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August 16, 2006

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

Subject: McGuire Nuclear Station, Units 1 and 2
Docket No. 50-369
Licensee Event Report 369/2006-01, Revision 0
Problem Investigation Process (PIP) M-06-02378

Pursuant to 10 CFR 50.73, Sections (a)(1) and (d), attached is Licensee Event Report (LER) 369/2006-01, Revision 0.

On June 19, 2006, Ice Condenser Floor Cooling (NF) air operated Outside Containment Isolation Valves, 1NF-234 and 2NF-234, were determined to be inoperable on McGuire Unit 1 and Unit 2 for a period longer than permitted by plant Technical Specifications (TS). In accordance with the requirements of 10 CFR 50.73 (a)(2)(i)(B), this condition is being reported as a condition prohibited by Technical Specifications.

This event has been determined 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

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U. S. Nuclear Regulatory Commission
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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, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-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.

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4. TITLE
Ice Condenser and Floor Cooling System Containment Isolation Valve inoperable longer than allowed by Technical Specification 3.6.3.

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
6	19	2006	2006	001	00	8	16	2006	McGuire	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)	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"/> 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"/> 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"/> 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"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)								

12. LICENSEE CONTACT FOR THIS LER	
NAME Reza Djali, Regulatory Compliance	TELEPHONE NUMBER (Include Area Code) 704-875-4228

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
B	BC	ISV	I207	YES					

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

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

Unit Status: At the time this historical condition was identified, Unit 1 and Unit 2 were in Mode 1 (Power Operation) at 100 percent power.

Event Description: On June 19, 2006, Ice Condenser Floor Cooling (NF) air operated outside containment isolation valves, 1NF-234 and 2NF-234, were determined to be inoperable on McGuire Unit 1 and Unit 2 for a period longer than allowed by Technical Specifications. Engineering identified a historical condition affecting these valves which could potentially allow them to open after their closure on a containment isolation signal. This event was not significant with respect to the health and safety of the public.

Event Cause: The cause for air operated containment isolation valves 1/2 NF-234 potentially not being able to remain closed after a containment isolation signal was attributed to inadequate actuator closing margin. This inadequacy stemmed from non-conservative system pressure considerations for ITT Grinnell diaphragm valves during original design.

Corrective Actions: The valves were declared inoperable. Compensatory actions were implemented to limit system pressure increase and to restore the valves to operable but degraded or non-conforming condition. A safety grade relief valve was installed on each Unit to limit system pressure increase and to return the components to fully operable status.

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17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

BACKGROUND

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

The Ice Condenser Refrigeration system (NF) [BC] serves as a central heat sink for sensible heat picked up in the ice condenser. During normal plant operation, a circulating loop of corrosion inhibited glycol/water solution carries the heat from the ice condenser air handling units, the floor cooling system and the ice machines (when operating) to the evaporator and heat is removed from the chiller unit by cooling water flowing through the condenser. The chiller units operate individually to maintain containment return temperature of glycol/water solution at or below approximately 1 degree Fahrenheit. This system is not safety related. During a design basis accident, glycol/water flow is terminated by containment isolation valves which are closed automatically. As the glycol/water solution heats up to ambient temperature and expands, the resultant pressure increase is limited on the containment side by an expansion tank which is vented into the containment, and on the Auxiliary building side by a relief valve with a relief setting of 180 psig. The containment isolation function of the NF system is safety related.

The Containment Isolation System provides the means of isolating fluid systems that pass through Containment penetrations so as to confine any radioactivity that may be released following a design basis event. The Containment Isolation System is required to function following a design basis event to isolate non-essential fluid systems penetrating the Containment.

Glycol lines of the NF system penetrating the containment are provided with fail closed, air operated, containment isolation valves, which close automatically upon receipt of a containment isolation signal.

For the glycol return line penetration, M-372, 1/2 NF-233 provide the inside containment isolation function and 1/2 NF-234 provide the outside containment isolation function. For the glycol inlet line penetration, M-373, a failed closed air operated valve outside containment, 1/2 NF-228, and a soft seated spring loaded check valve, 1/2 NF-229, are provided for containment isolation function.

The air operated NF valves are 4 inch diaphragm valves. Due to the large surface area of the internal diaphragm, system pressure creates a relatively

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large force opposing actuator thrust output. The highest force opposing the actuator spring occurs when the line pressure upstream and downstream of the valve is at maximum.

