

Duke Power Company  
McGuire Nuclear Generation Department  
12700 Hagers Ferry Road (MG01A)  
Huntersville, NC 28078-8985

T. C. McMEEKIN  
Vice President  
(704)875-4800  
(704)875-4809 FAX



DUKE POWER

March 20, 1992

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

Subject: McGuire Nuclear Station Unit 1  
Docket No. 50-369  
Licensee Event Report 369/92-03

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a) (1) and (d), attached is Licensee Event Report 369/92-03 concerning a Containment Isolation Valve Technical Specification violation. This report is being submitted in accordance with 10 CFR 50.73 (a) (2) (i). This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

T.C. McMeekin

TLP/bcb

Attachment

xc: Mr. S.D. Ebnetter  
Administrator, Region II  
U.S. Nuclear Regulatory Commission  
101 Marietta St., NW, Suite 2900  
Atlanta, GA 30323

INPO Records Center  
Suite 1500  
1100 Circle 75 Parkway  
Atlanta, GA 30339

Mr. Tim Reed  
U.S. Nuclear Regulatory Commission  
Office of Nuclear Reactor Regulation  
Washington, D.C. 20555

Mr. P.K. Van Doorn  
NRC Resident Inspector  
McGuire Nuclear Station

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# LICENSEE EVENT REPORT (LER)

FACILITY NAME(1) McGuire Nuclear Station, Unit 1						DOCKET NUMBER(2) 05000 369		PAGE(3) 1 OF 9		
TITLE(4) A Technical Specification Violation Was Caused By A Containment Isolation Valve Being Inoperable When Required Due To 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)
02	12	92	92	03	0	03	20	92	N/A	05000
									05000	
OPERATING MODE(9)		3		THIS REPORT IS SUBMITTED PURSUANT TO REQUIREMENTS OF 10CFR (Check one or more of the following)(11)						
POWER LEVEL(10)		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)
				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)		TELEPHONE NUMBER	
NAME Terry L. Pedersen, Supervisor, Safety Review Group		AREA CODE 704	
		375-4487	

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT(13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRCDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRCDS

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"/> X <input type="checkbox"/> NO							

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

While reviewing routine work requests on February 19, 1992, Performance (PRF) personnel discovered that valve 1WL-1301B, Unit 1 Upper Head Injection Check Valve Test Line Isolation, was inoperable because the required retest to verify leakage had not been performed at the appropriate time. The valve is required to be operable during operating Modes 1 (Power Operation), 2 (Startup), 3 (Hot Standby), and 4 (Hot Shutdown) as specified by Technical Specification (TS) 3.6.3, Containment Isolation Valves, or the affected penetration must be isolated within 4 hours by use of at least one deactivated automatic or manual valve secured in the isolation position. Unit 1 was in operating Mode 3 at the time of the event discovery and it was determined that the valve had been inoperable for greater than four hours as specified by the TS. Operations (OPS) personnel were notified and appropriate measures taken to perform the required retest. During the retest, Unit 1 entered TS Action Statement 3.0.3. This event is assigned a cause of Management Deficiency because of lack of an adequate process to identify the work as mode related prior to entering a mode when the valve was required to be operable. The subsequent retest was performed and the valve declared operable. Unit 1 then exited TS Action Statement 3.0.3.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME(1)	DOCKET NUMBER(2)	LER NUMBER(6)			PAGE(3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		92	03	0	2	OF	10

McGuire Nuclear Station, Unit 1

05000 369

**EVALUATION:**

**Background**

The general purpose of the Containment system is to provide a barrier confining postulated releases of radioactivity from severe accidents. This is accomplished by maintaining leak tightness within specified bounds. As a design feature, the Containment system is provided primarily for the protection of public health and safety. The free standing steel containment has an outer reinforced concrete Reactor Building and an annular space which is maintained at a lower-than-atmospheric pressure following a Loss Of Coolant Accident (LOCA). These structures form a fission product barrier.

