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September 16, 2004

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

Subject: McGuire Nuclear Station, Units 1 & 2  
Docket No. 50-369/50-370  
Licensee Event Report 369/2004-01, Revision 0

Pursuant to 10 CFR 50.73, Sections (a)(1) and (d), attached is Licensee Event Report (LER) 369/2004-01, Revision 0.

On July 21, 2004, McGuire Nuclear Station identified an instance in 2001 where Unit 1 and Unit 2 were in a condition which rendered an Auxiliary Feedwater System pump inoperable on each Unit for a period in excess of the associated Technical Specification Completion Time. This resulted in a failure to comply with Auxiliary Feedwater System Technical Specification requirements.

This event is being reported as a condition prohibited by Technical Specifications in accordance with the requirements of 10 CFR 50.73 (a)(2)(i)(B). Probabilistic risk assessment has determined this event to be of no significance to the health and safety of the public. There are no regulatory commitments contained in this LER.

G. R. Peterson

Attachment

U. S. Nuclear Regulatory Commission  
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cc: W. D. Travers  
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**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [Infocollects@nrc.gov](mailto:Infocollects@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOF-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME McGuire Nuclear Station, Unit 1	2. DOCKET NUMBER 05000 369	3. PAGE 1 OF 6
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4. TITLE  
Auxiliary Feedwater System in prohibited condition due to inadequate procedure.

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	16	2001	2004	- 001 -	00	09	16	2004	McGuire Nuclear Station, Unit 2	05000 370
									FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)									
10. POWER LEVEL 100	<input type="checkbox"/>	20.2201(b)	<input type="checkbox"/>	20.2203(a)(3)(ii)	<input type="checkbox"/>	50.73(a)(2)(ii)(B)	<input type="checkbox"/>	50.73(a)(2)(ix)(A)		
	<input type="checkbox"/>	20.2201(d)	<input type="checkbox"/>	20.2203(a)(4)	<input type="checkbox"/>	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(x)		
	<input type="checkbox"/>	20.2203(a)(1)	<input type="checkbox"/>	50.36(c)(1)(i)(A)	<input type="checkbox"/>	50.73(a)(2)(iv)(A)	<input type="checkbox"/>	73.71(a)(4)		
	<input type="checkbox"/>	20.2203(a)(2)(i)	<input type="checkbox"/>	50.36(c)(1)(ii)(A)	<input type="checkbox"/>	50.73(a)(2)(v)(A)	<input type="checkbox"/>	73.71(a)(5)		
	<input type="checkbox"/>	20.2203(a)(2)(ii)	<input type="checkbox"/>	50.36(c)(2)	<input type="checkbox"/>	50.73(a)(2)(v)(B)	<input type="checkbox"/>	OTHER	Specify in Abstract below or in NRC Form 366A	
	<input type="checkbox"/>	20.2203(a)(2)(iii)	<input type="checkbox"/>	50.46(a)(3)(ii)	<input type="checkbox"/>	50.73(a)(2)(v)(C)	<input type="checkbox"/>			
	<input type="checkbox"/>	20.2203(a)(2)(iv)	<input type="checkbox"/>	50.73(a)(2)(i)(A)	<input type="checkbox"/>	50.73(a)(2)(v)(D)	<input type="checkbox"/>			
	<input type="checkbox"/>	20.2203(a)(2)(v)	<input checked="" type="checkbox"/>	50.73(a)(2)(i)(B)	<input type="checkbox"/>	50.73(a)(2)(vii)	<input type="checkbox"/>			
	<input type="checkbox"/>	20.2203(a)(2)(vi)	<input type="checkbox"/>	50.73(a)(2)(i)(C)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)	<input type="checkbox"/>			
<input type="checkbox"/>	20.2203(a)(3)(i)	<input type="checkbox"/>	50.73(a)(2)(ii)(A)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)	<input type="checkbox"/>				

12. LICENSEE CONTACT FOR THIS LER

NAME Julius W Bryant, Regulatory Compliance	TELEPHONE NUMBER (Include Area Code) 704-875-4162
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
D	BA	P	B260	YES					

14. SUPPLEMENTAL REPORT EXPECTED				15. EXPECTED SUBMISSION DATE		MONTH	DAY	YEAR
YES (If yes, complete 15. EXPECTED SUBMISSION DATE).				<input checked="" type="checkbox"/>	<input type="checkbox"/>			

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

Unit Status: At the time of the event, Unit 1 and Unit 2 were in Mode 1 (Power Operation) at 100 percent power.

Event Description: In October 2001, procedure actions were implemented to close and remove motive electrical power from valve CA86A, "A" train assured water supply to the Turbine Driven Auxiliary Feedwater Pump. This condition rendered each Unit's Turbine Driven Auxiliary Feedwater Pump inoperable for approximately eight days. The failure to recognize this condition resulted in a failure to satisfy Auxiliary Feedwater System Technical Specification requirements. This condition is reportable as per 10 CFR 50.73 (a)(2)(i)(B). This event was not significant with respect to the health and safety of the public.