The valve control logic is such that the closed direction limit switch is used to provide a "seal-in" function for the valve solenoid to keep the valve open once the open push button is pressed. If the increased system pressure opened the valve to the point where the limit switch was reset, then the associated solenoid valve would be energized and the valve would fully open. A containment isolation signal being present would prevent the solenoid valve from energizing, but if the signal was removed (reset), the solenoid would be energized and the containment isolation function of this valve would not have been performed.

McGuire Technical Specification (TS) 3.6.3 - Containment Isolation Valves: TS 3.6.3 specifies that each containment isolation valve (CIV) [ISV] shall be operable in Modes 1, 2, 3, and 4. Condition A requires, in part, that in the event one CIV in one or more penetration flow paths is inoperable, the affected penetration flow path must be isolated within 4 hours. Condition F states that if the required action and associated completion time is not met, the respective Unit must be placed in Mode 3 in 6 hours and in Mode 5 in 36 hours.

EVENT DESCRIPTION

At the time this historical condition was identified, McGuire Unit 1 and Unit 2 were in Mode 1 at 100% power. No systems, structures, or components were out of service at the time of this event which contributed to this event.

In May 2006, the NF system calculation was issued with new system pressure design conditions in accordance with the Air Operated Valve (AOV) improvement plan.

On June 15, 2006, the plant corrective action process (PIP) was entered to document that the newly formulated system design conditions could affect closing margin on the NF containment isolation valves (1/2 NF-228, 1/2 NF-233, 1/2 NF-234).

On June 16, 2006, 1/2 NF-234 were conservatively declared inoperable due to concerns that 1/2 NF-234 would not remain closed following the receipt of the containment isolation signal. Compensatory actions were implemented to

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limit the pressure increase and to restore the valves to operable but degraded or non-conforming status.

On June 19, 2006, the operability determination process confirmed that for 1/2 NF-234, the internal force due to system pressure was large enough to exceed the actuator's capability to hold the valves closed such that the valves may be off its closed seat. Considering the valve's control logic, the valves may have fully opened and not be capable of re-closing when the containment isolation signal was reset. This process identified that 1/2 NF-228, and 1/2 NF-233 would function as designed.

On July 10, 2006, 1/2 NF-234 were declared fully operable when a safety grade relief valve with a lift setting of 70 psig was installed on each Unit to limit pressure increase outside containment.

Since valves 1/2 NF-234 could potentially reposition after a containment isolation signal, they were not considered fully operable per TS 3.6.3. Consequently, these valves were inoperable for a period longer than allowed by TS. This condition represented an operation prohibited by Technical Specifications and is reportable per the requirements of 10 CFR 50.73 (a)(2)(i)(B).

CAUSAL FACTORS

The cause for air operated containment isolation valves 1/2 NF-234 not being able to remain closed after a containment isolation signal was attributed to inadequate actuator closing margin. This inadequacy stemmed from non-conservative system pressure considerations for ITT Grinnell diaphragm valves during original design.

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CORRECTIVE ACTIONS

IMMEDIATE

- Valves 1/2 NF-234 were declared inoperable.
- Compensatory actions were implemented on both units to restore the valves to an operable but degraded or non-conforming condition.

SUBSEQUENT

- Installed a safety grade relief valve to limit pressure increase outside containment and to resolve the degraded or non-conforming condition.
- Engineering reviewed information contained in the valve calculations to ensure proper NF system conditions have been applied.

Planned

- Evaluate design enhancements for the "seal-in" circuitry on failed closed ITT Grinnell diaphragm containment isolation valves to address design vulnerabilities related to this function.
- Review information contained in other system valve calculations which are susceptible to the thermal pressurization mechanism that utilize diaphragm valves with AOVs.
- Review the sizing of active motor operated ITT Grinnell diaphragm containment isolation valves based on expected system conditions.

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SAFETY ANALYSIS

Failure of 1/2 NF-234 would have not prevented isolation of mechanical penetration M-372, when the containment isolation signal is reset, following its initial closure. The inside containment isolation valves 1/2 NF-233 would have remained closed during this event and isolated this penetration flow path.

If 1/2 NF-233 failed to close for any reason, the pressure between the two containment isolation valves would not increase to the point where 1/2NF-234 would be lifted off the closed seat. Thus, following containment isolation reset valves 1/2 NF-234 would remain closed and provide the mechanical penetration M-372 isolation.

A review of this event determined that there is no impact on either the estimated core damage frequency (CDF) or large early release frequency (LERF). Therefore, the event described in this LER was not significant with respect to the health and safety of the public.

ADDITIONAL INFORMATION

A review of the McGuire corrective action database did not identify any other events within the past three years having similar circumstances, cause, and corrective actions. Therefore, the event described in this LER is not considered a recurring event.