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

February 11, 2011

EA-2010-151

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

Subject: COOPER NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT NUMBER 05000298/2010005 AND NOTICE OF VIOLATION

Dear Mr. O'Grady:

On December 31, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Cooper Nuclear Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on January 13, 2011, with D. Willis, General Manager of Plant Operations, 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 Website 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 the licensee failed to restore compliance with NRC requirements within a reasonable time after July 6, 2009. 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.

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken to prevent recurrence and the date when full compliance was achieved is documented in this inspection report**.** Therefore, you are not required to respond to this letter unless the description herein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

Based on the results of this inspection, the NRC has also identified three additional issues that were evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has determined that violations are associated with two of these issues. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as noncited violations, consistent with Section 2.3.2 of the NRC Enforcement Policy.

If you contest the violation or the significance of the noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd, Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the facility. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV, and the NRC Resident Inspector at the facility.

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

Sincerely,

/RA/

Vince Gaddy, Chief
Project Branch C
Division of Reactor Projects

Docket: 50-298
License: DRP-46

Enclosure 1 - Notice of Violation
Enclosure 2 - NRC Inspection Report 05000298/2010005
Attachment - Supplemental Information

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ADAMS: ☑ No □ Yes	☑ SUNSI Review Complete	Reviewer Initials: VGG
	☑ Publicly Available	☑ Non-Sensitive
	□ Non-publicly Available	□ Sensitive

SRI:DRP/	RI:DRP/	C:DRS/EB1	C:DRS/EB2	C:DRS/OB	
JJosey	MLChambers	TRFarnholtz	NFO'Keefe	MSHaire	
/RA/	**/RA/E-VGG**	**/RA/**	**/RA/JMateychick**	**/RA/**	
2/8/11	2/1/11	1/27/11	1/26/11	1/28/11	
C:DRS/PSB1	C:DRS/PSB2	C:DRS/TSB	SEO:ORA/OE	C:DRP/	
MPShannon	GEWerner	MCHay	RKellar	VGGaddy	
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1/27/11	1/24/11	1/27/11	1/31/11	2/10/11	

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NOTICE OF VIOLATION

Nebraska Public Power District
Cooper Nuclear Station

Docket No. 50-298
License No. DPR-46
EA-2010-151

During an NRC inspection conducted July 19 through 22, 2010, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

> Title 10 CFR 50.47(b)(10) requires, in part, that guidelines for the licensee's choice of protective actions during an emergency, consistent with federal guidance, are developed and in place. Federal guidance for the choice of protective actions during an emergency is described in EPA-400-R-92-001.
>
> Contrary to the above, between July 6, 2009, and July 22, 2010, the licensee did not develop and have in place guidelines for the choice of protective actions during an emergency that were consistent with federal guidance. The licensee's guidelines for extending initial protective action recommendations under conditions of changing wind direction vectors were not consistent with EPA-400-R-92-001 guidance. Specifically, the licensee's practice of automatically extending existing offsite protective action recommendations without evaluating dose assessment information was not consistent with federal guidance that evacuation is seldom justified for radiation doses below the protective action guides.

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

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken to correct the violation and prevent recurrence, and the date when full compliance was achieved is adequately addressed on the docket in Inspection Report 05000298/2010005. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation," include the EA number(EA-2010-151), and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region IV, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice, within 30 days of the date of the letter transmitting this Notice.

If you choose to respond, 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's Website at or www.nrc.gov/reading-rm/adams.html. Therefore, to the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

Dated this 11th day of February, 2011

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	50-298
License:	DRP-46
Report:	05000298/2010005
Licensee:	Nebraska Public Power District
Facility:	Cooper Nuclear Station
Location:	72676 648A Ave Brownville, NE 68321
Dates:	September 24 through December 31, 2010
Inspectors:	M. Chambers, Resident Inspector P. Elkmann, Senior Emergency Preparedness Inspector G. Guerra, CHP, Emergency Preparedness Inspector J. Josey, Senior Resident Inspector E. Ruesch, Reactor Inspector
Approved By:	Vince Gaddy, Chief, Project Branch C Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000298/2010005; 09/24/2010 – 12/31/2010; Cooper Nuclear Station, Integrated Resident and Regional Report; Fire Protection, Maintenance Risk Assessments and Emergent Work Control, and Exercise Evaluation.

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

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors identified two examples of a finding for the failure of contract personnel to properly implement the requirements of the station procedure for control of hot work activities, where one instance resulted in a fire. Specifically, between November 9 and December 4, 2010, two examples were identified where contractor personnel failed to properly implement the requirements of station Procedure 0.39, "Hot Work," Revision 42, Step 5.17.3 which required that all combustible material within 35 feet of the hot work area was removed, protected or additional fire watches stationed. Consequently, on December 4, 2010, during torch cutting activities on the central alarm station upgrade project, combustible material that had been introduced into the area was ignited by the hot work. These issues were entered into the corrective action program as Condition Reports CR-CNS-2010-8364, and CR-CNS-2010-9015.

  The failure of contract personnel to follow the requirements of the stations control of hot work procedure was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the protection against external factors attribute and directly affected the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, and is therefore a finding. Additionally, if left uncorrected, the practice of conducting hot work in a manner that results in unintended combustion of uncontrolled combustible material within the procedurally specified exclusion area would have the potential to lead to a more significant safety concern, in that, it could result in a fire in or near risk important equipment. Using NRC Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," Phase 1 worksheet, the finding was determined to have

very low safety significance because the condition represented a low degradation of a fire prevention and administrative control. This finding had a crosscutting aspect in the area of human performance associated with decision making, in that, the licensee failed to use conservative assumptions in their decision making and adopt a requirement to demonstrate that the proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action when allowing combustible material to be introduced into the procedurally specified exclusion area for hot work activities [H.1(b)] (Section 1R05).

- Green. The inspectors identified a noncited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the failure of operations and work control personnel to adequately assess and manage risk associated with a planned maintenance activity. Specifically, on December 7, 2010, operations and work control personnel failed to adequately assess maintenance activities involving the use of a crane in the plants electrical switchyard. Following the inspectors' identification of this issue, the licensee adequately assessed and managed the increase in risk for the maintenance activities. The issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2010-9146.

  The failure to perform an adequate risk assessment for planned maintenance activities was a performance deficiency. As such, the finding was more minor because it affected the protection against external factors attribute of the Initiating Events Cornerstone. Additionally, if left uncorrected the practice of not properly evaluating crane activities in the stations switchyard would have the potential to lead to a more significant safety concern, in that, it could result in a more than minimal increase in risk associated with other risk important equipment that would not be identified nor result in appropriate actions being taken to mitigate this increase in risk. The inspectors determined that the licensee does not maintain a probabilistic risk analysis model that incorporates the electrical switchyard, and as such, an incremental core damage probability cannot be estimated for the plant conditions that existed at the time of the performance deficiency. For this reason, the inspectors determined that Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 2, could not be used to determine the risk significance the finding. Using the qualitative review process of Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," the finding is determined to have very low safety significance because the finding did not result in any additional loss of defense in depth systems. This finding had a crosscutting aspect in the area of human performance associated with decision making, in that, the licensee failed to use conservative assumptions in their decision making and adopt a requirement to demonstrate that the proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action [H.1(b)] (Section 1R13(1)).

