

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-315; 50-316
License Nos: DPR-58; DPR-74

Report No: 50-315/99020(DRP); 50-316/99020(DRP)

Licensee: American Electric Power Company
1 Cook Place
Bridgman, MI 49106

Facility: D. C. Cook Nuclear Generating Plant

Location: 1 Cook Place
Bridgman, MI 49106

Dates: October 9 through November 19, 1999

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EXECUTIVE SUMMARY

D. C. Cook Units 1 and 2 NRC Inspection Report 50-315/99020(DRP); 50-316/99020(DRP)

This inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a 6-week period of resident inspection activities and includes follow-up to issues identified during previous inspection reports.

Operations

- The control room operators did not properly review partial use of the essential service water system normal operating procedure prior to switching the essential service water pumps. The failure to properly review partial use of the procedure resulted in the unintended chlorination of the Unit 2 ESW system. This was considered a non-cited violation of 10 CFR Part 50 Appendix B, Criterion V. (Section O1.2)
- The licensee failed to provide appropriate guidance for load control of the reserve auxiliary transformer following an offsite power supply transformer tap setting change. A standing order was used to provide complex guidance on loading restrictions rather than a formal procedure. This was considered a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V. (Section O3.1)
- The inspectors identified two minor examples of failures to comply with administrative procedure requirements involving: (1) use of expired department head standing orders, and (2) placing the emergency operating procedure for transfer to cold leg recirculation on administrative hold. (Section O3.2)

Maintenance

- The licensee did not have an integrated process for controlling plant winterization. As an interim measure until a winterization program could be developed, the licensee appointed a project leader to ensure winterization activities would be completed. The interim measures appeared to adequately prepare the plant for winter. Not all of the required actions had been completed at the end of this inspection period. The winterization program development was scheduled to be completed by the end of 1999. (Section M1.2)
- A licensee procedure for performing overcurrent tests on molded case circuit breakers (MCCBs) allowed a MCCB to remain in service following a failed overcurrent test provided it passed a retest 20 minutes later. The procedure did not require the initial test failure to be evaluated. This was identified as an Inspection Followup Item. (Section M1.3)
- The licensee's Performance Assurance (PA) department identified a poor performance trend in motor-operated valve testing and issued a stop work order until the problems were corrected. This followed failure by maintenance personnel to install an open limit switch on a motor-operated valve. Engineering and maintenance department personnel failed to self-identify the poor performance trend and later issued a joint stop work order which provided an action plan to correct the trend. The PA department maintained

appropriate oversight of the corrective actions until the stop work orders were lifted.
(Section M7.1)

Plant Support

- The inspectors identified a vital area barrier breach caused by the partial removal of ice loading Temporary Modification 12-98-28. The breach had existed for several months. The licensee took prompt compensatory measures upon notification by the NRC inspectors. One Non-Cited Violation of the Modified Amended Security Plan was identified. (Section S2.1)

Report Details

Summary of Plant Status

Both units remained defueled throughout this inspection period. The licensee completed the Unit 2 "A" Train electrical bus work on November 17, 1999. The licensee subsequently started the second scheduled Unit 2 "B" Train outage to perform electrical bus cleaning and the scheduled 18-month preventive maintenance activity on the Unit 2 AB emergency diesel generator. Work on the Unit 2 "B" Train was continuing at the end of this inspection period.

I. Operations

O1 Conduct of Operations

O1.1 General Comments

The inspectors conducted frequent observations of control room activities and equipment operation during the extended outage of both reactor units. Overall, plant operations were performed using approved operating procedures and reflected good operating practices. Noteworthy observations and findings are detailed below and in the report sections which follow.

- On November 10, 1999, the licensee began cooling the Unit 2 ice condenser in preparation for loading ice. The ice condenser chill was in progress at the end of the inspection period.
- During this inspection period, the licensee completed the emergency operating procedure validation and began the emergency operating procedure verification process in the simulator.

O1.2 Inappropriate Partial Use of Essential Service Water Operating Procedure

a. Inspection Scope (71707)

On October 31, 1999, after switching operating essential service water (ESW) pumps, the control room operators did not notify chemistry personnel. As a result, the licensee continued to add chlorine to the Unit 2 ESW system after the pump was turned off. The inspectors followed up on the operators' failure to notify chemistry personnel.

b. Observations and Findings

On October 31, 1999, both control rooms' operators coordinated with each other to start the Unit 1 West ESW pump and stop the Unit 2 East ESW pump. The pump switching evolution was done to support work on Unit 2. The following day, after reviewing the control room logs, chemistry personnel identified that they were not notified. A chemistry supervisor wrote Condition Report (CR) 99-26474 to document the missed notification. Chemistry personnel concluded that this excessive chlorination of the Unit 2 ESW system would not result in system damage; however, the Michigan state discharge limits could have been exceeded if the Unit 2 ESW system had been returned to service before the excess chlorine had dispersed.

