

May 22, 2001

EA 01-110

Mr. R. P. Powers  
Senior Vice President  
Nuclear Generation Group  
American Electric Power Company  
500 Circle Drive  
Buchanan, MI 49107-1395

SUBJECT: D. C. COOK NUCLEAR POWER PLANT -  
NRC INSPECTION REPORT 50-315/01-10(DRS); 50-316/01-10(DRS)

Dear Mr. Powers:

On March 29, 2001, the NRC performed a baseline inspection at your D. C. Cook, Units 1 and 2 reactor facilities. The results of this inspection were discussed on March 29, 2001, with Mr. M. Rencheck and members of your staff. A subsequent telephone re-exit was conducted on April 24, 2001, with Mr. S. Lacey. The enclosed report presents the results of that inspection.

The inspection 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.

No findings of significance were identified. However, it was determined that deficiencies existed within the maintenance rule periodic evaluation completed in December 1999. Based on this and previous deficiencies with the maintenance rule program, we did not complete the biennial inspection on the maintenance rule periodic evaluation. We will conduct the follow-up inspection after you have completed a new periodic evaluation, which is presently scheduled for the May/June 2001, time frame. We request that you advise Region III when your staff would be ready for the follow-up inspection.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be 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/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

R. Powers

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We will gladly discuss any questions you have concerning this inspection.

Sincerely,

**/RA/**

John Jacobson, Chief  
Mechanical Engineering Branch  
Division of Reactor Safety

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

Enclosure: Inspection Report 50-315/01-10(DRS);  
50-316/01-10(DRS)

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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DATE	04/26/01	05/21/01	05/22/01	05/22/01

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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: 50-315/01-10(DRS); 50-316/01-10(DRS)

Licensee: American Electric Power Company

Facility: Donald C. Cook Nuclear Power Plant

Location: 1 Cook Place  
Bridgman, MI 49106

Dates: March 26 through 29, 2001

Telephone  
Re-exit: April 24, 2001

Inspectors: Andrew Dunlop, Reactor Engineer

Approved by: John M. Jacobson, Chief  
Mechanical Engineering Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

IR 05000315-01-10(DRS); IR 05000316-01-10(DRS), on 03/26-29/2001, American Electric Power Company, D. C. Cook Nuclear Power Plant, Units 1 and 2. Maintenance Rule Implementation.

The report covers a four day period of announced inspection by one regional reactor engineer. The significance of most/all findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "no color" or by the severity level of the applicable violation. 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>.

### **REACTOR SAFETY**

#### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

No Color. The inspectors identified a failure to evaluate whether adjustments were necessary such that there would be an appropriate balance between systems' availability and reliability in accordance with 10 CFR 50.65 (a)(3) of the maintenance rule.

The safety significance of the specific finding was very low because it did not affect the operability of the systems, and the licensee entered the finding in the corrective action program. However, this finding was considered to be of regulatory concern in the area of maintenance rule implementation due to the extent of the problems identified in this and previous NRC inspection reports (Section 1R12).

## Report Details

### 1. REACTOR SAFETY

#### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

#### 1R12 Maintenance Rule Implementation (71111.12B)

##### a. Inspection Scope

The objective of the inspection was to:

- Verify that the periodic evaluation was completed within the time restraints defined in the maintenance rule (once per refueling cycle, not to exceed two years), ensuring that the licensee reviewed its goals, monitoring, preventive maintenance activities, industry operating experience, and made appropriate adjustments as a result of that review;
- Verify that the licensee balanced reliability and unavailability during the previous refueling cycle, including a review of safety significant structures, systems, and components, (SSC) as required by the maintenance rule;
- Verify that (a)(1) goals were met, corrective action was appropriate to correct the defective condition including the use of industry operating experience, and (a)(1) activities and related goals were adjusted as needed as required by the maintenance rule; and
- Verify that the licensee has established (a)(2) performance criteria, examined any SSCs that failed to meet their performance criteria, or reviewed any SSCs that have suffered repeated maintenance preventable functional failures including a verification that failed SSCs were considered for (a)(1) as required by the maintenance rule.

The inspectors examined the current periodic evaluation documented in Condition Report (CR) 00-03392 for the report period December 1997 through November 1999, dated March 14, 2000. The maintenance rule program procedures associated with conducting a periodic evaluation were also reviewed to evaluate whether the available guidance was sufficient to meet 10 CFR 50.65 (a)(3) requirements. To evaluate the effectiveness of (a)(1) and (a)(2) activities the inspectors examined a number of CRs (contained in the list of documents at the end of this report). In addition, the CRs were reviewed to verify that the threshold for identification of problems was at an appropriate level and the associated corrective actions were appropriate.

In addition, a recent self-assessment of the maintenance rule was reviewed by the inspectors.

