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J. E. Pollock
Site Vice President

September 29, 2008
Indian Point Unit No. 3
Docket No. 50-286
NL-08-135

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

Subject: Licensee Event Report # 2008-004-00, "Automatic Actuation of the Motor Driven Auxilliary Feedwater Pumps During Surveillance Testing Caused by Incorrect Test Jumper Connection Due to Personnel Error"

Dear Sir or Madam:

Pursuant to 10 CFR 50.73(a)(1), Entergy Nuclear Operations Inc. (ENO) hereby provides Licensee Event Report (LER) 2008-004-00. The attached LER identifies an event where there was an automatic actuation of both motor driven Auxiliary Feedwater Pumps, a system listed in 10 CFR 50.73(a)(2)(iv)(B), which is reportable under 10 CFR 50.73(a)(2)(iv)(A). This condition was recorded in the Entergy Corrective Action Program as Condition Report CR-IP3-2008-01863.

There are no new commitments identified in this letter. Should you have any questions regarding this submittal, please contact Mr. Robert Walpole, Manager, Licensing at (914) 734-6710.

Sincerely,

J. E. Pollock
Site Vice President
Indian Point Energy Center

cc: Mr. Samuel J Collins, Regional Administrator, NRC Region I
NRC Resident Inspector's Office, Indian Point 3
Mr. Paul Eddy, New York State Public Service Commission
INPO Record Center

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LICENSEE EVENT REPORT (LER)

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: INDIAN POINT 3	2. DOCKET NUMBER 05000-286	3. PAGE 1 OF 4
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4. TITLE: Automatic Actuation of the Motor Driven Auxiliary Feedwater Pumps During Surveillance Testing Caused by Incorrect Test Jumper Connection Due to Personnel Error

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
8	04	2008	2008	004 - 00		9	29	2008	FACILITY NAME	DOCKET NUMBER
										05000
										05000

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: <i>(Check all that apply)</i>									
10. POWER LEVEL 100%	<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)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)								

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

NAME Michael Ferretti, Maintenance Technical Specialist	TELEPHONE NUMBER <i>(Include Area Code)</i> (914) 734-5754
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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 <input type="checkbox"/> YES <i>(If yes, complete 15. EXPECTED SUBMISSION DATE)</i> <input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR

16. ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced type written lines)*

On August 4, 2008, during performance of the monthly Reactor Protection Logic Channel Functional Test 3-PT-M13B1, Instrumentation & Control (I&C) technicians were testing Low-Low Steam Generator Water Level (SGWL) which required installation of jumper wires on terminal board logic contacts when a jumper became dislodged. When the I&C technicians completed installation of the second jumper they reinstalled the jumper that became dislodged and continued installation of the remaining jumpers. At this time Control Room Operators notified the technicians of an automatic start of the motor driven 31 and 33 Auxiliary Feedwater Pumps (AFWPs). The I&C technicians stopped the test, removed the jumpers, performed troubleshooting and testing and satisfactorily completed the test. The cause of the event was the AFWP Auto start actuation logic was satisfied when a relay was energized as a result of installation of a jumper on an incorrect terminal of the Low-Low SGWL logic circuit. The incorrect jumper connection was due to personnel error as a result of ineffective use of Human Performance (HP) tools because standards and expectations have not been adequately reinforced in I&C technicians. Corrective actions included coaching I&C personnel on use of HP tools, discussion with I&C Supervision of the event, lessons learned, and management expectations for procedure use and adherence and use of proper clips. A Maintenance Stand-down was developed and conducted on details of the root cause events in 2008 to include their causes, HP traps, and HP tools used ineffectively. HP Simulator High Intensity training will be performed. A needs analysis will be performed for the frequency of Human Performance refresher training. The event had no effect on public health and safety.

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

Note: The Energy Industry Identification System Codes are identified within the brackets {}.

