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February 16, 1990

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

Subject: McGuire Nuclear Station Unit 2
Docket No. 50-370
Licensee Event Report 370/89-14

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 370/89-14 concerning Diesel Generator 2A and 2B Sump Pump Discharge valve being closed. This report is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B). This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

T L McConnell /ryl

T.L. McConnell

DVE/ADJ/cbl

Attachment

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MC-815-04
(20)

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

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 4

TITLE (4) Diesel Generator 2A and 2B Sump Pump Discharge Valve Was Closed Because Of An Inappropriate Action And A Management Deficiency

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)
									N/A	0 5 0 0 0
1 2	1 5	8 9	8 9	— 0 1 4	— 0 0	0 2	1 6	9 0		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	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		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)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Alan Sipe, Chairman, McGuire Safety Review Group	7 0 4 — 8 7 5 - 4 1 8 3

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)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On December 15, 1989, Performance personnel were performing the Diesel Generator (DG) Room 2A Sump Pump Performance Test. After encountering problems with the test, Performance personnel discovered valve 1WC-198, DG 2A and 2B Discharge to the Turbine Building Sump closed. With valve 1WC-198 closed, no discharge path for DG 2A and 2B room sump pumps was available. After valve 1WC-198 was opened, Performance personnel successfully completed the DG 2A Sump Pump Performance Test. This event is assigned a cause of Management Deficiency because of a lack of control over a required support system for the DGs. This event is also assigned a cause of Inappropriate Action because unknown personnel apparently closed valve 1WC-198. It could not be determined who closed valve 1WC-198. Valves 1WC-198 and 1WC-196, DG 1A and 1B Discharge To The Turbine Building Sump, were subsequently locked open by Chemistry personnel. Operations personnel will assume operational control of valves 1WC-198 and 1WC-196. Unit 2 was in Mode 1 at 100 percent power at the time this event was discovered.

EVALUATION:

Background

Two mutually redundant and independent DGs [EIIS:DG] are provided per unit to supply essential power [EIIS:EK] during a Loss of Coolant Accident and/or a Blackout.

The DG Sump Pump [EIIS:P] system removes leakage and waste from the drains [EIIS:DRN] in the DG rooms and protects the DG from flooding in the event of a major pipe rupture. Sump pumps are provided for each DG room. One 5 horsepower non-essential and two 15 horsepower essential pumps are located in each DG room sump. DG rooms sumps discharge into the Conventional Waste Water Treatment (WC) [EIIS:WN] system through either valve [EIIS:V] 1WC-197, DG 2A and 2B Sump Pump Discharge to the Initial Holdup Pond, or valve 1WC-198, DG 2A and 2B Sump Pump Discharge to the Turbine Building [EIIS:NM] Sump. For Unit 1 the discharge valves are 1WC-196 and 1WC-195.

The DG Sump Pump system is a support system of the DGs and is required to be operable to maintain DG operability.

Technical Specification 3.8.1.1 requires that 2 DGs for each unit be operable in Modes 1 (Power Operation), 2 (Startup), 3 (Hot Standby), and 4 (Hot Shutdown).

Description of Event

On December 15, 1989, Performance personnel were performing procedure PT/2/A/4355/01A, DG 2A Room Sump Pump Performance Test. During the test, DG Sump Pump 2A3 was not performing satisfactorily. Performance personnel stopped the pump and began troubleshooting the problem and found valve 1WC-198 closed. Valve 1WC-197 was also found closed. Performance personnel notified Operations Control Room personnel that both discharge valves for DG Room Sump Pump 2A3 were closed. Operations personnel contacted Chemistry personnel and Chemistry personnel opened valve 1WC-198. Once valve 1WC-198 was opened Performance personnel successfully completed PT/2/A/4355/01A, DG 2A Room Sump Pump Performance Test. On December 15, 1989, Performance personnel wrote Problem Investigation Report 2-M89-0326 to investigate the reason valves 1WC-197 and 1WC-198 were closed. Compliance personnel contacted Design Engineering personnel and requested a Past Operability Determination for the DGs the same day. On January 17, 1990, Design Engineering personnel determined that with no discharge path available for DG rooms 2A and 2B Sump pumps, one DG was inoperable.

Conclusion

This event is assigned a cause of Management Deficiency because of a lack of positive control that ensured a discharge path for the DG Sump Pumps. Valve 1WC-198 is normally open when the Turbine Building Sump is discharging to WC. Valve 1WC-198 was not marked or designated as being a discharge path for the DG sump pumps. Station Management personnel were not aware that the WC system discharge valves for the DG sump pumps could effect DG operability. With no

discharge path available, the DG sump pumps could not have served their intended safety function. Operations personnel will work with Chemistry personnel and will assume operational control of valves 1WC-195, 1WC-196, 1WC-197, and 1WC-198. Operations personnel will revise the appropriate procedures to include these valves. As a result of this event, valves 1WC-198 and 1WC-196 were locked open by Chemistry personnel to ensure a discharge path is available for the DG sump pumps. Chemistry personnel will revise procedure OP/0/B/6500/08, Conventional Wastewater Treatment, to include steps that ensure a discharge path for the DG Sump pumps.

