

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

December 3, 1993

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Serial No. 93-723
NL&P/EJW
Docket Nos. 50-280
50-281
50-338
50-339
License Nos. DPR-32
DPR-37
NPF-4
NPF-7

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1 AND 2
NORTH ANNA POWER STATION UNITS 1 AND 2
SUPPLEMENT 1 TO VEP-FRD-42 REVISION 1-A
RELOAD NUCLEAR DESIGN METHODOLOGY MODIFICATIONS

In September 1985, Virginia Electric and Power Company submitted Topical Report VEP-FRD-42, Revision 1, "Reload Nuclear Design Methodology," which presented the methodology used to perform nuclear reload design analyses and safety evaluations for the Surry and North Anna Power Stations. That report described the analytical models and methods as well as the nuclear core design and safety analysis process used at the time of submittal. It also provided an overview of analyzed accidents and key parameter derivations performed for each reload.

Since the 1986 NRC approval of this topical report on nuclear core design and safety analysis, we have gained considerable experience and continued to improve and expand this analysis capability through development of in-house methods and incorporation of industry advancements. The most significant changes to our reload design methodology include:

1. The use of the WRB-1 Critical Heat Flux (CHF) correlation for the Departure from Nucleate Boiling (DNB) analysis for Surry and North Anna,
2. The application of Statistical Departure from Nucleate Boiling (DNB) Methodology to Surry and North Anna reactor cores,
3. The implementation of the Core Operating Limits Report (COLR) for reporting cycle specific Technical Specifications parameter limits for North Anna,

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4. The use of the Westinghouse Owners' Group Dropped Rod Evaluation Methodology described in WCAP-11394-P-A for North Anna and Surry, and
5. The application of improved core physics analytical models using the PDQ07 code.

Changes 1 through 3 have been reported to and accepted by the NRC on an individual basis. Changes 4 and 5 have been implemented for North Anna and Surry pursuant to the provisions of 10CFR50.59. These changes have effectively superseded portions of VEP-FRD-42, Rev. 1-A. Supplement 1 to VEP-FRD-42, Rev. 1-A (enclosed) consolidates and summarizes these changes for your information.

Very truly yours,



M. L. Bowling, Manager
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Enclosure

cc: U. S. Nuclear Regulatory Commission
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