NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-263/94009(DRP)

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

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

Facility Name: Monticello Nuclear Generating Plant

Inspection At: Monticello Site, Monticello, MN

Inspection Conducted: August 16 through September 28, 1994

Inspectors: S. Ray
W. Stearns
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Approved By: _____ 10/13/94
M. P. Phillips, Chief Date
Reactor Projects Section 2B

Inspection Summary

Inspection on August 16 through September 28, 1994
(Report No. 50-263/94009(DRP))

Areas Inspected: A routine, unannounced inspection by the resident inspectors and others of operations, maintenance, engineering, and plant support activities. The inspection of support activities included a routine security inspection conducted by a regional specialist.

Results: One violation with four examples was identified in that procedures required by Technical Specifications were not correctly followed.

Operations: Strengths were noted in communications, control of maintenance activities, conduct of a reactor shutdown, and monitoring of plant conditions during shutdown conditions. A large number of complex evolutions were conducted successfully during the inspection period. However, two examples of failure to follow procedures were identified when the wrong suction path was used for a residual heat removal intertie line flush and a residual heat removal service water pump was left running against a dead head. Both of the events involved inadequate attention by licensed operators to control board indications.

Maintenance: Strengths were noted in outage planning, scheduling, execution, and shutdown risk control. Two examples of failure to follow procedures were identified when workers manually initiated a relay in the wrong breaker cubicle and when workers began disassembly of the wrong check valves.

Engineering: The design, installation procedure, planning, and execution of a modification for repair of a crack in the core spray line was a strength.

Plant Support: The physical security program was found to be well managed. The recent security computer upgrade project was effectively implemented and indicative of good management support for the program. Communications within the security organization and between security and plant operations were good. Radiation protection planning for the refueling outage was also a strength.

Self-Assessment: An initiative in the quality services department to collect and collate all their observations for the week and present trends to management in a timely manner was considered a positive and useful step in the self-assessment process. Another self-assessment strength was the initiative in the security department to use NRC inspection manuals for audit guidance.

DETAILS

1. Persons Contacted

Northern States Power Company

*L. Waldinger, General Manager, Monticello Nuclear Site
B. Anderson, Superintendent, Security
M. Hammer, General Superintendent, Maintenance
*W. Hill, Plant Manager
G. Miserendino, Manager, Corporate Security
L. Nolan, General Superintendent, Safety Assessment
M. Onnen, General Superintendent, Operations
C. Schibonski, General Superintendent, Engineering
W. Shamla, Manager, Quality Services

The inspectors also contacted other licensee employees including members of the maintenance, engineering, quality, and operating staffs.

*Denotes those attending the resident inspectors' exit meeting on September 28, 1994.

2. Operations

The plant operated at power in the coastdown mode until the plant was shutdown for a refueling outage on September 15, 1994. The refueling outage continued for the remainder of the inspection period.

a. Operational Safety Verification

The inspectors verified that the facility was being operated in conformance with the license and regulatory requirements and that the licensee's management was effectively implementing its responsibilities for safe operation of the facility.

The inspectors verified proper control room staffing and coordination of plant activities; verified operator adherence with procedures and technical specifications; monitored the control room for abnormalities; verified that electrical power was available; and observed the frequency of plant and control room visits by station managers.

The inspectors also monitored various records, such as hold and secure card records, jumpers and bypasses, shift logs and surveillances, daily orders, and maintenance items.

Specific findings in this area are discussed in later sections of this report.

b. Changeout of Scram Pilot Solenoid Valves

Due to recent industry events involving scram pilot solenoid valves, the licensee embarked on a program to replace all of the valves with new ones designed for a longer service life. While most of the valves were replaced during the 1994 refueling outage, the licensee decided to replace the ones on the outer, low reactivity worth rods while on line before the outage. Operations personnel were involved in inserting the selected control rods one at a time, isolating and unisolating the hydraulic control units, withdrawing the control rods after the maintenance, and conducting individual scram time testing as a post maintenance test.

