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Bridgman, MI 49106
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December 20, 2011

AEP-NRC-2011-75
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 315/2011-002-00
MANUAL ACTUATION OF AUXILIARY FEEDWATER SYSTEMS IN RESPONSE TO LOSS OF
ONE MAIN FEEDWATER PUMP

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

LER 315/2011-002-00: "Manual Actuation of Auxiliary Feedwater Systems in Response to Loss of One Main Feedwater Pump."

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

SJM/jen

Enclosure

- c: J. T. King – MPSC, w/o enclosure
S. M. Krawec – AEP Ft. Wayne, w/o enclosure
MDEQ – WHMD/RPS, w/o enclosure
NRC Resident Inspector
C. D. Pederson – NRC Region III
P. S. Tam – NRC Washington DC
INPO Records Center

IE22
NRR

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: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@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 05000-315	3. PAGE 1 of 3
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4. TITLE
Manual Actuation of Auxiliary Feedwater Systems in Response to Loss of One Main Feedwater Pump

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
11	25	2011	2011	- 002	- 00	12	20	11	FACILITY NAME	DOCKET NUMBER
										05000
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)									
1	<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)						
10. POWER LEVEL	<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)						
100	<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	Specify in Abstract below or in NRC Form 366A					
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)							

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	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If Yes, complete 15. EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/> NO			

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

On November 25, 2011, at 0517 hours, in response to rising vibrations of 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. At 0522 hours, operators tripped the East MFP due to rapidly rising vibrations and entered the procedure for Loss of One Main Feed Pump, which directs manually starting Auxiliary Feedwater (AFW) pumps, as required. Operators manually started both Motor Driven AFW Pumps and the Turbine Driven AFW Pump. Power was lowered and stabilized at approximately 58 percent.

The East MFP was found with a cracked turbine rotor shaft during inspection. Completed corrective actions involved disassembly, inspection, and repair of the East MFP. These actions included replacement of the turbine rotor and coupling.

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 47477, submitted on November 25, 2011. The event is also reportable as a Licensee Event Report in accordance with 10 CFR 50.73(a)(2)(iv)(A).

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Donald C. Cook Nuclear Plant Unit 1	05000-315	YEAR	SEQUENTIAL NUMBER	REVISION NO.	2 of 3
		2011	- 002	- 00	

NARRATIVE

Conditions Prior to Event

100 percent reactor power.

Description of Event

On November 25, 2011, at 0517 hours, in response to rising vibrations of 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. At 0522 hours, operators tripped the East MFP due to rapidly rising vibrations and entered the procedure for Loss of One Main Feed Pump, which directs manually starting Auxiliary Feedwater (AFW) pumps [BA], as required. Operators manually started both Motor Driven AFW Pumps and the Turbine Driven AFW Pump. Power was lowered and stabilized at approximately 58 percent.

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 47477, submitted on November 25, 2011. The event is also reportable as a Licensee Event Report (LER) in accordance with 10 CFR 50.73(a)(2)(iv)(A).

Cause of Event

The Unit 1 East MFP was removed from service due to high vibrations.

The East MFP was found with a cracked turbine [TRB] rotor shaft during initial inspection.

A Root Cause Evaluation (RCE) was commenced regarding the high vibrations and is in progress. If the RCE results conclude substantially different information than reported, then a supplement to this LER will be submitted.

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 an event where main feedwater flow may be challenged 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 Unit 1 East MFP turbine rotor and coupling [CPLG] were replaced. The Unit 1 East MFP was returned to service on December 4, 2011.

Planned Corrective Actions

None.

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Donald C. Cook Nuclear Plant Unit 1	05000-315	YEAR	SEQUENTIAL NUMBER	REVISION NO.	3 of 3
		2011	- 002	- 00	

NARRATIVE

Previous Similar Events

LERs 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. The following were identified:

05000315-2010-003-00, Manual AFW Actuation in Response to Manual MFP Trip

On December 13, 2010, at 2117 hours, the Unit 1 East MFP was manually tripped as condenser [COND] vacuum lowered toward the low vacuum setpoint due to debris intrusion within the lake cooling water side of the MFP condenser. All three AFW pumps were manually started when the East MFP was required to be removed from service.

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

On May 2, 2010, at 0855 hours, the Unit 1 East MFP was removed from service quickly due to failure of a bearing. All three AFW pumps were manually started when the East MFP was required to be removed from service.