VERMONT YANKEE NUCLEAR POWER CORPORATION

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REPLY TO:
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B. 4.2.1
WVY 79-75

July 6, 1979

United States Nuclear Regulatory Commission
Region 1
631 Park Avenue
King of Prussia, PA 19406

Attention: Mr. Boyce H. Grier, Director

References: (1) License No. DPR-28 (Docket No. 50-271)
(2) USNRC letter to VYNPC, dated May 22, 1979; IE Bulletin 79-11

Gentlemen:

Faulty Overcurrent Trip Devices in Westinghouse DB Circuit Breakers

When responding to IE Bulletin 73-1, we assumed that the bulletin only applied to circuit breakers in ac circuits; we therefore reported that there were no circuit breakers of the types described installed at Vermont Yankee.

In our investigations for IE Bulletin 79-11, we have determined that there are four Westinghouse DB-50 circuit breakers utilized in the safety-related dc distribution switchgear. As requested in Reference (2), we are providing the following information. Item numbers of our response correspond to item numbers in Reference (2).

1. Vermont Yankee has determined that there are four Westinghouse DB-50 circuit breakers installed in safety-related Class 1E circuits. The circuit breakers are installed in the safety related dc distribution system. One circuit breaker is installed between each of the two safety-related station batteries and the two main dc distribution switchgear. The other two circuit breakers are used at either end of a maintenance bus tie between the two dc distribution switchgear.

   Because Vermont Yankee did not recognize that DB breakers were installed in the above mentioned dc switchgear, the old black end caps are still installed in the overcurrent trip device.

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2. The subject circuit breakers are non-drawout type which are bolted to the main dc distribution switchgear, as such, the circuit breakers cannot be safely tested without de-energization of the dc buses.

   Review of the existing test data has revealed that the time-current characteristics of the overcurrent trip devices have been verified, indirectly, since plant startup. During each refueling the integrated ECCS test has been performed; this test simulates a loss of offsite power concurrent with a LOCA. During this test the DB breakers between each of the two safety-related station batteries and the main distribution dc switchgear experience the combined inrush of required ECCS motor operated valves superimposed on normal steady state load requirements and other LOCA control load requirements.

   The DB circuit breakers have never tripped prematurely during the integrated ECCS test. These tests have periodically confirmed that the overcurrent trip devices do not operate with the severe ECCS load current flowing through the breakers.

   Based on the experience with the successful integrated ECCS tests, we are confident that there is no evidence of a current problem with the DB circuit breaker overcurrent trip devices. Because the manufacturer believes the navy gray end caps provide improved reliability over the black phenolic end cap material due to lower residual stresses, lower crack propagation probability and increased overall strength, we will replace the old black end caps with the new navy gray end caps at the forthcoming refuelling outage.

3. There are no spare DB breakers at Vermont Yankee.

4. The integrated ECCS test will continue to be performed at each refuelling. In addition, we will test all subject circuit breakers (with new end caps installed) at the forthcoming refuelling outage. Because the subject circuit breakers are of the non-drawout type and cannot be safely tested without de-energization of the dc busses, we will only test two of the four circuit breakers at each subsequent refuelling until evidence is obtained to ensure that the time current characteristics are maintained within the acceptance band. At this time the surveillance interval may be extended.

We trust that you find this information satisfactory; however, if you should require additional information, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

R. H. Groce

R. H. Groce
Licensing Engineer

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