LICENSEE EVENT REPORT (LER)

| Facility Name (1) | Docket Number (2) | Page (3) |
|---|---|---|
| QUAD-CITIES NUCLEAR POWER STATION, UNIT ONE | 0 5 0 0 0 2 5 4 | 1 of 0 4 |

Title (4) PIPING SUPPORT OUTSIDE COMPLIANCE WITH SAFETY ANALYSIS REPORT DUE TO CONSTRUCTION ERROR.

| 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 5 0 0 0 |
| 1 1 | 3 0 | 8 7 | 8 7 | 0 2 6 | 0 0 | 1 2 | 1 9 | 8 7 | | 0 5 0 0 0 |

| OPERATING MODE (9) | 2 | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| POWER LEVEL (10) | 0 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) | ___ 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) |
| | | ___ 20.405(a)(1)(iii) | ___ 50.73(a)(2)(i) | ___ 50.73(a)(2)(viii)(A) | |
| | | ___ 20.405(a)(1)(iv) | X 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 |
|---|---|
| GARY TAGATZ, TECHNICAL STAFF ENGINEER, EXTENSION 2152 | AREA CODE 3 0 9 6 5 4 - 2 2 4 1 |

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)

On November 30, 1987, Quad Cities Unit One was in the REFUEL mode at zero percent reactor thermal power. At 1130 hours, the Station was notified that a piping support located on 1B Core Spray discharge line did not comply with the Final Safety Analysis Report (FSAR) criteria for allowable stress. However, all systems were operable. This event was reported to NRC Region III in accordance with the agreement for the Piping Configuration Verification Program.

The cause of this situation is construction error during a modification in 1980 because the as-built configuration was not in conformance with as-designed/engineered drawings used for the original piping stress analysis.

Corrective action was to shim the excess clearances between the piping lugs and the support's wide flange. The new modification program in effect should prevent recurrence. This report is provided per 10CFR50.73(a)(2)(ii).



IE22
1/1

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2511 MWt rated core thermal power. Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

EVENT IDENTIFICATION: A piping support was found to be outside the Safety Analysis Report for allowable stress due to construction error.

A. CONDITIONS PRIOR TO EVENT:

Unit: One Event Date: November 30, 1987 Event Time: 1130
Reactor Mode 2 Mode Name: Refuel Power Level: 00%

This report was initiated by Deviation Report D-4-1-87-105

REFUEL Mode(2) - Refuel - In this position interlocks are established so that one control rod only may be withdrawn when flux amplifiers are set at the proper sensitivity level and the refueling crane is not over the reactor. Also, the trip from the turbine control valves, turbine stop valves, main steam isolation valves, and condenser vacuum are bypassed. If the refueling crane is over the reactor, all rods must be fully inserted and none can be withdrawn.

B. DESCRIPTION OF EVENT:

On November 30, 1987, at 1130 hours, Quad Cities Unit One was in the REFUEL mode at zero percent reactor thermal power. At this time, the Station was notified by the Boiling Water Reactor Engineering Department (BWRED) that piping support (In-service Inspection (ISI) support number) [SPT] 1404-G-214 located on 1B Core Spray pump [BM, P] discharge line 1-1404-12" DX did not comply with the Final Safety Analysis Report (FSAR) criteria for allowable stress.

On April 1, 1987, Commonwealth Edison (CECo) undertook the Piping Configuration Verification Program (PCVP) to verify the existence and location of pipe supports as well as the details utilized for the construction of branch connections with as designed/analyzed configurations for Quad Cities Units One and Two. The scope of the program consists of safety related piping, greater than four inches in diameter, which was analyzed by Architect/Engineers (A/E) as part of the Torus Attached Piping (TAP) Project in the Mark I Program during the early 1980's.

The piping supports and piping systems affected by this event were analyzed and determined to be operable according to PCVP criteria used to determine operability. NRC Region III was notified at 1130 hours in accordance with PCVP agreement with the NRC.

C. APPARENT CAUSE OF EVENT:

This event is being reported according to 10CFR50.73(a)(2)(ii)(B), which requires the reporting of any event or condition that resulted in the nuclear power plant being in a condition that was outside the design basis of the plant.

The apparent cause of this event was construction error involving A/E and contractor personnel. The PCVP walkdown and model review identified a discrepancy between support drawing M-1610-18, Revision B, ISI support number 1404-G-214, and the existing "as-built" configuration. The clearance specified between the piping lugs and the support's wide flange exceeds the specified tolerance. It appears that during the original TAP modification the construction contractor failed to build the support to the specified configuration. It also appears that the A/E failed to perform an as-built reconciliation of the drawings used in the original piping stress analysis. The re-analysis incorporated the results of the PCVP walkdown and model review and as a result of these differences, FSAR compliance was not achieved at this location.

D. SAFETY ANALYSIS OF EVENTS:

The safety of the plant and personnel were not affected during this event. The formal re-analysis of model Q1.10.2, Core Spray pump 1A/B Discharge line has demonstrated operability for this system even though FSAR criteria was not met. FSAR compliance requires that stresses and/or pipe support reactions satisfy established code allowables, whereas a somewhat less conservative acceptance criteria is permitted for the purpose of an operability assessment. FSAR compliance analysis considers the piping stresses and support reactions acting at those locations under analysis whereas, operability compliance analysis considers the overall effect on the piping system due to the stresses encountered.

E. CORRECTIVE ACTION:

The corrective action to return piping support, ISI support number 1404-G-214 on 1B Core Spray discharge line to FSAR compliance was to shim the excess clearance between the piping lugs and the support's wide flange. The work was completed on December 18, 1987 under Nuclear Work Request (NWR) Q62124.

To prevent recurrence of this event, BWRED now requires a dimensional verification be performed by a certified quality control inspector for all Safety Related modifications. Resolution of deficiencies will be accomplished before the modification test may be signed off as completed. This is part of the new modification program implemented in April, 1987.

F. PREVIOUS EVENTS:

| LER NUMBER | TITLE |
|---|---|
| 254/86-022 | Containment Atmospheric Monitoring Line does not meet code allowable stress limits. |
| 254/86-024 | U-1 and U-2 Residual Heat Removal Service Water Piping Supports exceed code stress allowable limits. |
| 254/86-025 | Torus Attached Small Bore Piping does not meet code allowable limits. |
| 254/87-008 | 1C Residual Heat Removal Service Water Pump piping in excess of allowable stress due to sheared anchor bolts. |
| 254/87-011 | Residual Heat Removal Support Embedment Plate in excess of allowable stress due to improper anchor strap spacing. |
| 265/87-019 | Piping Supports Outside Compliance with Safety Analysis Report Due to Design Error. |

G. COMPONENT FAILURE DATA:

There was no component failure identified in this event.

**Commonwealth Edison**
Quad Cities Nuclear Power Station
22710 206 Avenue North
Cordova, Illinois 61242
Telephone 309/654-2241

RLB-87-370

December 18, 1987

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

Reference: Quad-Cities Nuclear Power Station
Docket Number 50-254, DPR-29, Unit One

Enclosed please find Licensee Event Report (LER) 87-026, Revision 00, for Quad-Cities Nuclear Power Station.

This report is submitted in accordance with the requirements of the Code of Federal Regulations, Title 10, Part 50.73(a)(2)(ii)(B), which requires the reporting of any event or condition that resulted in the nuclear power plant being in a condition that was outside the design basis of the plant.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

R. L. Bax
Station Manager

RLB/MSK/ekb

Enclosure

cc: I. Johnson
R. Higgins
INPO Records Center
NRC Region III

IE22
1/1

0370H/0183Z