



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
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ARLINGTON, TEXAS 76011-4125

November 5, 2010

Brian J. O'Grady, Vice President-Nuclear  
and Chief Nuclear Officer  
Nebraska Public Power – Cooper  
Nuclear Station  
72676 648A Avenue  
Brownville, NE 68321

Subject: COOPER NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT  
05000298/2010004

Dear Mr. O'Grady:

On September 23, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Cooper Nuclear Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on October 14, 2010, with Mr. Demetrius Willis, General Manager, Plant Operation, and other members of your staff.

The inspections examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one NRC-identified noncited violation and one self-revealing finding of very low safety significance (Green). Because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating the noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the significance of the noncited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd, Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Cooper Nuclear Station facility. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV, and the NRC Resident Inspector at Cooper Nuclear Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, and its enclosure, will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Vince Gaddy, Chief  
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Division of Reactor Projects

Docket: 50-298  
License: DRP-46

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ADAMS: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		<input checked="" type="checkbox"/> SUNSI Review Complete		Reviewer Initials: <b>VGG</b>	
		<input checked="" type="checkbox"/> Publicly Available		<input checked="" type="checkbox"/> Non-Sensitive	
		<input type="checkbox"/> Non-publicly Available		<input type="checkbox"/> Sensitive	
<b>SRI:DRP/C</b>	<b>SPE:DRP/C</b>	<b>C:DRS/EB1</b>	<b>S:DRS/TSB</b>	<b>C:DRS/EB2</b>	
MLChambers	BHagar	TRFarnholtz	MCHay	NFO'Keefe	
<b>/RA/E</b>	<b>/RA/*</b>	<b>/RA/*</b>	<b>/RA/*</b>	<b>/RA/*</b>	
11/5/10	11/04/2010*	10/21/2010	10/23/2010*	11/04/2010*	
<b>C:DRS/OB</b>	<b>C:DRS/PSB1</b>	<b>C:DRS/PSB2</b>	<b>C:DRP/C</b>		
MSHaire	MPShannon	GEWerner	VGGaddy		
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10/20/2010*	10/21/2010*	10/21/2010*	11/5/10		

\*See previous concurrence

**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 50-298

License: DRP-46

Report: 05000298/2010004

Licensee: Nebraska Public Power District

Facility: Cooper Nuclear Station

Location: 72676 648A Ave  
Brownville, NE 68321

Dates: June 24 through September 23, 2010

Inspectors: L. Carson II, Senior Health Physicist  
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Approved By: Vince Gaddy, Chief, Project Branch C  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000298/2010004; 06/24/2010 – 09/23/2010; Cooper Nuclear Station, Integrated Resident and Regional Report; Maintenance Effectiveness, Exercise Evaluation, Event Follow-up.

The report covered a 3-month period of inspection by resident inspectors and an announced baseline inspection by region-based inspectors. Two Green findings were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." The cross-cutting aspect is determined using Inspection Manual Chapter 0310, "Components Within the Cross Cutting Areas." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors identified that the licensee failed to correctly determine that a plant power reduction caused by a clogged screen wash system for the circulating water system was a maintenance preventable functional failure that exceeded the plant level performance criteria. As a direct consequence, the licensee failed to assess this Maintenance Rule Program function per 10 CFR 50.65(a)(1) as required by station procedures. This issue was determined to involve a noncited violation of 10 CFR 50.65(a)(2) requirements for monitoring the effectiveness of maintenance at nuclear power plants. The licensee entered this issue in their corrective action program as CR-CNS-2010-05631.

This finding is more than minor because failure to monitor the effectiveness of the screen wash system function CW-F01 affects the protection against external factors attribute of the initiating events cornerstone, since this system was intended to limit the likelihood of events that upset plant stability. The inspectors determined that this performance deficiency was an additional, but separate consequence of the obstructed screen wash system. The inspectors determined that this finding occurred as a separate consequence of the licensee's functional failure assessment process, and that the system performance problem was not directly attributable to this finding. Therefore, this finding cannot be processed through the significance determination process, and was determined to be green using the guidance of Appendix B to Manual Chapter 0612 and Appendix D to Inspection Procedure 71111.12. The finding has a crosscutting aspect in the area of human performance associated with decision-making because the licensee did not use conservative assumptions in the functional failure evaluation of an obstructed screen wash system [H.1(b)] (Section 1R12).

- Green. A self-revealing finding was identified for the licensee's failure to follow the guidance of Administrative Procedure 0.5.EVAL, "Preparation of Condition Reports," Revision 21. Specifically, corrective actions to fix the Reactor Recirculation Motor Generator field breaker failure from 2009 failed to meet the measurable and reasonable criteria when the actions did not prevent a repeat failure of the same breaker and resulted in a fire in the breaker. The licensee entered this issue in their corrective action program as CR-CNS-2009-04115.

The finding is more than minor because it adversely affected the protection against external factors (Fire), attribute of the initiating events cornerstone, and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet (Initial Screening and Characterization of Findings) the finding was determined to have very low safety significance since it did not contribute to the likelihood of a primary or secondary system loss-of-coolant accident, did not contribute to a loss of mitigation equipment, and did not increase the likelihood of a fire or internal/external flood. This finding has a crosscutting aspect in the corrective action program component of the problem identification and resolution area due to licensee corrective actions that failed to implement a resolution of field breaker failures (P.1(c)) (Section 4OA3).

**B. Licensee-Identified Violations**

A violation of very low safety significance, which was identified by the licensee, has been reviewed by the inspector. Corrective actions taken or planned by the licensee has been entered into the licensee's corrective action program. This violation and corrective action tracking number (condition report number) is listed in Section 4OA7.

## REPORT DETAILS

### Summary of Plant Status

Cooper Nuclear Station began the inspection period at full power on June 24, 2010, and remained at essentially full power through the end of the inspection period, September 23, 2010.

#### 1. REACTOR SAFETY

##### Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

#### 1R01 Adverse Weather Protection (71111.01)

##### Readiness for Impending Adverse Weather Conditions

##### a. Inspection Scope

Since thunderstorms with potential tornados and high winds were forecast in the vicinity of the facility for August 27, 2010, the inspectors reviewed the plant personnel's overall preparations/protection for the expected weather conditions. On August 27, 2010, the inspectors walked down the fire protection, circulating water, service water, service water transformer, emergency transformer and main transformer systems because their safety-related functions could be affected, or required, as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the plant staff's preparations against the site's procedures and determined that the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report and performance requirements for the systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. The inspectors also reviewed a sample of corrective action program items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the corrective action program in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one readiness for impending adverse weather condition sample as defined in Inspection Procedure 71111.01-05.

##### b. Findings

No findings were identified.

## 1R04 Equipment Alignments (71111.04)

### .1 Partial Walkdown

#### a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- July 8, 2010, Service water booster pump
- July 27, 2010, Diesel generator and service water essential cable vaults
- August 19, 2010, Diesel generator 1 alignment while diesel generator 2 was out for maintenance/Yellow risk window

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Final Safety Analysis Report, technical specification requirements, administrative technical specifications, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also inspected accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

#### b. Findings

No findings were identified.

