



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
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August 14, 2003

Clay C. Warren, Vice President of  
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Nebraska Public Power District  
P.O. Box 98  
Brownville, Nebraska 68321

SUBJECT: COOPER NUCLEAR STATION - NRC INSPECTION REPORT 05000298/2003009

Dear Mr. Warren:

On June 6, 2003, the NRC completed an inspection at your Cooper Nuclear Station. The enclosed inspection report documents the inspection findings which were discussed on July 1, 2003, with Mr. T. Palmisano and other members of your staff.

This inspection examined activities related to the NRC Confirmatory Action Letter, dated January 30, 2003, and The Strategic Improvement Plan, Revision 2. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of plant equipment, and interviews with personnel.

Based on the results of this inspection no findings of significance were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

**/RA/**

Arthur T. Howell III, Director  
Division of Reactor Projects

Docket: 50-298  
License: DPR-46

Enclosure:  
NRC Inspection Report  
05000298/2003008

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**U.S. NUCLEAR REGULATORY COMMISSION**

REGION IV

Docket: 50-298

License: DPR-46

Report No.: 05000298/2003009

Licensee: Nebraska Public Power District

Facility: Cooper Nuclear Station

Location: P.O. Box 98  
Brownville, Nebraska

Dates: June 2-6, 2003

Team Leader: W. Walker, Senior Project Engineer

Inspectors: P. Elkmann, Emergency Preparedness Inspector  
J. Cruz, Resident Inspector  
L. Willoughby, Resident Inspector

Approved By: A. Howell, Director  
Division of Reactor Projects

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## SUMMARY OF FINDINGS

IR 05000298/2003009; 06/02-06/2003; Cooper Nuclear Station; special inspection to verify provisions of the NRC Confirmatory Action Letter and the licensee's Strategic Improvement Plan.

The inspection was conducted by two region based inspectors and two resident inspectors. No findings of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process." 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 3, dated July 2000.

This inspection was the second of a series of inspections performed by the NRC to assess Nebraska Public Power District's progress with respect to the implementation of their improvement plan and to verify the provisions outlined in the NRC Confirmatory Action Letter, dated January 30, 2003. The inspection primarily focused on the areas specified in the Confirmatory Action Letter which includes: (1) emergency preparedness; (2) human performance; (3) material condition and equipment reliability; (4) plant modifications and configuration control; (5) corrective action program, utilization of industry operating experience, and self-assessments; and (6) engineering programs. In addition, the inspection reviewed baseline inspection reports, licensee performance measures, and the licensee's utilization of performance indicators and assessed the progress in the above areas as documented by the performance indicator trends.

The team concluded that the licensee completed the improvement plan steps as scheduled and satisfied the intent of all steps reviewed during this inspection.

During this inspection, the team reviewed a total of 54 closure packages associated with the licensee's Strategic Improvement Plan, Revision 2.

The team evaluated the licensee's performance in emergency preparedness between June 2002 and May 2003 as indicated by audit reports, self-assessments, peer-assessments, drill and exercise reports, results from emergency response organization pager and drive-in drills, the initiation of condition reports, and data reported for NRC and internal performance indicators. Licensee performance was evaluated to determine whether previous corrective actions related to classification, notification, dose assessment and protective action recommendations, and the staffing of emergency response facilities had been effective in preventing recurrence. The team determined that the licensee's corrective actions had been effective in addressing performance issues in the area of emergency preparedness.

The team reviewed the licensee's actions to improve human performance at Cooper Nuclear Station and concluded that little improvement has occurred in this area. The licensee has programs in place or planned to address human performance problems; however, the team determined that a more intensive training program, and other actions as appropriate, may be needed in the area of human performance.

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A total of 67 performance indicators had been developed or identified by the licensee to be used in tracking schedule completion and effectiveness of the Strategic Improvement Plan. The team reviewed 36 of these performance indicators. In the area of emergency preparedness performance, the performance indicators indicated a satisfactory level of performance, which was generally consistent with other assessment data in the emergency preparedness area. The team determined that not enough time has passed to assess long-term trends as shown by the performance indicators in the areas of material condition/equipment reliability, plant modifications/configuration control, corrective action program/utilization of industry operating experience/self-assessments and engineering programs.

## REPORT DETAILS

The following documents are available to the public in the NRC Agency-wide Document Access and Management System (ADAMS) using the appropriate accession number. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

The Strategic Improvement Plan, Revision 1; dated June 10, 2002; ADAMS Accession Number ML023010136

The Strategic Improvement Plan, Revision 2; dated November 25, 2002; ADAMS Accession Number ML030340146

Confirmatory Action Letter (CAL); dated January 30, 2003; ADAMS Accession Number ML030310263

The Strategic Improvement Plan consists of a series of individual steps, each with an assigned scheduled completion date. As each step is completed, the licensee creates a closure package containing all associated documents, drawings, procedures, etc., that support the closure of that step. An independent reviewer checklist is completed for each step to ensure package completeness and is included in the closure package. The team reviewed the completed closure packages for the steps indicated in this report.

For each action plan step completed, the team performed document reviews and interviews with responsible action plan step owners to verify that the action plan step was completed on schedule as defined in the CAL, and the deliverable for the action plan step met the intent of the action. In addition, the team reviewed baseline inspection reports, licensee performance measures, and the licensee's utilization of performance indicators and addressed the progress as documented by the performance indicators for each CAL improvement area. The licensee developed their own performance indicators with a color scheme for tracking acceptable performance. The color scheme consisted of Red (indicating unsatisfactory performance), Yellow (indicating action required), White (indicating meets goal), and Green (indicating excellent performance). This assessment was performed to determine licensee progress in completing the strategic improvement plan and provided a method for the team to assess whether the number of action plan steps completed was indicative of improved performance.