On November 1, 1999, operations personnel investigated the CR. The investigation determined that the control room operators had used one of the attachments to the normal operating procedure for the ESW system, 12-Operations Head Procedure (OHP) 4021.019.001, "Operation of the Essential Service Water System," Revision 17. The normal operating procedure provided an attachment for stopping the Unit 2 East ESW pump and removing the Unit 2 East ESW header from service. The operators intended to stop the Unit 2 East ESW pump but leave the header in service. The operators determined that not all of the steps in the attachment were necessary to perform the pump switch. Plant Managers Procedure (PMP) 2010.PRC.003, "Procedure Use and Adherence," Revision 0, allowed the partial use of procedures provided certain criteria were met. In the case of the ESW normal operating procedure, the PMP required that the procedure be reviewed for change of intent, that the justification for the partial use of a procedure be documented, that a second technical review of the procedure be performed, and that a marked up copy of the procedure be used to perform the applicable steps.

The inspectors discussed the investigation with operations management. The licensee stated that the operators had not reviewed the intended partial use of the ESW normal operating procedure for change of intent. The inspectors agreed with the chemistry departments' assessment that in this case, the ESW system could not have been damaged by the excess chlorination. However, the inspectors discussed the potential for inadvertently changing the intent of a procedure if a proper review was not completed prior to using the procedure.

The licensee's investigators concluded that the failure to review the procedure in accordance with PMP 2010.PRC.003 resulted in the missed step to notify chemistry of the system status change. On November 4, 1999, operations management directed the Shift Managers to brief all of the Unit Supervisors on the requirements for partial use of procedures, and the operating crews were briefed on the potential to inadvertently change the intent of a procedure. The corrective actions were added to the original CR 99-26474.

10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," required, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, and drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Contrary to the above, on October 31, 1999, the licensee identified that an activity affecting quality, the partial use of the ESW normal operating Procedure 12 OHP-4021.019.001, was not accomplished in accordance with PMP 2010.PRC.003 in that the operators did not perform the required reviews of the proposed partial use. The inspectors considered the failure to properly review the proposed partial use to be a violation of 10 CFR Part 50, Appendix B, Criterion V. This Severity Level IV violation is being treated as an NCV.

Section VII.B.1.a of the Enforcement Policy requires that for Severity Level IV violations to be dispositioned as NCVs, they be appropriately placed in the licensee's corrective action program. Implicit in that requirement is that the corrective action program be fully acceptable. The D. C. Cook Plant corrective action program was not adequate and has been the focus of significant attention by the licensee to improve the program. While the licensee and the NRC have not yet concluded that the corrective action program is fully effective, the corrective action program improvement efforts are underway and

captured in the D. C. Cook Plant Restart Plan which is under the formal oversight of the NRC through the NRC Manual Chapter 0350 process, "Staff Guidelines for Restart Approval." Consequently, this issue is being dispositioned as an NCV (50-315/99020-01(DRP)).

c. Conclusions

The control room operators did not properly review partial use of the essential service water (ESW) system normal operating procedure prior to switching ESW pumps. The failure to properly review partial use of the procedure resulted in the unintended chlorination of the Unit 2 ESW system. This was considered a non-cited violation of 10 CFR Part 50 Appendix B, Criterion V.

O3 Operations Procedures and Documentation

O3.1 Inappropriate Use of an Operations Standing Order

a. Inspection Scope (71707)

The inspectors reviewed standing order requirements associated with reserve auxiliary transformer loading restrictions. The inspectors also reviewed requirements associated with the use of standing orders to promulgate plant operation guidance.

b. Observations and Findings

On June 4, 1999, the licensee completed a tap change adjustment to transformer number 5 in order to reduce voltage on in-plant safety-related buses. At the time the tap change was completed, TS 3.8.1.2, "Electrical Power Systems - Shutdown," required one operable circuit between the offsite transmission network and the onsite Class 1E distribution. The TS 3.8.1.2 requirements were applicable until the offloads of both the Unit 1 and 2 cores were completed on August 8, 1999. To support the tap change and ensure operability of the offsite power supply, the licensee issued Operations Standing Order (OSO) 136, "Plant Loading Restrictions After Transformer 5 Tap Change," Revision 0.

