Entergy

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J. E. Pollock
Site Vice President

May 21, 2008
Indian Point Unit No. 3
Docket No. 50-286
NL-08-077

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

Subject: Licensee Event Report # 2008-003-00, "Automatic Actuation of Emergency Diesel Generator 33 During Surveillance Testing Caused by Inadvertent Actuation of the Undervoltage Sensing Circuit on 480 Volt AC Safeguards Bus 5A"

Dear Sir or Madam:

Pursuant to 10 CFR 50.73(a)(1), Entergy Nuclear Operations Inc. (ENO) hereby provides Licensee Event Report (LER) 2008-003-00. The attached LER identifies an event where there was an automatic actuation of an emergency diesel generator, 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-IP3-2008-00818.

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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NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES: 8/31/2010

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-I0202, (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)

1. FACILITY NAME:	2. DOCKET NUMBER	3. PAGE
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4. TITLE: Automatic Actuation of Emergency Diesel Generator 33 During Surveillance Testing Caused by Inadvertent Actuation of the Undervoltage Sensing Circuit on 480 Volt AC Safeguards Bus 5A

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
3	25	2008	2008	003 -	00	5	21	2008		05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE

1

10. POWER LEVEL

100%

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

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☒ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER *(Include Area Code)*
Michael Ferretti, Maintenance Technical Specialist	(914) 734-5754

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

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

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

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

On March 25, 2008, during surveillance testing, Instrumentation & Control (I&C) Technicians inadvertently actuated the undervoltage sensing circuit on 480 volt AC safeguards bus 5A causing the normal supply breaker to open and an automatic actuation of emergency diesel generator (EDG) 33 which started and re-energized the bus. In accordance with design, loads on bus 5A were stripped and then sequentially re-loaded back onto the bus. All systems performed as designed. The cause of the inadvertent actuation was procedure usage and adherence. During testing, an Agastat timer was discovered out of specification and an adjustment was performed but the incorrect Agastat was adjusted. Instead of stopping and notifying supervision, the test was continued and the correct Agastat was adjusted to spec. Then a re-adjustment began on the incorrectly adjusted Agastat but this action was out of sequence of the procedure. After the re-adjustment was completed, an attempted restoration to normal resulted in a degraded voltage condition sensed due to the bypass of procedure steps which required the closure of knife switch contacts which resulted in action of the undervoltage relays. Corrective actions include the conduct of procedure adherence reinforcement training, conduct of oral boards for I&C Supervisors, and incorporation of this event into the I&C re-qualification training program. 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 March 25, 2008, while at 100% steady state reactor power, during the performance of monthly surveillance test 3-PT-M62B, "480 Volt AC Degraded Grid/Undervoltage Functional Testing Bus 5A," an inadvertent actuation of the undervoltage sensing circuit occurred that resulted in the opening of the normal supply breaker {BRK} and an automatic actuation of emergency diesel generator (EDG) 33 {EK} which started and re-energized the bus {BU}. In accordance with design, as a result of the undervoltage actuation, the loads on bus 5A were stripped and then sequentially re-loaded back onto the bus. All systems performed as designed. The condition was recorded in the Indian Point Corrective Action Program (CAP) as CR-IP3-2008-00818.

The onsite AC power distribution system is composed of 480 Volt AC buses 5A, 6A, 2A and 3A {ED} which is divided into three safeguards power trains. The three trains are designed such that any two trains are capable of meeting minimum requirements for accident mitigation and/or safe shutdown. The three safeguards power trains are train 5A (Bus 5A and EDG-33), Train 6A (Bus 6A and EDG-32), and Train 2A/3A (Bus 2A and 3A and EDG-31). The 480 Volt AC Electrical Distribution System {ED} is designed with protection against undervoltage conditions using relays that sense loss of voltage (LOV) and degraded grid voltage (DGV). The bus undervoltage relays will initiate the opening of the power feeds from the Station Service Transformer {FK} and 480 Volt AC tie breaker at a degraded voltage level after being timed out on a particular bus. Each of two voltage sensing relays has its own associated timing relay to provide a time delay to insure proper coordination with plant electrical transients. Actuation of the DGV relays will trip the bus supply breaker removing power to the buses which will actuate the LOV relays. When the feeder breaker trips, the two bus undervoltage relays will initiate bus stripping, actuate EDG start, and provide signals that will begin load sequencing to reload the bus.

On March 25, 2008, at approximately 10:51 hours, three qualified Instrumentation and Control (I&C) Technicians initiated actions in accordance with surveillance test procedure 3-PT-M62B to perform the scheduled monthly functional test of the 480 Volt AC undervoltage/degraded grid protection system for Bus 5A. The test is performed to demonstrate that the 480 volt AC undervoltage/degraded grid protection system functions properly. The 480 Volt AC bus 5A undervoltage/degraded grid protection fuctions are tested locally at a switchgear {SWGR} in the Switchgear Room on the 15 foot elevation of the Control Building {NA}. Performance of the test requires manipulation of various components including the following: 1) a three position key operated test switch with a normal (middle position) and two test positions, 2) a bus voltage sensing signal is manually disconnected by operation of knife (i.e. stabs) switches, 3) adjustment as needed of Agastat timing relays through use of their adjustment knobs.

