

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

October 18, 1985

Mr. Harold R. Denton, Director
Office of Nuclear Regulation
Attn: Mr. Edward J. Butcher, Jr., Acting Chief
Operating Reactors Branch No. 3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 85-737
E&C/JOE:acm
Docket No. 50-338
License No. NPF-4

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNIT NO. 1
RELOAD INFORMATION FOR CYCLE 6

North Anna Unit No. 1 is scheduled to complete its fifth cycle of operation on November 1, 1985, and will go into an outage for refueling. The purpose of this letter is to advise you of our plans for the Cycle 6 reload core and to transmit to you the Core Surveillance Report containing specific power distribution limits applicable for Cycle 6 operation.

The Cycle 6 reload core was analyzed in accordance with the methodology documented in Vepco topical VEP-FRD-42, Rev. 1, "Reload Nuclear Design Methodology", using NRC approved codes as referenced in the topical. This methodology is consistent with that documented in Westinghouse Topical Report WCAP-9272, entitled "Westinghouse Reload Safety Evaluation Methodology." These analyses were performed and reviewed by our technical staff. The results of these analyses indicated that no key analysis parameters would become more limiting during Cycle 6 operations than the values assumed in the currently applicable safety analyses. Further, the analyses demonstrated that the Current Technical Specifications, as approved through Operating License Amendment No. 68, are appropriate and require no additional changes.

The reload analysis results predict a positive moderator temperature coefficient (1.55 pcm/°F, including uncertainties) for beginning of cycle, unrodded core condition at hot zero power. Vepco has submitted a request for a Technical Specification change to allow a revision to raise the moderator temperature coefficient upper limit to +6pcm/°F between 0 and 70 percent power. This request was submitted to the NRC on February 7, 1985. If Vepco should receive NRC approval of that request prior to Cycle 6 start up, no further action would be required. If that request is not approved prior to Cycle 6 start up and a positive moderator temperature coefficient is measured during start up physics testing, limits on control rod withdrawal will be implemented, in accordance with Unit No. 1 Technical Specification 3.1.1.4.

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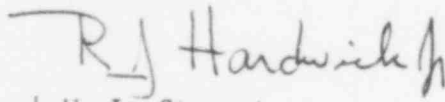
For the control rod reactivity worth determination using the rod swap technique for previous North Anna cycles, the NRC has required a comparison of the Vepco prediction "with the prediction by the organization performing the safety analysis", as stated in the NRC letter of November 7, 1980, R. L. Tedesco (NRC) to W. N. Thomas (Vepco), subject "Acceptance for Referencing of Topical Report VEP-FRD-36 'Control Rod Reactivity Worth Determination by Rod Swap Technique'." Since NRC approved Vepco codes were used for both the reload analyses and the analyses supporting control rod reactivity worth determination with the rod swap technique, this comparison is not required for Cycle 6 and future cycles using the Vepco methodology.

A review has been performed by both the Station Nuclear Safety and Operating Committee and the Safety Evaluation and Control Staff. It has been determined that no unreviewed safety question as defined in 10 CFR 50.59 will exist as a result of the Cycle 6 reload core.

Attachment 1 provides the Core Surveillance Report containing the specific Cycle 6 values for Fxy and the axial power distribution surveillance limit, Pm. This report is being provided as required by North Anna Unit No. 1 Technical Specification 6.9.1.7 and is based on the current total peaking factor (F_Q) limit of 2.20.

This letter is provided for your information and planning. However, should you have questions, please contact us at your earliest convenience.

Very truly yours,


+ W. L. Stewart

Attachment

1. Core Surveillance Report for North Anna 1, Cycle 6

VIRGINIA ELECTRIC AND POWER COMPANY TO Mr. Harold R. Denton

cc: Dr. J. Nelson Grace
Regional Administrator
Region II

Mr. Leon B. Engle
NRC Project Manager - North Anna
Operating Reactors Branch No. 3
Division of Licensing