- Green. The inspectors documented a noncited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," associated with the licensee's failure to perform an adequate risk assessment for the planned maintenance activities. Specifically, on August 24, 2010, operations and work control personnel failed to adequately assess and manage the increase in risk associated with the breaker switching sequence to support maintenance on the station startup service transformer. Following identification of the issue, the licensee adequately assessed and managed the increased risk associated with the maintenance activity. The issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2010-6100.

  The failure to perform an adequate risk assessment for planned maintenance activities was a performance deficiency. The performance deficiency was greater than minor because it was associated with the protection against external factors attribute and directly affected the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, and is therefore a finding. Using NRC Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 1, the finding was determined to have very low safety significance because the incremental core damage probability deficit and the incremental large early release probability deficit, used to evaluate the magnitude of the error in the licensee's inadequate risk assessment, were less than 1E-6 and 1E-7, respectively. This finding had a crosscutting aspect in the area of problem identification and resolution associated with operating experience, in that, the licensee uses operating experience information, including vendor recommendations and internally generated lessons learned, to support plant safety. Specifically, the licensee implements and institutionalizes operating experience through changes to station processes and procedures [P.2(b)] (Section 1R13(2)).

Cornerstone: Emergency Preparedness

- Green. A cited violation of 10 CFR 50.47(b)(10) was identified for failure to develop and have in place guidelines for the choice of protective actions during an emergency that were consistent with federal guidance. Federal guidance for the choice of protective actions during an emergency is described in EPA-400-R-92-001 and states, in part, that evacuation is seldom justified when doses are less than protective action guides. The licensee's automatic process that extended existing protective action recommendations with changes in wind direction without considering radiation dose was identified as a performance deficiency.

  This finding is more than minor because it affects the Emergency Preparedness Cornerstone objective of implementing adequate measures to protect the health

and safety of the public during a radiological emergency, and is associated with the cornerstone attributes of emergency response organization performance and procedure quality. This finding was determined to be of very low safety significance because it was a failure to comply with NRC requirements, was associated with risk significant planning standard 10 CFR 50.47(b)(10), and was not a risk significant planning standard functional failure or a planning standard degraded function. This finding is a cited violation of 10 CFR 50.47(b)(10) because the licensee failed to restore compliance with NRC requirements in a timely manner. The finding is related to the corrective action element of the problem identification and resolution crosscutting aspect because the licensee failed to take corrective actions to address the safety issue in a timely manner [P1.d] (Section 1EP1).

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Cooper Nuclear Station began the inspection period at full power on September 24, 2010, and remained at essentially full power through the end of the inspection period, December 31, 2010.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

Throughout the inspection period, the inspectors performed reviews of the adverse weather procedures for seasonal extremes (e.g., extreme high temperatures, extreme low temperatures, or hurricane season preparations). The inspectors verified that weather-related equipment deficiencies identified during the previous year were corrected prior to the onset of seasonal extremes, and evaluated the implementation of the adverse weather preparation procedures and compensatory measures for the affected conditions before the onset of, and during, the adverse weather conditions.

During the inspection, the inspectors focused on plant-specific design features and the procedures used by plant personnel to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. Specific documents reviewed during this inspection are listed in the attachment. The inspectors also reviewed corrective action program items to verify that plant personnel were identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures. The inspectors' reviews focused specifically on the following plant systems:

- Elevated release point tower continuous air monitoring heat trace.
- Condensate storage tank A heat trace.

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

b. Findings

No findings were identified.

1R04 Equipment Alignments (71111.04)

Partial Walkdown

a. Inspection Scope

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

- November 2, 2010, Walkdown of diesel generator two standby alignment during diesel generator one outage and Orange risk window
- November 3, 2010, Independent spent fuel storage installation transfer cask with dry storage cask loaded and neutron shield partially drained

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

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

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

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

- October 7, 2010, Northwest quad residual heat removal area
- November 3, 2010, Reactor building, 903 feet elevation level, control rod drive units south and railroad airlock
- December 9, 2010, Residual heat removal service water booster pump and service air compressor area, 882 feet elevation level
- December 22, 2010, Cable spreading room, 903 feet elevation level
- December 4, 2010, Central alarm station upgrade project

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 five quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

Introduction. The inspectors identified two examples of a Green finding for the failure of contract personnel to properly implement the requirements of the station procedure for control of hot work activities, where one instance resulted in a fire.

Description. On November 9, 2010, while performing a site walk down the inspectors noted contract personnel performing hot work activities associated with the central alarm station upgrade project. The inspectors noted that the hot work activities were being performed with combustible materials in the immediate vicinity of the hot work, within 35 feet. The inspectors questioned this practice, and inquired of the fire watch and the individual identified as the supervisor for this activity about the requirements for combustibles in the area. Through their discussion the inspectors determined that the fire watch and the supervisor were not sure of the procedural requirements. The inspectors then reviewed the hot work permit for the activity and noted that it specified that all combustible material within 35 feet of the hot work activities were either removed or covered. The inspectors then reviewed station Procedure 0.39, "Hot Work," Revision 42, and noted:

- Step 4.5.1 required the hot work supervisor to inspect the area prior to the start of work activities to ensure the requirements of the procedure were met.

- Step 5.17.3 required that prior to the start of hot work, the fire watch shall ensure that moveable combustibles material within 35 feet of the hot work area is either removed; protected or additional fire watches are stationed.

As such, the inspectors determined that the procedure had not been appropriately followed for this hot work activity. Also, the personnel who were performing the work, supervising the work, and performing fire watch duties were not familiar with the procedural requirements for the activities being performed. Condition Report CR-CNS-2010-8364 was initiated to document the inspectors' concerns.

On December 4, 2010, during torch cutting activities on the central alarm station upgrade project, combustible materials (tape) that had been introduced into the hot work area were ignited by sparks produced by the hot work activities. The area fire watch noted the fire and took action and extinguished the fire.

During the follow up review performed by the inspectors, it was determined that the combustible material that had ignited was introduced into the area by the hot work party. Specifically, the inspectors learned that torch cutting activities were taking place on top of the central alarm station, and on the inside tape was being used to hold a piece of aluminum plate material to the ceiling to shield sparks from the area underneath the cutting activity. The inspectors questioned this practice because the hot work permit identified that all combustible material within 35 feet of the hot work activities were either removed or covered, and use of tape in this application placed it in the direct vicinity of the hot work.

The inspectors inquired about this practice and were told by the fire watch and the supervisor that this was done because they were not aware of another means of holding the material to the ceiling. The inspectors also talked with the site fire marshal about this practice and were informed that he believed it was acceptable because he was not aware of another way of holding the material to the ceiling.

