June 22, 2004

Mr. M. Nazar
Senior Vice President and
Chief Nuclear Officer
Nuclear Generation Group
American Electric Power Company
500 Circle Drive
Buchanan, MI 49107

SUBJECT: DONALD C. COOK NUCLEAR POWER PLANT, UNIT 2
NRC SUPPLEMENTAL INSPECTION REPORT 05000316/2004004 (DRP)

Dear Mr. Nazar:

On April 30, 2004, the U.S. Nuclear Regulatory Commission (NRC) completed a supplemental inspection using Inspection Procedure 95002, "Inspection For One Degraded Cornerstone Or Any Three White Inputs In A Strategic Performance Area," at your D. C. Cook Nuclear Power Plant. The enclosed report documents the results of the inspection which were discussed on May 12, 2004, with Mr. J. Jensen and other members of your staff.

As discussed in our annual end-of-cycle assessment letter dated March 4, 2004, plant performance for D. C. Cook Unit 2 was categorized within the Degraded Cornerstone column of the NRC's Action Matrix based on two White performance indicators in the Initiating Events cornerstone. The NRC performed this supplemental inspection as prescribed by the Action Matrix based on this performance.

In July 2003, your second quarter 2003 performance indicator submittal reported that the Unit 2 Scrams With Loss of Normal Heat Removal performance indicator had crossed the Green-to-White threshold. Your third and fourth quarter performance indicator submittals reported that this performance indicator continued to be categorized as White. Your corrective actions to address this White performance indicator were previously evaluated using Inspection Procedure 95001, "Inspection For One Or Two White Inputs In A Strategic Performance Area," the results of which were documented in NRC Inspection Report 05000316/2003014 (DRP). The NRC concluded in that report that you had performed a thorough root cause evaluation and that your corrective actions to address this White performance indicator were reasonable. In January 2004, your fourth quarter 2003 performance indicator submittal reported that the Unit 2 Unplanned Scrams Per 7000 Critical Hours performance indicator had also crossed the Green-to-White threshold.

This supplemental inspection was conducted to review your corrective actions to individually and collectively address both of these White performance indicators and examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. The purpose of this inspection was to (1) provide assurance that the root causes and contributing causes for the

individual White performance indicators and for the collective performance issues which resulted in the degraded cornerstone were understood; (2) independently assess the extent of condition and extent of cause for the individual White performance indicators and collective performance issues; and (3) provide assurance that your planned corrective actions were sufficient to address the root causes and contributing causes for the White performance indicators and to prevent their recurrence.

Based upon the results of this inspection, no findings of significance were identified. The inspectors determined that your Common Cause Evaluation identified the root causes and contributing causes for the two Unit 2 White performance indicators which resulted in the degraded cornerstone. However, the inspectors identified some disparities between the corrective actions prescribed in your Common Cause Evaluation and the associated D. C. Cook Recovery Plan which you relied upon to implement these corrective actions. The inspectors concluded that these disparities could impact the successful implementation of corrective actions necessary to address the identified root causes and contributing causes which resulted in the White performance indicators.

Also, the inspectors reviewed the causal factors for the White performance indicators and determined that a common denominator was an ineffective corrective action program. Causal factors consistently identified in your evaluations were the failure to take timely and/or effective corrective actions to address identified problems and the inability to identify low level event precursors; elements related to the corrective action program. Because corrective action program deficiencies were also identified during a previous Inspection Procedure 95002 inspection and because a long-standing substantive cross-cutting issue exists in the Problem Identification and Resolution area, continued management attention in this area is warranted.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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).

Sincerely,

/RA by Patrick L. Hiland Acting for/

Steven A. Reynolds
Acting Director
Division of Reactor Projects

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

Enclosure: Inspection Report 05000316/2004004(DRP)
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-316
License No:	DPR-74
Report No:	05000316/2004004(DRP)
Licensee:	Indiana Michigan Power Company
Facility:	Donald C. Cook Nuclear Power Plant, Unit 2
Location:	1 Cook Place Bridgman, MI 49106
Dates:	April 19 through May 12, 2004
Inspectors:	S. Burton, Monticello Senior Resident Inspector C. Phillips, Senior Operator Licensing Examiner P. Snyder, Byron Resident Inspector R. Ng, Reactor Engineer
Approved by:	E. Duncan, Chief Branch 6 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000316/2004004(DRP); 04/19/2004-05/12/2004; Indiana Michigan Power Company, Donald C. Cook Nuclear Power Plant; Inspection Procedure 95002, “Inspection For One Degraded Cornerstone Or Any Three White Inputs In A Strategic Performance Area”

This report covers a supplemental inspection performed by region-based and resident inspectors. 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.

Cornerstone: Initiating Events

The U.S. Nuclear Regulatory Commission (NRC) performed this supplemental inspection to assess the licensee’s evaluation of two White performance indicators (PIs) in the Unplanned Scrams Per 7000 Critical Hours and the Scrams With Loss of Normal Heat Removal areas of the Initiating Events cornerstone.

This inspection was conducted in accordance with Inspection Procedure 95002, “Inspection For One Degraded Cornerstone Or Any Three White Inputs In A Strategic Performance Area,” and evaluated the licensee’s actions to address these White performance indicators. The inspectors concluded that the licensee performed a comprehensive evaluation of the issues, both individually and collectively. The licensee identified the underlying causal factors as an ineffective corrective action program, an ineffective equipment reliability program, and ineffective human performance improvement initiatives. The licensee’s planned corrective actions were identified in the associated Common Cause Evaluation and tracked for implementation in the D. C. Cook Recovery Plan.

The inspectors did not identify any findings during their review of the licensee’s evaluation; however, some disparities between the corrective actions prescribed in the Common Cause Evaluation and the D. C. Cook Recovery Plan which were relied upon to implement these corrective actions were identified. The inspectors concluded that these disparities could impact the successful implementation of actions necessary to address the identified root causes and contributing causes which resulted in the White performance indicators. Although none of the issues identified represented a finding or violation of regulatory requirements of more than minor significance, each represented a weakness within the licensee’s corrective action process.

