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December 26, 1984

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, Chief
Operating Reactors Branch #1
Division of Licensing

Dear Mr. Varga:

This is in response to your November 20, 1984 request for additional information concerning Generic Letter 83-28 Items 4.2.1 and 4.2.2, Preventative Maintenance Program for Reactor Trip Breakers/Maintenance and Trending.

Attachment A to this letter provides the requested information.

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

Very truly yours,

John D. O'Toole
for J. O'Toole

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ATTACHMENT A

RESPONSE TO NRC
NOVEMBER 20, 1984 REQUEST
FOR ADDITIONAL INFORMATION REGARDING
ITEMS 4.2.1 AND 4.2.2 OF GENERIC LETTER 83-28

NRC:

1. Item 4.2.1 - Periodic Maintenance Program for Reactor Trip Breakers.

- 1.1 Criteria for Evaluating Compliance with item 4.2.1

The Indian Point Unit 2 Reactor trip System utilizes Westinghouse DB-50 circuit breakers. The Primary criteria for an acceptable maintenance program for this breaker are contained in Maintenance Program for DB-50 Reactor Trip Switchgear, Rev. 0, dated October 14, 1983 by Westinghouse. The NRC Staff, Equipment Qualification Branch, has reviewed and endorsed the Westinghouse Maintenance Program for DB-50 Switchgear. Specifically, the criteria used to evaluate compliance include those items in the Westinghouse program that relate to the safety function of the breaker, supplemented by those measures that must be taken to accumulate data for trending.

RESPONSE:

Indian Point Unit 2 uses the Maintenance Program for DB-50 Reactor Trip Switchgear, Rev. 0, dated October 14, 1983, by Westinghouse. Some sections of this document have been incorporated directly into our procedures; others have been revised or modified to make them plant specific before adding them to our procedures.

NRC:

- 1.2 Issues Relating to Item 4.2.1

The licensee response states that the periodic maintenance program in effect at Indian Point 2 was described in their March 7, 1983, response to IE Bulletin No. 83-01, and is contained in their procedure MP-16.33; the procedure was not included with the submittal. The submittal states that the program "reflects the vendor recommendations in the areas of maintenance frequency and types of lubrication applied." The Westinghouse maintenance recommendations have been revised since March 7, 1983.

RESPONSE:

We have revised MP-16.33 since our March 7, 1983 submittal. The latest revision is Rev. 2 dated April 24, 1984 and includes the revised Westinghouse maintenance recommendations. MP-16.33 is a semi-annual inspection done in conjunction with PIM-14A.

NRC:

The licensee is to confirm that the periodic maintenance program includes these 20 items at the specified intervals or commit to their inclusion.

RESPONSE:

The following table shows how the Indian Point Unit 2 periodic maintenance program incorporates the 20 items. Notes following the table provide a basis for those items identified as partly incorporated.

TABLE

<u>NRC QUESTION</u>	<u>RESPONSE</u>	<u>REFERENCE</u>	
		<u>CON ED MP-16.33</u>	<u>WESTINGHOUSE PROGRAM</u>
<u>PART I</u>			
Does the Indian Point Unit 2 Periodic maintenance Program for the reactor trip breakers include, on a six month basis:			
1. Verification of trip bar freedom;	YES	1.4.3	1b
2. Verification of operating mechanism alignment and freedom, using the procedure identified in the Westinghouse program;	YES	1.7	2
3. Retaining ring verification, 33 places;	YES	1.7.3	3
4. Verification of nut and bolt tightness;	YES	1.4.1, 1.4.2, 1.9.3, 1.10.3, 1.11.5, 1.12.3	4, 10
5. Verification of pole bases physical condition;	YES	1.4.1 - 1.13.3	5
6. Verification of arcing and main contacts physical condition, using the procedure identified in the Westinghouse program;	YES	1.6	6
7. Verification of insulating link's physical condition;	YES	1.6.5	7