### 1. **CAL Item 1 - Emergency Preparedness**

#### Inspection Activities

##### a. Scope

The team reviewed the licensee's self-assessment of the effectiveness of problem resolution in the risk-significant areas of classification, notification, dose assessment and protective action recommendation development and the staffing of emergency

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response facilities, as required by CAL Item 1. The self-assessment was evaluated against the CAL and the requirements of Procedure 0-CN-25, "Self Assessment," Revision 10.

The team evaluated the licensee's closure of Significant Condition Reports (SCRs) 2001-0577, 2001-0624, and 2002-0572 associated with: (1) untimely emergency response facility activation during the June 25, 2001, Alert declaration, (2) untimely notification of the Alert classification to offsite authorities during the June 25, 2001, Alert declaration, (3) repetitive failures of the emergency response organization to develop accurate protective action recommendations during drills and exercises due to the failure to properly characterize the state of the reactor core during dose assessment, and (4) general failures of emergency preparedness management to identify and correct problems with program implementation. These SCRs were evaluated against the requirements of Procedure 0.5.SCR, "Preparation of Significant Condition Reports," Revision 6, to determine whether the licensee had corrected problems in determining the extent of condition of problems and use of operating experience in determining the root causes of the identified performance deficiencies. The condition reports were also reviewed to determine whether corrective actions had been identified for each root and contributing cause. The corrective action and performance aspects of these SCRs were previously reviewed in NRC Inspection Reports 05000298/2001004, 05000298/2001009, and 05000298/2002005.

The team reviewed licensee actions taken between July 2002 and May 2003 to complete steps 8, 12, 30, 33a, 35, and 45 through 62 of Strategic Improvement Plan Action Plan 5.2.2.1, "Improve/Maintain Emergency Preparedness," Revision 2a. The team reviewed the licensee's closure packages and supporting documentation and conducted interviews with various licensee personnel knowledgeable about each specific step. Each closure package was evaluated to determine whether: (1) the final deliverable product was in alignment with the deliverable specified in the associated Strategic Improvement Plan step, (2) the deliverable product demonstrated that the associated Strategic Improvement Plan action step had been completed, and (3) the closure package documentation was complete and consistent.

The team evaluated the licensee's performance in emergency preparedness between June 2002 and May 2003 as indicated by audit reports, self-assessments, peer-assessments, drill and exercise reports, results from emergency response organization pager and drive-in drills, the initiation of condition reports, and data reported for NRC and internal performance indicators. Licensee performance was evaluated to determine whether previous corrective actions related to classification, notification, dose assessment, protective action recommendations, and the staffing of emergency response facilities had been effective in preventing recurrence. The team analyzed the data to identify performance trends and to identify significant emerging issues. In addition, the team analyzed four Site Performance Indicators used by the licensee to track the effectiveness of the Strategic Improvement Plan actions associated with Emergency Preparedness.

b. Implementation of Action Plan Steps

(1) Self-Assessment SA03012

The inspectors evaluated Self-Assessment SA03012, "Emergency Preparedness Focused Self-Assessment," performed February 2003 as required by CAL Item 1. The inspectors determined that SA03012 evaluated the effectiveness of licensee corrective actions in classification, offsite notification, dose assessment and protective action recommendations, and staffing of emergency response facilities, as required by the CAL. The self-assessment was conducted by a six-person team, four were licensee staff and two were peers representing the Utilities Services Alliance. The licensee's assessment team sampled items from: (1) the licensee's corrective action program dated between June 2001 and February 2003; (2) the June 2001 Emergency Preparedness Improvement Plan; (3) drill and exercise evaluation reports between June 2001 and February 2003, including operator simulator training records; and (4) the Strategic Improvement Plan, Revisions 0, 1, and 2. The licensee's assessment team conducted facility walkdowns, document reviews, in-field observations, and interviews to verify the effectiveness of corrective actions. The licensee concluded that corrective actions for problems identified in 2001 and 2002 had been effective and resulted in improved performance in emergency preparedness at Cooper Nuclear Station.

The team determined the self-assessment scope was sufficiently broad and sampled from data sources which appropriately documented performance problems and their associated corrective actions. The team determined that the self-assessment team used acceptable methods and acceptance criteria. The team reviewed observation worksheets used by the licensee's self-assessment team and concluded that the licensee's conclusions were adequately supported by data and observations. The team determined that the licensee's conclusion that corrective actions had been effective in preventing a recurrence of problems in classification, notification, dose assessment, protective action recommendations, and emergency response facility staffing was justified and acceptable.