### .2 Complete Walkdown

#### a. Inspection Scope

On September 10, 2010, the inspectors performed a complete system alignment inspection of the high pressure coolant injection system to verify the functional capability of the system. The inspectors selected this system because it was considered both

safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one complete system walkdown sample as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

**1R05 Fire Protection (71111.05)**

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- June 30, 2010, Turbine building basement, 882 feet elevation areas, Zone 11H, 11F, and 11B
- July 8, 2010, Residual heat removal service water booster pump and service air compressor, Zone 7A
- August 17, 2010, Diesel generator 1 room, Zone 14A
- August 31, 2010, Reactor core isolation cooling/core spray/northeast quad, Zone 1A

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later

additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On August 27, 2010, the inspectors observed a fire brigade activation in the service water pump room of the intake structure. The observation evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies, openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient firefighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of preplanned strategies; (9) adherence to the preplanned drill scenario; and (10) drill objectives.

These activities constitute completion of one annual fire-protection inspection sample as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

**1R06 Flood Protection Measures (71111.06)**

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report, the flooding analysis, and plant procedures to assess susceptibilities involving internal flooding; reviewed the corrective action program to determine if licensee personnel identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of

sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; and verified that operator actions for coping with flooding can reasonably achieve the desired outcomes. The inspectors also inspected the areas listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment.

- July 27, 2010 - P3, P4, C3 and C4 cable vault inspections
- September 15, 2010 - Torus internal flooding with groundwater leakage

These activities constitute completion of two flood protection measures inspection samples as defined in Inspection Procedure 71111.06-05.

b. Findings

No findings were identified.

**1R07 Heat Sink Performance (71111.07)**

a. Inspection Scope

The inspectors reviewed licensee programs, verified performance against industry standards, and reviewed critical operating parameters and maintenance records for the reactor equipment cooling heat exchanger B. The inspectors verified that performance tests were satisfactorily conducted for heat exchangers/heat sinks and reviewed for problems or errors; the licensee utilized the periodic maintenance method outlined in EPRI Report NP 7552, "Heat Exchanger Performance Monitoring Guidelines"; the licensee properly utilized biofouling controls; the licensee's heat exchanger inspections adequately assessed the state of cleanliness of their tubes; and the heat exchanger was correctly categorized under 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one heat sink inspection sample as defined in Inspection Procedure 71111.07-05.

b. Findings

No findings were identified.

**1R11 Licensed Operator Requalification Program (71111.11)**

a. Inspection Scope

On September 1, 2010, the inspectors observed a crew of licensed operators in the plant's simulator to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being

conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- Licensed operator performance
- Crew's clarity and formality of communications
- Crew's ability to take timely actions in the conservative direction
- Crew's prioritization, interpretation, and verification of annunciator alarms
- Crew's correct use and implementation of abnormal and emergency procedures
- Control board manipulations
- Oversight and direction from supervisors
- Crew's ability to identify and implement appropriate technical specification actions and emergency plan actions and notifications

The inspectors compared the crew's performance in these areas to preestablished operator action expectations and successful critical task completion requirements. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one quarterly licensed-operator requalification program sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

**1R12 Maintenance Effectiveness (71111.12)**

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk significant systems:

- September 9, 2010, Traveling water screens trip on May 1, 2010
- August 16, 2010, Standby liquid control pump B failures on April 15, 2010 and October 27, 2006
- September 13, 2010, Reactor recirculation motor-generator breaker repeat function failures

The inspectors reviewed events such as where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- Implementing appropriate work practices
- Identifying and addressing common cause failures
- Scoping of systems in accordance with 10 CFR 50.65(b)
- Characterizing system reliability issues for performance
- Charging unavailability for performance
- Trending key parameters for condition monitoring
- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or -(a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

Introduction. The inspectors identified a Green noncited violation of 10 CFR 50.65(a)(2) requirements for monitoring the effectiveness of maintenance at nuclear power plants, for failure to demonstrate that the screen wash system performance was effectively controlled through appropriate preventive maintenance. Specifically, the licensee did not establish goals or monitor the performance of the screen wash system per 10 CFR 50.65(a)(1) when failure to perform appropriate maintenance resulted in an obstructed screen and an unplanned power reduction demonstrating the screen wash system was not effectively controlled through appropriate preventive maintenance.

Description. The inspectors performed a maintenance rule sample to independently verify licensee's actions were in accordance with 10 CFR 50.65(a)(2) using Inspection Procedure 71111.12, "Maintenance Effectiveness." This sample reviewed a functional failure evaluation of a power reduction in response to loss of traveling water screens due to ineffective equipment maintenance. On May 1, 2010, the licensee's failure to implement preventive maintenance requirements of the vendor manual to daily flush the trash troughs for the plant traveling water screens contributed to debris fouling and tripping the A1 and A2 traveling water screens. This required a power reduction from 100 percent power to 70 percent power, impacting the plant level criteria for unplanned power reductions, a licensee maintenance rule program (a)(1) threshold.

The licensee maintenance rule Administrative Procedure 0.27, "Maintenance Rule Program," prompted both a corrective action to perform an (a)(1) evaluation and a maintenance rule program action to perform a functional failure evaluation. The inspectors found that functional failure evaluation 10731710 determined no failure had occurred to function CW-F01, "Maintain unobstructed flow path and sufficient flow to Main Circulating Water Pumps, Service Water Pumps, and Main Condenser," despite the fouled screens obstructing circulating water flow to the main condenser, lowering condenser vacuum, and requiring a power reduction to prevent the plant from tripping on loss of vacuum. Based on the licensee conclusion of no functional failure there was no maintenance preventable functional failure and the (a)(1) evaluation was closed. The inspectors questioned the licensee on why the failure to perform required maintenance that resulted in exceeding a plant level performance criteria and maintenance rule (a)(1) threshold did not result in function CW-F01 being placed in (a)(1) status. CR-CNS-2010-05631 was initiated for this issue.

The licensee responded that maintenance rule function CW-F01 was evaluated based on the screening criteria that originally placed it into the maintenance rule. The criteria used was: 1) some function CW-FW01 equipment is essential, but in this evaluation the obstructed screens were not essential; 2) some function CW-FW01 equipment is used in the emergency operation procedures, i.e. restarting a circulating water pump, but in this case there was redundant equipment available and the obstructed screen would not have prevented performing emergency actions; and 3) failure of the function could cause a reactor scram but in this case it did not cause a scram. Therefore, the evaluation concluded the obstructed screen was not a maintenance rule functional failure.

NUMARC 93-01, Industry Guideline For Monitoring The Effectiveness Of Maintenance At Nuclear Power Plants, Rev. 2" states that, "Remaining non-risk significant SSCs (those normally operating) are addressed under (a)(2) and performance is monitored against plant level criteria. In the event a plant level performance criteria is not met, a cause determination will be conducted to determine whether the failure of a SSC within the scope of the maintenance rule was responsible and, if so, whether this failure was an MPFF." NUMARC 93-01 also gives this maintenance rule functional failure example, "Failures that occur due to the failure to perform maintenance activities that are normal and appropriate to the equipment function and importance." The licensee failed to understand that the unscheduled downpower due to the failure to perform the appropriate screen wash trough preventative maintenance was an impacted plant level

criteria due to a maintenance preventable functional failure of a system within the scope of the maintenance rule. The licensee's deficient functional failure evaluation process led to the licensee failing to place the function CW-F01 in (a)(1) and failure to perform their (a)(1) evaluation to determine appropriate actions, goals, and monitoring.

