

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) JAMES A. FITZPATRICK NUCLEAR POWER PLANT	DOCKET NUMBER (2) 0 5 0 0 0 3 3 3 1	PAGE (3) 1 OF 0 5
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TITLE (4)
Inoperative Containment Atmospheric Analyzers

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)											
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)									
0	9	13	8	5	8	5	0	2	4	0	1	0	2	1	4	8	6			0 5 0 0 0 0
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OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)											
POWER LEVEL (10) 1 0 1 0	20.402(b)			20.405(c)			50.73(a)(2)(iv)			73.71(b)		
	20.405(a)(1)(i)			50.78(e)(1)			50.73(a)(2)(v)			73.71(e)		
	20.405(a)(1)(ii)			50.36(a)(2)			<input checked="" type="checkbox"/> 50.73(a)(2)(vii)			OTHER (Specify in Abstract below and in Text, NRC Form 356A)		
	20.405(a)(1)(iii)			50.73(a)(2)(i)			50.73(a)(2)(viii)(A)					
	20.405(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(viii)(B)					
20.405(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(ix)						

LICENSEE CONTACT FOR THIS LER (12)						TELEPHONE NUMBER					
NAME Joseph P. Flaherty Assistant Instrument & Control Superintendent						AREA CODE 3 1 5 3 4 2 - 3 8 4 0					

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS		
D	I, K, A, T		E 3 5 1	N							

SUPPLEMENTAL REPORT EXPECTED (14)						EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)						<input type="checkbox"/> NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

Technical Specification Sections 3.7.A.6.b and 3.7.A.9 require containment oxygen and hydrogen to be continuously monitored and oxygen concentration to be maintained <4.0% by weight while containment integrity is required. Since system installation and startup in May, 1985, both A and B oxygen analyzers have been out of service numerous times due to sensor software and procedural problems. At least one of these problems was 10-CFR-21 reportable. Channel inoperability has been both individual and simultaneous, but at no time has the plant Technical Specification Limiting Condition for Operation been exceeded.

As of this time, both channels are operational.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

James A. FitzPatrick Nuclear Power Plant Technical Specifications Sections 3.7.A.6.b and 3.7.A.9 require containment oxygen and hydrogen to be continuously monitored and oxygen concentration to be maintained <4.0% by weight while containment integrity is required. During the 1985 Refuel Outage (February 15 through June 1), a plant modification was performed which replaced the original Beckman Containment Atmospheric Analyzers with instruments manufactured by Exo Sensors, Inc. These new instruments were to meet the requirements of Regulatory Guide 1.97 and NUREG 0737.

While writing the surveillance test to meet the Technical Specification quarterly calibration requirement, it was noted that the manufacturer's technical manual called for an automatic calibration every 90 days with no provisions for determining As Found or As Left values. From experience with other instruments, it was determined that passing calibration gas thru the sensors before and after calibration would provide these values. Initial results were satisfactory.

June through August, 1985

After the Refuel Outage, the plant was returned to service and normal operations resumed with Containment Analyzer operation and calibration satisfactory. In late June, it was noted that the Oxygen Channel As Left values were not always in tolerance. The manufacturer was contacted, and about the first of July he arrived on Site for troubleshooting and repair.

While calibrating the system, utilizing our surveillance procedure, the representative questioned the method of determining As Found and As Left values, but he could not provide other specific methods. The representative expressed an opinion that the sensors were being dried out due to sample gas being induced into the system for extended periods of time, while determining As Found and As Left values. His recommendations of decreasing the amount of time the sample gas passed through the sensors were incorporated into our procedure. Results appeared satisfactory and both channels were considered operable.

September - October, 1985

In mid-September, out of tolerance values again occurred with both channels simultaneously being inoperable for about thirty-six hours. After calibrations, Channel A was returned to service and Channel B, though operable, was left administratively inoperable for further testing. Testing of B Analyzer over a three week period and discussions with the manufacturer led to the conclusion that the calibration process was still excessively drying out the sensor when verifying As Found and As Left values. The method of verifying these values was changed to utilize software data and manual calculations, this method was tested by the manufacturer using a prototype system at his facilities. Site testing also proved satisfactory. Channel B was returned to service on October 12, 1985. Both channels remained on increased surveillance and observation frequency.

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

November, 1985

With the plant continuing to operate at 100% Reactor Power, continued surveillance testing revealed minor problems, but both channels were operable and appeared to be functioning properly. On November 5, 1985, Channel B was declared inoperable due to erratic calibration data. Channel A testing and indications were satisfactory. Channel B sensor was replaced on November 19, and after site testing by both the manufacturer and site personnel, was declared operable on November 24, 1985.

Due to other plant conditions, the Reactor was shut down and a Containment entry made on November 24, 1985. Upon Containment de-inerting, it was noted that Channel A indicated only 9.6% oxygen vice atmospheric conditions; it was declared inoperable. The manufacture's representative, who was present at this time, was of the opinion that the A sensor somehow failed during de-inerting. Reactor operation resumed on November 26 with Channel B operable.

The sensor replaced on November 19 was returned to the manufacturer for failure analysis and another sensor was to be manufactured and shipped to the site to replace the A sensor.

December, 1985

Reactor operation continued at 100% power. Channel B oxygen analyzer remained on increased observation and surveillance testing frequency; Channel A was inoperable.