(2) SCRs 2001-0577 and 2001-0624

The team evaluated SCRs 2001-0577, Revisions 0 through 3, 2001-0624, Revisions 0 and 1, and 2002-0572. NRC Inspection Reports 05000298/2001004, 05000298/2001009, and 05000298/2002005, had previously determined that SCR 2001-0577, Revisions 0 and 1, and 2001-0624, Revision 0, had lacked logical order and development, lacked a complete use of operating experience in determining potential root and contributing causes, and had failed to demonstrate the relationship between causal factors and corrective actions. The team determined that SCR 2001-0577, Revisions 2 and 3, had narrowed the focus to specific performance problems and that other management issues had appropriately been consolidated into SCR 2002-0572. The team determined that

SCR 2001-0577, Revision 2, had clear and well stated problem statements, was developed in a logical and coherent order, clearly identified root and contributing causes, expanded on the extent of condition and operating experience relevant to each identified cause, and clearly discussed the relationships between causes and corrective actions taken. The team concluded that SCR 2001-0577, Revisions 2 and 3, were acceptable in identifying the root and contributing causes of untimely staffing of the emergency response facilities and the untimely offsite notification during the June 25, 2001, Alert declaration and that appropriate corrective actions had been performed. NRC Inspection Report 05000298/2002005 previously identified that the performance problems related to SCR 2001-0577 had been appropriately addressed. NRC Inspection Report 05000298/2002005 had previously identified that problems with the use of operating experience to identify root and contributing causes in SCR 2001-0624, Revision 0, had been corrected by Revision 1.

(3) Strategic Improvement Plan Action Plan 5.2.2.1

The team identified observations and findings associated with the following steps of Strategic Improvement Plan Action Plan 5.2.2.1, "Improving/Maintaining Emergency Preparedness," Revision 2a:

1. Step 49 - Coordinate with government agencies on selection of Emergency Alert System (EAS) radios.
2. Step 52 - Complete upgrades to the emergency response organization notification system (pagers).
3. Step 53 - Implement fax technology to notify state and local authorities.
4. Step 54 - Complete ingestion pathway drill preparations.

The team reviewed the deliverable product for step 49, "EAS Radio Specification." The closure package for the deliverable included a User's Manual for the EAS radio which had been selected. The action plan step was to "Coordinate with government agencies on the selection of Emergency Alert System radios." The team determined the intent of the action plan step was met; however, further discussions were necessary to fully understand the extent of actions taken by the licensee to implement this step.

The team reviewed the deliverable products for steps 52 and 53, "Fully functional and acceptable pager system," and "Fully functional fax notification system." The team determined that the closure documentation for both steps consisted of changes made to Emergency Plan Implementing Procedure 5.7.6, "Notifications." Although the licensee completed the actions, the team found that

equipment acceptance criteria and tests were not described in the closure package. The licensee entered this issue into its corrective action program as Notification 10251383.

The team reviewed the deliverable product for step 54, "Acceptable ingestion pathway drill performance." The team determined that during the August 2002 Biennial Exercise the licensee evaluated 89 objectives, of which two objectives were evaluated as "Not Met" and seven objectives were evaluated as "Partially Met." The team determined that the licensee met the majority of the objectives; however, additional criteria for determining acceptable performance would have been helpful in evaluating this step for closure.

(4) Emergency Preparedness Performance

The team reviewed licensee audit reports, self-assessments, peer-assessments, drill and exercise reports, evaluations of operator simulator training, results from emergency response organization pager, drive-in drills, current and closed condition reports and data reported for NRC and internal performance indicators. The team determined that, while no new significant events had occurred since June 2002, there were a few examples of continuing low-level problems performing notifications to offsite authorities and in performing dose assessments, particularly for the on-shift crews. The team concluded that performance data demonstrated an overall improvement as compared to June 2002.

c. Performance Assessment

The team reviewed the following Emergency Preparedness Performance Indicators:

<u>Indicator</u>	<u>Performance</u>	<u>Trend</u>
02 Automated Notification System Reliability	Green - Excellent Performance	Steady
17 Emergency Preparedness Emergency Response Organization Staffing	White - Meets Goal	Negative
18 Emergency Response Organization Drill Participation	Green - Excellent Performance	Steady
19 Emergency Response Organization Performance	White - Meets Goal	Negative

The team determined that the NRC drill and exercise performance indicator was in the Green (Licensee Response) band with a steady trend. The team determined that the

licensee's Strategic Improvement Plan emergency preparedness performance indicators had performance at either the "Meets Goal" or "Excellent Performance" levels; although, EP-ERO Staffing and ERO Performance had negative trends which if not corrected could result in additional actions being required. The team also determined that since January 2001 the licensee's NRC-reported performance indicators have consistently shown acceptable performance.

d. Conclusions

The licensee completed their self-assessment of the effectiveness of corrective actions for the risk-significant emergency preparedness performance areas as required by the CAL. The team concluded the scope of the assessment was sufficiently broad and that the licensee used acceptable methods to perform the assessment. The team determined that the licensee's conclusion that corrective actions for the identified performance deficiencies were effective was accurate and the licensee met the intent of the CAL in this area.

The team concluded that the licensee had corrected previous problems with SCRs 2001-0577 and 2001-0624. SCRs 2001-0577, Revision 3, and 2001-0624, Revision 1, were logically developed, properly evaluated the extent of condition of performance problems, and appropriately considered operating experience in establishing potential root and contributing causes. The team concluded that the root and contributing causes, and their associated corrective actions, were supported by the licensee's analysis and were appropriate for the observed performance problems. The team concluded that SCRs 2001-0577, Revision 3, and 2001-0624, Revision 1, were acceptable in their scope, methods, thoroughness, and conclusions.

The team concluded that the licensee completed action plan steps according to the established schedule and that the closure packages were acceptable.

The team determined that, while no new significant events had occurred since June 2002, there were a few examples of continuing low-level problems performing notifications to offsite authorities, and in performing dose assessments, particularly for the on-shift crews. In addition, hardware problems with the pager notification system appeared to be an emerging trend. The team concluded that performance data demonstrated an overall improvement as compared to June 2002 and the licensee's performance indicators indicated an acceptable level of performance in Emergency Preparedness.

