



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BLVD
ARLINGTON, TEXAS 76011-4511

November 9, 2012

EA-12-206

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

SUBJECT: COOPER NUCLEAR STATION – NRC INTEGRATED INSPECTION REPORT
05000298/2012004 AND NOTICE OF VIOLATION

Dear Mr. O'Grady:

On September 26, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Cooper Nuclear Station. The enclosed inspection report documents the inspection results which were discussed on October 4, 2012, with Mr. D. Buman, Director of Engineering, 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 one 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 is being cited in the Notice because

Cooper Nuclear Station failed to restore compliance with NRC requirements within a reasonable time following documentation of the issue as a non-cited violation in NRC Inspection Report 05000298/2010007, issued December 3, 2010 (ML103370640). 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

B. O'Grady

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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.”

In addition, six NRC-identified and three self-revealing findings of very low safety significance (Green) were identified during this inspection.

All of these findings were determined to involve violations of NRC requirements. Additionally, the NRC has determined that a traditional enforcement Severity Level IV violation occurred. Further, licensee-identified violations which were determined to be of very low safety significance are listed in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest these non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Cooper Nuclear Station.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV; and the NRC Resident Inspector at Cooper Nuclear Station.

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

Sincerely,

/RA/

Robert C. Hagar, Chief (Acting)
Project Branch C
Division of Reactor Projects

Docket Nos.: 50-298
License Nos: DRP-46

Enclosure 1 – Notice of Violation
Enclosure 2 - Inspection Report 05000298/2012004
w/ Attachments: Supplemental Information

cc w/ encl: Electronic Distribution

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Only inspection reports to the following:
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ADAMS ACCESSION NUMBER: ML12314A372

SUNSI Rev Compl.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ADAMS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Reviewer Initials	RCH
Publicly Avail.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sensitive	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sens. Type Initials	RCH
SRI:DRP/C	RI:DRP/C	C:DRS/EB1	C:DRS/EB2	C:DRS/OB	C:DRS/PSB1
JJosey	CHenderson	TRFarnholtz	GMiller	VGaddy	MShaire
/RA via email/	/RA via email/	/RA/	/RA/	/RA/	/RA/
11/9/12	11/9/12	11/6/12	11/7/12	11/7/12	11/7/12
C:DRS/PSB2	C:DRS/TSB	SEO:ORA/OE	BC:DRP/C		
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NOTICE OF VIOLATION

Nebraska Public Power District
Cooper Nuclear Station

Docket No. 50-298
License No. DPR-46
EA-12-206

During an NRC inspection conducted June 26 through September 25, 2012, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2 and as specified in the license application, for those components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, from December 3, 2010, until August 30, 2012, measures established by the licensee failed to assure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2 and as specified in the license application, for those components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. Specifically, the licensee failed to assure that the emergency diesel generator starting air receiver was capable of providing sufficient air to perform multiple starts of the emergency diesel generator without immediate replenishment, as described in USAR section 5.3.3.

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

Pursuant to the provisions of 10 CFR 2.201, Nebraska Public Power District 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, 1600 East Lamar Blvd., Arlington, Texas 76011-4511 and a copy to the NRC Resident Inspector at Cooper Nuclear Station, 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 12-206" and should include: (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 website 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 reason, 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 ninth day of November, 2012.

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000298
License: DRP-46
Report: 05000298/2012004
Licensee: Nebraska Public Power District
Facility: Cooper Nuclear Station
Location: 72676 648A Ave
Brownville, NE 68321
Dates: June 27, 2012 through September 26, 2012
Inspectors: J. Josey, Senior Resident Inspector
C. Henderson, Resident Inspector
P. Elkmann, Senior Emergency Preparedness Inspector
A. Fairbanks, Reactor Inspector
G. Guerra, CHP, Emergency Preparedness Inspector
J. Laughlin, Emergency Preparedness Inspector, NSIR
Approved By: Robert C. Hagar, Chief (Acting)
Project Branch C
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000298/2012004; 06/27/2012 – 09/26/2012; COOPER NUCLEAR STATION, Integrated Resident and Regional Report; Equipment Alignment, Licensed Operator Requalification Program and Licensed Operator Performance, Maintenance Risk Assessments and Emergent Work Control, Operability Evaluations and Functionality Assessments, Exercise Evaluation, Problem Identification and Resolution of Problems.

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, eight Green non-cited violations, and one Severity Level IV violation of significance 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 documented a self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the failure of the licensee to ensure compliance with the requirements of the station's Surveillance Procedure 6.1REC.101, "REC Surveillance Operation (IST) (DIV 1)," Revision 12. Specifically, operators failed to ensure that division one of the reactor equipment coolant system was maintained above 65 psig as required by procedure. This resulted in the system header low pressure alarm and isolation of the noncritical loop. The licensee entered this deficiency into their corrective action program for resolution as Condition Report CR-CNS-2012-05396.

The failure to follow the station's Surveillance Procedure 6.1REC.101 on August 9, 2012, was a performance deficiency. The performance deficiency was more than minor and is therefore a finding because it is associated with the human performance attribute of the Mitigating Systems Cornerstone and affected the associated 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 failure to follow station procedures could become a more significant concern, in that the failure to follow site procedural requirements could render other safety-related equipment inoperable without the knowledge and approval of site management or control room personnel. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power." The inspectors determined that the finding was of very low

safety significance (Green) because the finding did not involve both the complete or partial loss of a support system that contributes to the likelihood of, or causes, an initiating event and affected mitigation equipment. The finding was determined to have a cross-cutting aspect in the area of human performance, associated with the decision making component, because the licensee failed to use conservative assumptions. Specifically, operators failed to validate their assumptions of the noncritical system header isolation and system header low pressure alarm set points for reactor equipment cooling system and allowed system pressure to go below the procedurally required limit which resulted in the reactor equipment cooling system low header pressure alarm and an automatic isolation signal for noncritical header loop [H.1(b)](Section 4AO2).

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to assure that the applicable design basis requirements associated with the emergency diesel generators' 1 and 2 voltage regulator cabinets were correctly translated into the plant design. Specifically, the licensee did not have an analysis that demonstrated that the emergency diesel generators' voltage regulator cabinets would remain operable following a design basis seismic event due to their close proximity to the emergency diesel generator switchgear cabinets. The licensee entered this deficiency into their corrective action program for resolution as Condition Report CR-CNS-2012-05618. The licensee subsequently performed an operability evaluation and determined emergency diesel generators would be operable following a design basis seismic event.

The licensee's failure to maintain design control of the emergency diesel generators' 1 and 2 voltage regulator cabinets was a performance deficiency. The performance deficiency is more than minor and is therefore a finding because it was associated with the design control attribute of the Mitigating Systems Cornerstone, in that the initial plant design failed to analyze for a potential seismic interaction between cabinets; as such, this affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power." The inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance in accordance with the licensee's

maintenance rule program. This finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance (Section 1R04).

- Green. The inspectors identified a cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to assure that the applicable design basis for applicable structures, systems, and components were correctly translated into specifications, procedures, and instructions. As described in UFSAR Section 5.3.3, a part of the design basis for a component to which this appendix applies is for each emergency diesel generator starting air receiver to be capable of providing sufficient air to perform multiple starts without immediate replenishment, and measures established by the licensee failed to assure that that part of the design bases was correctly translated into test procedures to verify that each emergency diesel generator starting air receiver is capable of providing sufficient air to perform multiple starts without immediate replenishment. The violation is cited because the licensee failed to restore compliance in a reasonable time following documentation of the issue as a non-cited violation in NRC Inspection Report 05000298/2010007, issued December 3, 2010 (ML103370640). The licensee entered this deficiency into their corrective action program for resolution as Condition Report CR-CNS-2012-05837.

The licensee's failure to ensure that the plant design bases were correctly translated into test procedures was a performance deficiency. This performance deficiency was determined to be more than minor and is therefore a finding because it was associated with the design control attribute of the Mitigating Systems Cornerstone, in that the licensee's failure to appropriately analyze or test the multiple-start capability of a single air receiver affected the associated objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Appendix A, "Initial Screening and Characterization of Findings." The inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. Since operators used non-conservative decisions when they evaluated the station's licensing basis when isolating and depressurizing air receiver 1B for emergency diesel generator 1, the finding has a cross-cutting 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 it is unsafe in order to disapprove the action [H.1(b)](Section 1R11).

- Green. The inspectors documented a self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to correctly translate certain parts of the design bases into documents used to order and install overload relays/heaters associated with the reactor equipment cooling system pump B motor. This failure resulted in the licensee installing incorrect overload relays/heaters which resulted in a trip of the reactor equipment cooling system pump B motor during normal operation. The issue was entered into the licensee's corrective action program as Condition Reports CR-CNS-2012-05389 and CR-CNS-2012-05401.

The licensee's failure to correctly translate certain parts of the design bases into procurement and installation documents for overload relays/heaters associated with the reactor equipment cooling system pump B motor was a performance deficiency. This performance deficiency was determined to be more than minor and is therefore a finding because it was associated with the design control attribute of the Mitigating Systems Cornerstone, in that this performance deficiency allowed the licensee to install an undersized overload relay/heater, which resulted in the pump tripping during normal operation, and thereby affecting the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power." The inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The inspectors determined that the apparent cause of this finding was that the licensee had changed their design documents prior to full implementation of a modification and had used the revised documents to plan work on unmodified equipment. Therefore, the finding has a cross-cutting aspect in the area of human performance associated with resources component because the licensee failed to provide complete, accurate, and up-to-date design documentation. [H.2(c)] (Section 1R13).

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the failure of the licensee to appropriately implement their configuration control process which resulted in unevaluated changes to the service water

booster pumps. Specifically, the licensee allowed their vendor to make undocumented changes to service water booster pumps, which resulted in a pump not being able to perform its specified safety function. The licensee entered this issue in their corrective action program as Condition Reports CR-CNS-2012-04600 and CR-CNS-2012-04628.

The failure to appropriately implement the station's configuration control process with respect to vendor changes to a service water booster pump was a performance deficiency. This performance deficiency was determined to be more than minor and is therefore a finding because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone, in that unevaluated changes to a service water booster pump resulted in the pump not being able to perform its specified safety function, thereby affecting the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," the finding was determined to be of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The inspectors determined that the apparent cause of this finding was that the licensee had decided to rely on purchase orders and vendor repair plans instead of evaluating configuration changes. Therefore, the finding has a cross-cutting 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 it is unsafe in order to disapprove the action [H.1(b)](Section 1R13).

- Green. The inspectors identified a non-cited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the licensee's failure to adequately assess and manage the increase in risk associated with maintenance activities. Specifically, on June 20, 2012, and July 27, 2012, licensee personnel failed to adequately assess and manage the increase in risk associated with Zurn strainer maintenance activities. This finding was entered into the licensee's corrective action program as Condition Reports CR-CNS-2012-04182 and CR-CNS-2012-05006.