As such, the inspectors determined that the procedure had not been appropriately followed for this hot work activity. Also, the personnel who were performing the work, supervising the work, and performing fire watch duties were not familiar with the procedural requirements for the activities being performed. Condition Report CR-CNS-2010-9015 was initiated to document the inspectors' concerns. The inspectors also determined that the area in question did not contain any safety related equipment and as such, this issue did not represent a high level of degradation. As immediate corrective action, the licensee conducted a stand down and reinforced the procedural requirements. Supervisors were also coached to ensure workers adhere to procedures, that effective briefs are conducted and that everyone is involved in maintaining the work areas. The licensee also held a tailgate session to review hot work and fire watch procedure requirements.

Analysis. The failure of contract personnel to follow the requirements of the stations control of hot work procedure was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the protection against external factors attribute and directly affected the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, and is therefore a finding. Additionally, if left uncorrected, the practice of conducting hot work in a manner that results in unintended combustion of uncontrolled combustible material within the procedurally specified exclusion area would have the potential to lead to a more significant safety concern, in that, it could result in a fire in or near risk important equipment. Using NRC Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance because the condition represented a low degradation of a fire prevention and administrative control. This finding had a crosscutting aspect in the area of human performance associated with decision making, in that, the licensee failed to use conservative assumptions in their decision making and adopt a requirement to demonstrate that the proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action when allowing combustible material to be introduced into the procedurally specified exclusion area for hot work activities [H.1(b)].

Enforcement. This finding does not involve enforcement action because no regulatory requirement was identified, because the area where hot work was occurring did not contain safety related equipment. Because this finding does not involve a violation, has very low safety significance, and has been entered into the corrective action program as Condition Reports CR-CNS-2010-8364 and CR-CNS-2010-9015, it is identified as FIN 05000298/2010005-01, "Failure to Implement Fire Protection Plan Requirements Related to Hot Work Activities."

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

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

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

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

On November 16, 2010, the inspectors observed a crew of licensed operators in the plant's simulator to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

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

- Crew's ability to identify and implement appropriate technical specification actions and emergency plan actions and notifications

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

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- November 18, 2010, Emergency diesel generator number two

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 one 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:

- November 2, 2010, Assessment of risk mitigation barriers during diesel generator one Orange risk work window
- December 7, 2010, Assessment of diesel generator two Yellow risk window mitigation barriers
- December 7, 2010, Assessment of crane activities in 345 kV switchyard
- December 28, 2010, Assessment of transformer removal activities using large crane in the switchyard
- December 29, 2010, Assessment of switching activities associated with the station startup service transformer maintenance

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

and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

(1) Failure to Assess and Manage Risk for Electrical Switchyard Impacting Maintenance

Introduction. The inspectors identified a Green noncited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the failure of operations and work control personnel to adequately assess and manage risk associated with a planned maintenance activities in the stations switchyard.

Description. On December 7, 2010, while the plant was in a yellow risk configuration due to maintenance activities on emergency diesel generator number two, the inspectors observed transmission personnel using a crane in the plants electrical switchyard. Noting that Cooper Nuclear Station is a four hour battery only coping station for station blackout events the inspectors questioned this evolution because the unit was already in an elevated (Yellow) risk condition with the diesel generator out of service, and the crane operation had not been discussed as a potential risk related activity.

The inspectors informed operations and work control personnel of their concerns, and asked how the station had assessed the risk associated with these two activities occurring concurrently. The inspectors were informed by work control that the diesel generator maintenance window had been evaluated using the site's probabilistic risk assessment model, and was determined to correspond to a yellow risk profile, and the evolutions in the switchyard had been evaluated using site Procedure 0.49, "Schedule Risk Assessment," Revision 24, and was considered a no risk impact activity.

The inspectors questioned this and asked the work week director to walk them through the assessment performed in accordance with station Procedure 0.49. The work week director identified Attachment 6 section 6.1.5.1 as the applicable portion of the procedure used to evaluate the activities in the switchyard. Section 6.1.5.1 states, in part:

> 6.1.5 In general, if three or more sources are available to the T2 transformer and there is reasonable assurance the 345 W sources are stable and would remain stable with Cooper Nuclear Station off-line, risk remains unchanged. The following are scenarios for emergent or scheduled maintenance:

6.1.5.1 If a single source is de-energized and three or more sources remain available to the T2 transformer No Risk Impact, no contingencies required.

The inspectors pointed out that this section was not an evaluation of risk associated with crane use in the switchyard but was an evaluation of the status of offsite power based on the number of incoming supplies.

As such, the inspectors determined that the station had failed to consider risk impacting maintenance activities that could increase the likelihood of an initiating event, such as the loss or significant uncompensated impairment of a key operating or shutdown safety function, in the plants risk assessment. The inspectors informed the work week director of this conclusion, and he took action to stop crane activities until they could be properly assessed. Condition Report CR-CNS-2010-9146 was initiated to document the inspectors' concerns.

During subsequent reviews of site procedures, the inspectors noted Procedure 0.49.9, "Work Activity Risk Management Process," Revision 4. A stated purpose of this procedure was to establish the process used to assess and manage the overall risk associated with work activities performed at Cooper Nuclear Station. As such, this procedure classified the crane activity in the switchyard as a medium risk activity because it involved a non-routine activity in the 345 kV Switchyard.

During subsequent discussions with the sites risk management group the inspectors learned that the diesel maintenance and the crane activity had not been looked at together for aggregate risk impact, but had been reviewed as two mutually exclusive events. The inspectors also learned that the licensee did not have a formal process or method for evaluating crane activities in the switchyard. Instead, there was a reliance on actions specified in station Procedure 0-CNS-52, "Control of Switchyard and Transformer Yard Activities at CNS," Revision 20, to mitigate any increase in risk. The inspectors reviewed these actions and noted that these had been applied on the time frame in question, but more actions were required that were not specified in the procedure, for instance, the identification of safe load/ travel paths for large vehicles/cranes. The licensee subsequently revised their procedure to incorporate these actions.

Analysis. The failure to perform an adequate risk assessment for planned maintenance activities was a performance deficiency. Additionally, if left uncorrected the practice of not properly evaluating crane activities in the stations switchyard would have the potential to lead to a more significant safety concern, in that, it could result in a more than minimal increase in risk associated with other risk important equipment that would not be identified nor result in appropriate actions being taken to mitigate this increase in risk. The finding is more than minor because it affected the protection against external factors attribute of the Initiating Events Cornerstone. The inspectors determined that the licensee does not maintain a probabilistic risk analysis model that incorporates the electrical switchyard, and as such, an incremental core damage probability cannot be estimated for the plant conditions that existed at the time of the performance deficiency.

For this reason, the inspectors determined that Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 2, could not be used to determine the risk significance the finding. Using the qualitative review process of Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," the finding is determined to have very low safety significance because the finding did not result in any additional loss of defense in depth systems, and based on the judgment of the senior reactor analyst, the increase in risk was very small. This finding had a crosscutting aspect in the area of human performance associated with decision making, in that, the licensee failed to use conservative assumptions in their decision making and adopt a requirement to demonstrate that the proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action [H.1(b)].