All of the activities were conducted with great care and appropriate consideration of the risk. Each control rod was declared inoperable until successful completion of the scram time test. The only scram pilot solenoid valves that were worked on at power were ones for which analysis showed that the associated control rod could be stuck fully withdrawn and still allow the plant to meet the single stuck rod criteria with any other rod stuck fully withdrawn. Overall, operations activities during this maintenance activity were considered excellent.

c. Shutdown for Refueling

The inspectors observed control room activities during the reactor shutdown for refueling on the evening of September 14-15, 1994. The shutdown was conducted in accordance with Operating Manual Section C.3, "Shutdown Procedures." The inspectors noted good control of the plant and the pace of operations during the shutdown. A comprehensive pre-evolution brief was conducted for all involved personnel. During the shutdown, the shift supervisor conducted several update briefs for the control room crew when changing conditions warranted. Good communications with repeat backs and acknowledgments were noted.

During the power reduction, the recirculation pump motor generator set scoop tube controls locked up a various times. Operators worked closely with the system engineer and instrument and control technicians to resolve the problems. At times, manual control of the scoop tubes was used to reduce recirculation flow. Those evolutions were conducted by a licensed reactor operator in the field under the direction of the control room. A second operator was used in the field to facilitate communications in the high noise area. Overall operator performance during the portions of the shutdown observed was considered excellent.

d. Control of the Plant During Refueling

With the exception of two events discussed below, the inspectors noted good control of plant status during the refueling. Status boards were available and updated in both the control room and

shift supervisor's office to monitor systems' availability for core cooling and water addition. Changes to systems' status were generally well planned and controlled. Because of major work in the steam chase which involved several changes to the normal secondary containment boundaries, an additional status board was developed just for that work.

During the refueling outage, several additional shift supervisory personnel were assigned to each shift and an additional position of shift outage manager was established. The shift outage manager position was generally filled by the most experienced senior reactor operators. The additional personnel in the shift supervisor's office initially made individual shift relief turnovers more complicated. Predetermined times were scheduled for turnover, with a final group turnover for all operations supervisors. No other administrative work was conducted in the office during the turnovers. That initiative resulted in significantly better and more efficient shift reliefs.

Control room activities were generally well controlled and coordinated. Adequate time was taken to conduct activities in a safe manner and schedule pressure was minimized. Shift schedules were arranged to provide as much personnel support as practical. Technical Specification requirements for working hours were adhered to without use of the option for management to extend hours in special cases.

e. Inadvertent Pumping of Water from the Torus to the Reactor Cavity

On September 19, 1994, while performing Special Procedure #8192, "Residual Heat Removal (RHR) Intertie Flush," an operator error caused water to be inadvertently pumped from the torus to the reactor cavity. The "A" RHR system was lined up for suction from the torus with the shutdown cooling suction valve closed when the procedure to flush the intertie line was begun. Step 3 of the procedure required the operator to position or verify the position of valve MO-1988, "Loop 11 Shutdown Cooling Suction," to be open.

A reactor operator placed the control switch for the valve into the open position but the valve did not open because of an electrical interlock that required the torus suction valve to be closed first. Procedure #8192 did not address closing or checking the torus suction valve. The operator did not notice that MO-1988 did not open, nor did a second reactor operator who was reading the procedure to the first and initialling steps as completed. The second operator then performed step 4 of the procedure which started the #11 RHR pump. This caused water to be pumped from the torus to the reactor cavity instead of simply recirculating reactor cavity water as intended. Special refueling instrumentation to monitor reactor cavity level was in service and an alarm was received a few seconds later when cavity level increased about one inch on that instrumentation. Operators

rapidly diagnosed the problem and secured the RHR pump. The total rise in reactor cavity level was only two or three inches.

The following problems were noted during the investigation of the event:

- Special Procedure #8192 was apparently written with the assumption that the RHR system would initially be lined up for shutdown cooling although that was not stated as a prerequisite.

- An infrequent evolution brief was held before performing the evolution but the problem with the procedure was not noticed.

- The reactor operator performing the valve lineup did not verify that the position of MO-1988 actually changed when he attempted to open it.

- A second reactor operator who was reading and initialling the steps as performed did not verify that the valve had opened.

- The evolution was performed at the end of a 12-hour night shift while some shift members were conducting their reliefs. Self-generated pressure to finish the job before the end of the shift appeared to be a contributing factor.

The licensee issued Nonconformance Report N94-209 to document its evaluation and corrective actions. The procedure was pulled from the files until a revision was made.

