



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
612 EAST LAMAR BLVD, SUITE 400  
ARLINGTON, TEXAS 76011-4125

May 3, 2011

EA-2011-090

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  
NUMBER 05000298/2011002 AND NOTICE OF VIOLATION

Dear Mr. O'Grady:

On March 24, 2011, 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 March 29, 2011, with you 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.

Based on the results of this inspection, the NRC has identified an issue that was evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has also determined that a violation is associated with this issue.

This violation was evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at <http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>.

The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in the subject inspection report. The violation involved the failure to appropriately assess and manage the risk associated with planned maintenance activities. The violation is being cited in the Notice because the licensee failed to restore compliance with NRC requirements within a reasonable time after violations were identified in Inspection Reports 05000298/2009005, 2010002, and 2010005. This is consistent with the NRC Enforcement Policy; Section 2.3.2, which states, in part, that a cited violation will be

considered if the licensee fails to restore compliance within a reasonable time after a violation is identified.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC review of your response to the Notice will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.”

Based on the results of this inspection, the NRC has also determined that one additional Severity Level IV violation of NRC requirements occurred, and three additional issues that were evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has determined that violations are associated with these issues. Additionally, one licensee-identified violation, which was determined to be of very low safety significance, is listed in this report. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as a noncited violations, consistent with Section 2.3.2 of the NRC Enforcement Policy.

If you contest the violation or the significance of the noncited violations, 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 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 the facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy or proprietary, information so that it can be made available to the Public without redaction.

Sincerely,

**/RA/**

Vince Gaddy, Chief  
Project Branch C  
Division of Reactor Projects

EA-2011-090  
Nebraska Public Power District

- 3 -

Docket: 50-298  
License: DRP-46

Enclosure 1 – Notice of Violation  
Enclosure 2 - NRC Inspection Report 05000298/2011002  
Attachment: Supplemental Information

cc w/Enclosure:  
Distribution via ListServ

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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	
SRI:DRP/	RI:DRP/	C:DRS/EB1	C:DRS/EB2	C:DRS/OB	
JJosey	MLChambers	TRFarnholtz	NFO'Keefe	MSHaire	
<b>/RA/E-VGG</b>	<b>/RA/E VGG</b>	<b>/RA/</b>	<b>/RA/</b>	<b>/RA/</b>	
4/27/11	4/27/11	4/14/111	4/15/11	4/13/11	
C:DRS/PSB1	C:DRS/PSB2	C:DRS/TSB	SEO:ORA/OE	C:DRP/	
MPShannon	GEWerner	MCHay	RKellar	VGGaddy	
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4/18/11	4/15/11	4/18/11	4/18/11	5/3/11	

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## NOTICE OF VIOLATION

Nebraska Public Power District  
Cooper Nuclear Station

Docket No. 50-298  
License No. DPR-46  
EA-2010-090

During an NRC inspection conducted January 1 through March 24, 2011, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Title 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," requires, in part, that before performing maintenance activities the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities.

Contrary to the above, from November 26, 2008 through February 17, 2011 work control and operations personnel failed to adequately assess and manage the increase in risk associated with maintenance activities. Specifically, qualitative assessments of maintenance activities in or near the electrical switchyard and offsite power components were not included in the on-line risk assessment.

This violation is associated with a Green Significance Determination Process finding.

Pursuant to the provisions of 10 CFR 2.201, Cooper Nuclear Station is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region IV, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-2011-090" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made

available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Dated this 3rd day of May, 2011

**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 05000298  
License: DRP-46  
Report: 05000298/2011002  
Licensee: Nebraska Public Power District  
Facility: Cooper Nuclear Station  
Location: 72676 648A Ave  
Brownville, NE 68321  
Dates: January 1 through March 24, 2011  
Inspectors: M. Chambers, Resident Inspector  
T. Farina, Operations Engineer  
J. Josey, Senior Resident Inspector  
C. Steely, Operations Engineer  
G. George, Reactor Inspector  
Approved By: Vince Gaddy, Chief, Project Branch C  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000298/2011002; 01/01/2011 – 03/24/2011; Cooper Nuclear Station, Integrated Resident and Regional Report; Licensed Operator Requalification Program, Maintenance Risk Assessments and Emergent Work Control, Refueling and Other Outage Activities, Identification and Resolution of Problems, and Event Follow-up.

The report covered a 3-month period of inspection by resident inspectors and an announced baseline inspections by region-based inspectors. One Green cited violation, three Green noncited violations, and one Severity Level IV violation 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 a cited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the failure of work control and operations personnel to adequately assess and manage the increase in risk associated with maintenance activities. Specifically, on February 17, 2011, work control and operations personnel failed to adequately assess and manage the increase in risk associated with maintenance activities involving the use of heavy equipment in or near the electrical switchyard and offsite power components. Due to the licensee's failure to restore compliance from the previous NCV 050000298/2008005-02 and other subsequent violations within a reasonable time after the violations were identified, this violation is being cited in a Notice of Violation consistent with Section 2.3.2 of the NRC Enforcement Policy. This finding was entered into the licensee's corrective action program as condition reports CR-CNS-2010-09146, CR-CNS-2008-08645 and CR-CNS-2009-03714.

The performance deficiency associated with this finding involved the licensee's failure to adequately assess and manage the risk of planned maintenance activities. This finding is greater than minor because it affected the protection against external factors attribute of the Initiating Events Cornerstone, and directly 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 inspectors determined that Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," could not be used due to the licensee's inability to quantify the increase in risk associated with the heavy equipment activity in the

switchyard. The inspectors therefore used Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria." The inspectors performed a bounding qualitative evaluation using the best available information and determined that the finding was of very low safety significance because another qualified source of offsite power (the emergency transformer) was unaffected by this performance deficiency and provided sufficient remaining defense in depth in the event of a loss of offsite power. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity [P.1(d)](Section 1R13).

#### Cornerstone: Mitigating Systems

- Green. The inspectors identified a noncited violation of 10 CFR Part 55.59 (a)(2)(ii), "Requalification," for the failure of the licensee to ensure that three senior operator license holders were evaluated during the annual operating test to the appropriate level of their license. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2010-09350.

The failure of the licensee to properly evaluate the three senior operators to the level of their license in the annual operating test was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it adversely impacted the human performance attribute of the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Additionally, if left uncorrected, the performance deficiency could have become more significant in that allowing licensed operators to return to the control room without valid demonstration of appropriate knowledge on the biennial examinations could be a precursor to a significant event if undetected performance deficiencies develop. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheets, and Appendix M, "Significance Determination Process Using Qualitative Criteria," the finding was determined to have very low safety significance (Green) because, although the finding resulted in three senior operator license holders standing watch in the senior operator position without being properly evaluated during the annual operating test, there were no actual safety consequences. This finding has a crosscutting aspect in the area of human performance associated with the decision making component because the licensee failed to use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action [H.1(b)] (Section 1R11).

- Green. The inspectors identified a 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.CR, "Condition Report Initiation, Review and Classification." to enter conditions adverse to quality into the corrective action program. Specifically, between January 12, 2011, and February 24, 2011, the inspectors identified multiple instances where licensee personnel were aware of conditions adverse to quality, but failed to appropriately enter them into the corrective action program until being prompted by the inspectors. The licensee entered this issue in their corrective action program as CR-CNS-2011-1239.

The performance deficiency associated with this finding involved the licensee's failure to initiate condition reports as required by Administrative Procedure 0.5.CR, "Condition Report Initiation, Review and Classification." The performance deficiency was more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone, and directly affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Although the examples mentioned above may be minor violations, the inspectors used Section 2.10.F of the NRC Enforcement Manual to determine that the performance deficiency was more than minor and is therefore a finding because the NRC has indication that the minor violation had occurred repeatedly. Using the Manual Chapter 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," the inspectors determined that the finding has very low safety significance because all of the items in the Table 4a Mitigating Systems Cornerstone checklist were answered in the negative. The finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component, in that the licensee takes appropriate corrective actions to address safety issues and adverse trends in a timely manner. Specifically, the licensee failed to take appropriate corrective actions to address previously identified examples of employees not initiating condition reports in response to conditions adverse to quality [P.1(d)] (Section 4AO2).