The OSO limited the operation of certain plant equipment and required other equipment to be tagged out-of-service. Step 3 of the OSO required that no more than one of the three Unit 1 circulating water pumps be operating at the same time. Contrary to this step, on October 24, 1999, the inspectors observed two Unit 1 circulating water pumps operating. After the inspectors questioned if running two circulating pumps complied with the OSO requirements, a member of the operations department management stated this was an acceptable condition based on an "additional precaution" in the OSO. The additional precaution stated, "loading of equipment tagged out-of-service for this OSO may be accomplished as long as a piece of equipment of equal or greater load from the same RAT [reserve auxiliary transformer] is removed from service and made incapable of auto starting." The licensee stated that additional equipment was tagged out-of-service to compensate for the load imposed by operating a second circulating water pump. The inspectors determined that, because the circulating water pumps were not among the "tagged out-of-service" equipment listed in the OSO, this precaution did not apply. Following further questioning by the inspectors, the licensee recognized that the guidance in the OSO was not being followed and stopped the second Unit 1

circulating water pump. The licensee did not exceed loading restrictions on the Unit 1 RATs during the time that two circulating water pumps were in service.

Because of the complexity and potential for misinterpretation of the OSO.136 requirements, the inspectors reviewed the requirements for the use of Department Head Standing Orders (DHOS) contained in Operations Head Instruction (OHI) 2000, "Operations Department Guidance Policy," Revision 4, and Plant Manager Instruction (PMI) 2260, "Standing Orders," Revision 7. Procedure OHI-2000 stated that OSOs should be used for short-term generic equipment operation guidance. Long-term guidance affecting plant operation should be issued in a plant procedure. The PMI-2260 policy statement for DHOSs stated that standing orders shall not be used to provide long term direction for the conduct of operations or the performance of work. Furthermore, PMI-2260 stated that standing orders shall not be used in lieu of a required procedure, or to supersede a procedure or instruction. The inspectors concluded that the OSO provided relatively complex, system-specific guidance on limiting electrical load to the operators. Furthermore, that guidance was subject to inconsistent execution as evidenced by the misinterpretation of the circulating water pump operating requirements. The licensee wrote CR 99-26997 to document the issue.

10 CFR Part 50 Appendix B Criteria V, "Instructions, Procedures, and Drawings," stated, in part, that activities affecting quality shall be prescribed by instructions of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions. The inspectors concluded that the failure to provide appropriate procedural guidance for an activity affecting quality, electrical load limiting on the reserve auxiliary transformers, constituted a violation of 10 CFR Part 50, Appendix B, Criterion V, in that an OSO was not appropriate to the circumstances to provide complex, system-specific operating instructions. This Severity Level IV violation is being treated as an NCV.

Section VII.B.1.a of the Enforcement Policy requires that for Severity Level IV violations to be dispositioned as NCVs, they be appropriately placed in the licensee's corrective action program. Implicit in that requirement is that the corrective action program be fully acceptable. The D. C. Cook Plant corrective action program was not adequate and has been the focus of significant attention by the licensee to improve the program. While the licensee and the NRC have not yet concluded that the corrective action program is fully effective, the corrective action program improvement efforts are underway and captured in the D. C. Cook Plant Restart Plan which is under the formal oversight of the NRC through the NRC Manual Chapter 0350 process, "Staff Guidelines for Restart Approval." Consequently, this issue is being dispositioned as an NCV (50-315/99020-02(DRP)).

c. Conclusions

The licensee failed to provide appropriate guidance for the control of reserve auxiliary transformer loading following an offsite power supply transformer tap setting change. A standing order was used to provide complex guidance on transformer loading restrictions rather than a formal procedure. This was considered a noncited violation of 10 CFR Part 50, Appendix B, Criterion V.

O3.2 Failure to Comply with Operation Head Instruction Requirements

a. Inspection Scope

The inspectors reviewed the implementation of OHI requirements related to the maintenance of OSOs and procedures. The inspectors also reviewed the licensee's corrective action system to determine if the licensee had identified problems related to these programs.

b. Observations and Findings

b.1. Failure to Revise Operations Standing Orders in a Timely Manner

The inspectors reviewed active OSOs for consistency with Operations Head Instruction (OHI) 2000, "Operations Department Guidance Policy," Revision 4, and Plant Manager Instruction (PMI) 2260, "Standing Orders," Revision 7, requirements. PMI-2260, Section 4.3.3 stated that all department head standing orders shall have an expiration date no later than one year from the approval date. At the time of the inspection, there were nine active operations standing orders in Unit 1. Of these nine, three standing orders were more than 1 year old. The oldest standing order, OSO.103, Revision 0, "Minimum Position Requirements for On-Shift Supervisory Personnel," was issued on June 1, 1992. OSO.076, "Control of Control Room Pressure Boundaries," Revision 11 was issued on July 10, 1998, and OSO.107, "Emergency Diesel Generator Incident Report," Revision 0, was issued on April 20, 1993. During the past year, the licensee had identified a number of related issues involving the compliance of department head standing orders with PMI-2260 requirements. The licensee has initiated the following condition reports relating to department head standing orders:

