evaluation was performed (paragraph 2.b).

Plant Support

Overall performance in this area was good. A non-cited violation was identified involving the inoperability of the continuous air monitor for the spent fuel pool normal ventilation system (paragraph 4.d). The security force effectively addressed potential security threats imposed by outside protesters (paragraph 3.f).

DETAILS

1. Persons Contacted

Northern States Power Company

- #M. Wadley, Plant Manager
- #K. Albrecht, General Superintendent, Engineering
- #G. Lenertz, General Superintendent, Maintenance
- D. Schuelke, General Superintendent, Radiation Protection
 and Chemistry
- #J. Sorensen, General Superintendent, Plant Operations
- #J. Goldsmith, General Superintendent, Nuclear Generation Services
 Engineering
- #J. Hill, Manager, Quality Services
- #T. Breene, Superintendent, Nuclear Engineering
- #R. Fraser, Superintendent, Technical Programs Engineering
- #J. Maki, Superintendent, Electrical Systems Engineering
- #C. Mundt, Superintendent, Instrumentation and Controls Systems
 Engineering
- #A. Hunstad, Staff Engineer
- W. Stolpa, Superintendent, Security
- #A. Johnson, Radiation Protection Supervisor
- #D. Eaxa, Production Engineer

#Denotes those present at the management interview on March 28, 1995.

The inspectors also had discussions with other licensee employees, including members of the technical and engineering staffs; reactor and auxiliary operators; electrical, mechanical, and instrument maintenance personnel; and contract security personnel.

2. Licensee Followup on Previously Identified Items (92901, 92902, 92903, 92904)

- a. (Closed) Inspection Followup Item 50-282/94002-03: Emergency Diesel Generator (EDG) Lube Oil Leakage.

Leakage of EDG lube oil has resulted in small, short-lived exhaust fires on the licensee's Fairbanks-Morse EDGs upon engine startup. This condition was discussed in detail in NRC Inspection Report 50-282/94002; 50-306/94002(DRP). The licensee developed safety evaluation No. 376, which concluded that the small, short-lived exhaust fires did not impact EDG operability. The inspectors reviewed the safety evaluation, a report written by the Fairbanks-Morse Owners Group concerning nuclear plant EDG oil leakage and potential for fires, and licensee actions to minimize exhaust fires at Prairie Island. After reviewing this information, the inspectors concluded that design attributes of the Fairbanks-Morse opposed piston EDGs, along with the method of EDG operation at nuclear installations, contributed to lube oil leakage, the

accumulation of oil in exhaust manifolds, and the potential for oil ignition. The licensee's preventive maintenance program for the EDGs included performance of exhaust system work designed to minimize the occurrence of exhaust fires. Conduct of EDG operations during surveillance testing was proceduralized to minimize the occurrence of exhaust fires. The inspectors will review EDG performance and the licensee's maintenance and surveillance activities during the course of routine inspections. This item is closed.

- b. (Closed) Unresolved Item 50-282/94018-02; 50-306/94018-02: Steam Generator Weld Inservice Inspection (ISI).

As discussed in NRC Inspection Report 50-282/94018; 50-306/94018(DRP), the licensee identified that procedures, used to perform analytical evaluations of flaw indications in welds for No. 11 and No. 12 steam generators, were not submitted to the NRC for approval as required by IWB-3610, Section XI of the ASME Code. The licensee submitted the associated ISI examination reports to the NRC and initiated a review of previously performed ISI flaw evaluations to determine if other required reports had not been submitted. From this review, the licensee identified two additional instances where an analytical evaluation of a flaw indication was performed per IWB-3610, but the associated evaluation procedures had not been submitted to the NRC for approval. In a letter dated January 31, 1995, the licensee submitted the ISI examination reports for these two steam generator indications.

On March 9, 1995, a conference call was initiated between the licensee, the NRC Office of Nuclear Reactor Regulation (NRR) Project Manager, and an ISI specialist in the Materials Branch of NRR, to further discuss this issue. In response to a question regarding what submittals were required for future analytical flaw evaluations per IWB-3610, the NRC stated that as long as the licensee continued to use one of the two evaluation methodologies (WCAPs) previously submitted for approval, then only the evaluation results with a reference to the specific evaluation methodology used need to be submitted to the NRC. If the licensee used a different methodology to perform the analytical evaluation, then the evaluation procedures have to be submitted along with the results.