Cornerstone: Barrier Integrity

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to adequately implement Procedure 0.45, "Foreign Material Exclusion Program," Revision 33. Specifically, between November 24, 2010, and March 24, 2011 multiple occasions were identified where licensee personnel failed to implement appropriate foreign material exclusion controls in areas designated as Zone 1 areas around safety related equipment (e.g., failure to appropriately log material into and out of the zone, or appropriately lanyard material in the zone) as required by station procedure. This issue was entered into the licensee's corrective action program as Condition Reports CR-CNS-2010-9173, CR-CNS-2010-9678, CR-CNS-2011-2775 and CR-CNS-2011-3214.

The failure of station personnel to follow Procedure 0.45, "Foreign Material Exclusion Program," when working in Zone 1 foreign material exclusion areas around safety related equipment/areas, was a performance deficiency. The performance deficiency was more than minor because it affected the human performance attribute of the Barrier Integrity Cornerstone, and directly affected the cornerstone objective of providing reasonable assurance that physical barriers protect the public from radionuclide releases caused by accidents or events, and is therefore a finding. Furthermore, station personnel's continued failure to implement appropriate foreign material exclusion controls could result in the introduction of foreign material into critical areas, such as the spent fuel pool or the reactor cavity, which in turn could result in degradation and adverse impacts on materials and systems associated with these areas. Using Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets (at power issues), and Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," Phase 1 guidance (shutdown issues), this finding was determined to have a very low safety significance because; the finding was only associated with the fuel barrier (at power), and did not result in an increase in the likelihood of a loss of reactor coolant system inventory, degrade the ability to add reactor coolant system inventory, or degrade the ability to recover decay heat removal (shutdown). This finding had a crosscutting aspect in the area of human performance associated with the work practices component, in that the licensee failed to define and effectively communicate expectations regarding procedural compliance and personnel follow procedures [H.4(b)] (Section 1R20).

Cornerstone: Miscellaneous

- Severity Level IV. The inspectors identified a Severity Level IV noncited violation of 10 CFR 50.72, "Immediate Notification Requirements for Operating Nuclear Power Reactors," for the licensee's failure to notify the NRC Operations Center within 8 hours following discovery of an event meeting the reportability criteria as specified. Specifically, on January 18, 2011, while the B train of residual heat removal was inoperable for scheduled maintenance the A train experienced a fault which rendered it inoperable for its low pressure coolant injection function. As a result, both trains of residual heat removal were incapable of performing their system specified safety function of residual heat removal. The licensee's evaluation of this condition determined that it was not a reportable event because both core spray pumps were operable and the D residual heat removal pump was available therefore the overall function of decay heat removal was maintained. The inspectors questioned this rationale, because the apparent intent of the reporting criteria as described in NUREG 1022, "Event Reporting Guidelines 50.72 and 50.73," Revision 2, section 3.2.7, was to cover an event or condition where structures, components, or trains of a safety system could have failed to perform their intended safety function as described in the plant safety analysis. Consultation with the Office of Nuclear Reactor Regulation determined that this was the intent of the criteria. As such, the inspectors determined that the licensee had failed to make a non-emergency 8 hour report as required by 10

CFR 50.72(b)(3)(v). The licensee submitted the 8 hour report on January 21, 2011 and entered this issue into the corrective action program as Condition Report CR-CNS-2011-0618.

The failure to make an applicable non-emergency 8-hour event notification report within the required time frame was determined to be a performance deficiency. The inspectors reviewed this issue in accordance with NRC Inspection Manual Chapter 0612 and the NRC Enforcement Manual. Through this review, the inspectors determined that traditional enforcement was applicable to this issue because the NRC's regulatory ability was affected. Specifically, the NRC relies on the licensees to identify and report conditions or events meeting the criteria specified in regulations in order to perform its regulatory function; and when this is not done, the regulatory function is impacted. The inspectors determined that this finding was not suitable for evaluation using the significance determination process, and as such, was evaluated in accordance with the NRC Enforcement Policy. The finding was reviewed by NRC management and because the violation was determined to be of very low safety significance, was not repetitive or willful, and was entered into the corrective action program, this violation is being treated as a Severity Level IV noncited violation consistent with the NRC Enforcement Policy. This finding had a crosscutting aspect in the area of human performance associated with the decision making component, in that, the licensee failed to use conservative assumptions in their decision making [H.1(b)] (Section 4OA3).

**B. Licensee-Identified Violations**

Violations of very low safety significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers (condition report numbers) are listed in Section 4OA7.

## REPORT DETAILS

### Summary of Plant Status

Cooper Nuclear Station began the inspection period at full power on January 1, 2011. On March 7, 2011, the plant began power coast down, and on March 13, 2011, the plant was shutdown for Refueling Outage 26.

#### 1. REACTOR SAFETY

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

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

##### Readiness to Cope with External Flooding

##### a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the Updated Final Safety Analysis Report for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and determined that barriers required to mitigate the flood were in place and operable. Additionally, the inspectors performed an inspection of the protected area to identify any modification to the site that would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. The inspectors also reviewed the abnormal operating procedure for mitigating the design basis flood to ensure it could be implemented as written. Specific documents reviewed during this inspection are listed in the attachment.

The inspectors reviewed Cooper Nuclear Station's external flood protection strategy to resolve unresolved item URI 05000298/2010005-06, "Failure to Update Flood Protection for Safety Related Buildings." The inspectors verified that flood protection strategy would adequately protect to the flood levels stated in the Updated Final Safety Analysis Report. Since the inspectors verified the adequacy of the external flood protection strategy to design basis flood levels, URI 05000298/2010005-06 is closed.

These activities constitute completion of one external flooding sample as defined in Inspection Procedure 71111.01-05.

##### b. Findings

No findings were identified.

## **1R04 Equipment Alignments (71111.04)**

### Partial Walkdown

#### a. Inspection Scope

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

- High pressure coolant injection system
- Fuel pool cooling decontamination flush/alternate decay heat removal
- Supplemental diesel generator

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.

## **1R05 Fire Protection (71111.05)**

### 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:

- January 12, 2011, Residual heat removal 1A heat exchanger room during residual heat removal valve RHR-101 freeze seal, Zone 2A
- January 25, 2011, Torus Area, Zone 1F
- February 16, 2011, Control rod drive repair area, reactor building 958 feet elevation, Zone 4C
- February 24, 2011, Alternate decay heat removal hot work permit area, reactor building 958 feet elevation, Zone 4C

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.

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

### **.1 Quarterly Review**

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

On February 9, 2011, 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.

### **.2 Biennial Review**

The licensed operator requalification program involves two training cycles that are conducted over a 2-year period. In the first cycle, the annual cycle, the operators were administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators were administered an operating test and a comprehensive written examination.

a. Inspection Scope

To assess the performance effectiveness of the licensed operator requalification program, the inspectors conducted personnel interviews, reviewed both the operating tests and written examinations, and observed ongoing operating test activities.

The inspectors interviewed six licensee personnel, consisting of two reactor operators, two senior operators, one simulator supervisor and one operations training supervisor to determine their understanding of the policies and practices for administering requalification examinations. The inspectors also reviewed operator performance on the written exams and operating tests. These reviews included observations of portions of the operating tests by the inspectors. The operating tests observed included two job performance measures and two scenarios that were used in the current biennial requalification cycle. These observations allowed the inspectors to assess the licensee's effectiveness in conducting the operating test to ensure operator mastery of the training program content. The inspectors also reviewed medical records of six licensed operators for conformance to license conditions and the licensee's system for tracking qualifications and records of license reactivation for one operator.