##### b. Findings

No Color. The 1999 periodic evaluation was reviewed and it did not meet the requirements of 10 CFR 50.65 (a)(3). Specifically, the rule required that there needs to be a balance between reliability and availability of SSCs within scope of the maintenance

rule. When an unbalanced condition is identified, then adjustments need to be made to re-establish this balance. The 1999 periodic evaluation determined that ten systems were not balanced, however, the evaluation did not address what adjustments were necessary, if any, to restore the balance to meet the requirements of the rule. Systems included residual heat removal, essential service water, and 250VDC battery systems. There was limited documentation or licensee knowledge within the maintenance rule staff to support the conclusions in the periodic evaluation. The maintenance rule staff presently in charge of the program were not involved with the 1999 periodic evaluation.

This issue was not screened through the Phase 1 Significance Determination Process as there was no effect on system operability. Although this issue was considered minor per the Group 1 questions of Manual Chapter 0610\*, Attachment 2, based on review of Group 3 questions, extenuating circumstances warranted documenting the issue in the inspection report. Specifically, there is increased regulatory concern due to the number and scope of findings involving maintenance rule implementation at D. C. Cook. Other issues involving maintenance rule implementation were discussed in previous NRC inspection reports 50-315/316-2000-19, 50-315/316-2000-20, 50-315/316-2000-22, and 50-315/316-2001-07. As a result, implementation problems associated with (a)(3) of the maintenance rule is considered a No Color finding (50-315/01-10-01; 50-316/01-10-01). The inspectors concluded that the failure to evaluate whether adjustments were necessary such that there would be an appropriate balance between systems' availability and reliability constituted a violation of 10 CFR 50.65 (a)(3) of minor significance and is not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. This issue was entered into the licensee's corrective action system as CR 01-88085.

The maintenance rule procedure was reviewed to determine if adequate guidance was presently available for performing an (a)(3) evaluation. The guidance focused on performance of self-assessments that would review programmatic issues rather than an assessment of the effectiveness of maintenance, which was required by the rule. This was further supported by a recent assessment performed this year that was initially planned to be used as an (a)(3) evaluation. This effort was also conducted as a programmatic self-assessment versus an (a)(3) evaluation. Based on discussions with the maintenance rule staff, the procedural guidance for conducting an (a)(3) evaluation did not sufficiently describe the process necessary to accomplish an adequate (a)(3) evaluation. Based on this inspection, a separate item was added to the maintenance rule Engineering Action Plan 01-572 to address the need for specific guidance for conducting the (a)(3) evaluation.

As a result of several previous concerns with the maintenance rule program identified by both the licensee and the NRC, the licensee had developed Engineering Action Plan 01-572. At the time of this inspection, the licensee was still in the process of completing the engineering action plan to resolve both the programmatic and implementation concerns with the program. The licensee had scheduled an (a)(3) evaluation to be conducted in the May to June 2001, time frame, which was included in the maintenance rule action plan. It was determined by NRC management that continuation of this inspection would be more prudent after completion of the scheduled periodic evaluation.

#### 4. OTHER ACTIVITIES

##### 4OA3 Event Follow-Up

##### .1 Licensee Event Reports

##### a. Inspection Scope

The inspectors reviewed the corrective actions associated with the following licensee event reports.

##### b. Findings

1. (Closed) Licensee Event Report (LER) 50-315/98057-01: Auxiliary Feedwater Valves not Tested in Accordance with Inservice Testing Program. On December 28, 1998, the licensee identified several valves in the auxiliary feedwater system that were not tested in accordance with Technical Specification 4.0.5 for compliance with the inservice testing program. The corrective actions for this LER were addressed in 50-315/99032-00, which is discussed below. This LER is closed.
2. (Closed) Licensee Event Report 50-315/99032-00: Failures to Comply with Technical Specification 4.0.5 Identified by Inservice Testing Program Assessment. On December 17, 1999, further examples of failure to comply with Technical Specification 4.0.5 were identified as part of the extent of condition review for LER 315/98-057-01. The licensee's investigation determined the cause of this event to be the lack of knowledge of the American Society of Mechanical Engineers Boiler and Pressure Vessel Codes, design and license basis for the Cook plant, and ineffective use of industry guidance. Portions of this event and the licensee's follow-up actions were discussed in NRC Inspection Report 50-315/2000-02; 50-316/2000-02. The inspectors verified that adequate testing for the components identified in the LER were either incorporated into the applicable surveillance procedure or were identified in the corrective action program for resolution. The inspectors concluded that the failure to comply with Technical Specification 4.0.5 constituted a violation of minor significance and is not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. The inspectors reviewed the LER and did not identify any significant findings. This issue was entered into the licensee's corrective action program as CR 98-07856 for the generic concern with the inservice test program. Specific components were entered into the licensee's corrective action program as contained in the list of documents at the end of this report. This LER is closed.



4OA6 Meeting(s)

Exit Meeting Summary

The inspector presented the inspection results to Mr. M. Rencheck and other members of licensee management and staff on March 29, 2001. A subsequent telephone re-exit was conducted on April 24, 2001. The licensee acknowledged the information presented and did not identify any as proprietary.

