

July 28, 2006

NRC 2006-0066
10 CFR 50.73

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Point Beach Nuclear Plant, Units 1 and 2
Dockets 50-266 and 50-301
License Nos. DPR-24 and DPR-27

Licensee Event Report 266/30132006-001-00
Control Room Emergency Filtration System Inoperable

Enclosed is Licensee Event Report 266/301/2006-001-00 for the Point Beach Nuclear Plant Units 1 and 2. This LER discusses the discovery of an inoperable Control Room Emergency Filtration System (CREFS). This event is reportable in accordance with 10 CFR 50.73(a)(2)(v) for, "Event or Condition That Could Have Prevented Fulfillment of a Safety Function."

This letter contains no new commitments and no revisions to existing commitments.

 FOR
Derfais L. Koehl
Site Vice-President, Point Beach Nuclear Plant
Nuclear Management Company, LLC

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

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: 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, (3150-0066), 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.

FACILITY NAME (1)

POINT BEACH NUCLEAR PLANT UNIT 1

DOCKET NUMBER (2)

05000266

PAGE (3)

1 of 4

TITLE (4)

CONTROL ROOM EMERGENCY FILTRATION SYSTEM INOPERABLE

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	30	2006	2006	-- 001 --	00	07	28	2006	PT BEACH UNIT 2	05000301
OPERATING MODE (9)		1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR .: (Check all that apply) (11)							
POWER LEVEL (10)		100	20.2201(b)			20.2203(a)(3)(ii)			50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
			20.2201(d)			20.2203(a)(4)			50.73(a)(2)(iii)	50.73(a)(2)(x)
			20.2203(a)(1)			50.36(c)(1)(i)(A)			50.73(a)(2)(iv)(A)	73.71(a)(4)
			20.2203(a)(2)(i)			50.36(c)(1)(ii)(A)			50.73(a)(2)(v)(A)	73.71(a)(5)
			20.2203(a)(2)(ii)			50.36(c)(2)			50.73(a)(2)(v)(B)	OTHER Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iii)			50.46(a)(3)(ii)			50.73(a)(2)(v)(C)	
			20.2203(a)(2)(iv)			50.73(a)(2)(i)(A)		X	50.73(a)(2)(v)(D)	
			20.2203(a)(2)(v)			50.73(a)(2)(i)(B)			50.73(a)(2)(vii)	
			20.2203(a)(2)(vi)			50.73(a)(2)(i)(C)			50.73(a)(2)(viii)(A)	
			20.2203(a)(3)(i)			50.73(a)(2)(ii)(A)			50.73(a)(2)(viii)(B)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

Shon McLean

TELEPHONE NUMBER (Include Area Code)

920-755-6835

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
X	VI	ADS	NUCON	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT

On May 2, 2006, testing was conducted on the F-16, Control Room Charcoal/HEPA/Roughing Filter, per Technical Specification (TS) 5.5.10.c, "Ventilation Filter Testing Program." A sample of the charcoal was sent to NUCON for methyl iodide penetration testing. On May 30, 2006, at 0923 the Control Room Emergency Filtration System (CREFS) was declared inoperable based on failure of the charcoal to meet the methyl iodide penetration acceptance criterion of $\leq 1.0\%$. Units 1 and 2 entered TS LCO 3.7.9, "Control Room Emergency Filtration System (CREFS)," Condition A, "CREFS Inoperable," with a Required Action of "Restore CREFS to OPERABLE status."

The F-16 charcoal filter trays were replaced and retested. A second failure occurred due to penetration and system bypass test exceeding allowable limits. The filters were replaced again and the degraded Sealant (RTV) repaired.

Subsequent testing on June 3, 2006, demonstrated compliance with TS 5.5.10.b, TS 5.5.10.c, and TS 5.5.10.d. Operations exited the CREFS TSAC June 4, 2006, at 2030.

CREFS is a single train system. Based on the guidance in NUREG-1022 for a single train system that performs a safety function, this condition was determined to be reportable per 10 CFR 50.73(a)(2)(v), "Event or Condition That Could Have Prevented Fulfillment of a Safety Function." Technical Specifications allow for this system to be inoperable for a period of seven days.

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		2006	-- 001	-- 00	

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

Event Description:

On May 2, 2006, testing was conducted on the F-16, Control Room Charcoal/HEPA/Roughing Filter [FLT], in accordance with Technical Specification (TS) 5.5.10.c, "Ventilation Filter Testing Program." A sample of charcoal was sent to NUCON for methyl iodide penetration testing. On May 30, 2006, at 0923 the Control Room Emergency Filtration System (CREFS) [VI] was declared inoperable based on failure of the charcoal to meet the methyl iodide penetration acceptance criterion of $\leq 1.0\%$. Units 1 and 2 entered TS LCO 3.7.9, "Control Room Emergency Filtration System (CREFS)," Condition A, "CREFS Inoperable" with a Required Action of "Restore CREFS to OPERABLE status" in a completion time of seven (7) days. Both units were in Mode 1 at 100% rated thermal power.

