VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

February 14, 1985

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. James R. Miller, Chief
Operating Reactors Branch No. 3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Serial No. 731
PSE/RCA/mjp/2002N
Docket Nos.: 50-338
50-339
License Nos.: NPF-4
NPF-7

Gentlemen:

AMENDMENT TO OPERATING LICENSES NPF-4 AND NPF-7
NORTH ANNA POWER STATION UNIT NOS. 1 AND 2
PROPOSED TECHNICAL SPECIFICATION CHANGE

Pursuant to 10CFR50.90, the Virginia Electric and Power Company requests an amendment, in the form of changes to the Technical Specifications, to Operating License Nos. NPF-4 and NPF-7 for the North Anna Power Station Units 1 and 2.

Through the use of an improved fuel rod bowing evaluation methodology, Westinghouse has successfully demonstrated to the NRC that the existing rod bow penalty on 17x17 R-grid fuel can be reduced. Vepco proposes to employ this benefit to eliminate the Rod Bow Penalty on the nuclear enthalpy hot channel factor, $F^N_{\Delta H}$. Enclosure 1 is the safety evaluation for the proposed change, which permits a simplification of the plant Technical Specifications. The proposed Technical Specifications are presented in Enclosure 2.

This request has been reviewed and approved by the Station Nuclear Safety and Operating Committee and the Safety Evaluation and Control Staff. It has been determined that this request does not involve any unreviewed safety questions as defined in 10CFR50.59 or a significant hazards consideration as defined in 10CFR50.92.

We have evaluated this request in accordance with the criteria in 10CFR170.12. A voucher check in the amount of $150.00 is enclosed as an application fee.

Very truly yours,

W. L. Stewart

W. L. Stewart



Add'l w/check $150.00
Check # 61476

Enclosures
(1) Safety Evaluation for Proposed Rod Bow Penalty Changes
(2) Proposed Technical Specifications Changes
(3) Voucher Check for $150.00

cc: Mr. James P. O'Reilly
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

Mr. Charles Price
Department of Health
109 Governor Street
Richmond, Virginia 23219

COMMONWEALTH OF VIRGINIA )
)
CITY OF RICHMOND )

The foregoing document was acknowledged before me, in and for the City and Commonwealth aforesaid, today by W. L. Stewart who is Vice President - Nuclear Operations, of the Virginia Electric and Power Company. He is duly authorized to execute and file the foregoing document in behalf of that Company, and the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 14th day of February, 1985.

My Commission expires: 2-26, 1985.

Ann C. McSee
Notary Public

(SEAL)

S/001

ENCLOSURE 1

# Safety Evaluation

An improved Westinghouse methodology to analyze the effect of fuel rod bowing was presented in References 1, 2 and 3 and approved by the NRC in Reference 4. VEPCO intends to apply the results of these methods to determine the departure from nucleate boiling ratio (DNBR) effects of rod bow for the North Anna Power Station Units 1 and 2, which are fueled with Westinghouse Standard 17x17 fuel assemblies. VEPCO will continue to use a conservative design uncertainty (FQU) value of 1.0815 (1.05 x 1.03) for evaluation and measurement of the total overall peaking factor FQ, even though a smaller value can be justified based on the information presented in Figure 3 (Response to Question 33) of Reference 3. This Figure is the replacement for Figure 6-1 of Reference 1.

The total retained DNBR Margin for 17 x 17 fuel has been quantified to be 9.1% (Ref. 3 and 5). The component parts of this margin are identified in the attached Table 1, taken from Reference 5. The new R-grid rod bow DNBR penalties shown in Figure 2 (Response to Question 33) of Reference 3 are substantially less than the retained 9.1% margin. Therefore, the removal of the Fdh rod bow penalty currently being applied in the North Anna Units 1 and 2 Technical Specifications is justifiable based on the adequate additional margin available. This Fdh reduction had been used to partially offset the previous (Ref 6) DNBR rod bow penalties of 11.4% (full flow) and 14% (low flow) associated with 85% gap closure data. Attached are the revised North Anna Unit 1 and 2 Technical

Specifications which incorporate this change.

As a result of our evaluation, we have determined that the implementation of the updated rod bow penalty and the removal of the Technical Specification Fdh rod bow penalty for North Anna does not result in an unreviewed safety question as defined in 10CFR50.59. In addition, the change does not involve a "significant hazards consideration". There is a reduction of the retained DNBR margin due to the removal of the Fdh rod bow penalty from the Technical Specifications; however, this is compensated for by implementation of the NRC-approved rod bow penalties, which enable a commensurate level of safety to be maintained.

Table 1: Retained DNBR Margin

W Standard 17 x 17 Fuel

| | |
|---|---|
| 1.28 DNBR vs. 1.30 DNBR | 1.6% |
| DNB correlation multiplier 0.865 vs. 0.88 | 1.7% |
| TDC .038 vs. .051 | 1.2% |
| Pitch Reduction | 1.7% |
| Extra Grid | 2.9% |
| Total Retained Margin | 9.1% |

References

1. J. Skaritka, et al., "Fuel Rod Bow Evaluation", WCAP-8691 Rev 1, (Proprietary) and WCAP-8692 Rev. 1 (Non-proprietary), July 1979.

2. Letter, E. P. Rahe, Jr. (W) to J. R. Miller (NRC), "Partial Response to Request Number 1 for Additional Information on WCAP-8691 Rev. 1," NS-EPR-2515, dated October 9, 1981.

3. Letter, E. P. Rahe, Jr. (W) to J. R. Miller (NRC), "Remaining Response to Request Number 1 for Additional Information on WCAP-8691 Rev. 1," NS-EPR-2572, dated March 16, 1982.

4. Letter, C. O. Thomas (NRC) to E. P. Rahe, Jr. (W), "Acceptance for Referencing of Licensing Topical Report WCAP-8691(P) / WCAP-8692(NP)," dated December 29,1982.

5. Letter, C. Eicheldinger (W) to V. Stello, Jr. (NRC), NS-CE-1161, August 13, 1976.

6. Letter, T. M. Anderson (W) to J. F. Stolz (NRC), NS-TMA-2053, dated March 16, 1979.