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DUKE POWER

March 31, 1992

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Subject: Catawba Nuclear Station, Unit 2  
Docket No. 50-414  
Fuel Handling Ventilation Filter Heaters Inoperable Greater Than 7 Days  
Special Report

Pursuant to Catawba Nuclear Station Technical Specification 3.9.11 Action b., find attached a Special Report concerning the inoperability of the Unit 2 Train B Fuel Handling Ventilation filter heaters. The heaters were declared inoperable on March 1, 1992.

Very truly yours,

M. S. Tuckman

Attachment

CRL/SRHTR331.92

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Senior Resident Inspector

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## SPECIAL REPORT

### CATAWBA NUCLEAR STATION

#### UNIT 2 TRAIN B FUEL HANDLING VENTILATION FILTER HEATER INOPERABLE FOR MORE THAN 7 DAYS

Catawba Technical Specification 3/4.9.11 requires at least one train of the Fuel Handling Ventilation Exhaust System to be operable with irradiated fuel in the storage pool. With the heaters inoperable, restoration must be made within 7 days, otherwise, a special report must be submitted.

On March 1, 1992, low differential temperature across the Unit 2 Train B Filter Unit was observed. A Work Order was initiated to investigate the cause of the low differential temperature. The problem was identified as a failed disconnect switch located on the heater control panel. The hand operated disconnect switch is a General Electric model THC 33S, and is used as an electrical safety device to disable the heater circuit during maintenance. The switch was supplied by Industrial Engineering and Equipment Company (INDEECO) as part of the heater. Duke Power purchased the heater as part of the filter train package from Mine Safety Appliances Company (MSA). The disconnect switch, along with the heaters, are classified as Nuclear Safety Related/QA Condition 1 components.

A generic problem has previously been identified with these disconnect switches. Two previous failures with the switches occurred on April 4, 1989 and March 5, 1990. As a result of these failures, a Problem Investigation Report (PIR) was initiated on April 18, 1990. After further investigation by Duke Power Design Engineering, shrinkage of an insulation material inside the disconnect switch was revealed as the root cause of the equipment failures. This insulation material, in the form of a sheet, is placed in the switch to isolate the current carrying components from ground. During heater operation, the center phase portion of the insulation will shrink due to heat from normal operating current. As shrinkage continues, the center phase will eventually short to ground, thus rendering the heater inoperable.

The April 4, 1989 switch failure was corrected under the work request system. At a later time, the disconnect switches were no longer available from the vendor. As a result, a Station Problem Report (SPR) was initiated on May 14, 1990 to completely remove the switches from the control panels. Future circuit isolation requirements will be satisfied by opening and tagging the Motor Control Center breaker. The March 5, 1990 failure was corrected by implementing Exempt Change CE-2954, which removed the switch from the control panel. Plans were to delete the remaining disconnect switches under the Nuclear Station Modification (NSM) process at a later date.

Due to the recent failure of the Unit 2 Train B Fuel Handling Ventilation System disconnect, Exempt Change CE-3654 was initiated to remove the disconnect switch from the associated Train B heater control panel. A Work Order was initiated to implement Exempt Change CE-3654. The disconnect switch has been removed. Satisfactory completion of the retest will allow the associated work order to be closed out, thus rendering the affected train to operable status.