REPORT DETAILS

01 INSPECTION SCOPE

This inspection was conducted in accordance with Inspection Procedure 95002, "Inspection For One Degraded Cornerstone Or Any Three White Inputs In A Strategic Performance Area," to assess the licensee's evaluation of two White performance indicators (PIs) in the Initiating Events cornerstone. The inspection objectives were to provide assurance that the root causes and contributing causes for the individual White performance indicators and for the collective performance issues which resulted in the degraded cornerstone were understood, to independently assess the extent of condition and extent of cause for the individual White performance indicators and collective performance issues, and to provide assurance that the corrective actions were sufficient to address the root causes and contributing causes for the White performance indicators and to prevent their recurrence.

D. C. Cook Unit 2 entered the Degraded Cornerstone column of the NRC's Action Matrix in the fourth quarter of 2003 as a result of two White performance indicators (PIs) in the Initiating Events cornerstone. In July 2003, the licensee's second quarter 2003 performance indicator submittal reported that the Scrams With Loss of Normal Heat Removal performance indicator had crossed the Green-to-White threshold. The third and fourth quarter performance indicator submittals reported that this performance indicator continued to be categorized as White. This performance indicator was previously inspected using Inspection Procedure 95001, "Inspection For One Or Two White Inputs In A Strategic Performance Area." The root causes for the trips with a loss of normal heat removal were the failure to implement an effective equipment reliability program to resolve long-standing and repetitive equipment problems, and an inadequate reactor trip response procedure. The NRC concluded that the licensee had performed a thorough root cause evaluation and that the corrective actions identified were reasonable. The results of this inspection and the findings identified during the inspection are documented in NRC Inspection Report 05000316/2003014(DRP).

The scope of this inspection included a review of the root cause evaluation, extent of condition, extent of cause, and corrective actions for a second White performance indicator in the Unplanned Scrams Per 7000 Critical Hours area that was reported in the licensee's fourth quarter performance indicator submittal, and the common issues identified for both of the White performance indicators. The licensee's evaluation of the second White performance indicator and the common causes for both White performance indicators were documented in Condition Report (CR) 03365036, "Common Cause Evaluation (CCE) of the Initiating Events Degraded Cornerstone." Additionally, the CCE referenced three additional root cause evaluations which independently assessed the contributing causes identified by the licensee during their CCE. In addition to a detailed review of the licensee's evaluation, the inspectors performed an independent extent of condition and extent of cause review for the individual and common causes.

The licensee's corrective actions also referenced the D. C. Cook Recovery Plan as the mechanism to implement these corrective actions. The D. C. Cook Recovery Plan was a performance improvement initiative to address performance problems that had been

previously identified. The Recovery Plan contained many of the corrective action elements identified in the licensee's CCE. The Recovery Plan was initiated in the Fall of 2003 prior to the identification of the degraded Initiating Events cornerstone. The inspectors included the D. C. Cook Recovery Plan in their review.

The reactor trips which caused the Unplanned Scrams Per 7000 Critical Hours and Scrams With Loss of Normal Heat Removal performance indicators to cross the Green-to-White threshold are described below:

- An automatic Unit 2 reactor trip occurred on October 7, 2001, due to the failure of a voltage regulator input resistor in the North Control Rod Drive Motor Generator (MG) set. The failure of the resistor resulted in the collapse of the North MG set field and created a rapid voltage transient in the South MG set. The loss of both MG sets caused multiple rods to drop into the core and resulted in a negative rate reactor trip. In addition, operators closed the Main Steam Isolation Valves (MSIVs) to address excessive reactor coolant system (RCS) cooldown. The closure of the MSIVs isolated the normal heat removal path to the main condenser.

- An automatic Unit 2 reactor trip occurred on May 12, 2002, due to the failure of two redundant power supplies in a reactor control instrumentation cabinet. The failure of the power supplies resulted in the closure of a feedwater regulating valve and caused a reactor trip on low feedwater flow coincident with low steam generator level. In addition, condenser steam dump controls were disabled, resulting in a loss of the normal heat removal path to the main condenser.

- An automatic Unit 2 reactor trip occurred on July 22, 2002, due to a loss of condenser vacuum that occurred during condenser waterbox cleaning. Operators closed the MSIVs to address excessive RCS cooldown. The closure of the MSIVs isolated the normal heat removal path to the main condenser.

- An automatic Unit 2 reactor trip occurred on February 5, 2003, due to the failure of a 24 Volt Direct Current control group power supply. The failure of the power supply resulted in the closure of a feedwater regulating valve and caused a reactor trip on low feedwater flow coincident with low steam generator level. Following the reactor trip, operators closed the MSIVs to address excessive RCS cooldown. The closure of the MSIVs isolated the normal heat removal path to the main condenser.

- Unit 1 and Unit 2 manual reactor trips occurred on April 24, 2003, due to a large influx of fish which significantly degraded circulating water flow. The degraded circulating water flow resulted in a loss of condenser vacuum and a loss of the normal heat removal path to the main condenser.

- An automatic Unit 2 reactor trip occurred on December 30, 2003, due to a short-to-ground in the Control Room Instrument Distribution system which occurred during a routine controller calibration. The short-to-ground caused a relay in the power supply circuit for the feedwater isolation valves to de-energize.

As a result, the feedwater isolation valves closed which resulted in a reactor trip on low feedwater flow coincident with low steam generator level.

The following reactor trips were also reviewed as part of the licensee's CCE, but did not directly contribute to the White performance indicators since these trips were associated with Unit 1.

- A manual Unit 1 reactor trip occurred on June 14, 2002, due to debris in the main feedwater condensers. An influx of zebra mussel shells and debris following a circulating water pump start caused blockage of the main feedwater pump condensers. A main feedwater pump tripped on low vacuum as the feedwater pump condenser became clogged with zebra mussels. Operators manually tripped Unit 1 in response to the trip of the main feedwater pump.

- An automatic Unit 1 reactor trip occurred on January 15, 2003, due to a fault in the Unit 1 main transformer resulting in a fire. The fault caused an automatic main generator trip and a reactor trip.

The following reactor trips were also reviewed as part of the licensee's CCE, but occurred after the performance indicators had crossed the Green-to-White threshold.

- An automatic Unit 2 reactor trip occurred on March 29, 2004, due to the grounding of one phase of the Control Rod Drive MG set when an auxiliary equipment operator incorrectly racked in a reactor trip bypass breaker following a Solid State Protection System test. The grounding of the MG set caused multiple control rods to drop into the core and resulted in a negative rate reactor trip.