During the performance of the test, the 480 volt AC undervoltage relays {27} for Bus 5A are removed from service. A pre job brief was performed that included use of human performance (HP) tools and previous operating experiences. During performance of the test at the section on degraded grid voltage protection testing, the test of Agastat timer 62-1 was shown to be within spec and no adjustments were made. The next Agastat tested (62-2) was found out of spec which required an adjustment.

A technician adjusted an Agastat thought to be 62-2 but discovered that the timing had not changed and realized that Agastat 62-1 was adjusted inadvertently. The lead Technician decided to continue the test and adjust the correct Agastat (62-2) and then come back to the misadjusted Agastat (62-1). The technicians did not stop work and notify their supervision or the Control Room that they had misadjusted Agastat 62-1 or were about to re-perform steps out of procedure sequence. The lead Technician went back to previous procedure steps that were already completed to re-perform testing of the 62-1 Agastat and restore it back to its proper specification. Upon completion of the re-adjustment, the Technician immediately turned the key operated test switch to normal to exit the re-adjustment of Agastat 62-1. By performing the re-adjustment out of sequence, the Technician bypassed four procedural steps one of which required closing the knife (stab) switch. When the key switch was turned to the normal position with the knife switch still open (because the step to close the knife switch was bypassed), the degraded voltage signal was sensed and caused a safeguard actuation.

Cause of Event

The root cause of actuation of the undervoltage sensing circuit that resulted in actuation and start of EDG-33 was a failure to adhere to the test procedure. There was a lack of adherence and reinforcement to the Conduct of Maintenance procedure standards and expectations for procedure adherence and usage. Contributing causes (CC) were as follows: CC1: Human performance. The Technicians failed to apply learned HU tools together to achieve maximum effectiveness such as 3-point communication, peer checking, S.T.A.R. and "Point and Shoot" to ensure that the correct Agastat was adjusted. CC2: Verbal Communication. Notifying the I&C Supervisor at either point when the wrong Agastat was adjusted or just prior to working the procedure steps out of sequence may have prevented the event. CC3: Place Keeping. Utilizing good place keeping techniques such as re-initialing or circle/slashing the steps when the Technicians went back into the procedure to re-check the misadjusted Agastat may have prevented the event.

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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 and lessons learned, counseled on expectations and standards for procedure adherence and usage, and briefed on the human performance tools that were ineffectively used for this event.
- Conduct procedure adherence reinforcement training and reinforce expectations and standards for use of the Conduct of Maintenance Procedure, the Procedure Use and Adherence procedure, and Procedure Adherence and Level of Use procedure for I&C personnel. Scheduled completion of training is September 15, 2008.

- Conduct oral boards for I&C Supervisors on the Conduct of Maintenance Procedure, the Procedure Use and Adherence procedure, and Procedure Adherence and Level of Use procedure. Scheduled completion of oral boards is September 15, 2008.
- Prepare a TEAR to incorporate this event into the I&C re-qualification training program. Scheduled completion for preparation of the TEAR is June 15, 2008.

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). The systems to which the requirements of 10CFR50.73(a)(2)(iv)(A) apply include (#8) Emergency AC electrical power systems including emergency diesel generators (EDG). This event meets the reporting criteria because the 33 EDG actuated to start when I&C Technicians inadvertently actuated the undervoltage sensing circuit on 480 Volt AC Bus 5A. The 33 EDG started at approximately 11:18 hours on March 25, 2008. At 12:25 hours, 480 Volt AC Bus 5A was returned to its normal power supply. At 12:32 hours, the 33 EDG was returned to its normal standby condition. All required safety systems performed as designed. 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 reportable under 10 CFR 50.73(a)(2)(v).

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

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-2005-002 reported a reactor trip on May 6, 2005, during I&C troubleshooting of the condensate system. The direct cause of the event was poor work practices. The root causes were 1) I&C and Operations failure to verify and recognize the required switch position for the condensate polisher post filter bypass valve, 2) Operations misunderstanding whether the activity constituted operational maintenance or troubleshooting thereby allowing I&C to work outside the normal work process. The actions in the condensate polisher procedure were inadequate for the condition. This event was considered not to be similar as the root cause was not procedure adherence. LER-2005-003 reported an inadvertent actuation of the Auxiliary Feedwater (AFW) Pumps on May 16, 2005, during Reactor Protection Logic Channel Functional Testing. The cause of the event reported in LER-2005-003 was human error due to inadequate work practices were the I&C technician performing the test failed to follow up on a known worst that can happen by allowing himself to be distracted and failed to disarm the actuation circuit within the known time frame noted by the 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 use of human performance tools, high intensity training on use of human performance tools, and procedure enhancement.

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 EDGs. Required power from both offsite sources and onsite emergency power were available and the actuation circuitry and EDG performed in accordance with design.