Containment isolation provides the means of isolating systems that pass through Containment penetrations [EIIS:PEN] so as to confine to the containment any radioactivity that may be released following a design basis event. The Containment Isolation systems are required to function following a design basis event to isolate non-essential systems penetrating the Containment.

The design bases for the Containment Isolation systems, in part, are indicated below:

- A. A double barrier is provided for all fluid penetrations to assure that no single failure or malfunction of an active component can result in loss of isolation or intolerable leakage.
- B. Upon receipt of either a Phase A Containment isolation signal which is derived from a Safety Injection signal or a Phase B Containment isolation signal which is derived from a high-high Containment pressure signal, the Containment Isolation system closes all penetrations not required for Engineered Safety Features operation.
- C. Isolation valves [EIIS:ISV] outside the containment are located as close to the Containment as practicable, and upon loss of actuating power, automatic isolation valves are designed to fail "as is" which for most scenarios would be the position that provides the greatest safety.
- D. Isolation valving systems from a seismic consideration are designed the same as the piping system and/or the penetration of which they are a part, whichever is the higher classification.

Technical Specification (TS) 3.6.3 states, in part, that the containment isolation valves

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME(2)	DOCKET NUMBER(2)	LER NUMBER(6)			PAGE(3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
McGuire Nuclear Station, Unit 1	05000 369	92	03	0	3	OF	10

shall be operable in Mode 1 (Power Operation), Mode 2 (Startup), Mode 3 (Hot Standby), and Mode 4 (Hot Shutdown). With one or more containment isolation valve(s) inoperable, maintain at least one isolation valve operable in each affected penetration that is open and isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or a closed manual valve [EIIS:V] or blind flange.

**Description of Event**

In June 1991, work began to implement Nuclear Station Modification (NSM) MG-12283 replacing the existing Unit 1 Post Accident Liquid Sampling (PALS) [EIIS:KN] system with the updated PALS II+ system. This work was performed as directed by work request 954273 by Electrical Craft personnel from the Generation Services Maintenance North (GSM-N) department.

A part of this NSM work was to disconnect and remove cable [EIIS:CBL] 1WL-858 from the PALS Panel [EIIS:PL] and valve 1WL-1301B, Unit 1 Upper Head Injection Check Valve Test Line Isolation. Work request 98080 was also generated at that time for Instrumentation and Electrical (IAE) personnel to perform a functional verification of the work performed by implementation of the NSM. The NSM work was performed and the functional verification for valve 1WL-1301B was completed as a part of the total checkout of the PALS II+ system. However, GSM-N personnel failed to document removal of cable 1WL-858 on work request 954273. Also, IAE personnel performing the functional verification under work request 98080 only verified correct indication for valve 1WL-1301B and did not verify removal of the cable at valve 1WL-1301B.

On approximately January 10, 1992, the Project Services Engineer associated with NSM MG-12283 began a final review of the work package associated with work request 954273. During this review, the Project Services Engineer noted that there was no documentation for removal of cable 1WL-858. At that time, the Project Services Engineer contacted GSM-N personnel involved to verify removal of the cable. GSM-N personnel pulled the cable card associated with cable 1WL-858 and stated that the card indicated the cable had been removed.

The Project Services Engineer then realized that work request 98080, which was for replacement of the entire PALS system, had not addressed valve 1WL-1301B as a separate component and; therefore, no attention had been given with regard to evaluation by Performance (PRF) personnel for retest of the valve. With this in mind, the Project Services Engineer discussed the problem with the Planner associated with IAE work on the Liquid Waste Recycle (WL) system [EIIS:WD]. After discussion, it was determined that the best course of action was to generate work requests for checkout of the WL system valves

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME(1)	DOCKET NUMBER(2)	LER NUMBER(5)			PAGE(3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		92	03	0	4	OF	10

McGuire Nuclear Station, Unit 1

05000 369

affected by the NSMs for the PALS II+ system installation on Units 1 and 2. This would insure proper functional verification of the valves and allow PRF personnel to evaluate the need for a retest to be performed on the valves.

Consequently, work requests were generated to perform the functional verification for each valve respectively.