- CR 99-01529 (initiated on January 26, 1999) identified that twelve maintenance and operations department head standing orders did not comply with PMI-2260 expiration date requirements
- CR 99-11240 (initiated on May 8, 1999) identified that OSO.103 and OSO.107 did not comply with PMI-2260 expiration date requirements
- CR 99-12904 (initiated on May 26, 1999) identified that OSOs were not properly controlled and implemented. Specifically, CR 99-12904 noted that requirements contained in four OSOs should have been placed in an approved plant procedure instead of a department head standing order.
- CR 99-20607 (initiated on August 10, 1999) stated that 28 department head standing orders were not in accordance with PMI-2260 requirements.

At the time of this inspection, the corrective actions associated with the above CRs have not been completed. During a review of DHSOs, the inspectors concluded that the failure to revise standing orders in a timely fashion did not significantly impact plant safety. The failure to implement the expiration date requirements of PMI-2260 constitutes a violation of minor significance and is not subject to formal enforcement action.

b.2. Inappropriate Placement of an Emergency Operating Procedure on Administrative Hold

During the October 26, 1999, biennial emergency preparedness exercise (see NRC Inspection Report Nos. 50-315, 50-316/99-030), licensee participants in the technical support center and the control room simulator identified that copies of emergency operating procedure (EOP) 02-O.P. 4023.ES-1.3, Revision 5, "Transfer to Cold Leg Recirculating," had been placed in an administrative hold status. The administrative hold process is used to temporarily remove a procedure or a section of a procedure from use. Because the administrative hold process affected all controlled copies of this procedure, copies of ES-1.3 had also been removed from the Unit 1 and Unit 2 control rooms. The licensee placed ES-1.3 in a hold status on December 8, 1998, pending completion of an engineering analysis of the required containment water level necessary to initiate transfer to cold leg recirculating following a loss of coolant accident. This lack of a supporting analysis for ES-1.3 was documented in CR 97-02312 and was discussed in the NRC's Confirmatory Action Letter of September 19, 1997.

Operations Head Instruction 2010, "Operations Department Procedure Maintenance," Revision 7, Step 3.2.4 stated that Emergency Operating Procedures (4023 series) will not be placed on administrative hold. Although CR 99-08512, issued on April 16, 1999, identified that placing O.P. 4023.ES-1.3 in administrative hold was contrary to the guidance in OHI 2010, the administrative hold on ES-1.3 was not lifted until October 27, 1999. The initial corrective action for CR 99-08512 stated that the procedural requirements contained in OHI 2010 should be revised to allow placement of EOPs in administrative hold rather than removing ES-1.3 from a hold status. During discussions with the inspectors, operations department management stated that the corrective action specified for this CR was in error and will be re-evaluated. On November 10, 1999, the inspectors verified that controlled copies of ES-1.3 were present in the control room and the procedure was no longer in an administrative hold status. During the period that ES-1.3 was in administrative hold, both units were in either mode 5, mode 6 or refueled, therefore the EOP was not required for safe plant operation. Placing procedure O.P. 4023.ES-1.3 in an administrative hold status, contrary to the requirements of OHI 2010, Step 3.2.4, constitutes a violation of minor significance and is not subject to formal enforcement action.

c. Conclusion

The inspectors identified two minor examples of failures to comply with administrative procedure requirements involving: (1) use of expired department head standing orders, and (2) placing the emergency operating procedure for transfer to cold leg recirculation on administrative hold.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (62707)

The inspectors observed all or portions of the following maintenance activities and reviewed associated documentation:

- Job Order (JO) C46935, Flush Unit 2 1AB emergency diesel generator fuel oil system
- JO C52417, Install temporary ice blowing equipment
- JO C52585, Clean and inspect Unit 2 containment spray and residual heat removal spray headers
- JO R78934, Replace C2 capacitor bank in Unit 2 control room Instrumentation distribution panel 4 inverter
- JO R84549, Clean and inspect motor control center 2-EZC-BS
- JO R95230, Plant winterization
- 01-OHP-4030.STP.027AB, "AB Diesel Generator Operability Test (Train B)," Revision 14
- Unit 2 Engineering Head Procedure (EHP) 4030.STP.203, "Type B & C Leak Rate Test," Revision 3

b. Observations and Findings

The inspectors concluded that the observed work was performed in accordance with procedures. The current revision of the appropriate procedures were in use at the work sites, and proper work safety and radiological protection practices were noted. Work items were appropriately scheduled in the Plan of the Day.

Noteworthy observations and findings are detailed below and in the report sections which follow.