This event is also assigned a cause of Inappropriate Action because unknown personnel apparently closed valve 1WC-198. The normal system alignment for the Turbine Building Sump is to the WC system. The alignment has not been changed since unwatering was performed during the time of the last Unit 2 Refueling Outage that ended in September, 1989. Valve 1WC-198 was closed sometime between November 10, 1989 when Performance personnel completed PT/2/A/4355/01B, DG 2B Room Sump Pump Performance Test, and December 15, 1989, when Performance personnel discovered valves 1WC-198 and 1WC-197 closed during the DG 2A Room Sump Pump Performance Test. There was no reason found during this investigation that would have required valve 1WC-198 to be closed. The Chemistry Supervisor in charge of the WC system and the members of his crew stated that no one in that group closed valve 1WC-198. The Chemistry logbook for the group in charge of WC system was reviewed. No mention of valve 1WC-198 was found. As a part of this investigation, the Reactor Operators Unit 2 Logbook, the Shift Supervisor's Unit 2 Logbook, and the Shift Manager's Unit 2 Logbook were all reviewed. The review of the logbooks did not reveal any reason valve 1WC-198 was closed. Additionally, work request histories were reviewed to determine the reason for valve 1WC-198 being closed. The reports of Oil, Chemical, or Hazardous Substance spills were reviewed. No spills were reported during the time between November 10, 1989 and December 15, 1989 that involved the DG rooms or the Turbine Building sumps. Work Requests 08645 and 08656 that documented preventative maintenance on the Unit 2 Turbine Building Sump pumps were reviewed. No documentation of closing valve 1WC-198 was found. Locking open valves 1WC-198, on Unit 2, and valve 1WC-196, on Unit 1, will prevent these valves from being closed unless they are unlocked.

A review of McGuire Licensee Event Reports (LERs) for the past 12 months revealed no events concerning Technical Specification violations involving the DGs with a cause of Management Deficiency or Inappropriate Action. Therefore, this event is not recurring.

This event is not Nuclear Plant Reliability Data System Reportable.

There were no personnel injuries, radiation overexposures, or uncontrolled releases of radioactive material as a result of this incident.

CORRECTIVE ACTIONS:

Immediate: None

Subsequent: 1) Chemistry personnel opened valve 1WC-198.

2) Chemistry personnel locked open valves 1WC-198 and 1WC-196.

Planned:

1) Chemistry personnel will revise procedure OP/0/B/6500/08, WC system, to include instructions concerning locking open valves 1WC-195 or 1WC-196 and 1WC-197 or 1WC-198.

2) Operations personnel will work with Chemistry personnel to coordinate Operations personnel taking over operational control of valves 1WC-195, 1WC-196, 1WC-197, and 1WC-198. Operations personnel will revise the appropriate procedures.

SAFETY ANALYSIS:

With the DG 2A and 2B room sump pumps isolated, the pumps were inoperable and could not have performed their intended function until valve 1WC-198 was opened. This inoperability would not have lead to a failure outside of the Design Basis of the plant. A single failure and subsequent flooding of one of the DG rooms could have lead to the loss of the DG in the flooded room but not the adjacent DG. To affect the adjacent DG, the flood must cause water levels to exceed the 12 inch barriers between the DG rooms. The worst case flood scenario would be a break or crack in the Nuclear Service Water (RN) system piping in the DG rooms. This would lead to a spill of approximately 8520 gallons in 30 minutes. Thirty minutes is the maximum estimated time that could be taken for operator action to open valve 1WC-198. Operator action would be taken upon receipt of a DG sump high level alarm in accordance with procedure OP/2/A/6100/10N, Annunciator Response for Panel 2AD13. This would lead to a maximum of approximately 10 inches of water in the DG room with the break and have no affect on the adjacent DG.

The isolation of the DG room sump pumps would render one DG inoperable with the failure of a system that does not support the DG itself. This failure would be caused by the water level created in the room within the 30 minutes required for operator action.

The failure of one DG because of the non-diesel related failure is no more severe that the failure of a Diesel support system, which is one disabled DG. The unit is designed for such conditions under single failure criteria. Therefore, the accidental isolation of the DG room sump pumps would not have led to unit inoperability. There were no incidents during the time that the DG room sump pumps were inoperable that would have required their use. All other sources of required power were available during this time. Had a loss of offsite power occurred concurrent with the worst case flood scenario mentioned above, back up power would have been provided as designed by one operable DG.

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