



December 13, 1996
LIC-96-0185

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

Reference: Docket No. 50-285

Subject: Licensee Event Report 96-013 Revision 0 for the Fort Calhoun
Station

Please find attached Licensee Event Report 96-013 Revision 0 dated
December 13, 1996. This report is being submitted pursuant to
10 CFR 50.73(a)(2)(i)(B). If you should have any questions, please contact me.

Sincerely,

S. K. Gambhir
Division Manager
Production Engineering

EPM/epm

Attachment

c: Winston and Strawn
L. J. Callan, NRC Regional Administrator, Region IV
L. R. Wharton, NRC Project Manager
W. C. Walker, NRC Senior Resident Inspector
INPO Records Center

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| NRC FORM 366 (4-95) | | | U.S. NUCLEAR REGULATORY COMMISSION | | | APPROVED BY OMB NO. 3150-0104 EXPIRES 4/30/98 <small>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 THE 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.</small> | | | | | | |
| <h2 style="margin: 0;">LICENSEE EVENT REPORT (LER)</h2> <p style="margin: 0;">(See reverse for required number of digits/characters for each block)</p> | | | | | | | | | | | | |
| FACILITY NAME (1) Fort Calhoun Station Unit No. 1 | | | | DOCKET NUMBER (2) 05000285 | | PAGE (3) 1 OF 4 | | | | | | |
| TITLE (4) Failure to Satisfy Surveillance Requirement for Containment Penetration M-80 | | | | | | | | | | | | |
| 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 NAME | DOCKET NUMBER | | |
| 11 | 16 | 96 | 96 | -- 013 | -- 00 | 12 | 13 | 96 | FACILITY NAME | DOCKET NUMBER | | |
| | | | | | | | | | 05000 | | | |
| | | | | | | | | | 05000 | | | |
| OPERATING MODE (9) | | 5 | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§ (Check one or more) (11) | | | | | | | | | |
| POWER LEVEL (10) | | 0 | 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 Glen L. Miller, Special Services Engineer | | | | | | | | TELEPHONE NUMBER (Include Area Code) (402) 533-7359 | | | | |
| COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13) | | | | | | | | | | | | |
| 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) | | | | <input checked="" type="checkbox"/> NO | | | | | | | | |
| ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16) | | | | | | | | | | | | |
| <p>On November 16, 1996 with the plant in Mode 5 for refueling, it was discovered that a pipe nipple, used to pressurize containment penetration M-80 for leak rate testing, did not penetrate the system piping. Record reviews indicated that tests performed during the 1993 and 1995 refueling outages using this pipe nipple were invalid as a result of this problem. Penetration M-80 and associated boundary valves were not checked for leakage as required by Technical Specification 3.5(5) since no pressure was applied to the penetration.</p> <p>The cause of this event was determined to be a lack of complete and thorough corrective action. Piping system nipples which did not penetrate piping boundaries had previously been identified as an issue in 1993. However, the corrective actions taken failed to identify and fix the concern for penetration M-80.</p> <p>A review of all similarly configured penetrations was conducted to verify that no other blocked or undrilled pipe nipples are being used for Type C local leak rate testing. This review verified that all other Type C penetrations are being tested properly. Administrative guidance has been provided to ensure that flow paths are verified following changes in test methodology for Type C local leak rate testing.</p> | | | | | | | | | | | | |

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

BACKGROUND

The containment is the final fission product barrier to the release of radioactivity to the environment in the event of a catastrophic failure of the reactor coolant system. The containment building provides biological shielding for plant and yard areas during normal as well as accident conditions, and provides the housing for the Nuclear Steam Supply System and some engineered safeguards equipment.

The containment, including its associated access openings and penetrations, is capable of withstanding the internal pressures resulting from the plant's Design Basis Accidents (DBAs).

Fort Calhoun Station (FCS) Technical Specification (TS) 3.5 requires leak rate tests be conducted to assure that leakage from the containment and associated systems is maintained within allowable leakage rate limits. TSs require periodic surveillances be performed to assure proper maintenance and repair of the containment structure and penetrations during the plant's operating life.

TS 3.5 requires that the following types of containment leak rate testing be performed:

1. Integrated Leak Rate Tests (Type A) - Type A tests measure the reactor containments overall integrated leakage rate.
2. Containment Penetration Leak Rate Tests (Type B) - Type B tests detect local leaks and measure leakage across each pressure containing or leakage limiting boundary for the containment penetrations.
3. Containment Isolation Valves Leak Rate Tests (Type C) - Type C tests measure containment isolation valve leakage rates.

The demineralized water supply line to the containment enters the containment through penetration M-80, and requires a Type C leak rate test.

EVENT DESCRIPTION

On November 16, 1996, a technician performing IC-ST-AE-3180 "Type C Local Leakage Rate Test of Penetration M-80" noted two unusual or unexpected conditions while the test was being performed. First, there was no indication of moisture when the pipe nipple fill connection was opened, as would be expected from a normally wetted, full piping system. Second, the duration of pressurization and depressurization of the penetration was noticeably shorter than other penetrations the technician had recently tested.

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Subsequent physical examination found the pipe nipple did not penetrate the demineralized water system piping. Record reviews indicated local leak rate testing conducted on penetration M-80 during the 1993 and 1995 refueling outages were invalid, as these tests used the blocked/closed pipe nipple as a pressurization path. Therefore, penetration M-80 and associated boundary valves were not checked for leakage within the required surveillance time as required by FCS TS 3.5(5). This report is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B). The pipe nipple that was intended to be used to pressurize penetration M-80 was modified (drilled out) to allow the Type C leak rate test to be performed. The test was subsequently reperformed satisfactorily.

SAFETY ASSESSMENT

Testing conducted in 1992, and in 1996 after the pressurization path was opened, showed the containment isolation valves allowed no leakage at the design basis accident pressure of 60 psig. Also, the valves in the demineralized water system are exposed to only very pure water under low flow conditions and would not be expected to degrade excessively. Therefore, this event had no adverse affect on either plant or public safety.

CONCLUSIONS

The root cause of this event has been determined to be a lack of complete and thorough corrective action.

Piping system nipples which did not penetrate piping boundaries and allow pressurization of penetrations had been previously identified on containment penetrations M-8 and M-20. The testing of a number of type C piping system penetrations, including M-80, M-20, and M-8, was modified following test methodology changes OPPD made in response to NRC Information Notice (IN) 92-20 "Inadequate Local Leak Rate Testing." In 1993 these new procedures were first used. During the testing it was discovered that the piping nipples for two penetrations, M-8 and M-20, had not been drilled into the penetrations during initial construction. A corrective action document, Incident Report (IR) 930278, records the condition of penetrations M-8 and M-20 and the corrective actions taken as a result of the problems noted. These corrective actions failed to adequately address the possibility that other penetrations of similar configuration and test methodology may have a similar problem. Penetration M-80 is configured much like penetrations M-8 and M-20. The fill point for M-80 was changed at the same time that the M-8 and M-20 procedures were changed.

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CORRECTIVE ACTIONS

1. A review of all similarly configured penetrations was conducted to verify that no other blocked or undrilled pipe nipples are being used for Type C local leak rate testing. This review verified that all other Type C penetrations are being tested properly.
2. Administrative guidance has been provided to ensure that flow paths are verified following changes in test methodology for Type C local leak rate testing.

PREVIOUS SIMILAR EVENTS

The event noted in 1993 for penetrations M-8 and M-20 was corrected as the tests were being run. No additional instances of type C containment penetrations being improperly tested due to piping nipples not having been properly configured have been found.