**2. CAL Item 2 - Human Performance**

Inspection Activities

a. Scope

The team reviewed the following completed Strategic Improvement Plan, Revision 2, action plan steps associated with CAL Item 2, Human Performance:

<u>Action Plan</u>	<u>Title</u>	<u>Steps</u>
5.1.4.1	Human Performance	1-3, 10-12, 16, 17, 27, 28

The team reviewed the licensee's closure packages and supporting documentation and conducted interviews with various licensee personnel knowledgeable of the specific steps. The team also reviewed baseline inspection reports and licensee performance measures and performed a review of four site performance indicators used to track effectiveness of the Strategic Improvement Plan actions associated with Human Performance.

b. Implementation of Action Plan Steps

The licensee completed the CAL related improvement plan steps as scheduled, and the actions taken met the intent of the associated steps.

c. Performance Assessment

The team performed a review of four site performance indicators associated with Human Performance:

<u>Indicator</u>	<u>Performance</u>	<u>Trend</u>
44 Qualification Matrix Adherence	Red-Unsatisfactory Performance	Stable
39 Overtime (% Hours) Year to Date	Red-Unsatisfactory Performance	Negative
23 Human Performance Event Free Days	Red-Unsatisfactory Performance	Negative
11 Configuration Control Events	White-Meets Goal	Positive

Three of the four indicators were demonstrating unsatisfactory performance and only one was trending positive. Also four baseline inspection findings were documented in NRC Inspection Report 05000298/2003-04, dated April 28, 2003, indicating continued

problems in the area of human performance. The team determined that the Strategic Improvement Plan Action steps implemented as of June 2, 2003, had not provided improvement in human performance.

The team reviewed the 10 action plan steps in Human Performance which are listed above and determined that many of the actions were foundational to establishing an effective Human Performance program such as a policy procedure and an implementing procedure for Human Performance. Both of these procedures were approved in late March 2003 and the actions for these procedures are currently being implemented.

Based on the team's analysis of the actions performed to date and actions scheduled for the next several quarters, it appears that a more intensive training program, and other actions as appropriate, may be needed in the area of human performance. An example of this is that Action Plan 5.1.4.1, step 13b, calls for formal human performance training to station personnel. This step is not scheduled to start until the 3<sup>rd</sup> quarter of 2003 and the scheduled end date is the 4<sup>th</sup> quarter of 2004. To date, the major site-wide activity in human performance training consisted of tailgate sessions with all plant personnel.

The team observed that some departments such as operations appeared to be ahead of other departments such as maintenance in reinforcing the importance of human performance. An example is the operations department implemented crew performance meetings starting in June 2003 which consisted of a dedicated time for crews to discuss their human performance and ways to improve performance. These meetings will become regular meetings once per training cycle for the operations crews.

d. Conclusions

The team reviewed the baseline inspection findings, licensee performance measures and performance indicators for human performance and concluded that little improvement has occurred in this area and recently the majority of the performance indicators have been trending in the negative direction. The licensee has programs in place or planned to address the decline in human performance; however, the team determined that a more intensive training program, and other actions as appropriate, may be needed in the area of human performance.

3. **CAL Item 3 - Material Condition and Equipment Reliability**

Inspection Activities

a. Scope

The team reviewed the following completed Strategic Improvement Plan, Revision 2, action plan steps associated with CAL Item 3, Material Condition and Equipment Reliability. The team reviewed the licensee's closure packages and supporting documentation and conducted interviews with various licensee personnel knowledgeable of the specific steps.

The team also reviewed baseline inspection reports and licensee performance measures and performed a review of 17 Site Performance Indicators used to track schedule completion and effectiveness of the Strategic Improvement Plan actions associated with material condition and equipment reliability.

<u>Action Plan</u>	<u>Title</u>	<u>Steps</u>
5.3.1.1	Material Condition and Equipment Reliability	1a, 1b, 3b, 3e, 6, 7
5.3.1.2.a	Service Water	1, 2a, 7, 8b, 11a
5.3.1.2.b	Feedwater Check Valves	1, 2
5.3.1.2.c	Offsite Power/Switchyard reliability	8
5.3.1.2.e	Water sulfates	21
5.3.1.2.h	Control Room Recorders	2a
5.3.1.2.i	Air systems	1a, 2b, 3b, 4, 5
5.3.1.2.j	Kaman Radiation Monitors	1
5.3.1.2.k	Optimum Water Chemistry	3, 4a, 4b

b. Implementation of Action Plan Steps

The team identified observations and findings associated with the following action plan step in the area of Material Condition and Equipment Reliability:

Strategic Improvement Plan, Revision 2, Action Plan 5.3.1.1 - Equipment Reliability Improvement Plan

Step 6 - Establish and implement a method to capture as-found equipment condition from completed preventive maintenance (PM) work orders.

On February 19, 2003, the licensee issued Maintenance Procedure 7.0.2, "Preventive Maintenance Program Implementation," Revision 21, which implemented a requirement to document the as-found condition of equipment. Steps 3.9 and 3.91 of Procedure 7.0.2, stated, in part, that maintenance craft personnel shall provide as-found condition feedback for use by the System and Program Engineers following performance of PM tasks. Step 5.2 of Procedure 7.0.2 describes the data entry requirements utilized to provide the as-found condition feedback. On March 26, the licensee initiated Notification 10236423 documenting that a review of PM orders completed after February 19 indicated that only approximately 20 percent of the PM

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orders contained the required as-found condition feedback information. The immediate corrective actions taken included the sending of an e-mail and conducting face-to-face discussions with the applicable departments to reinforce procedural and management expectations for providing feedback to the PM process. Additionally, the clerk responsible for entering the data tracking the closure of PM orders was verbally directed to not close an order until the as-found feedback information is received. Although the verbal direction was intended to be reinforced by written instructions, the licensee did not add this requirement to the procedure. The licensee stated that, although procedural adherence had improved, following these actions, absolute compliance with the procedure had still not been achieved. The team reviewed a list of PM orders completed between March 27 and June 2 and determined that 17 of the 530 orders completed did not have the procedurally required as-found feedback information.

