INDIANA MICHIGAN POWER
A unit of American Electric Power

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

June 23, 2006

AEP:NRC:2573-31
10 CFR 50.73

Docket No. 50-316

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Stop O-P1-17
Washington, DC 20555-0001

Donald C. Cook Nuclear Plant Unit 2
LICENSEE EVENT REPORT 316/2006-003-00
INADVERTENT EMERGENCY CORE COOLING SYSTEM ACTUATION DURING TESTING

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

LER 316/2006-003-00: "Inadvertent Emergency Core Cooling System Actuation During Testing"

Attachment 1 contains the regulatory commitments identified in this submittal.

Should you have any questions, please contact Ms. Susan D. Simpson, Regulatory Affairs Manager, at (269) 466-2428.

Sincerely,

Mark A. Peifer
Site Vice President

RAM/jen

Attachment

IE22

c: J. L. Caldwell, NRC Region III
K. D. Curry – AEP Ft. Wayne, w/o attachment
J. T. King, MPSC – w/o attachment
MDEQ – WHMD/RPMWS – w/o attachment
NRC Resident Inspector
P. S. Tam, NRC Washington DC

ATTACHMENT 1 TO AEP:NRC:2573-31

REGULATORY COMMITMENTS

The following table identifies those actions committed to by Indiana Michigan Power Company (I&M) in this document. Any other actions discussed in this submittal represent intended or planned actions by I&M. They are described to the Nuclear Regulatory Commission (NRC) for the NRC's information and are not regulatory commitments.

Commitment	Date
I&M will revise Procedure MHI-5000, "Conduct of Maintenance," to clarify procedure use and adherence requirements and expectations that a job order cannot be used to provide detailed instructions that manipulate plant components in order to establish initial conditions or bridge steps to support implementing procedures.	07/07/06
I&M will revise Procedure PMP-2291-PLN-001, "Work Control Activity Planning Process," to clarify procedure use and adherence requirements and expectations that a job order cannot be used to provide detailed instructions that manipulate plant components in order to establish initial conditions or bridge steps to support implementing procedures.	07/14/06
I&M will utilize department communication, stand down, or all-hands meeting for the maintenance and work control departments to reinforce the requirements and expectations established in the above procedure revisions.	07/14/06
I&M will update initial and continuing training programs for Maintenance and Work Control personnel regarding procedure use and adherence guidance. Available video type training tools will be utilized to demonstrate expectations and provide examples for complying with procedure use and adherence, purpose and intent, place keeping, questioning attitude, and self checking.	07/21/06
I&M will establish and implement a procedure to provide instructions and limitations for using the channel bypass functions.	08/18/06

NRC Form 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES 6/30/2007

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.

LICENSEE EVENT REPORT (LER)

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

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4. TITLE

Inadvertent Emergency Core Cooling System Actuation During Testing

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
04	27	2006	2006	-- 003 --	00	06	23	06	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE: 5

10. POWER LEVEL: 0

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
Michael Scarpello, Regulatory Affairs	(269) 466-2649

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	MONTH	DAY	YEAR
	YES (If Yes, complete EXPECTED SUBMISSION DATE).	X	NO				

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

On April 27, 2006, at 0207 hours, while in MODE 5, Donald C. Cook Nuclear Plant (CNP) Unit 2 received a main steam line low pressure safety injection (SI) signal on both trains. All components actuated as expected. Injection to the reactor coolant system was precluded by the low temperature overpressure protection system alignments that were in effect.

The root cause of the inadvertent SI actuation was the failure of instrument maintenance personnel to implement procedure use and adherence requirements when using the bypass function to clear the standing reactor trip signals. Immediate corrective actions included returning the bypass switches to their normal position, resetting the safety injection signal by reinstating the main steam line low pressure safety injection block, and restoring all actuated equipment to their pretest configuration. Additionally, Indiana Michigan Power Company will enhance procedural controls, provide additional training on the enhanced procedural controls, and establish specific programmatic guidelines and limitations to be implemented when using reactor protection system/solid state protection system channel bypass functions.

This event is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) as a valid actuation of the CNP Unit 2 general containment isolation, emergency core cooling system, and emergency AC electrical power systems.

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

Description of Event

On April 27, 2006, at 0207 hours, while in MODE 5 and conducting activities to prepare for the performance of 2-IHP-4030-STP-180, "Prior to Startup (SU) Instrumentation Channel Operating Test and Trip Actuating device Operational Test," Donald C. Cook Nuclear Plant (CNP) Unit 2 received a main steam line low pressure safety injection (SI) signal on both trains. The following components automatically started:

Unit 2 west centrifugal charging pump (CCP) (on minimum flow recirculation path with injection path isolated for low temperature overpressure protection (LTOP) – no injection to reactor coolant system (RCS)) [BQ]
Unit 2 south SI pump (on minimum flow recirculation path with injection path isolated for LTOP – no injection to RCS) [BQ]
Unit 2 east residual heat removal (RHR) pump [BP]
Unit 2 east component cooling water (CCW) pump [CC]
Unit 2 CD emergency diesel generator (EDG) [EK]
Both trains of Unit 2 control room pressurization [VI]
Both trains of Unit 2 phase A containment isolation signal [JM]
Both trains of Unit 1 control room pressurization fans [VI]
Unit 1 east and west essential service water (ESW) pumps [BI]

All equipment operated as designed. No injection to the RCS occurred due to LTOP system line-ups that were in effect.

