

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: 50.0 HRS. REPORTED LESSONS
LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED
BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN
ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-
6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC
20555-0001 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104),
OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Millstone Nuclear Power Station Unit 1

DOCKET NUMBER (2)

05000245

PAGE (3)

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TITLE (4)

Failure of 1-SG-1B to provide complete isolation of the SGBT system from RBVS

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
02	28	97	97	021	00	03	31	97	FACILITY NAME	DOCKET NUMBER
OPERATING MODE (9)		N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)							
POWER LEVEL (10)		000	20.2201(b)		20.2203(a)(2)(v)		<input checked="" type="checkbox"/> 50.73(a)(2)(i)		50.73(a)(2)(viii)	
			20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)	
			20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71	
			20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER	
			20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A	
			20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)			

LICENSEE CONTACT FOR THIS LER (12)

NAME

Robert W. Walpole, Nuclear Licensing Supervisor

TELEPHONE NUMBER (Include Area Code)

(860)440-2191

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)

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

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

On February 28, 1997, at 1000 hours, with the plant in the COLD SHUTDOWN condition, it was discovered that the Standby Gas Treatment System (SGTS) inlet isolation valve, 1-SG-1B, had a disc to shaft to actuator installed configuration such that the valve disc could not close the valve completely. Disassembly of the inlet valve revealed that the valve disc was installed such that the seating surface of the disc was oriented 180 degrees out from the design position. This orientation creates an approximately 1/4 inch annular gap between the disc and the seat which prevents complete isolation when the valve is closed. The SGTS inlet valves isolate SGTS from the Reactor Building ventilation system (RBVS) during normal plant operation while SGTS is used for containment venting and purging. These valves open on SGTS initiation and are designed to fail open. Technical Specification 3.7.B.3.6 requires primary containment to be vented through SGTS whenever primary containment is required. Since 1-SG-1B isolates SGTS from RBVS during vent and purge operations, the inability of this valve to fully seal could allow some of the primary containment gas to be drawn into the ventilation system and discharged out the stack, thus bypassing SGTS. This is reportable as an operation or condition prohibited by the plant's Technical Specifications.

The causes of this event are: inadequate design review and installation; lack of a questioning attitude; inadequate procedural guidance; inadequate post maintenance testing. Regardless of the path, all releases are discharged via the monitored elevated stack. All releases have been well within 10CFR50, Appendix I, effluent ALARA guidelines. The safety function of 1-SG-1B is to open upon initiation of SGBT, it has been determined that the disc of 1-SG-1B being installed in this abnormal configuration would not have prevented it from performing it's safety function. Based on this and the fact that there has not been an unmonitored release, this event has no safety significance.

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

I. Description of Event

On February 28, 1997, at 1000 hours, with the plant in the COLD SHUTDOWN condition, during a maintenance activity, it was discovered that the disc of 1-SG-1B was installed 180 degrees out of its design position. This orientation creates an approximately 1/4 inch annular gap between the disc and the seat which prevents complete isolation when the valve is closed.

Technical Specification 3.7.B.3.6 requires primary containment to be vented through SGTS whenever primary containment is required. Since 1-SG-1B isolates SGTS from RBVS during vent and purge operations, the inability of this valve to fully seal could allow some of the primary containment gases to be drawn into the ventilation system and discharged out the stack, thus bypassing SGTS.

Upon discovery of the event, a review of work history for 1-SG-1B was conducted which identified that the last overhaul of 1-SG-1B was completed December 31, 1985, and there were no unusual conditions noted during work performance. It can be assumed that the disc in 1-SG-1B had been installed 180 degrees out of its design position since original installation. Regardless of the path, all releases are discharged via the monitored elevated stack. All releases have been well within 10CFR50, Appendix I, effluent ALARA guidelines.

Leakage past 1-SG-1A/B would not be a unmonitored since the release must pass the stack gas monitoring system. Activity in excess of 10CFR50, Appendix I guidelines would be detected by the monitor. In addition, in demonstrating compliance to 10CFR50, Appendix I release guidelines, Millstone Unit No. 1 takes no credit for SGTS filtration.

II. Cause of Event

The causes of this event are:

- Inadequate design review and installation
- Lack of a questioning attitude
- Inadequate procedural guidance
- Inadequate post maintenance testing

III. Analysis of Event

Technical Specification 3.7.B.3.6 requires primary containment to be purged through SGTS whenever primary containment is required. Since 1-SG-1B isolates SGTS from RBVS during vent and purge operations, the inability of this valve to fully seal could allow some of the primary containment gases to be drawn into the ventilation system and discharged out the stack, thus bypassing SGTS.

Originally, Millstone Unit No. 1 purged and vented primary containment through AC-8 to the main exhaust plenum. An air sample was taken and analyzed before the release to ensure 10CFR20 limits were not exceeded. However, in 1975, the Environmental Technical Specifications introduced the requirement to purge using SGTS. This requirement was incorporated into the Technical Specifications when RETS was incorporated in October 1, 1985. A review of work history of 1-SG-1B identified that the last overhaul on 1-SG-1B was completed on December 31, 1985, and no unusual conditions were noted during work

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

performance. It is believed that the installation error in 1-SG-1B dates back to original design and original installation.

Regardless of the path, all releases are discharged via the monitored elevated stack. All releases have been well within 10CFR50 Appendix I, effluent ALARA guidelines. The safety function of 1-SG-1B is to open upon initiation of SBGT. It has been determined that this abnormal configuration of 1-SG-1B would not have prevented it from performing its safety function. Based on this and the fact that there has not been an unmonitored release, there is no safety impact.

IV. Corrective Action

The discrepancy between the field and the design documentation for 1-SG-1B has been corrected.

1-SG-1B has been physically modified to allow proper orientation of the valve disc upon reinstallation.

The current revision of MP 713.1, "Allis - Chalmers Butterfly Valve Repair," contains a caution statement to ensure proper orientation upon installation of the valves.

Questioning attitude and self checking is promoted by "STAR" (STOP, THINK, ACT, REVIEW).

Current revision of the Design Control Manual contains guidance to minimize an inadequate review.

NNECO will perform an appropriate post maintenance test of valve 1-SG-1B following installation to ensure seating. This will be completed prior to startup for operating Cycle 16. The procedure for AC-10 seat replacement is being modified to inspect the SGTS piping for excessive negative pressure which would indicate that 1-SG-1A/B are leaking.

NNECO will identify all Allis - Chalmers Model 150R, 150FR, 50R and 50FR butterfly valves and inspect as needed to ensure proper disc orientation. This will be completed prior to startup for operating Cycle 16.

V. Additional InformationSimilar Events

None

Manufacturer Data

1-SG-1B Allis - Chalmers Model 150FR butterfly valve