- An automatic Unit 2 reactor trip occurred on April 8, 2004, due to a feedwater flow transient. This transient resulted in oscillating flows to the steam generators and a high steam generator level main turbine trip. The main turbine trip caused a reactor trip. The cause of feedwater transient was under investigation at the time of inspection.

The following inspection results are organized by the specific inspection requirements of Inspection Procedure 95002 which are identified in italics in each section.

02 EVALUATION OF INSPECTION REQUIREMENTS

02.01 Problem Identification

a. *Determine that the evaluation identifies who (i.e., licensee, self-revealing, or NRC), and under what conditions the issue was identified.*

All reactor trips that contributed to the two White performance indicators were self-revealing events.

As discussed in NRC Inspection Report 05000316/2003014, the NRC resident inspectors questioned two Unit 2 reactor trips that were not reported in the licensee's

data for the Scrams With Loss of Normal Heat Removal performance indicator. The data-reporting issues identified by the resident inspectors were submitted for resolution using the Frequently Asked Question (FAQ) process. Following the resolution of the FAQs associated with these two trips, the licensee reported that these trips and three other reactor trips on May 12, 2002; July 22, 2002; and April 24, 2003; were performance indicator occurrences that had caused the Scrams With Loss of Normal Heat Removal performance indicator to cross the Green-to-White threshold.

On December 30, 2003, a Unit 2 reactor trip caused the Unplanned Scrams Per 7000 Critical Hours performance indicator to cross the Green-to-White threshold. The licensee identified and documented this trip and the other reactor trips that contributed to this White performance indicator in their CCE. The inspectors determined that the licensee properly identified the root causes and contributing causes which resulted in this performance indicator crossing the Green-to-White threshold; however, the inspectors determined that the licensee had not adequately addressed the problem when identified in condition reports at the precursor level on two previous occasions (Section 2.01.b).

The inspectors reviewed equipment, procedural, and human performance issues that resulted in the reactor trips to verify that the licensee was properly identifying and correcting problems. The inspectors determined that all of the reactor trips and associated performance issues previously identified by the licensee had been entered into the corrective action program. However, the inspectors identified a vulnerability associated with the licensee's documentation of the failure of the main generator output breaker to open automatically following a reactor trip.

Post-trip reports for Unit 2 reactor trips on December 30, 2003, and April 8, 2004, identified that the main generator output breaker failed to automatically open as expected. The inspectors identified that these failures were documented in condition reports that contained a number of other unrelated issues and the licensee's resolution of those condition reports failed to address the failure of the generator output breaker to open. Although these output breaker failures represented a condition adverse to quality, the generation of a separate condition report to identify this problem was not required by licensee procedures. The inspectors interviewed members of the licensee's engineering staff and determined that the technical problem with the generator output breaker was resolved; however the failure to document the issue in a separate condition report impaired the licensee's ability to evaluate the condition, to trend the issue, and to analyze a potential extent of condition concern.

The inspectors concluded that the practice of identifying multiple unrelated issues in a single condition report was a vulnerability which could diminish the effectiveness of the licensee's corrective action program. The licensee concurred with the observation and generated three condition reports to address the issue. Condition Report 04114060 identified the problem with the identification of multiple unrelated issues in a single condition report; CR 04114064 identified the lack of documentation of the technical evaluation for the failure of the Unit 2 generator output breaker to automatically open following a turbine trip; and CR 04114066 was generated to ensure that all issues identified during the April 8, 2004, Unit 2 reactor trip were captured in individual condition reports.

No additional concerns were identified by the inspectors.

b. *Determine that the evaluation documents how long the issue existed, and prior opportunities for identification.*

The inspectors determined that the licensee had prior opportunities to identify and evaluate trends that caused the Unplanned Scrams Per 7000 Critical Hours performance indicator to cross the Green-to-White threshold. Condition Report 01102028, dated April 12, 2001, identified that in the first quarter of 2001, the Unplanned Scrams Per 7000 Critical Hours performance indicator had developed an adverse trend. However, no common causes were identified for the reactor trips which impacted this indicator. Instead, the licensee concluded that material condition problems were expected to occur as a result of a 3-year extended shutdown which ended in 2000. The licensee's evaluation also concluded that the safety significance of each event was minor and that, overall, there was no decline in plant performance.

Condition Report 02281070, dated October 8, 2002, was also initiated for approaching the Unplanned Scrams Per 7000 Critical Hours performance indicator threshold. Although performance and equipment reliability issues were identified in the condition report as the causes for the reactor trips which impacted this performance indicator, a decrease in the number of reactor trips in the third quarter of 2002 compared to the second quarter of 2002 was cited as evidence that plant performance was improving. This logic led licensee personnel to conclude that continued operation through the end of 2002 without another reactor trip would cause the numerical value of the performance indicator to decrease further. As a result, no additional corrective actions or reviews were considered necessary or were performed.

Using licensee data, the inspectors determined that these evaluations failed to recognize that Unit 2 exceeded the average yearly trip rate for pressurized water reactors in the United States by 2.4 times in 2001 and by 2.9 times in 2002. The inspectors concluded that the licensee identified the negative trend in the performance indicator, but failed to collectively review the reactor trips to gain the necessary insights to develop corrective actions to prevent crossing the performance indicator threshold.

c. *Determine that the evaluation documents the plant specific risk consequences (as applicable) and compliance concerns associated with the issue(s) both individually and collectively.*

The plant specific risk consequences of each reactor trip associated with the Unplanned Scrams Per 7000 Critical Hours performance indicator was evaluated by the licensee and the safety significance was determined to be minimal. This evaluation was accomplished in individual condition reports for each reactor trip and the results were reaffirmed during the CCE. In December 2003, the NRC reviewed the licensee's evaluation of the safety significance for the Scrams With Loss of Normal Heat Removal performance indicator. The results of this review were documented in NRC Inspection Report 05000316/2003014. No issues regarding the plant specific risk consequences for the individual reactor trips were identified.

A formal quantitative assessment of the collective risk from the reactor trips which contributed to both White performance indicators was not initially available when requested by the inspectors. The licensee's CCE contained a qualitative assessment of the risk; however, no conclusion was clearly stated. Following discussions of this issue with licensee personnel, a collective quantitative risk assessment was performed. Subsequently, the inspectors were able to verify that although an increase in risk resulted from the combined events, that increase was small. No additional issues regarding the collective risk consequences for the trips were identified.

