

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8811010492 DOC. DATE: 88/10/26 NOTARIZED: NO DOCKET #
 FACIL: 50-250 Turkey Point Plant, Unit 3, Florida Power and Light Co 05000250
 AUTH. NAME AUTHOR AFFILIATION
 LYONS, E. Florida Power & Light Co.
 CONWAY, W. F. Florida Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-023-00: on 880926, plugged valves in steam generator
 blowdown sample sys results in no sample flow to process.
W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD2-2 LA	1 1	PD2-2 PD	1 1
	EDISON, G	1 1		
INTERNAL:	ACRS MICHELSON	1 1	ACRS MOELLER	2 2
	ACRS WYLIE	1 1	AEOD/DOA	1 1
	AEOD/DSP/TPAB	1 1	ARM/DCTS/DAB	1 1
	DEDRO	1 1	NRR/DEST/ADS 7E	1 0
	NRR/DEST/CEB 8H	1 1	NRR/DEST/ESB 8D	1 1
	NRR/DEST/ICSB 7	1 1	NRR/DEST/MEB 9H	1 1
	NRR/DEST/MTB 9H	1 1	NRR/DEST/PSB 8D	1 1
	NRR/DEST/RSB 8E	1 1	NRR/DEST/SGB 8D	1 1
	NRR/DLPQ/HFB 10	1 1	NRR/DLPQ/QAB 10	1 1
	NRR/DOEA/EAB 11	1 1	NRR/DREP/RAB 10	1 1
	NRR/DREP/RPB 10	2 2	NRR/DRIS/SIB 9A	1 1
	NUDOCS-ABSTRACT	1 1	REG EILE 02	1 1
	RES/DSIR/EIB	1 1	RES/DSR DEPY	1 1
	RES/DSR/PRAB	1 1	RGN2 FILE 01	1 1
EXTERNAL:	EG&G WILLIAMS, S	4 4	FORD BLDG HOY, A	1 1
	H ST LOBBY WARD	1 1	LPDR	1 1
	NRC PDR	1 1	NSIC HARRIS, J	1 1
	NSIC MAYS, G	1 1		

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TOTAL NUMBER OF COPIES REQUIRED: LTR 43 ENCL 42

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Turkey Point Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 5 0	PAGE (3) 1 OF 0 4
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TITLE (4) **Plugged Valves in Steam Generator Blowdown Sample System Results in No Sample Flow to Process Radiation Monitor R-19**

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)																																								
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<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9)</td> <td style="width:15%;">1</td> <td colspan="10">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="6">POWER LEVEL (10)</td> <td>1 0 0</td> <td>20.402(b)</td> <td>20.406(e)</td> <td>50.73(a)(2)(iv)</td> <td>73.71(b)</td> </tr> <tr> <td></td> <td>20.406(a)(1)(i)</td> <td>50.38(e)(1)</td> <td>X 50.73(a)(2)(v)</td> <td>73.71(e)</td> </tr> <tr> <td></td> <td>20.406(a)(1)(ii)</td> <td>50.38(e)(2)</td> <td>50.73(a)(2)(vi)</td> <td rowspan="4">OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td> </tr> <tr> <td></td> <td>20.406(a)(1)(iii)</td> <td>X 50.73(a)(2)(i)</td> <td>50.73(a)(2)(vii)(A)</td> </tr> <tr> <td></td> <td>20.406(a)(1)(iv)</td> <td>50.73(a)(2)(ii)</td> <td>50.73(a)(2)(vii)(B)</td> </tr> <tr> <td></td> <td>20.406(a)(1)(v)</td> <td>50.73(a)(2)(iii)</td> <td>50.73(a)(2)(viii)</td> </tr> </table>												OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)										POWER LEVEL (10)	1 0 0	20.402(b)	20.406(e)	50.73(a)(2)(iv)	73.71(b)		20.406(a)(1)(i)	50.38(e)(1)	X 50.73(a)(2)(v)	73.71(e)		20.406(a)(1)(ii)	50.38(e)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)		20.406(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(vii)(A)		20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(vii)(B)		20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(viii)
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LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Edward Lyons, Compliance Engineer	3 0 5 2 4 6 1 - 6 7 3 1

