Entergy

Entergy Nuclear Northeast
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249
Tel 914 734 6700

Fred Dacimo
Site Vice President
Administration

March 30, 2007

Re: Indian Point 2
Docket No. 50-247
NL-07-025

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

Subject: Licensee Event Report 2007-003-00, "Plant in a Condition Prohibited by Technical Specifications due to Operation With Control Room Ventilation System High Flow"

Dear Sir:

Pursuant to 10 CFR 50.73(a)(1), Entergy Nuclear Operations Inc. (Entergy) hereby provides Licensee Event Report (LER) 2007-003-00. The enclosed LER identifies an event where the plant was operated in a condition prohibited by Technical Specifications, which is reportable under 10 CFR 50.73(a)(2)(i)(B). This condition has been recorded in the Entergy Corrective Action Program in Condition Report CR-IP2-2007-00130.

There are no new commitments identified in this letter. Should you have any questions regarding this submittal, please contact Mr. Patric W. Conroy, Manager, Licensing at (914) 734-6668.

Sincerely,

Fred R. Dacimo
Site Vice President
Indian Point Energy Center

cc: Mr. Samuel J Collins, Regional Administrator, NRC Region I
Mr. John Boska, Senior Project Manager, NRC, NRR, DORL
Resident Inspector's Office, IP2
Mr. Paul Eddy, NYS Dept. of Public Service
Mr. Peter R. Smith, President, NYSERDA
INPO Record Center

IE22

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

APPROVED BY OMB NO. 3150-0104 EXPIRES: 06/30/2007

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-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
INDIAN POINT 2	05000-247	1 OF 3

4. TITLE Plant in a Condition Prohibited by Technical Specifications due to Operation With Control Room Ventilation System High Flow

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
										05000
1	3	2007	2007-	003 -	00	03	30	2007	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)*
Ivan Sinert, Engineer	(914) 734-6813

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 January 3, 2007 at approximately 1950 hours, with steady state reactor power at 100 percent, Indian Point determined that the Control Room Ventilation System (CRVS) booster fans were exceeding the required flow range of 2000 cfm ±10 percent. The CRVS was considered inoperable at the time for testing. The CRVS was returned to operability on January 4, 2007. Subsequent evaluation determined that the CRVS had been out of specification with high flow from October 26, 2006, following maintenance work on the 21 Control Room Fan (CRF), until January 4, 2007. The fans operate in series. This was operation outside the Technical Specifications. The apparent cause was the human performance weakness in failing to foresee the effects of the maintenance work and a contributing factor was lack of procedural testing requirements. The time frame of this condition is 71 days. Corrective action was taken to brief appropriate engineers on the effects of RPM change and to place a non-adjustable sheave in the 21 CRF for constant fan speed. Corrective action will be taken to revise procedures to prevent recurrence. There was no significant safety hazard since the CRVS safety function was capable of being performed at all times.

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Indian Point Unit 2	05000-247	2007	- 03 -	00	2 OF 3

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 January 3, 2007 at approximately 1950 hours, with steady state reactor power at 100 percent, Indian Point Energy Center (IPEC) determined that the Control Room Ventilation System (CRVS) booster fans were exceeding the required flow range of 2000 cfm ±10 percent. The CRVS was considered inoperable at the time for testing and Technical Specification (TS) 3.7.10, Condition B for two CRVS trains inoperable had been entered. The CRVS was returned to operability on January 4, 2007. Condition Report IP2-2007-00040 documents this event. This event was determined to be reportable under 10 CFR 50.73(a)(2)(i)(B) on January 31, 2007 during a subsequent review of results of laboratory testing of the CRVS charcoal. Condition Report IP2-2007-00130 documents this event.

The charcoal is in the CRVS and is part of the CR Heating, Ventilating, and Air Conditioning (HVAC) System {VI}. The primary function of the CRVS is to ensure that iodine released during a radiological event can be removed from the Control Room (CR) {VI} in order to maintain the habitability of the CR. TS Surveillance Requirement 3.7.10.3 requires CRVS testing per the Ventilation System Testing Program (VFTP) program found in TS 5.5.9. The VFTP specifies in place testing of CRVS pressure drop, in place testing of the penetration and bypass of the high efficiency particulates air (HEPA) filters {FLT} and charcoal filters, and laboratory testing of charcoal samples. All testing is at 2000 cfm ± 10 percent.