Technical Specification 4.2.A.1 states that ISI of ASME Code Class 1, Class 2, and Class 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR Part 50.55(g), except where relief has been granted. ASME Section XI, IWB-3610(e) states that "evaluation procedures shall be subject to approval by the regulatory authority having jurisdiction at the plant site." The licensee did not submit the procedures, used to perform analytical evaluations of flaw indications in welds for

No. 11 and No. 12 steam generators, until approximately six months after the flaw evaluation had been performed. This did not meet the intent of IWB-3610(e). The failure to submit evaluation procedures for NRC approval, as required by ASME Section XI, in a timely manner is considered a violation of Technical Specification 4.2.A.1. However, the violation is not being cited because the criteria specified in Section VII.B.2 of the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy, 10 CFR Part 2, Appendix C), were satisfied.

One non-cited violation was identified. No deviations, unresolved items, or inspection followup items were identified.

3. Plant Operations

Both Unit 1 and Unit 2 operated at full power throughout this inspection period, with the exception of a Unit 1 power reduction on February 18, 1995 for condenser tube cleaning and turbine control valve testing. At approximately 8:47 a.m. on February 18, Unit 1 was taken off-line to replace the emergency trip solenoid valve in the turbine electro-hydraulic (EH) control system. The subject valve was replaced in response to a generic industry concern regarding potential seat damage due to exposure to water-contaminated EH fluid. Unit 1 was returned to full power at 11:58 p.m.

a. Operational Safety Verification (71707, 93702, 92901)

The inspectors verified that the facility was being operated in conformance with the license and regulatory requirements, and that the licensee's management control system was effective in ensuring safe operation of the plant. The inspectors observed control room operations, reviewed applicable logs, monitored control room indications for abnormalities, conducted discussions with control room operators, and observed shift turnovers. The inspectors verified operability of selected emergency systems, reviewed equipment control records, verified the proper return to service of affected components, conducted tours of the Auxiliary Building, Turbine Building, and external areas of the plant to observe plant equipment conditions, including potential fire hazards, and to verify that maintenance work requests had been initiated for equipment in need of repairs.

On March 11, 1995, at 11:10 p.m. (CST), the licensee removed No. 12 charging pump from service due to a failed desurger. On March 12, 1995, at 8:25 p.m., the licensee removed the D2 EDG from service. No. 12 charging pump was powered from Train A safeguards bus No. 15, while No. 11 and No. 13 charging pumps were powered from Train B safeguards bus No. 16. Emergency power to buses 15 and 16 was provided by D1 and D2 EDGs, respectively.

During a control room tour on March 13, the inspectors noted that both No. 12 charging pump and D2 EDG were out-of-service. The

inspectors asked the Unit 1 shift supervisor if a limiting condition for operation (LCO) had been entered for the inoperable charging pumps based on the Technical Specification (TS) definition of operability. The definition stated, "A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal and emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s)." The definition further stated, "When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, ... it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal ... power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE,"

The inspectors questioned the shift manager about the operability of the charging pumps. Normally No. 11 and No. 13 charging pumps would be considered operable with D2 EDG (the emergency power source to No. 11 and No. 13 charging pumps) inoperable. However, with No. 12 charging pump (the "redundant component" to No. 11 and No. 13 charging pumps) inoperable, No. 11 and No. 13 charging pumps had to be considered inoperable per the TS definition of operability. Since the TS does not allow operation at power with three inoperable charging pumps, the inspectors questioned the shift manager about the applicability of TS 3.0.C. The inspectors discussed this issue with both the on duty and relieving shift managers. After the discussion on TS 3.0.C applicability, at approximately 6:30 p.m., the licensee logged entry in TS 3.0.C. The licensee restored No. 12 charging pump to service at 7:54 p.m. and exited TS 3.0.C.