On December 2, Channel B was declared inoperable due to erratic calibration results and a thirty day Limited Condition of Operation started.

On December 6, Exo Sensors informed the site that the failure of the sensor replaced on November 19, 1985 was caused by incorrect material installed during manufacture and that since the replacement sensor was made in the same batch its' failure was probably for the same reason. The failure of the A sensor was not assumed to be of the same type since it was manufactured in a different batch. Exo Sensors was informed by our site QA Department that we considered this a 10-CFR-21 reportable item. Exo Sensors concurred and generated a Report of Defect Letter (copy attached.) The site Resident Inspector was informed of these actions. A Potential Defect or Failure to Comply (10-CFR-21) Form was generated by the site QA Department and is currently in the New York Power Authority (NYPA) review cycle.

Correctly manufactured sensors were shipped to the site and installed on December 15. In addition, an error in the manual calculation formula used to verify As Left operability was found and corrected. Both channels were declared operable on December 16, 1985 with increased surveillance testing and observations to continue.

The Beckman Oxygen Analyzers, although not qualified for accident conditions, were calibrated and returned to service. Daily comparison checks between the Exo Sensors and the Beckman analyzers are being conducted for trending.

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TEXT (if more space is required, use additional NRC Form 366A's) (17)

January - February, 1986

Reactor operation continued at 100% power with both Channels A and B operable and on increased observation and surveillance testing.

On January 2, 1986, unrealistic As Left calibration values caused Channel B to be declared inoperable. On January 10, after numerous discussions with the manufacturer, the site was informed that the specific calibration values provided with each sensor were incorrect for the sensors replaced on December 15, 1985. Due to the individual characteristics of the sensors, Channel B would not always calibrate, yet Channel A appeared satisfactory. After further discussions with the manufacturer, it was determined that Channel A would give proper indication for normal operating temperature but at elevated temperatures the indication would be non-conservative. Both channels were declared inoperable on January 10, 1986. Correct calibration values were inserted into both channels, satisfactory calibrations performed and the units declared operable on January 11, 1986.

On January 13, 1986, a complete update of calibration values for all installed sensors was requested. The NYPA site QA Department advised Exo Sensors that we considered the incorrect calibration values a potential 10-CFR-21 reportable item and requested a letter of explanation. Also, a QA hold was placed on all Exo Sensors parts at the NYPA site.

During the week of January 27, 1986, a review team from the NYPA visited the Exo Sensors manufacturing site. This team was composed of NYPA QA and Instrument and Control personnel with input from the site Technical Services Department. The purpose of the visit was to clarify NYPA concerns and to verify that corrective actions have been implemented to correct the problem areas.

The review team went over the vendor's Corrective Action Response to NRC Inspection 85-01 (NRC inspection of Exo Sensors dated 8/85) and corrective actions to defect reports associated with equipment installed at FitzPatrick. The team also evaluated the following vendor programs:

- 1) Training and Indoctrination
- 2) Internal Audit
- 3) Nonconformance and Corrective Actions
- 4) Document Control
- 5) Procurement Document Control

The teams evaluation revealed that the vendor has made good progress in resolving noncompliances identified by the NRC during Inspection 85-01. While the vendor is still in the process of developing formal detailed programs, the team feels that the vendor's QA Program presently provides adequate confidence that he can provide satisfactory equipment and services to the FitzPatrick Plant. The complete list of calibration values was to be sent to the FitzPatrick Site on February 3, 1986.

The QA hold mentioned above has been released and a follow-up visit to the vendor's facility to ensure continued progress will be scheduled in approximately six months.

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TEXT (if more space is required, use additional NRC Form 386A's) (17)

January - February, 1986 (Continued)

On February 7, 1986, a telecopy of the calibration values was received at the FitzPatrick Site. Upon review, it was noted that the temperature compensation calibration values for Channel A Oxygen Analyzer were different than those presently in the analyzer. Further investigation revealed that these two values were transmitted to FitzPatrick on January 10, 1986, but due to a communications failure, they were not inserted into the analyzer. The incorrect calibration values placed Channel A in the same condition as the January 10 occurrence. All new calibration values were double verified and the correct ones installed in Channel A. Calibration proved satisfactory.

Since January 11, 1985, increased surveillance testing and observations have shown that the unstable conditions previously experienced have disappeared. However, Channel B sensor continues to cause minor calibration problems due to its' sensitivity. During the Spring Maintenance Outage, the vendor will be on Site to help resolve any outstanding problems.

Both channels are operable and continue on increased surveillance testing and observation frequency.

This supplemental report also corrects the reporting requirements of Item 11.

James A. FitzPatrick
Nuclear Power Plant
P.O. Box 41
Lycoming, New York 13093
315 342 3040

Memorandum



**New York Power
Authority**

February 14, 1986
JAFF 86-0143

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

REFERENCE: DOCKET NO. 50-333
LICENSEE EVENT REPORT: 85-024-01 Revision 1

Dear Sir:

Enclosed please find the referenced Licensee Event Report in accordance with the requirements of 10 CFR 50.73.

If there are any questions concerning this report, please contact Mr. Joseph P. Flaherty at (315) 342-3840, Extension 230.

A handwritten signature in cursive script, appearing to read 'R. Converse'.

RADFORD J. CONVERSE
RESIDENT MANAGER

RC/JPF/a11

Enclosure

CC: USNRC, Region I (1)
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