Enforcement. Title 10 CFR 50.65(a)(4), states in part, that before performing maintenance activities (including but not limited to surveillance, postmaintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, on December 7, 2010, operations and work control personnel failed to adequately assess and manage the increase in risk associated with maintenance activities in the electrical switchyard. Following the inspectors' identification of the findings, the licensee adequately assessed and managed the increase in risk for the maintenance activities. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Condition Report CR-CNS-2010-9015, this violation is being treated as a noncited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy:
NCV 05000298/2010005-02, "Failure to Assess and Manage Risk for Electrical Switchyard Impacting Maintenance."

(2) Failure to Adequately Assess and Manage Risk During Maintenance Activities

Introduction. The inspectors documented a noncited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," associated with the licensee's failure to perform an adequate risk assessment for the planned maintenance activities.

Description. On August 24, 2010 the licensee was performing planned maintenance on the station startup service transformer. During planned switching activities to isolate the autotransformer to the station startup service transformer from the grid, a low voltage condition occurred on the 69 kvac line. In response to this voltage drop, the offsite power voltage to the emergency station service transformer dropped below the voltage level where the essential 4160 vac buses were automatically prevented from loading on the emergency station service transformer. In response, the auto closure not permitted alarms for the emergency station service transformer output breakers was received in the control room.

This resulted in a loss of the safety function of the emergency station service transformer concurrent with the planned maintenance outage of the station startup service

transformer, which resulted in a loss of all safety related offsite power sources. Actions were taken by the licensee and the load dispatcher to restore the emergency station service transformer voltage. This issue was entered into the corrective action program as Condition Report CR-CNS-2010-6100.

The licensee performed a root cause analysis of this issue. Through the root cause analysis the licensee determined that the low voltage condition had occurred due to a change in the component switching order, and that the station had failed to recognize this change and its potential to cause the low voltage condition, during their review of the switching order. Specifically, the switching order issued by the grid operator for the planned maintenance activity changed the sequence of when the station startup service transformer was switched out relative to other components in the switchyard. The licensee determined that the switching sequence was important and directly related to low voltage condition.

Furthermore, the licensee determined that this low voltage condition was not an unexpected, or unknown issue. They noted that there was site specific operating experience that identified this low voltage condition would occur if switching operations were performed in this planned sequence. As such, the licensee determined that they had failed to adequately review and evaluate the switching order for this activity.

The inspectors reviewed the licensee's root cause report as well as the original risk assessment for the maintenance activity. The inspectors determined that the licensee's conclusions for cause were adequate.

Analysis. The failure to perform an adequate risk assessment for planned maintenance activities was a performance deficiency. The performance deficiency was greater than minor because it was associated with the protection against external factors attribute and directly affected the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, and is therefore a finding. Using NRC Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 1, the finding was determined to have very low safety significance because the incremental core damage probability deficit and the incremental large early release probability deficit, used to evaluate the magnitude of the error in the licensee's inadequate risk assessment, were less than 1E-6 and 1E-7, respectively. This finding had a crosscutting aspect in the area of problem identification and resolution associated with associated with operating experience, in that, the licensee uses operating experience information, including vendor recommendations and internally generated lessons learned, to support plant safety. Specifically, the licensee implements and institutionalizes operating experience through changes to station processes and procedures [P.2(b)].

Enforcement. Title 10 CFR 50.65(a)(4), states in part, that before performing maintenance activities (including but not limited to surveillance, postmaintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the

increase in risk that may result from the proposed maintenance activities. Contrary to the above, on August 24, 2010, operations and work control personnel failed to adequately access and manage the increase in risk associated with switching activities to support planned maintenance on the station startup service transformer. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Condition Report CR-CNS-2010-6100, this violation is being treated as a noncited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2010005-03, "Failure to Adequately Assess and Manage Risk During Maintenance Activities."

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- October 12, 2010, Plant monitoring and information system battery room temperature evaluation
- November 3, 2010, Independent spent fuel storage installation transfer cask neutron shield tank draindown
- November 10, 2010, Emergency diesel generator two loose bolting on lube oil cooler
- November 11, 2010, Failure of pressure controller results in loss of pressure in emergency core cooling system pressure maintenance system.

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

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

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

Temporary Modifications

a. Inspection Scope

To verify that the safety functions of important safety systems were not degraded, the inspectors reviewed the temporary modification identified as residual heat removal heat exchanger B inlet valve gag.

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

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

b. Findings

No findings were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

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

- October 11, 2010, Service water booster pump B post work test
- December 1, 2010, Residual heat removal valve RHR-MO-16A maintenance post work test
- December 1, 2010, Residual heat removal pumps A and C maintenance post work test

- December 2, 2010, Residual heat removal valve RHR-MO-27A post work test
- December 6, 2010, Diesel generator two post work test
- December 11, 2010, Diesel generator two post work test

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

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

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

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

b. Findings

No findings were identified.

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.

- October 11, 2010, Service water booster pump test
- November 4, 2010, Service water pump C inservice test
- November 16, 2010, Core spray pump B surveillance test
- December 1, 2010, Residual heat removal surveillances

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 inspectors reviewed the objectives and scenario for Cooper Nuclear Station's 2010 biennial emergency plan exercise to determine if the exercise would acceptably test major elements of the emergency plan. The scenario simulated an initial earthquake and aftershocks, a reactor coolant system break inside primary containment leading to uncovered reactor fuel, fission product barrier failures and core damage, and a radiological release to the environment via the hardened-pipe vent, to demonstrate the licensee personnel's capability to implement their emergency plan.

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, Emergency News 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. The inspectors identified a Green cited violation of 10 CFR 50.47(b)(10) for the failure to establish guidelines for the choice of protective actions during an emergency consistent with federal guidance. A notice of violation is associated with this finding because the licensee failed to correct the violation in a timely manner.

Description. On July 6, 2009, during an operating experience review of a Green noncited violation issued to Waterford Station Unit 3 (Inspection Report 05000382/009003) the licensee determined their guidelines for the choice of protective actions during an emergency were similar to those of Waterford, and were not consistent with federal guidance. Specifically, the licensee's process for extending protective action recommendations as wind vectors change was not consistent with the guidance of EPA-400-R-92-001, " Manual of Protective Action Guides and Protective Actions for Nuclear Incidents. The licensee identified their emergency response organization was trained to automatically extend existing protective action recommendations into all newly affected areas as the wind shifted without considering the radiation dose projected for those areas.

Section 6.5, "Protective Actions," of the emergency plan for Cooper Nuclear Station, Revisions 57 and 58, stated, in part, that the radiological control manager determines the need to implement protective actions using Procedure 5.7.20, "Protective Action Recommendations." Section 1.1, "Purpose," of Procedure 5.7.20, Revisions 20 and 21, stated the procedure provides a basis for relating actual or projected dose or plant conditions to the Environmental Protection Agency protective action guides. The licensee identified their practices could result in the emergency response organization recommending the evacuation of areas where protective action guides were not exceeded. The licensee entered this condition into their corrective action program as Condition Report CR-CNS-2009-05114.