The results of these examinations were reviewed to determine the effectiveness of the licensee's appraisal of operator performance and to determine if feedback of performance analyses into the requalification training program was being accomplished. The inspectors interviewed members of the training department and reviewed minutes of training review group meetings to assess the responsiveness of the licensed operator requalification program to incorporate the lessons learned from both plant and industry events. Examination results were also assessed to determine if they were consistent with the guidance contained in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

In addition to the above, the inspectors reviewed examination security measures, simulator fidelity and existing logs of simulator deficiencies.

The inspectors completed one inspection sample of the biennial licensed operator requalification program.

b. Findings

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 55.59 (a)(2)(ii), "Requalification," for the failure of the licensee to ensure that all senior operator license holders were evaluated during the annual operating test. Three of the twenty-nine senior operator license holders were not evaluated during the annual operating test due to the licensee's interpretation of Frequently Asked Questions Inspection Procedure .3 on the Operator Licensing section of the NRC website. This failure resulted in three senior operator license holders standing watch without being properly evaluated during the annual operating test, but did not lead to any actual safety consequences.

Description. On November 30, 2010, while performing a biennial requalification inspection in accordance with Inspection Procedure 71111.11, "Licensed Operator Requalification Program," the inspectors discovered that during calendar year 2009, three senior operators were not properly evaluated during the annual operator test. This resulted in this group of senior operators standing watch without properly completing the annual operating test. The licensee had determined at the beginning of 2009, per their interpretation of Frequently Asked Questions Inspection Procedure .3 on the Operator Licensing feedback section of the NRC website, that senior operators could be properly evaluated while in the reactor operator position without rotating to the level of their license during scenario evaluations. The inspectors informed the licensee that Frequently Asked Questions Inspection Procedure .3 was intended to allow licensees to evaluate senior operator license holders in the shift manager position without rotating them in another scenario back to the control room supervisor position. This would still allow evaluation of the senior operator in command and control functions and emergency procedure usage. The three senior operators were evaluated at the appropriate senior operator position during the 2010 annual operating examination. All three individuals successfully passed their annual operating examination.

Analysis. The failure of the licensee to properly evaluate the three senior operators to the level of their license in the annual operating test was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it adversely impacted the human performance attribute of the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Additionally, if left uncorrected, the performance deficiency could have become more significant in that allowing licensed operators to return to the control room without valid demonstration of appropriate knowledge on the biennial examinations could be a precursor to a significant event if undetected performance deficiencies develop. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheets, and Appendix M, "Significance Determination Process Using Qualitative Criteria," the finding was determined to have very low safety significance (Green) because, although the finding resulted in three senior operator license holders standing watch in the senior operator position without being properly evaluated during the annual operating test, there were no actual safety consequences. This finding has a crosscutting aspect in the area of human performance associated with the decision making component because the licensee failed to use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action [H.1(b)].

Enforcement. 10 CFR 55.59, "Requalification," requires, in part, that facility licensees shall pass a comprehensive requalification written exam and operating test to include a sample of items from 55.45. Among this sample is the ability to demonstrate the knowledge of the emergency plan for the facility and the ability by the senior operator to decide whether the plan should be executed and the duties under the plan assigned. Contrary to the above, during the calendar year of 2009 the licensee engaged in an

activity that compromised the ability to evaluate three senior operators according to 10 CFR 55.59 (a)(2)(ii). Specifically, three senior operators were not evaluated in the senior operator position during scenarios and instead were evaluated in the reactor operator position for which they normally stand. This resulted in three senior operators standing watch in the senior operator position without properly being evaluated in the annual operating test. The inspectors determined that there were no actual safety consequences due to the three senior operators standing watch without being properly evaluated. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as CR-CNS-2010-09350, this violation is being treated as a noncited violation consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2011002-01, "Failure to Properly Evaluate License Holders during Annual Operating Test"

## **1R12 Maintenance Effectiveness (71111.12)**

### **a. Inspection Scope**

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

- March 8, 2011, Review of maintenance rule 10 CFR 50.65(a)(1) status systems
- March 8, 2011, Review of maintenance rule 10 CFR 50.65(a)(3) assessment; Cooper Nuclear Station missed 24 month assessment

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 two quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

No findings were identified.

**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:

- January 26, 2011, Work in the switchyard with heavy equipment
- February 17, 2011, Work in the switchyard with heavy equipment during high pressure coolant injection system maintenance Yellow risk window
- March 3, 2011, Review of actions to correct noncited violation 05000298/2010005-02, "Failure to Assess and Manage Risk for Electrical Switchyard Impacting Maintenance"
- March 3, 2011, Steam exclusion boundary door maintenance activities
- March 8, 2011, Work in the switchyard with a crane in proximity of the main generator 345kV output line and other first quarter work in the switchyard

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 five maintenance risk assessments inspection samples as defined in Inspection Procedure 71111.13-05.

b. Findings

Introduction. The inspectors identified a Green cited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the failure of work control and operations personnel to adequately assess and manage the increase in risk associated with maintenance activities. Specifically, on February 17, 2011, work control and operations personnel failed to adequately assess and manage the increase in risk associated with maintenance activities involving the use heavy equipment in or near the electrical switchyard and offsite power components.

Description. During plant status activities on February 17, 2011, inspectors noticed heavy equipment work in the switchyard. The work involved a 100 ton crane, a small crane, service trucks, oil tankers, semi tractors and a vacuum trailer. The inspectors questioned whether these maintenance activities, that could increase the likelihood of initiating events, were considered in the station's on-line risk assessment. The inspectors determined that the risk assessment was inadequate in that it had not assessed all initiating events and the activity was not included in the overall on-line plant risk.

The inspectors were aware that the plant was in a planned elevated (Yellow) risk window due to ongoing maintenance of the high pressure coolant injection pump. The inspectors were also aware that past switchyard work had been performed with inadequate risk assessments indicating a deficiency in the licensee's ability to blend qualitative and quantitative risk assessments. The inspectors contacted the control room staff to obtain a copy of the risk assessment for this work and discuss the work being performed during the Yellow risk window. The inspectors reviewed work order 4786633 and noted that the risk assessment only evaluated a loss of offsite power and no other initiating events were considered. The switchyard risk assessment concluded the work was medium risk and did not evaluate that risk against the Yellow probabilistic risk assessment risk window in progress for the high pressure coolant injection pump work during the switchyard work. The control room stopped work in the switchyard yard until the condition could be resolved and initiated CR-CNS-2011-01439.

The inspectors reviewed the requirements of Administrative Procedure 0.49, "Schedule Risk Assessment," Revision 24 and noted no requirement to review the list of initiating events for any significant potential of work to increase risk to the many possible initiating events other than a loss of offsite power.

The inspectors had noted several previous failures to perform a qualitative risk assessments in accordance with 10 CFR 50.65(a)(4) for work in the switchyard and transformer yard. Three weeks earlier the inspectors noted heavy equipment work in the switchyard. A review of work orders 4740890, 4806573 and 4809054 found that the licensee had not identified any risk associated with this work. The station was in a normal Green risk window and when inspectors walked down the activities they found no risk mitigation actions were being taken for the work. The control room initiated CR-CNS-2011-00749 for this improper risk characterization of non-routine switchyard activities.

On December 7, 2010, while the plant was in a Yellow risk configuration due to maintenance activities on emergency diesel generator number two, the inspectors observed transmission personnel using a crane in the electrical switchyard. The inspectors determined that the work was being performed without an assessment that considered the increase in risk due to potential initiating events, and the licensee had not assessed the work to be performed coincident with the emergency diesel generator Yellow probabilistic assessment risk window. This violation of 10 CFR 50.65(a)(4) was documented in Inspection Report 05000298/2010005 as noncited violation, NCV 05000298/2010005-02, "Failure to Assess and Manage Risk for Electrical Switchyard Impacting Maintenance." In response, the licensee issued Revision 0 of the resulting apparent cause evaluation, CR-CNS-2010-09146, on January 5, 2011. This revision stated, "that an increase in risk did not actually occur and the work activities would not have challenged CNS with a loss of offsite power initiating event." As a result, no actions to restore compliance were implemented. Following inspectors Revision 0 comments, Revision 1 of the CR-CNS-2010-09146 apparent cause evaluation was issued January 10, 2011, that has corrective actions to revise the station risk management procedures to perform qualitative risk assessments of non-routine switchyard work that considers the increase in risk to all reasonable initiating events.

