

DUKE POWER COMPANY

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VICE PRESIDENT
NUCLEAR PRODUCTION

July 9, 1984 12 A10:08

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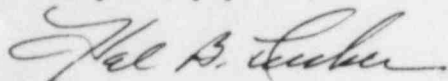
Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

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

Dear Mr. O'Reilly:

Pursuant to 10 CFR 50.55e, please find attached a Significant Deficiency Report No. SD 413-414/84-16.

Very truly yours,



Hal B. Tucker

LTP/rhs

Attachment

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

NRC Resident Inspector
Catawba Nuclear Station

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DUKE POWER COMPANY
CATAWBA NUCLEAR STATION

Report Number: 413-414/84-16

Report Date: July 9, 1984

Facility: Catawba Nuclear Station Units 1 and 2

IDENTIFICATION OF DEFICIENCY: Unconsidered effects of superheated steam generated by steam generator for Main Steam Line Break analysis could result in increased doghouse temperatures outside containment. This could possibly preclude safety related components from performing their intended safety function. The potential deficiency was identified May 11, 1984.

Initial Report: On June 8, 1984, Mr. Kerry Landis, NRC Region II, Atlanta, Georgia, was notified by telephone of the subject deficiency by L. M. Coggins and R. R. Weidler of Duke Power Company, Charlotte, N. C. 28242.

Component and/or Supplier: Duke Power Company is responsible for the doghouse environmental analysis. The MSLB analysis is accomplished utilizing input information supplied by Westinghouse, Water Reactor Division.

Description of Deficiency: Revised information has been received from Westinghouse giving mass/energy release rates for a Main Steam Line Break (MSLB) inside containment. The original Westinghouse information indicated a saturated steam condition from the steam generators; however, revised information identifies steam generator tube uncover and the formation of superheated steam.

Duke Power had previously assumed the same saturated steam condition for a MSLB in the doghouses located outside containment. Equipment important to safety for mitigating an MSLB in the doghouses has been identified (see list in corrective action below). Environmental qualification parameters for the doghouses are currently based on original analysis results of 330°F. Utilizing the new data from Westinghouse, revised Duke Power environmental analysis with superheated steam conditions indicates an increase in doghouse temperature from the present 330°F parameter to a 440°F revised maximum doghouse temperature.

ANALYSIS OF SAFETY IMPLICATIONS: Subjecting safety related components to temperatures higher than the qualification basis of 330°F could possibly preclude components from performing their intended safety functions following a postulated MSLB in either doghouse.

Corrective Action: In order to resolve the subject problem, analyses are being performed by Duke Power Company and Westinghouse. Safety related equipment potentially impacted by MSLB temperatures higher than the equipment qualification envelopes is as follows:

- * Main Steam Isolation Valves
- * Main Steam Isolation Bypass Valves
- * Auxiliary Feedwater Flow Instrumentation
- * Doghouse Level Instrumentation
- * Feedwater Isolation Valves
- * Feedwater Purge Valves
- * Auxiliary Feedwater Isolation Valves
- * Feedwater Supply to Upper Nozzle Isolation Valves
- * Tempering Isolation Valves
- * Auxiliary Feedwater Pump Turbine Steam Supply Isolation Valve
- * Main Steam Low Point Drain Isolation Valve
- * Steam Generator Power Operated Relief Valves
- * Steam Generator Power Operated Relief Valve Isolation Valves
- * Steam Generator Blowdown Isolation Valves
- * Steam Generator Blowdown Isolation Bypass Valves

Westinghouse is performing a main steam line break analysis for a spectrum of break sizes and power levels (matrix) to determine when required safety system actuations occur relative to the initiation of superheat in the affected doghouse. Results will be used in determining if required safety functions can be performed prior to the time doghouse equipment qualification parameters are exceeded. Where potential failures of safety related equipment can be shown to occur, additional systems analyses will be performed to determine acceptability of consequences. If any unacceptable consequences are shown following completion of the analysis, then Duke Power will develop and implement the necessary corrective measures.

The Westinghouse analysis work to determine the matrix of protection system actuation and superheat initiation times will be completed by July 31, 1984. The target date for Duke Power to evaluate the Westinghouse analysis and determine final actions required to resolve this issue, if any, is August 31, 1984. A supplementary report detailing the results of these activities will be forthcoming on or before this date.