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October 20, 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 50-414

Dear Mr. O'Reilly:

Pursuant to 10 CFR 50.55e, please find attached Significant Deficiency Report SD 413-414/82-21.

Very truly yours,

H. B. Tucker /bs

Hal B. Tucker

RWO/php
Attachment

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

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NRC Resident Inspector
Catawba Nuclear Station

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CATAWBA NUCLEAR STATION

REPORT NUMBER: SD 413-414/82-21

REPORT DATE: October 20, 1982

FACILITY: Catawba Nuclear Station Units 1 and 2

IDENTIFICATION OF DEFICIENCY:

Potential failure to activate the safeguards system due to possible failure of the switch contacts which shunt the proving lamp. Deficiency identified August 16, 1982 by Westinghouse (received August 23, 1982).

INITIAL REPORT:

On September 20, 1982, A. Ignatonis, NRC Region II, Atlanta, Georgia was notified of the deficiency by W. O. Henry and J. E. Thomas of Duke Power Company, Charlotte, North Carolina.

COMPONENT AND/OR SUPPLIER:

The component which could potentially fail is a test switch contact that is part of the Solid State Protection System manufactured by Westinghouse.

DESCRIPTION OF DEFICIENCY:

During review of a schematic diagram of the Solid State Protection System (SSPS), redrawn for purposes of consolidation, Westinghouse engineers uncovered an undetectable failure which could exist in on-line testing circuits for relays in the system.

Periodic testing of the SSPS includes actuation of master relays which actuate Safeguards systems. When a preselected master relay is energized, a proving lamp in series with the output (slave) relay coil confirms electrical continuity. Operation of the relay is prevented by reducing the circuit voltage from 120 VAC to 15 VDC during test. Subsequent tests from the Safeguards Test Cabinets energize (120 VAC) each output relay to confirm actuation of the Safeguards device. In those instances where actuation of the final device cannot be tolerated, a proving lamp in the Safeguards test circuits verifies relay contact movement, field wiring and electrical continuity through the final device. Operation of the master relay by means of the pushbutton test switch removes the shunt from the SSPS proving lamp and allows the 15 VDC to energize it confirming the continuity of the output relay coil.

Upon completion of the master relay and output relay coil continuity tests, 120 VAC circuit voltage is restored. However, if the switch contacts which shunt the proving lamp should fail to reclose as expected, 120 VAC would be applied to the lamp in event the system were called upon to operate. Depending on the output relay coil impedance and the number of output relays being operated by the master relay contacts, the current through the lamp could cause it to burn open before the output relay(s) energized. In such an instance associated Safeguards devices in the affected train would not actuate.

ANALYSIS OF SAFETY IMPLICATIONS:

A test switch contact failure could cause associated safeguard devices in the affected train not to operate.

CORRECTIVE ACTIONS:

A revision to the SSPS test procedure will be made by Westinghouse to ensure the relay test circuits in the SSPS operated properly when the system is returned to its normal operating mode. This action will be complete prior to fuel load.