02.02 Root Cause and Extent of Condition Evaluation

a. *Determine that the problem was evaluated using a systematic method(s) to identify root cause(s) and contributing cause(s).*

The inspectors concluded that the licensee used a systematic method to identify the root causes and contributing causes for the White performance indicators which resulted in the degraded Initiating Events cornerstone. However, the inspectors determined that the method the licensee utilized was not an industry-recognized method. The licensee's CCE did not document the method or assumptions used to perform the CCE and did not include any of the supporting charts or tables used to reach the conclusions documented in the CCE. Due to the lack of documentation, the inspectors relied on interviews with members of the licensee's CCE team to reach the conclusion that a systematic method of data analysis was used. Licensee management stated that there was no documented method of performing a common cause analysis available at the site. Licensee management also stated they were in the process of developing a guideline to perform common cause evaluations. The inspectors determined that a corrective action to develop an industry-recognized common cause analysis technique was still in progress at the end of the inspection.

Licensee personnel stated that the CCE for the Unplanned Scrams Per 7000 Critical Hours performance indicator reviewed the causes and the cause codes from the reactor trips resulting in this White performance indicator. Additionally, licensee personnel stated that the causes and cause codes for six additional root cause reports associated with previous Unit 1 and Unit 2 reactor trips, and the root cause report for the White performance indicator in the Scrams With Loss of Normal Heat Removal area were also reviewed. Licensee personnel stated that due to inconsistent and/or incorrect coding, there was not enough useable cause code data from these root cause reports to perform an adequate cause code analysis.

As a result, licensee personnel developed a "Trip and Cause" matrix for the root causes and contributing causes identified in the previous root cause reports and then categorized these root causes and contributing causes into thematic areas. The six areas developed were Obsolescence/Aging, Failure to Use Operating Experience, Human Performance, Corrective Action Program Failure, Equipment Reliability, and Procedural/Operational Guidance.

Each CCE team member was assigned an area to independently assess the issues within that area. Additionally, the CCE team members searched for other potential problems within their assigned area. For example, the CCE team's engineering

representative assigned to the Obsolescence/Aging area interviewed other system engineers to determine the scope of the problem with obsolescence and aging issues. The licensee identified the following causes for these six thematic areas: an ineffective corrective action program, an ineffective equipment reliability program, and ineffective human performance improvement initiatives.

b. *Determine that the root cause evaluation was conducted to a level of detail commensurate with the significance of the problem.*

The inspectors concluded that the licensee's CCE was conducted to a level of detail commensurate with the significance of the problem. However, the lack of documentation in the CCE on the methods used to perform the CCE combined with the very broad-based common causes was challenging to review.

The inspectors noted that the success of the CCE was predicated on the conclusions and causal factors identified in previous root cause evaluations. The licensee's CCE reviewed the root causes and contributing causes identified in previous root cause reports. The inspectors independently reviewed selected root cause reports and previous NRC inspection reports to assess the effectiveness of this methodology. Additionally, the inspectors compared the results of the licensee's CCE against the root causes and contributing causes identified in the selected individual root cause reports. The inspectors concluded that effective implementation of the planned corrective actions to address the common causes identified in the CCE could have prevented the reactor trips that resulted from these performance deficiencies. The inspectors also questioned the conclusions in one of the root cause evaluations reviewed.

The inspectors questioned the licensee's conclusions in CR 03364029, "Unit 2 Tripped From 100 Percent Power Due to a Low Steam Generator Level Coincident With Feed Flow Less Than Steam Flow." On December 30, 2003, an instrument maintenance technician was performing a calibration on West Residual Heat Removal Pump PP-35W Discharge Flow Switch 2-IFC-325. During this activity, the technician reconnecting an energized lead inadvertently shorted the lead to the terminal block junction box. The short caused the Train "B" feedwater isolation valves to close and caused a reactor trip on low steam generator water level coincident with feed flow less than steam flow. This condition report concluded that the apparent cause of the reactor trip was inattention-to-detail by an instrument technician.

The licensee had downgraded this condition report from Category 2 to Category 3 without documenting a justification. This resulted in an apparent cause evaluation to review the circumstances which led to the reactor trip instead of a more rigorous root cause evaluation. The results of the apparent cause evaluation indicated that the instrument maintenance technician shorted the lead to the junction box due to a lack of attention-to-detail.

The inspectors concluded that the apparent cause evaluation did not thoroughly review the manner in which the maintenance was scheduled and performed based on the following information. The calibration of West Residual Heat Removal Pump PP-35W Discharge Flow Switch 2-IFC-325 was a routine task that was normally accomplished without lifting any power leads. The power leads were lifted during the event only

because another maintenance task was being performed simultaneously on the valve operated by the flow switch 2-IFC-325. The inspectors confirmed this by reviewing previous job orders and interviewing the instrument maintenance mechanic involved in the work. Additionally, neither the worker nor his supervisor ensured that the metal enclosure housing the energized leads was insulated before the work began. The licensee identified insulating practices and proper integration of work packages as contributing causes in CR 03365009. The licensee entered these contributing causes into the corrective action program for resolution. However, from the inspectors' review of the issue and a walkdown of the area of the work, the inspectors concluded that the apparent cause would have been better attributed to the manner in which the maintenance was scheduled and performed. Since both issues were captured in the licensee's corrective action process for resolution, the concern was considered to be minor.

The licensee determined the common causes for the reactor trips were an ineffective corrective action program, an ineffective equipment reliability program, and ineffective human performance improvement initiatives. The inspectors reviewed the root causes and contributing causes for the reactor trips which led to the White performance indicators and determined that a common denominator in all the reactor trips was an ineffective corrective action program. The root causes and contributing causes in the licensee's evaluations consistently identified a failure to take timely and/or effective corrective actions and the inability to identify low level event precursors.

c. *Determine that the root cause evaluation included a consideration of prior occurrences of the problem and knowledge of prior operating experience.*

The inspectors concluded that the licensee's CCE included consideration of several other prior occurrences and prior operating experience. The licensee's CCE included a review of at least 10 different root cause reports associated with previous reactor trips. One of these reports reviewed additional events other than reactor trips. The CCE reviewed the implementation of previously specified corrective actions to determine process or performance errors which may have contributed to the repetition of reactor trips.

d. *Determine that the root cause evaluation addressed the extent of condition and extent of cause of the problem.*

The inspectors concluded that the CCE included consideration of the extent of condition and extent of cause of the problem. The licensee's CCE stated, "Considered in aggregate the common cause is the failure of the organization to take a balanced approach to developing and implementing programs necessary for long-term effective operation of the facility." This statement, in addition to the previously identified common causes, indicated that the actual causes of the problems were broad-based and extended into every organization at the facility.