The safety significance of the event was minimal because special instrumentation detected the rise in reactor cavity water level almost immediately. In addition, operators performing refueling activities over the cavity also noticed the rise in level. Had the event not been detected, there would have been no danger to the core but contaminated water may have overflowed the reactor cavity and caused contamination of portions of the reactor building. A fuel pool skimmer surge tank high level alarm would have annunciated before that point so operators would have had another method to detect the error. However, the event indicated a significant failure on the part of two reactor operators to perform self-checking of their actions for lining up an important system.

Technical Specification 6.5 required, in part, that detailed written procedures, including the applicable checkoff lists and instructions, covering areas listed shall be prepared and followed. One of the areas listed was system operating procedures. Contrary to the above, on September 19, 1994, Special

Procedure #8192 for flushing the RHR intertie line was not followed when valve MO-1988 was not positioned or verified to be open. This violation is similar in nature to an event that occurred on June 8, 1994, when inadequate self-checking contributed to a draining of the reactor cavity to the torus via the RHR system (see Inspection Report 50-263/94004). Since the corrective actions from that violation should have prevented this event, this example of failure to follow procedures is an example of a violation for failure to follow procedures (263/94009-01a(DRP)).

f. Residual Heat Removal Service Water (RHRSW) Pump Ran with no Discharge Path

On September 23, 1994, a reactor operator improperly secured the RHRSW system which resulted in running the #14 RHRSW pump with no discharge path for about three hours. The RHR system was operating in the shutdown cooling mode with both the #12 and #14 RHR pumps and #12 and #14 RHRSW pumps running. The operator was directed to shutdown the system to support invessel inspections. He properly secured both RHR pumps and the #12 RHRSW pump. However, the red running light was burned out on the control board for the #14 RHRSW pump and the operator incorrectly assumed that the pump was out of service and already secured. He shut the RHR heat exchanger service water outlet valve as part of the procedure, thus there was no flow path for the running RHRSW pump.

The problem was discovered about three hours later when the RHR system was being restarted for shutdown cooling. The pump was immediately secured and examined. The motor casing was warm but not overly hot. The pump was later restarted for a surveillance test and it exhibited normal characteristics and vibration. Oil samples from the pump motor were also normal. Supervisory personnel assessed the fitness for duty of the personnel involved and no concerns were identified. The event occurred about two to three hours into a twelve-hour day shift so fatigue did not appear to be a contributing factor. The licensee issued Nonconformance Report N94-229 to document its evaluation and corrective actions.

The following problems were noted during the investigation of the event:

- The shift supervisor watched the operator secure the RHR pumps but not the RHRSW pumps because he did not consider that part of the evolution to be difficult.

- The status board in the control room, shift turnover information, and control room logs all indicated that the #14 RHRSW pump was running at the start of the evolution.

- The operator assumed that the #14 RHRSW pump was out of service for maintenance and that was the reason neither the running nor stopped lights were lit. That would have been inconsistent with the plant's quite rigorous policy of working on only one division of shutdown cooling equipment at a time during an outage.

- RHRSW flow and heat exchanger differential pressure indications were consistent with both RHRSW pumps running at the beginning of the evolution.

- Shortly after the evolution was completed the turbine building operator informed the reactor operator that the #14 RHRSW pump was still running but the reactor operator dismissed the report as a mistake. The turbine building operator was rather newly qualified and did not pursue the issue.

Since the RHRSW pump was apparently not damaged from running dead headed the event had minimal safety significance. With the reactor head removed and reactor cavity flooded, the remaining RHRSW pump would have been sufficient to remove decay heat had the #14 pump been damaged. However, the event indicated a significant failure on the part of the reactor operator to maintain awareness of plant conditions and believe his indications and reports.

Technical Specification 6.5 required, in part, that detailed written procedures, including the applicable checkoff lists and instructions, covering areas listed shall be prepared and followed. One of the areas listed was system operating procedures. Contrary to the above, on September 23, 1994, Operations Manual Section B.8.1.3-05.F.1, "Shutdown of RHRSW Loop," step 4, "Stop the RHRSW pump(s)," was not followed when the #14 RHRSW pump was not stopped. Since the licensee had an opportunity to identify the condition but failed to take action when the turbine building operator notified the control room, this violation does not meet the criteria for a non-cited violation. This was another example of a violation for failure to follow procedures (263/94009-01b(DRP)).

Two examples of a violation were identified.