The licensee's failure to adequately assess and manage the increase in risk associated with Zurn strainer maintenance activities was a performance

deficiency. This performance deficiency was determined to be more than minor and is therefore a finding because it affected the equipment performance attribute of the Mitigating Systems Cornerstone, in that the licensee failed to recognize the Zurn strainers were unavailable, thereby directly affecting the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 1, "Assessment of Risk Deficit," inspectors determined the need to calculate the risk deficit to determine the significance of this issue. Therefore, a senior reactor analyst performed a bounding detailed risk evaluation. The analyst determined that the event would be time dependant, alarms would alert operators of the issue before the function would be lost, and recovery actions were available to bypass the strainers. The result was the incremental core damage probability was determined to be less than 1×10^{-6} , so the finding was determined to be of very low safety significance (Green). The inspectors determined that the apparent cause of this finding was that operators had failed to verify their assumptions associated with using manual actions to maintain equipment available. Therefore, finding has a cross-cutting 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 it is unsafe in order to disapprove the action [H.1(b)](Section 1R13).

- Green. The inspectors documented a self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" associated with the licensee's failure to provide complete, accurate, and up-to-date procedures for proper installation of the gearbox coupling setscrews for Zurn Strainer A. The licensee entered this deficiency into their corrective action program for resolution as Condition Report CR-CNS-2012-04710.

The licensee's failure to provide complete, accurate, and updated procedures for proper installation of the gearbox coupling setscrews for Zurn Strainer A was a performance deficiency. This performance deficiency was determined to be more than minor and is therefore a finding because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone, in that an inadequate procedure caused a loss of a safety function of the A Zurn strainer, which affected the availability of the strainer; as such, this directly affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," the inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system or component, and did not result in a loss of

operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The inspectors determined that the apparent cause of this finding was that the licensee's evaluation documented in Condition Report CR-CNS-2010-02213 had not resulted in appropriate corrective actions to address the cause of the Zurn strainer coupling failure. Therefore, this finding has a cross-cutting 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 1R15).

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to follow the requirements of station procedure 0.5OPS, "Operations Review of Condition Reports/Operability Determination," and properly document the basis for operability when a degraded or nonconforming condition is identified. Specifically, inspectors identified that the licensee had failed to consider all relevant information when assessing operability of service water booster pump B when a degraded condition was identified which resulted in their failure to recognize the pump as inoperable. The licensee entered these issues into their corrective action program for resolution as Condition Reports CR-CNS-2012-04903 and CR-CNS-2012-04925.

The licensee's failure to consider all relevant information and appropriately assess operability when a degraded nonconforming condition was identified was a performance deficiency. This performance deficiency is more than minor and is therefore a finding because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone, in that the inadequate operability evaluation failed to recognize the unavailability of the service water booster pump, as thereby affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," the finding was determined to be of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-

technical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The inspectors determined that the apparent cause of this finding was that operators had assumed that the oil level was adequate since it could be refilled without quantifying a leak rate. Therefore, the finding has a cross-cutting 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 it is unsafe in order to disapprove the action [H.1(b)](Section 1R15).

Cornerstone: Emergency Preparedness

- Green. The inspectors identified the licensee's failure to correct weaknesses occurring during the biennial emergency preparedness exercise conducted July 31, 2012. The licensee's failure to identify problems in implementing radiation protection measures for emergency workers as weaknesses requiring correction was a performance deficiency. This finding was entered into the licensee's corrective action program as Condition Report CR-CNS-2012-05199.

This finding is more than minor because it affects the emergency response organization readiness cornerstone attribute. The finding was evaluated using the Emergency Preparedness Significance Determination Process and determined to be of very low safety significance because it was a failure to comply with NRC requirements and was not a loss of the planning standard function; the weaknesses that were not corrected were not associated with risk-significant planning standards. This finding is a non-cited violation of 10 CFR 50.47(b)(14) and Appendix E to Part 50, Section IV.F(2)(g). The finding was assigned a cross-cutting aspect in the area of Problem Identification and Resolution because the licensee failed to completely and accurately identify weak performance during an exercise [P.1(a)](Section 1EP1).

Miscellaneous

- Severity Level IV. The inspectors identified a non-cited violation of 10 CFR 50.59, "Changes, Test, and Experiments," associated with the licensee's failure to adequately evaluate changes in order to ensure that they did not require prior NRC approval. The inspectors determined that a procedure change performed by the licensee to allow the use of the supplemental diesel generator for responding to a station blackout should have required prior NRC approval. Specifically, this change resulted in a more than minimal increase in the likelihood of the occurrence of a malfunction of a structure, system, or component important to safety that had been previously evaluated. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2012-05558.

The licensee's failure to implement the requirements of 10 CFR 50.59 and adequately evaluate the use of the supplemental diesel generator for responding to a station blackout event was a performance deficiency. Because this performance deficiency had the potential to impact the NRC's ability to perform its regulatory function, the inspectors evaluated it using traditional enforcement. In accordance with section 7.3.E.6 of the NRC Enforcement Policy, the inspectors used Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," to determine that this performance deficiency was of very low safety significance (Green) because it: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. Therefore, in accordance with section 6.1.d.2 of the NRC Enforcement Policy, the inspectors characterized this performance deficiency as a Severity Level IV violation. As described in section 07.03.c of Manual Chapter 0612, "Power Reactor Inspection Reports," no cross-cutting aspect was assigned to this violation. (Section 1R13).

B. Licensee-Identified Violations

Violations of very low safety significance were identified by the licensee and 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 associated corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Cooper Nuclear Station began the inspection period at full power. On August 19, 2012, power was lowered to approximately 65 percent while repairs were made to a main condenser circulating water backwash valve. On August 23, 2012, power was increased to 100 percent. On September 19, 2012, the plant began power coast down for Refueling Outage 27.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

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

- August 6, 2012, Reactor recirculation motor generator A and B during scaffolding build activities
- September 17, 2012, Diesel generator switchgear and voltage regulator seismic analysis
- September 25, 2012, Residual heat removal and core spray to condensate storage tank; condensate storage tank to emergency condensate storage tank

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, the 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

Introduction. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to maintain design control of the emergency diesel generators' 1 and 2 voltage regulator cabinets.

Description. The inspectors noted that the emergency diesel generators' 1 and 2 voltage regulator and switchgear cabinets were in close proximity to each other. Noting that the voltage regulator cabinets contain safety related relays that could be affected by seismic interaction, the inspectors asked the licensee for their evaluation of potential seismic interaction of the cabinets during a design-basis safe shutdown earthquake.

The licensee told the inspectors that the requested evaluation did not exist. The licensee initiated Condition Report CR-CNS-2012-05618 to capture this issue in the station's corrective action program. The licensee subsequently performed an operability evaluation for the subject cabinets to determine if during a design basis safe shutdown earthquake, a potential existed for interaction between the cabinets that could impact the safety function of the emergency diesel generators. That evaluation determined that no interaction could occur between the emergency diesel generator 2's voltage regulator and switchgear cabinets, and since the distance between these components was the most limiting distance this evaluation bounded emergency diesel generator 1's voltage regulator and switchgear cabinets. The licensee's corrective action was to make the operability evaluation the calculation of record for this issue.

Analysis. The licensee's failure to maintain design control of the emergency diesel generators' 1 and 2 voltage regulator cabinets was a performance deficiency. The performance deficiency was determined to be more than minor and is therefore a finding because it was associated with the design control attribute of the Mitigating Systems Cornerstone, in that during initial plant design, the licensee failed to analyze for a potential seismic interaction between cabinets, and thereby affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power." The inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-

significance in accordance with the licensee's maintenance rule program. This finding did not have a cross-cutting aspect because the most-significant contributor did not reflect current licensee performance.

Enforcement. 10 CFR Part 50, Appendix B, Criterion III, "Design Control," states, in part, that, "measures shall be established to assure that applicable regulatory requirements and the design bases, as defined in 10 CFR 50.2 and as specified in the license application, for those components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions." Contrary to the above, measures established by the licensee did not assure that applicable regulatory requirements and the design bases, as defined in 10 CFR 50.2 and as specified in the license application, for those components to which this appendix applies were correctly translated into specifications, drawings, procedures, and instructions. Specifically, from initial construction until August 21, 2012, the licensee failed to translate the seismic design basis of the emergency diesel generators into specifications. The licensee performed an immediate operability evaluation and established a reasonable expectation of operability pending full evaluation. Because the finding is of very low safety significance (Green) and has been entered into the licensee's corrective action program as Condition Report CR-CNS-2012-05618, this violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2012004-01, "Failure to Maintain Design Control of the Emergency Diesel Generators Voltage Regulator Cabinets"

.2 Complete Walkdown

a. Inspection Scope

On September 17, 2012, the inspectors performed a complete system alignment inspection of the service water and residual heat removal service water booster pump A to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

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:

- July 9, 2012, Auxiliary relay room, Fire Area VII, Zone 8A
- July 25, 2012, Diesel driven fire pump room, Fire Area XIII, Zone 23B
- July 30, 2012, Reactor core isolation cooling and core spray pump room, Fire Area I, Zone 1A
- July 31, 2012, DC switchgear 1B, Fire Area VI, Zone 8G

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 and Licensed Operator Performance (71111.11)

.1 Quarterly Review of Licensed Operator Requalification Program

a. Inspection Scope

On September 18, 2012, the inspectors observed a crew of licensed operators in the plant's simulator during requalification testing. The inspectors assessed the following areas:

- Licensed operator performance
- The ability of the licensee to administer the evaluations and the quality of the training provided
- The modeling and performance of the control room simulator
- The quality of post-scenario critiques
- Follow-up actions taken by the licensee for identified discrepancies

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 Quarterly Observation of Licensed Operator Performance

a. Inspection Scope

- September 26, 2012, 0.5 hours for rod pattern adjustment after a 10% downpower to support B-1 screen setting, including the pre-job brief
- September 26, 2012, 2.5 hours for high pressure coolant injection operability run
- September 26, 2012, 1.0 hours for breaking vacuum on waterbox 1A

The in addition, the inspectors assessed the operators' adherence to plant procedures, including conduct of operations procedure and other operations department policies.

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

b. Findings

Introduction. The inspectors identified a Green cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to demonstrate that the emergency diesel generators can perform multiple air starts from a single air receiver.

