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 JOHNSON,A.R. Project Directorate I-3

SUBJECT: Forwards summary of 900911 telcon re control rod worth measurements & modified boron end point test.

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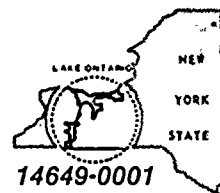
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September 25, 1990

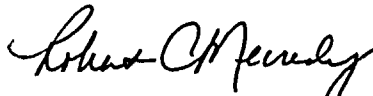
U.S. Nuclear Regulatory Commission
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Attn: Allen R. Johnson
Project Directorate I-3
Washington, D.C. 20555

Subject: Summary of Telephone Call Concerning Control Rod Worth
Measurements
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Johnson:

Attached is a summary of a telephone call between RG&E, Westinghouse, and the NRC on September 11, 1990. The purpose of the call was to discuss a modified boron end point test to measure RCCA bank worths. This test will be performed during startup testing of Cycle 21.

Very truly yours,


Robert C. Mecredy

RWE/119
Attachment

xc: Mr. Allen R. Johnson (Mail Stop 14D1)
Project Directorate I-3
Washington, D.C. 20555

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Ginna Senior Resident Inspector

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SUMMARY OF TELEPHONE CALL

SUBJECT: Modified Boron End Point Test Sequence for RG&E Cycle 21

DATE: September 11, 1990, at 0900

PARTICIPANTS:	<u>RG&E</u>	<u>NRC</u>	<u>WESTINGHOUSE</u>
	Bob Eliazsz	Al Johnson	Bob Meyer
	Steve Adams	Margaret Chatterton	Don Hill
		Howard Ritchings	Dave Krieg
		Tom Moslak	Lou Grobmyer
			Fred Frank

The attached test summary was discussed.

The test is to be performed on a one time basis during startup testing for Cycle 21. The test will replace the current sequential 4 bank reactivity worth measurements. In this test, the reactivity worth of all 5 banks will be measured. All other startup tests will still be done.

The test will be done by new procedures. The procedures will have the required safety reviews before implementation.

The purpose of the test is to obtain confirmatory information on individual bank worths.

Previous tests at Ginna have resulted in a good boron end point agreement and good total reactivity worth agreement as calculated by the reactivity computer. However, the difference between individual bank measurements and predictions were larger than desired even though the acceptance criteria was met. The proposed test will provide the worth of each bank individually and the measurement will minimize reliance on calculations.

RG&E will provide the NRC copies of the Cycle 21 startup test results. M. Chatterton and H. Ritchings will be placed on distribution for these results.

M. Chatterton and H. Ritchings stated they had no problems with the test as described in the attachment. The test was straight forward and did not deviate significantly from current measurement practices.

This summary was prepared by RG&E and reviewed by Westinghouse.

Modified Boron End Point
Test Sequence For RG&E Cycle 21

This strategy in establishing the RCCA bank Test Sequence is to (1) measure the reactivity worths in the order of increasing reactivity and (2) minimize the test time and/or water usage by taking advantage of a potentially small difference in reactivity worth between three control banks.

For purposes of generality, the RCCA banks are numbered from 1 to 5 in the order of increasing worth based on the predicted worth of each RCCA bank inserted with all other banks fully withdrawn.

Pretest

(I) Establish the RCCA bank Test Sequence.

- (a) Identify the shutdown bank as bank 5
- (b) Identify control bank A as bank 4
- (c) Based on the predicted worth, assign the designations X, Y, and Z to the remaining control banks based on the order of increasing reactivity worth.
- (d) If the difference in reactivity worth between X and Z is less than or equal to 100 pcm, then identify:
 - bank Y as 1
 - bank X as 2
 - bank Z as 3
- (e) If the difference in reactivity worth between X and Z is greater than 100 pcm, then identify:
 - bank X as 1
 - bank Y as 2
 - bank Z as 3

The RCCA banks will be measured in the sequence established above beginning with 1 and ending with 5.

Test

Step

- (1) Initial criticality.
- (2) Determine the flux level corresponding to onset of nuclear heating.
- (3) Perform the reactivity computer checkout.
- (4) Perform ARO boron concentration and MTC tests.
- (5) Using the reactivity computer, determine the differential and integral worth of bank 1 by diluting bank 1 into the core. This step ends with bank 1 fully inserted and all other banks out.
- (6) Perform a boron end point measurement with bank 1 fully inserted and all other banks fully withdrawn.
- (7) Alternately withdraw bank 1 and insert bank 2 until bank 1 is fully withdrawn or bank 2 is fully inserted.
- (8) If adjustment to final position of step 7 is required in order to perform a boron end point measurement, adjust the boron concentration by boration (compensating for reactivity by withdrawing bank 1) or by dilution (compensating for reactivity by insertion of bank 2). Measure the reactivity change with the reactivity computer.
- (9) Perform a boron end point measurement for bank 2 fully inserted, all other banks fully withdrawn.
- (10) Alternately withdraw bank 2 and insert bank 3 until bank 2 is fully withdrawn or bank 3 is fully inserted.
- (11) If adjustment to final position of step 10 is required in order to perform a boron end point measurement, adjust the boron concentration by boration (compensating for reactivity by withdrawing bank 2) or by dilution (compensating for reactivity by insertion of bank 3). Measure the reactivity change with the reactivity computer.
- (12) Perform a boron end point measurement for bank 3 fully inserted, all other banks fully withdrawn.
- (13) Alternately withdraw bank 3 and insert bank 4 until bank 3 is fully withdrawn.

- (14) Adjust the boron concentration by dilution, compensating for reactivity by insertion of bank 4. Measure the reactivity change with the reactivity computer. This step ends with bank 4 fully inserted and all other banks out.
- (15) Perform a boron end point measurement for bank 4 fully inserted, all other banks fully withdrawn.
- (16) Alternately withdraw bank 4 and insert bank 5 until bank 4 is fully withdrawn.
- (17) Adjust the boron concentration by dilution, compensating for reactivity by insertion of bank 5. Measure the reactivity change with the reactivity computer. This step ends with bank 5 fully inserted, all other banks out.
- (18) Perform a boron end point measurement for bank 5 fully inserted, all other banks fully withdrawn.
- (19) Establish control bank overlap configuration by boration and interchange of RCCA banks.
- (20) Reset overlap computer and turn plant over to operations.