May 22, 2002

Mr. A. C. Bakken III
Senior Vice President
Nuclear Generation Group
American Electric Power Company
500 Circle Drive
Buchanan MI 49107

SUBJECT: D. C. COOK NUCLEAR POWER PLANT, UNITS 1 AND 2
NRC INSPECTION REPORT 50-315/02-04(DRP); 50-316/02-04(DRP)

Dear Mr. Bakken:

On April 19, 2002, the NRC completed an inspection at your D. C. Cook Nuclear Power Plant, Units 1 and 2. The enclosed report documents the inspection findings which were discussed on April 23, 2002, with Mr. Pollock and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to the identification and resolution of problems, and compliance with the Commission's rules and regulations and the conditions of your operating license. Within these areas, the inspection involved selected examinations of procedures and representative records, observations of activities, and interviews with personnel.

The inspection team concluded that your corrective action program had some positive attributes, but the quality of program implementation has been inconsistent. Specifically, your staff's ability to consistently identify reasonable causes for conditions adverse to quality was considered inadequate, and several examples were identified where corrective actions as prescribed in root cause evaluations were not completely implemented. The team identified three findings associated with corrective action program implementation that are discussed below. In addition, in assessing the inspection findings documented in NRC inspection reports over the past 12 months, we have identified a cross-cutting issue regarding an adverse performance trend associated with the failure to promptly and effectively resolve conditions adverse to quality. In contrast, during the last problem identification and resolution inspection, which was completed in February 2001, there were no findings of significance identified. Based on the results of these inspections, a declining trend in the overall effectiveness of your corrective action program implementation was noted.

There were three findings of very low safety significance (Green) identified during this inspection. Two of the findings were associated with the failure to take prompt and effective corrective actions for conditions adverse to quality. In one instance, the corrective actions to

address abnormal deterioration of the safety-related 250 Vdc Battery 2AB, including entry into the required Technical Specification Limiting Condition for Operation, were not implemented in a timely manner. In the second instance, prompt and effective corrective actions were not implemented to resolve problems associated with the Unit 1 Motor Driven Auxiliary Feedwater Pump room coolers. The third finding was associated with multiple examples of inadequate apparent cause evaluations.

Two of these findings were determined to be violations of NRC requirements. However, because of the very low safety significance and because the issues were entered into your corrective action program, the NRC is treating these issues as Non-Cited Violations in accordance with Section VI.A.1 of the NRC' s Enforcement Policy. If you deny these Non-Cited Violations, you should provide a response with a basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector Office at the D. C. Cook facility.

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Sincerely,

/RA/

Anton Vegel, Chief
Branch 6
Division of Reactor Projects

Docket Nos. 50-315; 50-316
License Nos. DPR-58; DPR-74

Enclosure: Inspection Report 50-315/02-04(DRP);
50-316/02-04(DRP)

cc w/encl: J. Pollock, Site Vice President
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-315; 50-316
License Nos:	DPR-58; DPR-74
Report No:	50-315/02-04(DRP); 50-316/02-04(DRP)
Licensee:	American Electric Power Company
Facility:	D. C. Cook Nuclear Power Plant, Units 1 and 2
Location:	1 Cook Place Bridgman, MI 49106
Dates:	April 1 through April 19, 2002
Inspectors:	J. Lennartz, Senior Resident Inspector, Palisades D. Passehl, Reactor Project Engineer K. Coyne, Resident Inspector, D.C. Cook R. Winter, Reactor Engineer
Approved by:	A. Vegel, Chief Branch 6 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000315-02-04(DRP), IR 05000316-02-04(DRP), on 04/01 - 04/19/2002, Indiana Michigan Power Company, D. C. Cook Nuclear Power Plant, Units 1 and 2. Problem Identification and Resolution.

The baseline inspection was conducted by resident and region based inspectors. The inspectors identified three Green findings, two of which were Non-Cited Violations, and one No Color finding. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at: http://www.nrc.gov/NRR/OVERSIGHT/index.html. Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation.

Identification and Resolution of Problems

The inspectors concluded that the licensee's corrective action program attributes enabled timely problem identification commensurate with the significance level and that the threshold for problem identification was low. Significance level of identified problems was appropriately characterized and the backlog items that were reviewed revealed that resolution of problems were prioritized based on safety significance. Based on information obtained during interviews, there was no evidence that a safety conscious work environment did not exist.

Root cause evaluations were thorough and appropriate corrective actions for significant conditions adverse to quality were identified. However, while implementation of corrective actions to prevent recurrence of significant conditions adverse to quality was considered adequate, a recurring issue was identified regarding the failure to implement some corrective actions as prescribed in root cause evaluations.

Four of the eight apparent cause evaluations reviewed by the inspectors failed to identify a reasonable apparent cause of the problem. Therefore, the licensee's ability to consistently identify reasonable causes for conditions adverse to quality was considered inadequate which could adversely impact implementation of prompt and effective corrective actions to resolve the problem. Also, a review of previously documented findings revealed that an adverse performance trend exists regarding the ability to promptly and effectively resolve conditions adverse to quality which was considered a substantive cross-cutting issue.

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Green finding that is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," for the failure to take prompt action to address abnormal deterioration of the safety-related 250 Vdc Battery 2AB.

This finding was determined to be of very low safety significance (Green) because the finding: (1) was not a design or qualification deficiency; (2) did not result in a loss of function of a single train of a mitigating system for greater than its Technical Specification allowed outage time and did not represent an actual loss of safety function because the cracked cell covers and subsequent replacement activities did not render the 2AB battery incapable of supporting emergency electrical loads; (3) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event in that the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding or severe weather initiating event; and (4) did not involve the loss of a safety function that contributed to external event initiated core damage accident sequences. (Section 4OA2.1.2)

- Green. The inspectors identified a Green finding that is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," for the failure to take prompt corrective action to resolve a degraded condition of the control circuitry on the Unit 1 East Motor Driven Auxiliary Feedwater Pump room cooler.

  This finding was determined to be of very low safety significance (Green) because the finding: (1) was not a design or qualification deficiency; (2) did not result in a loss of function of a single train of the auxiliary feedwater mitigating system for greater than its Technical Specification allowed outage time in that necessary repairs for the room cooler following the August 21, 2001, failure were completed within the allowed outage time. Also, the auxiliary feedwater pump room temperatures were maintained within the required temperature bands during the February 2001 failure; (3) did not represent an actual loss of the Auxiliary Feedwater System safety function; (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event in that the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding or severe weather initiating event; and (5) did not involve the loss of a safety function that contributed to external event initiated core damage accident sequences. (Section 40A2.2.2)

- Green. The inspectors identified a Green finding for the failure to consistently identify reasonable apparent causes for conditions adverse to quality. The inspectors determined that the failure to consistently identify reasonable apparent causes for conditions adverse to quality could have had a credible impact on safety by affecting the availability, reliability, operability or functionality of mitigating equipment.

  This inspector identified finding was determined to be of very low safety significance (Green) because the finding: (1) was not a design or qualification deficiency; (2) did not result in a loss of function of a single train of any mitigating systems for greater than its Technical Specification allowed outage time and did not represent an actual loss of the safety function for any mitigating system; (3) did not represent an actual loss of safety function of one or more non-technical specification trains of equipment designated as risk significant per 10 CFR 50.65 for greater than 24 hours; (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event in that the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding or severe weather initiating event;

and (5) did not involve the loss of a safety function that contributed to external event initiated core damage accident sequences. (Section 40A2.2.3)

Cross-Cutting Issues: Corrective Actions

- No Color. Several findings associated with the implementation of the corrective action program were identified within the mitigating system and public radiation cornerstone areas. The inspectors determined that the six findings identified in the past 12 months indicated an adverse performance trend and had a common casual factor associated with the failure to promptly and effectively resolve conditions adverse to quality.

  Although the individual findings highlighted were of very low safety significance (Green) the number of findings were determined to be a substantive cross-cutting issue indicative of an adverse performance trend pertaining to implementation of the corrective action program. (Section 4OA4)

Report Details

4. OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution (71152)

Inspection Overview

The inspectors reviewed corrective action program related documents that pertained to the seven cornerstones of safety to evaluate the effectiveness of the licensee's corrective action program. The following general program attributes were considered during the evaluation:

- complete, accurate, and timely problem identification;
- consideration of extent of condition, generic implications, common causes and previous occurrences during root cause evaluations;
- ability to characterize and prioritize resolution of problems based on safety significance;
- appropriate root and contributing causes identified for significant conditions adverse to quality; and
- reasonable and effective corrective actions identified and implemented in a timely manner commensurate with safety significance.

During the inspection, the inspectors reviewed condition reports that were initiated or closed out during the period of February 2001 to April 2002. The inspectors performed the following general activities:

- conducted detailed reviews of eight apparent cause evaluations for conditions adverse to quality associated with Category 3 Condition Reports and 10 root cause evaluations for significant conditions adverse to quality associated with Category 1 or 2 Condition Reports;
- assessed condition report evaluations and associated corrective actions that were initiated to address seven NRC inspector-identified findings documented in previous NRC inspection reports; and
- reviewed the condition report and the corrective maintenance backlog items for two safety-related systems to verify that, if left uncorrected, the backlogged items in the aggregate would not adversely impact the system's ability to perform intended safety functions.

