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Indiana Michigan Power
Cook Nuclear Plant
One Cook Place
Bridgman, MI 49106
AEP.com

February 9, 2011

AEP-NRC-2011-7
10 CFR 50.73

Docket No. 50-315

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Donald C. Cook Nuclear Plant Unit 1
LICENSEE EVENT REPORT 315/2010-003-00
MANUAL AFW ACTUATION IN RESPONSE TO
MANUAL MFP TRIP

In accordance with the criteria established by 10 CFR 50.73, Licensee Event Report System, the following report is being submitted:

LER 315/2010-003-00: "Manual AFW Actuation in response to manual MFP trip"

There are no commitments contained in this submittal.

Should you have any questions, please contact Mr. Michael K. Scarpello, Regulatory Affairs Manager, at (269) 466-2649.

Sincerely,

Joel P. Gebbie
Site Vice President

JEN/jmr

Attachment

- c: INPO Records Center
J. T. King – MPSC, w/o attachment
S. M. Krawec – AEP Ft. Wayne, w/o attachment
MDNRE – WHMD/RPS, w/o attachment
NRC Resident Inspector
M. A. Satorius – NRC Region III
P. S. Tam – NRC Washington DC

JEN
NRC

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME Donald C. Cook Nuclear Plant, Unit 1	2. DOCKET NUMBER 05000315	3. PAGE 1 of 3
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4. TITLE
Manual Auxiliary Feedwater Actuation in Response to Manual Main Feedpump Trip

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
12	13	2010	2010	003	00	02	09	2011	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) <table style="width:100%; border: none;"> <tr> <td><input type="checkbox"/> 20.2201(b)</td> <td><input type="checkbox"/> 20.2203(a)(3)(i)</td> <td><input type="checkbox"/> 50.73(a)(2)(i)(C)</td> <td><input type="checkbox"/> 50.73(a)(2)(vii)</td> </tr> <tr> <td><input type="checkbox"/> 20.2201(d)</td> <td><input type="checkbox"/> 20.2203(a)(3)(ii)</td> <td><input type="checkbox"/> 50.73(a)(2)(ii)(A)</td> <td><input type="checkbox"/> 50.73(a)(2)(viii)(A)</td> </tr> <tr> <td><input type="checkbox"/> 20.2203(a)(1)</td> <td><input type="checkbox"/> 20.2203(a)(4)</td> <td><input type="checkbox"/> 50.73(a)(2)(ii)(B)</td> <td><input type="checkbox"/> 50.73(a)(2)(viii)(B)</td> </tr> <tr> <td><input type="checkbox"/> 20.2203(a)(2)(i)</td> <td><input type="checkbox"/> 50.36(c)(1)(i)(A)</td> <td><input type="checkbox"/> 50.73(a)(2)(iii)</td> <td><input type="checkbox"/> 50.73(a)(2)(ix)(A)</td> </tr> <tr> <td><input type="checkbox"/> 20.2203(a)(2)(ii)</td> <td><input type="checkbox"/> 50.36(c)(1)(ii)(A)</td> <td><input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)</td> <td><input type="checkbox"/> 50.73(a)(2)(x)</td> </tr> <tr> <td><input type="checkbox"/> 20.2203(a)(2)(iii)</td> <td><input type="checkbox"/> 50.36(c)(2)</td> <td><input type="checkbox"/> 50.73(a)(2)(v)(A)</td> <td><input type="checkbox"/> 73.71(a)(4)</td> </tr> <tr> <td><input type="checkbox"/> 20.2203(a)(2)(iv)</td> <td><input type="checkbox"/> 50.46(a)(3)(ii)</td> <td><input type="checkbox"/> 50.73(a)(2)(v)(B)</td> <td><input type="checkbox"/> 73.71(a)(5)</td> </tr> <tr> <td><input type="checkbox"/> 20.2203(a)(2)(v)</td> <td><input type="checkbox"/> 50.73(a)(2)(i)(A)</td> <td><input type="checkbox"/> 50.73(a)(2)(v)(C)</td> <td><input type="checkbox"/> OTHER</td> </tr> <tr> <td><input type="checkbox"/> 20.2203(a)(2)(vi)</td> <td><input type="checkbox"/> 50.73(a)(2)(j)(B)</td> <td><input type="checkbox"/> 50.73(a)(2)(v)(D)</td> <td>Specify in Abstract below or in NRC Form 366A</td> </tr> </table>	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(j)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A
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12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME Michael K. Scarpello, Regulatory Affairs Manager	TELEPHONE NUMBER (Include Area Code) (269) 466-2649
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED					15. EXPECTED SUBMISSION DATE		
YES (If Yes, complete EXPECTED SUBMISSION DATE).	X	NO					

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On December 13, 2010, at 2117 hours, in response to decreasing condenser vacuum on the Unit 1 East Main Feedwater Pump (MFP), Donald C. Cook Nuclear Plant control room operators initiated the Rapid Power Reduction Procedure in an effort to quickly lower power to remove the East MFP from service. Within 2 minutes of initiating the power reduction, operators observed East MFP Condenser vacuum rapidly lowering toward the low vacuum trip setpoint. At 2119 hours, they entered the procedure for Loss of One Main Feed Pump, manually tripped the East MFP and manually started both Motor Driven Auxiliary Feedwater (AFW) Pumps and the Turbine Driven AFW Pump. Power was lowered and stabilized at approximately 48 percent.