02.03 Corrective Actions

a. *Determine that appropriate corrective action(s) are specified for each root cause and contributing cause or that there is an evaluation that no actions are necessary.*

The inspectors determined that the corrective actions identified to address the root causes and contributing causes were appropriate. Corrective actions were established as a result of the CCE and as part of a licensee self-initiated performance improvement program, referred to as the D. C. Cook Recovery Plan, which had been established prior to commencing the CCE.

The licensee's CCE summarized that the White performance indicators which led to the degraded Initiating Events cornerstone was due to the "failure of the organization to take a balanced approach to developing and implementing programs necessary for the long-term effective operation of the facility." The CCE indicated that "the actions needed to resolve this common cause are to balance the priority of work associated with programs needed to understand and to resolve problems with the priority of work to repair and operate the plant." Additionally, the CCE indicated that the "Recovery Plan provides the vehicle to bring all of the work into a single system."

The licensee concluded that there were three causal factors which contributed to the root causes and contributing causes for the White performance indicators: an ineffective corrective action program, an ineffective equipment reliability program, and ineffective human performance improvement initiatives. The CCE also concluded that previous root cause evaluations adequately addressed the causal factors for each of the root causes and contributing causes.

Because the Recovery Plan was the corrective action tool for implementing the corrective actions identified in the CCE, the inspectors selected a sample of the corrective actions prescribed by the CCE and verified that these corrective actions were adequately captured in the D. C. Cook Recovery Plan.

In general, the short-term and long-term corrective actions to address the White performance indicators appeared to be comprehensive. Although broad in scope, it appeared that the Recovery Plan, if properly implemented, could be effective in addressing the identified root causes and contributing causes which resulted in the White performance indicators. However, the inspectors identified some examples where corrective action items in the CCE were not properly integrated in the Recovery Plan. The inspectors also identified some examples where Recovery Plan actions referenced by the CCE were not completed, although these actions had been closed as completed. The inspectors concluded that the disparities between the CCE and the Recovery Plan could impact the successful completion of actions necessary to address the root causes and contributing causes which led to the White performance indicators, and that the proper integration of the Recovery Plan and the corrective action program was paramount to the resolution of the identified root causes and contributing causes.

Although no findings or violations of regulatory requirements which were of more than minor significance were identified, the following examples supported this observation:

- The inspectors identified that a Recovery Plan action was inappropriately closed. Action EQ0004-11 was established to assess equipment aging and life-cycle-management deficiencies; however, it was closed indicating that the newly developed obsolescence guide resolved the concern. Specifically, the action was established to review the impact of equipment aging and life-cycle-management on the facility and not on the ability to procure replacement parts. Because the obsolescence program was established to assess the impact of age and obsolescence on the ability to procure outdated replacement parts, the inspectors concluded that the closure of the Recovery Plan item was inappropriate. The licensee acknowledged the deficiency and initiated CR 04117058 to address the issue.

- The inspectors identified an example where condition report corrective actions and Recovery Plan actions, which were linked together, were closed without all of the required actions being completed. Action Item 19 for CR 03365009 required that an evaluation to identify issues similar to those associated with an inadequate pre-job briefing would be specifically covered in the Recovery Plan. Action Item 19 referenced Recovery Plan items HP006-27. Recovery Plan item HP006-27 required the licensee to develop training videos covering behaviors such as safety, pre-job briefings, and procedure use and adherence. However, Action Item 19 identified that lessons learned were also identified in the areas of cross-functional communications, self-checks, peer coaching, and stopping work after committing an error. The inspectors noted that Recovery Plan item HP006-27 was not updated to reflect the increased scope identified by the assessment performed for Action Item 19. Additionally, HP006-27 had been closed without having developed training for all areas identified as needing improvement. The licensee acknowledged the deficiency and initiated CR 04114005 to address the issue.

- The inspectors identified that a corrective action due date was extended without assessing the impact on other dependent actions. Action Item 7 for CR 03365009 required the use of the Systematic Approach to Training (SAT) to identify gaps in managerial skills. Action Item 8 required training to be conducted for issues identified by Action Item 7. The licensee extended Action Item 7 beyond the due date for Action Item 8 without extending Action Item 8. The licensee acknowledged the deficiency and initiated CR 04112062 to address the issue.

- The inspectors identified that a corrective action was closed without completing a necessary supporting action. Action Item 10 for CR 03365009 required that the licensee develop or revise the management monitoring system to include any new elements identified during the SAT-based evaluations performed for Action Item 7. The inspectors identified that Action Item 10 was closed, indicating that the performance appraisal form had been modified and that the form was the mechanism for incorporating issues identified during the performance of the SAT process. The inspectors concluded that closing Action Item 10 without the completion of the SAT-based evaluation required by Action Item 7 was inappropriate because any elements identified during the SAT process would not

be included in the closed task. The licensee acknowledged the deficiency and initiated CR 04112067 to address the issue.

- The inspectors identified that Action Item 10 for CR 03365009 was not adequately linked to the Recovery Plan. The condition report indicated that Action Item 10 supported Recovery Plan element OE0004 but, unlike other action items linked to the Recovery Plan, Action Item 10 did not have a link to a specific element in the Recovery Plan. Additionally, the inspectors observed that 12 of the 16 Recovery Plan actions included in OE0004 were complete, and that the open actions did not contain activities that would accomplish the goals outlined in CR 03365009, Action Item 10. The licensee acknowledged the deficiency and initiated CR 04112067 to address the issue.

b. *Determine that the corrective actions have been prioritized with consideration of the risk significance and regulatory compliance.*

The inspectors reviewed the Recovery Plan, the CCE, and the referenced root cause evaluations and determined that the prioritization of the corrective actions was not directly based upon risk perspectives or analysis, but rather based upon a deterministic approach that considered the significance of each corrective action. The inspectors concluded that, in general, actions of a higher priority were scheduled for completion ahead of those having lesser urgency.

c. *Determine that a schedule has been established for implementing and completing the corrective actions.*

The licensee had established performance indicators to measure the effectiveness of the recovery process. Additionally, managerial controls had been established to ensure that any corrective action modification or due date change to a Recovery Plan action would be approved by senior management. The inspectors identified some discrepancies as identified in Section 02.03.a; however, the licensee initiated corrective actions for these issues. The inspectors concluded that these tools combined with the initiated corrective actions for the identified issues provided acceptable barriers to promote success of the Recovery Plan and corrective actions.

d. *Determine that quantitative or qualitative measures of success have been developed for determining the effectiveness of the corrective actions to prevent recurrence*.