A list of documents reviewed during the inspection is included at the end of the inspection report.

.1.1 Effectiveness of Problem Identification

a. Inspection Scope

The inspectors reviewed a sample of condition reports that had been previously entered into the licensee's corrective action program and condition reports that were initiated during the current inspection to verify that licensee personnel were identifying problems at an appropriate threshold. The inspectors also reviewed the condition reports and attended several condition report screening meetings to verify that the significance level assigned to the condition reports was appropriate. The inspectors reviewed one Performance Assurance Group surveillance summary report to assess the licensee's ability to identify problems during audit activities.

b. Findings

The inspectors determined that overall, licensee personnel effectively identified problems at a low threshold and entered the problems into the corrective action system.

However, the inspectors noted one issue with the Performance Assurance Surveillance Report, PA-SR-02-00001, "Corrective Action," that was completed on April 4, 2002. During this surveillance, performance assurance personnel reviewed condition reports that had been generated to address previously documented NRC findings/Non-Cited Violations related to NRC inspection reports issued in 2001. A review of the reports revealed that 23 condition reports were initiated to resolve NRC identified Non-Cited Violations. Performance Assurance personnel concluded, based on reviewing the 23 condition reports, that the previously documented NRC findings were properly documented and evaluated.

The inspectors had reviewed 3 of the 23 condition reports that were identified in the surveillance report and determined that 2 of the 3 condition reports did not adequately address the NRC identified finding as noted below:

- Category 4 Condition Report (CR) 01011037 was generated to evaluate and address a Green finding (2000-026-01) and related Non-Cited Violation (NCV) previously documented in an inspection report regarding the failure to adequately test intrusion detection systems as required by Section 5.3.1.1 of the NRC approved D. C. Cook Security Plan. That evaluation concluded that intrusion detection system testing met security plan requirements and that no corrective actions were necessary.

  The inspectors identified that the evaluation inadequately addressed the associated finding in that the evaluation concluded that no actions were necessary. Further review by the inspectors revealed that while the condition report evaluation was inadequate, the appropriate actions had been taken but were not documented. The licensee initiated CR 02100016 to document this issue. The Performance Assurance Surveillance Report did not identify these problems during their review of this NRC finding.

The inspectors subsequently determined that the Performance Assurance Surveillance Group personnel did not identify these problems because they reviewed condition reports that were not associated with this finding.

- Category 3 CR 01196002 was initiated to evaluate and address a Green finding (2001-014-01) and related NCV for failure to correct a condition adverse to quality on the Unit 2 Control Room Instrumentation Distribution (CRID) Ventilation System. One of the proposed corrective actions was to modify the CRID ventilation fan starting circuitry. The inspectors identified that the modification was not implemented as described in the condition report evaluation. Instead, only part of the modification was completed which was not associated with the fan starting circuitry. Performance Assurance personnel incorrectly concluded that all corrective actions, including modifications to the fan start circuitry, had been completed. The inspectors determined that Performance Assurance personnel did not identify this problem because the personnel did not review the condition report supporting documentation.

Based on the sample performed by the inspectors, the Performance Assurance Group's conclusion that NRC-identified findings were properly documented and evaluated lacked adequate basis. The licensee initiated CR 02114058 to address this issue.

.1.2 Failure to Take Prompt Corrective Action Following Identification of Abnormal Deterioration on the Covers of Two Cells in Safety-Related 250 Vdc Battery 2AB

a. Inspection Scope

The inspectors reviewed the circumstances associated with abnormal deterioration on the covers of two cells in safety-related 250 Vdc Battery 2AB. Licensee maintenance workers identified the deterioration on April 3, 2002, during a routine weekly surveillance.

b. Findings

The inspectors identified a finding of very low safety significance (Green) that is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," for the failure to take prompt action to address abnormal deterioration of the safety-related 250 Vdc Battery 2AB.

Description

While performing weekly pilot cell checks on the 2AB battery on April 3, 2002, maintenance workers identified two battery cells with cracks in the top cover. Although the workers identified the cracked cell covers at approximately noon on April 3, 2002, the licensee did not declare the 2AB battery inoperable until 6:12 p.m. on April 4, 2002. This was approximately 30 hours after the condition was initially identified. The licensee stated that communication delays between the maintenance workers and the operations staff resulted in the delay in the licensee's initial operability evaluation.

Technical Specification (TS) Surveillance Requirement 4.8.2.3.2.c.1 required that each 250 Vdc battery bank be demonstrated operable by periodically verifying that cells show no visual indication of physical damage or abnormal deterioration. Although the licensee was not performing this specific surveillance requirement on April 3, 2002, the abnormal deterioration rendered the 2AB battery inoperable.

As a result of additional extent of condition walkdowns by the operations staff, a third battery cell was also identified with abnormal deterioration. Technical Specification 3.8.2.3.a, "D. C. Distribution - Operating," permitted a 2 hour allowed outage time for a single inoperable battery. Based on the 30 hour delay between initial identification of the degraded condition and the licensee's entry into the associated limiting condition for operation, the inspectors concluded that the licensee failed to promptly address this issue. The licensee initiated CR 02093039 and CR 02095021 to document and evaluate the cracks in the battery cell covers, and the untimely operability evaluation; respectively.

After the 2AB battery was declared inoperable, the licensee initiated corrective actions to replace the three degraded battery cells. The licensee also began a power reduction in order to comply with TS requirements. Because replacement activities were estimated to take longer than the 2 hour allowed outage time, the licensee requested and received a Notice of Enforcement Discretion (NOED) from the NRC to extend the allowed outage time for a single inoperable battery to 13 hours. The licensee subsequently restored the battery to an operable status within the extended allowed outage time.

In their NOED request, the licensee stated that the cause of the abnormal deterioration was due to a manufacturing defect which resulted in the accumulation of corrosion products around the battery connection posts. The corrosion products stressed the top cover assembly which led to the abnormal deterioration. The inspectors reviewed the performance history of the station batteries to determine if the licensee had prior opportunities to identify and correct this condition. Although the licensee initially identified the corrosion product buildup around the battery posts in December 2001, the inspectors determined that the licensee's actions to address the condition after this initial discovery had been reasonable.

Analysis

The inspectors assessed the failure to take prompt action to address the degraded condition on the 2AB battery using the significance determination process. The inspectors determined that this issue could have a credible impact on safety and would become a more significant safety concern if left uncorrected. Specifically, the failure to promptly address the degraded condition on the 2AB battery delayed implementation of corrective actions, including entry into the required TS limiting condition for operation. Therefore, the inspectors concluded that this issue was more than a minor concern.

Because the 250 Vdc system provided electrical power required to support safe shutdown of the reactor and mitigation of accident conditions, the inspectors determined that this issue was associated with the mitigating systems cornerstone.

The inspectors used Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," regarding mitigating systems and determined that:

- The finding was not a design or qualification deficiency;
- The finding did not result in a loss of function of a single train of a mitigating system for greater than its TS allowed outage time and did not represent an actual loss of safety function because the cracked cell covers and subsequent repair activities did not render the 2AB battery incapable of supporting emergency electrical loads;
- The finding did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event in that the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding or severe weather initiating event; and
- The finding did not involve the loss of a safety function that contributed to external event initiated core damage accident sequences.

Therefore, the finding screened as Green and was of very low safety significance.

Enforcement

10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances, are promptly identified and corrected. Contrary to the above, on April 3, 2002, the licensee failed to promptly correct a deficiency on the safety-related 250 Vdc Battery 2AB following initial identification.

Specifically, on April 3, 2002, maintenance workers identified visual indications of abnormal deterioration on the covers of two cells of the 2AB battery, a condition adverse to quality. Technical Specification 4.8.2.3.2.c.1 required, in part, that each 250 Vdc battery bank be demonstrated operable by verifying that cells show no visual indication of physical damage or abnormal deterioration.

The licensee performed an operability evaluation for this condition and declared the 2AB battery inoperable approximately 30 hours after the initial identification of the abnormal condition. Because TS 3.8.2.3.a permitted only a 2 hour allowed outage time for a single inoperable battery, the inspectors concluded that a delay of 30 hours between the initial identification of a condition that rendered the battery inoperable and implementation of corrective actions, including entry into the associated limiting condition for operation, was a violation of 10 CFR 50, Appendix B, Criterion XVI.

Because of the very low safety significance, this violation is being treated as a Non-Cited Violation consistent with Section VI.A of the NRC Enforcement Policy (NCV 50-316/02-04-01(DRP)). This violation is in the licensee's corrective action program as CR 02095021.

.2 Prioritization and Evaluation of Issues

.2.1 Category X Condition Reports

a. Inspection Scope

The inspectors reviewed several Condition Reports that were initially designated as Category X, conditions not adverse to quality, which were subsequently changed to a higher significance level. The inspectors performed the review to verify that subsequent evaluations were appropriate and timely.

b. Findings

The inspectors identified one potential vulnerability within the licensee's corrective action program related to Category X Condition Reports. Conditions designated as Category X, as defined in the licensee's program, were conditions not adverse to quality that had no impact on safety-related or safety interface plant equipment or personnel safety.