Mr. M. W. Branch
NRC Resident Inspector
North Anna Power Station

ATTACHMENT 1

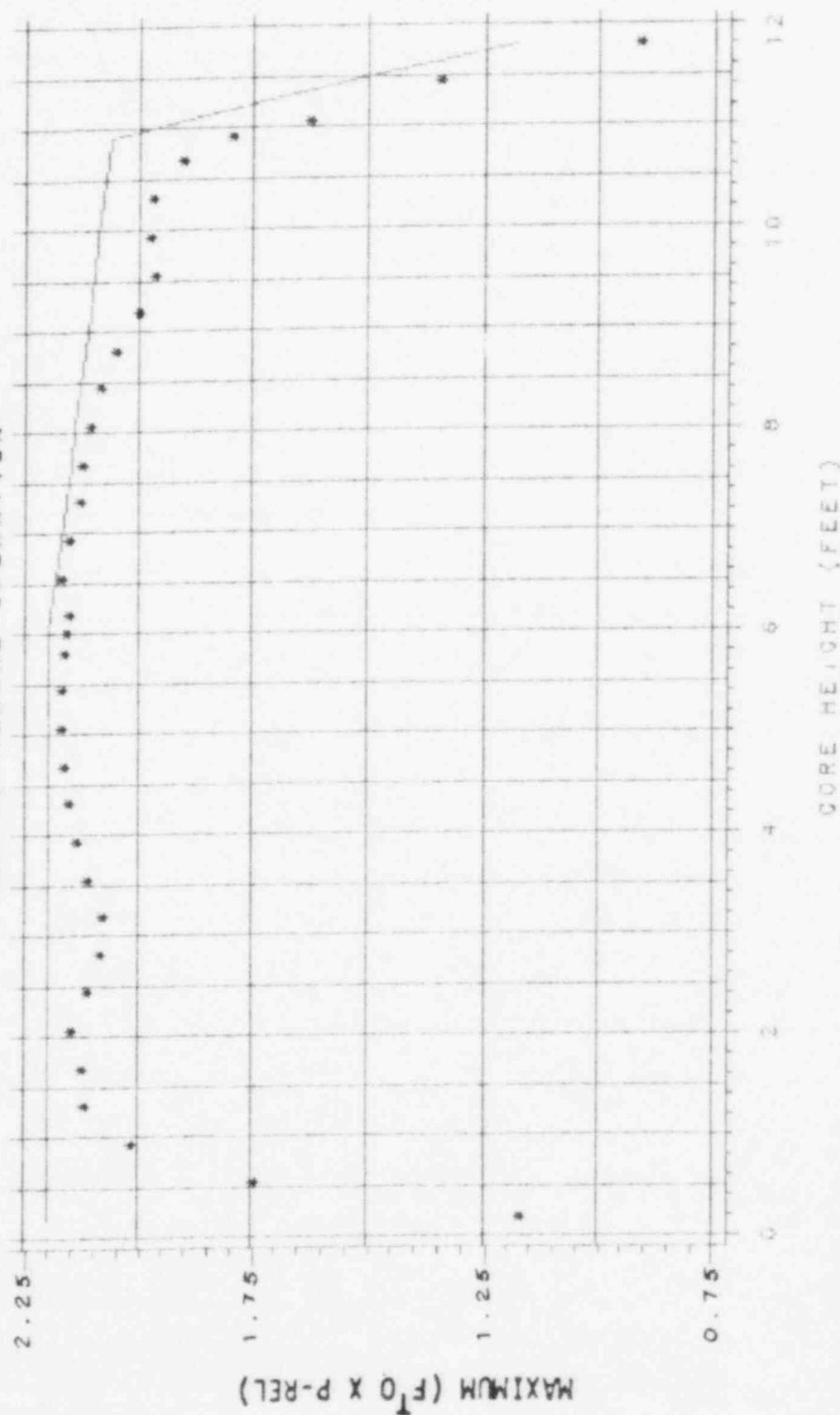
CORE SURVEILLANCE REPORT

NORTH ANNA 1, CYCLE 6

TABLE 1NORTH ANNA UNIT 1, CYCLE 6 CORE SURVEILLANCE LIMITS, FQ = 2.20

- I. The F-xy limits for RATED THERMAL POWER within specific core planes shall be:
 1. $F_{xy-RTP} \leq 1.71$ for all core planes containing bank "D" control rods, and
 2. $F_{xy-RTP} \leq 1.65$ for all unrodded core planes.
- II. The axial power distribution surveillance threshold power level shall be:
 1. $P_m = 100\%$ of RATED THERMAL POWER.

NORTH ANNA UNIT 1, CYCLE 6

MAXIMUM ($F_{TQ} \times P-REL$) VS. AXIAL CORE HEIGHT
DURING NORMAL OPERATIONLINE - TECH. SPEC. LIMIT
STAR - CALCULATED FQ