The licensee established management reviews and key performance indicators as qualitative measures of success. Additionally, Procedure PMP-7030-CAP-001, "Corrective Action Program Process Flow," required that the licensee establish an effectiveness review plan for conditions requiring a root cause evaluation. The CCE indicated that effectiveness reviews would be performed monthly at a management review meeting and that the effectiveness of the Recovery Plan elements to address the two Unit 2 White performance indicators would be evaluated.

02.04 Independent Assessment of Extent of Condition and Extent of Cause

The licensee identified in their CCE that age-related control group power supply failures had caused repeated reactor trips. The inspectors performed an independent extent of condition and extent of cause review of the materials control program to verify that measures were established to prevent damage or deterioration of warehoused components. The inspections also reviewed selected actions within the Recovery Plan that addressed age-related equipment issues.

The inspectors reviewed the licensee's Quality Assurance Program description and commitments related to in-storage materials management. The inspectors concluded that existing materials management procedures adequately fulfilled these commitments.

The inspectors also verified that warehousing requirements for electrolytic capacitors, solenoid valves, and emergency diesel generator governors conformed to the specified vendor requirements necessary to prevent damage or deterioration. No concerns were identified for these components; however, the inspectors found that Materials Control Procedure MMP-5030-001-001, "In-Storage Preventative Maintenance Activities of Parts and Components," had been placed on administrative hold in July 2003. This procedure was developed by the licensee as a result of a self-assessment in 1999, and was an enhancement to the existing in-storage materials control program. The purpose of the procedure was to expand the application of good practices for maintenance of stored material to equipment not covered by existing warehousing procedures. The procedure was approved for use in April 2002, but was never implemented. The inspectors concluded that the delay in implementation of MMP-5030-001-001 represented a potential vulnerability in the licensee's materials control program for preventing or identifying faulty warehoused components. The licensee concurred with the inspectors' observations and initiated CR 04117058 to address the issue and to evaluate implementing procedure MMP-5030-001-001. Because the procedure was an enhancement to the minimum requirements committed to by the licensee, the inspectors concluded that there was no violation of NRC requirements.

The inspectors also reviewed selected action items in the D. C. Cook Recovery Plan related to the equipment aging program. The inspectors identified that Action EQ0004-11 of the Recovery Plan was closed without completing the prescribed action. Action 11 required an assessment of processes and programs, including the Warehousing process, the Stored Equipment Preventative Maintenance program, and the Bill of Material program, that could be affected by implementation of the aging program and the revisions to related processes. The inspectors concluded that this issue represented an additional example of disparities between the CCE and the Recovery Plan discussed in Section 2.03.a. The inspectors did not identify any additional concerns.

03 MANAGEMENT MEETINGS

Exit Meeting Summary

The inspection results were presented to Mr. Jensen and other members of licensee management at the conclusion of the inspection on May 12, 2004. The licensee acknowledged the observations presented.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
M. Nazar, Senior Vice President and Chief Nuclear Officer
J. Jensen, Site Vice President
D. Fadel, Vice President Engineering
J. Zwolinski, Design Engineering and Regulatory Affairs Director
L. Weber, Performance Assurance Director
J. Gebbie, Engineering Programs Manager
J. Miller, Mechanical Maintenance Department Material Manager
J. Waddell, Site Protective Services Manager
J. Giuffre, Maintenance Manager
J. Nadeau, Supervisor Learning Organization

NRC
P. Hiland, Acting Deputy Director, Division of Reactor Projects
E. Duncan, Chief, Reactor Projects Branch 6
B. Kemker, D. C. Cook Senior Resident Inspector
I. Netzel, D. C. Cook Resident Inspector

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Open

None.

Closed

None.

Discussed

None.

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety but rather that selected sections of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

Condition Reports

CR P-99-10728; 12-MMP-3130-NETS-003 “In-Storage Preventative Maintenance” Procedure Does Not Comply with Requirements of ANSI 45.2.2; 05/05/1999

CR 01015023; NRC Regulatory Issue Summary - RIS0021 - Changes to the Unplanned Scram and Unplanned Scram With Loss of Normal Heat Removal Performance Indicators. Document Review/Evaluation; 01/15/2001

CR 01102028; During the First Quarter of 2001, the Performance Indicators in the Initiating Events Cornerstone for Both Unit 1 and 2 Have Demonstrated Declining Performance or Entered the White - Increased Regulatory Response Band; 04/12/2001

CR 01280015; 2-FMO-242 Failed to Throttle Following a Valid Flow Retention Signal; 10/07/2001

CR 01280017; Unit 2 Tripped from Approximately 8 Percent Power; 10/07/2001

CR 01280019; After the Reactor Trip it Was Noticed That the Generator Line Voltage on the Motor Generator Sets Was Indicating 0 Volts; 10/07/2001

CR 01290010; Plant Equipment Is Not Consistently Achieving Reliable Performance; 10/17/2001

CR 02057047; The Stop Valve and Actuator Are Hunting (Won’t Stay in Detent) Due to Low Packing Friction; 02/26/2002

CR 02133001; Both 24 VDC [Volts Direct Current] Power Supplies in Control Group 1 for Rack 16 Failed; 05/12/2002

CR 02133002; Unit 2 Trip from 100 Percent Power Level, Due to Low Feedwater Flow Coincident with Low Steam Generator Level on Loop 1; 05/12/2002

CR 02165064; Manual Reactor Trip Due to the Loss of the East Main Feed Pump Following Start of the #13 Circulating Water Pump; 06/14/2002

CR 02203001; Unit 2 Reactor Trip Due to Low Condenser Vacuum While Flushing Condensers; 07/22/2002

CR 02277047; The NRC Significance Determination of a White Finding for the ESW [Emergency Service Water] Debris Intrusion Event Results in Degraded Cornerstone Under the

