

## LICENSEE EVENT REPORT (LER)

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

TITLE (4)

Inadequate Control of Containment Integrity

EVENT DATE (6)			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	3	1	4	8	4	8	4	0	0	9	0	0	0	4	2	4	8	4	McGuire Unit 2	0 5 0 0 0 3 7 1 0
0	3	1	4	8	4	8	4	0	0	9	0	0	0	4	2	4	8	4		0 5 0 0 0 3 7 1 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) 20.406(a)(1)(i) 20.406(a)(1)(ii) 20.406(a)(1)(iii) 20.406(a)(1)(iv) 20.406(a)(1)(v) 20.406(e) 50.36(a)(1) 50.36(a)(2) 50.73(a)(2)(i) 50.73(a)(2)(ii) 50.73(a)(2)(iii) 50.73(a)(2)(iv) 50.73(a)(2)(v) 50.73(a)(2)(vi) 50.73(a)(2)(vii) 50.73(a)(2)(viii)(A) 50.73(a)(2)(viii)(B) 50.73(a)(2)(ix) 73.71(b) 73.71(c) OTHER (Specify in Abstract below and in Text, NRC Form 365A)

LICENSEE CONTACT FOR THIS LER (12)  
NAME  
Phillip B. Nardoci, Licensing Engineer  
TELEPHONE NUMBER  
7 1 0 4 3 1 7 1 3 1 - 1 7 4 1 3 1 2

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)										
CAUSE	SYSTEM	COMPONENT	MANUFAC- TURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFAC- TURER	REPORTABLE TO NPDOS	

SUPPLEMENTAL REPORT EXPECTED (14)  
YES (If yes, complete EXPECTED SUBMISSION DATE) X NO  
EXPECTED SUBMISSION DATE (15)  
MONTH DAY YEAR

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

On March 14, 1984 it was determined that there was a possible lack of containment integrity involving the Reactor Vessel Level Indication System (RVLIS) on Unit 2 and Unit 1. A Quality Assurance (QA) review revealed that the tubing welds and containment penetration fitting welds to the tubing had not been tested on Unit 2. The possible lack of containment integrity existed on Unit 2 from July 1983 to March 1984. This condition also existed on Unit 1 from March 1981 to June 1982.

These incidents are attributed to Administrative Deficiency, due to the lack of administrative controls in the design, installation, and follow-up on RVLIS. Unit 1 was in Mode 6 and Unit 2 was in Mode 1 at 100% power at the time of discovery.

Containment integrity was verified on Unit 1 on June 29, 1982 with the puff and pressure test performed by Westinghouse. Unit 2 containment integrity was verified when a leak test was performed on RVLIS on March 14, 1984.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES 8/31/85

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

On March 14, 1984, a QA review of the Unit 2 Reactor Vessel Level Indication System (RVLIS) revealed that the tubing welds and containment penetration fitting [EIIS:PSP] welds to the tubing had not been tested. Since no weld verification existed, containment integrity could therefore not be verified. Upon investigation it was also revealed that this condition had previously existed on Unit 1. The condition on Unit 1 existed from March 1981 to June 1982 (with the unit entering Mode 4 which required containment integrity, up to a power level of 100%). The possible lack of containment integrity existed on Unit 2 from July 1983 to March 1984 (with the unit entering Mode 4 to Mode 1 at power levels up to 100%). The QA review also revealed that this condition existed because RVLIS on both units had not been installed under the specified QA program (QA Condition One).

Containment integrity was verified on Unit 1 on June 29, 1982 with the puff and pressure test performed by Westinghouse. Unit 2 containment integrity was verified when a leak test was performed on RVLIS on March 14, 1984.

These incidents are attributed to Administrative Deficiency, due to the lack of administrative controls in the design, installation, and follow-up on RVLIS. Unit 1 was in Mode 6 and Unit 2 was in Mode 1 at 100% power at the time of discovery.

