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 2 | 0 5 0 0 0 3 7 0 | 1 OF 0 2 |

TITLE (4)
Active Valves With Commercial Limitorque Actuators

| 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 6 | 0 9 | 8 4 | 8 4 | — 0 1 4 | — 0 0 | 0 7 | 0 9 | 8 4 | | 0 5 0 0 0 |
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| OPERATING MODE (9) | 1 | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11) | | | |
|---|---|---|---|---|---|
| POWER LEVEL (10) | 1 0 0 | 20.402(b) | 20.405(c) | 50.73(a)(2)(iv) | 73.71(b) |
| | | 20.405(a)(1)(i) | 50.36(c)(1) | X 50.73(a)(2)(v) | 73.71(e) |
| | | 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) | 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 | |
|---|---|---|
| | AREA CODE | |
| Phillip B. Nardoci, Licensing Engineer | 7 0 4 | 3 7 3 - 7 4 3 2 |

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)

Commercial grade Limitorque actuators are installed on Unit 2 component cooling system (KC) containment isolation valves 2KC-424B (Inside Containment) and 2KC-425A (Auxiliary Building). Fisher Controls, the supplier for both Class 1E active valves, failed to provide environmentally qualified actuators as required by Duke specifications. The commercial grade actuators were discovered during an attempt (on June 9, 1984) to install T-drain plugs in the motor housing of valve 2KC-424B when it was discovered there was no provision for the plugs. Unit 2 was in Mode 1 100% power at the time of discovery.

This error went undetected because Limitorque model numbers/nameplates do not distinguish qualified actuators and their qualification level from commercial type actuators. Only Limitorque can determine the qualification level by tracing their factory order number back to a bill of material.

Based on evaluation there is a very high confidence level that the subject valves will operate at the onset of an accident, and the probability of a DBE occurring and challenging the KC System before actuator replacement can be made is quite remote. Therefore, actual safety consequences to the station is considered negligible and continued operation for a reasonable period of time is justified. The actuators will be replaced with qualified units as soon as plant availability permits. The qualification level of all other active valves furnished by Fisher Controls will be confirmed, and any necessary corrective actions taken.



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| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | PAGE (3) |
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| McGuire Nuclear Station, Unit 2 | 0 5 0 0 0 3 7 0 | 8 4 | — 0 1 4 | — 0 0 | 0 2 OF 0 2 |

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

Commercial grade Limitorque actuators [EIIS:XCV] are installed on Unit 2 component cooling system (KC) [EIIS:CC] containment isolation valves [EIIS:V] 2KC-424B (Inside Containment) and 2KC-425A (Aux. Bldg.). Fisher Controls, the supplier for both Class 1E active valves, failed to provide environmentally qualified actuators as required by Duke specifications. The commerical grade actuators were discovered during an attempt (on June 9, 1984) to install T-drain plugs in the motor [EIIS:MO] housing of valve 2KC-424B when it was discovered there was no provision for the plugs (Ref. LER 369/84-19 for discussion of the T-drain deficiency). Unit 2 was in Mode 1 at 100% power at the time of discovery. (The corresponding Unit 1 valves do not have Limitorque actuators.)

This error went undetected because Limitorque model numbers/nameplates do not distinguish qualified actuators and their qualification level from commercial type actuators. Only Limitorque can determine the qualification level by tracing their factory order number back to a bill of material.

It is felt that the above deficiency is an isolated case at the McGuire Nuclear Station. Valves 2KC-424B and 2KC-425A receive an automatic containment isolation signal at the onset of an accident; after which the valves would not be required to operate again. Valves are secured in their safety position 40 seconds after they receive their signal and prior to accident environment having any detrimental effect on the actuators. With the exception of some quality control inspections during manufacturing, these actuators are similar to actuators qualified for active outside containment service per Limitorque Qualification Type Test Report B-0003.

All electrical power and control components associated with the subject valves are Class 1E qualified (e.g., feeder breakers, reversing starters, cabling, etc.). The Class 1E feeder breakers [EIIS:BRK] are acceptably coordinated with the associated Class 1E bus breaker, such that electrical faults at the valve operator (postulated to occur only well into the DBE) would be isolated without degrading the Class 1E bus [EIIS:CON] and other safety-related loads. In addition, the two valves have passed their timing requirements in all surveillances performed since Unit 2 startup.

Based on the above technical evaluation, there is a very high confidence level that the subject valves will operate at the onset of an accident, and the probability of a DBE occurring and challenging the KC System before actuator replacement can be made is quite remote. Therefore, actual safety consequences to the station is considered negligible and continued operation for a reasonable period of time is justified. The health and safety of the public were unaffected by this deficiency.

Non-nuclear grade actuators on valves 2KC-424B and 2KC-425A will be replaced with qualified units as soon as necessary equipment is received and plant availability allows adequate time to make the replacement, but no later than during McGuire Unit 2 refueling outage, presently scheduled for January 6, 1985. In addition, the qualification level of all other active electric motor operated valves furnished by Fisher Controls will be confirmed by obtaining the order numbers from operator nameplates and tracing them back through Limitorque. Any additional deficiencies identified through this review will be evaluated, justified or corrected as required.

This deficiency is being reviewed in parallel at other Duke Nuclear Stations and appropriate actions will be taken and reported as required.

**DUKE POWER COMPANY**
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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

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July 9, 1984

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

Subject: McGuire Nuclear Station, Unit 2
Docket No. 50-370
LER 370/84-14

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 370/84-14 concerning active valves with commercial limitorque actuators 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 / PBN

Hal B. Tucker

PBN:scs

Attachment

cc: Mr. James P. O'Reilly
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