After further review of this issue, the licensee initiated discussion with the inspectors to present the licensee's position regarding operability requirements for the charging pumps. The licensee stated that emergency power was not required for the intended function of the charging pumps, since no credit was taken for charging pump availability during a design basis accident, such as a loss-of-coolant accident concurrent with a loss-of-offsite power. The licensee further stated that the only equipment which required emergency power was engineered safety features (ESF) equipment, and that this was the basis for TS 3.7.B.1 which allowed one EDG to be inoperable for 7 days provided all ESF equipment associated with the operable EDG was also operable. The licensee concluded that No. 11 and No. 13 charging pumps were not rendered inoperable when the D2 EDG and No. 12

charging pump were removed from service, and thus, entry into TS 3.0.C was not required. This is considered an Unresolved Item (50-282/95005-01(DRP)) pending further NRC review of the basis for the licensee's stated conclusions, and the results of that review will be documented in NRC Inspection Report 50-282/95004; 50-306/95004(DRP).

b. Onsite Event Followup (93702, 92901)

During the inspection period, the licensee experienced various events. The inspectors pursued the events onsite with licensee personnel. In each case, the inspectors verified that any required notification was correct and timely. The inspectors also verified that the licensee initiated prompt and appropriate actions.

1) Containment Hydrogen Monitors

During performance of surveillance procedure (SP) 1226B, "Quarterly Calibration of Unit One Post Accident Containment Hydrogen Sensors," sensor 1XE-720 was found out-of-tolerance and required replacement. The licensee identified that after installation the sensor computer had not been updated with the appropriate temperature compensation coefficients. The licensee promptly input the correct coefficients into the computer for sensor 1XE-720. Since all the sensors had been recently replaced in response to a 10 CFR Part 21 concern (refer to NRC Inspection Report 50-282/94002; 50-306/94002(DRP)), the licensee initiated an investigation to determine if other hydrogen sensors had been updated with the correct temperature coefficients upon replacement. The licensee identified that, with the exception of original installation, no sensor had been updated with temperature compensation coefficients upon replacement. The licensee updated the coefficients for all Unit 1 and Unit 2 sensors that were installed subsequent to original installation.

In assessing the safety significance of the as-found condition of the hydrogen sensors, the licensee contacted the vendor to analyze the impact of using incorrect coefficients on indicated hydrogen concentration. Based on the results of the vendor's analysis, the licensee concluded that for each channel, one sensor would read conservatively (higher indicated hydrogen concentration than actual), and one sensor would read non-conservatively (lower indicated concentration than actual). Since the sensors were auctioneered high, the hydrogen concentration displayed in the control room would have been conservative. The licensee also noted that per the emergency operating procedures (EOPs), the hydrogen sensors would be recalibrated 24 hours after an accident. Upon recalibration, the error in indicated hydrogen concentration due to incorrect

temperature compensation, would have been erased. As containment temperature decreased, the temperature compensation error would have increased. However, significant hydrogen buildup would not be expected until two days post-accident. Thus, the licensee concluded that the event had minimal safety significance.

TS 3.15 required that both channels of two hydrogen sensors be operable. While the TS did not specify a required accuracy for indicated hydrogen concentration, setpoints were specified in the EOPs with uncertainties of + or - 0.2 percent and + or - 0.4 percent concentration under normal and adverse hydrogen conditions, respectively. Since the temperature compensation error exceeded the assumed EOP setpoint uncertainties, the licensee concluded that the affected hydrogen sensors were inoperable and therefore, that the operability requirements of TS 3.15 had not been met. The licensee plans on submitting a licensee event report (LER) pursuant to the reportability requirements of 10 CFR Part 50.73(a)(2)(i)(b). The inspectors will review the licensee's corrective actions to prevent recurrence described in the LER, as part of their evaluation of this apparent TS violation, during a future inspection.

2) Hydrazine Spill

On February 22, 1995, the licensee made a 4-hour non-emergency notification to the NRC, per 10 CFR Part 50.72(b)(2)(vi), that the licensee had contacted another government agency, the Minnesota Pollution Control Agency (MPCA) to report a hydrazine spill. The licensee informed both the MPCA and the National Response Center that four to five gallons of 40 percent hydrazine solution leaked to the Turbine Building sump. The licensee estimated that approximately 0.4 grams of solution were discharged to the Mississippi river before the sump pumps were stopped. This activity is outside the scope of NRC regulations; however, the licensee notified the NRC in accordance with 10 CFR Part 50.72.

c. Engineered Safety Feature (ESF) Systems (71707)

During this inspection period, the inspectors performed a detailed walkdown of a representative sample of the accessible portions of selected ESF systems to verify system operability. This included verification that the system lineup procedure was consistent with plant system drawings and the as-built configuration; valve and power supply breaker positions were correct to ensure that plant equipment and instrumentation were aligned for proper system operation; major system components were properly labeled, lubricated, cooled, and no leakage existed; instrumentation was properly calibrated, and local and remote indication of

significant process parameters were consistent with normal expected values; and support systems essential to system actuation or performance were operational.