During a subsequent inspection, the NRC determined the licensee was committed to the EPA-400-R-92-001, protective action guides as a basis for recommending to offsite authorities protective actions for the public in the emergency planning zone. The inspector also determined that licensee practices that automatically extended protective action recommendations as winds shifted did not comply with NRC requirements. This conclusion was documented as a licensee-identified noncited violation of 10 CFR 50.47(b)(10) in Inspection Report 05000298/2009004, issued October 29, 2009, (ADAMS ML093050015).

During an inspection conducted July 19-22, 2010, the inspectors interviewed the licensee's Emergency Preparedness Manager and Director, Nuclear Safety Assurance, to determine the corrective actions implemented for Condition Report CR-CNS-2009-05114. The Emergency Preparedness Manager stated that no corrective actions had been implemented for the noncompliance identified in Inspection Report 05000298/2009004. The inspectors determined that corrective actions for CR-CNS-2009-05114 had been due in April 2010, and the due date had been extended to December 2010. The inspectors also determined the licensee had consulted with offsite authorities concerning the deficient condition, had reviewed corrective actions

implemented by three other licensees for the same performance deficiency, and had drafted a revision to Procedure 5.7.20, but the licensee had not implemented the procedure change.

The licensee implemented Procedure 5.7.20, "Protective Action Recommendations," Revision 21, on July 23, 2010. This revision stated, in part, "If wind shift is observed following an initial protective action recommendations issue, downwind sectors should be re-evaluated for inclusion of new sectors. If dose projections are below the EPA 400 guidance of Attachment 3, updated protective action recommendations are not mandated." The inspectors determined that this procedure revision did not require the emergency response organization to automatically recommend the extension of existing protective actions into newly-affected areas as wind direction changes, and did require the evaluation of radiation dose in newly-affected areas before changing protective action recommendations. The inspectors concluded that Procedure-5.7.20, Revision 21, corrected the deficiency identified July 6, 2009, and restored licensee compliance with 10 CFR 50.47(b)(10).

Analysis. The inspectors determined the licensee's failure to establish guidelines for the choice of protective actions during an emergency that were consistent with federal guidance was a performance deficiency within the licensee's ability to foresee and correct, and could have been prevented. The finding had a credible impact on the Emergency Preparedness Cornerstone objective because licensee recommendations to evacuate areas where protective action guides are not exceeded could affect the health and safety of the public. This finding is more than minor because it affects the Emergency Preparedness Cornerstone objective of implementing adequate measures to protect the health and safety of the public during a radiological emergency, and is associated with the cornerstone attributes of emergency response organization performance and procedure quality. 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, was associated with risk significant planning standard 50.47(b)(10) as defined in Inspection Manual Chapter 0609, Appendix B, Section 2.0, and was not a risk significant planning standard functional failure or a planning standard degraded function. This finding was not a functional failure or degraded planning standard function because appropriate protective action recommendations for the public would have been issued for all areas where protective action guides were exceeded. The finding is representative of current performance, is associated with a risk significant planning standard, and the licensee did not implement corrective actions for 380 days after the issue was identified. This finding has a crosscutting aspect associated with corrective actions because the licensee failed to take timely corrective actions to address a previously identified non-cited violation (P1.d).

Enforcement. Title 10 CFR 50.47(b)(10) requires, in part, that guidelines for the licensee's choice of protective actions during an emergency, consistent with federal guidance, are developed and in place. Section IV(B) of Part 50, Appendix E, requires, in part, that a licensee describe the basis for determining when and what type of protective measures should be considered outside the site boundary. Federal guidance for the

choice of protective actions during an emergency is described in EPA-400-R-92-001. Contrary to the above, between July 6, 2009 and July 22, 2010, the licensee did not develop and have in place guidelines for the choice of protective actions during an emergency that were consistent with federal guidance. The licensee's guidelines for extending initial protective action recommendations under conditions of changing wind direction vectors were not consistent with EPA-400-R-92-001 guidance. Specifically, the licensee's practice of automatically extending existing offsite protective action recommendations without evaluating dose assessment information was not consistent with federal guidance that evacuation was seldom justified for radiation doses below the protective action guides.

Inspection Manual Part 9900, Section 7.2 states, in part, that the NRC will consider safety significance, the effects on operability, the significance of the degradation, and what is necessary to implement corrective actions in determining whether the licensee is making reasonable efforts to complete corrective actions promptly. The guidance of Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Section 5.2, "Timeliness," states in part, that a risk significant planning standard related drill/exercise performance weakness is typically corrected within 90 days of identification. Planning Standard 50.47(b)(10) is identified in Inspection Manual Chapter 0609, Appendix B, as a risk significant planning standard with substantial effect on the Emergency Preparedness Cornerstone objective. The actions necessary to implement corrective action included revising Procedure 5.7.20, "Protective Action Recommendations," and providing appropriate retraining to those emergency response organization personnel responsible for implementing Procedure 5.7.20. The licensee implemented Procedure 5.7.20, Revision 21, on July 23, 2010, restoring compliance with NRC requirements. The NRC concluded that 380 days was not a reasonable time for the licensee to restore compliance, considering the safety significance of the violation identified on July 6, 2009, and the actions necessary for the licensee to implement corrective actions.

Because the licensee failed to restore compliance with NRC requirements within a reasonable time after July 6, 2009, this violation is being treated as a cited violation, consistent with the NRC Enforcement Policy, Section 2.3, 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. The NRC has concluded that information regarding the reason for the violation, the corrective actions taken to correct the violation and prevent recurrence, and the date when full compliance was achieved is adequately addressed in this inspection report; therefore, a written response to the associated Notice of Violation is not required. This violation is identified as VIO 05000298/2010005-04, "Failure to Have Guidelines for the Choice of Protective Actions During an Emergency Consistent with Federal Guidance" (EA-10-151).

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

.1 Onsite Review of Cooper Nuclear Station Emergency Plan

a. Inspection Scope

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

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

- Removed the data acquisition system and meteorological system console as sources of meteorological data in the control room;

- Updated the description of the emergency operation facility's communication system to include fiber optic cables;

- Clarified the duties of drill and exercise evaluators concerning the identification of root cause of emergency response organization performance;

- Updated NUREG-0654 cross-reference list;

- Updated the letter of agreement with the Nebraska State Patrol;

- Corrected titles and references; and,

- Made minor corrections and administrative changes.

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

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

b. Findings

No findings were identified.

.2 In-Office Review of the Emergency Plan for Cooper Nuclear Station

a. Inspection Scope

The inspector performed an in office review of the Emergency Plan for Cooper Nuclear Station, Revision 59, and Procedure 5.7.1, "Emergency Classification," Revision 42. These revisions:

- Added the independent spent fuel storage installation to the site description;
- Added additional discussion of the planning basis for the elevated release point Notification of Unusual Event threshold to emergency action level AU1.1, "Any valid gaseous monitor reading > Table A-1 Column UE for > 60 minutes;"
- Added a new storage location in the West Warehouse for emergency equipment used by environmental monitoring teams;
- Removed a reference to the Communications Building being adjacent to the site Protected Area, based on an expansion of the site Protected Area; and,
- Made minor editorial and title changes.

