NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
McGuire Nuclear Station - Unit 1	0 5 0 0 0 3 6 9	1 OF 0 3

TITLE (4)
Loss of Containment Integrity Due to Lower Airlock Seals Deflating

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 5	0 8	8 5	8 5	0 1 5	0 0	0 6	2 5	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)			
6		20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
0 0 0		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
Jerry Day - Licensing	AREA CODE 7 0 4 3 7 3 - 7 0 3 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 May 8, 1985 at approximately 1100 and again at approximately 1540, the auxiliary building side door seals and the reactor building side door seals of the lower personnel airlock (LAPL) were simultaenously deflated. Core unloading was in progress; however, no fuel was being moved at the time of the 1100 event. Fuel movement was halted following the 1540 incident and was not resumed until the airlock was repaired.

Unit 1 was in Mode 6 (refueling) at the time of the incident.

This incident is attributed to a component malfunction, because the limit switches on the airlock door pins were out of adjustment which caused the door seals to deflate. Design deficiency is a contributing factor because the contacts which control seal inflation can allow the seals to deflate if any one of the contacts close after the seals inflate.

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

On May 8, 1985, the control room received alarms that both Unit 1 LPAL doors were open at the same time. The first occurrence was at approximately 1100. Core alterations had begun, but no fuel was being moved at this time. The Operations shift supervisor made a telephone call to the airlock and received an eyewitness report about what was happening by an unidentified individual. This individual reported that, while exiting containment, when the auxiliary side door was opened, the seals for the reactor side door deflated, but the door remained closed. Then he added, the seals reinflated when the reactor side door "close" pushbutton was depressed. Assuming the doors were now working properly, Operations continued with core alterations.

At approximately 1540, the control room received alarms again that both Unit 1 LPAL doors were open at the same time. Then, within moments, as Operations was preparing to investigate, the alarms were received again. A witness to the event, an HP technician, was put in contact with control room personnel. The HP technician reported that the reactor side door seals deflated when the auxiliary side door "open" pushbutton was depressed. The pins however, remained extended. The "close" pushbutton had to be pressed again for the reactor side door. The HP technician also reported that he observed the reactor side door seals inflate and then deflate, as the reactor side door was closed, about 4 or 5 times that afternoon. The reactor side door had to be opened and then reclosed for the seals to stay inflated. Two IAE technicians were sent to the LPAL to investigate. These two technicians did not enter the airlock, but had HP personnel there verify correct positions of the interlock switches. Performance personnel were also sent to test the door interlock. Personnel airlock doors have interlocks which prevent seal inflation unless the door is closed and the pins fully engaged. These interlocks also prevent deflation of the seals on one door unless the seals on the other door are inflated. Air to the door seals is controlled by solenoid valves. Air is supplied to the seals when the solenoid valves are de-energized. This requires all of the contacts in series with the solenoid coils to be open. The contacts are controlled by door limit switches or pin limit switches. If any of these contacts close after the seals are inflated, they will immediately deflate, regardless of the status of the other door. Performance personnel found no problems with the operation of the doors and their interlocks. The airlock was then limited for use at 30 minute intervals.

Approximately 20 minutes after Performance completed the interlock test, personnel at the airlock reported to control room personnel that the reactor side door pins were not fully extending. IAE personnel were sent to the airlock to investigate and repair the problem. The IAE shift supervisor reported finding the lower pin on the reactor side door bent so badly that it would not fully extend. The limit switches for the reactor side door were also found to be out of adjustment. He stated that personnel were unable to exit the airlock as IAE personnel arrived. The airlock interlocks had to be defeated before the auxiliary side door would open. IAE personnel also found that an electric cable conduit from the reactor side door had been pulled out of the terminal box approximately one foot, making some wiring connections loose. These loose connections could possibly have contributed to the incident. All problems were repaired by IAE.

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

CORRECTIVE ACTION:

Immediate: Control room personnel contacted personnel at the LPAL as the alarms were received at ∿1100 and at ∿1540 to ensure the airlock doors were both open, and that at least one door was subsequently closed with the seals inflated. Core alterations were halted.

Subsequent: Performance personnel successfully tested the airlock door interlocks switches.

IAE personnel readjusted the door pin limit switches for the reactor side airlock door.

Operations limited the use of the LPAL to 30 minute intervals during fuel movement.

Planned: Design Engineering will re-evaluate two proposed NSMs for revisions to the airlock control circuitry to prevent inadvertent seal deflation (or inflation if the door is open).

SAFETY ANALYSIS:

Containment integrity was lost at least once during the 15:40 incident. As soon as the incident occurred, fuel movement was halted as quickly as possible and did not resume until the airlock had been repaired and determined to be functional. The reactor building ventilation system was operable to limit any radioactive leaks. No incident occurred during this time which would have challenged containment integrity. The health and safety of the public were not affected by this incident.

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

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June 25, 1985

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

Subject: McGuire Nuclear Station, Unit 1
Docket No. 50-369
LER 369/85-15

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 369/85-15 concerning a loss of containment integrity due to lower airlock seals deflating. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

H.B. Tucker /JBD

Hal B. Tucker

JBD:smh

Attachment

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cc: Dr. J. Nelson Grace, Regional Administrator
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