## KEY POINT OF CONTACT

### Licensee

C. Bakken, Senior Vice President  
M. Barfelz, Regulatory Affairs  
R. Crane, Regulatory Affairs  
R. Ebright, Manager, Engineering Programs  
R. Gaston, Regulatory Affairs  
J. Johns, Maintenance Rule Program Owner  
S. Lacey, Director, Engineering  
J. Pollock, Plant Manager  
M. Rencheck, Vice President, Engineering  
J. St. Amand, Engineering Programs Supervisor  
L. Thornsberry, Engineering Programs Manager

### NRC

J. Maynen, Resident Inspector  
K. Coyne, Resident Inspector

## ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

50-315/01-10-01 50-316/01-10-01	FIN	Inadequate Implementation of the Maintenance Rule
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### Closed

50-315/99032-00	LER	Failure to Comply with Technical Specification 4.0.5 Identified by Inservice Testing Program Assessment
50-315/98057-01	LER	Auxiliary Feedwater Valves Not Tested in Accordance with Inservice Testing Program
50-315/01-10-01 50-316/01-10-01	FIN	Inadequate Implementation of the Maintenance Rule

## LIST OF ACRONYMS USED

CR	Condition Report
CFR	Code of Federal Regulations
DRS	Division of Reactor Safety
LER	Licensee Event Report
NRC	Nuclear Regulatory Commission
OA	Other Activities
PARS	Publicly Available Records
SDP	Significance Determination Process
SSC	Structures, Systems, and Components
VDC	Volts Direct Current

## INSPECTION PROCEDURES USED

71111.12B -	Maintenance Rule Implementation
71153 -	Event Followup

## LIST OF DOCUMENTS REVIEWED

The following is a list of licensee documents reviewed during the inspection, including documents prepared by others for the licensee. Inclusion of a document on this list does not imply that NRC inspectors reviewed the entire documents, but, rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. In addition, inclusion of a document on this list does not imply NRC acceptance of the document, unless specifically stated in the body of the inspection report.

### Procedures

PMI-5035	Maintenance Rule Program	Revision 7	2/20/01
PMP-5035-MRP-001	Maintenance Rule Program Administration	Revision 2	2/20/01
12-EHP-5035-MRP-001	Maintenance Rule Program Administration	Revision 1	3/8/01
01-OHP-4030.STP.002V	Boration System Valve Position Verification and Testing	Revision 7	1/2/01
12-OHP-4030.STP.130N	North Spent Fuel Pit Pump Surveillance Test	Revision 5	9/08/00
01-OHP-4030.STP.017CS	Main and Auxiliary Feedwater System Shutdown Testing	Revision 8	12/8/00
01-OHP-4030.STP.017E	East Auxiliary Feedwater System Test, 10a		12/8/00
01-OHP-4030.STP.053B	ECCS Valve Operability Test - Standby Readiness Alignment	Revision 14	3/15/01

### Condition Reports

P-98-03495	Significant Weaknesses Identified with the Maintenance Rule Program
P-98-06368	Oil Samples on Unit 1 Motor Driven Auxiliary Feedwater AFW Pump Reflect Excessive Contamination
P-98-07232	Appendix J Containment Isolation Valve Leakage
P-99-10842	Failures Associated With Containment Isolation Valves Not Classified as Functional Failures

- P-98-07856            Inservice Testing Program Does Not Identify a Closed Safety Function or Testing Requirements For the Auxiliary Feedwater Pump Suction Check Valves
- P-99-4733            CVCS Charging Line Check Valves CS-321, CD-328-L1 & L4, and CD-329-L1 & L4 are not currently in the Inservice Testing Program for Forward Flow Testing
- P-99-04235            CCW Surge Tank Breaker Check Valve Not Currently in the Inservice Testing Program
- P-99-17276            Check Valves CS-442-1, -2, -3, -4 Are Not Being Tested in Accordance with the Third 10 Year Inservice Testing Program
- P-99-19181            IRV-310 and IRV-320 are Not Included in the Inservice Testing Program
- P-99-19903            CCW-122, CCW-135, and CCW-142 are Not Adequately Addressed in the Inservice Testing Program
- P-99-20819            Motor Driven Auxiliary Feedwater Pump Supply to Steam Generator Check Valves (FW-132s) Are Not Being Tested in Accordance with the Inservice Testing Program
- P-99-22452            Spent Fuel Pool Filter Manual Isolation Valves 12-SF-121N, 12-SF-121S, and 12-SF-129 Are Not Being Tested in Accordance with the Inservice Testing Program
- P-00-03392            SA-1999-ENP-018, Maintenance Rule (a)(3)

Miscellaneous

Engineering Action Plan 01-572, Maintenance Rule            Revision 2            3/28/01

Self-Assessments

SA-2001-ENP-018            Maintenance Rule Implementation            3/9/01