

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

April 14, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 238
NO/WDC:acm
Docket No. 50-280
License Nos. DPR-32

Gentlemen:

AMENDMENT TO OPERATING LICENSE DPR-32 AND RELOAD INFORMATION
FOR CYCLE 7, SURRY POWER STATION UNIT NO. 1
PROPOSED TECHNICAL SPECIFICATION CHANGE

Pursuant to 10 CFR 50.90, the Virginia Electric and Power Company requests an amendment, in the form of a change to the Technical Specifications, to Operating License DPR-32 for the Surry Power Station, Unit No. 1. The proposed change and reload safety evaluation are enclosed.

Vepco has completed the fuel examination and core redesign program described to you in our previous letter dated March 14, 1983 (Serial No. 139). To date, the fuel rod examination program has consisted of wet sipping, visual inspection via binoculars and high magnification TV, and use of an ultrasonic failed fuel rod detection system developed by Brown Boveri Reactor Ltd. Details of the examination results were provided in our LER No. 83-014/01T-0, dated March 23, 1983.

As a result of these inspections, Vepco developed a new Cycle 7 reload core design. The irradiated fuel assemblies which have been used in the Cycle 7 design have been confirmed to be sound through the inspection program. The new design has undergone a detailed safety evaluation, which is documented in Attachment 2.

The reload safety evaluation provided is based on analysis performed by Westinghouse in accordance with the methodology documented in Westinghouse Topical Report WCAP-9272. The results indicated that no key analysis parameters would become more limiting during Cycle 7 operation than the values assumed in the currently applicable safety analysis. The bases of this evaluation include the assumption of a revision to the presently approved control rod insertion limits. The revised insertion limits are required to meet the current radial power peaking factor design limits for Cycle 7 operation. Therefore, Vepco proposes to raise the rod insertion limits for Surry Unit 1, via a change to the Technical Specifications provided in Attachment 1.

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PDR

A detailed review of the Westinghouse methodology, analysis techniques, and results have been conducted by our technical staff. In addition this amendment request and reload safety evaluation have been reviewed and approved by the Surry 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 7 reload core or the proposed change to the Technical Specifications.

Verification of the reload core design will be performed through a startup physics testing program. Unless otherwise indicated, this program will be consistent with the program proposed for North Anna Unit 2 transmitted by our letter to you dated April 8, 1982 (Serial No. 204).

In the near future we will be submitting an analysis justifying a change in the $F\Delta H$ part power multiplier from 0.2 to 0.3 that will provide an $F\Delta H$ limit equal to:

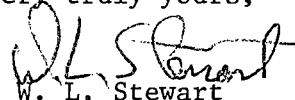
$$F\Delta H = 1.55(1+0.3(1-P))$$

where P = fraction of rated thermal power.

Your approval of this change would be required to support an additional Technical Specifications Change request which would restore the Unit 1 Control rod insertion limits to their currently approved values. Action on these anticipated changes is not required to support this submittal. In order to support our current operational schedules, your review and approval of the Attachments is requested by April 28, 1983. Should you have questions, please contact us at your earliest convenience.

We have reviewed this request in accordance with the criteria in 10 CFR 170.22. Since this request involves a safety issue which the staff should be able to determine does not involve a significant hazards consideration for Unit 1, a Class III license amendment fee is required for Unit 1. A check in the amount of \$4,000 is enclosed in payment of the required fees.

Very truly yours,


W. L. Stewart

Attachments:

1. Proposed Technical Specification Change
2. Reload Safety Evaluation for Surry Unit 1 Cycle 7 Redesigned Core
3. Voucher Check for \$4,000

cc: Mr. James P. O'Reilly
Regional Administrator
Region II

Mr. D. J. Burke
NRC Resident Inspector
Surry Power Station

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 April, 19 82.

My Commission expires: 2-26, 19 85.

John C. Mason
Notary Public

(SEAL)

M2/004

VIRGINIA ELECTRIC AND POWER COMPANY

CHECK VOUCHER
157.8

BANK NO. 26

CHECK NO. 1314783

DATE 04/13/83

VENDOR NO. 22936

LINE	DATE	INVOICE NO./OR DESCRIPTION	GROSS AMOUNT	DISCOUNT	NET AMOUNT
1	04/11/83	-TSC#129RODINSERT LMTS	4,000.00	0.00	4,000.00

ATTACHED CHECK ISSUED AS PAYMENT OF ITEMS LISTED ABOVE - PLEASE DETACH STUB AND CASH CHECK PROMPTLY.

Vepco

WACHOVIA BANK & TRUST COMPANY N.A.