The failure to perform the vendor recommended screen wash flushing maintenance was documented in Inspection Report 05000298/2010003 as FIN 05000298/2010003-04, "Failure to Perform Required Maintenance Causes Unplanned Down Power." The corrective action for this finding included performing the vendor recommended trough flushing.

Following the guidance of Appendix B to Manual Chapter 0612 this finding is more than minor because failure to monitor the effectiveness of the screen wash system affects the reliability objective of the equipment performance attribute under the mitigating systems cornerstone, specifically the risk of additional screen wash system obstructions that could cause unplanned plant power reductions or reactor scrams. This issue was screened with the assistance of Inspection Procedure 71111.12, "Maintenance Effectiveness," Appendix D, "Regulatory Review," that supplements the general guidance of Inspection Manual Chapters 0612 and 0609 and determined to be a Category II maintenance effectiveness issue in that the failure to establish goals and monitoring for the screen wash system is not attributable to the failure to perform appropriate maintenance but a result of an inadequate licensee functional failure evaluation. Since the equipment reliability problems were corrected by the licensee and the maintenance rule violation occurred as a separate consequence of the licensee maintenance rule evaluation process, this cannot be processed through the significance determination process. Therefore, per NRC staff review, this maintenance rule violation is Green (very low safety significance).

Analysis. The inspectors determined that the failure by licensee personnel to correctly determine that a plant level criteria was impacted by a maintenance preventable functional failure was a performance deficiency. This finding is more than minor because failure to monitor the effectiveness of the screen wash function CW-F01 affects the reliability objective of the equipment performance attribute under the initiating events cornerstone. The inspectors determined that this performance deficiency was an additional, but separate consequence of the obstructed screen wash system. Following the guidance of Appendix B to Manual Chapter 0612 and Appendix D to Inspection Procedure 71111.12, the inspectors determined that this finding occurred as a consequence of the licensee functional failure process, and that the obstructed screen problems were not attributable to this finding. This finding therefore cannot be processed through the significance determination process, and per NRC staff review is considered to be Green. The finding has a crosscutting aspect in the area of human performance associated with decision-making because the licensee did not use conservative assumptions in the functional failure evaluation of an obstructed screen wash system [H.1(b)].

Enforcement. Title 10 CFR 50.65(a)(1) requires, in part, that holders of an operating license shall monitor the performance or condition of systems, structures or components

within the scope of the rule as defined by 10 CFR 50.65(b), against licensee-established goals, in a manner sufficient to provide reasonable assurance that such systems, structures or components are capable of fulfilling their intended safety functions. Title 10 CFR 50.65(a)(2) states, in part, that monitoring as specified in 10 CFR 50.65(a)(1) is not required where it has been demonstrated that the performance or condition of a system, structure or component is being effectively controlled through the performance of appropriate preventive maintenance, such that the system, structure or component remains capable of performing its intended function. Contrary to the above, from May 1, 2010, to the present the licensee failed to demonstrate that the performance of the screen wash system function CW-F01 had been effectively controlled through the performance of appropriate preventive maintenance and did not monitor against licensee-established goals. Specifically, the licensee failed to identify a maintenance preventable functional failure of the screen wash system on May 1, 2010, that demonstrated the performance or condition of this system was not being effectively controlled through the performance of appropriate preventive maintenance and, as a result, that goal setting and monitoring was required. Because the finding is of very low safety significance and has been entered into the licensee's corrective action program as CR-CNS-2010-05631, this violation is being treated as a noncited violation consistent with Section VIA of the Enforcement Policy: NCV 05000298/2010-004-01, "Failure to Adequately Monitor the Performance of the Screen Wash System."

### **1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)**

#### **a. Inspection Scope**

The inspectors reviewed licensee personnel's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- July 8, 2010, Inspection of service water booster pump D gland seal/oil seal area
- July 22, 2010, Unplanned Yellow risk due to loss of 69.1 kV emergency transformer
- August 19, 2010, Extended Yellow risk window for emergent work on diesel generator 2
- August 24, 2010, Plant walkdown of protected equipment during Orange risk window

The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk

analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four maintenance risk assessments and emergent work control inspection samples as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings were identified.

**1R15 Operability Evaluations (71111.15)**

a. Inspection Scope

The inspectors reviewed the following issues:

- July 7, 2010, Average drywell temperature calculation
- July 22, 2010, Emergency transformer outage
- August 12, 2010, Component design basis inspection issues-diesel generator, heating and ventilation system seismic issues, diesel generator fuel oil storage tank vent missile hazards
- September 8, 2010, Diesel generator 2 overspeed governor drive unit bolting found loose
- September 9, 2010, Group 6 isolation due to lightning strike on 345kV line
- September 15, 2010, Notification system siren number 1112 failure

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and Updated Final Safety Analysis Report to the licensee personnel's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies

associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of six operability evaluations inspection samples as defined in Inspection Procedure 71111.15-04

b. Findings

No findings were identified.

**1R18 Plant Modifications (71111.18)**

Temporary Modifications

a. Inspection Scope

To verify that the safety functions of important safety systems were not degraded, the inspectors reviewed the temporary modification identified as elevated release point Kamen sample flow signal substitution.

The inspectors reviewed the temporary modification and the associated safety-evaluation screening against the system design bases documentation, including the Updated Final Safety Analysis Report and the technical specifications, and verified that the modification did not adversely affect the system operability/availability. The inspectors also verified that the installation and restoration were consistent with the modification documents and that configuration control was adequate. Additionally, the inspectors verified that the temporary modification was identified on control room drawings, appropriate tags were placed on the affected equipment, and licensee personnel evaluated the combined effects on mitigating systems and the integrity of radiological barriers.

These activities constitute completion of one sample for temporary plant modifications as defined in Inspection Procedure 71111.18-05.

b. Findings

No findings were identified.

**1R19 Postmaintenance Testing (71111.19)**

a. Inspection Scope

The inspectors reviewed the following postmaintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- July 22, 2010, Crane heavy load test

- August 27, 2010, Diesel generator 2 postmaintenance run and surveillance test
- September 23, 2010, High pressure coolant injection valve testing
- September 23, 2010, High pressure coolant injection pump testing
- September 23, 2010, Testing of reactor core isolation cooling, outside containment isolation valve and inside containment isolation valve

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities for the following (as applicable):

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed
- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the technical specifications, the Updated Final Safety Analysis Report, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with postmaintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five postmaintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings were identified.