The evaluation also identified that two similar noncited violations in 2008 and 2009 for failure to adequately assess risk for work near the transformer yard only addressed implementation of additional mitigation actions. They did not address the lack of qualitative risk assessments. The 2008 violation is documented as NCV 05000298/2008005-02, "Failure to Assess and Manage the Risk of Heavy Equipment Operations." On November 26, 2008, inspectors noticed heavy equipment operating within a few feet of the 161 kV transmission line tower to the startup transformer. The licensee was operating an excavator, a backhoe, a bulldozer and a dump truck in the area. As part of this activity, the bulldozer had created a large pile of concrete blocks, the base of which was only a few feet from the transmission tower. The inspectors were aware that the plant was already in a planned Yellow risk window due to ongoing maintenance activities that made diesel generator two unavailable. The inspectors challenged the heavy equipment operators, who were unaware of the importance of the transmission tower and had not received any specific instructions regarding standoff distances or other specific precautions. The inspectors contacted the control room staff, who were unaware of the ongoing heavy equipment operations in the vicinity of the transmission tower. The control room subsequently stopped work on the heavy haul road until diesel generator two had been returned to service.

This violation was repeated in 2009 and documented as NCV 05000298/2009002-01, "Repeat Failure to Assess and Manage the Risk of Heavy Equipment Operations." On January 29, 2009, the licensee was in a Yellow risk configuration due to ongoing repairs to diesel generator one. Inspectors questioned control room staff to determine if any heavy equipment operations were anticipated in the vicinity of the transmission line towers in the protected area during the elevated risk condition. The control room staff expressed that no such operations were anticipated. Later that shift, the inspectors noted a water drilling truck operating in the vicinity of the transmission towers. In maneuvering the drilling truck to unload its contents, the driver pulled the truck to within one foot of an unprotected leg of the 345 kV transmission tower that provides the first support for the transmission lines coming from the unit main power transformers. The inspectors alerted station personnel, who redirected the truck activity to an alternate route away from the towers. The inspectors promptly informed the control room staff to allow them to properly assess and manage the risk of the ongoing truck activity in the vicinity of the transmission towers.

In response to these two issues the licensee implemented corrective actions to identify equipment in need of protection and posted appropriate signage. No actions were established to assess the increase in risk associated with maintenance activities.

Analysis. The performance deficiency associated with this finding involved the licensee's failure to assess and manage the risk of planned maintenance activities. This finding is greater than minor because it affected the protection against external factors attribute of the Initiating Events Cornerstone, and directly 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 inspectors determined that Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," could not be used due to the licensee's inability to quantify the increase in risk associated with the heavy equipment activity in the switchyard. The inspectors therefore used Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria." The inspectors performed a bounding qualitative evaluation and determined that the finding was of very low safety significance because another qualified source of offsite power (the emergency transformer) was unaffected by this performance deficiency and provided sufficient remaining defense in depth in the event of a loss of offsite power. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity [P.1(d)].

Enforcement. Title 10 CFR 50.65(a)(4), states in part, that before performing maintenance activities, the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, from November 26, 2008 through February 17, 2011 work control and operations personnel failed to adequately assess and manage the increase in risk associated with maintenance activities. Specifically, qualitative assessments of maintenance activities in

or near the electrical switchyard and offsite power components were not included in the on-line risk assessment. This finding was of very low safety significance and was entered into the licensee's corrective action program as condition reports CR-CNS-2011-01439. Because the licensee failed to restore compliance with NRC requirements within a reasonable time after November 26, 2008, this violation is being treated as a cited violation, consistent with the NRC Enforcement Policy, Section 2.3.2, which states, in part, that a cited violation will be considered if the licensee fails to restore compliance within a reasonable time after a violation is identified: VIO 05000298/2011002-02, "Failure to Assess and Manage Risk for Maintenance That Could Impact Initiating Events."

## **1R15 Operability Evaluations (71111.15)**

### **a. Inspection Scope**

The inspectors reviewed the following issues:

- January 1, 2011, Control room steam exclusion door
- January 13, 2011, Residual heat removal valve RHR-101 failed post work test
- January 21, 2011, Diesel generator two lube oil heater leak operability review
- February 23, 2011, Residual heat removal service water pipe wall thinning

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 four operability evaluations inspection sample(s) as defined in Inspection Procedure 71111.15-04

### **b. Findings**

No findings were identified.

## **1R18 Plant Modifications (71111.18)**

### **.1 Temporary Modifications**

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

To verify that the safety functions of important safety systems were not degraded, The inspectors reviewed the following temporary modification:

- February 21, 2011, Northwest torus hatch plug temporary removal

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.

### **.2 Permanent Modifications**

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

The inspectors reviewed key parameters associated with energy needs, materials, replacement components, timing, heat removal, control signals, equipment protection from hazards, operations, flow paths, pressure boundary, ventilation boundary, structural, process medium properties, licensing basis, and failure modes for the permanent modification identified as supplemental diesel generator installation.

The inspectors verified that modification preparation, staging, and implementation did not impair emergency/abnormal operating procedure actions, key safety functions, or operator response to loss of key safety functions; postmodification testing will maintain the plant in a safe configuration during testing by verifying that unintended system interactions will not occur; systems, structures and components' performance characteristics still meet the design basis; the modification design assumptions were appropriate; the modification test acceptance criteria will be met; and licensee personnel identified and implemented appropriate corrective actions associated with permanent plant modifications. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample for permanent 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:

- January 13, 2011, Residual heat removal valve RHR-101 freeze seal postwork test
- January 18, 2011, Residual heat removal system test including RHR-MO-25B and RHR-MO-39B tests
- February 15, 2011, Core spray B event recorder repair
- March 8, 2011, Standby liquid control postwork test
- March 9, 2011, Fuel pool cooling system restoration following chemical decontamination
- March 10, 2011, Fuel pool cooling bypass valve FPC-29 replaced with non-throttle 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 six postmaintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings were identified.

**1R20 Refueling and Other Outage Activities (71111.20)**

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for the RE-26 refueling outage, which commenced on March 13, 2011, to confirm that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. During the refueling outage, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below.

- Configuration management, including maintenance of defense-in-depth, is commensurate with the outage safety plan for key safety functions and compliance with the applicable technical specifications when taking equipment out of service.
- Clearance activities, including confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing.
- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error.
- Status and configuration of electrical systems to ensure that technical specifications and outage safety-plan requirements were met, and controls over switchyard activities.
- Monitoring of decay heat removal processes, systems, and components.
- Verification that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system.
- Reactor water inventory controls, including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss.
- Controls over activities that could affect reactivity.
- Maintenance of secondary containment as required by the technical specifications.
- Refueling activities, including fuel handling and sipping to detect fuel assembly leakage.

- Licensee identification and resolution of problems related to refueling outage activities.

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

These activities constitute completion of one refueling outage and other outage inspection sample as defined in Inspection Procedure 71111.20-05.

b. Findings

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to adequately implement Procedure 0.45, "Foreign Material Exclusion Program," Revision 33.

Description. On November 24, 2010, while performing reviews of the licensee's activities associated with the dry cask storage campaign, the inspectors noted that condition reports CR-CNS-2010-6645, CR-CNS-2010-7355, and CR-CNS-2010-8940 detailed instances where foreign material had been found in a Zone 1 foreign material exclusion area (areas which required the highest level of foreign material exclusion controls), specifically the spent fuel pool. When the inspectors reviewed the applicable sections of Station procedure 0.45 specific actions and documentation requirements were noted for a loss of area integrity. Specifically, Attachment 10, "Loss of Integrity Actions and Notification Recovery Plan," was to be completed and attached to the condition report. The inspectors noted that for the instances being reviewed these attachments were not with the condition reports. The inspectors pointed this out to the licensee who subsequently determined that the procedural requirements had not been followed. This issue was entered into the licensee's corrective action program as condition report CR-CNS-2010-9173.