Description. On December 03, 2010, NRC Component Design Bases Inspection Report 05000298/2010007 (ML103370640), documented non-cited violation 05000298/2010007-04, "Inadequate Design Control," for the licensee's failure to establish design control measures, such as the performance of a design review, or the use of alternate or simplified calculational methods, or the performance of a suitable testing program, to verify that the emergency diesel generators can perform multiple starts from a single air receiver with a starting pressure of at least 200 psig. The licensee entered this deficiency into their corrective action program as Condition Report CR-CNS-2010-05294. The following corrective actions were developed and implemented: (1) Station Calculation NEDC 11-072, Revision 0, "DGSA Accumulator Sizing Basis," was generated to document that multiple starts were available from a single air accumulator in the starting air subsystem; and (2) The Updated Safety Analysis Report and technical specification basis were updated based on the results from NEDC 11-072 to reflect that a single air accumulator was capable of providing sufficient air to perform multiple starts without immediate replenishment with pressure at least 200 psig in a starting air accumulator. Based on the proposed corrective actions the licensee chose to generate a Design Calculation NEDC 11-072, instead of performing operational testing as allowed by 10 CFR Part 50, Appendix B, Criterion III.

The inspectors' review of NEDC 11-072 determined that it did not adequately address this issue. So, on August 02, 2012, NRC Integrated Inspection Report 05000298/2012003 (ML12216A055) documented non-cited violation 05000298/2012003-13, "Fail to Correct a Condition Adverse to Quality for Determining the Number of Multiple Starts for a Single Diesel Generator Starting Air Accumulator," for the licensee's failure to prepare an adequate design calculation demonstrating that a single diesel generator starting air accumulator was capable of performing multiple starts of an emergency diesel generator. The licensee entered this deficiency into their corrective action program as Condition Report CR-CNS-2012-03039. The licensee subsequently performed an operability evaluation and apparent cause evaluation. The emergency diesel generators were classified as operable with a compensatory measure to maintain the starting air receivers cross-tied while the cause evaluation was performed and the inadequate calculation was resolved.

On August 30, 2012, the inspectors were conducting a plant status walkdown in the control room when the emergency diesel generator 1 trouble alarm was received. Operators told the inspectors that the alarm was due to isolating and depressurizing air receiver 1B for emergency diesel generator 1 for relief valve preventative maintenance. The inspectors determined that this configuration had placed emergency diesel generator 1 in a condition where only one air receiver was available to potentially conduct multiple air starts, and questioned what the licensee had done to correct the

previously identified issue associated with the failure to perform suitable pre-operational testing since the licensee's corrective action, a calculational analysis, had been determined to be inadequate.

The inspectors reviewed the stations technical specifications and noted that Technical Specification 3.8.3 Bases states, in part, that with pressure at least 200 psig in at least one starting air receiver, sufficient capacity for multiple diesel generator start attempts exists without recharging the air receiver. Next, the inspectors noted that the licensee had closed Condition Report CR-CNS-2010-05294 with no actions beyond those described above, and in Condition Report CR-CNS-2012-03039, the licensee had revised the operability evaluation to remove the compensatory measure of maintaining the air receiver cross-connect valve open. The revised operability was based on the operators interpretation that while flawed, NEDC 11-072 does show that multiple starts are available from a single air receiver at 200 psig, and the requirement to perform multiple starts with only one air receiver was never part of the station's design basis, and these positions had formed the basis for allowing the maintenance activity to occur. However, the inspectors noted that, in their apparent cause evaluation documented in CR-CNS-2012-03039, the licensee had concluded that NEDC 11-072, Revision 0, did not support multiple air starts of the emergency diesel generator on a single air accumulator. This conclusion was contrary to the Technical Specification 3.8.3 Bases. The inspectors therefore determined that: (1) the revised operability in Condition Report CR-CNS-2012-03039 was incorrect and did not provide a reasonable basis for operability for the current plant configuration; and (2) the licensee had not restored compliance for non-cited violation 05000298/2010007-04. In response, the licensee initiated Condition Report CR-CNS-2012-05837 to capture this concern in the station's corrective action program. In that Condition Report, the licensee generated an operability evaluation which stated, in part, that NEDC 11-072 was the calculation of record for this issue and currently supports the statements in the technical specification basis and the USAR concerning the ability of a single air receiver to perform multiple starts under conditions specified in the design basis. The station's position was that the diesel generator remained operable if one of the air receivers was removed from service and the other air receiver was at normal standby conditions with all technical specification for the diesel generator starting air parameters met. The inspectors' review of this condition report and subsequent discussions with licensee management resulted in the licensee revising operability evaluations for Condition Reports CR-CNS-2012-03039 and CR-CNS-2012-05837, to state that, due to this issue, emergency diesel generators 1 and 2 were operable with compensatory measures, which were caution orders with caution tags on the valves to alert operators that if an air receiver is to be isolated or pressure falls below 200 psig, diesel generator operability must be assessed. In addition, the licensee implemented Standing Order 2012-09 to declare the associated diesel generator inoperable if an air receiver was isolated or pressure below 200 psig.

In summary, the inspectors determined that the licensee had not restored compliance for non-cited violation 05000298/2010007-04 within a reasonable amount of time.

Analysis. The licensee's failure to demonstrate that the emergency diesel generators can perform multiple air starts from a single air receiver was a performance deficiency. The performance deficiency was determined to be more than minor and is therefore a finding because it was associated with the design control attribute of the Mitigating Systems Cornerstone, in that during initial plant design, the licensee failed to appropriately analyze or test the multiple-start capability of a single air receiver, and thereby affected the associated objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, "Initial Screening and Characterization of Findings," the inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The inspectors determined that the apparent cause of this finding was that operators had made non-conservative decisions when they had evaluated the station's licensing basis when isolating and depressurizing air receiver 1B for emergency diesel generator 1. Therefore, this finding has a cross-cutting 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 it is unsafe in order to disapprove the action [H.1(b)].

Enforcement. 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2 and as specified in the license application, for those components to which this appendix applies, are correctly translated into specifications, drawings, procedures, and instructions. Contrary to the above, from December 3, 2010, until August 30, 2012, measures established by the licensee failed to assure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2 and as specified in the license application, for those components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. Specifically, the licensee failed to assure that the emergency diesel generator starting air receiver was capable of providing sufficient air to perform multiple starts of the emergency diesel generator without immediate replenishment, as described in USAR section 5.3.3. The licensee performed an immediate operability evaluation and established compensatory actions to maintain the diesels operable pending further evaluation. This performance deficiency had been previously identified by the NRC and had been documented as non-cited violation 05000298/2010007-04. In accordance with Section 2.3.2.a of the NRC Enforcement Policy, this finding is being cited because the licensee failed to restore compliance within a reasonable amount of time after the violation was initially identified

in NRC Inspection Report 05000298/2010007, issued December 3, 2010 (ML103370640): VIO 05000298/2012004-02, "Failure to Demonstrate that Emergency Diesel Generators can Perform Multiple Air Starts from a Single Air Receiver"

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- August 10, 2012, Review of the current (a)(3) periodic assessment
- August 31, 2012, Supplemental diesel
- September 12, 2012, Service water

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

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

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

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

b. Findings

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:

- July 13, 2012, Diesel generator 1 emergent work control and risk assessment for second dynamic relay failure
- August 9, 2012, RCIC-MO-131 and reactor core isolation cooling trip and throttle valve
- August 17, 2012, Reactor equipment cooling pump B trip
- August 17, 2012, 345kV and 161kV switchyard work
- September 24, 2012, Zurn strainer A risk assessment
- September 24, 2012, Cooper updated PRA model

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 six maintenance risk assessments and emergent work control inspection samples as defined in Inspection Procedure 71111.13-05.

b. Findings

(1) Failure to Maintain Design Control of the Reactor Equipment Cooling System

Introduction. The inspectors documented a Green self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to maintain design control of FH88 overload relay/heaters associated with the reactor cooling equipment system.

Description. On August 7, 2012, the station replaced reactor equipment cooling system pump B motor's overload relays/heater as part of a scheduled preventive maintenance activity. The work order specified size FH88 overload relays/heaters because that size was documented in NEDC 91-184, "Motor Overload Heater Sizing," Revision 3, instead of the installed FH89 overload relays/heaters.

On August 9, 2012, reactor equipment cooling system pump B motor tripped with no ongoing manipulation of the reactor equipment cooling system in progress. The station immediately entered into Emergency Procedure 5.2REC, "Loss of [Reactor Equipment Cooling]," Revision 13, and started reactor equipment cooling system pump A, and restored system pressure.

During troubleshooting activities, the licensee determined that the FH88 overload relay/heaters were not the correct size for the installed pump and had tripped the pump due to excessive current draw. The licensee replaced the overload relay/heaters with FH89 overload relay/heaters and reactor equipment cooling system pump B motor was returned to service. The licensee initiated Condition Reports CR-CNS-2012-05389 and CR-CNS-2012-05401 to capture this issue in the station's corrective action program.

The licensee performed an apparent-cause evaluation and documented it in Condition Report CR-CNS-2012-05389. During their evaluation, the licensee determined that in January 2006, they had evaluated replacing the existing reactor equipment cooling system motors with new Rockwell Automation-Reliance motors, which required FH88 overload relay heaters, and had initiated and implemented corresponding changes to station drawings and calculations. They had then changed NEDC 91-184 by calculation Change Notice 2C1, and then had fully incorporated this calculation change notice as part NEDC 91-184, Revision 3, in February, 2012. The licensee determined that they had incorrectly implemented changes to drawings and calculations before they actually replaced the pump motors and overload relays/heaters.

The licensee also determined that they had accelerated implementation of the work order which changed the currently installed overload relay to the FH88 overload relay heaters. This work order was originally scheduled for implementation in 2013, to coincide with when the licensee had planned to install the new Rockwell Automation-Reliance motor for reactor equipment cooling system pump B. After realizing their error, the licensee updated and implemented NEDC 91-184 to be reflective of current reactor equipment cooling system configuration.

The inspectors reviewed the licensee's cause analysis and determined the identified cause was reasonable.

Analysis. The licensee's failure to maintain design control of the FH88 overload relay/heaters associated with the reactor equipment cooling system pump B motor was a performance deficiency. The performance deficiency is more than minor and is therefore a finding because it is associated with the design control attribute of the Mitigating Systems Cornerstone, in that the installation of an undersized overload relay before the plant modification was completed resulted in the pump tripping, thereby affecting the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power." The inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The inspectors determined that the apparent cause of this finding was that the licensee had changed their design documents prior to full implementation of a modification and had used the revised documents to plan work on unmodified equipment. Therefore, the finding has a cross-cutting aspect in the area of human performance associated with resources component because the licensee failed to provide complete, accurate, and up-to-date design documentation [H.2(c)].