**1R22 Surveillance Testing (71111.22)**

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment
- Procedures
- Jumper/lifted lead controls
- Test data
- Testing frequency and method demonstrated technical specification operability
- Test equipment removal
- Restoration of plant systems
- Fulfillment of ASME Code requirements
- Updating of performance indicator data
- Engineering evaluations, root causes, and bases for returning tested systems, structures, and components not meeting the test acceptance criteria were correct
- Reference setting data
- Annunciators and alarms setpoints

The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- August 27, 2010, Standby liquid control pump test
- August 27, 2010, Diesel generator 2 surveillance run
- August 27, 2010, Residual heat removal loop A inservice test
- August 30, 2010, Residual heat removal valve inservice test
- September 9, 2010, Review of June and August unidentified leak rate samples and meetings
- September 23, 2010, Testing of reactor core isolation cooling, outside containment isolation valve and inside containment isolation valve

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of 2 routine surveillances, 2 inservice tests, 1 containment isolation valve surveillance, and 1 reactor coolant system leak surveillance for a total of 6 surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings were identified.

**Cornerstone: Emergency Preparedness**

**1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)**

a. Inspection Scope

The inspectors performed an onsite review of Cooper Nuclear Station Emergency Plan, Revision 58, transmitted June 1, 2010, and Procedure 5.7.1, "Emergency Classification," Revision 41, transmitted June 7, 2010. These revisions are listed below:

- Removed the licensee's emergency action level scheme based on NUREG 0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, Appendix 1, and implemented an emergency action level scheme based on Nuclear Energy Institute Report 99-01, "Emergency Action Level Methodology," Revision 5. The licensee's implementation of Nuclear Energy Institute Report 99-01, Revision 5, "Emergency Action Levels," were approved by the NRC in a letter dated February 23, 2010 (ADAMS ML1000802310)

- Removed the data acquisition system and meteorological system console as sources of meteorological data in the control room
- Updated the description of the emergency operation facility's communication system to include fiber optic cables
- Clarified the duties of drill and exercise evaluators concerning the identification of root cause of emergency response organization performance
- Updated NUREG-0654 cross-reference list
- Updated the letter of agreement with the Nebraska State Patrol
- Corrected titles and references
- Made minor corrections and administrative changes

These revisions were compared to their previous revisions, to the criteria of NUREG 0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, to Nuclear Energy Institute Report 99-01, "Emergency Action Level Methodology," Revision 5, and to the standards in 10 CFR 50.47(b) to determine if the revision adequately implemented the requirements of 10 CFR 50.54(q). The removal of meteorology information displays from the control room was in accordance with a safety analysis report issued by the NRC on March 3, 2004, (ML040650536). These reviews were not documented in the safety evaluation reports and did not constitute an approval of licensee-generated changes; therefore, these revisions are subject to future inspection. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two samples as defined in Inspection Procedure 71114.04-05.

b. Findings

No findings were identified.

**1EP6 Drill Evaluation (71114.06)**

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on June 21, 2010, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the Technical Support Center to determine whether the event classification, notifications, and protective action recommendations were

performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings were identified.

.2 Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on September 1, 2010, which required emergency plan implementation by a licensee operations crew. This evolution was planned to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the postevolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective action program. As part of the inspection, the inspectors reviewed the scenario package and other documents listed in the attachment.

These activities constitute completion of one samples as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational and Public Radiation Safety**

**2RS04 Occupational Dose Assessment (71124.04)**

a. Inspection Scope

This area was inspected to: (1) determine the accuracy and operability of personal monitoring equipment; (2) determine the accuracy and effectiveness of the licensee's methods for determining total effective dose equivalent; and (3) ensure occupational dose is appropriately monitored. The inspectors used the requirements in

10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed licensee personnel, performed walkdowns of various portions of the plant, and reviewed the following items:

- External dosimetry accreditation, storage, issue, use, and processing of active and passive dosimeters
- The technical competency and adequacy of the licensee's internal dosimetry program
- Adequacy of the dosimetry program for special dosimetry situations such as declared pregnant workers, multiple dosimetry placement, and neutron dose assessment
- Audits, self-assessments, and corrective action documents related to dose assessment since the last inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.04-05.

b. Findings

No findings were identified.

**2RS05 Radiation Monitoring Instrumentation (71124.05)**

a. Inspection Scope

This area was inspected to verify the licensee is assuring the accuracy and operability of radiation monitoring instruments that are used to: (1) monitor areas, materials, and workers to ensure a radiologically safe work environment; and (2) detect and quantify radioactive process streams and effluent releases. The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed licensee personnel, performed walkdowns of various portions of the plant, and reviewed the following items:

- Selected plant configurations and alignments of process, post-accident, and effluent monitors with descriptions in the Updated Final Safety Analysis Report and the offsite dose calculation manual
- Select instrumentation, including effluent monitoring instrument, portable survey instruments, area radiation monitors, continuous air monitors, personnel contamination monitors, portal monitors, and small article monitors to examine their configurations and source checks

- Calibration and testing of process and effluent monitors, laboratory instrumentation, whole body counters, post-accident monitoring instrumentation, portal monitors, personnel contamination monitors, small article monitors, portable survey instruments, area radiation monitors, electronic dosimetry, air samplers, continuous air monitors
- Audits, self-assessments, and corrective action documents related to radiation monitoring instrumentation since the last inspection

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.05-05.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

**40A1 Performance Indicator Verification (71151)**

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the second quarter 2010 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings were identified.

.2 Unplanned Scrams with Complications (IE02)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams with complications performance indicator for the period from the third quarter 2009 through the second quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC integrated inspection reports for the period of July 2009

through June 2010, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one unplanned scrams with complications sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.3 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill and Exercise Performance, performance indicator for the period July 2009 through June 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator; assessments of performance indicator opportunities during predesignated control room simulator training sessions, performance during the 2010 biennial exercise, and performance during other drills. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the drill/exercise performance sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.4 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors sampled licensee submittals for the Emergency Response Organization Drill Participation performance indicator for the period July 2009 through June 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator, rosters of personnel assigned to key emergency response organization positions, and exercise participation records. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the emergency response organization drill participation sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.5 Alert and Notification System (EP03)

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System performance indicator for the period July 2009, through June 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and the results of periodic alert notification system operability tests. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the alert and notification system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

**Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection**

**40A2 Identification and Resolution of Problems (71152)**

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included: the complete and accurate identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. Minor issues entered into the licensee's corrective action program because of the inspectors' observations are included in the attached list of documents reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors recognized a corrective action item documenting CR-CNS-2010-03594, "NCV [05000298/2010002-01]. The NRC identified a green noncited violation of 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures and Drawings," regarding the licensee's failure to follow the requirements of Administrative Procedure 0.5, "Conduct of the Condition Reporting Process."

The inspectors noted that after initiating CR-CNS-2010-03594, the licensee had closed that condition report by reference to CR-CNS-2010-01596, a condition report that had been initiated earlier to address the same topic. In CR-CNS-2010-01596, the inspectors

noted that to address the behavior deficiencies that were described in the referenced noncited violation, the licensee had developed and completed five corrective actions. The inspectors determined that those corrective actions were not appropriately focused to correct the behavior deficiencies, in that:

- The inspectors considered that actions to correct behavior deficiencies should include clearly communicating expectations, periodically reinforcing expectations, and holding people accountable for satisfying expectations.
- The licensee's actions to correct behavior deficiencies included clearly communicating expectations to the entire site staff, but did not include periodically reinforcing expectations for any site staff except certain engineering supervisors. The licensee's actions also did not include holding anyone accountable for satisfying expectations.