On December 30, 2010, while conducting a routine tour of the spent fuel floor the inspectors noted work in the area of a dry fuel canister, which had been designated as a zone 1 foreign material exclusion area, was not in accordance with station procedures. Specifically, individuals working in the area were not appropriately implementing the requirements of Procedure 0.45 because they were wearing jewelry in the area, and had material in their pockets. The inspectors informed the licensee of this issue and it was entered into the stations corrective action program as condition report CR-CNS-2010-9678.

Based on these observations, and a concern with the implementation of the stations foreign material exclusion program, the inspectors performed increased monitoring of this program, including observations during the beginning of refueling outage RE-26. Through increased observations in and around other Zone 1 foreign material exclusion areas the inspectors noted eleven additional instances where licensee personnel failed to appropriately implement procedural requirements associated with Zone 1 foreign material exclusion controls. One of these instances, as stated below, actually resulted in the loss of control of items that were inadvertently introduced into the reactor vessel.

- March 19, 2011, during refueling activities, two ten foot pole sections, that were not lanyarded as required by procedure, were dropped from the refuel platform onto the reactor core. These items were immediately retrieved.

The inspectors concluded that not all of these examples of the licensee's failure to follow procedure 0.45, "Foreign Material Exclusion Program," directly resulted in the introduction of foreign material into a critical system. They were, however, indicative of a programmatic issue associated with the licensee's proper implementation of the foreign material exclusion control program that if left uncorrected could become a more significant issue.

Analysis. The failure of station personnel to follow Procedure 0.45, "Foreign Material Exclusion Program," when working in Zone 1 foreign material exclusion areas around safety related equipment/areas, was a performance deficiency. The performance deficiency was more than minor because it affected the human performance attribute of the Barrier Integrity Cornerstone, and directly affected the cornerstone objective of providing reasonable assurance that physical barriers protect the public from radionuclide releases caused by accidents or events, and is therefore a finding. Furthermore, station personnel's continued failure to implement appropriate foreign material exclusion controls could result in the introduction of foreign material into critical areas, such as the spent fuel pool or the reactor cavity, which in turn could result in degradation and adverse impacts on materials and systems associated with these areas. Using Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets (at power issues), and Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," Phase 1 guidance (shutdown issues), this finding was determined to have a very low safety significance because; the finding was only associated with the fuel barrier (at power), and did not result in an increase in the likelihood of a loss of reactor coolant system inventory, degrade the ability to add reactor coolant system inventory, or degrade the ability to recover decay heat removal (shutdown). This finding had a crosscutting aspect in the area of human performance associated with the work practices component, in that the licensee failed to define and effectively communicate expectations regarding procedural compliance and personnel follow procedures [H.4(b)].

Enforcement. Title 10 of the Code of Federal Regulations Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Contrary to the above, between November 24, 2010, and March 24, 2011, multiple occasions were identified where licensee personnel failed to implement appropriate foreign material exclusion controls in areas designated as Zone 1 foreign material exclusion areas as required by station Procedure 0.45. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Condition Reports CR-CNS-2010-9173, CR-CNS-2010-9678, CR-CNS-2011-2775 and CR-CNS-2011-3214, this violation is being treated as a noncited violation, consistent with Section 2.3.2 of the NRC Enforcement

Policy: NCV 05000298/2011002-03, "Failure to Adequately Implement Foreign Material Exclusion Controls."

## **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.

- February 9, 2011, Diesel generator one monthly operability testing
- February 20, 2011, Reactor equipment cooling motor operated valve inservice test
- February 28, 2011, Secondary containment isolation valve inservice test
- March 7, 2011, Diesel generator one operability test
- March 8, 2011, Standby liquid control pump inservice test

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

These activities constitute completion of five (2 routine, 2 inservice tests, and 1 containment isolation valve) surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings were identified.

**Cornerstone: Emergency Preparedness**

**1EP6 Drill Evaluation (71114.06)**

Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on February 9, 2011, 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 sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings were identified.

#### 4. OTHER ACTIVITIES

##### 4OA1 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 per 7000 Critical Hours (IE01)

###### a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams per 7000 critical hours performance indicator for the period from the first quarter 2010 through the fourth 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 January 2010 through December 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 per 7000 critical hours sample as defined in Inspection Procedure 71151-05.

###### b. Findings

No findings were identified.

.3 Unplanned Power Changes per 7000 Critical Hours (IE03)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned power changes per 7000 critical hours performance indicator for the period from the first quarter 2010 through the fourth 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, maintenance rule records, event reports, and NRC integrated inspection reports for the period of January 2010 through December 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 transients per 7000 critical hours 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 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

The inspectors performed these daily reviews as part of their daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

Introduction. The inspectors 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," and Administrative Procedure 0.5.CR, "Condition

Report Initiation, Review and Classification.” Specifically, there are multiple examples where licensee personnel failed to initiate condition reports or failed to initiate condition reports in a timely manner, per the requirements of 0.5CR, Condition Report Initiation, Review, And Classification,” when problems are identified.

Description. During problem identification and resolution inspections and plant status inspection activities performed in January and February of 2011 the inspectors determined that condition reports had not been initiated to document newly-discovered conditions adverse to quality.

The inspectors noted that Administrative Procedure 0.5, “Conduct of the Condition Report Process,” Revision 67, provides overall direction on the conduct of the corrective action program at Cooper Nuclear Station. Paragraph 7.1.3 provides the following standard for condition report initiation: “Employees and contractors are encouraged to write condition reports for a broad range of problems. Problems reported must include, but are not limited to, Adverse Conditions.” The procedure goes on to define adverse conditions as “an event, defect, characteristic, state, or activity that prohibits or detracts from safe, efficient nuclear plant operation or storage of spent nuclear fuel. Adverse conditions include non-conformances, conditions adverse to quality, and plant reliability concerns.” Administrative Procedure 0.5.CR, “Condition Report Initiation, Review and Classification,” provides additional instructions that, “If a problem is identified, then a CR should be initiated no later than the end of the current shift.” The inspectors and the licensee’s investigation by CR-CNS-2011-01239 have noted condition report initiation examples affecting several departments including: Design Engineering, Engineering Support, System Engineering, Columbus General Office (Records & Telecom), Licensing, Maintenance, Operations, Strategic Initiatives/Projects, Training, Planning Scheduling & Outages, Quality Assurance, Radiation Protection, and Security.

During baseline inspection activities the inspectors identified multiple adverse conditions that did not have condition reports initiated until prompted by the inspectors. The inspectors determined that the following examples met the licensee’s definition of an adverse condition, and the condition reports should have been initiated by the end of shift.

CR-CNS-2011-00544 was initiated January 20, 2011, for condition reports not generated in accordance with Procedure 0.5CR requirements when issues were identified during the inspectors January 12, 2011 post maintenance inspection of freeze seal work in the residual heat removal heat exchanger room. These issues included adequacy of restraints used on nitrogen dewars secured adjacent to the control rod drive accumulators, the transient combustible conditions in the residual heat removal heat exchanger room, overflow of liquid nitrogen on a safety related spring can, and inspectors indentifying and stopping an escorted visitor from entering the residual heat removal heat exchanger room without his escort. Followup review of the visitor issue found that a licensee quality assurance inspector had noted and stopped the behavior of allowing visitor craft from entering the residual heat removal heat exchanger room without their escort the previous shift but had not yet issued a condition report on their finding when the inspectors noted the same behavior. Six additional condition reports

were subsequently originated associated with these issues to ensure effective corrective actions were taken to prevent the risk of additional occurrences.