Enforcement. 10 CFR Part 50, Appendix B, Criterion III, "Design Control," states, in part, that, "measures shall be established to assure that applicable regulatory requirements and the design bases, as defined in 10 CFR 50.2 and as specified in the license application, for those components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions." Contrary to the above, measures established by the licensee did not assure that applicable regulatory requirements and the design bases, as defined in 10 CFR 50.2 and as specified in the license application, for those components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. Specifically, from January 2006, until August 2012, measures established by the licensee did not assure that the current configuration of the reactor equipment cooling system was correctly translated into station drawings and calculations. As a result, the licensee installed incorrect overload relays/heaters into the power supply, and those overload relays/heaters tripped during normal operation. In response, the licensee immediately declared the pump inoperable and replaced the failed overload relays/heaters with properly sized overload relay/heaters prior to returning the system to service. Because the finding is of very low safety significance (Green) and has been entered into the licensee's corrective action program as Condition Reports CR-CNS-2012-05389

and CR-CNS-2012-05401, this violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2012004-03, "Failure to Maintain Design Control of the Reactor Equipment Cooling System."

(2) Failure to Control Vendor Changes to a Service Water Booster Pump

Introduction. The inspectors reviewed a Green self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the failure of the licensee to appropriately control vendor changes to service water booster pumps.

Description. During the week of July 9, 2012, the licensee installed a refurbished service water booster pump (S/N 891-C-0051) into the service water booster pump A location due to a declining performance trend of the currently installed pump (S/N 883-M-0803). This refurbished pump was known to produce high total developed head at design flow, but the licensee had previously determined this to be acceptable. While performing acceptance testing on July 12, 2012, higher than expected vibrations were recorded, along with the inability to reach the required flow due to the pump reaching motor amperage restrictions. The licensee initiated Condition Report CR-CNS-2012-04600 to capture this issue in the station's corrective action program.

While addressing the identified issues with the pump (S/N 891-C-0051), the licensee identified that the vendor had altered internal parts on the pump casing to reduce the probability of vibrations. Ultimately, the licensee removed the refurbished pump (S/N 891-C-0051) and re-installed the previously installed pump (S/N 883-M-0803).

The licensee performed and documented an apparent cause evaluation in Condition Report CR-CNS-2012-04628. During their evaluation, the licensee determined that in 2006, a refurbished service water booster pump had exhibited high vibrations during post work testing, and had determined that the high vibrations were directly related to the vendor refurbishment work. As a result, the licensee had returned pump to the vendor and the vendor had made some changes to the pump that were approved by the station. With vendor input that the changes were "remedial" actions, the licensee had determined that the changes were within the scope of the approved vendor repairs and therefore did not require any further documentation per the station configuration control process. Specifically, because they had determined that the changes did not impact the fit, form, or function of the pump, the licensee evaluate or document these changes any further. In particular, the licensee had not marked the changes on station drawings or other internal documentation.

Subsequently, the licensee had sent the refurbished service water booster pump (S/N 891-C-0051) to the same vendor for further refurbishment. In accordance with the station's purchase order documents and licensee-approved vendor repair plans, the vendor had incorporated some of the previously approved changes during their refurbishment activities. Also, during in shop testing, the vendor had noted better

indicated hydraulic performance for this pump. The station had subsequently accepted this pump without evaluating the effects of the changes implemented by the vendor.

In the apparent cause evaluation documented in Condition Report CR-CNS-2012-04628, the licensee determined that they had no formal process to identify what changes are within the scope of the vendor processes ("remedial" or within tolerance), and what changes would require configuration control documentation, therefore it was up to the engineer to make this determination. They also determined that they had operated for many years without a formal configuration control process for vendor activities, and had not previously identified the need for one. In the absence of such a program and without clear guidance on which vendor changes would require documentation within the configuration-control process, the engineers had worked together on an "ad hoc" basis to review and evaluate vendor repair plans and any proposed changes. In the case of the refurbished service water booster pump, the involved engineer had determined that the changes proposed by the vendor were within the scope of the vendor process.

The station concluded that the apparent causes of this issue were: (1) they had no formal vendor repair plan review process and varied interpretations on what vendor alternations required configuration control documentation; (2) they had not validated the cause of the 2006 vibrations, along with the vendor making alterations based on the assumption that those alterations reduced vibrations; and (3) the pump engineer lacked knowledge and experience. As a contributing cause, the station also identified that the horsepower requirements had not been specified in purchasing documents. The licensee presented this evaluation to the corrective action review board, which approved it, on September 4, 2012.

Following the corrective action review board review, the inspectors questioned the licensee's identified causes. Specifically, the inspectors noted that the station was committed to ANSI N18.7/ANS 3.2-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," and that Section 5.2.13 of that standard requires, in part, that procedures shall be established and implemented to assure that purchased materials and components associated with safety related structures or systems are purchased to specifications and codes equivalent to those specified for the original equipment, or those specified by a properly reviewed and approved revision. The inspectors noted that Engineering Procedures 3-CNS-DC-138, "Technical Evaluation Process," and 3-CNS-DC-138.3, "Parts Safety and Quality Classification," were the station's procedures that implemented the configuration control process, and that the licensee had not been using it correctly. As such, the inspectors determined that the licensee had not adequately evaluated this issue and the inspectors had added value to the licensee's process.

Analysis. The failure to appropriately implement the station's configuration control process for vendor changes to a service water booster pump was a performance deficiency. This performance deficiency is more than minor and is therefore a finding because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone, in that unevaluated changes to a service water booster pump resulted in the pump not being able to perform its specified safety function, as such this

affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," the finding was determined to be of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The inspectors determined that the apparent cause of this finding was that the licensee had decided to rely on purchase orders and vendor repair plans instead of evaluating configuration changes. The finding has a cross-cutting 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 it is unsafe in order to disapprove the action. [H.1(b)]

Enforcement. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that "activities affecting quality shall be prescribed by documented instructions or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions or drawings." Contrary to the above, from July 2006 through July 2012, an activity affecting quality was prescribed by documented instructions of a type appropriate to the circumstances, but was not accomplished in accordance with these instructions. Specifically, during the subject period, the licensee failed to ensure that engineering personnel complied with Engineering Procedures 3-CNS-DC-138, and 3-CNS-DC-138.3, and appropriately evaluated configuration changes associated with the service water booster pumps. The licensee performed an immediate operability evaluation and establish a reasonable expectation of operability pending full evaluation. The licensee entered this issue into the corrective action program as Condition Reports CR-CNS-2012-04600 and CR-CNS-2012-04628. Because the violation was of very low safety significance (Green) and it was entered into the licensee's corrective action program, the violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2012004-04, "Failure to Control Vendor Changes to a Service Water Booster Pump."

(3) Failure to Adequately Assess and Manage Risk for Maintenance Affecting the Zurn Strainer

Introduction. The inspectors identified two examples of a Green non-cited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the failure of the licensee to adequately assess and manage

the increase in risk associated with maintenance activities that affected the Zurn strainers.

Description. (Example 1) On June 20, 2012, the A Zurn strainer was not able to meet one of its safety functions (backwash), which resulted in the licensee declaring the A train of service water inoperable. Operations personnel evaluated this condition and declared the service water train “available” based on the strainer still straining and the fact that alarm response procedures described actions that operators could take in the event of a high strainer differential pressure alarm.

The inspectors reviewed the licensee’s equipment lineup and the associated risk assessment. The inspectors noted that station Administrative Procedure 0.49, “Schedule Risk Assessment,” allowed operators to declare equipment “available” provided that restoration was directed by a procedure, restoration could be done in a few simple actions, restoration did not require diagnosis, and the function could be promptly restored either by an operator in the control room or by a dedicated operator stationed locally for that purpose. Inspectors engaged operators about classifying the A train of service water as available, and operators informed the the inspectors that they were aware of the requirements of Administrative Procedure 0.49, but stated that they had declared the strainer inoperable and unavailable, but the service water train was available because the alarm response procedures described actions that operators could take in the event of a high strainer differential pressure alarm.

Inspectors determined that the operators interpretation had credited alarm-card response in conjunction with local valve manipulation by an operator, and that the operator who would perform the manual action was neither dedicated nor locally stationed. The inspectors determined that the licensee’s plans did not meet the station’s requirement for the risk-management action and that the action had not been implemented correctly. The inspectors also determined that, when station risk was assessed without the subject risk-management action, the overall risk designation should have been Yellow. The inspectors told the licensee of their concern and the licensee initiated Condition Report CR-CNS-2012-04182 to capture this issue in the station’s corrective action program.

(Example 2) On July 27, 2012, the licensee removed the B Zurn strainer drive motor from service for planned maintenance. This lineup resulted in the B Zurn strainer not able to meet the backwash safety function, and this resulted in the licensee declaring the A train of service water “inoperable”. Again, operations personnel evaluated this condition and called the service water train available based on the strainer being inoperable and unavailable, but the service water train being available because the alarm response procedures described actions that operators could take in the event of a high strainer differential pressure alarm. Again, the inspectors reviewed the licensee’s equipment lineup and the associated risk assessment. As before, the inspectors determined that to maintain the train available. the licensee had credited alarm card response in conjunction with local valve manipulation by an operator, and that the operator that was to perform the manual action was neither dedicated nor locally stationed. The inspectors determined that this did not meet the station’s requirement for

the risk-management action and determined that the action had not been implemented correctly. The inspectors also determined that, when station risk was assessed without the subject risk-management action, the overall risk designation should have been Yellow. The inspectors told the licensee of their concern and the licensee initiated Condition Report CR-CNS-2012-05006 to capture this issue in the station's corrective action program.

The inspectors determined that in both of these instances, the licensee had failed to appropriately assess and manage the increase in risk associated with Zurn strainer maintenance.

Analysis. The licensee's failure to adequately assess and manage the increase in risk associated with Zurn strainer maintenance activities was a performance deficiency. This performance deficiency was determined to be more than minor and is therefore a finding because it affected the equipment performance attribute of the Mitigating Systems Cornerstone, in that the licensee failed to recognize the Zurn strainers were unavailable, which directly affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 1, "Assessment of Risk Deficit," inspectors determined the need to calculate the risk deficit to determine the significance of this issue. Therefore, a senior reactor analyst performed a bounding detailed risk evaluation. The analyst determined that the event would be time dependant, alarms would alert operators of the issue before the function would be lost, and recovery actions were available to bypass the strainers. The result was the incremental core damage probability was determined to be less than 1×10^{-6} . As such, the finding was determined to be of very low safety significance (Green). The inspectors determined that the apparent cause of this finding was that operators had failed to verify that their assumptions concerning required manual actions maintaining equipment available. Therefore, this finding has a cross-cutting 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 it is unsafe in order to disapprove the action [H.1(b)].

