

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

November 13, 1996

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555-0001

Serial No. 96-319  
NL&P/MAE: R0  
Docket Nos. 50-280/-281  
50-338/-339  
License Nos. DPR-32/-37  
NPF-4/-7

Gentlemen:

**VIRGINIA ELECTRIC AND POWER COMPANY**  
**NORTH ANNA POWER STATION UNITS 1 & 2**  
**SURRY POWER STATION UNITS 1 & 2**  
**SUPPLEMENTAL INFORMATION FOR THE NOMAD CODE AND MODEL, RELOAD**  
**NUCLEAR DESIGN METHODOLOGY, AND RELAXED POWER DISTRIBUTION**  
**CONTROL METHODOLOGY TOPICAL REPORTS**

Virginia Electric and Power Company uses the NOMAD 1-D core physics code to perform both reload design analyses and core operation evaluations. Use of this code and its associated model was originally approved by the NRC on March 4, 1985, when the NRC issued its Acceptance for Referencing of Licensing Topical Report VEP-NFE-1-A, "The Vepco NOMAD Code and Model". As stated in VEP-NFE-1-A, verification of and improvements to the NOMAD code and model would continue to be made as more experience was gained in the application of the model to the units at the Surry and North Anna Nuclear Power Stations.

An updated version of NOMAD has recently been developed and qualified. Attachment 1 describes both the enhancements to the model and the model's qualification process. The qualification process was equivalent, in scope and rigor, to the original model. Implementation of the updated model involves no changes to the accident basis assumptions supporting the transient analyses described in North Anna UFSAR Chapter 15 and Surry UFSAR Chapter 14.

Changes to the approved core reload design methodology (described in Attachment 2) and to the approved Relaxed Power Distribution Control (RPDC) methodology (described in Attachment 3) are related to the elimination of the 2-D PDQ model from the synthesis of peaking factors and to the use of a 3-D PDQ model for input data. Implementation of a 3-D PDQ model into the reload design process was discussed in Supplement 1 to VEP-FRD-42 Revision 1-A. The most significant changes are:

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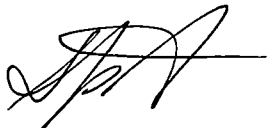
- 1) For Fq calculations, planewise Fxy radial peaking factors are taken from a 3-D PDQ model rather than via a synthesis of 2-D PDQ model and 3-D FLAME model data. This changes the Fq calculation from a 1-D/2-D/3-D synthesis to a 1-D/3-D synthesis.
- 2) NOMAD model setup and normalization no longer requires data from 2-D PDQ and 3-D FLAME models, but now uses data from a 3-D PDQ model.

The updated model, core reload design method change, and RPDC method change have been reviewed and approved by the Station Nuclear Safety and Operating Committee at both stations and have been determined not to involve an unreviewed safety question or a Technical Specification change. Therefore, the updated model is being implemented under the provisions of 10CFR50.59.

No commitments are made by this letter.

If you have any questions, or require additional information, please contact us.

Very truly yours,



S. P. Sarver, Acting Manager  
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#### Attachments

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