CR-CNS-2011-0110 was initiated February 7, 2011 following resident inspector questions on licensee actions in response to an industry cyber security threat operational experience. The inspector found that the licensee was aware of and had taken measures to prevent the threat at Cooper Nuclear Station but had not documented their review or actions in accordance with Procedure 0.5CR requirements.

CR-CNS-2011-01741 was initiated February 24, 2011, on follow up field observations of the inspectors and licensee personnel for several programmatic and potential fire protection issues in response to an inspector's February 16, 2011, field observations and questions on hot work in the reactor building on the alternate decay heat removal project. The inspectors had previously informed licensee personnel that the original condition report CR-CNS-2011-01413 failed to follow procedure 0.5CR requirements to, "have sufficient detail to provide a clear understanding of the condition."

CR-CNS-2011-01326 was initiated February 14, 2011, following several discussions between the inspectors and the licensee following the December 27, 2010 inspection of licensee work on the traversing in-core probe machine. During maintenance of this equipment the licensee craft and engineering determined that a limit switch circuit board had an unauthorized modification installed. The licensee initiated the proper modification to document this condition that had existed since original installation. However, until this was identified by the inspectors the licensee staff failed to understand the procedure 0.5CR requirements to document nonconforming conditions to allow an extent of condition review of the other two affected in-core machines to validate the installed circuit configuration is adequate. In response, the licensee revised the previous investigation by CR-CNS-2010-08310 to include this additional extent of condition review action.

The inspectors reviewed the licensee's evaluation of each condition and determined that none of these conditions resulted in the inoperability of safety-related equipment.

The inspectors noted that similar violations had been documented in inspection reports 05000298/2008005-04, "Failure to Follow Procedure for Initiating Condition Reports," and 05000298/2010002-01, "Repeat Failure to Follow Procedure for Initiating Condition Reports." The licensee initiated CR-CNS-2011-01239 on February 10, 2011, to investigate failures to initiate condition reports in a timely manner. This investigation reviewed approximately 39 condition reports on this issue from the years 2009, 2010 and 2011. The inspectors reviewed the corrective actions taken for noncited violations 2008005-04 and 2010002-01, and agreed with the licensee's CR-CNS-2011-01239 investigation results that determined that there are weaknesses in the reinforcement of the corrective action program expectations for condition report initiation. Past corrective actions were taken to reinforce expectations but no actions were taken to make the expectation reinforcements on a periodic basis. To address this concern the licensee is implementing a corrective action to, "Develop and implement a "CAP [corrective action program] Preventive Maintenance," type of process to provide periodic reinforcement and monitoring of expectations for CR [condition report] initiation (to include standards

for when a CR is needed as well as time limitation), CAP implementation, and CAP quality. Ensure the process is institutionalized for sustainability.”

The inspectors have determined that overall the licensee’s corrective action program is effective. However, it does have a programmatic weakness associated with failures to initiating condition reports. This programmatic weakness indicates that the failure is more widespread than simple occasional human error. This programmatic weakness is correctable by the licensee’s corrective action to institutionalize periodic reinforcement and monitoring of condition report initiation. This is important to assure that conditions adverse to quality do not go uncorrected and result in safety related equipment degradation to occur unnoticed by licensee personnel.

Analysis. The performance deficiency associated with this finding involved the licensee’s failure to initiate condition reports as required by Administrative Procedure 0.5.CR, “Condition Report Initiation, Review and Classification.” The performance deficiency affected the equipment performance attribute of the Mitigating Systems Cornerstone, and directly affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Although the examples mentioned above may be minor violations, the inspectors used Section 2.10.F of the NRC Enforcement Manual to determine that the performance deficiency was more than minor and is therefore a finding because the NRC has indication that the minor violation had occurred repeatedly. Using the Manual Chapter 0609, Attachment 4, “Phase 1 – Initial Screening and Characterization of Findings,” the inspectors determined that the finding has very low safety significance because all of the items in the Table 4a mitigating systems cornerstone checklist were answered in the negative. The finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component, in that the licensee takes appropriate corrective actions to address safety issues and adverse trends in a timely manner. Specifically, the licensee failed to take appropriate corrective actions to address previously identified examples of employees not initiating condition reports in response to conditions adverse to quality [P.1(d)].

Enforcement. 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures and Drawings” requires, in part, that activities affecting quality shall be accomplished in accordance with procedures of a type appropriate to the circumstances. Administrative Procedure 0.5CR, “Conduct of the Condition Reporting Process,” Revision 67, requires that employees must initiate condition reports for adverse conditions no later than the end of shift. Contrary to this requirement, from January 12, 2011 to February 24, 2011, inspectors discovered multiple adverse conditions where the licensee had not initiated condition reports as required by procedure. Because the finding is of very low safety significance and has been entered into the licensee’s corrective action program as CR-CNS-2011-01239, this violation is being treated as a noncited violation consistent with Section 2.3.2 of the Enforcement Policy: NCV 05000298/2011002-04, “Repeat Failure to Follow Procedure for Initiating Condition Reports.”

.2 In-depth Review of Operator Workarounds

a. Inspection Scope

The inspectors performed a review of control room deficiencies to ensure that the licensee is identifying operator workaround problems at an appropriate threshold and entering them in the corrective action program, and has proposed or implemented appropriate corrective actions.

These activities constitute completion of one in-depth review of operator workarounds sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings of significance were identified.

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

.1 Unplanned entry into Limiting Condition for Operation 3.0.3 due to loss of both trains of residual heat removal low pressure coolant injection function

a. Inspection Scope

On January 18, 2011, the inspectors responded to the control room when the licensee determined that both trains of residual heat removal were inoperable with respect to the low pressure coolant injection function, which resulted in the unplanned entry into Technical Specification Limiting Condition for Operation 3.0.3. Subsequently, the licensee was able to restore the 'B' train of residual heat removal to an operable condition and exit Technical Specification Limiting Condition for Operation 3.0.3. Inspectors toured the control room during the event to verify stable plant conditions, monitored the licensee's actions to restore the 'B' train of residual heat removal, reviewed station logs, discussed the event with the operations and maintenance staff and reviewed NUREG-1022, "Event Reporting Guidelines," Revision 2, to ensure licensee compliance.

b. Findings

Introduction. The inspectors identified a Severity Level IV noncited violation of 10 CFR 50.72, "Immediate Notification Requirements for Operating Nuclear Power Reactors," for the licensee's failure to notify the NRC Operations Center within 8 hours following discovery of an event meeting the reportability criteria as specified.

Description. On January 18, 2011, at 2:30 p.m. the licensee made the B train of residual heat removal inoperable for scheduled maintenance. Subsequently, at 4:30 p.m. while performing a panel walk down, an operator noted that the open position indicating light for the A reactor recirculation pump discharge valve, RR-MOV-53A, was blown. Further investigation by maintenance team determined that the control power circuit for the valve was deenergized.

Valve RR-MOV-53A must close at a specified reactor pressure to allow the A train of residual heat removal to inject to the core during a loss of coolant accident involving reactor recirculation loop A. The deenergized control power circuit rendered the A train of residual heat removal inoperable for low pressure coolant injection. As such, at 5:31 p.m. operators declared the A train of residual heat removal inoperable. As a result, both trains of residual heat removal were inoperable, and incapable of performing their system specified safety function of residual heat removal. Operators entered Technical Specification Limiting Condition for Operation 3.0.3, and commenced preparations for a plant shut down.

Subsequent troubleshooting found a failed light socket that had caused the fuses to open. The fuses were replaced and the circuit tested satisfactorily. At 7:15 p.m. residual heat removal Loop "A" low pressure coolant injection was declared operable and Technical Specification Limiting Condition for Operation 3.0.3 was exited.