The licensee indicated that the failure to provide as-found condition feedback did not result in any failures to conduct additional preventive or corrective maintenance activities and did not negatively impact material condition or equipment reliability. Although this finding should be corrected, it constitutes a violation of minor significance that is not subject to enforcement action in accordance with Section VI of the NRC's Enforcement Policy. This finding is minor because the failure to implement this procedure requirement had no safety impact in the given situation.

The team requested to review all the notifications generated as the result of the failure to comply with Procedure 7.0.2. The licensee provided a copy of Notification 10236423, dated March 26, 2003, and indicated it was the only Notification generated regarding this issue. The team asked, if a Notification was required to be initiated following the identification of each failure to comply with Procedure 7.0.2. The licensee responded that, per step 2.3 of Procedure 0.5.PIR, "Problem Identification, Review, and Classification," Revision 12, each failure to adhere to Procedure 7.0.2 would represent a condition which warranted a Notification. The licensee indicated that while they had focused on improving compliance with the new maintenance procedure through departmental communications, they had overlooked the corrective action procedure requirements. The failure to initiate a notification constitutes a violation of minor significance that is not subject to enforcement action in accordance with Section VI of the NRC's Enforcement Policy. This finding is minor because the failure to implement this procedure requirement had no safety impact in the given situation.

During the team's review of Maintenance Procedure 7.0.2, it was also noted that step 3.2.4 required that the PM Program Engineer be responsible for periodically reviewing completed PM orders for feedback evaluations and tracking and trending feedback information. The team asked what expectations were held by licensee management regarding the definition of periodically. The licensee responded that the expectation was that a review should be conducted monthly. The licensee stated that the individual currently serving as the PM Program Engineer may not have had a full understanding of the expectation since it was not documented in any procedure or desktop guide. Records also appeared to indicate that a review was not conducted in

April 2003. The licensee initiated Notification 10251475 to provide clarification with regard to the definition of “periodically” and indicated that the review should be conducted monthly.

c. Performance Assessment

The team reviewed the following Material Condition and Equipment Reliability Performance Indicators:

<u>Indicator</u>	<u>Performance</u>	<u>Trend</u>
56 System Health	Yellow-Action Required	Stable
38 Overdue PM's	Red-Unsatisfactory Performance	Negative
33 Online Corr. Main. Backlog	Red-Unsatisfactory Performance	Positive
13 Control Room Deficiencies	Red-Unsatisfactory Performance	Negative
10 Components in Accelerated Test	Red-Unsatisfactory Performance	Stable
64 Unplanned LCO Entries	Red-Unsatisfactory Performance	Stable
20 Forced Loss Rate	Red-Unsatisfactory Performance	Negative
27 Long term Caution Orders	Red-Unsatisfactory Performance	Stable
34 Online Plant Leaks	Green-Excellent	Negative
57 Temporary Modifications	White-Meets Goal	Negative
Safety System Unavailability-		
16 Emergency AC Power	Green-Excellent	Stable
22 HPCI	White-Meets Goal	Negative
48 RCIC	Yellow-Action Required	Stable
50 RHR	White-Meets Goal	Stable
53 Safety System		
Functional Failures	White-Meets Goal	Negative
52 Risk Significant		
Functional Failures	Red-Unsatisfactory Performance	Positive
45 RCS Leak Rate	Green-Excellent	Stable

The team performed a review of 17 performance indicators associated with Material Condition and Equipment Reliability. With 10 of the 17 indicators demonstrating either

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Unsatisfactory Performance or Action Required, and only two of 17 trending in a positive direction, the team determined that the Strategic Improvement Plan Action steps implemented as of June 2, 2003, had not provided improvement in material condition or equipment reliability. However, this was not an unexpected result since the more significant steps of these action plans had not yet been completed. The implementation of most of the equipment improvement plans was scheduled to begin in the latter half of 2003. Exceptions to this include the modifications completed on the service water and service air systems which appear to have resulted in improved system performance.

d. Conclusions

The licensee completed the CAL related improvement plan steps as scheduled and the actions taken met the intent of the associated steps. The implementation of a method to capture as-found equipment condition from completed PM work orders was identified as requiring additional attention. Additionally, the failure to take effective corrective measures regarding the failures to comply with the new maintenance procedure contributed to weaknesses in the implementation of Action Plan 5.3.1.1 - step 6. The team concluded that the 48 actions completed to date constitute an initial foundation for improvement.

The team reviewed a sample of the performance indicators associated with Material Condition and Equipment Reliability and concluded that, in general, more time was required to assess the effectiveness of the Strategic Improvement Plan. Although a number of plans and strategies were completed, most of the actions completed pertained to plan development or procurement relative to equipment improvements. As a result, the actions implemented to date have not provided satisfactory performance indicator results in most areas.