Operations replaced the F-16 charcoal filter trays on May 30, 2006. On May 31, 2006, freon leak testing of the F-16 control room charcoal adsorber [ADV] failed based on 98.6% filtration efficiency results. The acceptance criterion is $\geq 99.00\%$. An inspection of the F-16 filter frame, housing and trays was performed. This inspection identified degraded Sealant (RTV) on the north and south vertical seams of the downstream side of the charcoal adsorber (CAP 01033448). This degradation allowed upstream air to bypass the charcoal adsorber. Inspection of the filter trays also revealed 7 of 14 trays with an underfill condition, which could lead to bypass air flow.

The charcoal filter trays were replaced again on June 3, 2006 (Work Order 286726). The trays were verified to be full prior to installation. The charcoal also passed a laboratory methyl iodide penetration test prior to shipment to Point Beach Nuclear Plant (PBNP).

The degraded RTV condition was resolved by applying new RTV on the downstream side of the north and south vertical seams. In addition, new RTV was applied to the upstream side of the north and south vertical seams (Work Order 286788). GE Silicone RTV 102 was used in accordance with the component instruction manual.

Testing was completed on June 3, 2006, that demonstrated compliance with TS 5.5.10.b, TS 5.5.10.c, and TS 5.5.10.d. Operations exited the CREFS TSAC June 4, 2006, at 2030.

During replacement of filters and repair of RTV on the filter frame/housing, the tightness of the control room envelope (CRE) was not affected. The outside/pressurization airflow rate in control room ventilation system Mode 4 remained above the minimum of 4455 cfm. Therefore, the CRE to all adjacent spaces Differential Pressure (DP) measurements remained greater than 1/8" with significant margin to spare.

Component and system Description:

The CREFS provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity.

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The CREFS consists of one emergency makeup air filtration unit, two emergency makeup fans, two recirculation fans, and the required ducts and dampers necessary to establish the required flow paths and isolation boundaries. The CREFS is an emergency system, parts of which operate during normal operations.

The air entering the control room is continuously monitored by a noble gas radiation monitor and the control room itself is continuously monitored by an area radiation monitor. One detector output above its setpoint will actuate the emergency makeup mode of operation for the CREFS.

The limiting design bases accident for the control room dose analysis is the large break Loss of Coolant Accident (LOCA).

The CREFS will pressurize the control and computer rooms to at least 0.125 inches water gauge in the emergency makeup mode of operation. The CREFS role in maintaining control room habitability is discussed in the Final Safety Analysis Report (FSAR), Section 9.8.

The CREFS provides airborne radiological protection for control room personnel, as demonstrated by the limiting control room dose analysis for the design basis LOCA. Control room dose analysis assumptions are presented in the FSAR, Section 14.3.5.

Event Analysis and Safety Significance:

The F-16 filter is part of the control room ventilation system that is used for emergency operation and is used to maintain control room personnel radiation dose within regulatory requirements.

Prior to the test, there were no known significant conditions adverse to quality present. There were no conditions where nuclear safety or personnel safety were significantly threatened or had been compromised. The condition was identified as part of routine testing that is performed to ensure system operation meets technical specification requirements.

This event was of low safety significance because this event would not have prevented CREFS from performing its safety function since the last successful completion of the Technical Specification surveillance. The methyl iodide penetration test result of the charcoal sample, 98.905% filter efficiency was well above the safety analysis (FSAR Section 14.3.5) stated 95% required filter efficiency for organic (methyl) and elemental material. In addition, a qualitative assessment of the impact of the extra out of service time was performed and concluded that there was no direct effect on Core Damage Assessment due to the CREFS being out of service.

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

Cause:

The exact cause for failure of the methyl iodide penetration test of the sample of the charcoal adsorber has not yet been determined. However, the subsequent test failure due to excessive bypass flow was attributed to a combination of:

- aging of the RTV used to seal the seams between the filter frame and the filter housing, and
- possible bypass airflow due to an underfill condition in 7 of the 14 filter trays.

Corrective Action:

The F-16 charcoal filter trays were replaced with new trays that were verified to be properly filled before installation. The degraded RTV condition was repaired by applying new RTV over the degraded RTV. Proper gasket crush was verified when installing the new filter trays.

Previous Similar Events:

None.