Work request 98954 was written on January 13, 1992, for checkout of valve 1WL-1301B. The work request was given a routine priority because of the scope of the work requested. On January 17, 1992, Unit 1 entered an unplanned outage because of a tube leak in Steam Generator [E11S:SG] "D". The Planner then planned the job as routine IAE work on January 29, 1992. The work request was planned for functional verification of the wiring associated with the NSM and to ensure correct indication for the valve. No note or caution was placed on the work request denoting TS requirements for the valve to be operable during operating Modes 1 through 4 since there was no requirement for such a caution associated with the scope of the work to be performed.

On January 30, 1992, the work request was placed on schedule for performance of the work. No stamp or note denoting TS requirement was placed on the work request during review by Operations (OPS) personnel prior to the work being performed, nor was the valve logged as inoperable due to the scope of the planned work and the operating mode of Unit 1 at that time (Mode 5).

Upon receipt of the work request, IAE personnel went to valve 1WL-1301B and discovered that cable 1WL-858 had not been disconnected or removed from the valve. They then proceeded to the PALS panel and noted that the cable had been deleted from the panel. The work request was then rescheduled pending proper removal of the cable from the valve.

Work request 984771 was subsequently generated for GSM-N personnel to disconnect cable 1WL-858 at valve 1WL-1301B. The work was performed on February 10, 1992.

On February 11, 1992, work request 98954 was again scheduled for completion of the functional verification by IAE personnel. Again no TS stamp or log entry was made by OPS personnel granting permission to begin work due to the scope of the work to be performed and the operating mode of Unit 1 at that time (Mode 5) did not require the valve to be operable.

IAE personnel went to valve 1WL-1301B and verified that cable 1WL-858 had been disconnected from the valve. They then went to the Control Room (CR) [E11S:NA] for checkout of indication for the valve. Upon arriving in the CR, the computer [E11S:CPU] points associated with the valve (D1615 and D1616) read not open and not closed



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME(1)	DOCKET NUMBER(2)	LER NUMBER(6)			PAGE(3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
McGuire Nuclear Station, Unit 1	05000 369	92	03	0	5	OF	10

respectively, while the control board [E11S:MCBD] indication on control board MC-8 read closed. OPS personnel then cycled the valve to the open position. Both computer points and the control board indication read open. OPS personnel then cycled the valve back to the closed position. Initially, both computer points and the control board indication read closed, but in a short time the computer points changed to read not open and not closed.

The IAE personnel then went to the valve to investigate. Upon arriving at the valve, the IAE personnel removed the Add-On Pack cover for the valve actuator to examine the switches associated with the computer points. When the Add-On Pack cover was removed, the IAE personnel noted approximately 1/4 pint of oil was present inside the cover. They investigated and determined the cause to probably be a bad oil seal [E11S:SEAL]. They replaced the Add-On Pack Cover and proceeded to the IAE shop to discuss the problem with their supervisor. Upon discussion, it was determined that replacement of the oil seals was required and that the best approach was to have work request 98954 replanned to perform the additional work.

On February 12, 1992, the IAE personnel returned the work request to the Planner to incorporate the new scope of the work to be performed. The work request was replanned but no note of TS requirement for the valve was placed on the work request because no process existed requiring the listing of mode requirements on routine work requests. The IAE personnel went to the CR and talked with OPS personnel about red tagging the breaker [E11S:52] compartment supplying power for the valve. At that time, it was discovered that the drawings with the work request package were not the proper revision since another NSM (MG-12262) had changed power for the actuator to be supplied from a different breaker compartment. The IAE personnel contacted the Project Services Engineer about the problem. The Project Services Engineer agreed to investigate this problem. The IAE personnel then proceeded to obtain the materials required for replacement of the oil seals.

On February 13, 1992, the IAE personnel obtained the red tags for the valve, verified the placement, and proceeded with repairs on the valve. The work continued throughout the day. The work continued throughout February 14, 1992 and was continued on the next working day which was February 17, 1992.