This event is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) as a valid actuation of the CNP Unit 2 general containment isolation, emergency core cooling system, and emergency AC electrical power systems. On April 27, 2006, at 0918 hours, Indiana Michigan Power Company (I&M), in accordance with the reporting requirements established in 10 CFR 50.72(b)(3)(iv)(A), completed its prompt notification of this event to the Nuclear Regulatory Commission Operations Center via the Emergency Notification System.

Analysis of Event

While conducting activities in preparation to perform required surveillance testing on Unit 2, maintenance personnel were attempting to clear several standing reactor trip signals on multiple channels using the newly installed reactor trip protection system bypass function. This resulted in an inadvertent SI on both trains due to the "Low Steam Line Pressure SI Block" having been removed with all Unit 2 steam generator pressures below the low pressure main steam line isolation and SI actuation set point of 500 psig. As designed, a main steam line isolation signal was generated; however, the main steam line isolation valves were already closed (the designated response position to low pressure steam line isolation signal) in support of system maintenance at the time of the event. As reported above, available Unit 2 emergency safety features equipment started, consisting of the Unit 2 CD EDG, the Unit 2 south SI pump, the Unit 2 west CCP, Unit 2 east RHR pump, and Unit 2 east CCW pump. Both trains of Unit 2 control room pressurization fans started and a Unit 2 phase "A" isolation occurred. Both trains of Unit 1 control room pressurization actuated and Unit 1 east and west ESW pumps automatically started (as designed) in response to the Unit 2 SI signal. Unit 2 was in MODE 5 at approximately 180 degrees F and 300 psig with the applicable Unit 2 LTOP controls and alignments in effect in a supporting alignment for Unit 2 Train B loss of offsite power/loss of coolant accident testing. The north (train A) SI pump was disabled in test and did not start. The south (train B) SI pump started, but did not inject because the discharge flow path was manually isolated for LTOP. The west (train B) CCP started, but did not inject because the discharge flow path was isolated for LTOP. Phase "A" Containment Isolation occurred as expected. At the time of the event, the AB EDG was out of service for planned maintenance. The pressurizer

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surge line [AB] temperature lowered from 412 degrees F to 205 degrees F and subsequently returned to 414 degrees F. This pressurizer surge line transient was evaluated and it was determined that the qualification of both the surge line and pressurizer were not impacted. No specific plant safety-related equipment OPERABILITY concerns were noted at the time and none were subsequently identified.

Events such as this represent a potential to challenge Unit 2 RCS integrity; however, all appropriate administrative and equipment controls were in place and there was no injection into the RCS as a result of this actuation, and thus no RCS integrity challenge. No additional equipment became unavailable as a result of this event. In that no additional plant equipment was made unavailable and no other equipment challenges occurred, there was no challenge to any key safety functions (i.e., shutdown cooling, inventory control, reactivity control, containment closure, electric power distribution, service water (CCW/ESW), and spent fuel pit cooling).

The impact to Unit 1 from a "shared PRA equipment" perspective was minimal in that the Unit 1 control room pressurization system started (not a PRA modeled system) and the stand-by ESW pumps auto-started from the Unit 2 SI. The extra operating ESW pumps did not affect either ESW system function or any related equipment availability. Thus, there was no significant risk impact to Unit 1 from this event.

Cause of Event

The root cause of the inadvertent SI actuation was the failure of instrument maintenance personnel to implement procedure use and adherence requirements when using a job order to bypass channels instead of using existing procedures to clear the standing reactor trip signals (formal procedures were available to address all of the standing trip signals that were observed for ΔT/Tavg and SG level).

Corrective Actions

Immediate corrective actions included returning the bypass switches to their normal position, resetting the safety injection signal by reinstating the main steam line low pressure safety injection block, and restoring all actuated equipment to their pretest configuration. Additionally, the Plant Manager, Maintenance Manager, and Maintenance Instrumentation and Control Manager briefed the Instrumentation and Control personnel regarding this event and communicated expectations for remaining outage activities.

I&M will revise Procedure MHI-5000, "Conduct of Maintenance," to clarify procedure use and adherence requirements and expectations that a job order cannot be used to provide detailed instructions that manipulate plant components in order to establish initial conditions or bridge steps to support implementing procedures.

I&M will revise Procedure PMP-2291-PLN-001, "Work Control Activity Planning Process," to clarify procedure use and adherence requirements and expectations that a job order cannot be used to provide detailed instructions that manipulate plant components in order to establish initial conditions or bridge steps to support implementing procedures.

I&M will utilize department communication, stand down, or all-hands meeting for the maintenance and work control departments to reinforce the requirements and expectations established in the above procedure revisions.

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I&M will update initial and continuing training programs for Maintenance and Work Control personnel regarding procedure use and adherence guidance. Available video type training tools will be utilized to demonstrate expectations and provide examples for complying with procedure use and adherence, purpose and intent, place keeping, questioning attitude, and self checking.

I&M will establish and implement a procedure to provide instructions and limitations for using the channel bypass functions.

Previous Similar Events

None.