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Vice President

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February 14, 1986

Re: Indian Point Unit No. 2
Docket No. 50-247

Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

ATTN: Mr. Steven A. Varga, Project Director
PWR Project Directorate No. 3
Division of PWR Licensing - A

Dear Mr. Varga:

In your letter of June 22, 1984, enclosing staff's safety evaluation report (SER) for a proposed modification to Indian Point Unit No. 2 in response to Generic Letter 83-28, Item 4.3 (Automatic Actuation of Shunt Trip Attachment for Westinghouse plants), you noted that seismic qualification of the shunt trip attachment was being conducted by the Westinghouse Owner's Group (WOG) and requested that we confirm that the shunt trip is seismically qualified when the results of the WOG qualification program are available. You also requested that we submit proposed Technical Specifications responsive to the staff requirements noted in the SER following implementation of the shunt trip modification. Subsequently, Generic Letter 85-09 entitled "Technical Specifications for Generic Letter 83-28, Item 4.3", dated May 23, 1985 was received in this office. That letter provided guidance for the content of Technical Specifications which the staff would find acceptable with respect to the Westinghouse generic design modifications for reactor trip system automatic actuation using shunt coil trip attachments.

Our response to the seismic qualification issue and our interim response to the Technical Specification issue are provided in Enclosures 1 and 2, respectively.

Should you or your staff have any further questions, please contact us.

Very truly yours,

John D. O'Toole

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Enclosure 1

Seismic Qualification of Shunt Trip Attachment

Seismic qualification of the reactor trip breaker shunt trip attachment (model DB-50) has been accomplished by Westinghouse for the Westinghouse Owners Group (WOG). The WOG program was a generic qualification effort intended to conservatively envelope the plant specific parameters and licensing requirements applicable to each Westinghouse plant. We have reviewed the seismic test results included in the WOG program and conclude that the seismic testing performed adequately envelopes the Indian Point Unit No. 2 plant specific seismic parameters. The Indian Point Unit No. 2 reactor trip breakers and their shunt trip attachments are located in a mild environment; therefore, the qualification requirements of 10 CFR 50.49 do not apply. Accordingly, the shunt trip attachments are considered seismically qualified based on the WOG seismic test results.

Enclosure 2

Technical Specifications for Automatic Shunt Trip

Generic Letter 85-09 identifies Technical Specification requirements for reactor trip breakers, including:

1. Adding surveillance tests on the bypass breakers,

2. Testing both UVTA and 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.

The Westinghouse Owners Group has undertaken a program which will optimize reactor trip breaker maintenance and surveillance practices through the development of an improved trip breaker reliability model. The results of that program will be used to calculate breaker surveillance test intervals and allowed outage times for the Technical Specifications. Based on the WOG's current calculations of Reactor Trip System unavailability the WOG concludes:

1. that bypass breaker testing should not be included in Technical Specifications as recommended by NRC Generic Letter 85-09,

2. that the remaining Generic Letter 85-09 surveillance test requirements and allowable outage times should be adopted as an interim test requirement, and

3. that the interim requirement in 2, above, should be administratively controlled without Technical Specification changes until the requirements can be optimally determined by the trip breaker reliability model on which the WOG is now working.

The WOG recommendations are based on the evaluation provided in Attachment A to this enclosure. Con Edison endorses and plans to follow these WOG recommendations. Details of the actual testing being performed were provided by Con Edison letters dated April 2, 1984 and June 22, 1984. These letters provided, in part, the basis for the staff's SER. The testing methods described in those letters will be used to satisfy these interim requirements.

ATTACHMENT A

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 RPS is in test. The only circumstance in which the bypass breaker could affect RPS unavailability is the cutset 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 cutset 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 cutset to

   (3.7 E -7)(3.5E -4)=1.3E -10

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

   or,

   (3.7 E -7)(3.5 E -3)=1.3 E -9

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

Based on the above, WOG recommends that testing of bypass breakers not be included in the 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 approx. 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, Indian Point Unit No. 2 will control bypass breaker testing without changes to the technical specifications.

The G.L. 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 2 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.

G.L. 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 G.L. 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 its more sophisticated model of the trip breaker is available.

The final recommendation in G.L. 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 that procedures to do the test have already been developed.

In summary, based on the WOG's review of the proposed Tech Specs on Reactor Trip Breakers described in NRC Generic Letter 85-09, and as a member of the WOG and subscriber to the WOG program to develop a RTB reliability model, Con Edison has reached the following conclusions.

Based on the WOG's current calculations of the Reactor Trip System unavailability, there is an insignificant reliability improvement from including periodic surveillance tests of the bypass breakers in the technical specifications. Thus the proposed requirement in G.L. 85-09 to test the bypass breakers prior to the main breaker periodic surveillance test should be deleted. The remaining surveillance test requirements and allowable outage times proposed G.L. 85-09 should be adopted as interim test requirements. However, these interim requirments should be administratively controlled without technical specification changes until the requirements can be optimally determined by the trip breaker reliability model on which the WOG is now working.