The inspectors also noted that in LO-CNSLO-2010-0005, the licensee had described an effectiveness review which had concluded that the corrective actions in CR-CNS-2010-01596 had been effective. However, the inspectors determined that the licensee had based that conclusion on verifying that the corrective actions had been implemented as intended, and on noting that only one failure to initiate a condition report when required had been recorded since the corrective actions had been implemented. The inspectors observed that in developing that conclusion, the licensee had not considered whether the corrective actions were appropriately focused to correct the behavior deficiencies.

These activities constitute completion of one in-depth problem identification and resolution sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings were identified.

**40A3 Event Follow-up (71153)**

.1 (Closed) Licensee Event Report 05000298/2009-005-01, High Pressure Coolant Injection Governor Valve Failure

a. Inspection Scope

On December 21, 2009, control room operators observed that the high pressure coolant injection governor valve did not respond as expected when starting the lube oil system. High pressure coolant injection was declared inoperable and CR-CNS-2009-10691 was written. Filter changes in March 2009 inappropriately introduced particulate into the high pressure coolant injection hydraulic oil resulting in the December 21, 2009, failure of the electronic governor remote valve. Corrective actions included correcting the procedural inadequacy to prevent further introduction of particulate, system oil flushing, and replacement of the electronic governor remote. This finding is more than minor because high pressure coolant injection was discovered to be unavailable removing one layer of

defense in depth to prevent core damage should an applicable accident, transient or special event occurred. The finding affected the equipment performance attribute of the mitigating systems cornerstone, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. The issue screened as potentially risk significant since the finding represented a loss of system safety function of a single train for greater than the technical specification allowed outage time. However, a Phase 3 analysis was performed and it was determined that the finding was of very low risk significance (Green). This licensee identified finding involved a violation of 10 CFR, Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings. The enforcement aspects of the violation are discussed in Section 4OA7. This Licensee Event Report is closed.

b. Findings

No findings were identified.

.2 Failure to Follow Procedure Results in Repeat Equipment Failure

a. Inspection Scope

On June 6, 2010, while starting up the 'B' reactor recirculation motor generator from a scheduled reduction in power the field breaker failed to open and smoke was observed from the breaker. A fire was reported in the breaker and the plant entered Emergency Procedures 5.1 Incident and 5.4 Post-Fire. The event was reviewed by the inspectors and a Green noncited violation was identified for the licensee's failure to follow the guidance of their Administrative Procedure 0.5.EVAL, "Preparation of Condition Reports,' for measurable and reasonable corrective actions following implementation of a 2009 field breaker failure apparent cause CR-CNS-2009-007148 corrective actions that did not prevent a repeat failure.

b. Findings

Introduction. A self revealing Green finding was identified for the licensee's failure to follow the requirements of Administrative Procedure 0.5.EVAL, "Preparation of Condition Reports,' Revision 21. Specifically, corrective actions to fix a 2009 Reactor Recirculation Motor Generator field breaker 2009 failure did not meet the procedure's measurable and reasonable criteria when the actions did not prevent a repeat failure of the same breaker and resulted in a fire in the breaker.

Description. On June 6, 2010, Cooper Nuclear Station was starting up the 'B' reactor recirculation motor generator from a scheduled reduction in power when the field breaker failed to open and smoke was observed from the breaker. A fire was reported in the breaker and the plant entered Emergency Procedures 5.1 Incident and 5.4 Post-Fire. The breaker that failed to open was the same breaker that failed to trip on the 'A' reactor recirculation motor generator during refueling Outage 25 on September 26, 2009.

The center pole of the breaker had failed in both 2009 and 2010. Industry operating experience also documented failures of General Electric model AKF-2-25 field breakers.

The 2009 apparent cause investigating the failure correctly determined that the marginal design of the breaker center pole required additional quality control measures to assure the field breaker was in good condition and would operate as expected.

The licensee determined the root cause of the breaker failure and fire was, "The quality control measures put forward in CR-CNS-2009-07148 to provide assurance against center pole closure deficiencies in GE AFK-2-25 field breakers for the reactor recirculation motor generator system were ineffective due to the station's lack of experience in maintaining this model breaker." Cooper Administrative Procedure 0.5.EVAL, "Preparation of Condition Reports," attachment 1, "Corrective Action Requirements," describes that corrective actions should meet several criteria. Two of these requirements are titled, "Measurable," and, "Reasonable." Measurable is defined as, "Can the corrective action be measured (quantitatively) to see when it is done and to see if it worked?..." Reasonable is defined as, "Will this corrective action work? Is it practical? Can it be implemented?..." The 2009 corrective action failed to meet the measurable requirement when lack of licensee knowledge during implementation of the corrective action prevented the action from being measured and determining if it worked. The 2009 action also did not meet the reasonable requirement since it, demonstratively, did not work in preventing a repeat failure against a center pole breaker failure.

When the center pole failed again during the June 6, 2010, start attempt a breaker coil burned up. This burned coil affected the protection against external factors (Fire), attribute of the initiating events cornerstone, and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations.

The licensee replaced the failed breaker, established actions to obtain and inspect spare field breakers, and revised operating procedures to guide operator actions should another field breaker fail to open. This procedure guidance is to remain in place until the installed field breakers have been replaced with new breakers with additional inspections to assure reliability.

Analysis. The performance deficiency associated with this finding was the licensee's failure to follow the guidance of Administrative Procedure 0.5.EVAL, "Preparation of Condition Reports," for measurable and reasonable corrective actions following implementation of the 2009 field breaker failure apparent cause CR-CNS-2009-007148 corrective actions. The finding is more than minor because it adversely affected the protection against external factors (Fire), attribute of the initiating events cornerstone, and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Based on the results of a Significance Determination Process, Phase 1 evaluation, the finding was determined to have very low safety significance since it did not contribute to the likelihood of a primary or secondary system loss-of-coolant accident, did not contribute to a loss of mitigation equipment, and did not increase the likelihood of a fire or internal/external flood. This finding has a crosscutting aspect in the corrective action program component of the problem identification and

resolution area due to licensee corrective actions that failed to implement a resolution of the field breaker failures [P.1(c)].

Enforcement. Enforcement action does not apply because the performance deficiency did not involve a violation of a regulatory requirement. Because this finding does not involve a violation of regulatory requirements and has very low safety significance, it is identified as FIN 05000298/2010004-02, "Failure to Follow Procedure Results in Repeat Equipment Failure."

#### **40A5 Other Activities**

##### (Closed) NRC Temporary Instruction 2515/180, Inspection of Procedures and Processes for Managing Fatigue

###### a. Inspection Scope

The principal objective of this temporary instruction was to determine if the licensee had established appropriate procedures and processes to reasonably ensure the requirements specified in 10 CFR 26, Subpart I, "Managing Fatigue", would be accomplished. This temporary instruction applied to all operating nuclear power reactor licensees but was intended to be performed at only one site per utility. The Cooper Nuclear Station was selected because it is the only nuclear site owned by the licensee.