4. **CAL Item 4 - Plant Modifications and Configuration Control**

Inspection Activities

a. Scope

The team reviewed the following completed Strategic Improvement Plan, Revision 2, action steps associated with CAL Item 4, Plant Modification and Configuration Control:

<u>Action Plan</u>	<u>Title</u>	<u>Steps</u>
5.2.1.2	Operability Determinations	2, 3, 4, 5 and 9
5.3.3.1	Design Basis information/Licensing Basis Information	8
5.3.3.3	Unauthorized Modifications Follow-up Project Completion	2 and 3

The team conducted interviews with various licensee personnel knowledgeable of the specific steps and reviewed the licensee's closure packages and the supporting documentation. Also, the team reviewed the licensee's progress in completing Action Plan 5.2.1.1, step 7. In addition, the team reviewed baseline inspection reports and licensee performance measures and performed a review of four Site Performance Indicators used to track effectiveness of the Strategic Improvement Plan actions associated with Plant Modifications and Configuration Control.

b. Implementation of Action Plan Steps

The licensee completed the CAL related improvement plan steps as scheduled, and the actions taken met the intent of the associated steps.

The licensee uses a one-form system to capture work requests, work orders, and condition reports as notifications. The system is used corporately throughout the Nebraska Public Power District; therefore, notifications written by nonlicensee employees are also entered into the system. Work requests and work orders are used throughout the district, but condition reports are only used by the licensee. As currently administered, an employee must notify their supervisor that they have entered a notification. The supervisor has 24 hours to review the notification and enter routing information so that proper reviews are made by the various departments. However, discussions with licensee personnel revealed that notifications are normally reviewed the same shift they were written.

The team reviewed Action Plan 5.2.1.2, step 2, which implemented an operations procedure change that would ensure end of shift turnovers would include a review for operability impact of all notifications initiated during the previous shift. The team identified a discrepancy in the operations procedure which could have allowed up to 24 hours before operations personnel would have been aware that a notification was written and therefore could result in operations personnel not performing a timely review as required by procedure. Notifications 10251279 and 10251311 were written to address these discrepancies.

The team also reviewed Action Plan 5.2.1.2, step 3, which implemented a procedure that required the Work Control Center Senior Reactor Operator to review all notifications for operability and work priority and issue notifications when unreviewed notifications were found. Discussions with the Work Control Center Senior Reactor Operator indicated that the intent of this step was to perform a second check of the operability after operations completed their review. The team determined that the intent of the step was being met; however, further clarification was needed to ensure that all notifications were reviewed and properly documented, not just notifications that pertained to operability. Notification 10251325 was written to address the discrepancies.

The team reviewed the progress of Action Plan 5.2.1.2, step 7, scheduled to be completed by September 2003, which implemented the formation of an interim operability determination group in the 1<sup>st</sup> quarter of 2003. This group was to provide a

quality check for completed operability determinations and a representative sample of operations screening tasks. An Operability Oversight Group was formed in the 1<sup>st</sup> quarter of 2003 and met on a regular basis until the outage in March 2003. Due to work schedules, the oversight group could not find a mutual time to meet and suspended the meetings even though their charter required meeting at least once every 2 weeks. The team determined the operability oversight group had not met since March 13, 2003. Notification 10251333 was written to address this issue.

c. Performance Assessment

The team performed a review of four Site Performance Indicators used to track effectiveness of the Strategic Improvement Plan actions associated with Plant Modifications and Configuration Control. Specifically, the team reviewed the following indicators:

<u>Indicator</u>	<u>Performance</u>	<u>Trend</u>
49 Reactor Oversight Program Index	Red-Unsatisfactory Performance	Stable
30 Modification Close Out Backlog	Red-Unsatisfactory Performance	Positive
15 Drawing Change Notice On-Time Completion	White-Meets Goal	Positive
14 Drawing & vendor Manual Change Backlog	Green-Excellent Performance	Stable

The team noted two of four performance indicators were unsatisfactory; however, one of these performance indicators had an improving trend. The performance indicator for Modification Close Out Backlog has shown steady improvement since August 2002. The performance indicator for the Drawing Change Notice On-Time Completion indicator was in the green band in January 2003 and the red band in February. Since then the indicator has been trending to the green band. The Reactor Oversight Program Index indicator is dependent on the three White inspection findings that are currently outstanding in the emergency preparedness cornerstone. This indicator will improve when the findings are closed. The majority of actions in this area have centered around analysis of unauthorized modifications. The implementation of program improvements are scheduled for the 3<sup>rd</sup> quarter of 2003.

d. Conclusions

The licensee completed the CAL-related improvement plan steps as scheduled and also the actions required by the step. Additional discussions with the team were required in some instances to adequately verify that the actions taken met the intent of the associated steps. The team determined that the licensee has completed the initial

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action steps needed to build a foundation that is necessary for improvement in these areas. Additional action steps need to be completed in order to assess the effectiveness of this improvement plan.

**5. CAL Item 5 - Corrective Action Program, Utilization of Industry Operating Experience, and Self-Assessments**

a. Scope

The team reviewed the following completed Strategic Improvement Plan, Revision 2, action plan steps associated with CAL Item 5, Corrective Action Program, Utilization of Industry Operating Experience, and Self-Assessments:

<u>Action Plan</u>	<u>Title</u>	<u>Steps</u>
5.2.7.1	Improve Use of CAP (Corrective Action Program) to Effectively Resolve Station Problems	1b, 1c, 1f, 2a, 3a, 4a, 6a, 7a, 8a, and 8b
5.2.7.2	Root Cause Investigation and Corrective Action Effectiveness	7a and 7b

The team reviewed the licensee's closure packages and supporting documentation and conducted interviews with various licensee personnel knowledgeable of the specific steps. The team also reviewed baseline inspection reports and licensee performance measures and performed a review of five site performance indicators used to track effectiveness of the Strategic Improvement Plan actions associated with the Corrective Action Program, Utilization of Industry Operating Experience, and Self-Assessments.

b. Implementation of Action Plan Steps

The licensee completed the CAL-related improvement plan steps as scheduled and the actions taken met the intent of the associated steps.