On February 17, 1992, the IAE work was completed but the procedure could not be completed because the discrepancy with the drawings previously discovered prevented verification of the correct overload type in the breaker compartment supplying power to the valve. Because work request 98954 was designated as routine work, and was not stamped or logged as a TS item, neither the IAE personnel or Planner recognized any need for completion of the work prior to Unit 1 entering operating Mode 4. The as-built drawings for valve 1WL-1301B had not been updated to reflect NSM MG-12262 in the work request package. Correct

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME(1)  McGuire Nuclear Station, Unit 1	DOCKET NUMBER(2)  05000 369	LER NUMBER(6)			PAGE(3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		92	03	0	6	OF	10

red-marked drawings were present in the CR. Interim as-built drawings were present in Master File, and the IAE File Room. Because of this confusion with the work request package, the work request was then rescheduled pending resolution of the drawing discrepancy by the Project Services Engineer.

At 0417, on February 18, 1992, Unit 1 entered operating Mode 4. Valve 1WL-1301B was required to be operable but personnel reviewing checklists prior to entering Mode 4 were not aware of work request 98954 or that the valve was inoperable. This was because the work request was not added to any "Outage" priority work lists and OPS personnel had not logged the valve in the TS log. At 1608, on February 18, 1992, Unit 1 entered operating Mode 3.

On February 19, 1992, IAE personnel obtained the correct drawings from the Project Services Engineer. The procedure signoff verifying the correct overload was obtained and the valve indications were again verified to be correct. The work request was then rescheduled for PRF retest.

At 1800, on February 19, 1992, the PRF person reviewing routine work requests for retest requirements discovered work request 98954. He realized that the valve had been inoperable when the unit entered Mode 4 and subsequently Mode 3, since no retest of the valve had been performed. He then notified OPS personnel of this discovery.

OPS personnel entered Unit 1 into TS Action Statement 3.0.3 at 1826 on February 19, 1992. The PRF retest was performed and completed satisfactorily at 1930 on February 19, 1992. OPS personnel then removed Unit 1 from TS Action Statement 3.0.3 at 2015 on February 19, 1992.

#### Conclusion

This event has been assigned a cause of Management Deficiency resulting from lack of an adequate process to identify the work as mode related prior to entering a mode when the component in question was required to be operable.

Work request 98954 was written only for functional verification of the work performed on valve 1WL-1301B during implementation of NSM MG-12283. Work request 98954 was written as a routine work request due to the scope of the work. When the work request was written, Unit 1 was in operating Mode 1.

There was no process in place to cause work request 98954 to be designated as outage priority or to have the work involved added to the outage list of work then being maintained by station Work Control personnel when the unit entered an unplanned outage.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME(1)	DOCKET NUMBER(2)	LER NUMBER(6)			PAGE(3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
McGuire Nuclear Station, Unit 1	05000 369	92	03	0	7	OF	10

The Project Services Engineer and Planner associated with initiation, planning, and scheduling of the work did not envision a need to make the work request outage priority or to notify Work Control personnel tracking outage activities of the work when the unit entered the outage.

The Planner involved planned and scheduled the work properly per Planning Group procedures and methodology. All required notes and determinations were made during the initial and subsequent re-planning of the work. No requirement existed for the Planner to place a note on the work request denoting TS or mode requirements associated with the valve, nor did he envision a need to do so.

Because the work on the valve took place at a time when Unit 1 was in Mode 5 and the valve was not required to be operable, no TS log entry was made by the OPS personnel involved.

The IAE personnel involved followed all procedures and performed the associated work properly. They consulted their supervisor, planner, and OPS personnel when appropriate during performance of the work.

Personnel reviewing outstanding work requests prior to the Unit entering Mode 4 were simply unaware of the existence of the work request involved. Therefore, no action was taken to retest the valve prior to the Unit entering Mode 4.

Corrective action was taken to restore the valve to an operable state immediately upon discovery of the oversight. Also, during the time period associated with the event, valve 1WL-1302A, Unit 1 Upper Head Injection Check Valve Test Line Isolation, and manual valve 1WL-1303, which are on either side of valve 1WL-1301B, were operable and closed at all times. However, because valve 1WL-1302A was not deactivated within four hours and valve 1WL-1303 is not seismically qualified, TSs were violated. See illustration on page 10 of 10.