The inspectors walked down accessible portions of the Unit 1 and Unit 2 auxiliary feedwater system and presented several questions to the licensee regarding configuration of condensate storage tank level instrumentation in the field and parameter display in the control room. Each of the issues was adequately addressed and there were no resultant equipment operability concerns.

The inspectors also walked down accessible portions of the Unit 1 and Unit 2 control room air treatment system. The inspectors observed that the spring-type vibration isolators on No. 121 control room cleanup fan were installed tighter than on other similarly installed fans in the plant. The inspectors presented this issue to the licensee as a potential operability concern. The licensee reviewed the design basis for the vibration eliminators, evaluated the as-found condition (including a review of historical vibration spectra), and concluded that the fan was operable. The licensee initiated a work order to restore the vibration isolators to their original design configuration. The inspectors reviewed the licensee's operability evaluation and had no additional questions.

d. Current Material Condition and Plant Housekeeping (71707)

The inspectors performed general plant, as well as selected system and component walkdowns, to assess the general and specific material condition of the plant, and to evaluate housekeeping. Walkdowns included an assessment of plant buildings, systems, and components, as applicable, for proper identification and tagging, accessibility, fire and security door integrity, proper use of scaffolding, appropriate radiological controls, and any unusual conditions. Unusual conditions included, but were not limited to, water, oil, or other liquids on floors or equipment; indications of leakage through ceilings, walls, or floors; loose insulation; corrosion; excessive noise; unusual temperatures; and abnormal ventilation or lighting. The inspectors also monitored the status of housekeeping and plant cleanliness for fire protection and protection of safety-related equipment from intrusion of foreign material.

Overall material condition and plant housekeeping were good.

e. Radiological Controls (92904)

The inspectors verified that personnel were following health physics procedures for dosimetry, protective clothing, frisking, posting, etc., and randomly examined radiation protection instrumentation for use, operability, and calibration. An operability concern with the spent fuel pool continuous air

monitor was identified during this inspection period and is discussed in paragraph 4.d of this report.

Overall radiological controls were good.

f. Security (92904)

During routine activities and tours, the inspectors monitored the licensee's security program to ensure that observed actions were being implemented in accordance with the approved security plan. The inspectors observed that persons within the protected area displayed proper photo-identification badges, and that individuals requiring escorts were properly escorted. The inspectors also verified that selected vital areas were locked and alarmed. The inspectors observed that personnel and packages entering the protected area were searched by equipment or hand, as appropriate.

Protesters established a presence outside of the owner controlled area on several occasions. The security force was effective in its response to potential security threats and exhibited good cooperation with local law enforcement agencies.

One unresolved item was identified. No violations or deviations were identified.

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

Through direct observations, discussions with licensee personnel, and review of records, the following LERs were reviewed to determine that reportability requirements were fulfilled, that immediate corrective action had been accomplished, and that corrective action to prevent recurrence had either been completed or planned.

a. (Closed) LER 50-282/92011-01: ASME Section XI Inservice Inspection of Longitudinal Seam Welds Not Consistently Performed within the Required Time Limits.

As discussed in NRC Inspection Report 50-282/92015; 50-306/92015(DRP), the licensee identified that certain longitudinal weld inspections of selected piping in the safety injection, residual heat removal, and main steam systems had not been performed. This issue was reviewed by a Region III inservice inspection (ISI) specialist, and based on the results of that review, the original LER was closed in NRC Inspection Report 50-282/92020; 50-306/92020(DRS). The licensee submitted this supplemental LER to revise a corrective action commitment described in the original LER.

The licensee had originally committed to revise ISI component identification sketches, nondestructive examination procedures, and ISI program documents to better identify longitudinal seam welds and to more clearly state examination requirements. The

licensee had begun to revise ISI isometrics (component identification sketches); however, the use of the revised isometrics led to confusion when performing ISI examinations in the field. As a result, the licensee decided to revise the ISI database and nondestructive examination procedures rather than continue with the effort to revise ISI isometrics. The licensee revised the nondestructive examination procedures to more clearly state longitudinal seam weld examination requirements. In addition, the ISI database was revised to specifically identify longitudinal seam welds. In the supplemental LER, the licensee stated that the revised procedures and database will ensure that longitudinal seam weld examinations are performed as required. The inspectors concluded that the licensee's revised corrective actions appeared adequate to prevent recurrence. This supplemental LER is closed.