The inspectors noted that Category X Condition Reports got reviewed during the daily condition report screening meetings but operations personnel do not review Category X Condition Reports. The daily screening meetings were only conducted on Tuesdays through Fridays, since Monday was not a normal business day at the site. Therefore, if a CR was initiated and inappropriately designated as Category X on a Friday after the daily screening meeting, the next scheduled opportunity to identify the inappropriate significance level would be the following Tuesday. Consequently, for a condition adverse to quality inappropriately designated as Category X which required an operability evaluation by operations personnel, a vulnerability existed that the evaluation may not get completed for approximately 4 days, which would not be timely.

While the vulnerability existed, the inspectors did not identify any instances when a condition report that was inappropriately designated as Category X resulted in an untimely operability evaluation. The inspectors also noted that this vulnerability was recognized by corrective action department personnel and that inappropriately designating condition reports as Category X was actively being tracked and trended. The tracking and trending program allowed corrective action department personnel to coach individual supervisors when an adverse trend was noted.

.2.2 Failure to Implement Prompt Corrective Actions for Degraded Condition of Unit 1 East Motor Driven Auxiliary Feedwater Pump Room Cooler

a. Inspection Scope

The inspectors reviewed the corrective actions taken for an NRC-Inspector identified potential malfunction of the Unit 1 East Motor Driven Auxiliary Feedwater Pump (MDAFWP) room cooler in February 2001.

b. Findings

The inspectors identified a finding of very low safety significance (Green) that is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," for the failure to take prompt corrective action to resolve a degraded condition of the Unit 1 East MDAFWP room cooler.

Description

On February 18, 2001, the inspectors noted that the Unit 1 East MDAFWP room cooler compressor running light was illuminated on the Unit 1 control room panel during conditions when the room cooler control logic should have prevented compressor operation. Specifically, the room cooler control circuitry was designed to prevent compressor operation when essential service water temperature was less than 48°F to prevent icing of the room cooler chiller coils and an associated degradation in cooler heat transfer capability. The room cooler is designed to provide sufficient heat removal with low Essential Service Water (ESW) temperatures using only an ESW cooled pre-cooler without operation of the refrigerant compressor. Above approximately 55°F, the control circuitry was designed to permit compressor operation to provide the required heat removal capability at high ESW temperatures.

Based on a review of control room logs, the inspectors determined that ESW temperature on February 18, 2001, was at least 10°F less than the compressor cutoff temperature, indicating a potential malfunction of the compressor control circuitry. At the time, Unit 1 was in Mode 3 (Hot Standby), with both the Unit 1 MDAFWPs running providing steam generator makeup. Despite this abnormal condition, the cooler maintained room temperatures within the normal operating band. The licensee initiated CR 01051009 on February 20, 2001, to document the condition and an associated Job Order to troubleshoot the Unit 1 East MDAFWP room cooler.

Prior to the licensee investigating this condition, both the Unit 1 and Unit 2 East MDAFWP room cooler compressors failed on August 21, 2001. Licensee personnel's root cause evaluation documented in CR 01233030 determined that the compressor failures were a malfunction of the control circuitry which prevented compressor operation despite ESW temperatures significantly above 55°F. Specifically, moisture intrusion into the ESW temperature sensors on both the Unit 1 and 2 East MDAFWP room coolers resulted in a faulty temperature input signal to the compressor control circuitry. The licensee later determined that the ESW temperature sensors were not qualified for the appropriate environmental condition.

The licensee repaired the MDAFWP room coolers and returned the Unit 1 and Unit 2 East MDAFWP room coolers to an operable status on August 23, 2001. The inspectors noted that Job Order 01051009 to followup on the malfunction identified in February 2001 was administratively closed on October 9, 2001, with no work performed. In addition, the inspectors determined that the licensee had two other prior opportunities to identify the improper operation of the compressor control circuit ESW temperature sensor:

- The Unit 2 East MDAFWP room cooler failed on August 10, 2001, due to a malfunction of the compressor control circuitry. Although the troubleshooting and repair did not identify a failure cause, the licensee replaced the compressor

control module and declared the cooler operable. The licensee ruled out the ESW temperature sensor failure based on electrical checks intended to detect only a shorted or open circuit. Following the August 21, 2001, failure, the licensee determined that the control module was operating correctly and the temperature sensor had caused the August 10, 2001 failure. Because the failure mechanism for the Unit 1 and Unit 2 East MDAFWP room coolers was similar, more rigorous troubleshooting of the temperature sensor following the Unit 2 East MDAFWP room cooler failure on August 10, 2001, might have identified appropriate corrective actions to preclude the subsequent cooler failures on August 21, 2001.

- A contributing cause for the temperature sensor failure identified in the root cause evaluation for CR 01233030 was the original design, procurement, and installation activities for the room coolers being performed simultaneously. This cause was also identified in the CR 009586 root cause evaluation for a common mode failure of the room coolers that occurred in July 2000. The inspectors questioned why corrective actions arising from the July 2000 root cause were insufficient to prevent the August 2001 failures. The licensee stated that, due to limiting the extent of condition for corrective actions to address only room cooler interfacing systems (such as electrical connections and cooling water), a review of the design of room cooler sub-components, such as the ESW temperature sensor, was not performed. The inspectors concluded that a more extensive extent of condition review as a result of the design change process weaknesses identified in July 2000 could have provided a prior opportunity to identify and correct the temperature sensor issue.

Analysis

The inspectors assessed the licensee's failure to take prompt corrective action for a malfunction of the safety-related Unit 1 East MDAFWP room cooler control circuitry using the significance determination process. The inspectors determined that this issue had a credible impact on safety in that unavailability of an auxiliary feedwater pump room cooler rendered the associated MDAFWP pump inoperable as noted in PMP 4030.001.001, "Impact of Safety Related Ventilation on the Operability of Technical Specification Equipment," Attachment 3. Therefore, the inspectors concluded this issue was more than a minor concern.

Because failure of the room cooler credibly impacted the operability of a train of auxiliary feedwater, the inspectors concluded that this issue was associated with mitigating systems cornerstone. The inspectors used Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," regarding mitigating systems and determined that:

- The finding was not a design or qualification deficiency;

- The finding did not result in a loss of function of a single train of the auxiliary feedwater mitigating system for greater than its TS allowed outage time in that necessary repairs for the room cooler following the August 21, 2001, failure were completed within the allowed outage time. Also, the auxiliary feedwater pump

room temperatures were maintained within the required temperature bands during the February 2001 malfunction;

- The finding did not represent an actual loss of the Auxiliary Feedwater System safety function;

- The finding did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event in that the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding or severe weather initiating event; and

- The finding did not involve the loss of a safety function that contributed to external event initiated core damage accident sequences.

Therefore, the finding screened as Green and was of very low safety significance.

Enforcement

10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances, are promptly identified and corrected. Contrary to the above, the licensee failed to promptly correct a malfunction of the compressor control circuit of the Unit 1 East MDAFWP room cooler, a condition adverse to quality, which was identified on February 18, 2001.

Subsequently, the Unit 1 East MDAFWP room cooler compressor control circuit failed on August 21, 2001, due to a malfunction of the cooler compressor control circuitry. This is considered to be a violation of 10 CFR Part 50, Appendix B, Criterion XVI. Because of the very low safety significance, this violation is being treated as a Non-Cited Violation consistent with Section VI.A of the NRC Enforcement Policy (NCV 50-315/02-04-02(DRP)). This violation is in the licensee's corrective action program as CR 02101026.

.2.3 Adequacy of Apparent Cause Evaluations for Conditions Adverse to Quality

a. Inspection Scope

The inspectors conducted detailed reviews of eight apparent cause evaluations to verify that the evaluations identified a reasonable cause of the identified problem and that the associated actions would reasonably correct the identified cause. The inspectors also verified that the associated corrective actions had been implemented in a timely manner based on the significance of the problem.

b. Findings

The inspectors identified a finding of very low safety significance (Green) for the failure to consistently identify a reasonable apparent cause for problems associated with conditions adverse to quality.

Description

The inspectors conducted detailed reviews of eight Category 3 Condition Report Apparent Cause Evaluations for conditions adverse to quality. The following four evaluations were considered inadequate:

- On April 12, 2001, CR 01103002, was initiated to document a dry boric acid buildup downstream of an isolation valve for the Unit 2 south safety injection pump discharge flow transmitter. The initial operations review determined that the cause of the boric acid buildup was a weld crack on the outlet of valve 2-IFI-266-V2, which was designated as an ASME code class 2 component. The apparent cause evaluation, completed on July 3, 2001, concluded that the cause of the condition was a leak and that adherence to the preventative maintenance and predictive maintenance procedures should have prevented the failure.

  The inspectors determined that the licensee failed to identify a reasonable cause of the weld leak. Additionally, the licensee did not adequately describe how adherence to the predictive and preventative maintenance procedures would have prevented the leak. Although the weld leak was repaired, no additional corrective actions were identified to address the described adherence issues associated with the preventative and predictive maintenance procedures. Licensee personnel subsequently initiated CR 02102032 to document that the apparent cause evaluation for CR 01103002 was insufficient.