The licensee evaluated this event for immediate reportability against the criteria specified in 10 CFR 50.72, "Immediate Notification Requirements for Operating Nuclear Power Reactors," NUREG 1022, "Event Reporting Guidelines 50.72 and 50.73," Revision 2, and station procedures 2.0.5, Reporting to NRC Operations Center, Revision 38, and 2.0.11.1, Safety Function Determination Program, Revision 4. Specifically, the licensee considered 10 CFR 50.72(b)(2)(i), "The initiation of any nuclear plant shutdown required by the plant's Technical Specifications," and 10 CFR 50.72(b)(3)(v), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to; A) Shut down the reactor and maintain it in a safe shutdown condition; B) Remove residual heat; C) Control the release of radioactive material, or D) Mitigate the consequences of an accident, as the applicable reportability criteria.

Through their review the licensee determined that the overall decay heat removal safety function was maintained if three low pressure emergency core cooling system/spray pumps remained operable/available. The licensee determined that both core spray pumps A and B were operable and residual heat removal pump D was available (the pump had an available injection path) at the time of this event. Therefore the licensee's determination was that this event was not reportable under 10 CFR 50.72(b)(3)(v) because the overall safety function of residual heat removal had been maintained. The licensee also determined that this event was not reportable under 10 CFR 50.72(b)(2)(i) since negative reactivity had not been added to the core.

On January 19, 2011, the inspectors reviewed licensee's reportability evaluations. The inspectors questioned the rationale used for evaluating reportability under 10 CFR 50.72(b)(3)(v). Inspectors noted that the apparent intent of this reporting criteria as described in NUREG 1022, "Event Reporting Guidelines 50.72 and 50.73," Revision 2, Section 3.2.7, was to cover an event or condition where structures, components, or trains of a safety system could have failed to perform their intended safety function as described in the plant safety analysis. Consultation with the Office of Nuclear Reactor Regulation determined that this was the intent of the criteria. While the

licensee was correct that the overall decay heat removal function was maintained this did not meet the intent of the safety system functional failure reportability to report the failure of the residual heat removal system to perform all designed safety functions. As such, the inspectors determined that the licensee had failed to make a nonemergency 8 hour report as required by 10 CFR 50.72(b)(3)(v).

The inspectors informed the licensee of their concern, and the licensee entered this issue into their corrective action program as Condition Report CR-CNS-2011-0618. Subsequently, the licensee made a late notification to the Operations Center on January 21, 2011.

Analysis. The failure to make an applicable non-emergency 8-hour event notification report within the required time frame was determined to be a performance deficiency. The inspectors reviewed this issue in accordance with NRC Inspection Manual Chapter 0612 and the NRC Enforcement Manual. Through this review, the inspectors determined that traditional enforcement was applicable to this issue because the NRC's regulatory ability was affected. Specifically, the NRC relies on licensees to identify and report conditions or events meeting the criteria specified in regulations in order to perform its regulatory function; and when this is not done, the regulatory function is impacted. The inspectors determined that this finding was not suitable for evaluation using the significance determination process, and as such, was evaluated in accordance with the NRC Enforcement Policy. The finding was reviewed by NRC management and because the violation was determined to be of very low safety significance, was not repetitive or willful, and was entered into the corrective action program, this violation is being treated as a Severity Level IV noncited violation consistent with the NRC Enforcement Policy. This finding had a crosscutting aspect in the area of human performance associated with the decision making component, in that, the licensee failed to use conservative assumptions in their decision making [H.1(b)].

Enforcement. Title 10 CFR 50.72, "Immediate Notification Requirements for Operating Nuclear Power Reactors," requires, in part, that the licensee shall notify the NRC Operations Center within 8 hours after discovery of a non-emergency event described in paragraph (b)(3)(v). Paragraph (b)(3)(v) of 10 CFR 50.72 requires, in part, that licensees report any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to:

- Shut down the reactor and maintain it in a safe shutdown condition
- Remove residual heat
- Control the release of radioactive material
- Mitigate the consequences of an accident

Contrary to the above, on January 18, 2011, the licensee failed to notify the NRC Operations Center within 8 hours after the discovery of an event or condition that could have prevented the fulfillment of the safety function. This finding was determined to be applicable to traditional enforcement because the failure to report conditions or events meeting the criteria specified in regulations affects the NRC's regulatory ability. The finding was evaluated in accordance with the NRC's Enforcement Policy. The finding

was reviewed by NRC management and because the violation was of very low safety significance, was not repetitive or willful, and was entered into the corrective action program, this violation is being treated as a Severity Level IV noncited violation, consistent with the NRC Enforcement Policy: NCV 05000298/2011002-05, "Failure to Notify the NRC within Eight Hours of a Nonemergency Event."

.2 (Closed) LER 050002982010003, "Low Voltage on Emergency Transformer Causes Loss of Safety Function"

On August 24, 2010, a low voltage condition occurred on the offsite power supply to the emergency station service transformer during planned maintenance on the station startup service transformer. Subsequently, emergency station service transformer secondary voltage dropped below the level where essential 4160 volt alternating current buses will automatically load onto the emergency station service transformer. Control room operators declared the emergency station service transformer inoperable and entered the Technical Specification limiting condition for operation condition for two offsite circuits inoperable. After two minutes, emergency station service transformer secondary voltage was restored to the proper level and the control room operators returned the emergency station service transformer to operable status. The cause of this event was the licensee's review of a revised switching order, associated with planned maintenance on the station startup service transformer, was inadequate. Specifically, the low voltage condition had occurred due to a change in the component switching order, and that the station had failed to recognize this change and its potential to cause the low voltage condition, during their review of the switching order. The licensee event report was reviewed by the inspectors. Inspectors determined that a violation had occurred and this issue was documented as NCV 05000298/2010005-03. This licensee event report is closed.

#### **40A6 Meetings**

##### Exit Meeting Summary

On December 2, 2010, the inspectors discussed the results of the licensed operator requalification program inspection with Mr. Art Zarembo, Director of Nuclear Safety, and other members of the licensee's staff. The lead inspector obtained the final biennial examination results and telephonically exited with Mr. Art Zarembo, Director of Nuclear Safety, on January 11, 2011. The licensee representatives acknowledged the finding presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On March 29, 2011, the resident inspectors presented the inspection results to B. O'Grady, 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 2.3.2 of the NRC Enforcement Policy for being dispositioned as noncited violations.

- 10 CFR 50.65(a)(3) states, in part, that performance and condition monitoring activities and associated goals and preventive maintenance activities shall be evaluated at least every refueling cycle provided the interval between evaluations does not exceed 24 months. Contrary to the above, as of August 31, 2010, the licensee had not completed the (a)(3) assessment in the 24 months since the last assessment period ended August 2008. When a licensee self assessment determined on February 3, 2011 that they had failed to perform the assessment, Condition Report CR 2011-01003 was initiated to track completed the assessment and revise the controlling procedure to prevent recurrence of this condition. The inspectors determined that this issue was of very low safety significance and no degraded performance or condition of associated structure, system, and components functions within the scope of the maintenance rule, resulted from the performance deficiency.