8. Verification of wiring insulation and termination physical condition;	YES	1.4.2 - 1.13.4	8
9. Verification of arc chute physical condition;	YES	1.6.7	9
10. Verification of breaker cleanliness;	YES	1.4.1	11
11. Undervoltage Trip Attachment (UVTA) dropout voltage test and lubrication, using the procedure identified in the Westinghouse program;	YES	1.11.3	13
12. Shunt Trip Attachment (STA) operation verification;	YES	1.10	14
13. Verification of operation of auxiliary switches;	YES	1.12	15
14. Inspection of positioning lever condition, using the procedure identified in Westinghouse program;	YES	1.7.2	16
15. Functional test of the breaker prior to returning it to service, using the procedure identified in the Westinghouse program.	YES	PTM-14A	17

PART II

Does the Indian Point Unit 2 periodic maintenance program for the reactor trip breakers include, on a refueling interval basis:

1. Verification of cell interlock operation;	PARTLY	1.7.2	18
2. Examination and cleaning of breaker enclosure;	YES	1.14	19
3. Measurement of trip force required, using the procedure identified in the Westinghouse program;	YES	1.13.6	20
4. Breaker response time for under-voltage trip;	YES	PTM-14A	NONE

5. Functional test of the breaker prior to returning it to service, using the procedure identified in the Westinghouse program.

YES

PTM-14A

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NOTES CONCERNING THE TABLE

- o Part II, Question 1 relates to closing interlocks and does not test tripping ability. Some parts of Activity 18 were not incorporated as breaker closure is not a safety function for the reactor trip breakers. Consideration was given to incorporating those parts of Activity 18 relating to the closure function, however, compliance would require the installation of jumpers, blocks and trip bypasses to facilitate testing of the non-safety closure function. It was determined that the installation of these features would require modifications that could negatively impact on the overall reliability of the reactor trip breaker trip function solely to test the non-safety closing function of the reactor trip breakers. Based on the overall intent of the maintenance and test program, implementation of these portions of activity 18 were not considered justified.
- o Part I, Question 15 and Part II, Question 5 - Con Edison does not agree with the Westinghouse requirement for ten additional operations of the undervoltage element. This requirement would only shorten the life expectancy of the undervoltage element. Con Edison functional test, PTM-14A, is used instead of Westinghouse Activities 17 and 21. This test is plant specific and addresses breakers in the installed position, operation of auxiliary switches, feeds, cell switches and overall operability of the reactor trip breakers. The breaker is closed at least 9 times, (mechanically tripped 5 times and electrically tripped 4 times) during procedure MP-16.33.

NRC:

2. Item 4.2.2 - Trending of Reactor Trip Breaker Parameters to Forecast Degradation of Operability.

2.1 Criteria for Evaluating Compliance with items 4.2.2

Four parameters have been identified as trendable and are included in the criteria for evaluation. These are (1) undervoltage trip attachment dropout voltage, (2) trip force, (3) breaker response time for undervoltage trip, and (4) breaker insulation resistance.

2.2 Issues Relating to Item 4.2.2

The licensee indicates that a "program exists to trend the reactor trip breaker performance. The opening time and undervoltage are recorded and trended." It is not clear whether the response time is for a shunt or undervoltage trip.

The licensee is to commit to inclusion of trip force, breaker response time for undervoltage trip and breaker insulation resistance as trending parameters. The licensee should also identify the organization which will perform trend analysis, how often the analysis will be performed and how the information derived from the analysis will be used to affect periodic maintenance.

RESPONSE:

The response time of the undervoltage element alone and the response time of the simultaneous actuation of the undervoltage and shunt elements are both trended.

Indian Point Unit 2 trending parameters include breaker trip force, insulation resistance, undervoltage trip attachment drop out voltage and response time for trip (both the undervoltage element alone and simultaneous actuation of shunt and undervoltage elements). Nuclear Power Technical Engineering trends and analyzes the data as it is obtained (monthly, semi-annually, refueling or unit trip) and makes recommendations to replace, repair or modify equipment and suggests adjustments in the periodic maintenance schedule and procedures.