Enforcement. 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, on June 20, 2012, and July 27, 2012, before performing maintenance activities, the licensee did not assess and manage the increase in risk that may result from the proposed maintenance activities. Specifically, on those dates, licensee personnel failed to realize that the failure to correctly implement risk management actions resulted in an increase in risk color from Green to Yellow for the station. The licensee entered this issue into the corrective action program for resolution. Because the violation was of very low safety significance and it was entered into the licensee's corrective action program by Condition Reports CR-CNS-2012-04182 and CR-CNS-2012-05006, the violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV

05000298/2012004-05, "Failure to Adequately Assess and Manage Risk for Maintenance Activities That Affected the A Zurn Strainer."

(4) Failure to Obtain Prior NRC Approval for A Change When Required

Introduction. The inspectors identified a Severity Level IV non-cited violation of 10 CFR 50.59, "Changes, Test, and Experiments," associated with the licensee's failure to adequately evaluate changes in order to ensure that they did not require prior NRC approval.

Description. While reviewing updates to the station's probabilistic risk model the inspectors noted that the licensee had changed Station Procedure 5.3SBO, "Station Blackout," Revision 24, to allow use of the beyond-design-basis supplemental diesel generator within the previously evaluated and approved coping time.

The inspectors reviewed the procedure-change documentation for Station Procedure 5.3SBO, Revision 24, and noted that it had been approved as an exempted intent change, based on the existence of previously authorized design documents. In this case, the previously authorized design document was Change Evaluation Document 6029940, "Supplemental Diesel Generator," which the licensee had used to evaluate the installation of the supplemental diesel generator. The inspectors' review of the 10 CFR 50.59 evaluation associated with Change Evaluation Document 6029940 noted that the licensee had answered question 1.2 ("Does the proposed activity result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component important to safety previously evaluated in the USAR?") in the negative, even though they had identified a new potential failure mode that affected the emergency station service transformer. Specifically, the licensee had identified that motor-operated disconnects had been installed as part of the modification that had installed the supplemental diesel generator, and that the failure of those disconnects could prevent or delay recovery of the emergency station service transformer. The inspectors noted that the licensee had concluded that this circumstance was acceptable because they had determined that a station blackout event was outside of normal design basis, and therefore they did not need to postulate failures of equipment used to recover from a station blackout event. So, the licensee concluded that the supplemental diesel generator did not increase the likelihood of the malfunction of a structure, system, or component important to safety previously evaluated in the USAR.

The inspectors determined that the licensee's conclusion was incorrect. Specifically, Station Analysis NPP1-PR-01, "Station Blackout Coping Assessment for Cooper Nuclear Station," Revision 2, was the station's previously reviewed and approved coping analysis that had been incorporated into the USAR by reference to demonstrate how the licensee complied with 10 CFR 50.63 "Loss of All Alternating Current Power." This analysis had credited the use of the emergency station service transformer with no identified failure mechanism that affected recovery. In consultation with staff in the NRC's office of Nuclear Reactor Regulation, the inspectors determined that the licensee should have answered question 1.2 of their screen in the affirmative, and that, consequently, the

licensee should have requested NRC approval of the procedure change prior to implementation.

The inspectors informed the licensee of their concerns, and the licensee initiated Condition Report CR-CNS-2012-05558 to capture this issue in the station corrective action program.

Analysis. The licensee's failure to implement the requirements of 10 CFR 50.59 and adequately evaluate the use of the supplemental diesel generator for responding to a station blackout event was a performance deficiency. Because this performance deficiency had the potential to impact the NRC's ability to perform its regulatory function, the inspectors evaluated it using traditional enforcement. In accordance with section 7.3.E.6 of the NRC Enforcement Policy, the inspectors used Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," to determine that this performance deficiency was of very low safety significance (Green) because it: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. Therefore, in accordance with section 6.1.d.2 of the NRC Enforcement Policy, the inspectors characterized this performance deficiency as a Severity Level IV violation. As described in section 07.03.c of Manual Chapter 0612, "Power Reactor Inspection Reports," no cross-cutting aspect was assigned to this violation.

Enforcement. In 10 CFR 50.59, "Changes, Tests, and Experiments," section (c)(1) states, in part, that a licensee may make changes in the facility as described in the final safety analysis report (as updated) without obtaining a license amendment pursuant to 10 CFR 50.90 only if; (i) a change to the technical specifications incorporated in the license is not required, and (ii) the change, test, or experiment does not meet any of the criteria in paragraph (c)(2). In 10 CFR 50.59, section (c)(2) states, in part, that a licensee shall obtain a license amendment pursuant to Section 50.90 prior to implementing a proposed change, test, or experiment if the change, test, or experiment would result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component important to safety previously evaluated in the final safety analysis report (as updated). Contrary to the above, from April 19, 2011, through August 17, 2012, the licensee failed to obtain a license amendment pursuant to Section 50.90 prior to implementing a proposed change, test, or experiment if the change, test, or experiment would result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component important to safety previously evaluated in the final safety analysis report (as updated). Specifically, the licensee implemented a change to Station Procedure 5.3SBO after incorrectly concluding that the supplemental diesel generator did not increase the likelihood of occurrence of a malfunction of a structure, system, or component important

to safety previously evaluated in the final safety analysis report. This violation is being treated as a Severity Level IV non-cited violation, consistent with the NRC Enforcement Policy: NCV 05000298/2012004-06, "Failure to Obtain Prior NRC Approval for a Change Regarding the Supplemental Diesel Generator."

1R15 Operability Evaluations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following assessments:

- July, 13, 2012, HV-AO-263, 265, 267, 269
- July 19, 2012, Service water booster pump A casing void and service water booster pump B oil leak
- July 20, 2012, Reactor building internal flooding analysis
- July 20, 2012, Zurn strainer A vendor minimum torque requirement
- August 15, 2012, Service water ambient air temperature and intake structure temperature
- September 24, 2012, Diesel generator ambient air temperature; diesel generator 1 with one starting air receiver

The inspectors selected these operability and functionality assessments based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure technical specification operability was properly justified and to verify 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 the Updated Final Safety Analysis Report to the licensee'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. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of six operability evaluations inspection samples as defined in Inspection Procedure 71111.15-05.

b. Findings

(1) Failure to Provide Complete, Accurate, and Up-to-Date Procedure for Assembling the Zurn Strainer

Introduction. The inspectors documented a Green self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" associated with the licensee's failure to provide procedures of a type appropriate to the circumstances of proper installing set screws into the Zurn strainers wiper arm motor-to-gear box coupling.

Description. NRC Integrated Inspection Report 05000298/2011003 documented self-revealing, non-cited violation 2011003-06, "Failure to Correctly Translate Design Requirements into Installed Plant Configuration," for the licensee's failure to ensure that design requirements for the Zurn strainers were correctly translated into installed plant equipment. The licensee had entered this deficiency into their corrective action program as Condition Report CR-CNS-2010-02213. The licensee's root cause evaluation had concluded that the failure of the Zurn strainers wiper arm motor-to-gear box coupling was due to the inadequate design and design control configuration, and the design configuration of the reduction gear to motor shaft for the Zurn strainer. As a result of their cause analysis, the licensee lengthened the shaft and staked the key to the shaft as a corrective action to prevent recurrence.

On June 19, 2012, the Zurn strainer A gearbox coupling failed when placed in continuous mode of operation in preparation for conducting the nightly Sedimentation Accumulation Monitor scan. Upon restoration, operations personnel identified that the amber caution light was lit on the control panel and that the strainer backwash arm had stopped on Zurn strainer A. The operators observed that the strainer motor was operating, but the backwash arm was not moving. Subsequent inspection determined that inadequately engaged set screws had caused failure of the wiper arm motor-to-gear box coupling. The licensee repaired the coupling, initiated Condition Report CR-CNS-2012-04170 to capture this issue in the station's corrective action program, and performed a root cause evaluation. In that evaluation, the licensee determined that the coupling had failed because the procedural guidance implemented on October 25, 2010, to prevent recurrence of the Zurn strainer failure, had not been adequate to ensure the proper installation of the gearbox coupling set screws. The inspectors therefore determined that the subject procedural guidance had not been appropriate to the circumstances.

The inspectors reviewed the licensee's cause analysis and determined that the identified root cause was reasonable.

Analysis. The licensee's failure provide a procedure appropriate to the circumstance of proper installing set screws into the Zurn strainers wiper arm motor-to-gear box coupling was a performance deficiency. This performance deficiency was determined to be more than minor and is therefore a finding because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone, in that this performance deficiency resulted in an inadequate procedure which caused a loss of a safety function

of the A Zurn strainer which affected the availability of the strainer, which affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequence. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," the inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The inspectors determined that the apparent cause of this finding was that the licensee's evaluation documented in CR-CNS-2010-02213 had not resulted in appropriate corrective actions to address the cause of the Zurn strainer coupling failure. Therefore, this finding has a cross-cutting 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. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that activities affecting quality shall be prescribed by documented instructions or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions or drawings. Contrary to the above, on October 25, 2011, an activity affecting quality was prescribed by documented instructions of a type not appropriate to the circumstances. Specifically, on that date the licensee implemented instructions that were not appropriate to ensure the proper installation of the gearbox coupling setscrews for Zurn Strainer A. The licensee corrected the condition prior to restoring the strainer to service. Because the finding is of very low safety significance (Green) and has been entered into the licensee's corrective action program as Condition Report CR-CNS-2012-04170, this violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2012004-07, "Failure to Provide Procedure Appropriate to the Circumstance of Assembling the Zurn Strainer."

(2) Failure to Consider All Relevant Information and Appropriately Assess Operability When A Degraded Nonconforming Condition Was Identified

Introduction. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to follow station procedure 0.5OPS, "Operations Review of Condition Reports/Operability Determination," and properly document the basis for operability when a degraded or nonconforming condition is identified.

Description. The inspectors selected Condition Report CR-CNS-2012-04903 for review based on its risk significance and previously identified issues with operators not using all available information when evaluating operability for service water booster pump oil leaks. This condition report had documented an oil leak on the service water booster pump motor outboard bearing, and included an operability evaluation which the licensee had completed on July 25, 2012.

During review of that operability determination, the inspectors noted that the bearings' oil level had decreased from the top of the allowable band to the middle of the band, but had still been above the minimum startup mark (bottom of the allowable band) on the level indicator. Operations' initial evaluation of this condition was documented as an administrative issue with no required operability evaluation. This was based on the oil level being above the minimum startup level and no obvious signs of leakage (oil puddles).

The inspectors' review determined that this evaluation was inadequate to establish operability as the operators had only evaluated the as-found oil level as sufficient to support operability because they did not see any obvious signs of leakage (oil puddles). However, their evaluation had failed to quantify the oil leak rate and determine if this oil leak would allow the motor to run for its required mission time. The licensee initiated Condition Report CR-CNS-2012-04925 to capture this concern in the station's corrective action program. Subsequent review determined that the affected service water booster pump had been inoperable because the oil leak rate would not have allowed the pump to meet its mission time. The licensee subsequently determined the pump had been inoperable for less than its technical specification allowed outage time.

