

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) McGuire Nuclear Station, Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 3 6 9				PAGE (3) 1 OF 0 2						
TITLE (4) Lack of Redundant Overcurrent Protection for DC Welding Circuit Electrical Containment Penetrations																				
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	4	0	5	8	4	8	4	0	1	3	0	0	0	5	0	7	8	4	McGuire Unit 2	0 5 0 0 0 3 6 9
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																		
POWER LEVEL (10)		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, NRC Form 56A)						
		20.405(a)(1)(iii)				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)(ix)										
LICENSEE CONTACT FOR THIS LER (12)																				
NAME Phillip B. Nardoci, Licensing Engineer										TELEPHONE NUMBER AREA CODE 7 0 1 4 3 7 1 3 1 - 7 1 4 1 3 1 2										
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																				
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS										
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"/> NO								

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

On April 5, 1984, as a result of a design engineering review it was determined that Redundant Circuit Protection capable of keeping overload and fault currents within the ratings of electrical penetrations was not provided for two permanently installed DC welding circuits per unit. These circuits supply multiple receptacles inside containment. This is not in conformance with FSAR, Chapter 8, Paragraph 8.3.1.2.7.7. At the time of discovery Unit 1 was in mode 6, and Unit 2 was in mode 1 at 100% power.

The failure to provide redundant circuit protection for these penetrations is attributed to design oversight and the unique nature of the circuits involved. Duke Power Company plans to install Redundant Overcurrent Protective Devices in the circuits by the end of the next refueling outage for each unit. As is our standard procedure, we will continue to test these penetrations for integrity at approximately six month intervals. Should it become necessary to use these circuits prior to installation of the overcurrent protection, the circuits penetration will be tested. The penetrations have been tested since their last use and no integrity problems are indicated. Health and safety of the public were unaffected.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
McGuire Nuclear Station, Unit 1	0 5 0 0 0 3 6 9	8 4	— 0 1 3	— 0 0	0 2	OF	0 2

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

On April 5, 1984, as a result of a design engineering review it was determined that redundant circuit protection capable of keeping overload and fault currents within the ratings of electrical penetrations [EIIS:PEN] was not provided for two permanently installed DC welding circuits per unit. These circuits supply multiple receptacles inside containment through penetrations E-226 and E-399 of each unit. This is not in conformance with FSAR, Chapter 8, paragraph 8.3.1.2.7.7, and is reportable pursuant to 10 CFR 50.73 (a)(2)(v)(vi). The failure to provide redundant circuit protection for these penetrations is attributed to design oversight and the unique nature of the circuits involved. At the time of discovery Unit 1 was in Mode 6, and Unit 2 was in Mode 1 at 100% power.

The electrical penetration assemblies are tested and qualified to withstand certain capabilities of current vs. time. Penetration circuits which are capable of being subjected to currents greater than the continuous rating of its penetration must be provided with redundant overcurrent protective devices [EIIS:BRK]. As stated in the FSAR, this will insure that the failure of a single overload device will not allow a fault current which could cause a loss of mechanical integrity of the penetration.

In the case of two (per unit) permanent DC welding circuits, receptacles are provided at each end of the circuit. During maintenance activities requiring welding inside containment, the output of a given welding machine can be connected to the receptacles outside containment so as to provide DC inside containment. No protective devices are provided in the permanent portion of the circuit. Theoretically, therefore, it would be possible to subject the penetrations in question to currents beyond their proven capabilities and hence cause a loss of integrity.

Duke Power Company plans to install redundant overcurrent protective devices in the subject circuits by the end of the next refueling outage for each unit. As in our standard procedure, we will continue to test these penetrations at approximately six month intervals, so as to maintain a check on integrity. The welding circuits are only subject to use during outages. In the event that it is necessary to use any of the DC welding circuits prior to installation of proper overcurrent protection, the given circuit's penetration will be tested prior to restart of the unit to assure integrity.

If the situation had occurred at McGuire where one of the DC welding circuit penetrations were subjected to current beyond its capabilities and was damaged, the damage would have been detected by the periodic testing referenced above.

The penetrations in question have been inspected since their last use and no integrity problems are indicated. In light of this and the inspections mentioned above, continued operation of McGuire prior to installation of overcurrent protection is justified. The health and safety of the public were unaffected by this event.

DUKE POWER COMPANY

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May 7, 1984

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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 369/84-13

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 369/84-13 concerning a lack of redundant overcurrent protection for DC welding circuit electrical containment penetrations which is submitted in accordance with §50.73(a)(2)(v)(vi). 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: James P. O'Reilly
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