- On July 14, 2001, CR 01196002 was initiated to document that corrective actions in CR 99-10357 were improperly implemented. CR 01196002 was initiated to evaluate and address a Green finding (2001-014-01) and related NCV for failure to correct a condition adverse to quality on the Unit 2 Control Room Instrumentation Distribution (CRID) Ventilation System. The licensee developed actions under CR 99-10357 to restore full qualification of the control rod drive and control room instrumentation distribution system ventilation fans. Although the licensee identified corrective actions to revise the ventilation fan start logic to preclude simultaneous operation of both CRID ventilation system fans, the actions were not completed and the licensee closed out CR 99-10357.

  Although the licensee's evaluation in CR 01196002 concluded that the corrective actions from CR 99-10357 were inappropriately closed due to a human performance error, no additional actions were identified to restore full qualification of the CRD/CRID ventilation fans. The inspectors concluded that the apparent cause evaluation in CR 01196002 failed to adequately identify a reasonable cause for the failure to complete corrective actions and address the abnormal CRD/CRID ductwork vibration in CR 99-10357. Licensee personnel subsequently initiated CR 02094039 to address issues related to the quality of the apparent cause evaluation documented in CR 01196002.

- On January 21, 2002, CR 02021004 was initiated to document a 10 CFR 50, Appendix J leak rate testing failure for containment isolation valve 2-CCR-440, "Containment Penetrations CPN-2 and CPN-5 Inner Coiling Coils CCW Outlet Containment Isolation Valve." The licensee's initial investigation for this event

determined that 2-CCR-440 failed to fully close, resulting in excessive seat leakage. The licensee repaired, retested, and returned 2-CCR-440 to an operable status on January 31, 2002.

The apparent cause evaluation determined that the as-found valve condition following an inservice testing failure on April 11, 2001, indicated that the valve stem coupling was loose, allowing a reduction in valve closing capability. The apparent cause further determined that had the existing job order instructions to verify valve position been performed during the maintenance following the April 2001 failure, that it was highly likely that the failure of the valve to be fully seated would have been identified.

Licensee personnel initiated Condition Report CR 02037089, which documented the failure to verify valve position during the 2-CCR-440 repair activities in April 2001. However, licensee personnel evaluated CR 02037089 and concluded that no human performance error or condition adverse to quality existed and the condition report was subsequently closed.

During follow up questioning by the inspectors, the licensee stated that the CR 02021004 apparent cause evaluation incorrectly characterized the as-found condition of 2-CCR-440 following the April 11, 2001, inservice testing failure in that they now believed that the stem coupling was not loose. Based on this information, the inspectors concluded that either: (1) the CR 02021004 apparent cause evaluation failed to adequately identify the cause of the failure of 2-CCR-440 or (2) the licensee failed to take corrective actions for the apparent cause originally identified in CR 02021004. The licensee subsequently initiated CR 02101060 to evaluate this issue.

- On January 19, 2002, CR 02019036 was initiated to document that the Unit 2 turbine driven auxiliary feedwater pump (TDAFWP) automatically started unexpectedly during the reactor shutdown for the Unit 2 cycle 13 refueling outage. The reactor coolant cooldown caused by TDAFWP automatic start resulted in an unexpected letdown isolation and an additional challenge to the control room operators. Because of a recent revision to Procedure 02-OHP-4021.001.003, "Power Reduction," this shutdown was the first time that the reactor was allowed to be tripped from 22 percent power. The previous revisions of Procedure 02 OHP 4021.001.003 tripped the reactor from less than approximately 4 percent reactor power.

  Licensee personnel determined that the steam generator level transient following a reactor trip from the higher power level of approximately 22 percent resulted in actuation of the engineered safety features automatic start of the TDAFWP. However, the CR 02019036 apparent cause evaluation was limited to the 10 CFR 50.73 reportability aspects of the unexpected start of the TDAFWP. Consequently, the corrective action resulting from the apparent cause recommended annotating the reactor power reduction procedure to expect a TDAFWP automatic start when tripping the plant from 22 percent power to avoid future reportability of this during a planned reactor shutdown.

The inspectors concluded that the apparent cause evaluation failed to adequately address the cause of the unexpected TDAFWP start. Specifically, the apparent cause did not evaluate the operational aspects of the automatic pump start. Consequently, the evaluation did not identify any corrective actions that could be taken to avoid an automatic start of TDAFWP pump and the resultant unnecessary challenge to control room operators. Operations Department management subsequently initiated CR 02107016 to evaluate the operational aspects of the unexpected automatic pump start and to identify appropriate corrective actions.

Based on this review, the inspectors determined that the licensee's ability to consistently identify reasonable causes for conditions adverse to quality associated with Category 3 Condition Report Apparent Cause Evaluations was inadequate.

Analysis

The inspectors assessed this issue using the significance determination process. The inspectors determined that the failure to consistently identify reasonable causes for conditions adverse to quality could credibly impact safety and, if left uncorrected, could become a more significant safety concern. Specifically, failure to identify reasonable causes could adversely impact the ability to implement prompt and effective corrective actions to resolve conditions adverse to quality. Consequently, this issue could credibly affect the reliability or availability of safety-related plant systems. Therefore, the inspectors determined that this issue was more than a minor concern.

The inspectors determined that this issue could adversely impact the ability to implement prompt and effective corrective actions to resolve conditions adverse to quality associated with safety-related plant systems and could credibly affect the operability, availability, reliability, or function of a system or train in a mitigating system.

The inspectors used Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," regarding mitigating systems and determined that:

- The finding was not a design or qualification deficiency;

- The finding did not result in a loss of function of a single train of any mitigating systems for greater than its TS allowed outage time and did not represent an actual loss of the safety function for any mitigating system;

- The finding did not represent an actual loss of safety function of one or more non-TS trains of equipment designated as risk significant per 10 CFR 50.65 for greater than 24 hours;

- The finding did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event in that the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding or severe weather initiating event; and

- The finding did not involve the loss of a safety function that contributed to external event initiated core damage accident sequences.

Therefore, the finding screened as Green and was of very low safety significance.

Enforcement

The inspectors assessed the regulatory impact and determined that this issue did not represent a non-compliance with NRC requirements. Specifically, 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances, are promptly identified and corrected. The inspectors did not identify a specific instance when the inadequate apparent cause evaluations resulted in the related plant equipment from being unable to perform safety related functions in that the specific problem was fixed.

Because this issue was more than a minor concern but did not involve a violation of NRC requirements, the inspectors determined that this issue constituted a Finding of very low safety significance (Green) (FIN 50-315, 50-316/02-04-03).

.2.4 Corrective Maintenance and Condition Report Backlog Items Pertaining to the Safety-related 250 Vdc and Component Cooling Water Systems

a. Inspection Scope

The inspectors reviewed the overall backlog of corrective action items, including the backlog of items incurred during the plant extended outage. The inspectors discussed with the licensee staff the actions being taken to track and disposition these issues. In additions, the inspectors reviewed the backlog of condition reports and corrective maintenance job orders pertaining to the safety-related 250 Vdc and Component Cooling Water systems to verify that, if left uncorrected, the backlogged items when taken in the aggregate would not adversely impact the system’s ability to perform intended safety functions; and to verify that the backlogged items were prioritized and scheduled to be completed based on the significance of the item. Selected condition reports were also reviewed to verify that 10 CFR 50.65 Maintenance Rule requirements for the 250 Vdc and Component Cooling Water Systems were appropriately addressed.

b. Findings

No findings of significance were identified. The inspectors determined that the licensee was aggressively addressing the backlog of corrective action items. Since January 2001, the licensee had closed approximately 10,000 of "old" corrective action items. The current total backlog of open condition reports was approximately 1600. The inspectors determined that resolution of problems in the backlog related to the 250 Vdc and component cooling water systems were appropriately prioritized based on safety significance.

.2.5 Review of Operating Experience Information

a. Inspection Scope

The inspectors reviewed several generic communications regarding industry operating experience information and observed one operating experience screening meeting to verify that known industry problems that had a potential to affect D. C. Cook nuclear plant were being identified and appropriately evaluated.

b. Findings

The inspectors determined that the licensee's Operating Experience Group adequately identified, evaluated and developed corrective actions for known industry problems that could potentially impact D. C. Cook nuclear plant. However, the inspectors identified the following two minor issues:

- One Significant Event Notification, SEN-224, "Recurring Event, Inadvertent Reactor Vessel Inventory Reduction During RHR Crosstie Line Flushing," was not evaluated because it was designated as not applicable to D. C. Cook based on the event occurring at a boiling water reactor. However the causal factors for the event were generic items such as ineffective work practices, inadequate supervisory oversight and ineffective managerial methods which would be applicable to all reactor designs. Therefore, the event should have been evaluated.

- One of the prescribed corrective actions in a CR 01199022 that evaluated Information Notice (IN) 2001-012, "Hydrogen Fires At Nuclear Power Station," was not implemented because a subsequent evaluation concluded that the corrective actions were not necessary. However, the evaluation did not adequately justify why corrective actions were not necessary.

The inspectors did not identify any resultant potential or actual significant adverse consequences from the two noted exceptions and therefore, concluded both were minor.