3. Maintenance

a. Observation of Work

Routinely, station maintenance and surveillance activities were observed and/or reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides, and industry codes and standards, and in conformance with technical specifications.

The following items were considered during this review: approvals were obtained prior to initiating work; test instrumentation was calibrated; 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; results were within specification and properly reviewed, and any deficiencies identified were properly resolved. The following maintenance and surveillance activities were observed:

4580PM	Snubber Maintenance
Test 0030	ECCS High Drywell Pressure Sensor
WRA 94-04683	Scram Pilot Solenoid Replacement
Test 0081	Single Rod Scram
WRA 94-04970	On Line Control Rod Drive Hydraulic Control Unit Isolation and Testing
Test 0212	Rod Worth Minimizer Operational Test
WRA 94-90283	Installation of Mechanical Clamps on the Core Spray T-Box

Portions of numerous other maintenance and testing activities were observed as part of the refueling outage activities. All activities except as discussed elsewhere in this report were conducted properly and safely.

- For WRA 94-04683, the inspectors observed especially careful work by the electricians involved. They displayed the appropriate sensitivity to working on control rod systems while the plant was on line. Good self-checking was observed when the electricians verified that they were working on the proper scram valves, that the valves were properly isolated, and that wires for scram pilot solenoid valves and directional control valves were reconnected to the proper valves.

- For WRA 94-90283 additional comments are contained in Section 4.b of this report.

b. Outage Planning and Execution

The inspectors attended numerous meetings involving the outage schedulers and other plant personnel during the planning and execution of the refueling outage. Detailed planning and scheduling of the outage resulted in the work remaining very close to schedule during the first part of the outage covered by this inspection report. Emergent work was carefully fit into the existing schedule. Outage status was communicated to all personnel by twice daily meetings, electronic mail, newsletters, and other methods. A detailed probabilistic risk assessment was conducted for the outage and updated as necessary when conditions changed. The control of systems necessary to cool the fuel and

add water to the reactor was carefully planned and monitored. Overall outage planning, scheduling, and execution was considered a strength.

c. Reactor Disassembly for Refueling

The inspectors observed portions of the reactor disassembly in preparation for invessel inspections and refueling operations. The work generally was well planned, controlled, and executed. Workers were assembled for a pre-job brief at the beginning of each shift and before each major evolution. Since much of the work was conducted inside highly contaminated areas and it would have been difficult for workers to have copies of the procedures to refer to, the licensee used a separate reader to maintain the procedure and give instructions.

The only significant problem with the disassembly was that a section of the outer o-ring seal on the reactor head stuck to the vessel flange as the head was initially lifted. This was noticed by the workers immediately and actions were taken to free the ring and hold it in place on the head during the lift. However, despite those efforts, an o-ring retaining clip was found missing after the lift. The clip possibly could have dropped into the reactor vessel. At the conclusion of the inspection period the clip had still not been located. The inspectors will continue to follow this issue.

d. Personnel Error Caused Unanticipated Start of Emergency Diesel Generators

On September 7, 1994, during the performance of Surveillance Test 0301, "Safeguard Bus Voltage Protection Relay Functional Test," electricians manually closed an incorrect relay which resulted in starting both the emergency diesel generators (EDGs). Step 48 of the test procedure instructed the electricians to measure the voltage between two contacts on relay 127-6Y located in breaker cubicle ACB-152-601 while manually closing relay 127-6 located in breaker cubicle ACB-152-605. A note typed in bold print at the beginning of step 48 warned that relay 127-6 was in breaker cubicle ACB-152-605; however, the electricians manually closed relay 127-6 in cubicle ACB-152-601. That action completed the loss of voltage logic which started both EDGs.

The mistake was recognized as soon as it occurred and the procedure was halted. The EDGs started and operated normally. All equipment functioned as expected under the circumstances. The licensee notified the NRC in accordance with 10 CFR 50.72 and will issue a licensee event report as a written followup. Although it caused an unnecessary challenge to a engineered safety feature system, the event had minimal safety significance.

The investigation of the event indicated no unusual factors other than a failure on the part of the electricians to read and follow the procedure closely enough. The procedure was clearly written and had been performed by the electricians successfully in the past. Lighting, fatigue, schedule pressure, or other conditions did not appear to be factors.

