Westinghouse Electric Corporation Power Systems

PWR Systems Division
Box 355
Pittsburgh Pennsylvania 15230

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Mr. John G. Davis
Acting Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555
Mail Stop - EW-322

Dear Mr. Davis:

Subject: Westinghouse DB Breakers

This is to confirm my telephone conversation of April 13, 1979, with Mr. Thompson, Executive Officer for Operations Support, Nuclear Regulatory Commission. Personnel at an operating plant recently informed us that during periodic overcurrent trip device calibration, cracks were found in some end caps of Westinghouse DB breaker overcurrent trip devices. The information from the field indicated that three in-service breakers had small cracks in the end caps of the overcurrent trip devices. In addition, seven spare end caps exhibited small cracks on their inside surface. The end caps involved were replacements for original equipment.

These cracks have the potential to cause air leakage into the air chamber that contains a dashpot time delay element and could shorten the delay time. A significant reduction of this time delay could cause the breakers to trip open during the starting of motors. There have been no reports of premature tripping of breakers which have the replacement caps. A check of four of the nine potentially affected plants confirms this. The periodic functional testing performed in accordance with Technical Specifications should reveal significant changes in breaker timing characteristics.

The only Westinghouse breakers potentially affected are types DB-50 and DB-75 having series overcurrent trip devices. Reactor trip breakers do not have overcurrent trip devices, and thus, are not affected. The plants using these breakers with the overcurrent trip devices are:

1. Connecticut Yankee
2. Cooper Station
3. H. B. Robinson Unit No. 2
4. Indian Point Unit No. 2
5. Point Beach Units No. 1 and 2 (cracked end caps were initially reported on Point Beach Unit No. 2 and an LER was filed).
6. Robert E. Ginna
7. San Onofre
8. Three Mile Island Unit No. 1

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Although we are not aware of any premature tripping of motors in the field, we have recommended to the utilities operating the above plants that they take the following actions with respect to safety related DB breakers.

1. Review the most recent overcurrent trip device calibration test data for the safeguards breakers. If any individual readings are marginally acceptable on the low side of the acceptance band or indicate any significant reduction in delay time from previous results, retests should be performed within 30 days. If any individual reading from the retest is below the acceptable band or marginal, the end cap on the trip device should be removed and replaced if inspection under a minimum 3X magnification reveals any cracks. The trip device after assembly should then be recalibrated.

2. All end caps in storage should be inspected for cracks using a minimum 3X magnifying glass. Do not use any end caps having evidence of cracking in safeguards applications.

3. The safeguards breakers not retested under item 1 above should be tested in the same manner during the current or next planned outage.

Feedback from utilities operating the potentially affected plants indicates that each utility calibrates the overcurrent trip devices during refueling outages. We indicated in our discussion with Mr. Thompson that prior to and independent of reporting of end cap cracking, the overcurrent trip devices in the DB breakers at the Cooper Station are being replaced by Amptector solid state devices which do not incorporate a dashpot time delay element and hence would not be affected. However, four of the DB breakers at the Cooper Station are in DC applications for which there is no solid state trip device available. These breakers have been tested during the current outage at the Cooper Station and, although no anomalous readings were observed, the end caps were inspected and no evidence of cracking was found.

Should you have any questions on this matter, please contact Mr. B. G. Croley at (412) 373-4890 or myself.

Very truly yours,

T. M. Anderson, Manager
Nuclear Safety Department

BGC:pj