On January 3, 2007, following Procedure 2PT-EM13, a CRVS charcoal sample was removed for laboratory testing (2 inch sample tested) and the in place test was initiated. The CRVS booster fans {FAN} were found out of the allowable flow range (2000 cfm ± 10) and IP2-CR-2007-00040 was written; actual flow was approximately 2500 cfm. Trouble shooting determined that high speed in the 21 Control Room Fan (CRF) associated with the air conditioner was the likely cause of the high airflow (the CRF and booster fans run in series). Sheaves were replaced on the 21 CRF (WR IP2-06-14505) lowering the CRF by about 500 cfm. This reduced the CRVS booster fan flow to allowable flow. Subsequent evaluation determined that the 21 CRF speed was adjusted on October 26, 2006 (WR-IP2-04-35618) without consideration of the effect on the CRVS booster fans. Post work tests were revised to verify flows on the CRVS booster fans following work that could affect flow on the 21 CRF. A review of TS HVAC systems found no extent of condition. This was not determined to be reportable until January 31, 2007 during the review of charcoal sample test results (IP2-CR-2007-00130).

On January 10, 2007 the CRVS charcoal sample analysis came back as unacceptable (6.04 percent penetration with 5 percent allowable) and IP2-CR-2007-00130 was written. The sample was also tested at the face velocity associated with the as found fan condition of 2500 cfm and found unacceptable (10.11 percent penetration). The CR charcoal was replaced. The above testing was done for 2 inch samples as required by PT-EM-13, the bed design described in response to Generic Letter 99-02 in a letter dated September 11, 2000. The CRVS has two two-inch beds of charcoal. The charcoal was further laboratory tested for a 4 inch depth to demonstrate past operability. Using flow velocities of 2000 cfm and 2500 cfm, the tests showed penetrations of 0.67 percent and 1.07 percent, respectively. Based on this, the charcoal laboratory test results were determined to be not reportable.

Cause of Event

The apparent cause is human performance weakness in the failure to foresee the effects of adjustments of the 21 CRF on the booster fans with respect to the resultant flow rates. A contributing cause was the lack of procedural guidance to require flow verification.

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:

- Briefed Program and Components Engineers and the Fan Component Engineer on the consequences of fan speed / flow changes.
- Revise maintenance and post work test procedures for the 21 CRF, the Control Room Circulating Fan (CRCF), and the CRVS booster fans to require verification of as found and as left fan RPMs, and to require airflow acceptance criteria to be met using 3PT-EM13 values for booster fans following all work. (CA 2 and 3 due May 2, 2007).
- The 21 CRF sheaves were changed to fixed rather than adjustable sheaves to maintain constant flow rates for the 21 CRF.

Event Analysis

This event is reportable under 10 CFR 50.73(a)(2)(i)(B), any event or condition that resulted in the nuclear power plant operating in a condition prohibited by TS. The January tests found the CRVS booster fans with flow values out of specification high. The evaluation determined that high booster fan flow rate was due to work on the 21 CRF on October 26, 2006. Fan speed was adjusted to meet TS on January 4, 2007. The plant was in non-compliance with TS 3.7.10 surveillance requirement for flow of 2000 cfm $\pm$ 10 percent for 71 days. There was no loss of safety function.

A review was conducted of Licensee Event Reports (LER) in the past two years for non-compliance with TS. IP2 reported six events resulting in operations prohibited by Technical Specifications. LER-2005-001 reported an inoperable Component Cooling Water check valve that resulted in an inoperable Emergency Core Cooling train. LER 2005-002 reported an inoperable Safety Injection pump due to gas binding. LER 2006-002 reported two inoperable Post Accident monitors. LER 2006-007 reported pressure relief valves opened beyond allowable values. LER 2007-001 reported operation outside the allowed containment temperature value. LER 2007-002 reported an inoperable breaker for a residual heat removal pump. No common cause was identified.

Safety Significance

This event had no effect on the health and safety of the public. The CRVS was demonstrated to meet accident analysis acceptance criteria using flow velocities of 2500 cfm. The CRVS was fully capable of performing its function.