

CP&L

Carolina Power & Light Company

P. O. Box 101, New Hill, N. C. 27562
October 8, 1982

Mr. James P. O'Reilly
United States Nuclear Regulatory Commission
Region II
101 Marietta Street, Northwest (Suite 3100)
Atlanta, Georgia 30303

NRC-13

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
1985-89 - 900,000 KW - UNITS 1 & 2
CONCRETE-GROUT INTERFACE FAILURE OF
EMBED FRAME - ITEM 99

Dear Mr. O'Reilly:

Attached is the final 10CFR50.55(e) report on the subject deficiency which describes the problem and the corrective action taken. With this report, Carolina Power & Light Company considers this matter closed.

If you have any questions regarding this matter, please do not hesitate to contact me.

Yours very truly,



R. M. Parsons
Project General Manager
Shearon Harris Nuclear Power Plant

RMP/bs

Attachment

cc: Mr. G. Maxwell (NRC-SHNPP)
Mr. V. Stello (NRC)

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USNRC REGION II
ATLANTA, GEORGIA

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CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT

UNIT NO. 1

CONCRETE-GROUT INTERFACE FAILURE OF EMBED FRAME

Final Report

October 8, 1982

Reportable Under 10CFR50.55(e)

SUBJECT: Shearon Harris Nuclear Power Plant - Unit No. 1
10CFR50.55(e) Reportable Deficiency
Grout-Concrete Interface Failure On An Equipment Pad

ITEM: Grout to concrete bond under an equipment pad frame failed after having welding performed on it.

SUPPLIED BY: N/A - It was not a failure of vendor material.

NATURE OF DEFICIENCY: Embedded equipment frame was noticed to move when the welder performing the welding was stenciling his identification mark on the frame.

DATE PROBLEM OCCURRED: September 4, 1982

DATE PROBLEM REPORTED: September 9, 1982 - CP&L (Mr. N. J. Chiangi) notified the NRC Region II (Mr. A. Hardin) that this item was reportable under the provisions of 10CFR50.55(e).

SCOPE OF PROBLEM: The problem involved one equipment foundation on which DC panel 1A-2 was to set. The problem occurred while welding shim plates on the embedded steel frame so the panel could be set.

SAFETY IMPLICATION: Although the DC panel is not nuclear safety related, it is mounted seismically since it sets in such close proximity to some nuclear related panels. If the failure of the pad had gone undetected, it would have resulted in the DC panel falling into and possibly damaging a piece of safety related equipment during a seismic event.

REASON DEFICIENCY IS REPORTABLE: If left uncorrected, the DC panel would not have sufficient anchorage to prevent it from falling into a safety related piece of electrical equipment and thereby jeopardize the safe shutdown of the plant during a seismic event.

CORRECTIVE

ACTION:

Embed frame was removed, concrete curb was chipped completely out and the curb and frame were replaced. In addition equipment foundation on the same elevation (286 elevation of reactor Auxiliary Building) placed at the same time and having similar welding details for mounting equipment were tested. The test consisted of welding studs to the tops of the frames and applying a tensile force equal to the allowable load of the nelson studs welded to the embed frames and embedded in concrete. Five such tests were conducted with no failures and no evidence of distress occurring in the foundation. In addition, due to the uncertainty of how or why the failure occurred, two other equipment foundations, the auxiliary control panel and the engineering safeguards sequencer panel, which were placed at the same time as the DC panel foundation was completely removed and replaced. Prior to their replacement, a tensile test as described above was performed on the sequencer panel foundation, this time loading the pad to failure. Failure of the system occurred in the high-strength studs attached to the pad used to apply the tensile load. Again, no visible distress occurred in the foundation. The load at failure was approximately two times the allowable design load for the embedded nelson stud.