

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) McGuire Nuclear Station - Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 3 6 9 1					PAGE (3) OF 0 3										
TITLE (4) Unplanned ESF Actuation																									
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	6	2	3	8	5	8	5	0	2	2	0	0	0	7	2	3	8	5	0	5	0	0	0		
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)																							
3		20.402(b)				20.406(c)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)											
POWER LEVEL (10)		20.406(a)(1)(i)				50.38(c)(1)				50.73(a)(2)(v)				73.71(c)											
0 0 0		20.406(a)(1)(ii)				50.38(c)(2)				50.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)											
		20.406(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(viii)(A)															
		20.406(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)															
		20.406(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)															
LICENSEE CONTACT FOR THIS LER (12)																									
NAME Jerry Day, Licensing										TELEPHONE NUMBER															
										AREA CODE 7 0 4 3 7 3 - 7 0 3 3															
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs															
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)			MONTH	DAY	YEAR										
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> NO															

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

On June 23, 1985, at 2215, an unplanned Engineering Safeguard Features (ESF) actuation occurred on a "loss of both main feed pumps" signal. The ESF actuation was the result of a low steam generator 'B' level signal momentarily generated when a trend chart recorder was reinserted. The low steam generator level signal automatically realigned two feedwater valves to supply more flow to the steam generator. This caused the operating condensate booster pump to trip on low flow which tripped main feedwater pump 1B. Main feedwater pump 1A was out of service at the time of the incident.

The Unit was in Mode 3, Hot Standby, at the time of the incident.

This incident is attributed to component malfunction due to a voltage transient when the trend chart recorder was reinserted.

The recorder will be replaced. It causes a potential problem only when being reinserted, though a unit trip may result if at power. The auxiliary feedwater pumps actuated as designed.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
McGuire Nuclear Station - Unit 1	0 5 0 0 0 3 6 9 8 5	—	0 2 2	—	0 0 0	2	OF 0 3

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

On June 23, 1985, at 2215, an unplanned Engineering Safeguard Features (ESF) actuation occurred on a "loss of both main feed pumps" signal. The ESF actuation was the result of a low steam generator 'B' level signal momentarily generated when a trend chart recorder was reinserted. The low steam generator level signal automatically realigned two feedwater valves to supply more flow to the steam generator. This caused the operating condensate booster pump to trip on low flow which tripped main feedwater pump 1B. Main feedwater pump 1A was out of service at the time of the incident.

The Unit was in Mode 3, Hot Standby, at the time of the incident.

The Chart recorder trends the following "B" loop parameters: 1) steam generator narrow range level, 2) main feedwater flow, and 3) steam flow. The steam generator (S/G) level signal reaches the chart recorder without any isolation from the process control system. Therefore, any transient originating at the recorder would be sensed by the process control system.

On the evening of June 23, 1985, at approximately 2215, the recorder was replaced after unplugging it for repairs. Upon reinsertion, a transient was generated at the recorder which fed back to the process control system as an apparent S/G B low level signal. Feedwater Regulating bypass valve 1CF-105 (which was in automatic) began to open to allow more flow to the S/G. Concurrently, valve 1CF-81 (Feedwater recirculation) began to close to reduce condensate recirculation flow (the condensate system was in the recirculation mode with flow to the S/Gs directed through the upper nozzles via the feedwater regulator bypass valves). 1CF-105 was placed in the manual mode to close it, expecting 1CF-81 to respond and open in time to prevent the operating condensate booster pump (CBP) from tripping. However, 1CF-81 did not respond and the CBP tripped on a low flow signal. This caused the only operating main feedwater pump (FWP 1B) to trip which caused an auxiliary feedwater (CA) actuation on a loss of both main feed pumps signal.

It is not clear what caused the apparent transient when the chart recorder was reinserted. Since this problem has occurred with this recorder only, the problem could be with the mating of the terminals. It is thought that somehow during reinsertion of the recorder, a grounding occurred which caused the transient. The recorders for the other loops (A, C, and D) are wired identical to this recorder, so the potential for similar problems is present with these recorders also.

A problem of this nature occurred with this recorder in January, 1985. An operator was replacing this recorder and a transient was produced which caused a S/G level deviation alarm. No incidents occurred as a result of this alarm. The recorder was then removed and reinserted three times to check for improper terminal mating. No problems occurred and no alarms or transients were produced.

CORRECTIVE ACTION:

Immediate: As 1CF-105 opened, the valve was placed in the manual mode and closed.

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

Subsequent: The CA motor driven pumps were secured and FWP 1A was restarted.

A yellow sticker was placed on the recorder warning of the unit trip potential when reinserting the recorder.

Planned: The subject recorder will be replaced with another chart recorder of the same type (including terminal plugs), pending further evaluation.

SAFETY ANALYSIS: The chart recorder poses a potential problem only when it is being reinserted. Although periodic maintenance is performed weekly on this type of recorder, the control room operators stated that these recorders require attention almost every day which requires the recorders to be removed, then reinserted. This increases the potential for a unit trip.

The CA pumps actuated as designed as an indirect result of the chart recorder transient.

The health and safety of the public were not affected by this incident.

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

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July 23, 1985

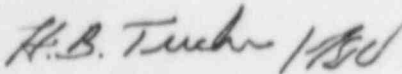
Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: McGuire Nuclear Station, Unit 1
Docket No. 50-369
LER 369/85-22

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 369/85-22 concerning an unplanned Engineered Safety Features Actuation. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,



Hal B. Tucker

JBD/mjf

Attachment

cc: Dr. J. Nelson Grace, Regional Administrator
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