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
B	K, N	V	W 1 6 5	N					

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

On September 26, 1988, at 0130, with Unit 3 operating at 100 percent power, a Chemistry Technician reported to the control room that there was no flow to plant process radiation monitor R-19. R-19 is required to monitor Steam Generator Blowdown (SGBD) effluent, and upon detecting high radioactivity, isolate the SGBD system. The results of the investigation of the event indicate that the most probable cause was that the valves in the sample system used to throttle flow were plugged with particulates from the SGBD system. The investigation also concluded that valves being used to throttle flow were not those shown on plant drawings as throttle valves. Plant procedures for the SGBD sample system did not identify which valves should be used for throttling nor the required flow rates. Corrective actions include a proposed modification to replace the valves currently in use with a different type of valve less susceptible to plugging; regular flushing of the sample system; procedure revisions to identify throttle valves and proper flow rate and monitoring of sample flows.

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FACILITY NAME (1) Turkey Point Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 5 0	LER NUMBER (8)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8 8	— 0 2 3	— 0 0	0 2	OF 0 4

TEXT (If more space is required, use additional NRC Form 305A's) (17)

Description of the Event

On September 26, 1988, at 0130, with Unit 3 operating at 100 percent power, a Chemistry Technician reported to the Control Room that there was no flow indication to plant process radiation monitor R-19. R-19 is required to monitor Steam Generator Blowdown (SGBD) (EIIIS:WI) effluent, and upon detecting high radioactivity, isolate the SGBD system. One sample line is provided for each of three Steam Generators. Each sample line contains a flow indicator with one valve upstream of the flow indicator and one valve downstream of the flow indicator. The three sample lines combine downstream to provide a common sample line to R-19. The Chemistry Technician noted that the flow indicators for the sample lines (FI-5116, 5117, 5118) indicated no flow, and verified this by opening the hood sample valves. The Chemistry Technician notified the Control Room, and the Reactor Control Operator immediately isolated SGBD by closing valves CV-3-6275A, 6275B and 6275C. The Nuclear Watch Engineer and a Nuclear Operator (NO) proceeded to the sample room to investigate. At the time of the event, the NO indicated that valves 20-3-530, 531, 532 and 534 were closed. Valves 20-3-530, 532 and 534 are upstream of FI-5116, 5117 and 5118, respectively. Valve 20-3-531 is downstream of FI-5116. The valves downstream of FI-5117 and 5118 were found to be open. At 0150, the upstream and downstream valves were repositioned to achieve the required flow to R-19. At 0440, the SGBD system was returned to service.

A subsequent investigation into the event was conducted in order to identify the cause of the event and corrective actions. The results of the investigation of the event indicate that the most probable cause was that valves in the sample system used to throttle flow were plugged with particulates from the SGBD system. The pressure drop across the valve being used to throttle flow is approximately 800 pounds per square inch (psi), while the flow rate through the flow indicators is required to be approximately 5 gallons per hour (gph). Rotating the handle of the valve approximately 5 degrees from fully closed will result in this flow rate. This small valve opening creates a situation in which particulates can easily plug the flow in the sample lines. The SGBD system is designed to remove solids from the secondary side of the Steam Generators, and thus provides a source of particulates. The plugging of the lines was evidenced by the fact that less than 24 hours after the flow was properly set on September 26, 1988, a line plugged and no flow indication was noted.

Plant drawings indicate that the valves upstream of the flow indicators should be open and that the valves downstream of the flow indicators should be used for throttling. However, this is not reflected by the operating procedures for these sample lines. The investigation concluded that the upstream valves 20-3-530, 532 and 534 were being used as throttle valves. Valves 20-3-530 and 534 would not isolate flow when closed.

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

Cause of the Event

The loss of flow to R-19 was most probably caused by solids from the SGBD plugging valves 20-3-530, 531, 532 and 534. The following factors contributed to this event.

- 1) The SGBD sample system requires very low flow rates which results in small valve openings that can become plugged due to the particulate from the SGBD system.
- 2) There were no provisions to routinely monitor sample flow to R-19, or to routinely flush the sample valves/lines.

