

DUKE POWER COMPANY

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October 31, 1983

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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 21, please find attached Significant Deficiency Report  
SD 413-414/83-15.

Very truly yours,

*H.B. Tucker*

Hal B. Tucker

LTP/php

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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Catawba Nuclear Station

Report #: SD 413-414/83-15

Report Date: October 31, 1983

Facility: Catawba Nuclear Station - Units 1 & 2

Identification of Deficiency:

Westinghouse has reported to us that their SA1 differential relays contain tantalum capacitors that are subject to electrolyte leakage. Also reported to us is a possibility that some SA1's may contain defective SCR's. These problems were brought to our attention through letters dated September 12 and October 5 describing the potential problems with an SA1 bought for McGuire. Subsequent conversations with Westinghouse have confirmed that the potential problems are generic in nature and therefore could exist on Catawba relays also.

Initial Report:

On October 24, 1983, Mr. Greg Nejfelt of the NRC Region II office was contacted and notified of this item by L. M. Coggins, M. L. Childers, T. L. Utterback, and E. M. Brinson (all of Duke Power Co., 422 S. Church Street, Charlotte, NC 28242).

Component and/or Supplier:

This deficiency pertains to Westinghouse type SA1 differential relays.

Description of Deficiency:

Westinghouse has discovered that given tantalum capacitors used internal to their SA1 relays are subject to electrolyte leakage which could cause component corrosion, possible capacitor failure, and possible false trip output on the relay itself.

Westinghouse has also noted that SA1 relays which contain SCR's manufactured by ST Semicon are subject to false tripping. Note that due to manufacturing dates, it is not believed that the relays at Catawba contain this SCR.

At Catawba, the SA1 relay is used to protect the Class 1E diesel generators (emergency AC on site power sources) against short circuits. Each of the four diesel generators is protected by its own respective relay. If a given SA1 produces a trip output, the affected diesel generator's main circuit breaker will trip. A shutdown of the engine and generator will also occur.

Analysis of Safety Implications:

If a situation were to occur at Catawba in which all offsite power was lost, the two Class 1E diesel generators per unit (Train A and Train B) would provide the required on-site AC power. In the event that a false trip of an SA1 were

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to take place during the above event, one of the on-site AC sources would be lost until it could be determined that a false trip had occurred. In order to restore power to the affected train, the lockout relay tripped by the SA1 would have to first be reset. The affected diesel generator would then have to be restarted and loaded.

In the situation described above, there would be no effect on the health and safety of the public. The AC power needed to shut down the plant would be provided by the unaffected diesel generator.

Duke Power has employed the Westinghouse SA1 relays in various applications for years (since 1960's) both for 1E and non Class 1E service. No false trips of these relays have ever been reported attributable to either capacitor leakage or SCR failures. Furthermore, all these relays on the Duke system are inspected and tested on a regular basis (12-24 month cycle depending upon location). No capacitor electrolyte leakage has ever been observed. The probability of a false trip due to the deficiencies described in this report is, therefore, judged extremely remote.

#### Corrective Action

Westinghouse intends to make available to us new replacement capacitors that are hermetically sealed as well as new SCR's, if required. It is our intention to remove the SA1 relays from service, replace the capacitors, inspect the SCR and replace if necessary, before August 1, 1984. Design Engineering will arrange shipment of parts and Transmission Department will be responsible for installation and checkout.