Technical Specification 6.5 required, in part, that detailed written procedures, including the applicable checkoff lists and instructions, covering areas listed shall be prepared and followed. One of the areas listed was surveillance and testing requirements that could have an effect on nuclear safety. Contrary to the above, on September 7, 1994, electricians did not follow Surveillance Test 0301 in that they manually closed the wrong relay. The primary cause of this error was lack of sufficient attention to detail on the part of the electricians. Inadequate attention to detail was the root cause of several of the violations issued in Inspection Report 50-263/94004. Since this violation could reasonably have been expected to be corrected from corrective actions for the prior violations, it does not meet the criteria for a non-cited violation. This is another example of a violation for failure to follow procedures (263/94009-01c(DRP)).

2. Maintenance Workers Started Work on the Wrong Valves

On September 16, 1994, maintenance workers assigned to disassemble emergency service water (ESW) system check valves ESW-15 and ESW-16 began disassembling service water (SW) system check valves SW-15 and SW-16. While loosing the bonnet bolts on the valves, water was encountered and the bolts were rapidly retightened. The system engineer was contacted and he identified the correct valves. The licensee issued Nonconformance Report (NCR) 94-202 to document the evaluation and corrective actions for this event.

The following problems were noted during the investigation of the event:

- ESW-15 and ESW-16 check valves were normally covered with insulation. The valves are identified by tags on the outside of the insulation but the insulation was removed by other workers before the job. The valves themselves were not labeled.

- The workers could not locate the proper valves for the job but when they found SW-15 and SW-16, they thought that perhaps they were the correct valves.

- The workers, with supervisor knowledge, were allowed to disassemble SW-15 and SW-16.

- Although the workers suspected that they might be on the wrong valves, they did not obtain assistance from operations or engineering personnel to resolve the uncertainty. They proceeded because they perceived that the service water system had a low risk of causing personal injury.

- The NCR for the event was considered nonsafety-related and nonsignificant. The inspectors determined that the NCR was miscategorized. SW-15 and SW-16 are on the cross-tie line between nonsafety-related service water and the safety-related emergency service water supply to the #11 emergency diesel generator (EDG). SW-16 is a safety-related valve. Had it been disassembled to the point of allowing major leakage, cooling water would not have been available to the #11 EDG. At the point in the outage when the event occurred, the #11 EDG was required to be operable to provide emergency backup power to the core cooling and water addition equipment. This was a licensee self-imposed requirement for outage safety and was not a Technical Specification requirement. The inspectors discussed the miscatagorized NCR with the General Superintendent Maintenance who agreed with the finding and said he would recategorize it.

As discussed above, the event had minimal safety significance because the workers retightened the bonnet bolts as soon as they noted leakage. However, the event showed a lack of good judgment on the part of the workers for not fully resolving their uncertainties before proceeding with the work.

Technical Specification 6.5 required, in part, that detailed written procedures, including the applicable checkoff lists and instructions covering areas listed, shall be prepared and followed. One of the areas listed was preventive maintenance of plant equipment that could affect the nuclear safety of the plant. Contrary to the above, on September 16, 1994, workers performing Maintenance Work Request (MWR) 94-03778 for inspection of safety-related valves ESW-15 and ESW-16 did not follow the MWR procedure because they started to disassemble SW-15 and SW-16. This was an example of a violation for failure to follow procedures where the proper characterization of need for corrective action timeliness was made by the NRC, hence, it does not qualify as licensee-identified (263/94009-01d(DRP)).

Two examples of a violation were identified.

4. Engineering

a. Main Steam Isolation Valves Fail Local Leak Rate Tests

On September 19, 1994, the licensee reported to the NRC in accordance with 10 CFR 50.72 that local leak rate tests of the main steam isolation valves (MSIVs) indicated that seven of the eight valves displayed leakage greater than allowed by Technical Specifications. The licensee expected some of the valves to fail because they had failed previously in recent outages. Inspection Report No. 50-263/92019 and Licensee Event Report 93-003 contain discussions of similar failures in the 1993 refueling outage.

The licensee had already planned to replace all of the outboard MSIVs during the 1994 refueling outage with valves having improved isolation characteristics. In addition, the licensee had already planned to perform a modification to the operating air supply to the inboard MSIVs to make it a safety-grade system. Because the existing air supply was not considered safety-grade, the licensee did not apply air to the MSIV operators to help hold them shut during local leak rate tests. After the modification is completed during the 1994 outage, the licensee will be able to use the air assist to help seal the inboard MSIVs during testing. The inspectors considered the MSIV modifications to be a proactive, long term approach to improve the safety performance of the valves.