DESCRIPTION OF EVENT

On August 4, 2008, at approximately 12:00 hours, while at 100% steady state reactor power, both motor driven auxiliary feedwater (AFW) pumps {BA} (AFWP) automatically started during performance of the Low-Low Steam Generator Water Level section of procedure 3-PT-M13B1, "Reactor Protection Logic Channel Functional Test (Reactor Power Greater Than 35%-P8)." At approximately 12:07 hours, Operators recognized the start of the 31 and 33 AFWPs and secured the pumps. AFWP switches in the Control Room (CR) were returned to Auto following verification by I&C that the Auto start signal was no longer present. The steam driven 32 AFWP did not start and was not expected to start during this portion of the test. The test was terminated and troubleshooting initiated to determine the cause of the event. The core reactivity changes due to the event were not significant and resulted in a less than 0.25% increase in reactor power and no rod movement. The reactivity effect as measured by the Power Range Nuclear Instrumentation {IG} was small and SG {AB} level oscillated approximately 1-2% from normal but there was no challenge to automatic control and no SG level alarms were actuated. At approximately 13:22 hours, performance of 3-PT-M13B1 was commenced and after successful performance of the test, Technical Specification (TS) 3.3.1 was exited at approximately 16:09 hours. On August 4, 2008, at 14:17 hours, an eight hour non-emergency notification was made to the NRC for a valid actuation of the AFW system under 10CFR50.72(b)(3)(iv)(A). The event was recorded in the Indian Point Energy Center corrective action program (CAP) as CR-IP3-2008-01863.

Prior to the event, at approximately 09:59 hours on August 4, 2008, Operations entered TS 3.3.1, "Reactor Protection System Instrumentation," and initiated start of surveillance test 3-PT-M13B1. Instrumentation and Control (I&C) technicians were briefed in the performance of surveillance test 3-PT-M13B1 which demonstrates the operability of the Reactor Protection System {JE} Logic relays {RLY} (Train B) in accordance with the surveillance requirements of TS 3.3.1. During the pre-job brief, use of alligator type jumpers was discussed and the I&C technicians questioned whether the Pomona banana jack adapters had been installed as the space around the terminal lugs was limited. The engineering for this type of adapter had not been completed therefore banana jacks adapters had not been installed. During performance of the test, Instrumentation & Control (I&C) technicians were at the step that tests Low-Low Steam Generator Water Level (SGWL) which required installation of jumper wires on terminal board logic contacts so that logic relays can be functionally tested. A unique testing feature is the AC feed to the logic relays are broken when various Low-Low SG Level logic matrices are tested in order to prevent actuation of the relays which would Auto start the 31 and 33 AFWPs. In order to functionally test the relays, jumpers are installed to bypass test contacts which open during testing. I&C technicians initially installed the first jumper and during installation of the second jumper noticed that the first jumper had become dislodged. The I&C technicians did not see any sparks or hear any relay actuation so the second jumper installation was completed and the dislodged jumper was reconnected. I&C technicians continued with installing the remaining jumpers.

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At this time CR Operators notified the Technicians of an automatic start of the motor driven 31 and 33 AFWPs. The I&C Technicians stopped the test and removed the jumpers. Troubleshooting and testing was initiated with no anomalies identified and the test completed satisfactorily using micro grabber type jumpers.

Cause of Event

The actuation of the 31 and 33 AFWPs was due to the satisfaction of the AFWP Auto start actuation logic when a relay was energized as a result of installation of a jumper on an incorrect terminal of the Low-Low SGWL logic circuit. The incorrect jumper connection was due to personnel error as a result of ineffective use of Human Performance (HP) tools. The ineffective use of HP tools was because standards and expectations have not been adequately reinforced and engrained into I&C technicians by Maintenance supervisors and management. Interviews of I&C technicians indicated there was confusion on whether they were performing concurrent verification or peer checking. Procedural use and management's expectations require that peer checking be performed during this continuous use procedure. The dislodged jumper may have caused the I&C technicians to become distracted and not use their HP tools during installation of the second jumper. The procedure contains check boxes to place keep installation of each jumper but there was no indication of place keeping for the re-installation of the dislodged jumper. I&C technicians did not effectively use their HP tools such as place keeping, verification practices, questioning attitude, self checking during jumper installation.