These revisions were compared to their previous revisions; to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1; to the Nuclear Energy Institute Report 99-01, "Methodology for Development of Emergency Action Levels," Revision 5; and to the standards in 10 CFR 50.47(b) to determine if the revisions adequately implemented the requirements of 10 CFR 50.54(q). This review was not documented in a safety evaluation report and did not constitute approval of the licensee-generated changes; therefore, these revisions are subject to future inspection.

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

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on November 16, 2010, which required emergency plan implementation by licensee operations Crew B. 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 post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective action program. As part of the inspection, the inspectors reviewed the scenario package and other documents listed in the attachment.

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

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.2 Data Submission Issue

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index - Emergency ac Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Emergency ac Power System performance indicator for the period from the fourth quarter 2009 through the third quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's operator narrative logs, mitigating systems performance index derivation reports, issue reports, event reports and NRC integrated inspection reports for the period of October 2009 through September 2010 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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 mitigating systems performance index emergency ac power system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.4 Mitigating Systems Performance Index - High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - High Pressure Injection Systems performance indicator for the period from the fourth quarter 2009 through the third quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports and NRC integrated inspection reports for the period of October 2009 through September 2010 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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 mitigating systems performance index high pressure injection system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.5 Mitigating Systems Performance Index - Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Heat Removal System performance indicator for the period from the fourth quarter 2009 through the third quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, mitigating systems performance index derivation reports, and NRC integrated inspection reports for the period of October 2009 through September 2010 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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 mitigating systems performance index heat removal system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.6 Mitigating Systems Performance Index - Residual Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Residual Heat Removal System performance indicator for the period from the fourth quarter 2009 through the third quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports and NRC integrated inspection reports for the period of October 2009 through September 2010 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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 mitigating systems performance index residual heat removal system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.7 Mitigating Systems Performance Index - Cooling Water Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Cooling Water Systems performance indicator for the period from the fourth quarter 2009 through the third quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports and NRC integrated inspection reports for the period of October 2009 through September 2010 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk

coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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 mitigating systems performance index cooling water system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.8 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill and Exercise Performance, performance indicator for the period July 2009, through June 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator; assessments of performance indicator opportunities during predesignated control room simulator training sessions, performance during the 2010 biennial exercise, and performance during other drills. The specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings were identified.

.9 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors sampled licensee submittals for the Emergency Response Organization Drill Participation performance indicator for the period July 2009, through June 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator, rosters of personnel assigned to key emergency response organization positions, and exercise participation records. The specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings were identified.

.10 Alert and Notification System (EP03)

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System performance indicator for the period July 2009, through June 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and the results of periodic alert notification system operability tests. The specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

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

.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 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on repetitive equipment issues, but also considered the results of daily corrective action item screening discussed in Section 4OA2.2, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 6-month period of July through December 2010 although some examples expanded beyond those dates where the scope of the trend warranted.

The inspectors also included issues documented outside the normal corrective action program in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's corrective action program trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

These activities constitute completion of one single semi-annual trend inspection sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings were identified

Human Error Prevention Techniques Substantive Cross-Cutting Issue Review.

The NRC identified a crosscutting theme associated with the work practices component of the human performance area related to the use of human error prevention techniques [H.4(a)] in 2008. Since the licensee recognized the theme and developed corrective actions, a crosscutting issue was not identified for the 2008 human performance issue.

During the 2009 end of cycle assessment period seven findings with the crosscutting aspect related to the use of human error prevention techniques occurred, five of these occurred following full implementation of the licensee corrective actions. Based on these findings with the repeated common theme, the NRC staff identified a substantive crosscutting issue in the human performance area associated with work practices related to the use of human error prevention techniques at Cooper Nuclear Station [H.4(a)]. These findings occurred in initiating events, barrier integrity and occupational radiation safety cornerstones. This baseline inspection semiannual trend has noted sustainable performance improvements as evidenced by effective implementation of an appropriate corrective action plan that has resulted in no safety significant inspection findings and a notable reduction in the number of inspection findings with the human error theme. Only one additional inspection finding was identified during the 2010 assessment period with a causal factor in this area and is described in Inspection Report 05000298/2010003.

The inspectors performed a comparison of the licensee condition report records of human performance 2009 trends versus the 2010 trends. Consequential human errors were significantly less in 2010. Non consequential human errors have also trended down in 2010 versus the levels noted in 2009 though not as significantly as the consequential human error rate improvement. Inspector reviews of site incidents corresponds with licensee self-assessments that the site is not fully utilizing error prevention tools, techniques, and behaviors to prevent and minimize non consequential errors. Actions taken have not yet fully engrained the human error reduction behaviors

for minimization of non consequential errors and continued enforcement is required to correct this issue. The inspectors have increased confidence in the licensee awareness of this issue through their self-assessment process and their program of continuous improvement in this area.

The licensee Human Performance Improvement Plan corrective actions have been closed, except for one enhancement action for continued improvement in procedural compliance. These actions of accountability models, human error review boards, increased field supervision, crew mini assessments, coaching, training and other human performance improvement actions include continuous improvement components to ensure further reduction in human errors. The sustained performance improvement in human performance behavior will continue to be monitored by the NRC inspectors' baseline inspection program.

.3 Selected Issue Follow-up Inspection – Diesel Generator Loose Bolting

a. Inspection Scope`

The inspectors selected for review an issue that had been identified with loose bolting associated with the mechanical overspeed governor on diesel generator number 2 in August 2010. This issue was similar to a previous loose bolting issue that had occurred in September 2009. The inspectors selected this issue for review because failure to properly makeup mechanical joints on the sites emergency diesel generators could have a negative impact on their ability to respond to design basis events. The inspectors considered the following, as applicable, during the review of the licensee's actions: (1) complete and accurate identification of the problem in a timely manner; (2) evaluation and disposition of operability/reportability issues; (3) consideration of extent of condition, generic implications, common cause, and previous occurrences; (4) classification and prioritization of the resolution of the problem; (5) identification of root and contributing causes of the problem; (6) identification of corrective actions; and (7) completion of corrective actions in a timely manner.

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

b. Findings

Diesel Generator Overspeed Governor Loose Bolting Issue

Introduction. The inspectors identified an unresolved item associated with the loose bolting issue on the over speed governor of diesel generator two. Specifically, the issue concerns past operability of the diesel, adequacy of previous evaluations and corrective actions taken by the licensee, and procedure quality and use.

Description. On September 8, 2009, while performing a monthly surveillance run of diesel generator two, the overspeed governor trip mechanism was observed to be vibrating significantly. The licensee secured the diesel generator, and during

subsequent inspection found that all eight nuts that that were used to retain the governor were loose (less than finger tight).

The licensee determined that this event had been caused by gasket creep and thermal cycle effects, and had this been occurring over a very long period of time, approximately 30 years. The licensee took corrective actions based on these identified causes.