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

Licensee Personnel

J. Austin, Manager, System Engineering  
T. Barker, Manager, Quality Assurance  
M. Bakker, Cognizant Switchyard Engineer  
J. Bebb, Manager, Security  
N. Beger, Work Control Supervisor  
J. Dedic, Shift Manager  
L. Dewhirst, Manager, Corrective Action and Assessments  
J. Flaherty, Licensing Engineer  
B. Gilbert, Operations Training Supervisor  
D. Goodman, Assistant Operations Manager  
T. Hottovy, Manager, Engineering Support  
M. Joe, Operations Training Supervisor  
J. Long, Shift Manager  
S. Nelson, Engineer, Risk Management Supervisor  
S. Norris, Work Control Manager  
R. Penfield, Operations Manager  
D. Sealock, Training Manager  
K. Sutton, Manager, Nuclear Engineering Department  
D. VanDerKamp, Licensing Manager  
D. Werner, Operations Training Superintendent  
D. Willis, Plant Manager  
A. Zaremba, Director of Nuclear Safety Assurance

NRC Personnel

J. Josey, Senior Resident Inspector  
M. Chambers, Resident Inspector

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

Opened

05000298-2011002-02	VIO	Failure to Assess and Manage Risk for Maintenance That Could Impact Initiating Events (Section 1R13)
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Opened and Closed

05000298-2011002-01	NCV	Failure to Properly Evaluate All Senior Operator License Holders during Annual Operating Test (Section 1R11)
05000298-2011002-03	NCV	Failure to Adequately Implement Foreign Material Exclusion Controls. (Section 1R20)
05000298-2011002-04	NCV	Repeat Failure to Follow Procedure for Initiating Condition Reports (Section 4OA2)

05000298-2011002-05    NCV    Failure to Notify the NRC within Eight Hours of a Nonemergency Event (Section 40A3)

Closed

05000298-2010005-06    URI    Failure to Update Flood Protection for Safety Related Buildings (Section 1R01)

05000298-2010-003-00    LER    Low Voltage on Emergency Transformer Causes Loss of Safety Function (Section 40A3)

**LIST OF DOCUMENTS REVIEWED**

**Section 1R01: Adverse Weather Protection**

CALCULATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
NEDC 10-063	Probable Maximum Flood Hydraulic Evaluation	0
NEDC 10-073	Evaluation of External Flood Barriers	0

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
2.5.1.6	Operations Procedure, "Radwaste Low Conductivity Liquid Waste Sample Tank Fluid Transfer"	41
2.5.2.3	Operations Procedure, "Radwaste High Conductivity Liquid Waste Floor Drain Sample Tank Fluid Transfer"	50
5.1FLOOD	Engineering Procedure, "Emergency Procedure: Flood"	9
7.0.11	Maintenance Procedure, "Flood Control Barriers"	10
7.0.11	Maintenance Procedure, "Flood Control Barriers"	11

CONDITION REPORT

CR-CNS-2010-02050	CR-CNS-2010-02869	CR-CNS-2010-04281	CR-CNS-2010-04394
CR-CNS-2010-04509	CR-CNS-2010-04628	CR-CNS-2010-04679	CR-CNS-2010-04718
CR-CNS-2010-04913	CR-CNS-2010-05149	CR-CNS-2010-05608	CR-CNS-2010-05613
CR-CNS-2010-08961	CR-CNS-2010-4620	CR-CNS-2011-0062	CR-CNS-2011-01688
CR-CNS-2011-01689	CR-CNS-2011-01690		

**Section 1RO5: Fire Protection**

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>
11-0016	Transient Combustible Evaluation Permit, Attachment 4
11-0016	Transient Combustible Evaluation Permit, Attachment 4
11-0023	Transient Combustible Evaluation Permit, Attachment 4
11-0026	Transient Combustible Evaluation Permit, Attachment 4

CONDITION REPORT

CR-CNS-2011-01413 CR-CNS-2011-01737 CR-CNS-2011-01741

WORK ORDER

4790368

**Section 1RO6: Flood Protection Measures**

CALCULATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
NEDC 91-24	Maximum Flooding in the NE Quad (HELB)	June 12, 1991

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
2038	Flow Diagram Reactor Bldg Floor & Roof Drain Systems SH1	N53
2182	Reactor Bldg Floor Drains WO2520 DWG	N03
2709-23	FDR-2 Radioactive Floor Drains Reactor Bldg	N01
2709-31	FDR-2 Radioactive Floor Drains Reactor Bldg	N01
2709-41	FDR-2 Radioactive Floor Drains Reactor Bldg	N01
2709-50	FDR-2 Radioactive Floor Drains Reactor Bldg	N01

CONDITION REPORT

CR-CNS-2008-06903

## Section 1R11: Licensed Operator Requalification Program

### MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
	2009/2010 Sample Plan	
	Simulator Stability/Accuracy Test	December 7, 2009
	Simulator Transient 1,5 and 8	November 2009
2009-002	LER	December 30, 2009
2009-003	LER	January 4, 2010
4.1	Sim. Desk Guide, Simulator Performance Testing	6
INT0231001	Ops Shutdown Risk Management	19
SDR-666	Simulator Deficiency Report	June 20, 2007
SKL012-06-01	OPS Simulator Introduction	151
SKL034-10-94	In-plant JPM	2
SKL0374-22-01	Simulator JPM	1
SKL051-51-179	Scenario Guide	1
SKL052-52-83	Scenario (ATWS)	3
SKL052-52-87	Scenario (LOCA)	4
SKL054-01-31	Loss of Start Up Transformer, Loss of Shutdown Cooling, Earthquake, sap/bet #35826	4
SWR-10771302	Simulator Work Package	

### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OTP803	Development of Operations Training JPMs	4
OTP804	Requalification Scenario Exercise Guide Development	19
OTP805	Licensed Operator Requalification Biennial Written Exam	12
OTP806	Conduct of Simulator Training and Evaluation	16

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OTP808	Open Reference Examination Test Item Development	1
OTP809	Operator Requalification Examination Administration	16
OTP810	Operations Department Examination Security	11
OTP812	Conduct of Operator Oral Boards	12
OTP813	Annual Operating Requal. Exam Development and Admin	2

CONDITION REPORT

CR-CNS-2010-07850 CR-CNS-2010-09350

**Section 1R12: Maintenance Effectiveness**

CONDITION REPORT

CR-CNS-2010-05587 CR-CNS-2010-05779 CR-CNS-2011-1003

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

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0-CNS-52	Administrative Procedure, "Control of Switchyard and Transformer Yard Activities at CNS"	22
0.49	Administrative Procedure, "Schedule Risk Assessment"	24

CONDITION REPORT

CR-CNS-2008-08645 CR-CNS-2009-01465 CR-CNS-2009-03714 CR-CNS-2010-09146  
CR-CNS-2011-00749 CR-CNS-2011-01369 CR-CNS-2011-01439

WORK ORDER

4716328 4740703 4740890 4784034 4786633  
4806573 4809054 4815917

**Section 1R15: Operability Evaluations**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0.16	Administrative Procedure, "Control of Doors"	42

CONDITION REPORT

CR-CNS-2010-00311 CR-CNS-2011-00438 CR-CNS-2011-0684 CR-CNS-2011-1619  
CR-CNS-2011-1691

**Section 1R18: Plant Modifications**

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
CED 6029940	Supplemental Diesel Generator	May 25, 2010
EE-01-026	Northwest torus hatch plug temporary removal	

**Section 1R19: Postmaintenance Testing**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
6.2RHR.201	Surveillance Procedure, "RHR Power Operated Valve Operability Test (IST)(Div 2), performed 1/18/11 5:28 p.m.	22
6.2RHR.201	Surveillance Procedure, "RHR Power Operated Valve Operability Test (IST)(Div 2), performed 1/19/11 2:30 a.m.	22

CONDITION REPORT

CR-CNS-2011-00311 CR-CNS-2011-2241

WORK ORDER

4664218 4665167 4706519 4731168 4753298  
4767972 4790368

**Section 1R22: Surveillance Testing**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
6.1DG.101	Surveillance Procedure, "Diesel Generator 31 Day	67

**Section 1R22: Surveillance Testing**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
	Operability Test (IST)(Div 1)”	

WORK ORDER

4754071

**Section 1EP6: Drill Evaluation**

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SKL054-01-31	Loss of Start Up Transformer, Loss of Shutdown Cooling, Earthquake, sap/bet #35826	4

CONDITION REPORT

CR-CNS-2011-01200

**Section 4OA2: Identification and Resolution of Problems**

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>DATE</u>
Control Room Deficiency Tags	March 6, 2011
Open Operator Challenges	March 1, 2011

PROCEDURE

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
2.0.12	Conduct of Operations Procedure, “Operator Challenges”	9

CONDITION REPORT

CR-CNS-2011-0219

**Section 4OA3: Event Follow-Up**

CONDITION REPORT

CR-CNS-2011-00461 CR-CNS-2011-00618