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October 29, 1982

Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Re: Catawba Nuclear Station
Units 1 and 2
Docket Nos. 50-413 and -414

Dear Mr. O'Reilly:

Pursuant to 10 CFR 50.55e, please find attached a supplemental response to Significant Deficiency Report SD 413-414/82-12.

Very truly yours,

Hal B. Tucker

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RWO/php
Attachment

cc: Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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Duke Power Company
Catawba Nuclear Station
Supplemental
Significant Deficiency Report

Report Number: SD 413-414/82-12

Report Date: October 29, 1982

Facility: Catawba Nuclear Station, Units 1 and 2

Identification of Deficiency:

Possible incorrect end distances for Type 1 and 2 embedded plates with Nelson headed anchors.

Supplemental Corrective Action:

To determine the applicability of this deficiency to other units in the Duke Power Company system, surveys were conducted at Oconee and McGuire Nuclear Stations. The results of these surveys indicate that nonconformances do exist, but if they had gone undetected, public safety would not have been jeopardized.

Oconee Nuclear Station:

Seventy-nine (79) embedded strip plates were randomly selected in Unit 3 Auxiliary, Reactor, and Turbine Buildings and eleven (11) plates were randomly selected in the Standby Shutdown Facility (SSF) for evaluation. Each plate end was ultrasonically tested (U.T.) to locate the first row of Nelson Studs. Results of the U.T. found that of the seventy-nine (79) Unit 3 embedded strip plate ends tested, thirty-eight (38) had nonconforming stud locations at the ends of the plates. Analysis of the nonconforming plate ends with attachments indicates that none of the plates exceed allowable stress levels or represent any significant safety problem, and that the attachments would perform their intended safety functions without any required physical modifications. Based on Unit 3 results, it is not anticipated that any significant safety problems exist on Oconee Units 1 and 2. To confirm this, similar investigations are scheduled for Units 1 and 2 during the next available refueling outages (currently scheduled for late 1983).

Results of the SSF structure U.T. testing indicated no nonconformances existed for the eleven (11) embedded plates tested. Based on the different SSF construction control and quality assurance inspections used during erection of embedded strip plates and the findings from the U.T. examinations, the SSF structure has been determined to have no embedded strip plate nonconformance problems similar to Catawba NCI 13632 and Reportable Item CA-82-22.

For future attachments to the "end" zone of Type 1 and 2 embedded plates, appropriate Design Engineering Department and Nuclear Production Department procedures have been modified to account for the possibility of misplaced studs in the end region of the plates. Specifically, whenever an attachment is to be placed within 12 inches of the "end" of a Type 1 and 2 embedded plate, an

ultrasonic test will be required to determine the actual location of the first row of studs. This actual stud location will then be incorporated into the design of the attachments, and the actual plate capacity versus the attachment load compared and verified to be acceptable. Applicable design drawings will be revised by January 1, 1983 to identify that embedded strip plate end stud locations nonconformances do exist and that all plates require verification in accordance with the aforesaid procedures prior to any future attachments being made.

McGuire Nuclear Station:

Seventy-four (74) embedded strip plates were randomly selected at McGuire.

Each plate end was ultrasonically tested (U.T.) to determine the Nelson Stud location in relation to the plate end. Results of the U.T. found that eleven (11) of seventy-four (74) plate ends had an attachment within six (6) inches of a free end. The eleven (11) plate ends were evaluated and found acceptable by calculating the bending stresses induced by the attachment loads and comparing them to the American Institute of Steel Construction (AISC, 1969) and Final Safety Analysis Report (FSAR) allowable stresses. Other results of the surveillance program showed that approximately sixty (60) percent of the seventy-four (74) embedded plate ends ultrasonically tested were nonconforming according to miscellaneous design drawings.

Results of the surveillance program and bending stress analysis conclude the embedded plates are nonconforming according to miscellaneous steel drawings, but none of the embedded plate ends were found to be overstressed.

The following steps will be taken to ensure embedded plates are not overstressed:

1. All future attachments to existing embedded plates made within the last 6 inches of any plate end shall not be installed until an examination, such as U.T., is performed on the plate end to determine studs are installed in accordance with design drawings. Plate ends include splices in plates as well as termination of the plate.

   If the examination reveals that the studs are not within one (1) inch of the plate end, the plate is to be nonconformed and Design Engineering contacted before the hanger is installed. An NCI will identify the hanger and specific location on the plate to ensure an evaluation is completed.

2. Existing procedures for installation of embedded plates will be modified as necessary to provide positive verification and documentation that studs are provided as required on future embedded plate installations (plate additions, etc.).

Applicable Construction and Quality Control Procedures will be revised to incorporate the above recommendations to prevent installation of nonconforming plates or attachments in a manner which would overstress embedded plates.