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA

86-152
531

VOID IF NOT CASHED IN 90 DAYS

22936 26 1314783 00000400000

PAY FOUR THOUSAND AND 00/100 DOLLARS

TO
THE
ORDER
OF

US NUCLEAR REGULATORY COMM
OFFICE OF RESOURCE MANAGENT
ATT DIV OF ACCOUNTING & FINANC
NUCLEAR REG C DC 20555

BK	CHECK NO	DATE	VENDOR NO.	AMOUNT
26	1314783	04/13/83	22936	\$4,000.00

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Johnston

0351771 053101529 3608 088819

ATTACHMENT 1

PROPOSED TECHNICAL SPECIFICATION CHANGE

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on the maximum inserted rod worth in the unlikely event of a hypothetical assembly ejection and provide for acceptable nuclear peaking factors. The limit may be determined on the basis of unit startup and operating data to provide a more realistic limit which will allow for more flexibility in unit operation and still assure compliance with the shutdown requirement. The maximum shutdown margin requirement occurs at end of core life and is based on the value used in the analysis of the hypothetical steam break accident. The rod insertion limits are based on end of core life conditions. The shutdown margin for the entire cycle length is established at 1.77% reactivity. All other accident analysis with the exception of the chemical and volume control system malfunction analysis are based on 1% reactivity shutdown margin. Relative positions of control rod banks are determined by a specified control rod bank overlap. This overlap is based on the consideration of axial power shape control. The specified control rod insertion limits have been established to limit the potential ejected rod worth in order to account for the effects of fuel densification. The Unit 1 limits have been raised as shown in Figure 3.12-1A to ensure acceptable radial power peaking during Cycle 7 core life. The various control rod assemblies (shutdown banks, control banks A, B, C, and D) are each to be moved as a bank; that is, with all assemblies in the bank within one step ($5/8$ inch) of the bank position. Position indication is provided by two methods: a digital count of actuating pulses which shows the demand position of the banks, and a linear position indicator, Linear Variable Differential Transformer, which indicates the actual assembly position. The position indication accuracy of the Linear Differential Transformer is approximately $\pm 5\%$ of span (± 12 steps) under steady state conditions. The relative accuracy of the linear position indicator has been considered in establishing the maximum allowable deviation of a control rod assembly from its indicated group step demand position. In the event that the linear position indicator is not

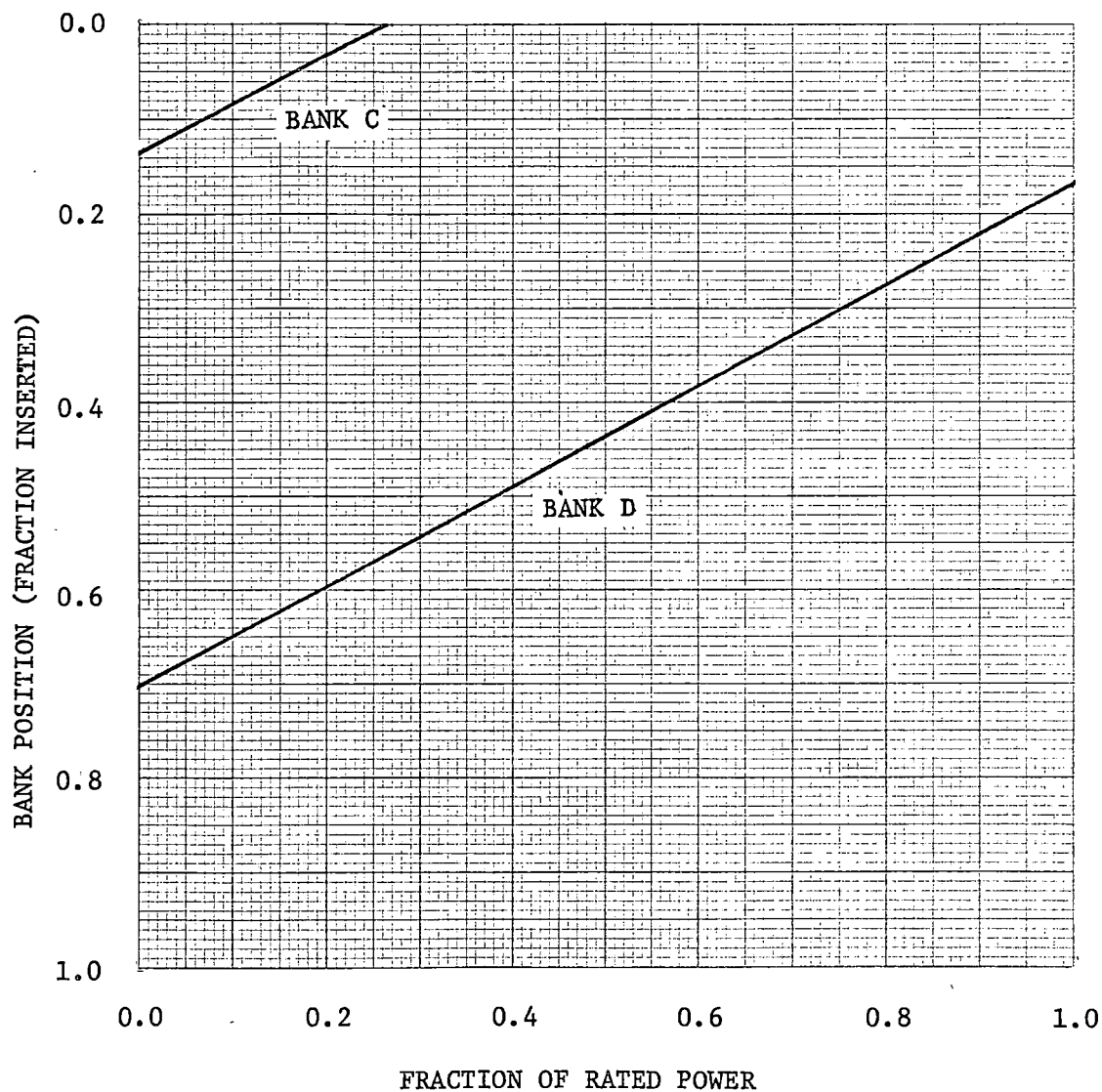


FIGURE 3.12-1A CONTROL BANK INSERTION LIMITS FOR 3-LOOP
NORMAL OPERATION-UNIT 1

ATTACHMENT 2