

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)										DOCKET NUMBER (2)			PAGE (3)	
McGuire Nuclear Station - Unit 2										0 5 0 0 0 3 7 0 1			OF 0 3	

TITLE (4)

Reactor Trip Following Feedwater Isolation

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 4 8 5	8 5 -	0 1 8 -	0 0 0 7 2 4 8 5						0 5 0 0 0				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)									
		1	20.402(b)		20.405(c)	X	50.73(a)(2)(iv)			73.71(b)	
POWER LEVEL (10)	1 0 0	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)			73.71(c)		
		20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)					
		20.405(a)(1)(iii)		50.73(a)(2)(ii)		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)(ii)		50.73(a)(2)(ix)					

LICENSEE CONTACT FOR THIS LER (12)										TELEPHONE NUMBER			
NAME										AREA CODE 7 0 4 3 7 3 - 7 0 3 3			
Jerry Day, Licensing													

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPPDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPPDS	
X	S J	I I	V B 3 5 0	Y							

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

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

On June 24, 1985 at 1532, the unit tripped due to steam generator "2C" low level. The low level condition occurred when valve 2CF-28 (Steam Generator "2C" feedwater isolation) closed due to a solenoid valve failure. The 125 VDC solenoid failure caused the 2CF-28 hydraulic actuator to "fail closed".

This incident is attributed to component failure due to the failure of the solenoid valve. Following repair of the valve, a steam leak was discovered in the doghouse and was found to be a broken pipe weld on a two inch reverse purge line on the auxiliary feedwater system. The leak was isolated and repaired. Evaluation is continuing on the break and a supplemental report will be submitted when information is complete.

This incident had no significant safety related implications and all systems responded correctly during and following the trip.

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

On June 24, 1985, at 1532, the reactor tripped due to steam generator "2C" low level. The low level condition occurred when valve 2CF-28 (Steam Generator "2C" Feedwater Isolation) closed due to a solenoid valve failure. The 125 VDC solenoid failure caused the 2CF-28 hydraulic actuator to "fail closed".

This incident is attributed to component failure because the solenoid valve, manufactured by Borg Warner, failed to the closed position. The unit was operating at 100% power at the time of the failure.

The failure of the "fail position solenoid valve" caused 2CF-28 to close. The solenoid coil was open, but because of the sealed stainless steel enclosure, a visual inspection of the coil was not possible. Duke considers the solenoid failure to be an isolated case. This was the first instance of a coil failure at McGuire on this type solenoid. These solenoid valves are rated for continuous duty at 90 to 140 volts DC. The voltage applied is ~133 VDC according to measurements taken following the failure.

A search of the NFRDS data base revealed that the only reported failures of this type of main feedwater isolation valve was at the McGuire Station. Only one of the reported failures involved the solenoid valves. This failure was related to a leaking valve seat. No other coil failures were found.

Following repair and verification (opening), steam was reported leaking in the interior doghouse. The steam leak was found to be a broken pipe weld on a two inch reverse purge line in the auxiliary feedwater system. Following isolation of the steam leak, valve 2CF-28 would not close.

The broken pipe discovered on a section of auxiliary feedwater piping was a result of fatigue caused by the pipe coming in contact with a secondary rupture restraint. This pipe failure will be described in a supplemental report when all information is complete. The pipe break was within six feet of valve 2CF-28. The electrical cover was not installed on 2CF-28 because of the maintenance and testing of the valve components. The water spray from the broken pipe caused a short circuit in the valve "open" circuit and the valve moved to the open position. The valve actuator was dried out after the leaking pipe was isolated and normal valve operation was restored.

CORRECTIVE ACTIONS:

Immediate: Operators took appropriate actions to ensure safe reactor shutdown.

Subsequent: Maintenance personnel replaced the failed solenoid valve on 2CF-28 and functionally tested the valve.

Maintenance personnel dried the water from the valve components and functionally tested 2CF-28 again.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

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

Planned: The NAMCO limit switches in the Unit 2 and Unit 1 doghouses will be sealed.

This sealing will prevent moisture from entering the electrical circuits.

SAFETY ANALYSIS: No significant safety-related implications occurred during this event. The inadvertent closing of the feedwater isolation valve caused a feedwater transient resulting in a reactor trip from low steam generator level. All systems and components responded correctly during and following the reactor trip.

Post trip response was good. Temperature response was excellent and pressure remained well above the safety injection setpoint. Steam pressure responded as expected with three S/G PORV's opening (S/G 'C' PORV remained closed) within the setpoint ranges. Steam Generator level responded properly in generators 'A', 'B', and 'D'; level in 'C' dropped off scale low (narrow range) but was recovered to target value in fourty five minutes. Adequate heat removal was maintained at all times and no ECCS actuation occurred.

The health and safety of the public were unaffected by this incident.

DUKE POWER COMPANY
P.O. BOX 33189
CHARLOTTE, N.C. 28242

HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

July 24, 1985

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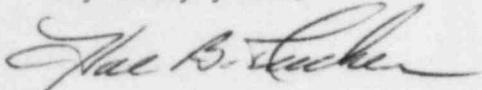
Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: McGuire Nuclear Station, Unit 2
Docket No. 50-370
LER 370/85-18

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 370/85-18 concerning a reactor trip due to a feedwater isolation valve failure. 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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