- b. (Closed) LER 50-282/93011: Opening Found in Steam Exclusion Boundary.

The inspectors concluded that the licensee's completed corrective actions and those corrective actions that are still in the process of being implemented, appear adequate to prevent recurrence. Issues that may result from revised high energy line break analyses that are being performed to update the Safety Analysis Report and further define the steam exclusion boundary control program, will be reviewed as they are identified during future inspections. This LER is closed.

- c. (Closed) LER 50-282/95001: Inoperability of One Safeguards Traveling Screen Due to Personnel Error.

On January 21, 1995, an outplant operator discovered that the high and low pressure sensing lines were disconnected from the differential pressure switch associated with No. 121 safeguards traveling screen. In this condition, the traveling screen could not perform the safety-related function of starting in fast speed and operating with continuous backwash. In addition, a high screen differential pressure condition would not have been annunciated in the control room. The licensee determined that the switch condition would not have precluded the traveling screen from operating in slow speed with periodic backwash regulated by an automatic timer. Upon identifying the discrepant condition, the licensee declared No. 121 safeguards traveling screen inoperable and entered the appropriate 90-day limiting condition for operation (LCO). The licensee initiated a work order and restored the pressure switch to operation on January 23.

After further investigation, the licensee concluded that the differential pressure switch had been inoperable since July 29, 1994, when an instrument and controls (I&C) technician last performed corrective maintenance on the switch. The licensee determined that the governing work procedure did not provide the

I&C technician with adequate guidance for returning the switch to service and did not specify any post-maintenance testing requirements. The licensee also concluded that the responsible I&C technician did not perform "self-checking" when restoring the switch to service.

As described in the associated LER, the licensee's corrective action included emphasizing to all I&C technicians the importance of self-checking in return-to-service and post-maintenance testing activities. The corrective action also included verifying proper alignment and sensing line connections by inspecting all accessible instruments located outside the containment building and listed in unit startup checklists. The licensee committed to reviewing existing instrument calibration procedures to verify that adequate guidance for returning instruments to service and for conducting post-maintenance testing was included. The licensee stated that the review scope will include those procedures used to calibrate safeguards and Technical Specification-required equipment on a non-outage frequency. Procedures used to calibrate equipment on an outage frequency did not contain return-to-service requirements since associated instrument alignments were verified by prestartup checklists. The licensee also reminded work order procedure writers and reviewers to specify removal-from-service/return-to-service instructions and post-maintenance testing requirements in work procedures associated with Technical Specification-required or safety-related equipment.

Per Technical Specification 3.3.D.2.c, one safeguards traveling screen may be inoperable for 90 days. The inoperability of No. 121 safeguards traveling screen from July 29, 1994, to January 23, 1995, a period of 178 days, is considered a violation of TS 3.3.D.2.c. However, the violation is not being cited because the criteria specified in Section VII.B.2 of the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy, 10 CFR Part 2, Appendix C), were satisfied.

In the subject LER the licensee stated that a few similar events have occurred in the last several months. Similar to this event, the licensee attributed the root causes for these other events to personnel error and to procedures without specific guidance on return-to-service or post-maintenance testing requirements. The inspectors expressed related concerns with configuration control in NRC Inspection Report 50-282/94015; 50-306/94015(DRP), which discussed the repositioning of a safeguards ventilation system control switch by a maintenance worker based on verbal authorization rather than a documented authorization in accordance with the licensee's tagout procedures. In addition, the inspectors noted during a routine review of licensee nonconformances, other instances of equipment configuration control problems. For example, after receiving the "121 Traveling Screen Failure to Wash" control room annunciator on November 7,

1994, an operator found two instrument block valves, one for pressure switch PS-16099 (screen motor start permissive) and one for pressure instrument PI-11498 (local screen wash water pressure indicator), closed. These valves were mispositioned during a cooling water line flush of the associated instruments, and the mispositioning resulted in an unplanned LCO entry for No. 121 safeguards traveling screen.