Mitigating Systems Cornerstone of the Revised Reactor Oversight Program for Unit 2; 10/04/2002

CR 02305075; NRC Senior Resident Questioned the D. C. Cook Plant Design Which Has Frequently Required Closure of the MSIVs to Terminate an Excessive RCS Cooldown; 11/01/2002

CR 02306005; CD EDG [Emergency Diesel Generator] Exhibited 150 KW [Kilowatt] Oscillations at Full Load During Surveillance Testing; 11/02/2002

CR 02331035; Scheduled Human Performance Self Assessment (SA-2002-OPI-001) Tracking Condition Report; 11/27/2002

CR 03010011; Perform Self Assessment SA-2002-CAP-003, Corrective Action Review; 01/10/03

CR 03016007; Unit 1 Reactor Trip Due to Fire in Main Transformer; 01/15/2003

CR 03025002; While at Full Load (3500 KW), DG2CD Experienced 150 KW Load Swings; 01/25/2003

CR 03036056; Automatic Reactor Scram from 100 Percent Power Due to Loss of Control Group Power Supplies; 02/05/2003

CR 03065001; When 2-PP-3W-MTR Breaker was Energized, a Loud “Buzz”, Lasting About 1 Second, Came From the Room on 2 Different Starts, About an Hour Apart. None of the Starting Team had Heard this Sound Before Tonight. Motor/Pump Then Ran Normally; 03/06/2003

CR 03070009; Technical Specification 3.7.1.2 Action “a” Establishes an Allowed Outage Time of 72 Hours for One Auxiliary Feedwater Pump Being Out of Service; 03/11/2003

CR 03114044; Manual Reactor Scram from 100 Percent Due to Alewife (Fish) Influx; 04/24/2003

CR 03168045; ANSI Standard N45.2.2-1972, Section 6.4, Control of Items in Storage Requires Inspections and Examinations to Be Performed on Items in Storage on a Periodic Basis. The Inspection Should Verify the Integrity of the Items Stored and its Containers, i.e., Packaging Requirements Such as Level A, B, C, or D. The Standard Also Requires the Characteristics of the Item and its Container to be Verified During the Periodic Inspection, Such as Markings, Protective Covers and Seals, Coatings and Preservatives, Desiccants and Inert Gas Blankets, Physical Damage, and Cleanness; 06/17/2003

CR 03171053; Performance Assurance Review of the Preventive Maintenance Program for In Storage Parts and Components Identified that the Program is Not Being Implemented as Required by MMP-5030-001-001, for Items Other than Motors and Pumps; 06/20/2003

CR 03177030; Self-Assessment SA-2003-OPS-008 Operations Department Human Performance Evaluates Operator Performance Issues Previously Identified by INPO [Institute

for Nuclear Power Operations] Teams. The Assessment Looks at Recent Human Performance Errors, Peer Checking, and Work Load; 07/16/2003

CR 03183035; Self-Assessment SA-2003-OPS-001 Finding - Equipment Reliability Problems Challenge Operators and Plant Safety and Production. Long Standing Problems Create Work-Arounds and Cause Acceptance of Substandard Performance; 07/02/2003

CR 03197030; Self-Assessment SA-2003-OPS-008 Operations Department Human Performance Evaluates Operator Performance Issues Previously Identified by INPO Teams. The Assessment Looks at Recent Human Errors, Peer Checking, and Work Load; 07/16/2003

CR 03199051; During the Second Quarter of 2003, the Unplanned Scrams With Loss of Normal Heat Removal Performance Indicator in the Initiating Events Cornerstone of the Reactor Oversight Process for Unit 2 Entered the White Regulatory Response Band; 07/18/2003

CR 03207008; Tracking Esat for the Performance of Self Assessment SA-2003-WMD-002-QH, Preventive Maintenance of Stocked Material; 07/26/2003

CR 03227008; CAR - SA-2002-CAP-003 Identified Some Areas for Improvement Comments Contained in NRC Inspection Report 50-315(316)/2001-03 That Have Not Been Captured for Evaluation; 08/15/2003

CR 03275041; Internal and External Assessment of the Corrective Action Program has Determined That There are Significant Weaknesses That Need to be Understood and Corrected; 10/02/2003

CR 03332025; 2-OME-90-RO, Main Turbine Right Outer Stop Valve, Caused Actuation of Annunciator 220, Drop 8, Plant CD Battery Ground When Fully Closed; 11/27/2003

CR 03341015; Removed the Unit 2 AB Emergency Diesel from Service by Tripping the HEA Due to a Loss of Load and Rapid Load Oscillations of Approximately 200-300 KW; 12/07/2003

CR 03364029; Unit 2 Tripped from 100 Percent Power Due to a Low Steam Generator Level Coincident with Feed Flow Less than Steam Flow; 12/30/2003

CR 03365009; Perform a Root Cause Investigation Associated with the Human Performance Aspects Exhibited During the Execution of Work Involving the West Residual Heat Removal Flow Transmitter IFI-325; 12/31/2003

CR 03365036; Regulatory Assessment of the Unit 2 Reactor Trip on 12/30/03 Shows Unit 2 Crossing the Green/White Threshold for the 4th Quarter of 2003. This Will Give 2 White Assessment Inputs for Unit 2 Resulting in a Degraded Cornerstone; 12/31/2003

CR 04027029; A Lack of Consistency Between Two JOAs [Job Order Activities] to Perform a Single Task May Result in Undesired Effects up to and Including Unit Trip; 01/27/2004

CR 04089034; An Automatic Reactor Trip of Unit 2 Occurred During Testing IAW [in accordance with] 2-IHP-4030-STP-511, “Train B RPS [Reactor Protection System] and ESF

[Engineered Safety Feature] Reactor Trip Breaker and SSPS [Solid State Protection System] Automatic Trip/Actuation Logic Functional Test"; 03/29/2004

CR 04089038; Main Steam Generator Stop Valve, 2-MRV-210, Drifted Partially Closed Following Unit 2 Reactor Trip/Turbine Trip; 03/29/2004

CR 04089041; Main Steam Generator Stop Valve, 2-MRV-220, Drifted Partially Closed Following Unit 2 Reactor Trip/Turbine Trip; 03/29/2004

