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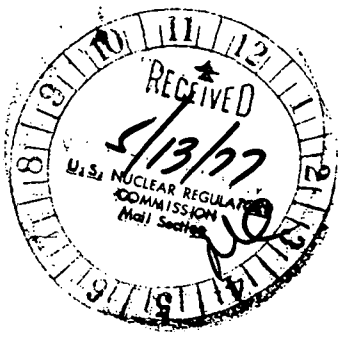
May 10, 1977



Mr. Donald K. Davis, Acting Chief
Operating Reactors - Branch 2
Division of Operating Reactors
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Dresden Station Units 2 and 3
Control Rod Drive Uncoupling Program
NRC Docket Nos. 50-237 and 50-249

Reference (a): D. L. Ziemann letter to R. L. Bolger, dated March 11, 1977.

Dear Mr. Davis:

Regulatory File Cy.

Reference (a) requested that Dresden Station develop a control rod drive (CRD) program for implementation during the forthcoming refueling outage to eliminate CRD uncoupling occurrences.

Attached to this letter is our response to your request.

Please direct any additional questions concerning this matter to this office.

Very truly yours,

M. S. Turbak

M. S. Turbak
Nuclear Licensing Administrator
Boiling Water Reactors

Attachment

Attachment

Dresden Unit 2 has experienced a number of control rod drive (CRD) uncoupling events. Three events occurred in 1973, four events in 1974, two events in 1976, and two events in 1977. The CRD's which experienced uncoupling events in 1973 and 1974 were all overhauled in 1972 during a program to modify the inner filter latching mechanism. The CRD's which experienced uncoupling events in 1976 and 1977 were all overhauled in January, 1975. Since the 1975 overhaul, a 20 to 30 pound pull test on the inner filter following installation has been added to the CRD reassembly procedure to insure proper installation. The CRD's which experienced uncoupling events in 1973 and 1974 were removed from the vessel and inspected. The inspection resulted in the conclusion that the seven uncoupling events which occurred in 1973 and 1974 were probably caused by improper inner filter installation. Proper installation of the inner filter involves insertion through the end of the index tube and then rotation to allow the inner filter retaining ring to lock on the stop piston connector flats. If the inner filter becomes unlatched, the filter rests on top of the stop piston connector. It is believed that during CRD movement, the filter can be lifted off the stop piston connector which decreases the clearance between the uncoupling rod and blade coupling lock plug. Upon subsequent withdrawal to position 48, uncoupling can take place when the uncoupling rod imparts the force necessary to reseat the inner filter on the stop piston connector. After the filter is again in place, the clearance between the uncoupling rod and blade coupling lock plug is normal and the CRD can recouple following insertion.

A review of the uncoupling symptoms associated with the CRD's which experienced uncoupling in 1976 and 1977 indicated that the uncoupling mechanism is again probably an unlatched inner filter. The means by which the inner filter becomes unlatched cannot be accurately determined until the four CRD's are removed and inspected during the September, 1977 refueling outage.

In addition to the normal disassembly inspection performed on CRD's to be overhauled, a more detailed inspection will be performed on the four CRD's which experienced uncoupling. The detailed inspection will include, but not necessarily be limited to:

1. Verification that the distance between the CRD flange and the end of the fully seated uncoupling rod is within the specified length 173.406 $\pm$ .031 inches.

2. Verification that the uncoupling rod is properly installed.

3. A pull test of the inner filter assembly as soon as possible following removal from the reactor vessel.

4. Examination of the inner filter assembly for damage and proper installation.

5. Examination of inner filter retaining ring.

6. Examination of stop piston connector.

7. Examination of inner surface of index tube for scratches which might indicate rotation.

A review of the detailed inspection will be made to insure that the reason for CRD uncoupling is an unlatched inner filter. Assuming that an unlatched inner filter will be the cause of recent CRD uncoupling, several steps will be taken prior to future CRD overhaul to insure proper CRD reassembly.

1. CECo Quality Control will install the inner filter to insure proper installation.

2. In addition to the 20 to 30 pound inner filter pull test presently performed by Quality Control, a push-pull test will be performed by Quality Control to verify that the extent of inner filter travel on the stop piston connector flats is limited to approximately 1/8 inch.

As mentioned earlier in this letter, a 20 to 30 pound pull test on the inner filter has been incorporated in the overhaul-reassembly procedure since May, 1975. CRD's overhauled and reassembled under this revised procedure have not experienced uncoupling.

It is believed the above steps are adequate to prevent future CRD uncoupling.