.3 Effectiveness of Corrective Actions

.3.1 Evaluations and Corrective Actions for Significant Conditions Adverse to Quality

a. Inspection Scope

The inspectors conducted detailed reviews of 10 completed Category 1 Condition Report Root Cause Evaluations for significant conditions adverse to quality to verify that the evaluations were thorough; that appropriate root and contributing causes were identified; and that corrective actions to prevent recurrence were reasonable and implemented in a timely manner commensurate with safety significance.

b. Findings

For the Category 1 Condition Reports reviewed, the inspectors concluded that licensee personnel generally performed thorough and detailed root cause evaluations. Extent of condition, generic implications, common causes and previous occurrences of the problem were adequately addressed and the evaluations identified appropriate root and contributing causes. The inspectors also concluded that the evaluations identified reasonable corrective actions to prevent recurrence and that the actions were adequately implemented in a timely manner based on safety significance.

However, the inspectors identified the following examples where some corrective actions for root cause evaluations were not implemented:

- Condition Report 99-20129, initiated on August 2, 1999, identified that the operators tripped the Unit 2 CD Diesel Generator due to excessive load oscillations. The condition report identified a specific issue regarding a lack of procedural guidance for adjusting the governor on the diesel. The evaluation and corrective actions for CR 99-20129 were subsequently closed to a separate condition report (CR 99-22617), which was associated with adverse organizational and programmatic issues within the Maintenance Department. However, that separate condition report failed to address the specific procedural guidance issue identified in CR 99-20129. Consequently, the lack of procedure guidance for adjusting the emergency diesel generator governor was not evaluated and therefore appropriate corrective actions were not identified and implemented. The licensee subsequently initiated CR 02102016 to document that CR 99-20129 was inappropriately closed without completing an appropriate evaluation.

- Category 1 CR 99-10014 was initiated on April 30, 1999, to evaluate degradation of a vital area barrier. Specifically, the licensee identified that missing and corroded barrier fasteners resulted in a vital area barrier failure. The associated evaluation concluded that one of the root causes for this condition was the lack of a program for performing periodic inspections of vital area barriers. Corrective Action 3 of CR 99-10014 prescribed implementation of procedural guidance for the conduct of periodic vital area barrier inspections. The inspectors noted that this corrective action had been closed out to another condition report (CR 01038031) and had not been completed.

Although the prescribed corrective actions in the root cause evaluation had not been implemented, security personnel stated that informal vital area barrier walkdowns were being periodically conducted. Additionally, the inspectors did not identify any instances where the failure to implement proceduralized vital area barrier inspection guidance resulted in a degraded barrier. During additional followup discussions, the licensee indicated that the CR 99-10014 root cause evaluation may have been inaccurate with regard to the required corrective actions to address barrier degradation. Therefore, the inspectors concluded that either: (1) the licensee failed to implement corrective actions in a timely manner, or (2) the root cause evaluation for CR 99-10014 was inadequate. The licensee subsequently initiated CR 02108010 to address this issue.

- Condition Report 99-06940, was initiated on March 27, 1999, to evaluate safety injection and charging system throttle valve internal erosion. The root cause evaluation concluded that an original design issue resulted in the throttle valves being closed too far which produced a large pressure drop and resultant flow induced vibration and erosion of the valves. As described in the root cause evaluation effectiveness plan, Action 21 of CR 99-06940 prescribed procedural revisions intended to monitor for recurrence of conditions causing throttle valve erosion. This action was subsequently closed to a separate Category X Condition Report (CR 01283054).

  However, the inspectors determined that only one part of the actions that were closed to the Category X Condition Report was implemented as prescribed in the root cause evaluation. Specifically, the associated surveillance procedures were revised to identify the minimum position that the throttle valves could be closed in the acceptance criteria. The second part of the effectiveness plan, not implemented, was to install acoustic monitoring devices that would detect flow induced vibration in the area of the throttle valves. The inspectors noted that licensee personnel identified this issue in parallel with the inspectors during the inspection period while performing an effectiveness review of the completed root cause evaluation. Licensee personnel initiated CR 02100017 to address this issue.

The inspectors determined that transferring the tracking of corrective actions from root cause evaluations to separate condition reports contributed to the licensee's not implementing the prescribed corrective actions. Because the inspectors did not identify any instances where the significant condition adverse to quality recurred, the inspectors concluded that the above issues were minor.

Although overall implementation of corrective actions was considered adequate, the inspectors determined that the failure to implement corrective actions as prescribed in the root cause evaluations was a recurring issue. Specifically, inadequate implementation of corrective actions for Category 1 and 2 Conditions Reports was identified during the previous Problem Identification and Resolution inspection documented in NRC Inspection Report No. 50-315/01-03(DRP); 50-316/01-03(DRP). Consequently, additional management attention is warranted to address this issue to

ensure that corrective actions for significant conditions adverse to quality are implemented as prescribed in the root cause evaluations.

.3.2 Resolution of Issues Identified During Last Problem Identification and Resolution Inspection

a. Inspection Scope

The inspectors reviewed corrective actions that had been implemented to address the issues identified during the last problem identification and resolution inspection in February 2001 as documented in NRC Inspection Report No. 50-315/01-03(DRP); 50-316/01-03(DRP). The inspectors verified that the corrective actions adequately addressed the previously identified issues.

b. Findings

During the problem identification and resolution inspection in February 2001, the inspectors identified several challenges to the effective implementation of the corrective action program. Specifically, the inspectors noted the following issues: (1) lack of timeliness in completing root cause evaluations and effectiveness reviews for significant conditions adverse to quality, (2) inconsistent or inadequate closeout of corrective actions for Category 1 and 2 condition reports, and (3) a failure of corrective actions to prevent recurrence of conditions adverse to quality.

Overall, the inspectors concluded that the licensee's corrective actions adequately addressed the inspector identified issues from the last problem identification and resolution inspection. Additionally, the inspectors considered the following changes that were made to address the issues as programmatic improvements:

- Implementation of a Corrective Action Review Board pre-analysis for significant conditions adverse to quality. The pre-analysis afforded the Corrective Action Review Board an opportunity to communicate expectations regarding the pending root cause evaluation and ensure that interim corrective actions are appropriate;

- New methods for management tracking of overdue root cause evaluations and corrective actions to prevent recurrence; and

- Requirements that the Corrective Action Review Board concur in corrective actions intended to prevent recurrence of significant conditions adverse to quality.

Although the inspectors concluded that improvements to the corrective action program had been implemented, these improvements were not fully effective in improving implementation of corrective actions for Category 1 and 2 condition reports. As discussed in Section 4OA2.3.1 above, the inspectors determined that additional management attention was warranted to ensure that corrective actions for significant conditions adverse to quality are implemented as prescribed in the root cause evaluations.

.3.3 Assessment of Safety Conscious Work Environment

a. Inspection Scope

The inspectors interviewed approximately 15 licensee personnel using the type of questions included in Appendix 1 to NRC Inspection Procedure 71152, “Suggested Questions For Use In Discussions With Licensee Individuals Concerning PI&R Issues,” to assess whether conditions existed that would challenge the establishment of a safety conscious work environment.

b. Findings

No findings of significance were identified. Based on the information obtained from the interviews, the inspectors concluded that there was no evidence that a safety conscious work environment did not exist at the D. C. Cook nuclear plant.

Through the interviews, the inspectors determined that site employees were aware of the various means through which they could raise safety issues and that employees would willingly identify safety issues to their immediate supervision. Information collected during the interviews also indicated that site management was supportive of identifying and correcting safety problems.

4OA3 Event Followup

.1 (Closed) Licensee Event Report (LER) 50-315/1999-013-01: "Safety Injection and Centrifugal Charging Throttle Valve Cavitation During LOCA Could Lead to ECCS Pump Failure," Supplement 1.

As described in this LER, inadequate design application of safety injection and centrifugal charging throttle valves resulted in a condition that could result in clogging or cavitation induced erosion of the throttle valves during a loss of coolant accident. The licensee submitted Supplement 1 to LER 50-315/1999-013 to provide additional information regarding the safety significance and corrective actions for this issue. The inspectors determined that the corrective actions were reasonable and that the information provided in the supplement did not raise any new issues or change the conclusions of the initial review, which were documented in NRC Inspection Report 50-315/99-29 (DRP); 50-316/99-29 (DRP). This LER is closed.

.2 (Discussed) LER 50-316/2002-004-00: "Unanticipated Start of the Turbine Driven Auxiliary Feedwater Pump".

On January 19, 2002, following a planned reactor trip from approximately 22 percent reactor power, the Unit 2 TDAFWP automatically started due to a valid low level indication in the steam generators. The inspectors reviewed the LER and the licensee's corrective actions for the event. The inspectors concluded that the corrective actions proposed in the LER were not reasonable in that they failed to adequately address the cause of the unexpected TDAFWP start. (This issue is discussed further in Section 4OA2.2.3 of this report).

Specifically, the LER and the associated apparent cause evaluation did not address the operational aspects for the automatic TDAFWP start. Consequently, the evaluation did not identify any corrective measures that could have been taken to avoid an automatic pump start and the resultant unnecessary challenge to control room operators. Operations Department management subsequently initiated CR 02107016 to address the operational aspects of the automatic pump start. Pending review of the completed evaluation for CR 0210716 and the associated corrective actions, this LER will remain open.