The licensee intended to issue a licensee event report (LER) as a written followup of the event. The inspectors will review the LER and corrective actions when issued.

b. Core Spray Line Crack Repair

As previously discussed in Inspection Reports 50-263/92018, Section 2.d.(5).(c), and 50-263/93004, Section 5.c, the licensee discovered a crack on the "B" core spray line internal to the reactor vessel in the 1993 refueling outage. During the 1994 refueling outage, the licensee installed clamping devices on both the "A" and "B" core spray lines around the T-boxes inside the vessel. The work was completed in accordance with Modification 94Q060 under Maintenance Work Request 94-90283. The work involved the use of underwater divers in the reactor vessel.

The modification appeared to be well designed. It was mechanically simple and its installation involved a minimum of cutting, welding, and installation time. The modification ensured structural integrity not only of the weld where the crack was identified but of several other welds in the core spray thermal sleeve and T-box areas.

The installation was conducted on September 25-26, 1994. The effort was well planned and executed. The entire job took only a

little over half the time originally expected and resulted in only about one third of the radiation exposure expected. Overall the modification was considered an excellent job not only by the engineering personnel involved with its design and planning, but with numerous other plant and contractor groups involved with executing the repair.

No violations or deviations were identified.

5. Plant Support

a. Security

(1). Summary

A routine physical security inspection was conducted between August 29, 1994, and September 2, 1994 Inspection activities included Audits, Corrective Actions and Management Support; Effectiveness of Management Controls; Alarm Stations and Communications; and followup on previous inspection findings.

No violations, unresolved items, or deviations were identified. All previous inspection followup items were closed. An unresolved item pertaining to the licensee's fitness for duty program was also closed. These items were discussed with the Manager Corporate Security and cognizant members of his staff on September 2, 1994.

The physical security program was found to be effectively implemented and appropriately directed toward public health and safety. Completion of a new security computer upgrade project with updated hardware and software showed strong management support for the program. The onsite self-assessment program provided an effective ongoing system of internally monitoring security activities at the plant and was successful in identifying and recommending solutions to identified problems. Good information communication existed between security management and the security force and between the security and the various plant groups.

However, continued management attention is warranted in the resolution of minor debugging problems associated with the new security computer.

(2). Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (50-263/93016-01(DRSS)): This item was described in Section 5 of the above noted report and related to the protection of safeguards information. The licensee was to investigate an incident involving the finding of an unmarked computer disk possibly containing

significant safeguards information. The investigation showed that the disk found in the drafting area contained safeguards information developed during 1990 in preparation for the NRC Regulatory Effectiveness Review conducted during September 1990. The drawings were from the vulnerability assessment and could assist an adversary in radiological sabotage. A reactive inspection conducted by Region III on October 26-29, 1993, resulted in the identification of two potential violations: (1) failure to secure a computer disk containing some significant safeguards information that could assist an individual with an act of radiological sabotage; and (2) failure to mark this disk and five others with external safeguards information markings.

(Closed) Violation (50-263/93019-01(DRSS)): This violation was described in Section 4 of the above noted report and involved a failure to adequately secure safeguards information. Specifically, an unmarked disk that could assist an individual in an act of radiological sabotage was not controlled. The inspector verified by observation that all safeguards information was consolidated into the Security Services Information Room. An SGI classification guide was developed and implemented. Site personnel requiring access to SGI have reviewed 4AWI-02.11.01, "Classification, Handling and Protection of Safeguards," prior to being granted access to SGI. The inspector observed the SGI control measures in place and concluded that the licensee has a well developed and implemented SGI protection program.

(Closed) Violation (50-263/93019-02(DRSS)): This finding was described in Section 4 of the above noted report and involved a failure to mark six computer disks with external SGI markings. The site SGI procedure was revised to require the Superintendent Security to make all SGI determinations. Additional marking requirements were introduced for SGI computer media while in use. Personnel were trained in the procedure. These measures have been effective in preventing recurrence.