To fulfill the temporary instruction objective, the inspectors specifically reviewed Cooper Nuclear Stations Operations Manual, Administrative Procedure 0.12, "Work Hour Limitations and Personnel Fatigue Management," Revision 25; and Administrative Procedure 0-FFD-01, "NPG Fitness for Duty Program and Behavioral Observation Program," Revision 28. In addition to 10 CFR 26, Subpart I, the inspectors referred to Nuclear Energy Institute 06-11, "Managing Personnel Fatigue at Nuclear Power Reactor Sites", Revision 1, and Regulatory Guide 5.73, "Fatigue Management for Nuclear Power Plant Personnel", March 2009, as guidance for verifying the licensee's program procedures and policies complied with 10 CFR 26. The inspectors also reviewed applicable site specific training materials related to fatigue management, and examined selected waivers approved since October 2009. Furthermore, the inspectors interviewed responsible station staff familiar with Procedures 0.12 and 0-FFD-01, and 10 CFR 26, Subpart I.

###### b. Findings and Observations

No findings were identified. The inspectors concluded that Procedures 0.12 and 0-FFD-01 were consistent with the requirements of 10 CFR 26, Subpart I, and the associated guidance documents of Regulatory Guide 5.73 and Nuclear Energy Institute 06-11, except as follows:

Pursuant to 10 CFR 26.203(a), the licensee was required to establish a policy for the management of fatigue for all individuals subject to the Fitness for Duty program, and incorporate it into the written Fitness for Duty policy required by 10 CFR 26.27(b). In Nuclear Energy Institute 06-011, Section 5.1, "Policy," additional guidance considered

acceptable by the NRC was provided regarding 10 CFR 26.203(a). However, the licensee did not include several of the policy elements contained in Nuclear Energy Institute 06-011, Section 5.1, in their written Fitness for Duty policy established by Attachment 4 of 0-FFD-001,.

Section 13, "Training," of Procedure 0.12, provided a detailed listing of the training elements deemed necessary to meet 10 CFR 26, Subpart I. The inspector confirmed that the level of training prescribed by Section 13 complied with 10 CFR 26.203(c), and was consistent with the guidance of Nuclear Energy Institute 06-011, Section 14, "Training and Examination." However, the actual training materials used to administer the Fitness for Duty site training were deficient and did not include all of the training elements listed in Section 13 of Procedure 0.12. Although there were a number of missing elements from the licensee's training program for fatigue management, the training materials did address both of the knowledge and abilities specifically prescribed by 10 CFR 26.203(c)(1) and (2). The missing training elements were only described by Nuclear Energy Institute 06-011, Section 14, not 10 CFR 26.203(c).

Pursuant to 10 CFR 26.203(b)(1)(iii), the licensee was required to describe the process to be followed if an individual disagreed with the results of a fatigue assessment conducted due to a "self-declaration" per 10 CFR 26.211(a)(2). Although, Section 7.3.2.1 of Procedure 0.12 states a worker who disagrees with the results of a fatigue assessment may "pursue other management and nuclear oversight paths," Procedure 0.12 didn't describe what these options actually were or how to pursue them.

Several minor inconsistencies between the automatic computer-based waiver form and Attachment 1, "Working Hour Waiver Request," and Attachment 2 "Fatigue Assessment Form," of Procedure 0.12 were identified.

The licensee initiated Condition Reports CR-CNS-2010-06359, 06361, 06363, and 06372 to address these programmatic deficiencies and/or omissions.

## **40A6 Meetings**

### Exit Meeting Summary

On July 22, 2010, the inspectors presented the results of the onsite inspection of the July 21, 2010, biennial emergency preparedness exercise and changes to the licensee's emergency plan and emergency action levels to Mr. D. Willis, General Manager of Plant Operations, and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On September 9, 2010, the inspectors conducted a telephonic exit meeting to present the radiation safety inspection results to Mr. Dave VanDerKamp and other members of the licensee staff. The licensee staff acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On October 14, 2010, the inspectors presented the inspection results to Demetrius Willis, General Manager, Plant Operation, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

#### **40A7 Licensee-Identified Violations**

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a noncited violation.

- Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," requires activities affecting quality shall be prescribed by instructions appropriate to the circumstances. Contrary to this on December 21, 2009 Operations found the high pressure coolant injection turbine was not operable due to inadequate work instructions to prevent the mixing of unfiltered and filtered oil. Introduction of unfiltered oil resulted in particulate in the electronic governor remote unit leading to corrosion and binding of the electronic governor remote unit rendering the high pressure coolant injection system inoperable. The licensee entered this issue in their corrective action program as CR-CNS-2009-10691. This finding is of very low safety significance as determined by a Manual Chapter 0612 significance determination process Phase 3 analysis.

**SUPPLEMENTAL INFORMATION**  
**KEY POINTS OF CONTACT**

Licensee Personnel

J. Austin, Manager, System Engineering  
T. Barker, Manager, Quality Assurance  
J. Bebb, Manager, Security  
J. Bednar, Technical Supervisor, Radiation Protection  
R. Beilke, Manager, Radiation Protection/Chemistry  
S. Brown, Manager, Maintenance  
D. Buman, Director of Engineering  
J. Corey, Manager, Radiation Protection  
S. DeRosier, Supervisor, Operations Training  
L. Dewhirst, Manager, Corrective Action and Assessments  
K. Fike, Plant Chemist  
J. Gren, System Engineer  
T. Hottovy, Manager, Engineering Support  
F. Lerner, Engineer, System Engineering Department  
G. Mace, Manager, Nuclear Asset  
D. Madsen, Licensing Engineer  
E. McCutchen, Senior Licensing Engineer  
D. Montgomery, Manager, Emergency Preparedness  
G. Pflapsen, System Engineer, SED  
A. Sarver, Supervisor, System Engineering Department  
K. Sutton, Manager, Nuclear Engineering Department  
M. Tackett, Assistant to General Manager of Plant Operations  
D. VanDerKamp, Licensing Manager  
C. Walters, System Engineer, SED  
D. Werner, Superintendent, Operations Training  
J. White, Technician, Radiation Protection  
D. Willis, General Manager of Plant Operations  
M. Wright, Technician  
A. Zaremba, Director Nuclear Safety Assurance

NRC Personnel

M. Chambers, Senior Resident Inspector  
T. Farina, Reactor Inspector  
Z. Hollcraft, Reactor Inspector  
M. Shannon, Branch Chief, Plant Support Branch 1

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened and Closed

05000298/2010004-01	NCV	Failure to Adequately Monitor the Performance of the Screen Wash System (Section 1R12)
05000298/2010004-02	FIN	Failure to Follow Procedure Results in Repeat Equipment Failure (Section 4OA3)

Closed

05000298/2009005-01	LER	High Pressure Coolant Injection Governor Valve Failure (Section 4OA3)
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**LIST OF DOCUMENTS REVIEWED**

