

June 12, 2000

Mr. R. P. Powers  
Senior Vice President  
Nuclear Generation Group  
American Electric Power Company  
1 Cook Place  
Bridgman, MI 49106

SUBJECT: D. C. COOK INSPECTION REPORT 50-316/2000004(DRS)

Dear Mr. Powers:

This refers to the inspection conducted on May 8 through 12, 2000, at the D. C. Cook Unit 2 reactor facility. The inspection was conducted by regional Senior Reactor Analysts to evaluate the risk significance of the engineering and maintenance backlog.

Based on a detailed review of the backlogged items for eight risk-significant systems the inspectors determined that the restart scoping process was appropriate and deferred actions did not individually or collectively have a risk-significant impact on Unit 2 restart. However, continued management oversight appears warranted to ensure that the performance of post-restart 10 CFR 50.59 screenings and the resolution of configuration control backlogged items will be timely.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room and will be available on the NRC Public Electronic Reading Room (PERR) link at the NRC home page, <http://www.nrc.gov/NRC/ADAMS/index.html>.

Sincerely,

**/RA/**

John A. Grobe, Director  
Division of Reactor Safety

Docket No. 50-316  
License No. DPR-74

Enclosure: Inspection Report 50-316/2000004(DRS)

See Attached Distribution

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cc w/encl: A. C. Bakken III, Site Vice President  
J. Pollock, Plant Manager  
M. Rencheck, Vice President, Nuclear Engineering  
R. Whale, Michigan Public Service Commission  
Michigan Department of Environmental Quality  
Emergency Management Division  
MI Department of State Police  
D. Lochbaum, Union of Concerned Scientists

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R. Whale, Michigan Public Service Commission  
Michigan Department of Environmental Quality  
Emergency Management Division  
MI Department of State Police  
D. Lochbaum, Union of Concerned Scientists

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-316  
License No: DPR-74

Report No: 50-316/2000004(DRS)

Licensee: American Electric Power Company  
1 Cook Place  
Bridgman, MI 49106

Facility: D. C. Cook Nuclear Generating Plant

Location: 1 Cook Place  
Bridgman, MI 49106

Dates: May 8 through 12, 2000

Inspectors: Michael Parker  
Sonia Burgess

Approved by: Gary L. Shear, Chief, Plant Support Branch  
Division of Reactor Safety

## EXECUTIVE SUMMARY

### D. C. Cook Unit 2 NRC Inspection Report 50-316/2000004(DRS)

This inspection included aspects of licensee

#### Engineering

- The licensee's system indexed database system (SIDS) satisfactorily tracked post-restart actions. Deferred engineering and maintenance backlogged items did not individually or collectively have a risk-significant impact on plant restart. The licensee had taken appropriate actions to ensure that risk-significant items will be completed prior to plant restart (Section E1.1).
- Although comprehensive operability evaluations had been performed for risk-significant nonconforming conditions, the 10 CFR 50.59 screenings for other minor items were to be performed post-restart. The licensee's corrective action program will track the evaluation of potential 10 CFR 50.59 screenings designated as Unit-2 post-restart (Section E1.1).

## Report Details

### **III. Engineering**

#### **E1 Conduct of Engineering**

##### **E1.1 Engineering and Maintenance Backlogs**

###### **a. Inspection Scope (37551, 62700)**

The inspectors examined backlogged items that were not scheduled to be completed prior to the expected plant restart for the following programs: Action Requests (AR), Condition Reports (CR), Design Change Package (DCP), Proposed/Pending Updated Final Safety Analysis Report (UFSAR) Changes, Maintenance Job Orders (JO), and Procedure Change Requests (PCR). In addition to evaluating the impact of the maintenance and engineering backlog on individual systems, the inspectors screened backlog items for potential impact on initiating events, containment performance and fire suppression capability.