During this inspection period (refer to paragraph 3.a), the licensee removed No. 12 charging pump from service by tagging the associated control room switch and supply breaker at the local motor control center, and by closing the pump's suction and discharge isolation valves. The licensee did not attach any equipment control tags to these valves but rather relied on the exchange of valve status information during shift turnover to maintain configuration control. The valves' position was recorded on the shift turnover sheet. The inspectors will evaluate the effectiveness of licensee corrective actions to address configuration control issues as part of their followup to Unresolved Item 50-306/94015-02(DRP). This LER is closed.

- d. (Open) LER 50-282/95002: Inoperability of Continuous Air Monitor When Drive Belt Failed Without Control Room Knowledge.

At approximately 7:08 a.m. (CST) on February 5, 1995, an Auxiliary Building operator noticed that the continuous air monitor (CAM) for the spent fuel pool (SFP) normal ventilation system (CAM-5) was not running due to a broken sample pump drive belt. The control room was notified by the Auxiliary Building operator. Control room operators then secured the SFP normal ventilation system. The duty chemist obtained an airborne sample to verify that iodine, particulate, and noble gas levels were acceptable. The sample results were normal. At 11:15 a.m., auxiliary sampling equipment was placed in service and the SFP normal ventilation system was returned to service. A work order was initiated to replace the drive belt, and CAM-5 was returned to service on February 8. CAM-5 provides continuous particulate and iodine sampling for the SFP, and the silica gel tritium sampler is connected to it.

Based on sample flow integrator calculations, the licensee determined that CAM-5 was inoperable for 2 to 2½ hours on February 5. The licensee concluded that no radioactive release occurred during this period. This was based on the following: the results of samples taken before CAM-5 became inoperable and after CAM-5 was returned to service, the fact that noble gas monitors R-25 and R-31 did not provide any indication of increased activity, and that no work was in progress in the SFP which would have changed SFP conditions. The licensee concluded that while the preventive maintenance (PM) procedure for radiation monitor sample pumps required periodic inspection of the drive belt, this

inspection was inadequate to detect impending failure. The licensee's corrective action included revising the PM procedure for radiation sample pumps by requiring a more thorough belt inspection and more frequent belt replacement.

When referencing Technical Specification (TS) Table 3.9-2, TS 3.9.F identified the radioactive gaseous effluent monitoring instrumentation required to be operable and the specific actions to be taken if less than the minimum number of required instrumentation channels was operable. Unless samples were continuously collected with auxiliary sampling equipment, at least one channel of the iodine sampler cartridge and the particulate sampler filter must be operable during SFP releases (SFP ventilation system in service). In addition, TS 4.17-4 required continuous sampling for tritium during releases from the SFP. The inoperability of CAM-5 with the SFP normal ventilation system in service prevented continuous particulate, iodine, and tritium sampling of the SFP. This constituted a violation of TS 3.9.F and TS 4.17-4. However, the violation is not being cited because the criteria specified in Section VII.B.2 of the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy, 10 CFR Part 2, Appendix C), were satisfied. The licensee reported this event pursuant to 10 CFR Part 50.73(a)(2)(i)(B).

A similar event (LER 50-282/94008) involving the inoperability of CAM-5 was discussed in NRC Inspection Report 50-282/94015; 50-306/94015(DRP). This LER will remain open pending a review of radioactive gaseous effluent monitoring instrumentation performance by a Region III radiation protection (RP) specialist during the next routine RP inspection.

Two non-cited violations were identified. No deviations, unresolved items, or inspection followup items were identified.

5. Maintenance Observation (62703, 92902)

Routine preventive and corrective maintenance activities were observed to ascertain that they were conducted in accordance with approved procedures, regulatory guides, industry codes or standards, and in conformance with Technical Specifications. The following items were considered during this review: adherence to Limiting Conditions for Operation while components or systems were removed from service, approvals were obtained prior to initiating the work, activities were accomplished using approved procedures and were inspected as applicable, functional testing and/or calibrations were performed prior to returning components or systems to service, and activities were accomplished by qualified personnel.

