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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

April 14, 1988

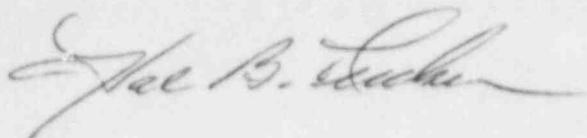
U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Subject: RII/WC
Catawba Nuclear Station
Docket Nos. 50-413 and 50-414
IE Report 50-413,-414/88-09

Dear Sir:

Please find attached a response to the Violation 414/88-09-01 which was identified in the subject Inspection Report.

Very truly yours,



Hal B. Tucker

LTB/6024/sbn

Attachments

xc: Dr. J. Nelson Grace, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Mr. P. K. Van Doorn
NRC Resident Inspector
Catawba Nuclear Station

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Duke Power Company
Reply to Notice of Violation
50-414/88-09-01

10 CFR Part 50, Appendix B, Criterion IX, as implemented by paragraph 17.2.9 of Duke Power Company Topical Report Duke-1, requires that measures be established to assure that special processes including nondestructive testing are controlled and accomplished in accordance with applicable criteria.

Technical Specification 3/4.4.5 and Surveillance Requirements 4.4.5.0 require that each generator be determined operable prior to increasing Tavg above 200° F by performing the required Eddy Current (ET) inspection and plugging all tubes that show wall degradation \geq 40%.

Contrary to the above, in August 1987, measures to control and accomplish nondestructive testing (ET of steam generator tubes) were inadequate in that ET data for two steam generator tubes (one in A generator and one in D generator) were accepted when, in fact, the data showed both tubes met the plugging criteria (\geq 40% wall degradation). This violation resulted in a violation of Technical Specification 3/4.4.5 in that the plant was operated from August 1987 until December 1987, with two steam generator tubes that should have been plugged.

Response:

(1) Admission or Denial of Violation

Duke Power Company admits the violation. However, as stated it implies a lack of "measures to control and accomplish nondestructive testing". Two personnel errors were made in the interpretation of eddy current test data for S/G's A and D in August 1987. These errors in no way indicate a lack of "measures to control and accomplish nondestructive testing". The violation of T/S 3/4.4.5 was reported in Licensee Event Report 414/88-02.

(2) Reasons for Violation of Technical Specification 3/4.4.5

The applicable criteria for eddy current inspections at Catawba is found in Technical Specification 3/4.4.5 and Duke Nuclear Guide 1.83. Procedures ISI-460 and ISI-464 were written to control the analysis of eddy current inspection data. These procedures require a documented review of data. The NRC has not identified any regulatory requirement requiring a second evaluation of eddy current data. The NRC stated in IE Report 50-413/87-38 and 50-414/87-38 that "although there is not a requirement to conduct a second evaluation of the data, that the economical consequences associated with a missed leaking tube through the use of a single analyst could be very expensive.

Quality Assurance personnel informed the inspector that Duke Power had recognized the economic risk and had begun the process of establishing a second review in July 1987. Our plans were to have personnel trained and procedures in place to implement a second review of eddy current inspections no later than February 1, 1988 for all steam generators. We were able to meet this schedule for implementing a second review.

The incident in question was due to personnel error. The defect indication in tube R49/C64 was relatively small in amplitude and located at the roll transition area at the top of the tubesheet. Geometry changes and the proximity of the tubesheet edge produce large amplitude signals in this region, making recognition of small signals difficult. The defect signal

in tube R15/C77 was located in a free span area and was not affected by any geometry changes or structural items; however, the signal was small in amplitude and ambiguous in nature. The signal was noticed but misinterpreted by the analyst.

(3) Corrective Actions Taken and Results Achieved

The flaw signals in these two tubes were discovered by the Duke analysts who were being trained to implement the second review program. The review was initiated by Duke based on visual indications on Tube R49/C64 found while performing a secondary side visual inspection. Duke Power has re-evaluated all eddy current test data taken at Catawba during the August 1987 outage. No other cases of misinterpretation were found.

Since implementation of a second review of eddy current inspections, 23,814 individual tube inspections have received a second review. First analysis by the contractor properly dispositioned 23,810 tubes or, 99.9% and properly identified 53 of 57 or 93% of the pluggable indications. These numbers include the tubes identified in this alleged violation, and do not indicate inadequate control measures. On the contrary they are indicative of proper control of a process involving human judgement. In addition out of approximately 200,000 steam generator tube ET inspections on the Duke nuclear system, no steam generator tube leaks have occurred as a result of misinterpretation of ET data.

In summary, the procedures in place at that time provided adequate measures to control ET testing of steam generator tubes to meet the Regulation requirements and Duke Power commitments. Program changes that started in July 1987, indicate that Duke Power also recognizes the economic concerns and risk of not having an independent second analysis of eddy current inspection data. This is not a programmatic violation.

(4) Corrective Actions to be Taken to Avoid Further Violations

The corrective actions outlined in (3) above will avoid further violations.

(5) Date of Full Compliance

Duke Power Company is presently in full compliance and maintains that adequate measures to control and accomplish nondestructive testing have always been maintained.