As documented in Condition Report CR-CNS-2012-04925, the licensee performed an apparent cause evaluation associated with the the identified oil leak which determined that this oil leak had been present since the pump had been installed in July 2007. Therefore, the inspectors concluded that the apparent cause was that the station was not adequately monitoring the oil leak.

Analysis. The licensee's failure to follow the requirements of Station Procedure 0.5OPS and consider all relevant information and appropriately assess operability when a degraded nonconforming condition was identified was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone, in that the inadequate operability evaluation failed to recognize the unavailability of the service water booster pump, as such this affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power," the finding was determined to be of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for

longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than its technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The inspectors determined that the apparent cause of this finding was that operators had assumed that the oil level was adequate because it could be refilled without quantifying a leak rate. Therefore, the finding has a cross-cutting 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 it is unsafe in order to disapprove the action [H.1(b)].

Enforcement. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, "that activities affecting quality shall be prescribed by documented instructions or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions or drawings." Contrary to the above, on July 25, 2012, an activity affecting quality was not accomplished as prescribed by documented instructions of a type appropriate to the circumstances. Specifically, on that date and while completing the operability determination documented in CR-CNS-2012-04903, the licensee failed to follow the requirements of Station Procedure 0.5OPS and consider all relevant information and appropriately assess operability when a degraded nonconforming condition was identified with the B service water booster pump, which resulted in their failure to recognize it as inoperable. The licensee declared the pump inoperable, and corrected the issue prior to returning it to service. Because the finding is of very low safety significance (Green) and has been entered into the licensee's corrective action program as Condition Reports CR-CNS-2012-04903 and CR-CNS-2012-04925, this violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2012004-08, "Failure to Consider All Relevant Information and Appropriately Assess Operability When A Degraded Nonconforming Condition Was Identified."

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- August 9, 2012, RCIC-MO-131, RCIC-V-92, and reactor core isolation cooling trip and throttle valve
- August 17, 2012, Reactor equipment cooling pump B thermal overload relay replacement
- August 31, 2012, C charger modification

- September 13, 2012, Service water booster pump A replacement and maintenance window
- September 13, 2012, Residual heat removal pump A leak repair

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 post-maintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

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

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria

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

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

- July 13, 2012, Diesel generator 1 operability test with isolation switches in isolate and operability run
- August 9, 2012, Service water surveillance operation
- August 9, 2012, Service water valve operability test
- August 24, 2012, Unidentified and identified leak rate checks

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

These activities constitute completion of four surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation (71114.01)

a. Inspection Scope

The licensee submitted the preliminary exercise scenario to the NRC on May 30, 2012, in accordance with the requirements of Appendix E to Part 50, Section IV.F.2(a). The inspectors performed an in-office review of the preliminary scenario to determine whether the exercise tested major elements of the emergency plan, provided opportunities to demonstrate key emergency response organization skills, challenged the emergency response organization, and avoided participant preconditioning.

The scenario was designed to escalate from the Alert through the General Emergency classifications to demonstrate the licensee's capability to implement their emergency plan. The exercise scenario simulated:

- A break in service water system piping
- A small-break loss of coolant accident in containment
- A failure of the reactor protection system on an automatic reactor trip condition
- The failure of high pressure core injection leading to the uncovering of reactor fuel
- A steam line break outside primary containment with a release path to the environment
- The buildup of hydrogen in containment

The inspectors evaluated exercise performance by focusing on the risk-significant activities of event classification, offsite notification, recognition of offsite dose consequences, and development of protective action recommendations in the Control Room Simulator and the following dedicated emergency response facilities:

- Technical Support Center
- Operations Support Center
- Emergency Operations Facility
- Joint Information Center

The inspectors also assessed recognition of, and response to, abnormal and emergency plant conditions, the transfer of decision making authority, and emergency function responsibilities between facilities, onsite and offsite communications, protection of emergency workers, emergency repair evaluation and capability, and the overall implementation of the emergency plan to protect public health and safety and the environment. The inspectors reviewed the current revision of the facility emergency plan, emergency plan implementing procedures associated with operation of the

licensee's emergency response facilities, procedures for the performance of associated emergency functions, and other documents as listed in the attachment to this report.

The inspectors compared the observed exercise performance with the requirements in the facility emergency plan, 10 CFR 50.47(b), 10 CFR Part 50, Appendix E, and with the guidance in the emergency plan implementing procedures and other federal guidance.

The inspectors attended the post-exercise critiques in each emergency response facility to evaluate the initial licensee self-assessment of exercise performance. The inspectors also attended a subsequent formal presentation of critique items to plant management. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.01-05.

b. Findings

Introduction. A Green non-cited violation was identified for the failure to correct deficiencies that occurred during the biennial emergency preparedness exercise conducted July 31, 2012, as required by 10 CFR 50.47(b)(14).

Description. The NRC identified two examples of weaknesses [deficiencies] during the biennial emergency preparedness exercise conducted July 31, 2012, that were not corrected. Specifically, licensee staff did not identify performance problems in onsite radiation protection as weaknesses requiring correction.

The inspectors observed the July 31, 2012, exercise and identified problems in implementing adequate radiation protection practices for the emergency response organization; the issues involved exposure to simulated radioactive material and revealed potential training and proficiency gaps. Specifically, the inspectors identified inadequate contamination controls at the entry to onsite emergency response facilities and identified that some radiation protection measures were not taken for staff performing in-plant mitigation and repair. The inadequate performance in contamination control included not providing containers for contaminated exterior clothing, dropping contaminated clothing in an uncontaminated area, the transfer of potential contamination into areas not contaminated, and performing inadequate contamination surveys. Plant staff were not adequately protected against radiation exposure because their radiation doses were not recorded following in-plant work, air sampling was not performed to determine airborne radioactive material concentrations, evaluations were not performed to determine the need for respiratory protection from airborne radioactive materials, and no post-exposure actions were taken to evaluate worker dose from inhaled radioactive material.

Manual Chapter 0609, Appendix B, Section 2.0, defines a weakness [deficiency] as performance which, had it occurred during an event, would have precluded effective implementation of the emergency plan. The inspectors determined that inadequate contamination controls and a lack of some radiation protection measures for plant staff

were weaknesses [deficiencies] because the observed performance would have precluded effective implementation of emergency worker protection requirements of the licensee's emergency plan. This finding was entered into the licensee's corrective action program as Condition Report CR-CNS-2012-05199.

Analysis. The inspectors determined the failure to correct performance weaknesses [deficiencies] during an emergency preparedness exercise is a performance deficiency. The finding had a credible impact on the Emergency Preparedness Cornerstone objective because the failure to correct emergency response organization performance weaknesses may degrade the licensee's ability to protect the health and safety of the public in the event of a radiological emergency. This finding is more than minor because it affects the emergency response organization readiness cornerstone attribute. The finding was associated with a violation of NRC requirements. This finding was evaluated using the Emergency Preparedness Significance Determination Process and was determined to be of very low safety significance (Green) because it was a failure to comply with NRC requirements and was not a loss of the planning standard function. The planning standard function was not lost because the weaknesses that were not corrected were not associated with risk-significant planning standards. The weaknesses were associated with planning standard 50.47(b)(11), which states, in part, that means are established for controlling the radiological exposures of emergency workers. The finding was assigned a low threshold aspect in the corrective action program cross-cutting component because the licensee failed to completely and accurately identify weak performance during an exercise providing opportunities to demonstrate key emergency response organization skills [P1.(a)].

Enforcement. 10 CFR 50, Appendix E, Section IV.F(2)(g) requires, in part, that weaknesses and deficiencies identified in the critique of exercises must be corrected; 10 CFR 50.47(b)(14) states, in part, that deficiencies identified as a result of exercises are (will be) corrected. Contrary to the above, on July 31, 2012, the licensee failed to correct deficiencies identified as a result of exercises. Specifically, during a biennial exercise, the licensee failed to identify deficient performance by the emergency response organization in radiation protection as weaknesses [deficiencies] requiring correction. Because this failure is of very low safety significance and has been entered into the licensee's corrective action system, this violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2012004-09, "Failure to Correct Exercise Performance Deficiencies."

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

a. Inspection Scope

The NSIR Headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures (EPIPs) and the Emergency Plan located under ADAMS Accession Number ML12199A019 as listed in the Attachment.

The licensee determined that in accordance with 10 CFR 50.54(q), the changes made in the revisions resulted in no reduction in the effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to

10 CFR Part 50. The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection. The specific documents reviewed during this inspection are listed in the Attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.04-05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on August 29, 2012, 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

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

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 2012 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

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

b. Findings

No findings were identified.

.2 Unplanned Scrams with Complications (IE04)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams with complications performance indicator for the period from the third quarter 2011 through the second quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC Integrated Inspection Reports for the period of July 2011 through June 2012, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings were identified.

.3 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill and Exercise Performance, performance indicator for the period of October 2011 through June 2012. The performance indicator definitions and guidance in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, were used to determine the accuracy of the reported performance indicator data. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator, assessments of performance indicator opportunities during predesignated control room simulator training sessions, performance during the 2012 biennial exercise, and performance during other drills. The specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings were identified.

.4 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill and Exercise Performance, performance indicator for the period October 2011 through June 2012. The performance indicator definitions and guidance in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, were used to determine the accuracy of the reported performance indicator data. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator, rosters of personnel assigned to key emergency response organization positions, and exercise participation records. The specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings were identified.

.5 Alert and Notification System (EP03)

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill and Exercise Performance, performance indicator for the period October 2011 through June 2012. The performance indicator definitions and guidance in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, were used to determine the accuracy of the reported performance indicator data. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and the results of periodic alert notification system operability tests. The specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings were identified.

40A2 Problem Identification and Resolution (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

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

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an

integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

The 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 documented a self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the failure of the licensee to ensure compliance with the requirements of the station's Surveillance Procedure 6.1REC.101, "REC Surveillance Operation (IST) (DIV 1)," Revision 12.

Description. On August 09, 2012, the licensee was performing Surveillance Procedure 6.1REC.101, "REC Surveillance Operation (IST) (DIV 1)," Revision 12. The surveillance procedure contained a caution which required header pressure to be maintained above 65 psig during the testing. However, operations personnel allowed system pressure to go below the required 65 psig and reach a system pressure below 62 psig. This resulted in the reactor equipment cooling system low header pressure alarm and the automatic isolation of the noncritical system header. Operators entered Emergency Procedure 5.2REC, "Loss of REC," Revision 13, and restored the system per the emergency procedure and alarm card. The licensee initiated Condition Report CR-CNS-2012-05396 to capture this concern in the corrective action program and conducted an evaluation.