Subsequently, on August 17, 2010, while performing bolt tightness checks the licensee discovered six of eight nuts that were used to retain the diesel generator two overspeed governor drive unit were loose (less than finger tight), and one bolt was at a reduced torque (48 ft-lbs). The licensee determined that the cause of this event was improper torque being applied to the nuts when they had been reassembled following the September 2009 issue along with thermal cycle effects.

During review of the root cause report for the loose bolting issue found on diesel generator two in August 2010, the inspectors noted that this condition appeared to be a repeat occurrence of what had been found in September 2009, and as such, questioned the licensee's determined cause for the 2010 issue. The inspectors also questioned key assumptions used by the licensee when evaluating this issue. Furthermore, the inspectors noted that the past operability evaluation that the licensee performed failed to consider all pertinent conditions that could have affected the equipments ability to perform its design basis function, specifically elevated vibrations associated with the as-found condition.

As such, the inspectors determined that more inspection was necessary to resolve this issue. Accordingly, this issue is being considered an unresolved item pending further review.

Analysis. An unresolved item is an issue requiring further information to determine if it is acceptable, if it is a finding, or if it constitutes a violation of NRC requirements. As such, no analysis of this issue has occurred.

Enforcement. Additional information was needed to determine whether a violation of regulatory requirements occurred. Pending further review of additional information provided by the licensee, this issue is being treated as an Unresolved Item 05000298/2010005-05, "Diesel Generator Overspeed Governor Loose Bolting Issue."

4OA5 Other Activities

a. Inspection Scope

The inspectors performed a review of flood protection features for safety related structures. The review included a walkdown of all safety related structures, structure openings, and identified in the flood protection procedures. Additionally, the inspection included a walkdown of all safety related equipment in structure that could be affected in a probable maximum flood.

b. Findings

Failure to Update Flood Protection for Safety Related Buildings

Introduction. The team identified an unresolved item concerning external flood protection for plant areas considered vital to allow the reactor to achieve cold shutdown. Specifically, the issue concerns the ability of the licensee to protect the Cooper Nuclear Station reactor building and intake structure from external floods as stated in Updated Safety Analysis Report, Technical Specifications, and emergency procedures.

Description. The inspectors reviewed the historical information for hydrology in the Cooper Nuclear Station Updated Safety Analysis Report Section II-4, "Hydrology." The inspectors noted that this information was used to establish the design basis floods levels and flood protection at Cooper Nuclear Station. By reviewing recent industry operating experience and the 2010 floods along the Missouri River, the inspectors identified that actual river flow rates yielded higher flood levels than previously evaluated in the Updated Safety Analysis Report. Additionally, the US Army Corps of Engineers published new data in January 2004 that river flows on the Missouri River created the potential for higher flood levels than previous published data. Because of the potential for increased flood levels, the inspectors questioned the licensee's ability to protect nuclear plant structures from the design basis flood levels. Based on questions from the inspectors, the licensee entered the condition into the corrective action program.

The inspectors determined that more inspection is necessary to resolve the issue. Since more information is necessary, the issue is considered an unresolved item pending further NRC Region IV review. The NRC Region IV review will determine:

1. If the licensee's flood protection strategy will adequately protect to the flood levels stated in the Updated Safety Analysis Report,

2. If failure to meet these standards of flood protection is a performance deficiency in accordance with NRC Manual Chapter 0612, and

3. If a violation of NRC requirements is associated with the performance deficiency.

Analysis. Because this item is an unresolved item, no analysis section is required.

Enforcement. Because this item is an unresolved item, no enforcement section is required. This unresolved item is identified as URI 05000298/2010005-06, "Failure to Update Flood Protection for Safety Related Buildings."

4OA6 Meetings

Exit Meeting Summary

On July 22, 2010, the inspectors presented the results of the onsite inspection of the July 21, 2010, biennial emergency preparedness exercise and changes to the licensee's emergency plan and emergency action levels to Mr. D. Willis, General Manager of Plant

Operations, and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On December 2, 2010, the inspector discussed the results of the in-office inspection of licensee changes to their emergency plan and emergency plan implementing procedures with Mr. D. Montgomery, Manager, Emergency Preparedness. 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 January 13, 2011, the resident inspectors presented the inspection results to D. Willis, General Manager of Plant Operations, and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

None

SUPPLEMENTAL INFORMATION
KEY POINTS OF CONTACT

Licensee Personnel

J. Austin, Manager, System Engineering
T. Barker, Manager, Quality Assurance
J. Bebb, Manager, Security
R. Beilke, Manager, Radiation Protection/Chemistry
S. Brown, Manager, Maintenance
D. Buman, Director of Engineering
S. DeRosier, Supervisor, Operations Training
L. Dewhirst, Manager, Corrective Action and Assessments
J. Flaherty, Licensing Engineer
T. Hottovy, Manager, Engineering Support
G. Mace, Manager, Nuclear Asset
D. Madsen, Licensing Engineer
D. Montgomery, Manager, Emergency Preparedness
M. Tackett, Assistant to General Manager of Plant Operations
D. VanDerKamp, Licensing Manager
D. Werner, Superintendent, Operations Training
D. Willis, General Manager of Plant Operations
A. Zaremba, Director Nuclear Safety Assurance

NRC Personnel

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

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000298-2010005-05	URI	Diesel Generator Overspeed Governor Loose Bolting Issue (Section 4OA2)
05000298-2010005-06	URI	Failure to Update Flood Protection for Safety Related Buildings (Section 4OA5)

Opened and Closed

05000298-2010005-01	FIN	Failure to Implement Fire Protection Plan Requirements Related to Hot Work Activities (Section 1R05)
05000298-2010005-02	NCV	Failure to Assess and Manage Risk for Electrical Switchyard Impacting Maintenance (Section 1R13)
05000298-2010005-03	NCV	Failure to Adequately Assess and Manage Risk During Maintenance Activities (Section 1R13)
05000298-2010005-04	NOV	Failure to Have Guidelines for the Choice of Protective Actions During an Emergency Consistent with Federal Guidance (Section 1EP1)

LIST OF DOCUMENTS REVIEWED

Section 1RO1: Adverse Weather Protection

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE
Attachment 2	Maintenance Department Cold Weather Checklist
Attachment 4	Ops Department Cold Weather Checklist

PROCEDURE

NUMBER	TITLE	REVISION
2.1.14	General Operating Procedure, "Seasonal Weather Preparations"	16

CONDITION REPORT

CR-CNS-2010-07860 CR-CNS-2010-07961 CR-CNS-2010-07973

WORK ORDER

4705248

Section 1RO4: Equipment Alignment

CONDITION REPORT

CR-CNS-2010-08192

Section 1RO5: Fire Protection

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE
23	Fire Brigade Scenario
Zone 1C	Fire Hazards Analysis Fire Area Drawings, Elevation 903' 6"
Zone 2C	Fire Hazards Analysis Fire Area Drawings, Elevation 903' 6"
Zone 7A	Fire Hazards Analysis Fire Area Drawings, Elevation 881' 9"
Zone 9A	Fire Hazards Analysis Fire Area Drawings, Elevation 903' 6"