- While reviewing JO C52417, the inspectors observed that there was minimal guidance for the installation of required temporary security compensatory measures. The inspectors' review of temporary modification (TM) 12-99-11, which authorized the installation of the temporary ice blowing equipment, determined that engineering personnel improperly concluded there was no impact upon security. This error significantly contributed to the weak security compensatory measures discussed in JO 52417. Additional detail on the engineering and security aspects of this JO are discussed in Section E3.1 and S2.1, below.

M1.2 Cold Weather Preparations

a. Inspection Scope (71714)

The inspectors reviewed the licensee's processes and procedures for preparing the plant for cold weather. In addition, the inspectors performed a walked down portions of the plant and reviewed the actions taken to correct identified deficiencies.

b. Observations and Findings

The inspectors reviewed Job Order R95230, Plant Winterization, which was written as a recurring task to prepare the plant for winter. This JO implemented Preventive Maintenance (PM) Task 30, "Plant Winterization and Dewinterization." The inspectors reviewed PM Task 30 and determined that PM Task 30 appeared to adequately prepare the plant for cold weather. However, the inspectors noted that the licensee did not have a process in place to ensure that the plant's winterized configuration would be maintained.

In addition, the licensee did not have a process for ensuring that the plant winter preparations were integrated across organizational boundaries. This was discussed in a previous NRC Inspection Report 50-315/316/98027. The lack of integration contributed to the inadequate preparation for cold weather, especially considering the lack of process heat in the buildings due to the current shutdown condition. Cold weather preparations were untimely and severe cold weather caused multiple challenges to the plant operators. The licensee stated that, as an interim measure until the process was developed, an individual would be selected to lead the plant winterization project for 1999.

The inspectors discussed plant winterization with the project leader and reviewed the following condition reports:

- CR 99-01516 (initiated on January 26, 1999), documented that the plant does not have adequate winterization policies or procedures to prevent outside tank vents or bladders from freezing.
- CR 99-05872 (initiated on March 17, 1999), documented that the plant does not have a winterization program in place to prepare the plant for winter.
- CR 99-24020 (initiated on September 27, 1999), documented that Condition Reports associated with cold weather and winterization are not being addressed in a timely manner.
- CR 99-27050 (initiated on November 9, 1999), documented that the winterization program walkdowns revealed many air intrusion issues and other discrepancies.

The inspectors determined that the individual discrepancies identified in the CRs listed above were being corrected. However, the inspectors noted that not all of the actions required by PM Task 30 were complete at the end of the inspection period. All of the PM Task 30 winterization activities were scheduled to be completed by the end of November 1999.

The inspectors reviewed the CR 66-05872 root cause analysis and discussed the findings with licensee management. The licensee stated that the root cause analysis and corrective actions for CR 99-05872 required a comprehensive plant winterization program, owned by the Operations department, to be implemented. The CR documented that the winterization program would be developed by the end of 1999 and used for the following winter. The inspectors identified no further concerns.

c. Conclusions

The licensee did not have an integrated process for controlling plant winterization. As an interim measure until a winterization program was developed, the licensee appointed a project leader to ensure winterization activities were completed. The inspectors concluded that the interim measures appeared to adequately prepare the plant for winter; however, not all of the required actions had been completed at the end of the inspection period. The winterization program development was scheduled to be completed by the end of 1999.

M1.3 Molded Case Circuit Breaker Testing

a. Inspection Scope (62707)

On November 8, 1999, the inspectors observed portions of JO R84549, Clean and inspect motor control center 2-EZC-BS. Part of the JO required the licensee to test the molded case circuit breakers (MCCBs). The inspectors questioned the MCCB testing procedure methodology for performing 300 percent overcurrent tests on MCCBs.

b. Observations and Findings

The inspectors reviewed the molded case circuit breaker (MCCB) testing, 12 Instrument Head Procedure (IHP) 5030.EMP.006, "MCCB/TOLR Testing and Electrical Enclosure Maintenance," Revision 4. The procedure provided instructions for performing a 300 percent overcurrent test of a MCCB. The 300 percent overcurrent test was performed to time how long a MCCB takes to trip on overcurrent and compared the measured time to a maximum allowable time.

Step 7.2.6 of 12-IHP 5030.EMP.006 stated that if the test results were unsatisfactory (the MCCB took too long to trip on overcurrent), then the MCCB should be retested after cooling for 20 minutes. The inspectors questioned the licensee about the second test. The licensee stated that if a MCCB passed the second test, then the MCCB would be left in service. The inspectors reviewed test history and found one example, a test on a spare MCCB, where the MCCB failed the first test, but passed the second test. The inspectors did not identify any instances of an in-service breaker which failed an initial overcurrent test but remained in service after it passed a second test.

