



April 14, 1975

Mr. Benard C. Rusche, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Rusche:

UNUSUAL EVENT NO. 250-75-1
TURKEY POINT UNIT NO. 3
APPARENT DISCREPANCY BETWEEN MEASURED
CONTROL ROD WORTH AND VENDOR PREDICTIONS

A. DESCRIPTION OF EVENT

During physics testing following Unit 3 Cycle II refueling, a comparison of measured control rod worths to the predicted worths, furnished by the vendor indicated discrepancy of approximately 19% for total control rod bank worth. The measured values were lower than predicted which gave some concern as to required shutdown margin at beginning-of-cycle. Further testing verified that adequate shutdown margin existed so normal operation of the unit was initiated.

B. APPARENT CAUSE AND ANALYSIS OF EVENT

An investigation into the apparent discrepancy was initiated by Florida Power & Light Company to determine its cause and extent. The fuel vendor was requested to reconfirm the predicted values for Cycle II operation. In addition, Florida Power & Light Company engineers performed independent calculations of beginning-of-cycle physics parameters. The Florida Power & Light Company calculations indicate that the measured control rod worths are within 6% of predicted values for beginning-of-cycle conditions. Further, end-of-cycle calculations indicate that adequate shutdown margin will be available.

C. CORRECTIVE ACTION

The fuel vendor has recalculated his predictions and the results, included as Table 1, are consistent with Florida Power & Light Company predicted values. Based on this recalculation and our

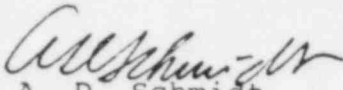
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independent calculations, adequate control rod capability and shutdown margin exist throughout Cycle II.

Very truly yours,



A. D. Schmidt
Vice President
Power Resources

PJW/cpc

Enclosure

cc: Mr. Norman C. Moseley
Jack R. Newman, Esquire

TABLE 1
TURKEY POINT UNIT NO. 3 - CYCLE 2
END OF CYCLE SHUTDOWN REQUIREMENTS AND MARGINS

<u>ITEM</u>	<u>CYCLE 1</u>	<u>REVISED CYCLE 2</u>
<u>Control Rod Worth at HZP ($\% \Delta \rho$)</u>		
All Full Length Rods Inserted	7.71	7.23
All Full Length Rods Inserted Less Worst Stuck Rod (F-14)	6.47	6.01
(1) Less 10%	5.82	5.41
<u>Control Rod Requirements ($\% \Delta \rho$)</u>		
Power Defect (Combined Doppler, T_{avg} , Void and Redistribution effects)	3.07	2.61
Rod Insertion Allowance	0.70	0.70
(2) Total Requirement	3.77	3.31
Shutdown Margin [(1) - (2)] ($\% \Delta \rho$)	2.05	2.10
Required Shutdown Margin ($\% \Delta \rho$)	1.77	1.77
Excess	0.28	0.33

The revised control rod worth is based on the end of Cycle 1 critical boron and an adjustment to the radial reflector cross-section to provide better agreement with power distribution measurements. The revised power defect is based on a more accurate evaluation at the Cycle 2 plant operating conditions for a core average moderator temperature of 567.3°F at a system pressure of 1,900 psia, as previously documented in the Unit No. 3 Design Report.

Based on this revised analysis, the calculated N-1 rod worth at BOC II is within 6.7% of the measured value. In addition, at BOC II the reanalysis provides good agreement between the calculated and measured power distribution and the HFP and HZP critical boron concentrations.