PROCEDURE

NUMBER	TITLE	REVISION
0.39	Hot Work	42

Section 1R11: Licensed Operator Requalification Program

CONDITION REPORT

CR-CNS-2010-08637

Section 1R12: Maintenance Effectiveness

CONDITION REPORT

CR-CNS-2008-05767 CR-CNS-2008-08055 CR-CNS-2009-06716 CR-CNS-2009-06778 CR-CNS-2010-8608

NOTIFICATION

10772372

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION
Attachment 3	Protected Equipment Program Electronic Tracking Form for Diesel Generator 2 Limiting Condition for Operation Window Week 1050	
O-Protect-EQP	Protected Equipment Program	7

PROCEDURE

NUMBER	TITLE	REVISION
0.49	Schedule Risk Assessment	24

Section 1R15: Operability Evaluations

DRAWINGS

NUMBER	TITLE	REVISION
2049 SH 3	Condensate Supply System	N20

Section 1R15: Operability Evaluations

DRAWINGS

NUMBER	TITLE	REVISION
2049 SH 4	Condensate Supply System	N13

CONDITION REPORT

CR-CNS-2010-07556	CR-CNS-2010-08373	CR-CNS-2010-08429	CR-CNS-2010-08545
CR-CNS-2010-08576	CR-CNS-2010-08608	CR-CNS-2010-08192	

Section 1R18: Plant Modifications

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE
4742749	Temporary Configuration Change. Install gag on SW-V-153

Section 1R19: Postmaintenance Testing

PROCEDURE

NUMBER	TITLE	REVISION
6.MISC.401	Surveillance Procedure, “Position Indicator Inservice Testing (IST)”	15
6.1RHR.101	Surveillance Procedure, “RHR Test Mode Surveillance Operations (IST)(DIV 1)”	23
6.1RHR.201	Surveillance Procedure, “RHR Power Operated Valve Operability Test (IST)(DIV 1)”	23
6.2DG.101	Surveillance Procedure, “Diesel Generator 31 Day Operability Test (IST)(DIV 2)”	66
6.2DG.104	Surveillance Procedure, “Diesel Operability Test with Isolation Switches in Isolate (DIV 2)”	23
6.2SWBP.101	Surveillance Procedure, “RHR Service Water Booster Pump Flow Test and Valve Operability Test (DIV 2)”	18

WORK ORDER

4664764	4664770	4664906	4705308
4706032	4740304	4753657	4799101

Section 1R22: Surveillance Testing

PROCEDURE

NUMBER	TITLE	REVISION
6.1SW.101	Surveillance Procedure, “Service Water Surveillance Operation (Div 1) (IST)” (C Pump)	33
6.1RHR.201	Surveillance Procedure, “RHR Power Operated Valve Operability Test (IST)(Div1)”	23
6.2CS.101	Surveillance Procedure, “Core Spray Test Mode Surveillance Operation (IST)(Div 2)”	19
6.2SWBP.101	Surveillance Procedure, “RHR Service Water Booster Pump Flow Test and Valve Operability Test (Div 2)”	18

WORK ORDER

4753137

Section 1EP1: Exercise Evaluation

PROCEDURE

NUMBER	TITLE	REVISION
EPIP 5.7.1	Emergency Classification	40, 41
EPIP 5.7.2	Emergency Director EPIP	27, 28
EPIP 5.7.6	Notification	49, 50
EPIP 5.7.7	Activation of the TSC	31
EPIP 5.7.8	Activation of the OSC	24
EPIP 5.7.9	Activation of the EOF	30
EPIP 5.7.15	OSC Team Dispatch	17
EPIP 5.7.17	Dose Assessment	35
EIPP 5.7.20	Protective Action Recommendations	19, 20, 21
	Sequence of Events, 2010 Biennial EP Exercise	
	Sequence of Events, 2008 Biennial EP Exercise	
	Sequence of Events, 2006 Biennial EP Exercise	

CONDITION REPORT

CR-CNS-2009-05114	CR-CNS-2009-05222	CR-CNS-2009-06407	CR-CNS-2009-09565
CR-CNS-2009-09798	CR-CNS-2009-10542	CR-CNS-2010-00182	CR-CNS-2010-00261
CR-CNS-2010-00345	CR-CNS-2010-00682	CR-CNS-2010-00923	CR-CNS-2010-00924
CR-CNS-2010-00934	CR-CNS-2010-00962	CR-CNS-2010-01316	CR-CNS-2010-01480
CR-CNS-2010-01891	CR-CNS-2010-01955	CR-CNS-2010-02118	CR-CNS-2010-02304
CR-CNS-2010-02722	CR-CNS-2010-02791	CR-CNS-2010-02803	CR-CNS-2010-02809
CR-CNS-2010-02813	CR-CNS-2010-03265	CR-CNS-2010-03426	CR-CNS-2010-03495
CR-CNS-2010-03921	CR-CNS-2010-04208	CR-CNS-2010-04365	CR-CNS-2010-04503
CR-CNS-2010-04505	CR-CNS-2010-04538	CR-CNS-2010-04551	CR-CNS-2010-04626
CR-CNS-2010-04632	CR-CNS-2010-04822	CR-CNS-2010-05171	CR-CNS-2010-05255
CR-CNS-2010-05256	CR-CNS-2010-05258	CR-CNS-2010-05259	CR-CNS-2010-05260

Section 1EP4: Emergency Action Level and Emergency Plan Changes

MISCELLANEOUS

NUMBER	TITLE	DATE
	50.54Q Evaluation for the Cooper Nuclear Station Emergency Plan Revision 58	March 22, 2010
	Apparent Cause Evaluation, Meteorological Instrumentation not removed from CNS Emergency Plan	March 1, 2010

Section 1EP6: Drill Evaluation

MISCELLANEOUS DOCUMENTS

	TITLE	REVISION
	Scenario: High Winds, Recirculation Pump Trip, with fuel damage and release	
NUREG 1022	Event Reporting Guidelines	2
RIS 2007-02	Clarification of NRC Guidance for Emergency Notifications During Quickly Changing Events	

PROCEDURE

NUMBER	TITLE	REVISION
	Scenario: High Winds, Recirculation Pump Trip, with fuel damage and release	
5.7.1	Emergency Classification	42
5.7.2	Emergency Director Emergency Plan Implementing Procedure	29
5.7.24	Medical Emergency	25

CONDITION REPORT

CR-CNS-2010-08637

Section 4OA1: Performance Indicator Verification

PROCEDURE

NUMBER	TITLE	REVISION
EPDG 2	Semi-Monthly Alert and Notification System Siren Testing	15
EPIP 5.7.27	Alert and Notification System	17
EPIP 5.7.27.1	EAS Tone Activated Radio Malfunction	9

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION
	Cooper Nuclear Station Emergency Plan	57, 58

Section 4OA2: Identification and Resolution of Problems

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	DATE
	Human Performance Improvement Plan	December 16, 2010
	Corrective Action & Assessments Department On-Going Assessment Report	Third Quarter 2010
2010-00145	CNSLO Focused Self-Assessment CNS Human Performance Tool Use	August 23-September 21

CONDITION REPORT

CR-CNS-2010-5371