Event Cause: Inadequate procedure revision resulted in inoperable Turbine Driven Auxiliary Feedwater Pumps.

Corrective Action: Applicable procedures were revised to adequately address operability. Performed a review of other station procedures that close and remove motive electrical power from CA86A and revised any procedures with similar discrepancies or placed them on hold. Evaluation will be performed to verify that procedure revisions were adequately justified.

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**BACKGROUND**

Auxiliary Feedwater System [BA] (CA):

The CA system provides an emergency feedwater supply to the steam generators [SG] (SG) if the respective Unit's Condensate and Feedwater System [KA-SJ] (CF) is not available. The CA system is capable of transferring fission product decay heat and other residual heat loads from the reactor coolant system [AB] (NC) to a heat sink during both normal operation and accident conditions. The CA system also supports the operation of the Standby Shutdown System [ED] (SSS).

Each Unit's CA system contains an "A" and "B" train motor driven pump [P] (MDCAP) and a "C" train turbine driven pump [P] (TDCAP) configured into three trains. The normal suction source of water for the MDCAPs and TDCAP is the CA storage tank [TK] (CAST). The Nuclear Service Water System [BI] (RN) provides the assured suction source of water for the CA pumps when the normal suction supply from the CAST is not available. The "A" and "B" train MDCAPs are supplied assured suction water from the "A" and "B" RN train discharge headers respectively. The TDCAP was designed to be supplied an assured source of suction water from either the "A" RN train discharge header via isolation valve CA86A or by the "B" RN train discharge header via isolation valve CA116B. To this end, these normally closed valves are designed to automatically open upon receipt of an Engineered Safety Feature [JE] (ESF) CA pump low suction pressure signal. CA86A and CA116B are supplied motive power from the respective train's emergency diesel generator [EK] (EDG).

RN System:

Each Unit's RN system is comprised of an "A" and "B" train. Lake Norman [ES] and the Standby Nuclear Service Water Pond (SNSWP) serve as the worst case design basis accident (DBA) heat sinks/cooling water reservoirs for RN. The SNSWP, which is seismically designed, serves as the most severe natural phenomena (earthquake) heat sink/cooling water reservoir for RN assuming Lake Norman is lost due to its' non-seismic design.

During normal operation, both the "A" and "B" trains of RN are aligned to take suction off Lake Norman. After use by components served by the system, the RN water is returned to Lake Norman via RN discharge headers. However, to support infrequent plant evolutions, either or

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both of the RN trains can be aligned to the SNSWP using station procedures OP/1/A/6400/006 (Unit 1) and OP/2/A/6400/006 (Unit 2).

McGuire Technical Specification (TS) 3.7.5 - Auxiliary Feedwater System:

The TS 3.7.5 Limiting Condition for Operation (LCO) specifies that a Unit's three CA trains shall be operable in Mode 1. As per TS 3.7.5, Condition B, if one of the required trains is inoperable, Unit operation may proceed provided the inoperable train is restored to operable status within 72 hours and within 10 days of discovery of a failure to meet the LCO. If the required action and associated completion time of Condition B are not met, then TS 3.7.5, Condition C states that the respective Unit must be in MODE 3 within 6 hours and in MODE 4 within 12 hours.

Summary of Applicable Reporting Requirements For This Event:

On July 21, 2004, McGuire Nuclear Station identified that, in October of 2001, Unit 1 and Unit 2 were in a condition which rendered each Unit's TDCAP inoperable for a period longer than permitted by TS 3.7.5, Condition B. Since this condition was not recognized, the required actions and associated completion time of TS 3.7.5, Condition C, were not satisfied. This is being reported as a condition prohibited by TSs.

At the time of the October 2001 event described above, both Units were in MODE 1 at approximately 100 percent power. No additional structures, systems, or components were out of service at the time of the event which contributed to either the events occurrence or significance.

EVENT DESCRIPTION

February 1993:

Unit 1 and 2 procedures were revised to address the potential for air in the "A" RN train discharge header to migrate to the suction of the TDCAP during the infrequent alignment of that discharge header to the SNSWP (reference LER 369/92-06). As part of these revisions, procedures OP/1/A/6400/006 (Unit 1) and OP/2/A/6400/006 (Unit 2) were changed to close CA86A ("A" RN train assured water supply to the TDCAP) and remove motive electrical power from that valve prior to aligning the "A" RN train discharge header to the SNSWP. These actions did not require the TDCAP to be declared inoperable.