(Closed) Unresolved Item (50-263/94004-02(DRP)): This item was described in Section 2.c of the above noted report and pertained to the fitness for duty (FFD) program's ability to address mental impairment due to sleep deprivation. The inspector reviewed the licensee's fitness for duty program to determine if the program adequately addressed mental impairment due to sleep deprivation. Based on that review, the inspector concluded that the licensee's program addressed fatigue as a factor affecting FFD and the program was adequate. The inspector interviewed the reactivity manager regarding his FFD status on April 17, 1994. He stated that he considered himself fit for duty when he was

called in to work on his day off and at no time while on duty on April 17 did he consider himself not fit for duty. He stated that he was aware of his responsibility to report to his supervisor when he feels that he is not fit for duty. He was also aware that fatigue could affect an individual's FFD. In retrospect, he felt that fatigue was a factor but there was no realization of it while he was on duty at the time of the event.

(3). Physical Security Program - This effort completed 100 percent of the security inspection program. Two program strengths were noted in the areas of Management Support and Effectiveness of Management Controls.

(a). Excellent management support for the security program was demonstrated by the completion of a major alarm station and security computer upgrade program. Installation began in December 1993 and was completed in three months. The project included a replacement of all computer equipment including multiplexers. Additionally, the consoles for the Central and Secondary Alarm Stations were replaced. The licensee initiated the project because of the difficulty in maintaining an outdated system.

The upgrade significantly improved system reliability. (Under the old system, severe weather would frequently make the system fail.) Overtime by security officers required for compensatory measures was reduced. Alarms could be assessed more quickly. The human factor environment of both stations was greatly improved.

Minor debugging had continued with good vendor support. At the time of this inspection, a high number of "foreign card" alarms were being generated. For reasons unknown, a valid card would generate a foreign card alarm on the first attempt in the card reader but would properly activate the reader on second insertion. Security officers were required to respond to all foreign card alarms. On August 31 there were 73 foreign card alarms; on September 1, 1994, there were 106. The licensee was attempting to resolve this problem.

(b). The Self Assessment Program provided for an effective ongoing monitoring of the security program by security force members using the NRC inspection manuals and was considered a program strength. The program, well documented in SAP-01.1, provided members of the security force the opportunity to learn in greater detail security systems, equipment, procedures, and

regulatory requirements. Objectives of the program included the identification and recommendation of solutions to identified weaknesses. Audit concerns and findings were addressed through scheduled Monday staff meetings for the purpose of assigning action items and responsible individuals. The resolution and disposition of recommendations were communicated to the security force.

b. Radiation Protection

Radiation protection planning for the refueling outage was considered excellent. Jobs were planned in detail and realistic dose estimates were developed for each. A challenging overall outage dose goal was established and clearly communicated to all personnel. When the radiation levels in the drywell were determined to be significantly less than expected, the dose goals were reduced a proportionate amount rather than taking advantage of the unexpected lower dose rates in order to make it easier to meet the goals. Radiation protection personnel were available and involved in all major work planning and execution. Dose accumulation was carefully tracked. Some unexpected problems were encountered with airborne contamination while working on the main steam isolation valves. That issue will be addressed by a regional NRC radiation control specialist in a future report.

No violations or deviations were identified.

6. Self Assessment Activities

During the refueling outage, the quality services department started an initiative to provide more extensive and timely information to management of trends they had identified. They compiled all of the QA/QC findings, observations, nonconformances, and other documentation into a weekly trend report. Among the items trended were Miscellaneous Observation/Action Reports which had previously been used only internally in the quality services department. These reports often provided the first indication of a problem that would only later be developed into a finding or nonconformance.

A meeting was held with management each week to review the trends. This provided much more timely feedback to management of developing problems than would be obtained from formal audit reports and safety assessment trend reports, neither of which would be available until the completion of the outage.

Plant management appeared to give serious attention to the reports and the weekly meetings were quite interactive. Although it was too early to credit the initiative with a great deal of success, a significant trend in negative observations regarding welding was identified in the first weekly report and appeared to be largely corrected by the second

report. The inspectors considered the assessment initiative a positive development that could add significant value if properly used.

No violations or deviations were identified.

7. Exit Interview

The inspectors met with the licensee representatives denoted in paragraph 1 at the conclusion of the inspection on September 28, 1994. The inspectors summarized the purpose and scope of the inspection and the findings. The licensee strengths and weaknesses identified in the report were discussed. The inspectors also discussed the likely informational content of the inspection report, with regard to documents or processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents or processes as proprietary.