CR 04100009; Unit 2 Reactor Automatically Tripped Caused by a High-Level in #4 Steam Generator Following a Feedwater Flow Transient; 04/08/2004

CR 04107043; Address Weaknesses Discovered During 95002 Common Cause Evaluation; 04/16/2004

CR 04114060; Condition Was Not Addressed Because Multiple Conditions Were Identified in a Single Condition Report; 04/23/2004

CR 04114064; Failure of the Main Generator to Trip and the Effect of Motoring the Unit 2 Main Generator Following a Reactor Scram on December 30, 2003, Needs to be Evaluated; 04/23/2004

CR 04114066; 95002 Inspection Observation Related to Condition Report Processing, and Addressing All Related Conditions Identified During an Event Evaluation; 04/23/2004

Condition Reports Written as a Result of this Inspection (NRC-Identified)

CR 04112062; During Inspection 200404, a Review of the Site Human Performance Recovery Plan Indicated Two Actions Were Assigned Without Due Dates; 04/21/2004

CR 04112066; There Is a Potential Loss of a CAQ [Condition Adverse to Quality] Utilizing the Current Process to Delete Condition Reports; 04/21/2004

CR 04112067; During the 200404 Inspection (95002) it was Noted by an NRC Inspector that Action Item 10 in CR 03365009 was Inappropriately Closed; 04/21/2004

CR 04113032; the NRC Noted That Many Department Level Procedures Include Requirements to Initiate an AR [Action Request]; 04/22/2004

CR 04113033; The NRC Noted that the Learning Organization Department (CAP) [Corrective Action Program] and Quality Assurance Departments are in a Common Reporting Chain; 04/22/2004

CR 04114005; Closeout Documentation for Root Cause CR 033656009 Action Item 19 and Related Recovery Plan Actions H0006-27 and -29 Did Not Clearly Identify How the Action was Implemented Generically; 04/22/2004

CR 04114044; Untimely Corrective Actions Associated with Condition Report 03171053 as a Result of Discussion with the NRC 95002 Team; 04/23/2004

CR 04114058; Phase 1 PM [Preventative Maintenance] Optimization PM Task Implementation Sheets for AFW [Auxiliary Feedwater] System Did Not Have Implementation Signature on Them; 04/23/2004

CR 04114060; Condition Was Not Addressed Because Multiple Conditions Were Identified in a Single Condition Report; 04/23/2004

CR 04114062; CR 03365009 Action 16 and Recovery Plans HP0006-26 Did Not Adequately Address the Prescribed Actions; 04/23/2004

CR 04114064; Failure of the Main Generator to Trip and the Effect of "Motoring" the Unit 2 Main Generator Following a Reactor Scram on 12/31/03 Needs to Be Evaluated; 04/23/2004

CR 04114066; This CR is Generated to Create an Action to Assure that the Identified Conditions in CR 04100009 are Appropriately Evaluated or that Separate Condition Reports Were Written to Address Each Deficiency Identified in that CR; 04/23/2004

CR 04114070; During Inspection 200404 (95002), an Inspector Identified Where Available Tools Were Not Used to Generate a Common Cause Analysis for CR 03365036; 04/23/2004

CR 04117058; Failure to Document Performance of Recover Plan – EQ0004, Action EQ0004-11; 04/26/2004

CR 04118072; Corrective Action 5.3.11 Discussed Within the Root Cause Evaluation for CR 03295045 had no Corresponding Prescribed Action Created and Assigned Within the CR (eCAP) to Track its Completion; 04/27/2004

Procedures and Work Requests

12-OAP-3130-SMS-002; Storage and Surveillance of Plant Stores Material; Revision 1

12-EHP-5043-ERP-001; Engineering Review of Procurement Documents; Revision 0a

12-MMP-3130-NETS-003; In-Storage Preventative Maintenance; Revision 0

12-EHP-5043-SLE-001; Shelf Life; Revision 0

DTG-7030-CAP-001; Desk Top Guide for Performing Root Cause Analysis; Revision 3

JOA R0239023; Calibrate Flow Switch 2-IFC-315; 03/18/2004

JOA R0248690; Calibrate Flow Switch 1-IFC-325; 07/24/2003

JOA R0251004; Calibrate Flow Switch 1-IFC-315; 09/04/2003

JOA R0255607; Perform Calibration For 2-IFC-325; 12/31/2003

Job Order Number: 03002025; 2-33-SVC-CL, Investigate and Repair Limit Switch; 01/04/2004

PMI-3010; Plant Procurement Control; Revision 7

PMP-2291-PMT-001; Work Management Post Maintenance Testing Matrices; Revision 4

PMP-2291-WAR-001; Work Activity Risk Management Process; Revision 1

PMP-7110-PIP-001; Regulatory Oversight Program Performance Indicators; Revision 2

PMP-7030-CAP-001; Corrective Action Program Process Flow; Revision 16

Other Documentation

D. C. Cook Nuclear Plant Recovery Plan

D. C. Cook Root Cause Analysis Training Manual; 04/2001

Meeting Minutes Corrective Action Review Board #264; 04/01/2004

ML032880731; Issuance of Amendment 263; Donald C. Cook Nuclear Plant, Unit 2 - Issuance of Amendment (TAC MB8202); 11/12/2003

MMP-5030-001-001; In-Storage Preventative Maintenance Activities of Parts and Components; Revision 0

Operating Experience Summary; Unit 2 Reactor Trip - Breaker Racking; CR 04089034; 03/29/2004 Preventive Maintenance Improvement Project; Auxiliary Feedwater System Summary; 06/18/2002; Revision 1

Preventive Maintenance Improvement Project; Auxiliary Feedwater System Summary; 6/18/2002; Revision 1

Quality Assurance Program Description; Revision 17

SECY-04-0052; FY [Fiscal Year] 2003 Results of the Industry Trends Program for Operating Power Reactors and Status of Ongoing Development; 04/06/2004

Information Request 2004-95002-026; Closure Packages for Recovery Plan; 04/30/2004

LIST OF ACRONYMS USED

CCE	Common Cause Evaluation
CR	Condition Report
DRP	Division of Reactor Projects
FAQ	Frequently Asked Question
IP	Inspection Procedure
IR	Inspection Report
MG	Motor Generator
MSIV	Main Steam Isolation Valve
OE	Operating Experience
PI	Performance Indicator
RCS	Reactor Coolant System
SAT	Systematic Approach to Training