The inspectors questioned the licensee about the potential of the first test to precondition the second test and the potential for leaving an inoperable breaker in service. The test procedure did not require an evaluation of a failed overcurrent test; it simply directed the test personnel to wait 20 minutes and then retest the MCCB. The licensee stated that the MCCBs which were tested using the procedure all required three separate tests to fully perform the overcurrent test on each breaker pole. Thus,

the first overcurrent test performed on any breaker pole would necessarily precondition all of the following tests. The licensee also stated that other utilities and an industry group were contacted regarding standard industry practices for performing overcurrent tests on MCCBs. However, the licensee had not received responses by the end of this inspection period. Engineering personnel wrote CR 99-27129 to document the inspectors' questions regarding the test procedure. The inspectors considered the quality of the licensee's procedure for performing overcurrent testing of MCCBs to be an Inspection Followup Item (IFI 50-316/99020-03 (DRP)) pending the review of standard industry practices for MCCB testing.

c. Conclusions

A licensee procedure for performing overcurrent tests on molded case circuit breakers (MCCBs) allowed a MCCB to remain in service following a failed overcurrent test provided it passed a retest 20 minutes later. The procedure did not require the initial test failure to be evaluated. This was identified as an Inspection Followup Item.

M7 Quality Assurance in Maintenance

M7.1 Performance Assurance Identification of Poor Trend on Motor Operated Valve Work

a. Inspection Scope (62707)

On October 19, 1999, during maintenance on a motor operated valve (MOV), several procedural steps were missed which resulted in the open limit switch not being installed. During the subsequent test, the MOV failed to stop opening as designed. The inspectors followed up on the licensee's response to this event.

b. Observations and Findings

After the failed MOV test, engineering personnel wrote CR 99-25635 to document the failure; however, the Performance Assurance department noted that the engineering CR did not document the incomplete maintenance. The PA department reviewed other CRs and identified a poor performance trend on MOV maintenance and testing. As a result of the identification of the poor performance, the licensee's Performance Assurance (PA) department issued Stop Work Order (SWO) PA-99-013 (CR 99-25678) on October 19, 1999, which stopped all field work on MOVs

Subsequent to the PA SWO, on October 21, 1999, the licensee's engineering and maintenance departments jointly issued SWO MT-99-08 (CR 99-25825), which also stopped all field work on MOVs. Stop Work Order MT-99-08 provided an action plan which required a root cause analysis of the MOV errors, refresher training on procedure adherence, and a review of the MOV maintenance and testing procedures. The action plan also provided direction for work to resume in stages after action plan items were completed. The engineering and maintenance SWO required that the MOV maintenance and testing procedures be revised, and that the workers receive training on the revised procedures. The engineering and maintenance SWO also allowed an incremental lifting of the order as various portions of the action plan were completed. Performance Assurance department personnel reviewed the engineering and maintenance department SWO and stated in a revision to their SWO that if the action plan provisions of MT-99-08 were thoroughly implemented, the PA department concerns

regarding procedure adherence, work control practices, and supervisory field oversight would be adequately addressed.

Over the next several weeks, the SWO was incrementally lifted as provided by the engineering and maintenance action plan. Motor operated valve testing resumed in November 1999. The inspectors reviewed the SWOs and determined that the licensee had taken appropriate action to correct the poor performance trend.

c. Conclusions

The licensee's Performance Assurance (PA) department identified a poor performance trend in motor-operated valve testing and issued a stop work order until the problems were corrected. This followed failure by maintenance personnel to install an open limit switch on a motor-operated valve. Engineering and maintenance department personnel failed to self-identify the poor performance trend. These departments later issued a joint stop work order which provided an action plan to correct the trend. The PA department maintained appropriate oversight of the corrective actions until the both of the stop work orders were lifted.

III. Engineering

E3 Engineering Procedures and Documentation

E3.1 Incomplete Review of a Temporary Modification (37551, 71707)

The inspectors reviewed ice loading Temporary Modifications (TM) 12-99-11, and TM 12-98-28, following the inspectors' identification of a vital area barrier breach. The vital area barrier breach was caused by the implementation of the ice loading TMs and is discussed in additional detail in Section S2.1, below. The inspectors performed additional follow up to the failure of the licensee to follow the TM process that resulted in the violation of a vital area barrier.

Procedure 12 EHP 5040.MOD.009, Revision 1, "Design Change and Temporary Modification Package Reference guide," provided a summary of technical issues required to be evaluated in the development of design change packages or temporary modifications. Attachment 42 of the procedure addressed plant security and directed that the Plant Security Impact Checklist be completed in order to determine the impact of the TM on plant security. The checklist required a review of the proposed TM or design change for potential impact on security equipment or barriers. The inspectors requested a copy of the completed checklist, but the licensee was unable to comply with the request. The licensee informed the inspectors that an engineer had completed the checklist, determined that the TM would not impact upon security, and discarded the checklist. The licensee documented the incorrect conclusion that the TM did not have an impact upon a vital area barrier in CR 99-26772. As a result of the incomplete review, the licensee failed to implement adequate compensatory measures to support the TM installation.

