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 VARGA, S. A. Office of Nuclear Reactor Regulation, Director (post 851125)

SUBJECT: Responds to Generic Ltr 85-09, "Tech Specs for Generic Ltr
 83-28, Item 4.3." Based on Westinghouse Owners Group
 recommendations, deletion of proposal to test breakers prior
 to breaker test recommended.

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Director of Nuclear Reactor Regulation
Attention: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing
United States Nuclear Regulatory Commission
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
RESPONSE TO GENERIC LETTER 85-09

REFERENCES: WOG to NRC, Letter OG-153
NRC to WOG, Letter of July 31, 1985

Dear Mr. Varga:

The Westinghouse Owners' Group (WOG) has completed its review of Generic Letter 85-09, "Technical Specifications for Generic Letter 83-28, Item 4.3," which identifies Technical Specification requirements for Reactor Trip Breakers (RTB). Carolina Power & Light Company (CP&L) hereby submits its response for H. B. Robinson Steam Electric Plant Unit No. 2 (HBR2) based on WOG recommendations.

BACKGROUND

Generic Letter 85-09 identifies Technical Specifications for Reactor Trip Breakers which include:

1. Adding surveillance tests on the bypass breakers,
2. Testing both undervoltage trip attachment (UVTA) and shunt trip attachment (STA) trip functions in the periodic trip breaker tests,
3. Allowing a 48-hour allowable outage time when a UVTA or STA device is inoperable, and
4. Testing the UVTA and STA circuits when actuated by the remote manual trip switches.

Any necessary Technical Specification change request were to be submitted as soon as practical following NRC review and approval of the modified design.

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DISCUSSION

The WOG has calculated the impact of the bypass breaker failure probability on the reactor trip system failure probability and concludes that the bypass breaker contribution is insignificant. These calculations are based on the trip breaker fault tree model presented in Supplement 1 to WCAP-10271.

In WOG Letter No. OG-106, which transmitted the WOG response to NRC questions on WCAP-10271, a typical Westinghouse PWR reactor trip unavailability is estimated to be 1.5 E-5 . No credit was taken for operation of the bypass breaker in the evaluation from which these calculations were derived. The impact on the reactor trip system unavailability including the unavailability of the reactor trip bypass breakers was calculated with the following results:

1. The bypass breakers are placed in service only when one train of the Reactor Protection System (RPS) is in test. The only circumstance in which the bypass breaker could affect RPS unavailability is the case when one train is in test, a signal is generated in the operable redundant train, and the main breaker fails to open.
2. The unavailability of the RPS attributable to failure of a main trip breaker with the opposite train in test is 3.7 E-7 or 2.5% of the total RPS unavailability (i.e., 1.5 E-5). This case constitutes the only configuration in which the bypass breaker can affect RPS unavailability.
3. Taking credit for the bypass breaker would reduce the probability value of this case to

$$(3.7 \text{ E-7})(3.5 \text{ E-4}) = 1.3 \text{ E-10}$$

where 3.5 E-4 is the unavailability of the bypass breaker assuming bimonthly testing or,

$$(3.7 \text{ E-7})(3.5 \text{ E-3}) = 1.3 \text{ E-9}$$

where 3.5 E-3 is the unavailability of the bypass breaker assuming testing on an 18 month interval.

Based on the above, it is recommended that testing of bypass breakers not be included in the HBR2 Technical Specifications periodic test of the main trip breakers. As shown above, testing the bypass breakers on a 2-month or 18-month test interval will result in a E-9 or E-10 level contribution to the RPS unavailability of approximately E-5 . Alternatively, the RPS unavailability increase that occurs by increasing the bypass breaker failure probability from 0% to 100% is only 2.5% at the RPS level.

Given the minimal impact of bypass breaker testing, HBR2 will administratively control this testing without changes to the Technical Specifications.

Generic Letter 85-09 also requires that both the UVTA and the STA function be tested during the periodic trip breaker surveillance tests. Again, using the reactor trip breaker fault tree model discussed above, the WOG recalculated the impact of UVTA and STA testing on breaker unavailability. The results of this evaluation showed that trip breaker unavailability increased by a factor of two when the surveillance test interval on either

of the two diverse trip functions (UVTA or STA) was increased from 2 to 18 months. The impact of this increase in breaker unavailability on the overall reactor trip system unavailability was also evaluated. The result of this evaluation showed that trip breaker unavailability is approximately 10%. This increase in RPS unavailability will proportionately increase the ATWS core melt probability. Therefore, no relaxation in the surveillance test frequency of the UVTA or STA functions is proposed at this time. These surveillance test intervals will be re-examined by the WOG with a more sophisticated reliability model of the trip breaker when it becomes available.

Generic Letter 85-09 further recommends a 48-hour allowed outage time if either trip function is declared inoperable. Using once again the same breaker fault tree model, the breaker availability sensitivity to the 48-hour allowed outage time was calculated. The results showed unequal sensitivities for the STA and UVTA. Because this result does not support a significant increase in the 48-hour allowed outage time in Generic Letter 85-09, no relaxation in this parameter is recommended at this time. As in the above case of the surveillance test interval, the allowed outage time will be re-examined by the WOG when a more sophisticated model of the trip breaker is available.

The final recommendation in Generic Letter 85-09 involves testing the manual reactor trip switch UVTA and STA circuits. Although a clear RPS unavailability improvement has not been shown for testing both UVTA and STA circuits, no change to this test at this time is proposed. The basis for this position is the infrequent test interval (18 months), and procedures to do the test have already been developed.

CONCLUSION

Based on the WOG's review of the proposed Technical Specifications on Reactor Trip Breakers described in NRC Generic Letter 85-09, and the WOG's current calculations of the Reactor Trip System unavailability, CP&L has reached the following conclusions.

There is an insignificant reliability improvement from including periodic surveillance tests of the bypass breakers in the Technical Specifications. Thus, the proposed requirement in Generic Letter 85-09 to test the bypass breakers prior to the main breaker periodic surveillance test should be deleted. While WOG studies on this issue continue, HBR2 will continue to follow the commitments made to the NRC regarding reactor trip and bypass breakers following the issuance of Generic Letter 83-28.

Yours very truly,



S. R. Zimmerman
Manager

Nuclear Licensing Section

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