###### **b. Observations and Findings**

The inspectors noted that, based on the licensee's probabilistic risk assessment (PRA), the most likely core damage scenarios were associated with loss-of-coolant accidents, main steam line breaks, and the loss of component cooling water. Using these accident scenarios captured sequences that accounted for over 78 percent of the core damage frequency (CDF). The risk importance of many of the more highly ranked systems on the inspector's final list was influenced by their potential failure to mitigate these scenarios. As a result, the inspectors selected backlog items related to eight systems and the loss-of-coolant initiating event for further review of their potential collective risk significance. These systems were: auxiliary feedwater (AFW), high-head injection portion of the chemical volume and control system (CVCS), accumulators, low-head injection portion of residual heat removal (RHR), power operated relief valves (PORVs) block valves, safety injection (SI), containment spray, and component cooling water (CCW).

###### **Risk-Significance of Post-Restart Backlog**

The post-restart backlog for these systems was approximately 22,000 items contained and tracked in SIDS. The inspectors noted that the corrective maintenance backlog represented less than 1% of that backlog. The licensee developed a corrective maintenance completion metric to ensure that system material condition issues were being addressed and worked in a timely manner. The majority of the backlog consisted of engineering issues related to resolving design documentation versus as-built plant configurations.

The inspectors discussed backlogged items with system managers to understand the details of the issues that were designated as post-restart. System managers were knowledgeable of system design and outstanding deferred items since each was responsible for defending system restart readiness during a System Readiness Review

Board (SRRB). The inspectors attended an SRRB for the SI accumulator system. The board consisted of system experts in both engineering and operations who performed a comprehensive evaluation of system readiness for restart using a Final Expanded System Readiness Report which detailed outstanding system issues and resolutions. An individual board member was assigned responsibility for review of all outstanding SIDS items for its impact on restart. Overall, the board approved the report with minor exceptions. The inspectors determined that the SRRB was effective in ensuring system readiness for Unit 2 restart.

The inspector's also reviewed the Performance Assessment audit reviews of the SIDS backlog tracking system. The audits identified minor discrepancies in the classification of deferred items but overall concluded that the deferment process was appropriate and effective. The inspectors determined that the audits were thorough, comprehensive, and performance-based in ensuring that items were properly characterized as post-restart.

Discussions with system managers, observation of an SRRB, review of the Performance Assurance oversight audits of the post-restart activities, and a detailed evaluation of the backlogged items assured the inspectors that the restart scoping process was satisfactory and deferred action did not individually or collectively have a risk-significant impact on Unit-2 restart, containment performance or fire suppression capability. This closes Manual Chapter 0350 item C.4.i, "Maintenance backlog managed and impact on operation assessed."

#### Post-Restart 10 CFR 50.59 Screening

The inspectors noted that many of the backlogged items consisted of pending 10 CFR 50.59 screens for nonconforming conditions. The licensee had performed comprehensive operability evaluations for the nonconforming conditions in accordance with Generic Letter (GL) 91-18, but the decision to return the item to a conforming condition or to "use as is" and perform a 10 CFR 50.59 screening were to be performed post-restart. Most of the items were UFSAR updates, drawing changes, or minor equipment nonconformance. The inspectors did not identify any items with a post-restart 10 CFR 50.59 screening that appeared to be risk-significant; however, this post-restart screening left the licensee vulnerable to a delay in identifying potential unreviewed safety questions. A due date for evaluating the continued "use as is" decision was delineated in the electronic corrective action program (ECAP); however, because the licensee's focus would be on restarting Unit 1, the inspectors were concerned that due dates could slip further than the next refueling outage. GL 91-18 specified that the time frames for nonconformance resolution longer than the next refueling outage be explicitly justified by the licensee as part of the deficiency tracking documentation. The licensee's staff indicated that the corrective action program should address the timely evaluation of potential 10 CFR 50.59 screens designated as Unit 2 post-restart.