The cause of the upstream valves being used as throttle valves is inadequate procedures in that they did not identify which valves should be throttled, nor did they specify the required flow rate.

Analysis

During the investigation of this event, a chemistry record was identified which verified flow through FI-5116, 5117 and 5118 by opening the downstream hood sample valves on July 22, 1988. Technical Specification 3.9 requires that when R-19 is out of service, blowdown may continue provided that grab samples are analyzed at least once per 24 hours when the specific activity of the secondary coolant is less than or equal to 0.01 microcuries per milliliter dose equivalent I-131. Since July 22, 1988, the Chemistry Department has been conservatively taking grab samples on a daily basis. However, plant records indicate that on at least two occasions, samples were not taken within 24 hours of each other while blowdown was occurring. Therefore, if the SGBD sample lines were plugged on those occasions, then Technical Specification 3.9 would have been violated unknowingly. If a primary to secondary leak were to occur during this period, it would have been identified by the daily grab sample analysis. All of the samples analyzed during the period were less than the minimum detectable activity.

R-19 functions to isolate SGBD upon detecting high radiation in the Steam Generator secondary side. The FSAR safety analysis for a design basis Steam Generator Tube Rupture (SGTR) does not take credit for any automatic actions resulting from a high radiation signal on R-19. Were the design basis SGTR to occur, rapidly falling pressure in the pressurizer would initiate a safety injection signal, tripping the unit and closing the SGBD outlet valves. The FSAR safety analysis assumes only that R-19 will alarm, indicating the passage of primary fluid into the secondary system. This function is concurrently accomplished by the steam jet air ejector radiation monitor (PRMS R-15), indicating high radiation in the condenser off gas. The condenser off gas effluent release point also has a high range noble gas effluent monitor (RAD-6417) for accident conditions. In addition, the main steam lines are continuously monitored by a high range noble gas effluent monitor (RAD-6426) for accident conditions. Based on the above, the health and safety of the public were not affected.

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TEXT (If more space is required, use additional NRC Form 308A's) (17)

Corrective Actions

- 1) Sample flows to R-19 will be monitored once per shift when in modes 1 through 4. Procedure revisions required for this action will be completed by December 31, 1988, however, shiftly monitoring of flow rates will be performed in the interim.
- 2) The SGBD sample valves downstream of FI-5116, 5117 and 5118 have had their handles painted yellow in order to identify them as throttle valves. Throttle valves in other sample systems will be reviewed to ensure that their handles are painted yellow. This action will be completed by December 31, 1988.
- 3) Valves 20-3-530, 533 and 534 have been replaced. Valves 20-3-531, 532, and 535 did not require replacement.
- 4) The SGBD sample system will be modified to replace the throttle valves currently in use with a valve less susceptible to plugging at low flow rates. These modifications will be complete for both Unit 3 and 4 by March 31, 1989.
- 5) The SGBD sample system will be flushed out on a weekly basis by opening the throttle valves and allowing SGBD fluid to remove any accumulated solids. If warranted, these flushes will be performed on a more frequent basis. The procedure changes required to accomplish this action will be completed by December 31, 1988.
- 6) The procedure for the SGBD sample system will be revised to identify the valves to be used for throttling and the required flow rates. Procedure revisions will be completed by November 1, 1988.
- 7) Other process radiation monitoring systems will be reviewed to ensure that they are not susceptible to this failure mechanism. Both Unit 3 and 4 are currently shutdown. This action will be completed prior to startup of each unit.

Additional Information

No other LER's have been issued because of plugged sample lines.

The plugged valves were manufactured by Whitey Co.

FPL

OCTOBER 26 1988

L-88-468
10 CFR 50.73

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

Gentlemen:

Re: Turkey Point Unit 3
Docket No. 50-250
Reportable Event: 88-23
Date of Event: September 26, 1988
Plugged Valves in Steam Generator
Blowdown Sample System Results in No
Sample Flow to Process Radiation Monitor R-19

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

Very truly yours,


W. F. Conway
Senior Vice President - Nuclear

WFC/RHF/gp

Attachment

cc: Malcolm L. Ernst, Acting Regional Administrator,
Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

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