Corrective Actions

The following corrective actions have been or will be performed under Entergy's Corrective Action Program to address the cause and prevent recurrence:

- I&C personnel were briefed on the event, lessons learned, traps associated with the event such as distractions, interruptions, physical environment, HP tools that could have been used more effectively and counseled on the expectations and standards for procedure adherence and usage.
- I&C personnel were coached on verification practices, self checking, S.T.A.R. process and place keeping. Expectations of I&C personnel were reinforced on what it means to stop when unexpected conditions are encountered in the performance of a procedure and what actions are to be taken.
- A Maintenance Stand-down was developed and conducted on details of the root cause events in 2008 to include their causes, contributing causes, HP traps, and HP tools used ineffectively.
- Future job briefs were revised to include the specific actions that I&C technicians are to take should unexpected equipment reactions occur and the cautions related to errors on incorrect jumper installation. The revised brief also includes a discussion of peer checking versus concurrent review roles and performance expectations.
- Human Performance Simulator High Intensity training of I&C, Maintenance, and Performance personnel including supervisors will be performed to include review of appropriate sections of EN-MA-101, "Conduct of Maintenance, EN-AD-102, "Procedure Adherence and Level of Use, EN-HU-102, "Human Performance Tools, and IP-SMM-OP-106, "Procedure Use and Adherence." Training is scheduled to be complete by December 31, 2008.
- A needs analysis will be performed for the frequency of Human Performance refresher training for maintenance personnel in accredited programs. The needs analysis is scheduled to be completed by December 15, 2008.

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

Event Analysis

The event is reportable under 10CFR50.73(a)(2)(iv)(A). The licensee shall report any event or condition that resulted in the manual or automatic actuation of any system listed in 10CFR50.73(a)(2)(iv)(B). Systems to which the requirements of 10CFR50.73(a)(2)(iv)(A) apply for this event include the AFWS. This event meets the reporting criteria because the AFWS was actuated in accordance with design as a result of satisfying the requirements for initiation from the actuation circuitry for the 31 and 33 AFWSs. As a result of the event, there were no safety systems that were not capable of performing their safety function. In accordance with reporting guidance in NUREG-1022, an additional random single failure need not be assumed in that system during the condition. Therefore, there was no safety system functional failure of the AFWS reportable under 10 CFR 50.73(a)(2)(v).

Past Similar Events

A review was performed of Licensee Event Reports (LERs) for the past three years for any events reporting Engineered Safety Feature actuation due to inadvertent actuation during testing. LER-2005-003 reported an inadvertent actuation of the Auxiliary Feedwater (AFW) Pumps on May 16, 2005, during Reactor Protection Logic Channel Functional Testing (3-PT-M13B1). The cause of the event reported in LER-2005-003 was human error due to inadequate work practices where the technician performing the test failed to adhere to the procedure and allowed himself to be distracted and failed to disarm the actuation circuit as required by procedure. The event reported in LER-2005-003 has a similar cause to this event as both were caused by human performance issues. The corrective actions for LER-2005-003 included counseling I&C personnel on management expectations on procedure adherence and use of human performance tools, high intensity training on use of human performance tools. These corrective actions were not sufficiently effective in preventing a reoccurrence of a similar event by I&C personnel being reported in this LER because training on the lessons learned were not continually reinforced.

Safety Significance

This event had no effect on the health and safety of the public. There were no actual safety consequences for the event because there were no accidents or transients requiring the AFWSs and Operators were aware of the possibility of an inadvertent AFW pump start during testing and have indications alerting them to AFW pump start. The operators had adequate time to terminate AFW pump operation and limit the addition of AFW into the SGs. Operators during this event recognized the AFW pump start and took appropriate actions in accordance with plant procedures to limit the effects of the inadvertent AFW actuation.