4OA4 Corrective Action Cross-Cutting Finding

a. Inspection Scope

The inspectors reviewed NRC inspection reports issued since April 1, 2001, to determine if an adverse pattern or trend was emerging in a cross-cutting area which may not be captured in individual issues.

b. Findings

The inspectors determined that an adverse performance trend had developed in multiple cornerstone areas with a common element of failure to promptly implement effective corrective actions to resolve conditions adverse to quality. The following findings documented since April 1, 2001, are indicative of this adverse performance trend:

- In April 2001, the inspectors identified a No Color finding regarding several examples of ineffective corrective actions for previous violations of the Maintenance Rule. Specifically, the licensee failed to properly evaluate and identify several maintenance preventable functional failures associated with the Unit 1 auxiliary feedwater system and set adequate goals for the ice condenser system. The inspectors concluded that this issue could have impacted multiple cornerstones, including the mitigating system and barrier integrity cornerstones and could adversely impact the reliability, availability and performance of risk-significant equipment (No Color; FIN 50-315/01-07-02; FIN 50-316/01-07-02).

- In September 2001, the inspectors identified a No Color finding regarding two additional examples of failures to adequately resolve conditions adverse to quality associated with the Unit 1 West auxiliary feedwater system and the Unit 2 safety-related ventilation system. The inspectors concluded that these issues, combined with the previously identified ineffective Maintenance Rule corrective actions finding identified in April 2001, (FIN 50-315/01-07-02; FIN 50-316/01-07-02), provided substantive information relating to the problem identification and resolution cross-cutting area (No Color; FIN 50-315/01-14-03; 50-316/01-14-03).

Mitigating Systems Cornerstone

- In December 2001, the inspectors identified a Green finding and associated Non-Cited Violation for the failure to promptly address a design deficiency on the

Unit 1 and Unit 2 safety-related breakers in a timely manner (Green; NCV 50-315/01-019-04(DRP); 50-316/01-019-04(DRP)).

- In April 2002, the inspectors identified a Green finding and associated Non-Cited Violation for the failure to promptly correct a malfunction of the compressor control circuit of the Unit 1 East MDAFWP room cooler that was initially identified on February 18, 2002 (Section 4OA2.1 of this report, Green, NCV 50-315/02-04-02 (DRP)).

- In May 2002, the inspectors identified a White finding and associated Notice of Violation for the failure to take prompt corrective actions to prevent a repetitive failure of the Unit 2 turbine driven auxiliary feedwater pump (White; Final Significance Determination Letter dated May 6, 2002).

Public Radiation Safety Cornerstone

- In January 2002, the inspectors identified a Green finding and associated Non-Cited Violation for the failure to meet TS 6.8 requirements associated with Offsite Dose Calculation Manual (ODCM) required radioanalytical detection capabilities for some environmental samples collected during the third and fourth quarters of 2000, and the first quarter of 2001. This finding included a cross-cutting element as a contributing factor related to the timeliness of the licensee's corrective actions, since the sample analytical problems were known but not effectively corrected for an extended period (Green; NCV 50-315/01-019-01(DRP); 50-316/01-019-01(DRP)).

Additionally, as described in Section 4OA2.2.3 of this report, the inspectors identified a Green finding regarding the failure to consistently identify reasonable apparent causes for conditions adverse to quality. Consequently, the ability to implement prompt and effective corrective actions could be adversely impacted which could credibly impact multiple cornerstones of reactor safety. Specifically, the examples of inadequate apparent cause evaluations identified by the inspectors were associated with the mitigating systems and barrier integrity cornerstones.

The inspectors determined that each of these issues was due to a common casual factor associated with the failure to promptly and effectively resolve conditions adverse to quality. Although the individual findings highlighted were of very low safety significance, the findings could have had a credible impact on safety by affecting the availability, reliability, operability or functionality of mitigating equipment and by affecting public radiation safety.

This adverse performance trend for the failure to promptly and effectively resolve conditions adverse to quality is not suitable for a Significance Determination Process evaluation. However, this trend has been reviewed by NRC management and is determined to be a substantive cross-cutting issue not captured in individual issues indicating an adverse performance trend, and is a Finding characterized as (No Color; FIN 50-315/02-04-04; 50-316/02-04-04). This issue is identified in the licensee's corrective action program as CR 02108057.

4OA6 Management Meetings

Exit Meeting Summary

The inspectors presented the results to Mr. Pollock and other members of licensee management at the conclusion of the inspection on April 23, 2002. The licensee acknowledged the findings presented.

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

KEY POINTS OF CONTACT

Licensee

G. Arent, Manger, Regulatory Affairs
C. Bakken, Senior Vice President, Nuclear Generation
B. Bradley, Emergency Core Cooling System Manager
M. Danford, Manager, Corrective Action Department
R. Gaston, Regulatory Compliance Manager
J. Gebbie, Manager, System Engineering
E. Larson, Director, Operations
R. Meister, Regulatory Affairs
J. Nadeau, Supervisor, Corrective Action Program Administrative Section
T. Noonan, Director, Performance Assurance
W. McCrory, Component Cooling Water System Manager
J. Pollock, Site Vice President
G. Truini, 250 Vdc System Manager
L. Weber, Manager, Performance Assurance

NRC

S. Reynolds, Deputy Director, Division of Reactor Projects
A. Vegel, Chief, Reactor Projects Branch 6
J. Stang, Project Manager, NRR

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-316/02-04-01	NCV	10 CFR 50, Appendix B, Criterion XVI, inspector identified violation for the failure to take prompt corrective action to address abnormal degradation of the safety-related 250 Vdc Battery 2AB
50-315/02-04-02	NCV	10 CFR 50, Appendix B, Criterion XVI, inspector identified violation for the failure to take prompt corrective action to resolve a degraded condition of the Unit 1 East MDAFWP room cooler
50-315/02-04-03; 50-316/02-04-03	FIN	Green finding regarding for the failure to consistently identify a reasonable apparent cause for conditions adverse to quality
50-315/02-04-04; 50-316/02-04-04	FIN	Corrective action cross-cutting finding for the failure to promptly implement effective corrective actions for conditions adverse to quality impacting the mitigating systems and public radiation safety cornerstones

Closed

50-315/1999-013-01	LER	Safety Injection and Centrifugal Charging Throttle Valve Cavitation During LOCA Could Lead to ECCS Pump Failure, Supplement 1
50-316/02-04-01	NCV	10 CFR 50, Appendix B, Criterion XVI, inspector identified violation for the failure to take prompt corrective action to address abnormal degradation of the safety-related 250 Vdc Battery 2AB
50-315/02-04-02	NCV	10 CFR 50, Appendix B, Criterion XVI, inspector identified violation for the failure to take prompt corrective action to resolve a degraded condition of the Unit 1 East MDAFWP room cooler
50-315/02-04-03; 50-316/02-04-03	FIN	Green finding regarding for the failure to consistently identify a reasonable apparent cause for conditions adverse to quality
50-315/02-04-04; 50-316/02-04-04	FIN	Corrective action cross-cutting finding for the failure to promptly implement effective corrective actions for conditions adverse to quality impacting the mitigating systems and public radiation safety cornerstones

Discussed

50-316/2002-004-00	LER	Unanticipated Start of the Turbine Driven Auxiliary Feedwater Pump

LIST OF ACRONYMS USED

ADAMS	Agency-wide Documents and Management System
AEP	American Electric Power
AV	Apparent Violation
CFR	Code of Federal Regulations
CR	Condition Report
CRD	Control Rod Drive
CRID	Control Room Instrumentation Distribution
DC	Direct Current
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
ESW	Essential Service Water
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
MDAFWP	Motor Driven Auxiliary Feedwater Pump
NCV	Non-Cited Violation
NOED	Notice of Enforcement Discretion
RHR	Residual Heat Removal
SDP	Significance Determination Process
TDAFW	Turbine Driven Auxiliary Feedwater
TS	Technical Specification

4OA2 Problem Identification and Resolution

Corrective Action Program Documents and Plant Procedures

	Desktop Guide for Processing Condition Reports	Revision 0
DTG-7030.CAP.001	Desk Top Guide for Performing Root Cause or Apparent Cause Analysis	Revision 0
DTG-7030.CAP.004	Closure Reviews, Concurrences and Infrequent Processes	Revision 4
DTG-7030.CAP.005	Cross Referencing Desktop Guide	
DTG-7030.SAP.001	Self-Assessment Program Desktop Guide	Revision 0
PM Task 24	Containment Airlocks	Revision 10
PMI-7030	Corrective Action Program	Revision 30
PMI-7030-CAP-001	Corrective Action Program Process Flow	Revision 11
PMI-7030-OE-001	Industry Operating Experience	Revision 5
PMI-7030-OPR-001	Operability Determination	Revision 6
PMI-7030-POP-001	Performance Observation Program	Revision 0
PMP-4010-CAC-001	Containment Access Control	Revision 1
PMP-4100-SDR-001	Plant Shutdown Safety and Risk management	Revision 5
PMP-5030-001-001	Boric Acid Checklist	Revision 4
PMP-7030.OE.001	Industry Operating Experience	Revision 5
PMP-7030-001-001	Prompt NRC Notification	Revision 6
PMP-7030-001-002	Licensee Event Reports, Special and Routine Reporting	Revision 4
PMP-7100-CMP-001	Commitment Change Form	Revision 3
02-OHP-4021-001-003	Power Reduction	Revision 15
12-EHP-4030-001-001	Check Valve Examination Surveillance	Revision 01a
12-EHP-5043.OAR.001	Acceptance Review Checklist	February 16, 2002
12-EHP-5074.MOV.002	Control Switch Settings (p20&21)	January 18, 2002