The installation problem occurred because the RVLIS package was not a typical Duke Power installation, and there was a lack of central control of the project. In most instrument installations, Duke is the designer supplier and installer. The RVLIS package was designed and supplied by Westinghouse. The installation drawings were prepared by Duke and the installation was Duke's responsibility. As a result of unclear responsibility definitions within various internal Duke Power Departments, the instrument detail was incorrectly interpreted resulting in tubing installations with no verifications being performed as required by Q. A. Condition 1.

Duke installed the Unit 1 containment penetration fittings in March, 1981, and conducted an "Instrument Penetration Structural Integrity and Leak Rate Test" on the welds of the containment penetration fittings March 24, 1981. After Duke had installed the RVLIS, Westinghouse inspected (December 1981) the system and performed a puff test (air was blown through the tubing to ensure that it was unobstructed). As a result of the inspection and test, Westinghouse requested some modifications to the RVLIS' installation. These were performed in February 1982. On June 29, 1982 a puff and pressure test was performed by Westinghouse on the RVLIS on Unit 1, verifying the integrity of the welds.

Duke installed the Unit 2 containment penetration fittings in July, 1983, and conducted an "Instrument Penetration Structural Integrity and Leak Rate Test" on the welds of the containment penetration fittings on July 6, 1983. Since the system on each unit did not have to be functional prior to the first refueling, the containment integrity issue was not noticed. Although Duke had performed a leak test and integrity test on the containment penetration fitting weld, the other welds had not been checked. The Westinghouse pressure test would take care of these welds. The pressure test would pressurize the tubing to 2400 psi  $\pm$  100 psi, so that the weld integrity could be verified.

The Technical Specification requirement to assure containment integrity prior to unit operation was not met because no qualified weld procedure was used and no containment leak testing was performed to assure the containment integrity for these installations. This deficiency resulted in a situation where Unit 2 was operating with no proper verification of containment integrity. Although these welds have since been shown to be acceptable, the decision was made to discontinue unit operation until the containment integrity could be verified by a leak test. Therefore, on March 14, 1984, the RVLIS penetrations

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APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

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

on Unit 2 were declared inoperable and Unit 2 started power reduction at 20% per hour. The tubing was successfully leak tested, verifying containment integrity. The penetrations were declared operable, power reduction was stopped (with power level having reached 38%), and load was increased.

Additionally, it was discovered that the RVLIS capillary tubing was not supplied as ASME material. However, since ASME material is not required for this type filled capillary application, as exempted by NA-1130, paragraph C, the only problem this presented was verification that the material could be welded properly to ASME materials. This verification has since been performed. The main deficiency in this incident was that no qualified welding procedure existed when these installations were made. Although these installations have since been justified, the installations should not have been performed without this justification.

The potential for these problems to occur in the future will be eliminated by Duke Power's review and clarification of design requirements associated with containment penetrations. Containment integrity will be specifically reviewed at the end of each outage to assure that all completed or uncompleted modifications have not adversely affected containment integrity. These actions will eliminate future occurrences of this problem.

The lack of containment integrity verification posed no health or safety hazard to the public, as the installations have since been shown to have been acceptable. Although the penetrations [EIIS:PEN] were not properly tested prior to entering Mode 4, their integrity was assured by the tubing and bellows in the Containment Vessel and Auxiliary Building [EIIS:NF]. It was shown by the pressure test, performed by Westinghouse on the Unit 1 RVLIS, that the welds would have maintained containment integrity in a design event. It was also shown by the leak test on the Unit 2 RVLIS that containment integrity would have been maintained in the design event. This leak test pressurized the tubes to 16.9 psi to verify the integrity of the welds.

DUKE POWER COMPANY

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HAL B. TUCKER  
VICE PRESIDENT  
NUCLEAR PRODUCTION

April 24, 1984

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

Subject: McGuire Nuclear Station, Units 1 and 2  
Docket Nos. 50-369 and 50-370  
LER 369/84-09

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 369/84-09 concerning inadequate control of containment integrity which is submitted in accordance with §50.73(a)(2)(v)/(vi). Initial notification of this event was made (pursuant to §50.72 Section (b)(1)(i)) with the NRC Operations Center via the ENS on March 14, 1984. 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*

Hal B. Tucker

PBN:glb

Attachment

cc: Mr. James P. O'Reilly  
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