**Section 1RO1: Adverse Weather Protection**

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
2.1.14	General Operating Procedure , “Seasonal Weather Preparations”	16
5.1Flood	Engineering Procedure, “Flood”	9
5.1Weather	Engineering Procedure, “Operation During Weather Watches and Warnings”	7

**Section 1RO4: Equipment Alignment**

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
	High Pressure Coolant Injection System Health Report, 2 <sup>nd</sup> Quarter 2010	
SH4	Service Water P&ID 2006	N42
2041	P&ID Flow Diagram	N85
2044	P&ID Flow Diagram	N71

**Section 1RO4: Equipment Alignment**

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
2.2.20	CNS System Operating Procedure, "Standby AC Power System (Diesel Generator)"	77
2.2.33A	System Operating Procedure, "High Pressure Coolant Injection System Component Checklist"	24

NOTIFICATION

4694564            4694565

**Section 1RO5: Fire Protection**

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	CNS Fire Pre Plan	6
	CNS Fire Hazard Analysis Vol. I & II	February 28, 2003
	CNS Fire SER	May 23, 1979
23	Fire Brigade Scenario	

**Section 1RO6: Flood Protection Measures**

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>
09-067	Engineering Evaluation
2.4.12	Standard Review Plan Section, "Groundwater"
2.4.2	Standard Review Plan Section, "Floods"
3.4.1	Standard Review Plan Section, "Internal Flooding"
3.6.1	Standard Review Plan Section, "Piping Failure"
09-102	NEDC
93-128	NEDC

CONDITION REPORT

CR-CNS-2009-9563 CR-CNS-2010-4501

NOTIFICATION

4694564 4694565

**Section 1RO7: Heat Sink Performance**

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>DATE</u>
REC Heat Exchanger Fouling Trend Graph	January 2003 through September 2010
REC Heat Exchanger Trending Data	September 3, 2010
<a href="http://www.zhi.com/index.php/nuclear/engineering-analysis/proto-hx">http://www.zhi.com/index.php/nuclear/engineering-analysis/proto-hx</a> : (description of the Proto-HX computer program used by the licensee to calculate fouling factors in heat exchangers)	

**Section 1RO7: Heat Sink Performance**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
13.15.1	Performance Evaluation Procedure, "Reactor Equipment Cooling Heat Exchanger Performance Analysis"	30

WORK ORDER

4702630

**Section 1R11: Licensed Operator Requalification Program**

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>
5.5Aircraft	Engineering Procedure, "Aircraft Threat"

**Section 1R11: Licensed Operator Requalification Program**

LESSON

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SKL054-01-26	5.5Aircraft/LOOP	4

**Section 1R12: Maintenance Effectiveness**

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>
Maintenance Rule (a)(1) Evaluation for RPT-PF01B

**Section 1R12: Maintenance Effectiveness**

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
6.SLC.101	SLC Pump Operability Test	15

CONDITION REPORT

CR-CNS-2006-08102 CR-CNS-2010-02814 CR-CNS-2010-03195 CR-CNS-2010-04115  
CR-CNS-2010-05631

NOTIFICATION

10488747 10728119 10731710

**Section 1R13: Maintenance Risk Assessment and Emergent Work Controls**

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0.40	Administrative Procedure, "Schedule Risk Assessment"	23
0.49	Procedure O-PROTECT-EQUIP	

CONDITION REPORT

CR-CNS-2010-05924 CR-CNS-2010-05960 CR-CNS-2010-06100

CORRECTIVE MAINTENANCE ORDER

4758748

WORK ORDER

4776174            4783144

**Section 1R15: Operability Evaluations**

CONDITION REPORTS

CR-CNS-2010-04811   CR-CNS-2010-04813   CR-CNS-2010-04816   CR-CNS-2010-04819  
CR-CNS-2010-05211   CR-CNS-2010-05301   CR-CNS-2010-05342   CR-CNS-2010-05348  
CR-CNS-2010-05350   CR-CNS-2010-05372   CR-CNS-2010-05564   CR-CNS-2010-05662  
CR-CNS-2010-05774   CR-CNS-2010-05763   CR-CNS-2010-05764   CR-CNS-2010-05924  
CR-CNS-2010-05960   CR-CNS-2010-06100   CR-CNS-2010-06443   CR-CNS-2010-06708

CORRECTIVE MAINTENANCE ORDER

4758748

WORK ORDER

4783144

**Section 1R18: Plant Modifications**

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>DATE</u>
Current Source Substitution for the ERP Kaman	August 10, 2010

TEMPORARY CONFIGURATION CHANGE

4781669

**Section 1R19: Postmaintenance Testing**

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>
09-013	Engineering Evaluation

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
6.2DG.101	Surveillance Procedure, "Diesel Generator 31 Day Operability Test (IST) (Div 2)"	65
2.2.20.1	System Operating Procedure, "Diesel Generator Operations"	51
6.HPCI.103	Surveillance Procedure, "HPCI IST and 92 Day Test Mode Surveillance Operation"	38
6.HPCI.201	Surveillance Procedure, "HPCI Valve Operability Test (IST)"	18
6.RCIC.201	Surveillance Procedure, "HPIC Power Operated Valve Operability Test (IST)"	17

WORK ORDER

4664193	4664194	4664195	4664196	4664198
4677077	4705859	4719815	4732839	4744200
4746572	4748696	4783145	46663045	46705858

**Section 1R22: Surveillance Testing**

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>DATE</u>
Unidentified Leak Rate Team Meeting Notes	August 10, 2010
Unidentified Leak Rate Team Meeting Notes	August 24, 2010

**Section 1R22: Surveillance Testing**

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
6.1RHR.101		

**Section 1R22: Surveillance Testing**

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
6.1RHR.201	Surveillance Procedure, "RHR Power Operated Valve Operability Test (IST)(Div1)"	22
6.2DG.101	Surveillance Procedure, "Diesel Generator 31 Day Operability Test (IST) (Div 2)"	65
6.DWLD.301	Surveillance Procedure, "	
6.RCIC.201	Surveillance Procedure, "FCIC Power Operated Valve Operability Test (IST)"	17
6.SLC.101	Surveillance Procedure, "SLC Pump Operability Test"	15 and 14

CONDITION REPORTS

CR-CNS-2010-05291 CR-CNS-2010-06387

WORK ORDER

4705875 47505976

**Section 1EP4: Emergency Action Level and Emergency Plan Changes**

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>REVISION / DATE</u>
50.54Q Evaluation for the Cooper Nuclear Station Emergency Plan	58
Apparent Cause Evaluation, Meteorological Instrumentation not removed from CNS Emergency Plan	March 1, 2010

**Section 1EP6: Drill Evaluation**

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
5.5Aircraft	Engineering Procedure, "Aircraft Threat"	

**Section 2RS04: Occupational Dose Assessment**

**AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES**

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
10-03	Quality Assurance Audit Report	July 26, 2010
	CNS System Health	July 2010