12-OHP-4050.FHP-041	Reactor Missile Shield Cavity Cover and Seismic Restraint Installation	Revision 1a
01EHP 4030.108.208	ECCS Flow Balance - Safety Injection System	Revision 1
02EHP 4030.208.001	ECCS Flow Balance - Safety Injection System	Revision 3
02EHP 4030.203.208	ECCS Flow Balance - Boron Injection System	Revision 0b
01EHP 4030.103.208	ECCS Flow Balance - Boron Injection System	Revision 1
1EHP 4030.116.248	CCW Survey Data	Revision 0

Category 1 and 2 Root Cause Evaluations

P-00-08384	Trip of 34.5 KV Circuit Breaker BC and Subsequent Loss of Reserve Power to Units 1 and 2 Train a Buses
00238033	Maintenance Rule Functional Failure Identified. Should Also Be a Maintenance Preventable Functional Failure
01023054	Unit 2 Lower Containment Airlock, the Inner Airlock Was Able to Be Opened While Outer Airlock Door Was Also Open
01296054	Maintenance Rule Systems Are Not Being Evaluated and (A)(1) Action Plans Are Not Being Developed, Approved and Implemented in a Timely Manner
P99-06940	Degradation of ECCS Throttle Valves Due to Cavitation Induced Erosion During LOCA
P-99-07897	Valve 1-SI-121S Disk(plug) Seating Surface Has Apparent Eroded Indications
P-99-10452	ECCS Throttle Valve May Not Be Open Enough to Pass Maximum Size Containment Sump Debris (0.25-inch Diameter) During Long Term Cooling on Containment Sump Recirculation
P-99-15072	4kv Degraded Voltage Relay Technical Specification Lower Allowable Limit Is Not Adequate to Protect Connected Safety Related Motors
CR 99-03087	EDG Control Air System Designed Non-Conservatively. A loss of control air will shut engine down

CR 01233030	The east motor driven auxiliary feedwater pump room coolers were found not operating in automatic
CR 01101048	Unit 2 entry into excessive reactor coolant leakage abnormal procedure due to unidentified RCS leakage
CR 99-20129	Tripped Unit 2 CD diesel generator due to load swings from 3200 kW to 1000 kW
CR 99-10014	Vital area barrier degradation

Category 3 Apparent Cause Evaluations

01103002	Dry BA Buildup on Downstream Side of Valve Where Tubing Is Welded to Valve
01196002	ODE Actions Specified in CR 99-10357 to Restore Full Qualification for CRD/CRID Ventilation Fans Appear to Have Been Inadequately Implemented
01210001	4KV Switchgear Fans 2-HV-SGRS-1a and 2-HV-SGRS-4a Dampers Are Cycling Causing Ventilation Problems in the CRID Inverter Room Area
02021004	2-CCR-440 Leaked at 44,000 SCCM with a Supply Pressure of 1.5 psig During LLRT Testing
02022006	SSTD and CD Mix Match
02022018	2AB Diesel Generator Failed Steady State Voltage Acceptance Criteria During STP.217AB (Diesel Time Response Testing) Failed to Parallel to Offsite
02023077	U2 Entered an Unintended Shutdown Risk Orange Path on Inventory Control
02028028	Valve Severely Thrusted into Backseat
02037084	2-ESW-141, All Internal Parts of the Valve Except Rubber Insert Are Missing
P-98-05574	The GL 89-13 Program Has Been Implemented thru Individual Systems but Not on a Formal Programmatic Basis

02019036	During Planned Reactor Trip the Turbine Driven Aux Feed Pump Started
P-99-10357	Fans 2-HV-SGRS-1A and 2-HV-SGRS-4A in the 4 KV Room Which Share Common Duct Work, Are Experiencing Adverse Fan to Fan Interactions. Possibly Due to Failed Temperature Controller 2-VCT-350

Operating Experience and Generic Communications

01136027	NRC Information Notice 2001-06 Centrifugal Charging Pump Thrust Bearing Damage
01199022	NRC Information Notice 2001-12 Hydrogen Fire at Nuclear Power Station
01353040	Operating Event-13065-2B RHR Pump Failure Due to Contact Between the Pump Impeller and the Stuffing Box Extension Upper Wear Ring
POE-01-001990	INPO SEN 224-Recurring Event, Inadvertent Reactor Vessel Level Decrease During Shutdown Cooling Loop Transfer
01362006	INPO SEN 222 Emergency Diesel Fuel Oil Storage Tank Water Intrusion
01362008	NRC Information Notice 2001-14 Problems with Incorrectly installed Swing Check Valves
02002020	NRC Information Notice 2001-19 Improper Maintenance and Reassembly of Automatic Oil Bubblers
02042002	Westinghouse NSAL-02-2 entitled CRDM Pressure Housings, CRDM Seismic Supports which Provides Guidance on proper installation of CRDM Seismic Supports
P-99-24826	NRC Information Notice 99-28 Recall of Star Brand Fire Protection Sprinkler Heads
P-99-07602	SRV3 ESRR: Calculation PS-4KVD-002 Shows that the Momentary Ratings on the 4kV Circuit Breakers are exceeded for Fault Conditions
01025037	Operating Event 11850-Charging Safety Injection Pump Bearing Damage Found Upon Disassembly

OE-13483	Operating Event - Tube Damage in Recirculated Cooling Water Heat Exchangers
OE-13476	Operating Event - Unexpected Failure of Source Range Detector
OE-13499	Operating Event-Auxiliary Feedwater Pump Suction Integrated Design
OE-13493	Operating Event-2A D/G Governor Failed to Respond During Monthly Run Due to Missing Gear Guard Clip and Misadjusted Clutch
OE-13482	Operating Event-10CFDR55 Medical Exam Requirements Not Met

Corrective Maintenance Job Orders

C020244	Replace Rotating Element 2-HV-ACRA-2
C020290	2-IRV-310, Correct Leakage at Stem Area
C0044824	1-CCW-355 Repair Separated Stem
C0053709	Obtain Fouling Factor Baseline Data
C0053964	Install Trimming Orifices in Emergency Core Cooling System.
A0103841	1-CCR-441 Refurbish Valve and Actuator
A0104298	1-CCR-440 Refurbish Valve and Actuator
C0174665	1-PP-10E Repair Seal Leak
C0197514	2-PP-50E. Repair Seal Fitting LK. Clean/Remove BA
C0199732	Remove Packing Verify Easy Operation of Valve
R0203080	Various Construction Activities to Support Refuel; Reinstall Rx Seismic Turnbuckles
C0204317	Repair Pressure Seal Leakage 2-SI-205
00323057	1-PP-10 Change Oil
00327043	1-CRR-440 Setup with Wrong Bench Set Values
00350174	1-PP-26N Investigate Source of Leak and Correct

00366005	1-PP-10E Correct Oil Leak OB Level Glass
01053036	2-PP-50E, Correct leakage at Pump Head Gasket
01103002	2-IFI-266-V2 Perform Pin Hole Weld Repair
01183039	U-1 West MDAFP Outboard Packing is Leaking a Fine Spray on to the Outboard Bearing Housing
01268044	2-HV-AES-2 Investigate Shaft Noise

Other Condition Reports

P-00-01973	Unit 2 Small Bore Piping Concerns That Resulted in Post Restart Design Changes Based on “Operability Criteria”
P-00-03032	Some Small Bore CCW Piping Attached to the RCP Thermal Barrier Is Not Adequately Supported to Accommodate the Thermal Movement of the Pumps
P-00-04479	The Containment Isolation Valve 1-CCR-440,441,455,456,457 and 2-CCR-440,441,457 Have Been Setup with the Wrong Benchset Values
P-00-05269	The Unit 2 South Safety injection Pump (2-PP-26S) Lube Oil has an Unacceptable Level of Particulate Containment
00323057	Unit 1 East Component Cooling Water Pump Inboard Bearing has Discolored Oil
00327043	WR 00264047 and WR 00264048 Were Incorrectly Rejected
00350174	U1 North SI Pump OB Mechanical Seal Water Outlet Piping Threaded Connection into Mechanical Seal is Leaking 1 drop per minute
00366005	East CCW Pump Has an Oil Leak From Outboard Pump Bearing
01019018	An Error was Discovered in the Calculation of Battery Capacity for 2-Batt-CD in JO R10468
01019032	Track Effectiveness Review Plan Items CARB Closure, Year 2001