The licensee determined during their evaluation that operations personnel allowed system pressure to go below 65 psig contrary to the surveillance procedure because the personnel performing the surveillance were confident that maintaining system pressure above 60 psig would prevent the system header low pressure alarm and isolation of the noncritical system header.

Analysis. The failure to follow the station's Surveillance Procedure 6.1REC.101 on August 9, 2012 was a performance deficiency. The performance deficiency was more-than-minor and is therefore a finding because it is associated with the human

performance attribute of the Mitigating Systems Cornerstone and affected the associated 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 failure to follow station procedures could become a more significant concern, in that the failure to follow site procedural requirements could render other safety-related equipment inoperable without the knowledge and approval of site management or control room personnel. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power." The inspectors determined that the finding was of very low safety significance (Green) because the finding did not involve both the complete or partial loss of a support system that contributes to the likelihood of, or causes, an initiating event and affected mitigation equipment. The inspectors determined that the apparent cause of this finding was that operators had failed to validate their assumptions of the noncritical system header isolation and system header low pressure alarm setpoints for reactor equipment cooling system and, as a result, had allowed system pressure to go below the procedurally required limit, which had resulted in the reactor equipment cooling system low header pressure alarm and an automatic isolation signal for noncritical header loop. Therefore, the finding has a cross-cutting aspect in the area of human performance, associated with the decision making component, because the licensee had failed to use conservative assumptions [H.1(b)].

Enforcement. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that activities affecting quality shall be prescribed by documented instructions or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions or drawings. Contrary to the above, on August 09, 2012, an activity affecting quality was not accomplished as prescribed by documented instructions of a type appropriate to the circumstances. Specifically, the licensee failed to ensure that reactor equipment cooling system division one was maintained above 65 psig as required by the Surveillance Procedure 6.1REC.101, which resulted in the division one reactor equipment cooling system header low pressure alarm, and isolation of the noncritical system header. The licensee entered the issue into the corrective action program as Condition Report CR-CNS-2012-05396. Because the violation was of very low safety significance (Green) and it was entered into the licensee's corrective action program, the violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2012004-10, "Failure to Follow Surveillance Procedures for Reactor Equipment Cooling."

40A3 Followup of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) LER 05000298/2011004-00, "Technical Specification Prohibited Condition for Non-Compliance with LCO 3.0.4"

a. Inspection Scope

On June 13, 2011, while reviewing a post Refueling Outage 26 report, the licensee discovered that Technical Specification Limiting Condition for Operation 3.0.4.b was not complied with during startup from Refueling Outage 26.

Technical Specification Limiting Condition for Operation 3.0.4.b requires, in part, "When a limiting condition of operation is not met, entry into a MODE or other specified condition in the applicability shall only be made after performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions." Cooper Nuclear Station changed from Mode 2 to Mode 1 while in an limiting condition of operation for the Low Pressure Coolant Isolation subsystem "B" being inoperable without performing a risk assessment prior to changing modes.

The root cause of this event was determined to be a deficient procedure that does not prompt operations to review all methods of Limiting Conditions for Operation tracking to ensure that the low pressure coolant injection system Limiting Conditions for Operations related to Suppression Pool Cooling activities are closed prior to the change from Mode 2 to Mode 1. To prevent recurrence of this event, the procedure will be revised to prompt the reviews. As an interim action, a standing order was created that directs the reviews.

b. Findings

No findings were identified.

.2 (Closed) LER 05000298/2011005-00, "Technical Specification Prohibited Condition Due To Valve Test Failure"

a. Inspection Scope

On June 22, 2011, the licensee identified that one of eight Target Rock safety relief valve pilot valve assemblies, removed during Cooper Nuclear Station Refueling Outage 26, failed to lift within Technical Specification lift setpoint requirements. The licensee determined that the mechanistic cause is the same as reported in previous licensee event reports, pilot disc-to-seat corrosion bonding. The licensee submitted a license amendment request on January 5, 2011, to the Nuclear Regulatory Commission to revise the number of safety relief valves required to be operable. This license amendment request is pending NRC approval. As such, corrective actions to implement a license amendment, related to Technical Specification 3.4.3 and the number of safety relief valves required to be operable, were not completed prior to the safety relief valve testing in June 2011.

b. Findings

No findings were identified.

.3 (Closed) LER 05000298/2011007-00, "Primary Containment Lost Safety Function due to Open Drywell Vacuum Breaker"

a. Inspection Scope

On November 22, 2011, the top corner of a rolling podium that was being used during a surveillance at Cooper Nuclear Station contacted the Master Control Switch for the Torus to Drywell Vacuum Breakers. The contact was sufficient to cause the switch to move from the normally closed position to the open position, causing one Torus to Drywell Vacuum Breaker to open. The Control Room operator performing the surveillance, along with a peer, recognized what had occurred and repositioned the Master Control Switch to the closed position, which returned the affected Torus to Drywell Vacuum Breaker to the normally closed position.

The Torus to Drywell Vacuum Breaker and Primary Containment were declared inoperable, and the appropriate Technical Specification for Limiting Condition of Operation were entered. After the Torus to Drywell Vacuum Breaker closed, the vacuum breaker and Primary Containment were declared operable and the Limiting Condition of Operation were exited.

Cooper Nuclear Station identified the root cause to be the design of the rolling podium was deficient with respect to its use in the Control Room. The rolling podium has been removed from the Control Room. To prevent recurrence of this event, the rolling podium will be replaced with one designed such that it cannot contact the switches and instrumentation.

b. Findings

No findings were identified.

40A6 Meetings, Including Exit

Exit Meeting Summary

On August 3, 2012, the inspectors presented the results of the onsite inspection of the licensee's biennial emergency preparedness exercise to Mr. A. Zaremba, Director, Nuclear Safety Assurance, and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On October 4, 2012, the inspectors presented the inspection results to with Mr. D. Buman, Director of Engineering, 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 violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy for being dispositioned as non-cited violations.

.1 Inadequate Risk Assessment for RHR B LCO Maintenance Window

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, the licensee identified on July 20, 2012, the failure to adequately assess and manage the increase in risk associated with the residual heat removal train B maintenance window. The performance deficiency was determined to be more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone and directly affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 1, "Assessment of Risk Deficit," the incremental core damage probability was determined to be less than 1×10^{-6} therefore the finding was determined to have very low safety significance (Green).

.2 Service Water Pump Temperature Switch HT-TS-100

10 CFR 50.65(b)(2) requires, in part, that the scope of the monitoring program specified in paragraph (a)(1) shall include non-safety related structures, systems, and components that are relied upon to mitigate accidents and transients. Contrary to the above, from initial maintenance rule scoping in 1996 to August 1, 2012, the licensee identified that the temperature switch HT-TS-100 was not included in the scope of the maintenance rule monitoring program specified in 10 CFR 65(a)(1). Temperature switch HT-TS-100, high service water pump temperature alarm, is relied upon in the station design calculation for mitigating the effects of the failure of the non-safety related heating and ventilation air-conditioning units to maintain the service water pumps operable. The performance deficiency was determined to be more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone and directly affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power." The inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; (4) did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating event.

.3 Recirculation Pump Motor Generator A

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," requires, in part, that, "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformance's are promptly identified and corrected." Contrary to the above, from October 27, 2004 to June 11, 2012, the licensee failed to assure adequate corrective actions were implemented to correct an identified nonconformance associated with the oiler position for solenoid operated valves. This resulted in HV-AO-263AV, reactor motor generator set 1A ventilation supply outboard isolation valve operator, not meeting its technical specification required closing stroke time. The performance deficiency was determined to be more than minor because it was associated with the barrier performance attribute of the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process For Findings At-Power." The inspectors determined that the finding is of very low safety significance (Green) because the finding only represented a degradation of the radiological barrier provided for by the standby gas treatment system.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Anderson, Director, Projects
R. Beilke, Manager, Chemistry
T. Chard, Manager, Quality Assurance
L. Dewhirst, Manager, Corrective Actions and Assessment
M. Ferguson, Manager, Emergency Preparedness (in training)
J. Lewis, Senior Project Manager, Entergy Emergency Preparedness Projects
G. Mace, Manager, Nuclear Assets
D. Madsen, Licensing Engineer
D. Montgomery, Manager, Emergency Preparedness
D. Van Der Kamp, Manager, Licensing
A. Zaremba, Director, Nuclear Safety Assurance

NRC Personnel

P. Elkmann, Emergency Planning Inspector
A. Fairbanks, Reactor Inspector
G. Guerra, Emergency Planning Inspector
C. Henderson, Resident Inspector
J. Josey, Senior Resident Inspector
J. Laughlin, Emergency Preparedness Inspector
J. O'Donnell, Reactor Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000298/2012004-02	VIO	Failure to Demonstrate that Emergency Diesel Generators can Perform Multiple Air Starts from a Single Air Receiver (Section 1R11)
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Opened and Closed

05000298/2012004-01	NCV	Failure to Maintain Design Control of the Emergency Diesel Generators Voltage Regulator Cabinets (Section 1R04)
05000298/2012004-03	NCV	Failure to Maintain Design Control of the Reactor Equipment Cooling System (Section 1R13)
05000298/2012004-04	NCV	Failure to Control Vendor Changes to a Service Water Booster Pump (Section 1R13)

Opened and Closed

05000298/2012004-05	NCV	Failure to Adequately Assess and Manage Risk for Maintenance Activities That Affected the A Zurn Strainer (Section 1R13)
05000298/2012004-06	SL-IV	Failure to Obtain Prior NRC Approval for a Change Regarding the Supplemental Diesel Generator (Section 1R13)
05000298/2012004-07	NCV	Failure to Provide Procedure Appropriate to the Circumstance of Assembling the Zurn Strainer (Section 1R15)
05000298/2012004-08	NCV	Failure to Consider All Relevant Information and Appropriately Assess Operability When A Degraded Nonconforming Condition Was Identified (Section 1R15)
05000298/2012004-09	NCV	Failure to Correct Exercise Performance Deficiencies (Section 1EP1)
05000298/2012004-10	NCV	Failure to Follow Surveillance Procedures for Reactor Equipment Cooling (Section 4OA2)

Closed

05000298/2011004-00	LER	Technical Specification Prohibited Condition for Non-Compliance with LCO 3.0.4
05000298/2011005-00	LER	Technical Specification Prohibited Condition Due To Valve Test Failure
05000298/2011007-00	LER	Primary Containment Lost Safety Function due to Open Drywell Vacuum Breaker