The cause of the East MFP vacuum lowering was fouling of the MFP Condenser cooling water side due to debris intrusion from rough lake conditions. Corrective actions were taken to open and clean the East and West MFP condensers.

Manually starting the AFW Pumps in response to actual plant conditions resulting from equipment failure was reported in accordance with 10 CFR 50.72(b)(3)(iv)(A). Event Notification 46477 was submitted on December 14, 2010, at 0202 hours. This event is also reportable as a Licensee Event Report in accordance with 10 CFR 50.73(a)(2)(iv)(A).

LICENSEE EVENT REPORT (LER)

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17. NARRATIVE (If more space is required, use additional copies of NRC Form (366A))

Conditions Prior to Event

Mode 1, approximately 98 percent power

Description of Event

On December 13, 2010, at 2117 hours, in response to decreasing condenser vacuum on the Unit 1 East Main Feedwater Pump (MFP) [SJ][P], Donald C. Cook Nuclear Plant (CNP) control room operators initiated the Rapid Power Reduction Procedure in an effort to quickly lower power to remove the East MFP from service. Within 2 minutes of initiating the power reduction, operators observed East MFP Condenser [SG][COND] vacuum rapidly lowering toward the low vacuum trip setpoint. At 2119 hours, they entered the procedure for Loss of One Main Feed Pump, manually tripped the East MFP and manually started both Motor Driven Auxiliary Feedwater (AFW) Pumps [BA] and the Turbine Driven AFW Pump as directed by the procedure. Power was lowered and stabilized at approximately 48 percent.

Cause of Event

The cause of the East MFP vacuum lowering was fouling of the MFP Condenser cooling water side due to debris intrusion from rough lake conditions. Corrective actions were taken to open and clean the lake cooling water side of the East and West MFP condensers.

Analysis of Event

Manually starting the Unit 1 AFW Pumps as part of a procedurally-directed action in response to the loss of one main feed pump is a conservative action to assure that feedwater is maintained to the unit's Steam Generators (SGs) [TB] when main feedwater flow has been significantly reduced while reducing reactor and turbine power. This action does not disable any equipment, nor does it adversely affect mitigation of any plant events. In the event a reactor trip was not avoided, the AFW Pumps were already operating, avoiding dependence on automatic actuation circuitry to provide AFW to the SGs. Thus, manually starting AFW Pumps reduces risk during this event where main feedwater flow was severely curtailed, by removing reliance on automatic actuation to start the AFW Pumps via the additional operator direction to start AFW Pumps "as required" based on operator judgment.

Corrective Actions

Completed Corrective Actions:

The East and West MFP condensers were both opened and cleaned.

Planned Corrective Actions:

None

Previous Similar Events

Licensee Event Reports (LER) for both CNP Unit 1 and Unit 2 for the past three years were reviewed for similar events related to 10 CFR 50.73(a)(2)(iv)(A) reporting criteria for system actuation. Plant design for CNP Unit 1 and Unit 2 has actuation of the AFW System as an expected response to reactor trips. The following were identified:

05000315-2010-002-00, Manual AFW Actuation in Response to MFP Failure

On May 2, 2010, at 0855 hours, a similar situation occurred in that the Unit 1 East MFP needed to be removed from service very quickly due to failure of a bearing. All three AFW pumps were started when the MFP was required to be removed from service. Corrective actions from the bearing failure specifically addressed the bearing issue, so they could not have prevented the situation resulting from the MFP condenser fouling.

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17. NARRATIVE (If more space is required, use additional copies of NRC Form (366A))

05000316-2009-001-00, Unit 2 Manual Reactor Trip

On July 26, 2009, at 1506 hours, CNP Unit 2 control room operators performed a manual reactor trip in response to a malfunctioning reactor coolant pump (RCP) seal. AFW is designed to start in response to a reactor trip.

05000315-2008-006-01, Manual Reactor Trip due to Main Turbine High Vibrations

On September 20, 2008, at 2005 hours, CNP Unit 1 control room operators initiated a manual reactor trip from 100% power following Hi-Hi vibration alarms on all main turbine supervisory instrumentation vibration points. AFW is designed to start in response to a reactor trip.

05000315-2008-001-00, Unit 1 Manual Reactor Trip

On February 2, 2008, at 0530 hours, CNP Unit 1 control room operators initiated a manual reactor trip from 93% power when main turbine bearing vibration reached the manual trip setpoint. AFW is designed to start in response to a reactor trip.

05000315-2007-001-00, Unit 1 Automatic Reactor Trip

On August 28, 2007, at 1354 hours, CNP Unit 1 received a reactor trip and main turbine trip signal as a result of low SG water level coincident with a steam flow – feedwater flow mismatch. AFW is designed to start in response to a reactor trip.