01023054	Unit 2 lower Containment Airlock Doors Open
01029047	CR 00-08384 Action #2 Does Not Fully Address Revision 1 of the Associated Prescribed Action
01029049	Condition Report Actions taken were not Closed in a Timely Manner
01029055	Potential Non-compliance with Action #4 of P-00-8384 (Partial Loss of Power Event of June 2000)
01030016	Condition Report was not initiated when 2-EHP 4030.208.002, Rev 0a. Was determined to Need Changes
01030017	NRC Inspectors Identified that the Prescribed Action Does Not Match the Actual Action Taken
01031013	Assess Effectiveness of Actions Taken to Improve Interim Corrective Actions and Corrective Action Timeliness
01031025	NRC Inspectors identified in Interviews that Some Personnel Did Not Feel Proficient in the Use of eSAT
01032008	Water Found in the Oil From the Unit 1 West Motor Driven AFP Outboard Pump Bearing
01032040	NRC Identified that a Prescribed Action From a Condition Report was Not Completed Properly and Closed Out
01047048	1-FRV-230, Unit 1 SG#13 Feedwater Regulating Valve Control Board Indication Continued to Indicate Mid-Position Even After 1-FRV-230 Was Locally Closed Post Unit 1 Reactor Trip
01051034	Power Supplied from PPC to Limit Switches is Inadequate to Break Down Contact Film on Containment Isolation Valves
01053036	U2 East Charging Pump Head gasket is Leaking as Indicated About 1/8 cup BA Buildup at Bottom of Head Flange
01117020	NRC Inspector Questions on the RCP Control Seal Leakage Technical Specification Regarding the Seal Line Resistance

01124053	Evaluate the Methodology Used for the Acceptance Criteria for the Development of the Seal Line Resistance Surveillance IAW TS 4.4.6.2.1c
01129088	S&L Study to Resolve 4kV Switchgear Short Circuit Overduty Concerns was OAR'd With Comments
01163040	CR -00-11239 Maintenance Rule Evaluation Did Not Properly Evaluate the Described Condition for Possible Maintenance Preventable Functional Failures
01184086	Unit 1 West Motor Driven Aux Feed Pump Inboard and Outboard Pump Bearing Have Water in the Bearing Reservoirs
01186002	Repeated Concerns with Water in Pump Bearing Housing Oil Requires Remedial Actions
01198037	1 AB Battery Pilot Cell Electrolyte Temperature used for Determining Operability in Procedure 01-OHP-4030.STP.030 was Inappropriately Revised
01213058	Inadequate PMT Specified for Planned Scope of JO 00253005. Condition Discovered during T-5 Meeting (SR-U2 East Motor Driven Aux Feed Pump)
01248050	Battery Charger Failures, Maintenance Rule Function 250-01(Provide Charger DC Power to Safety-Related Busses) Will be Taken to (a) 1 Status
01249015	2-FRV-255, East MDAFP Test Valve failed to Stroke Properly during the Performance of 02-OHP-4030-STP-017E
01250006	Corrosion on Various Positive Posts of 2-BATT-N
01250025	As Found Connection Torque Less Than 60 inch pounds
01255009	Various Discrepancies Found During Weekly Battery Surveillance

01257072	When Running STP-27 (under full load) the Output of the Diesel Generator was Fluctuating ~1000kw
01262005	1-BATT-N Cell #30 ICV Below Tech Spec Limit
01264042	Damper 2-HV-SGR-MD Parts Are Worn
01268044	2-HV-AES-2 Made a Light Grinding Noise Where the Shaft Enters the Fan Casing
01277001	1-CCR-440 Failed to Stroke During Testing
01277051	1-CCR-440 Exceeded the Stroke Time Limit Stated in the Tech Data Book During IST Stroke Timing per 01-OHP-4030-STP-020E
01283054	Follow Completion of Enhancement of Procedure 12 4030 STP.208SI
01331041	Enter Unavailability Hours for the VSG into the M-Rule Database
01338025	Track RadChem-Environmental Self Assessment RPS-2001-01
01341004	1-BC-CD-2 Battery Charger Failure
01347067	Internal Degradation Found on 23 cells of 2-BATT-AB during surveillance
02032010	Unit 2 CD2 Battery Charger Tripped off When AC Source Cross-tied
02034028	Damaged Insulation on Conductor
02037089	2-CCR-440 failed IST Stroke Time Test. A JO was Initiated to Reposition the limit switch Arm. Done without Verifying that the Valve was in the Seat
02039004	During the PMT run of the CD DG it Had to be Stopped After One Minute of Run Time Due to Speed Cycling From 60 to 61 Hz
02043052	Maintenance Supervisor Inappropriately Closed Out Job Order Activity 01101073-03
02044010	Body to Bonnet Leak on 2-SI-205(North SI Pump 2-PP-26N Discharge Header Shutoff Valve) Rate 1-3 drops/min

02044012	12-PP-26S Possible Oil Degradation Observed During Start Up
02044093	Corrosion Found on Cell 87 During Weekly Battery Surveillance
02045035	Observed Deficiencies for Check Valve 2-ESW-143 During Engineering Examination
02049054	The CD2 Battery Charger Failed to Control Bus Voltage Resulting in Multiple Control Room Annunciators and a Large Current Loading on the Charger
02052070	Relay K301 Failed Causing Uncontrollable DC Voltage Output
02054016	CR 02037089 Documented Comments From Engineering About Procedure 12-IHP-6030-IMP-030
02065036	Tracking CAT X CR Created to Track Three 01296054 CRAs related to System Engineering Handbook Update and Revision
02073016	Pa Audit Pa-02-06 Noted Areas for Improvement in the Documentation of CR Evaluations for Operating Experience
02093039	Cells Number 102 and 27 Have Cracks in the Top Cover
02094039	Evaluation Performed for CR 01196002 Did Not Meet Standards for Quality
02095021	Inoperability of 3 Cells Was Not Reported in a Timely Manner
02096004	During Tour of the Unit 2 A/B Battery Room Noted a Slight Difference in Batteries 46 and 52 From the Others
02100017	Corrective Actions Taken for Root Cause CR 99-06940 not Consistent with Prescribed Actions
P-99-07866	ESRR GL89-13 Thermal Performance Monitoring Program Needs to be Upgraded
P-99-29182	Revised Control Room Dose Analysis from Westinghouse will be Submitted to NRC for Approval

Condition Reports Initiated As A Result of this Inspection

01183039	Reopened - Unit 1 West MDAFP Outboard Pump Packing is Leaking a Fine Spray on to the Outboard Bearing Housing
02087024	Failure To Meet Management Expectations for Issuance of CR to Document Known Adverse Conditions
02094039	The Evaluation Performed for CR 01196002 Did Not Meet Standards for Quality
02099018	Failure To Correctly Document Corrective Actions Taken
02100016	Failure to Correctly Evaluate NRC Security Related NCV
02100085	Accuracy of Information Concern
02101026	CR 01051009 Was Closed Out to WR 01051009 and WR Closed With No Work Performed
02101053	Action Documented Do Not Match Changes Made in Guidance
02101060	Failure to Identify the Cause and to Implement Corrective Actions for Conditions Adverse to Quality
02102016	CR 99-20129 Was Closed Without Creating an Action to Fully Resolve the Condition
02102032	CR 01103002 Apparent Cause Evaluation was Deemed Insufficient
02107016	CR 02019036 Evaluation did not Address the Operational Aspects of the TDAFP Auto Start on the Planned Reactor Trip
02108010	Apparent Failure to Implement Corrective Action for Category 1CR
02108012	Failure to Implement Corrective Actions for Category 1 and 2 CRs
02108013	Inadequate/Ineffective Apparent Casual Evaluations for Category 3 CRs

02108014	Untimely Notification of Shift Manager for Condition Adverse to Quality	
02108057	Crosscutting Finding Resulting from PI&R Inspection	
02114058	NRC Indicated That PA Assessment of Non-Cited Violation Condition Reports was Inadequate	

Audits

PA-SR-02-0001	Performance Assurance Surveillance - Corrective Action	February 28 - March 15, 2002

Other Documents

Component Eval CE 95-0304	Stem Connector for Hamel-Dahl 500 Series Control Valves	September 16, 1995
Drawing 1-AEP-ITHD-M001	Valves	Revision 0
NED CALC PS-4KVP-011	4KV/600 Volt XFMR Overload Relays	May 10, 1994
Exception ODE Priority List Item 00416	ODE 00-01973 Small Bore Piping	
DIT -S-00362-01	Containment Penetrations CPN-2 and CPN-5 Inner Cooling Coils CCW Outlet and CPN-3 and CPN-4 Inner Cooling Coils CCW inlet Setpoint Parameters	
DIT-S-00572-00	Transmittal of a Summary of 2-DCP 558 Test Results for ECCS Flow Balancing	February 2, 2002
PDM Interim Oil Analysis Report	Unit 1 East Component Cooling Water Pump Lube Oil	April 9, 2002
Commitment # 6688	Interim Response to Design Request	
01000028	Mechanical Preventive Maintenance Task Sheet	March 14, 2002
	Effectiveness Review CR99-06940 SI and Centrifugal Charging Throttle Valve Internal Erosion	April 11, 2002
	Top 15 Oldest Category 1&2 CRs with Actions	April 9, 2002

	Top 50 Oldest Category 3 CRs with Actions	March 26, 2002
2-DCP-3558	ECCS Injection Line Modification	Revision 1a
	Inter Organization Agreement AEP Energy Delivery and AEP Nuclear Generation Group	August 7, 2001
2002-0985-00	50.59 Screening	
LER 99-013-01	Safety Injection and Centrifugal Charging Throttle Valve Cavitation during LOCA could lead to ECCS Pump Failure	February 8, 2001
LER 316/2002-004-00	Unanticipated Start of the Turbine Drive Auxiliary Feedwater Pump	January 19, 2002
	250 Vdc System Maintenance Rule Scoping Document	Revision 2
	Component Cooling Water System Maintenance Rule Scoping Document	Revision 1