After the inspectors identified the vital area barrier breach, the licensee took prompt corrective actions to address the degraded vital area barrier. In addition, engineering

personnel reviewed all 19 open TMs to determine if other similar conditions existed. Of the 19 TMs reviewed, only TM 12-99-11 was determined to have a security impact.

E8 Miscellaneous Engineering Issues

E8.1 Review of Licensee's Readiness for Year 2000

On October 28, 1999, the licensee updated its response to NRC Generic Letter 98-01, "Year 2000 Readiness of Computer Systems at Nuclear Power Plants." The licensee reported that the meteorological information and dispersion assessment system (MIDAS) upgrade was completed on October 14, 1999, and that the MIDAS had been restored to operability on October 21, 1999.

On November 2, 1999, the inspectors discussed the design change package for the MIDAS upgrade and the Year 2000 testing with the test engineer and reviewed the test results in accordance with NRC Temporary Instruction 2515/141, "Review of Year 2000 Readiness of Computer Systems at Nuclear Power Plants," and Nuclear Energy Institute / Nuclear Utilities Software Management Group (NEI/NUSMG) 97-07, "Nuclear Utility Year 2000 Readiness." Prior to installation, the MIDAS interface with the plant process computer (PPC) was tested on the licensee's development PPC to verify the accuracy of shared data. Additionally, the licensee tested high-risk rollover dates to verify that the MIDAS to PPC interface was not affected by date changes and that the appropriate dates were displayed on the PPC screens. Following installation, an integrated test was run on MIDAS to verify its interface with the PPC. The inspectors concluded that the MIDAS upgrade Y2K testing methodology met the data and integration testing recommendations of NEI/NUSMG 97-07, Appendix F.

IV. Plant Support

R1 Radiation Protection and Chemistry Controls (71750)

During normal resident inspection activities, routine observations were conducted in the area of radiation protection and chemistry controls using Inspection Procedure 71750. No uncontrolled releases of radioactive material were identified.

S1 Conduct of Security and Safeguards Activities (71750)

During normal resident inspection activities, routine observations were conducted in the area of security and safeguards activities using Inspection Procedure 71750. Two discrepancies were noted. The first discrepancy involved the inspectors' identification of a missing temporary security barrier. The barrier separated two vital areas and was removed for construction activities. The barrier was not in place and uncontrolled personnel access between the two vital areas was possible. A review of the licensee's security plan determined that there was no security violation, but the security plan requirements for barriers between adjacent vital areas were ambiguous. The licensee stated that a revision of the security plan would soon be submitted to the NRC and the revision would resolve the ambiguity. Condition Report 99-25717 was written by the licensee to address the inspectors' observation. The inspectors had no further concerns. (The second discrepancy is discussed in Section S2 of this report.)

S2 Status of Security Facilities and Equipment

S2.1 Inadequate Compensatory Measure (71750)

a. Inspection Scope

During a routine tour, the inspectors identified a breach in a vital area barrier caused by the partial removal of a temporary modification for loading ice in the ice condenser. The inspectors promptly notified security personnel and followed up on this finding. Observations related to the process and procedures for the review of the TM which created the vital area barrier breach are documented in Section E3.1, above.

b. Observations and Findings

After identifying the vital area barrier breach, the inspectors informed security personnel. The licensee's security personnel compensated for the inadequate vital area barrier within procedurally required time limits. Security personnel measured the breach and confirmed the inspectors measurements of a 9" by 12" opening which exceeded the maximum opening allowed by the licensee's security plan. The licensee subsequently restored the vital area barrier to an acceptable status. Condition Report 99-25959 was initiated on October 24, 1999, by licensee personnel.

The inspectors' review of the records and interviews with personnel determined that the vital area barrier breach occurred when the TM was partially removed to support core offload in July 1999. Licensee personnel did not identify the vital area barrier breach during routine operator rounds and security patrols. The TM remained partially removed between July 1999, and October 26, 1999.

Modified Amended Security Plan (MASP) Section 5.2.1.1.f, and Figure 5.1-4 identified that the area near the temporary equipment installed for ice loading was a vital area. The MASP further identified the vital area barriers that protected the noted vital area. Contrary to the above, the licensee partially removed TM 12-98-28 without providing adequate compensatory measures for the degraded vital area barrier. This Severity Level IV violation is being treated as an NCV.

