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P.O. Box 14000, Juno Beach, FL 33408-0420

NOVEMBER 22 1989

L-89-426
10 CFR 50.73

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Re: St. Lucie Unit 1
Docket No. 50-335
Reportable Event: 89-06
Date of Event: October 25, 1989
Technical Specification Effluent Monitor Inoperable
Due To Personnel Error While Performing Maintenance

Gentlemen:

The attached Licensee Event Report is being submitted pursuant to the requirements of 10 CFR 50.73 to provide notification of the subject event.

Very truly yours,

D. A. Sager

by H. G. Buisy

D. A. Sager
Vice President
St. Lucie

DAS/GRM/rh

Attachment

cc: Stewart D. Ebnetter, Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) ST. LUCIE, UNIT 1	DOCKET NUMBER (2) 0 5 0 0 0 3 3 5	PAGE (3) 1 OF 0 4
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TITLE (4) **TECHNICAL SPECIFICATION EFFLUENT MONITOR INOPERABLE DUE TO PERSONNEL ERROR WHILE PERFORMING MAINTENANCE**

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)
1	0	2 5 8 9	8 9	0 0 6	0 0	1 1	2 2	8 9	N/A	0 5 0 0 0

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)				
POWER LEVEL (10) 1 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)	
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)		
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)		
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)		
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)			

LICENSEE CONTACT FOR THIS LER (12)

NAME SANDRA C. MEAD, SHIFT TECHNICAL ADVISOR	TELEPHONE NUMBER
	AREA CODE: 4 0 7 NUMBER: 4 6 5 - 3 5 5 0

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

On the morning of October 25, 1989, St. Lucie Unit 1 was operating in Mode 1 at 100% steady state power. A functional check was being performed on the Plant Vent gaseous effluent monitor channel 01-05. When the gas channel was functionally checked by disconnecting the high voltage cable from the signal input box, the expected channel failure did not occur. Instead, the iodine channel 01-03 failed. Investigation into this problem revealed that the cables between the two detectors were reversed. The gas detector was connected to and reading out on the iodine channel 01-03. The iodine detector was connected to and reading out on the gas channel 01-05. Operation in this mode did not provide the plant with the effluent Plant Vent gas channel 01-05 required to be in operation by the Technical Specifications. The cause of this event was a cognitive personnel error by utility Instrument and Control technicians who reversed the cables while replacing a damaged cable on channel 01-05. Corrective action will be to properly label all components involved with the respective channel numbers. The utility personnel involved in the event were counselled on the importance of verifying their work to ensure the work is performed correctly, particularly when working on equipment required by Technical Specifications.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

DESCRIPTION OF EVENT

On October 25, 1989 St. Lucie Unit 1 was in Mode 1 at 100% steady state power. At 1117 hours, while performing a functional check of the Eberline Plant Vent Low Range Gas channel 01-05 (EIIS-IL), a chemistry technician found the channel out of service.

Part of the channel functional test is to verify a circuit failure. To do this, locally at the monitor, the high voltage cable is disconnected from the detector's signal input box (IB-2 box). An alarm will occur locally and in the control room, indicating a circuit failure has occurred. The high voltage cable is reconnected after verifying the alarm. When the chemistry technician disconnected the cable from the low range gas channel 01-05 at the IB-2 box it was connected to, the iodine channel 01-03 was observed to fail instead. Troubleshooting this occurrence led to the discovery that the two high voltage cables for these channels had been reversed. The gas detector was reading out on the iodine channel 01-03. The iodine detector was reading out on the gas channel 01-05.

On 10-16-89 while working on a check source problem, the Instrument and Control technicians found a damaged cable on the low range gas channel 01-05. To ensure proper operation of the channel, they temporarily replaced the damaged cable with the cable from one of the other channels. A new cable was ordered from the vendor for the gas channel 01-05. On 10-17-89, the Instrument and Control technicians again worked on the check source problem. After completing their work, a source check of 01-05 was performed, and the channel responded, indicating the channel was operable at this time.

The new cable was installed on the gas channel 01-05 on October 23, 1989. The Instrument and Control technicians also worked on some control boards associated with the central processing unit (CPU) which required the radiation monitor to be de-energized. When the work on the monitor was complete for the day, a visual check was performed on all of the channels. The check indicated the monitor was operating properly, with each channel reading within normal range. No source check was performed after de-energizing the monitor, because this does not affect the operation of the monitor or the calibration of the detectors. From the visual checks performed and the satisfactory readings on each channel, there was no reason for the personnel involved to doubt the operability of the gas channel 01-05.

It was determined the high voltage cables were inadvertently reversed while the Instrument and Control technicians were replacing the new cable on channel 01-05.

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TEXT (If more space is required, use additional NRC Form 306A's) (17)

CAUSE OF EVENT

The cause of the event was due to a cognitive personnel error by two utility maintenance technicians who reversed the cables while replacing a damaged cable. There were not any unusual characteristics of the work location which directly contributed to the personnel error. Inadequate labeling was a contributing factor to this personnel error.

ANALYSIS OF EVENT

This event is reportable under the requirements of 10 CFR 50.73.a.2.i.B, as an operation or condition prohibited by the St. Lucie Technical Specifications.

St. Lucie Unit 1 Technical Specification 3.3.3.10 requires that the Low Range Noble Gas Activity Monitor (channel 01-05) for the Plant Vent System be operable at all times. Failure of the operable channel requires compliance with the associated action statement. In this instance, the action statement allows for effluent releases via this pathway to continue for up to 30 days provided grab samples are taken at least once per 8 hours and these samples are analyzed for isotopic activity within 24 hours. Since it was not known channel 01-05 was inoperable, the required grab samples were not taken.

Following the maintenance, the gas and iodine channels appeared to be working properly because each was reading within the range of the normal values. The readings for these channels are logged daily by the chemistry department and three times a day by the licensed utility operators. All the values over the period of time the cables were reversed appeared to be normal readings. This led personnel to believe the Plant Vent monitor was functioning properly. Because the readings appeared to be normal, there were not any indications to suggest differently or reason to question the operability of the gas channel 01-05.

A weekly grab sample for effluent release accountability was drawn during the period the gas channel 01-05 was out of service, and the gas activity was within the normal range of what the gas activity typically runs for these same plant conditions. If there had been an abnormally high activity gas release during this time period, the iodine channel would have alarmed. In the process of investigation, the reversed detector cables would have been discovered. There were no alarms on channel 01-03 during this time period. Based on this, it can be concluded that the health and safety of the public were not affected at any time.

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TEXT (if more space is required, use additional NRC Form 388A's) (17)

CORRECTIVE ACTIONS

1. Personnel involved in the event were counselled on the importance of verifying their work to ensure the work is performed correctly, particularly when working on equipment required operable by Technical Specifications.
2. Both ends of the high voltage cables were labeled with the respective channel they should be attached to.
3. The IB-2 boxes were labeled with the respective channel number.
4. Each detector was labeled with it's respective channel number.
5. The other Eberline monitors with the same design were labeled the same way.

ADDITIONAL INFORMATION

Component Failures

None

Previous Similar Events

A previous similar event occurred in which equipment failure and personnel error resulted in Technical Specification radiation monitors being inoperable. LER 389-87-009 describes this occurrence.