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October 2003:

The February, 1993 revisions to OP/1/A/6400/006 and OP/2/A/6400/006 were deemed inadequate to maintain the TDCAPs operable. Whenever CA86A is closed with motive electrical power removed and the TDCAP not declared inoperable, it would be necessary to assume a worst case single failure concurrent with an event requiring actuation of the TDCAP. The assumed single failure would be a "B" EDG failure preventing operation of normally closed CA116B, the "B" RN train assured water supply valve to the TDCAP. This, in conjunction with the inability to operate CA86A, would result in the unavailability of both the "A" and "B" RN train assured water supplies to the TDCAP. Since this condition would preclude the pump from satisfying required redundancy requirements, the TDCAP would be inoperable. Upon identifying this problem, OP/1/A/6400/006 and OP/2/A/6400/006 were placed on hold, precluding performance of the actions that close and remove motive electrical power from CA86A.

November 2003:

OP/1/A/6400/006 and OP/2/A/6400/006 were revised to ensure, prior to closing CA86A and removing motive electrical power, either:

- The TDCAP is declared inoperable
- OR
- The "B" RN train assured water supply is manually aligned to provide a suction source of water for the TDCAP.

These revised actions adequately addressed the TDCAP operability concerns identified in October, 2003 with respect to the availability of an assured water supply. Therefore, OP/1/A/6400/006 and OP/2/A/6400/006 were removed from hold status.

July 21, 2004:

McGuire identified that performances of OP/1/A/6400/006 and OP/2/A/6400/006 in 2001 rendered each Unit's TDCAP inoperable for a period longer than the 72 hours allowed by TS 3.7.5, Condition B. Specifically, the Unit 1 CA86A valve was closed with motive power removed from approximately 2151 on October 13, 2001 through approximately 2139 on October 21, 2001. The Unit 2 CA86A valve was in the same condition from approximately 2152 on October 13, 2001 through approximately 2141 on October 21, 2001. No other structures, systems, or components were out of service during these periods which

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contributed to either the event occurrence or significance. Since, in 2001, it was not recognized that this condition rendered the Unit 1 and 2 TDCAPs inoperable for a period longer than allowed by TS 3.7.5, Condition B, the required actions and associated completion time of TS 3.7.5, Condition C, were not satisfied. This represented a TS prohibited condition reportable under the requirements of 10 CFR 50.73 (a)(2)(i)(B). Note that non-assured suction sources for the TDCA pump were available and the "A" and "B" MDCAPs remained operable.

**CAUSAL FACTORS**

Procedure Deficiency:

In 1993, McGuire station procedures OP/1/A/6400/006 and OP/2/A/6400/006 were changed to close CA86A and remove motive electrical power from that valve prior to aligning the "A" RN train discharge header to the SNSWP. These actions did not require the TDCAP to be declared inoperable. However, since these actions did not ensure availability of an assured water supply to the TDCAP, these changes were inadequate to maintain the TDCAPs operable.

**CORRECTIVE ACTIONS**

- 1) OP/1/A/6400/006 and OP/2/A/6400/006 were revised in November, 2003 to address the inadequacies identified in October, 2003.
- 2) A review was performed of other station procedures that close and remove motive electrical power from CA86A. Procedures with similar discrepancies were either revised to adequately address operability or they were placed on hold.
- 3) During preparation of this LER, a question arose regarding the adequacy of the basis for the 1993 and 2003 revisions to OP/1/A/6400/006 and OP/2/A/6400/006. Pending completion of an evaluation, portions of those procedures that allow closing and removing motive electrical power from CA86A without declaring the TDCAP inoperable have been placed on hold. Other administrative controls have been implemented to address TDCAP operability. If further evaluation identifies information significant to the understanding of this event or it results in substantial changes to the corrective action plan, a revised LER will be submitted providing this information.

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**SAFETY ANALYSIS**

A probabilistic risk assessment of this event determined that, for the amount of time that CA86A was closed and motive power removed beyond the 72 hours allowed by TS 3.7.5, Condition B, the increase in the estimated core damage frequency (CDF) or large early release frequency (LERF) was insignificant. The basis for this is the limited impact that the inoperable valve has on the functionality of the CA System given the availability of non-assured suction sources for the TDCA pump and the fact that the "A" and "B" MDCAPs remained operable.

Based upon the above, the condition described in this LER had a very minor impact on the ability to mitigate risk significant accidents and the risk increase attributable to this event was not significant with respect to the health and safety of the public.

**ADDITIONAL INFORMATION**

In October 2003, when it was recognized that the February, 1993 revisions to OP/1/A/6400/006 and OP/2/A/6400/006 were inadequate to maintain the TDCAPs operable, a reportability review was conducted. That review failed to identify any reportable conditions. This failure is being addressed by McGuire's corrective action program.

A review of the McGuire corrective action database did not identify any previous occurrences of a similar event.

Applicable Energy Industry Identification (EIIS) system and component codes are enclosed within brackets. McGuire unique system and component identifiers are contained within parentheses.