Section VII.B.1.a of the Enforcement Policy requires that for Severity Level IV violations to be dispositioned as NCVs, they be appropriately placed in the licensee's corrective action program. Implicit in that requirement is that the corrective action program be fully acceptable. The D. C. Cook Plant corrective action program was not adequate and has been the focus of significant attention by the licensee to improve the program. While the licensee and the NRC have not yet concluded that the corrective action program is fully effective, the corrective action program improvement efforts are underway and captured in the D. C. Cook Plant Restart Plan which is under the formal oversight of the NRC through the NRC Manual Chapter 0350 process, "Staff Guidelines for Restart Approval." Consequently, this issue is being dispositioned as an NCV (50-316/99020-04(DRP)).

The inspectors performed additional reviews of licensee security plans and procedures and determined design guidance for the installation of temporary security barriers did not exist. The temporary barrier installed as part of the ice loading TMs was installed to comply with verbal requirements by licensee security personnel but did not have

procedural requirements. In response to this inspector observations licensee personnel stated that the security plan was already in the process of being revised and would include requirements for the compensation for degraded security barriers.

The inspectors review of the MASP also determined that the plan did not address temporary degradations of vital area or protected area barriers. The licensee stated that a revision of the security plan would soon be submitted to the NRC and the revision would add information concerning temporary security compensatory measures.

c. Conclusions

The inspectors identified a vital area barrier breach caused by the partial removal of ice loading Temporary Modification 12-98-28. The breach had existed for several months. The licensee took prompt compensatory measures upon notification by the NRC inspectors. One Non-Cited Violation of the Modified Amended Security Plan was identified.

F1 Control of Fire Protection Activities (71750)

During normal resident inspection activities, routine observations were conducted in the area of fire protection activities using Inspection Procedure 71750. No discrepancies were noted.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of the licensee management at the conclusion of the inspection on November 19, 1999. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

#C. Bakken, Site Vice President
#J. Carlson, Radiation Protection, Environmental, and Chemistry
#R. Cook, Regulatory Affairs
#R. Crane, Regulatory Affairs
#R. Ebright, Plant Engineering
#M. Finissi, Director, Plant Engineering
#J. Pollack, Plant Manager
#A. Rodriguez, Site Protective Services
#B. Smallbridge, Assistant Operations Manager
#F. Timmons, Manager, Site Protective Services
#H. Torberg, Site Protective Services
#C. Vanderniet, Performance Assurance
#B. Wallace, Training
#L. Weber, Operations Manager

Denotes those present at the November 19, 1999, exit meeting.

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
IP 61726: Surveillance Observations
IP 62707: Maintenance Observation
IP 71707: Plant Operations
IP 71714: Cold Weather Preparations
IP 71750: Plant Support Activities
TI 2515/141: "Review of Year 2000 (Y2K) Readiness of Computer Systems at Nuclear Power Plants"

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-315/99020-01	NCV	Inappropriate partial use of procedure
50-315/99020-02	NCV	Inadequate guidance provided to operators
50-316/99020-03	IFI	Molded case circuit breaker overcurrent testing
50-315/99020-04	NCV	Unidentified vital area barrier breach caused by implementation of temporary modification

Closed

50-315/99020-01	NCV	Inappropriate partial use of procedure
50-315/99020-02	NCV	Inadequate guidance provided to operators
50-315/99020-04	NCV	Unidentified vital area barrier breach caused by implementation of temporary modification

Discussed

None

LIST OF ACRONYMS

AR	Action Request
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CR	Condition Report
D/G	Diesel Generator
DHSO	Department Head Standing Order
DRP	Division of Reactor Projects
EHP	Engineering Head Procedure
ESRR	Expanded System Readiness Review
ESW	Essential Service Water
IHP	Instrument Head Procedure
IMP	Instrument Maintenance Procedure
IST	In-Service Test
JO	Job Order
MASP	Modified Amended Security Plan
MC	Manual Chapter
MCCB	Molded Case Circuit Breaker
MHP	Maintenance Head Procedure
MIDAS	Meteorological Information and Dispersion Assessment System
MOV	Motor Operated Valve
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
OHI	Operations Head Instruction
OHP	Operations Head Procedure
OSO	Operations Standing Order
PA	Performance Assurance
PM	Preventive Maintenance
PMI	Plant Manager's Instruction
PMP	Plant Manager's Procedure
PMSO	Plant Manager's Standing Order
PMT	Post Maintenance Testing
PDR	Public Document Room
PPC	Plant Process Computer
RAT	Reserve Auxiliary Transformer
RCS	Reactor Coolant System
RHR	Residual Heat Removal
SRO	Senior Reactor Operator
STP	Surveillance Test Procedure
SWO	Stop Work Order
TM	Temporary Modification
TOLR	Thermal Overload Relay
TS	Technical Specification
VIO	Violation