Action Plan 5.2.7.1, step 4a, was implemented to ensure that resources would be provided from departments to perform trending, self-assessments, cause analysis, operating experience, management observations, and human performance improvements. Step 4a indicated that the department managers in addition to providing resource agreements would also specify how they would ensure continuous improvement through the above programs. The team determined that the intent of the step was met; however, further clarification was needed on how the various improvement activities would be implemented. Notifications 10251320, 10251200, and 10251280 were written to address these issues.

c. Performance Assessment

The team performed a review of five site performance indicators used to track effectiveness of the Strategic Improvement Plan actions associated with the Corrective Action Program, Utilization of Industry Operating Experience, and self-assessments. Specifically, the team reviewed the following indicators:

<u>Indicator</u>	<u>Performance</u>	<u>Trend</u>
4 Corrective Action Program Performance Index	White - Meets Goal	Stable
59 Timeliness of Cooper Nuclear Station Response to Industry Issues	Red - Unsatisfactory Performance	Negative
3 Significant Condition Report On-Time Completion	Red - Unsatisfactory Performance	Stable
55 Significant Operating Event Review Implementation	White - Meets Goal	Negative
54 Significant Condition Report Recurrence	White - Meets Goal	Stable

The team noted two of five performance indicators demonstrated unsatisfactory performance. The other indicators met the licensee performance goal and showed a negative or stable trend. The Timeliness of CNS Response to Industry Issues performance indicator had five operational experience review document evaluations that were greater than 106 days old, causing this indicator to be in the red. The oldest issue being evaluated is not scheduled to be completed until August 2003. The corrective action program area will be further evaluated during the comprehensive NRC corrective action program inspection scheduled for September 2003.

d. Conclusions

The licensee completed the CAL-related improvement plan steps as scheduled and the actions taken met the intent of the associated steps. The team determined that initial action steps to build a foundation for improvement have been completed and additional action steps need completion in order to determine whether the action plan is effective.

The team reviewed a sample of the performance indicators associated with the Corrective Action Program, Utilization of Industry Operating Experience, and Self-Assessments and concluded initial programs are in place to effect change; however, the

majority of the implementing actions are scheduled for the 3<sup>rd</sup> quarter of 2003. The team concluded that more time is required to assess the effectiveness of the Strategic Improvement Plan.

**6. CAL Item 6 - Engineering Programs**

Inspection Activities

a. Scope

The team did not review any action plan steps under this CAL item because no actions were scheduled to be completed during the 2<sup>nd</sup> quarterly inspection period. However, the team performed a review of two performance indicators used to track effectiveness of the Strategic Improvement Plan actions associated with Engineering Programs.

b. Implementation of Action Plan Steps

No actions were scheduled for completion during the 2<sup>nd</sup> quarterly inspection period.

c. Performance Assessment

The team reviewed the following performance indicators:

<u>Indicator</u>	<u>Performance</u>	<u>Trend</u>
38 Overdue PMs	Red-Unsatisfactory Performance	Negative
7 CNS Program Health	Yellow-Action Required	Stable

The team noted one of the two performance indicators was indicating unsatisfactory performance. The number of PMs past the grace period was seven and trending upward. The licensee was in the process of implementing changes to the preventive maintenance program to address the past due grace period problem; however, it was too early in the implementation phase of the corrective actions to determine effectiveness. The other performance indicator, CNS Program Health, reflected a new process that only began in March 2003; therefore, the information provided was not sufficient enough to analyze trends in performance.

d. Conclusions

The team reviewed the performance indicators for engineering programs and determined more time is required to assess the effectiveness of the actions to improve performance.

7. **Management Meetings**

On July 1, 2003, a public meeting was held to present the results of the inspection to Mr. T. Palmisano and other members of the licensee staff. The licensee acknowledged the inspection results.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

D. Blythe, Strategic Improvement Plan Project Manager  
D. Buman, Design Engineering  
K. Cohn, Senior Engineer, Design Engineering Electrical  
D. Cook, Manager, Strategic Improvement Plan  
M. Coyle, Site Vice President  
R. Estrada, Manager, Corrective Action Program  
P. Flemming, Manager, Risk and Regulatory Affairs  
J. Hutton, Plant Manager  
G. Kline, Senior Manager, Engineering  
D. Kunsemiller, Senior Manager, Quality Assurance  
D. Meyers, Senior Manager, Site Support  
D. Montgomery, Human Performance Coordinator  
T. Palmisano, Vice President, Site Support  
A. Passwater, Senior Consultant  
V. Roppel, Assistant Senior Manager of Engineering  
J. Sumpter, Senior Engineer, Licensing  
B. Toline, Manager, Root Cause Analysis  
C. Warren, Vice President, Nuclear Energy and Chief Nuclear Officer  
N. Wetherell, Manager, Maintenance  
A. Williams, Manager, ESD  
L. Young, Senior Consultant

#### NRC

S. Schwind, Senior Resident Inspector, Cooper Nuclear Station

### LIST OF DOCUMENTS REVIEWED

The following documents were selected and reviewed by the team to accomplish the objectives and scope of this inspection:

#### Strategic Improvement Plan, Revision 2, Step Closure Documents

<u>Action Plan</u>	<u>Step</u>	<u>CAP ID, Revision 2</u>
5.1.4.1	1	RCR 2002-2410-2
5.1.4.1	2	RCR 2002-2410-3
5.1.4.1	11	RCR 2002-2410-13
5.1.4.1	3	RCR 2002-2410-4
5.1.4.1	10	RCR 2002-2410-12

5.1.4.1	16	RCR 2002-2410-20
5.1.4.1	17	RCR 2002-2410-21
5.1.4.1	27	RCR 2002-2410-33
5.1.4.1	28	RCR 2002-2410-34
5.1.4.1	12	RCR 2002-2410-14
5.3.1.1	1a	RCR 2002-2435-2
5.3.1.1	1b	RCR 2002-2435-3
5.3.1.1	3b	RCR 2002-2435-7
5.3.1.1	3e	RCR 2002-2435-10
5.3.1.1	6	RCR 2002-2435-22
5.3.1.1	7	RCR 2002-2435-23
5.3.1.2.a	1	RCR 2002-2436-2
5.3.1.2.a	2a	RCR 2002-2436-3
5.3.1.2.a	7	RCR 2002-2436-10
5.3.1.2.a	8b	RCR 2002-2436-12
5.3.1.2.a	11a	RCR 2002-2436-19
5.3.1.2.b	1	RCR 2002-2437-2
5.3.1.2.b	2	RCR 2002-2437-3
5.3.1.2.c	8	RCR 2002-2438-9
5.3.1.2.e	21	RCR 2002-2440-22
5.3.1.2.h	2a	RCR 2002-2443-5
5.3.1.2.i	1a	RCR 2002-2444-2
5.3.1.2.i	2b	RCR 2002-2444-5
5.3.1.2.i	3b	RCR 2002-2444-7
5.3.1.2.i	4	RCR 2002-2444-8
5.3.1.2.i	5	RCR 2002-2444-9
5.3.1.2.j	1	RCR 2002-2445-2
5.3.1.2.k	3	RCR 2002-2446-6
5.3.1.2.k	4a	RCR 2002-2446-7
5.3.1.2.k	4b	RCR 2002-2446-8

Notifications

10251280	10251383
10251200	10251475
10251495	10251476
10251311	10251433
10251279	10251533
10251325	10217517
10236423	
10251248	
10251339	
10251475	
10251476	
10251320	
10251248	
10251347	
10251333	
10251339	

## Procedures

0-CNS-25, "Self Assessment," Revision 10

0.5.SCR, "Preparation of Significant Condition Reports," Revision 6

5.7.6, "Notifications," Revision 38

Administrative Procedure 0-CNS-63, "The Strategic Improvement Plan (TIP) Progress Monitoring and Action Plan Closure," Revision 3

Administrative Procedure 0-CNS-07, "Management Field Observations," Revision 5

Administrative Procedure 0-HP-Policy, "Human Performance Policy," Revision 1

Administrative Procedure O-HP-Implement, "Human Performance Policy Implementing Procedure," Revision 1

Administrative Procedure 0.5, "Conduct of the Problem Identification and Resolution Process," Revision 38

Administrative Procedure 0.5.PIR, "Problem Identification, Review, and Classification," Revision 12

Engineering Procedure 3.4, "Configuration Change Control," Revision 34

Maintenance Procedure 7.0.2, "Preventive Maintenance Program Implementation," Revision 21

## Engineering Evaluations

Change Evaluation Documents 6009980  
Engineering Evaluation 02-014, Revision 2  
Engineering Evaluation 03-003, Revision 0

## Other

TIP 5.2.2.1, Revision 2a

Emergency Preparedness Improvement Plan

Audit 01-01, Emergency Preparedness

Audit 02-03, Emergency Preparedness

Audit 03-03, Emergency Preparedness

Strategic Teaming and Resource Sharing Alliance (STARS) Cooper Nuclear Station  
Emergency Preparedness Program Assessment, August 12-17, 2001

Self Assessment Report, Emergency Preparedness Program, Utilities Service Alliance (USA),  
Cooper Nuclear Station, November 5-7, 2002

Self Assessment Plan SA03012, Emergency Preparedness Performance Improvements,  
February 2003

Emergency Preparedness Self Assessment, Quality Assurance Surveillance Report S403-0301

Gai-Tronics Upgrade Project Plan, C/0002846, May 8, 2002

SCR 1998-0239

SCR 2002-0572, Revisions 0 through 1

SCR 2001-0577 Revisions 0 through 3

RCR 2001-0646

RCR 2001-1573

RCR 2002-0545

RCR 2002-0558

Drill records for 25 emergency response organization off-hours pager drills conducted between  
June 2001 and April 2003

Evaluation reports for emergency response organization drills and exercises conducted:  
May 29, 2001, July 16, 2001, March 19, 2002, October 1, 2002, November 4, 2002, and  
March 1, 2003

Evaluation reports for simulator operator training scenarios evaluated:

- [In 2001] August 7, August 14, August 21, August 28, and September 4
- [In 2002] February 27, March 1, March 6, March 8, March 13, March 28, April 16,  
April 17, April 24, June 21, November 6, November 7, November 13, November 15,  
November 20, November 26, December 4, December 11, and December 18

#### **LIST OF ACRONYMS**

ADAMS	Agency-wide Document Access and Management System
CAL	confirmatory action letter
EAS	emergency alert system
NRC	Nuclear Regulatory Commission
PM	preventive maintenance