Portions of the following maintenance activities were observed or reviewed during the inspection period:

- Work Order 9500176, "Replace D1 EDG Exhaust Gaskets"
- Replace containment hydrogen sensor
- Work Order 9500262, "21 Battery Charger - Install Conduit Cable and Terminate"
- Work Order 9500273, "Replace 21 DC Battery Transfer Switch and Terminate Cables"
- Work Order 9500027, "21 RHR Pump Discharge Pressure Loop Calibration"
- Work Order 9501618, "22 RHR Pump Breaker Change"

a) Online Maintenance

On March 9, 1995, the licensee removed both No. 21 residual heat removal (RHR) pump and No. 21 safety injection (SI) pump from service for various preventive maintenance activities including the swapping of respective pump supply breakers with installed spare breakers (breaker rolls) and performing an RHR pump discharge pressure loop calibration. The pressure loop calibration involved calibrating pressure transmitter 2PT-629 (21 RHR pump discharge pressure). This pressure transmitter provided an interlock function for motor-operated valve MV-32208 (21 RHR heat exchanger to 21 SI pump isolation valve). The licensee considered MV-32208 inoperable during the calibration of 2PT-629. Since MV-32208 provides a suction flow path from the RHR system to the SI system during long term recirculation (piggyback mode), the licensee declared both the Train A RHR and SI systems inoperable. The licensee entered a 72-hour limiting condition for operation (LCO) for both Train A RHR and SI systems.

The inspectors questioned the licensee regarding what risk evaluation had been performed before taking one train of the emergency core cooling system (ECCS) out-of-service. Based on discussion with the licensee, a quantitative risk assessment had not been performed for this specific evolution. The inspectors also questioned why preventive maintenance (PM) was being performed on the SI system while Unit 2 was at power rather than waiting until the upcoming outage when SI was not required. The licensee stated that since Train A of the RHR and SI systems were considered inoperable during the calibration of 2PT-629, other RHR and SI system PM items were scheduled for the same time. The inspectors noted that these other PM activities, such as breaker rolls, prevented No. 21 RHR and SI pumps from being able to provide any injection flow in the event of a loss-of-coolant accident. The inspectors asked the licensee if consideration was given to sequencing the RHR and SI system PM work, such that at

least one pump's injection capability would have been maintained, while balancing this against overall LCO time. The inspectors noted that Train A of RHR and SI were inoperable for greater than 9 hours and asked the licensee if the scope of planned PM activities required the ECCS train to be inoperable for a longer period of time than that necessitated by the calibration of 2PT-629 alone. Additionally, the inspectors were concerned because the need to revise post maintenance surveillance procedure SP 2088 "Safety Injection Pumps Test" was not recognized until operators were actually ready to perform post maintenance testing.

The inspectors discussed these concerns with operations shift management and the General Superintendent of Plant Operations (GSPO). The day time shift manager (assistant to the GSPO) informed the inspectors that the work planning process was currently being reviewed including the involvement of operations shift management. The inspectors will review the results of the licensee's self-assessment upon completion. This online maintenance issue is considered an Inspection Followup Item (50-306/95005-02(DRP)) pending further evaluation and review by the inspectors.

b) Work Planning

During the maintenance on the RHR and SI systems, the volt meters on the control room "G" panel for 4 kV safeguards bus No. 26 and 480 Volt safeguards busses No. 221 and No. 222, were lost at approximately 8:15 a.m. on March 9, 1995. The loss of voltage was caused by an interruption of power to the non-safeguards inverter No. 44 while isolating the inverter to troubleshoot an associated fan alarm. Due to conflicting information on an equipment control tag, an operator mistakenly secured power to the subject inverter. The inspectors discussed this apparent configuration control problem with operations shift management and will further evaluate it as part of their followup to Unresolved Item 50-306/94015-02 (refer to paragraph 4.c).

Inverter No. 44 also supplied power to the Train B central processing unit (CPU) of the emergency response computer system (ERCS). At the time that power to Inverter No. 44 was lost, the licensee had not completed all planned work on ERCS Train A CPU. Per the daily work plan, the licensee intended to complete all work on the Train A CPU before starting any work on Inverter No. 44. The inspectors discussed this apparent failure to follow the approved work plan with the licensee and will further evaluate this issue as part of their followup to Inspection Followup Item 50-306/95005-02.

One inspection followup item was identified. No violations or deviations were identified.