As a conservative measure to prevent recurrence of similar events, Work Control personnel are reviewing all work requests currently on schedule for Unit 2 which require a retest prior to Unit 2 changing operating modes.

A review of the Operating Experience Program Data Base for the 24 months prior to this event revealed 9 events involving TS violations in which the cause was a Management Deficiency. Four of the events identified were assigned a cause of Management Deficiency due to a lack of adequate policy or directive. The events were documented in LERs 369/91-03, 369/90-15, 369/91-13, and 369/91-18.

LER 369/91-03 documented an event in which both trains of the Annulus Ventilation (VE)



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME(1)	DOCKET NUMBER(2)	LER NUMBER(5)			PAGE(3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
McGuire Nuclear Station, Unit 1	05000 369	92	03	0	8	OF	10

[EIIIS:VD] system were inoperable because a VE system pressure boundary door was found open. LER 369/90-15 documented an event in which TS 3.0.3 was entered due to inoperable power range nuclear instrumentation. LER 369/91-13 documented an event in which both trains of the VE system were inoperable because a VE system pressure boundary door was found open. LER 369/91-18 documented an event in which both trains of the VE system were inoperable because a VE system pressure boundary door was opened without establishing compensatory measures. TS violations due to a Management Deficiency because of a lack of adequate policy or directive is considered to be recurring. However, none of the corrective actions identified in LERs 369/91-08, 369/90-15, 369/91-13, and 369/91-18 would have prevented this event because all of these events involved the lack of administrative controls for a specific system and were not involved with generic control of work when changing operating modes.

This event caused no significant operational problems or difficulties.

This event is not Nuclear Plant Reliability Data System (NPRDS) reportable.

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

**CORRECTIVE ACTIONS:**

**Immediate:** 1) OPS and PRF personnel performed the required retest of valve 1WL-1301B and returned it to an operable condition.

**Subsequent:** 1) Work Control personnel began tracking of all outstanding Un' 2 routine priority work requests which specify retest required for mode change requirements.

**Planned:** 1) Work Control Management personnel will cover the event with all appropriate Work Control personnel.

2) Work Control Management personnel in conjunction with OPS and Maintenance personnel will evaluate the problem of tracking all outstanding work for mode change requirements and develop a program to better monitor and control this type work.

**LICENSEE EVENT REPORT (LER) TEXT CONTINUATION**

FACILITY NAME(1)	DOCKET NUMBER(2)	LER NUMBER(6)			PAGE(3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
McGuire Nuclear Station, Unit 1	05000 369	92	03	0	9	OF	10

**SAFETY ANALYSIS:**

The valve in question provides a means of isolating the associated test line that passes through penetration M-348 so as to confine to the containment any radioactivity which could be released following a design basis event.

During the time period associated with this event, valve 1WL-1302A was operable and closed at all times. Also, manual valve 1WL-1303 was closed. These two valves would ensure integrity of the containment should valve 1WL-1301B fail during a design basis event. Additionally, on receipt of a Safety Injection Signal, OPS personnel must verify all Phase A components to be properly aligned per existing emergency procedures. If a Safety Injection had occurred during the time period associated with this event, OPS personnel would have noted any misalignment of these valves and taken appropriate action to close them. For most accident sequences, there is significant time for such action to be taken before any release of radioactivity from the Containment could occur.

During the time period associated with this event, the Auxiliary Building Ventilation (VA) system [E1IS:VF] was fully operable and would have been able to handle any inleakage from containment.

The Containment system was not challenged during this time period nor was there any required safety function.

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

# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)

McGuire Nuclear Station, Unit 1

DOCKET NUMBER (2)

05000 369

LER NUMBER (6)

YEAR

92

SEQUENTIAL  
NUMBER

03

REVISION  
NUMBER

0

PAGE (3)

10 OF 10

## ONE LINE DIAGRAM OF CONTAINMENT PENETRATION M-348