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>
2006, Sheets 1-5	B&R,
2036, Sheet 1-2	B&R,
2045, Sheet 1	B&R, "Core Spray System"
2049, Sheet 3	B&R, "Condensate Supply System"
2077	B&R,

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
81-43	Minor Design Change, "Modification of SW-MO-89A&B"	April 07, 1981
87-02	Generic Letter	
87-03	Generic Letter	
00-095E	NEDC	
91-221	NEDC	
91-232	NEDC	
94-271	NEDC	
96-029	NEDC	
1999-0144	Change Evaluation Document, "Replacement of Valves SW-MO-89A and B"	
A-46	USI Seismic Evaluation Report (SQUG, GIP-2, GIP-3)	
DCD-3	Design Criteria Document, "Service Water and Residual Heat Removal Service Water (RHR SW) Booster System"	
Volume II Chapter IV	USAR, "Reactor Coolant System"	
Volume III Chapter VII	USAR, "Control and Instrumentation"	
Volume IV Chapter XI	USAR, "Power Conversion Systems"	
Volume IV Section X.8	USAR, "Service Water and RHR Service Water Booster System"	

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
2.2.69.1	Operations Procedure, "RHR LPCI Mode"	25
2.2.9	Operations Procedure, "Core Spray System"	74
6.SW.102	Surveillance Procedure, "Service Water System Post-LOCA Flow Verification"	37
6.1SW.101	Surveillance Procedure, "Service Water Surveillance Operation (DIV 1) (IST)"	38

CONDITION REPORTS

CR-CNS-2012-03135 CR-CNS-2012-03429 CR-CNS-2012-04179 CR-CNS-2012-04584
CR-CNS-2012-04651 CR-CNS-2012-05618

Section 1R05: Fire Protection

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	CNS Fire Hazard Analysis, Fire Area I, Fire Zone 1A	February 28, 2003
	CNS Fire Hazard Analysis, Fire Area VI, Fire Zone 8G	February 28, 2003
	CNS Fire Hazard Analysis, Fire Area VII, Fire Zone 8A	February 28, 2003
	CNS Fire Hazard Analysis, Fire Area XIII, Fire Zone 23B	February 28, 2003
T3.11.1	Technical Requirements Manual, "Fire Detection Instrumentation"	

Section 1R11: Licensed Operator Requalification Program

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
Volume IV Section 5.3.3	USAR, "Diesel Generator Reliability Assurance"	8/23/2011
3.8.3 E.1	Technical Specification Bases, "Diesel Fuel Oil, Lube Oil, and Starting Air"	8/23/2011

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
6.HPCI.103	Surveillance Procedure, "HPCI IST and 92 Day Test Mode Surveillance Operation"	43

CONDITION REPORTS

CR-CNS-2012-03039 CR-CNS-2012-05294 CR-CNS-2012-05837

Section 1R12: Maintenance Effectiveness

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>
	Service Water Performance Basis Documents
Volume IV Section X.8	USAR, "Service Water and RHR Service Water Booster System"

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
2.3_B-3	Operations Procedure, "Panel B – Annunciator B-3"	25
5.1Break	Emergency Procedure, "Pipe Break Outside Secondary Containment"	11
5.2SW	Emergency Procedure, "Service Water Casualties"	22
7.2.30	Maintenance Procedure, "Service Water Strainer Maintenance"	18

CONDITION REPORTS

CR-CNS-2010-02213 CR-CNS-2012-04170 CR-CNS-2012-04224 CR-CNS-2012-04491
CR-CNS-2012-04710

WORK ORDERS

4759702 4898664

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
6.1DG.101	Surveillance Procedure, "Diesel Generator 31 Day Operability Test (IST)(DIV1)"	70

CONDITION REPORTS

CR-CNS-2012-04182 CR-CNS-2012-04525 CR-CNS-2012-05006 CR-CNS-2012-05224
CR-CNS-2012-05225 CR-CNS-2012-05233 CR-CNS-2012-05246 CR-CNS-2012-05248

CR-CNS-2012-05389 CR-CNS-2012-05401

WORK ORDERS

4850231	4886901	4892026	4892642
4897563	4901194	4903454	4905086
4905052	4905102		

Section 1R15: Operability Evaluations

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>
91-103	NEDC
91-221	NEDC

CONDITION REPORTS

CR-CNS-2012-03977	CR-CNS-2012-04466	CR-CNS-2012-04503	CR-CNS-2012-04550
CR-CNS-2012-04552	CR-CNS-2012-04563	CR-CNS-2012-04710	CR-CNS-2012-04803
CR-CNS-2012-04808	CR-CNS-2012-04868	CR-CNS-2012-04903	CR-CNS-2012-04925
CR-CNS-2012-05368	CR-CNS-2005-09369		

WORK ORDERS

4898664

Section 1R19: Post-Maintenance Testing

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>
10-068	Engineering Evaluation, "SWBP High TDH Evaluation"

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
6.1SWBP.101	Surveillance Procedure, "RHR Service Water Booster Pump Flow Test and Valve Operability Test (DIV 1)"	20

CONDITION REPORTS

CR-CNS-2012-04323 CR-CNS-2012-04337 CR-CNS-2012-04594 CR-CNS-2012-04600
CR-CNS-2012-04611 CR-CNS-2012-04612 CR-CNS-2012-04628 CR-CNS-2012-04635
CR-CNS-2012-04645 CR-CNS-2012-05389 CR-CNS-2012-05401

WORK ORDERS

4895013 4903454 4905052 4905086
4905102

Section 1R22: Surveillance Testing

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
6.LOG.101	Surveillance Procedure, "Daily Surveillance Log – Modes 1,2,3"	110
6.1DG.102	Surveillance Procedure, "Diesel Generator Demonstration of Operability Test (DIV 1)"	49
6.1DG.104	Surveillance Procedure, "Diesel Operability Test with Isolation Switches in Isolate (DIV 1)"	15

WORK ORDERS

4849321 4849898 4849919

Section 1EP1: Exercise Evaluation

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>DATE</u>
Evaluation Report for the July 9 Team 4 Drill Critique	July 30, 2008
2010 NRC and FEMA Evaluated Biennial Exercise Critique	August 23, 2010
Evaluation Report for the September 8, 2010 Off Hours Exercise for Team 2a	September 29, 2010
Evaluation Report for November 16, 2010 Team 3b Drill	January 9, 2011
Evaluation Report for February 14, 2011 Team 1a Mini-Drill	

Section 1EP1: Exercise Evaluation

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>DATE</u>
Evaluation Report for March 1, 2011 Team 3a Mini-Drill	
Evaluation Report for June 14, 2011 Team 3b Emergency Preparedness Drill	August 28, 2011
2011 NOUE due to Flooding Critique	
Evaluation Report for August 2, 2011 Team 2a Mini-Drill Critique	
Evaluation Report for August 23, 2011 Team 2b Mini-Drill Critique	
Evaluation Report for September 27, 2011 Dress Rehearsal	April 1, 2012
Evaluation Report for November 8, 2011 Annual Exercise	
Evaluation Report for February 21, 2012 Teams 1a & 2b Turnover Drill	
Evaluation Report for March 22, 2012 Unusual Event Critique	April 15, 2012
Evaluation Report for 2012 IPX Drill Dress Rehearsal Critique	

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EPIP 5.7.1	Emergency Procedure, "Emergency Classification"	46
EPIP 5.7.2	Emergency Procedure, "Emergency Director EPIP"	30
EPIP 5.7.6	Emergency Procedure, "Notification"	54
EPIP 5.7.7	Emergency Procedure, "Activation of the TSC"	32
EPIP 5.7.8	Emergency Procedure, "Activation of the OSC"	24
EPIP 5.7.9	Emergency Procedure, "Activation of the EOF"	30
EPIP 5.7.10	Emergency Procedure, "Personnel Assembly and Accountability"	36
EPIP 5.7.12	Emergency Procedure, "Emergency Radiation Exposure Control"	15
EPIP 5.7.14	Emergency Procedure, "Stable Iodine Thyroid Blocking"	18
EPIP 5.7.15	Emergency Procedure, "OSC Team Dispatch"	17
EPIP 5.7.17	Emergency Procedure, "Dose Assessment"	37
EPIP 5.7.20	Emergency Procedure, "Protective Action Recommendations"	23

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EPIP 5.7.21	Emergency Procedure, "Maintaining Emergency Preparedness – Exercises, Drills, Tests, and Evaluations"	45

CONDITION REPORTS

CR-CNS-2011-06803	CR-CNS-2011-09155	CR-CNS-2011-09533	CR-CNS-2011-10340
CR-CNS-2011-10563	CR-CNS-2011-12463	CR-CNS-2012-01245	CR-CNS-2012-01278
CR-CNS-2012-01289	CR-CNS-2012-02413	CR-CNS-2012-04167	CR-CNS-2012-04437
CR-CNS-2012-05151	CR-CNS-2012-05155	CR-CNS-2012-05156	CR-CNS-2012-05158
CR-CNS-2012-05158	CR-CNS-2012-05163	CR-CNS-2012-05166	CR-CNS-2012-05170
CR-CNS-2012-05171	CR-CNS-2012-05199	CR-CNS-2012-05309	CR-CNS-2012-05313
CR-CNS-2012-05315	CR-CNS-2012-05319		

Section 1EP4: Emergency Action Level and Emergency Plan Changes

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>REVISION</u>
Emergency Plan	60

Section 4OA1: Performance Indicator Verification

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0-EN-LI-114	Emergency Procedure, "Performance Indicator Process"	5
0-PI-01	Performance Indicator Program	33
EPIP 5.7.1	Emergency Procedure, "Emergency Classification"	46
EPIP 5.7.27	Emergency Procedure, "Alert and Notification System"	17
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MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>REVISION</u>
Cooper Station Emergency Plan	60

Section 40A2: Identification and Resolution of Problems

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
5.2REC	Emergency Procedure, "Loss of REC"	13
6.1REC.101	Surveillance Procedure, "REC Surveillance Operation (IST)(DIV 1)"	12

CONDITION REPORTS

CR-CNS-2006-10017 CR-CNS-2007-02818 CR-CNS-2009-08110 CR-CNS-2009-10389
CR-CNS-2011-00139 CR-CNS-2011-00536 CR-CNS-2011-01619 CR-CNS-2012-05396

Section 40A5: Other Activities

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
Volume IV Chapter VIII	USAR, "Diesel Generator Reliability Assurance"	August 23, 2011
3.8.3 E.1	Technical Specification Bases, "Diesel Fuel Oil, Lube Oil, and Starting Air"	August 23, 2011

CONDITION REPORTS

CR-CNS-2012-03039 CR-CNS-2012-05294 CR-CNS-2012-05837