6. Surveillance (61726, 73753, 92902)

The inspectors reviewed Technical Specification-required surveillance testing as described below, and verified that testing was performed in accordance with adequate procedures, test instrumentation was calibrated, and Limiting Conditions for Operation were met. The inspectors further verified that the removal and restoration of affected components were properly accomplished, test results conformed with Technical Specifications and procedure requirements, test results were reviewed by personnel other than the individual directing the test, and deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

Portions of the following test activities were observed or reviewed:

- Cooling water system benchmark test
- SP 2088, "Unit 2 Safety Injection Pumps Test"
- SP 2355, "Unit 2 Auxiliary Feedwater Pumps Check Valve Test"
- SP 1032B, "Unit 1 Safeguards Logic Test Train B"

No violations, deviations, unresolved items, or inspection followup items were identified.

7. Engineering and Technical Support (37551, 92903)

The inspectors reviewed and evaluated engineering and technical support activities to assess the adequacy of these activities in supporting operations, maintenance, testing, training, fire protection, and configuration management.

During this inspection period, additional concerns with configuration management were identified. These concerns are discussed in paragraph 4.c.

No violations, deviations, unresolved items, or inspection followup items were identified.

8. Self-Assessment (40500)

a. Operations Committee (OC) Meetings

The inspectors observed several OC meetings during this inspection period. The OC is the licensee's onsite safety review committee and meets weekly or as emergent operability issues dictate. Items reviewed and discussed at these meetings included proposed modifications and alterations, 10 CFR Part 50.59 and Part 72.48 safety evaluations, Technical Specification interpretations,

procedure revisions, and minutes of previous OC meetings. Reviews of proposed modifications and safety evaluations were conducted in a professional manner in an environment conducive to open, candid discussion with emphasis on safety and adequate documentation of the basis for conclusions. The OC aggressively pursued identification and evaluation of potential operability issues. The inspectors concluded that the OC demonstrated an appropriate safety focus in evaluating both potential and actual plant safety issues.

b. Safety Audit Committee (SAC) Meeting

The inspectors attended portions of the licensee's SAC meeting on March 22, 1995. The SAC is the licensee's offsite safety review committee and meets semiannually to discuss plant events, organizational changes, NRC violations, license amendment requests and other regulatory correspondence, quality assurance audits, and other items of interest relative to operation of the licensee's facility. During the March 22 meeting, the inspectors observed discussions on selected plant events, NRC inspection results, dry cask storage activities, and quality assurance audit findings. The inspectors noted that the committee exhibited an appropriate safety perspective as reflected in the nature of questions to the licensee's staff.

No violations, deviations, unresolved items, or inspection followup items were identified.

9. Non-cited Violation

The NRC uses the Notice of Violation as a standard method for formalizing the existence of a violation of a legally binding requirement. However, because the NRC wants to encourage and support licensee initiatives for self-identification and correction of problems, the NRC will not generally issue a Notice of Violation for a violation that meets the criteria of 10 CFR Part 2, Appendix C, Section VII.B. These criteria are:

- (1) it was not a violation that could have reasonably been prevented by corrective action to a previous violation;
- (2) the violation was not of major safety significance;
- (3) the violation was or will be corrected, including measures to prevent recurrence, within a reasonable time; and
- (4) it was not a willful violation.

Violations of regulatory requirements identified during this inspection for which a Notice of Violation will not be issued are discussed in paragraphs 2.b, 4.c, and 4.d of this report.

10. Inspection Followup Item

Inspection Followup Items are matters which have been discussed with the licensee, which will be reviewed by the inspector and which involve some action on the part of the NRC or licensee or both. An Inspection Followup Item disclosed during the inspection is discussed in paragraph 5.a.

11. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. An unresolved item is discussed in paragraph 3.a.

12. Spent Fuel Dry Cask Storage Activities (60846)

During this inspection period, the inspectors continued to review dry cask storage activities. The licensee's activities included receipt inspection of the first storage cask that arrived onsite (Cask No. TN-01 (1103A)), and preoperational testing and training activities in preparation for fuel loading. The NRC will document the results of inspection activities related to dry cask storage in Inspection Report 50-282/95002; 50-306/95002; 72-10/95002.

13. Exit Interview

The inspectors met with the licensee representatives denoted in paragraph 1 during the inspection period and at the conclusion of the inspection on March 28, 1995. The inspectors summarized the scope and results of the inspection, and discussed the likely content of this inspection report. The licensee acknowledged the information and did not indicate that any of the information disclosed during the inspection could be considered proprietary in nature.