**Section 2RS04: Occupational Dose Assessment**

**MISCELLANEOUS DOCUMENTS**

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
W 08-01	2010 Internal Dose Assessment Prospectus	0
Lab Code 100518-0	NVLAP Certificate of Accreditation	May 6, 2010
W 09-02	Multiplication Factor for Merlin Gerin DMC 2000S	1

**Section 2RS04: Occupational Dose Assessment**

**PROCEDURE**

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0.5.CR	Condition Report Initiation, Review, and Classification	16
9.ALARA.1	Personnel Dosimetry and Occupational Radiation Exposure Program	38
9.RADOP.5	Airborne Radioactivity Sampling	7

**CONDITION REPORTS**

CNS-2009-08197	CNS-2009-10900	CNS-2010-04393	CNS-2010-04402
CNS-2010-04496	CNS-2010-04861		

**Section 2RS05: Radiation Monitoring Instrumentation**

**AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES**

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
10-03	Quality Assurance Audit Report	July 26, 2010
	CNS System Health	July 2010

**Section 2RS05: Radiation Monitoring Instrumentation**

**CALIBRATION AND MAINTENANCE RECORDS**

<u>NUMBER</u>	<u>MONITOR DESCRIPTION</u>	<u>PROCEDURE</u>	<u>DATE</u>
RMP-RM-354	Liquid Radwaste Effluent Monitor	6.PRM.308	February 26, 2009
RMP-RM-354	Liquid Radwaste Effluent Monitor	6.PRM.308	August 26, 2010
RMP-RM-3A/3B	Elevated Release Point Effluent Monitors	6.PRM.310	March 5, 2009
OG-FIT-4001	Elevated Release Point Flow Transmitter	6.OG.303	June 22, 2010
RW-FIT-485/442	Liquid Radwaste Effluent Line Flow Monitors	6.PRM.306	May 18, 2010
RW-FR-441	Liquid Radwaste Effluent Line Flow Monitor	6 PRM.306	May 18, 2010
RMA-ES-53A	Area Radiation Monitor Calibration	15.ARM.302	November 25, 2009

**Section 2RS05: Radiation Monitoring Instrumentation**

**MISCELLANEOUS DOCUMENTS**

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
TCC 4781669	Temporary Configuration Change Package for Elevated Release Point Radiation Monitoring System (ERP Kaman)	August 9, 2010
Chapter 12	Updated Safety Analysis Report (USAR): Process Radiation Monitors	February 22, 2007
Chapter 13	Updated Safety Analysis Report (USAR): Plant and Augmented Radwaste (Drum Handling) Area Radiation Monitoring System	March 9, 2007
Chapter 14	Updated Safety Analysis Report (USAR): Environmental Radiation Monitoring Instruments	January 23, 2001
Chapter 15	Updated Safety Analysis Report (USAR): Radiological Protection and Radiochemistry Instruments	January 23, 2001

**Section 2RS05: Radiation Monitoring Instrumentation**

**PROCEDURE**

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0.26	Surveillance Program	60

## Section 2RS05: Radiation Monitoring Instrumentation

### PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0.37	Measuring and Test Equipment (MT&E) Calibration Program Guidelines	24
6.PRM.306	Liquid Radwaste Effluent Flow Monitor Channel Calibration	6
6.PRM.308	Liquid Radwaste Effluent System Channel Calibration	11
6.PRM.310	ERP Kaman Monitor Channel Calibration	19
8.2.2	Instrument Performance Monitoring and Calibration Schedule	15
8.8.15	Noble Gas Sample Collection for Effluent Monitors and Drywell Air Monitor	6
9.INST.37	Constant Air Monitors	10
9.INST.40	DCA Area Alarm Monitor Models 3090, 3090-2, and 3090-3	0
9.INST.47	Eberline Personnel Contamination Monitor Model PCM-2	4
9.INST.50	Hand-Held GM Survey Meters	7
9.INST.53	Ion Chamber Survey Instrument Eberline Models RO-2, RO-2A, and RO-20	3
14.8.14	Kaman Power Supply Calibration, Battery Check, and Watchdog Timer Board Calibration	9
15.ARM.302	Area Radiation Monitors Calibration and Functional Test	15
98-03-03	System Engineer Desktop Guide – System Health Report/Presentation	15

## Section 2RS05: Radiation Monitoring Instrumentation

### RADIATION PROTECTION INSTRUMENTATION CALIBRATIONS

<u>IDENTIFICATION</u>	<u>INSTRUMENT TYPE</u>	<u>CALIBRATION DATE</u>
Fastcan	Whole Body Counter	June 7, 2010
Gamma Spectroscopy	Germanium Detectors	August 4, 2010
Radcal#26-0795	Radiation Monitor Controller	February 16, 2010
S5-XBL	Alpha-Beta Smear Counter	April 8, 2010
PCM-2 #377	Personnel Contamination Monitor	April 10, 2010
PCM-2 #401	Personnel Contamination Monitor	September 30, 2009

**Section 2RS05: Radiation Monitoring Instrumentation**

**RADIATION PROTECTION INSTRUMENTATION CALIBRATIONS**

<u>IDENTIFICATION</u>	<u>INSTRUMENT TYPE</u>	<u>CALIBRATION DATE</u>
PM- 7 #490	Personnel Contamination Monitor	February 17, 2009
PM-7 #590	Personnel Contamination Monitor	April 16, 2010
RP-10916	Hand and Foot Monitor	June 8, 2010
RP-10274	APC-II	April 16, 2010

**CONDITION REPORTS**

CNS-2009-00412	CNS-2009-04751	CNS-2009-05005	CNS-2009-05330
CNS-2009-05431	CNS-2009-07638	CNS-2009-07700	CNS-2009-09271
CNS-2010-05907	CNS-2009-09750	CNS-2009-10007	CNS 2010-02307
CNS 2010-04400	CNS-2010-04833	CNS-2010-04871	CNS-2010-05414
CNS-2010-05476			

**Section 40A1: Performance Indicator Verification**

**MISCELLANEOUS DOCUMENTS**

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EPDG 2	Semi-Monthly Alert and Notification System Siren Testing	15
EPIP 5.7.27	Alert and Notification System	17
EPIP 5.7.27.1	EAS Tone Activated Radio Malfunction	9
	Cooper Nuclear Station Emergency Plan	57, 58

**Section 40A2: Identification and Resolution of Problems**

**PROCEDURE**

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0.5	Administrative Procedure, "Conduct of the Condition Report Process"	67

**CONDITION REPORT**

CR-CNS-2008-08780	CR-CNS-2010-01596	CR-CNS-2010-01634	CR-CNS-2010-01658
CR-CNS-2010-03594	LO-CNSLO-2010-0005		

**Section 40A3: Event Follow-Up**

**MISCELLANEOUS DOCUMENTS**

<u>TITLE</u>	<u>DATE</u>
Lightning Strike on 345kv Line Event	September 9, 2010

**CONDITION REPORT**

CR-CNS-2009-2238    CR-CNS-2009-10691    CR-CNS-2010-06443    CR-CNS-2010-03594

**Section 40A7: Licensee-Identified Violations**

**CONDITION REPORT**

CR-CNS-2009-2238    CR-CNS-2009-10691