### Configuration Control

The inspectors identified that a large amount of the backlog consisted of UFSAR updates, design basis document changes, procedure enhancements, drawing changes, vendor drawing changes and vendor manual changes. In reviewing the issues individually, the inspectors determined that the licensee appropriately categorized the issues as post-restart; however, the issues had no target completion date other than post-restart. The inspectors were not able to identify that the licensee had performed any assessment of the integrated impact of the engineering backlog other than to identify the issues as post-restart. The combined integrated effect of the backlog could ultimately have a negative effect in the licensee's ability to appropriately address issues in a timely manner. System engineers, maintenance planners, maintenance workers and operators routinely utilize these documents to conduct activities and would continue to use these documents without the knowledge that the documents may not be correct. In discussing these issues with the licensee, the licensee agreed to review and prioritize the backlog issues with assigned target completion dates.

#### c. Conclusions

Detailed review of the backlogged items, discussions with system managers, observation of the accumulator SERB, and review of Performance Assurance's oversight audits of post-restart backlog items assured the inspectors that the restart scoping process was satisfactory and deferred actions did not individually or collectively have a risk-significant impact on plant restart. However, the licensee needs to ensure that the performance of post-restart 10 CFR 50.59 screens and resolving configuration control backlogged items will be timely.

## **V. Management Meetings**

### **X1 Exit Meeting Summary**

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on May 12, 2000. The licensee acknowledged the findings presented.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

#A. Bakken, Site Vice President  
#M. Barfelz, Inspection Coordinator, Regulatory Affairs  
#R. Crane, Regulatory Affairs Supervisor  
#M. Finissi, Director, Plant Engineering  
#D. Garner, Director, Nuclear Fuels, Safety and Analysis  
#R. Gaston, Manager, Regulatory Affairs  
#S. Greenlee, Director, Design Engineering  
#R. Godley, Director, Regulatory Affairs  
W. Kropp, Director, Performance Assurance  
#S. Lace, Restart Director, Engineering  
#A. Magnafici, Restart Group Engineer  
#T. Ninin, Director, Restart  
#J. Pollock, Plant Manager  
#M. Rencheck, Vice President, Nuclear Engineering  
#L. Thornsberry, Manager, System Engineering

### NRC

#J. Grobe, Director, Division of Reactor Safety  
#S. Burgess, Senior Reactor Analyst  
#M. Parker, Senior Reactor Analyst

# Denotes those present at the May 12, 2000, exit meeting.

## INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering  
IP 62700: Maintenance Implementation

## ITEMS OPENED, CLOSED, AND DISCUSSED

### Closed

- Item C.4.i, "Maintenance backlog managed and impact on operation assessed."

### Discussed

- Item C.1.2.j, "Interim corrective actions have been developed and documented when permanent corrective action will take an excessive amount of time to implement or cannot be completed before the licensee plans to restart the facility."

## LIST OF ACRONYMS

AFW	Auxiliary Feedwater
AR	Action Request
CCW	Component Cooling Water
CDF	Core Damage Frequency
CFR	Code of Federal Regulations
CR	Condition Report
CVCS	Chemical Volume and Control System
DRS	Division of Reactor Safety
DCP	Design Change Package
ECAP	Electronic Corrective Action Program
GL	Generic Letter
JO	Job Order
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
PCR	Procedure Change Request
PDR	Public Document Room
PRR	Probabilistic Risk Assessment
RHR	Residual Heat Removal
SI	Safety Injection
SIDS	System Indexed Database System
SRRB	System Readiness Review Board
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report

## LIST OF DOCUMENTS REVIEWED

- Computer print-out of post-restart SIDS items for the following systems: AFW, CCW, CVCS, accumulators, RHR, reactor coolant, safety injection, and containment spray.
- Final Expanded System Readiness reports for the following systems: AFW, CCW, CVCS, accumulators, emergency core cooling system (RHR/SI), reactor coolant, and containment spray.
- Performance Assurance Department Surveillance Summary Reports: SURV 99-0032, SURV 99-035, SURV-00-0001, SURV-00-0002
- Performance Assurance Department Audits: PA-00-01/NSDRC#272, PA-00-02/NSDRC#273, PA-00-03/NSDRC#274