

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

February 17, 1998

Mr. Carl J. Paperiello, Director
Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 98-054
NL&OS/TJS R0
Docket No. 72-16

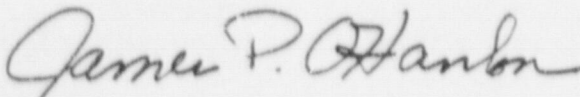
Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (TAC NO. L22113)

Virginia Electric and Power Company (Virginia Power) submitted an application for the review and approval of a site-specific license for an independent spent fuel storage installation (ISFSI) at North Anna Power Station on May 9, 1995 (Serial No. 95-195). The NRC submitted a Request for Additional Information to Virginia Power on January 16, 1998 concerning the thermal design criteria of the fuel assemblies to be stored in the North Anna Power Station ISFSI and the concrete pad static analysis. Attached is our response to the Request for Additional Information.

Please contact us if you have any questions or require additional information.

Very truly yours,



James P. O'Hanlon
Senior Vice President - Nuclear

Attachments

Commitments made by this letter:

1. None

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cc: Mr. J. W. Shea
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United States Nuclear Regulatory Commission
Attention: Document Control Desk
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Mr. M. J. Morgan
NRC Senior Resident Inspector
North Anna Power Station

ATTACHMENT 1

Response To A Request For Additional Information Fuel Assemblies to be Stored in the North Anna ISFSI

1.0 INSOLATION DESIGN CRITERIA

1.1 NRC BACKGROUND COMMENT

"Section 2.3.2.1 of the North Anna ISFSI Safety Analysis Report (SAR) states that the insolation data from Regulatory Guide 7.8 is 800 g-cal/cm² per day for a horizontally transported cask and that the Regulatory Guide defines the design insolation as 400 g-cal/cm² per day for stationary and vertically stored casks. Regulatory Guide 7.8 uses the insolation data given in 10 CFR 71.71(c)(1) which is not as stated in the North Anna ISFSI SAR.

Section 2.3.2.1 and Table 3.4-1 of the North Anna ISFSI SAR state that 800 g-cal/cm² will be used as the design criterion for the storage casks. The North Anna ISFSI SAR uses the TN-32 as its design basis storage cask. However, the maximum solar heat load used in the TN-32 TSAR is 2950 BTU/ft² (800 g-cal/cm²) for flat surfaces and 1474 BTU/ft² (400 g-cal/cm²) for curved surfaces. The TN-32 cask was not analyzed for 800 g-cal/cm² on the curved surfaces, as might be inferred from Section 2.3.2.1 and Table 3.4-1. Therefore, it does not appear to meet the design criterion specified in the North Anna ISFSI SAR."

1.2 NRC REQUEST

"Clarify the insolation design criterion used for the North Anna Spent Fuel Storage Cask and justify any deviation from the TN-32 TSAR design criterion. If the North Anna design criterion are different from the TN-32 TSAR design criterion, demonstrate that the TN-32 meets the North Anna design criterion."

1.3 VIRGINIA POWER RESPONSE

Virginia Power will propose to revise Section 2.3.2.1 of the draft North Anna ISFSI Safety Analysis Report (SAR) to reference the insolation criteria in 10 CFR 71.71(c)(1). This proposed revision will clarify that North Anna's insolation design criteria are the same as used in the TN-32 TSAR.

2.0 MAXIMUM DECAY HEAT DESIGN CRITERIA

2.1 NRC BACKGROUND COMMENT

"Table 3/4-1 of the North Anna Technical Specifications lists a decay heat of 0.843 kw/assembly whereas Table 3.1-1 of the North Anna ISFSI SAR, states that the maximum decay heat is specified in the storage cask TSAR. Virginia Power proposes to use the TN-32 as its storage cask at the North Anna ISFSI.

The maximum decay heat listed in the TN-32 TSAR is 0.847 kw/assembly, therefore, there is a discrepancy between these two tables."

2.2 NRC REQUEST

"Change the North Anna ISFSI SAR and/or the Technical Specifications so that both give the same decay heat value."

2.3 VIRGINIA POWER RESPONSE

Virginia Power will propose to revise Table 2.1-1 of the draft North Anna ISFSI Technical Specifications to use the decay heat limit of 0.847 kw/assembly for the TN-32. This proposed revision was included in our January 30, 1998 response to your December 29, 1997 RAI concerning fuel assemblies to be stored in the North Anna ISFSI. A draft copy of the revised table is provided below.

Draft NAPS ISFSI Technical Specifications
Table 2.1-1
Fuel Assembly Characteristics

1. TN-32

a.	Initial Enrichment	≤ 3.85 w/o U235
b.	Fuel Assembly Average Burnup	$\leq 40,000$ MWD/MTU
c.	Cooling Time After Discharge	≥ 7 Years
d.	Decay Heat/Fuel Assembly	≤ 0.847 Kilowatts
e.	Gamma Source/Cask	$\leq 2.31E17$ Photons/Sec
f.	Neutron Source/Cask	$\leq 4.83E9$ Neutrons/Sec
g.	Fuel Assembly Design	Westinghouse 17x17 Standard or Westinghouse 17x17 Vantage 5H

3.0 CONCRETE PAD STATIC ANALYSIS

3.1 NRC BACKGROUND COMMENT

"Section 4.2.1.1 (static analysis) of the North Anna ISFSI SAR discusses the concrete storage pad design."

3.2 NRC REQUEST

"Provide the calculation package of the static analysis to demonstrate that the cask storage pad and areas have been designed to adequately support the static load of the stored casks."

3.3 VIRGINIA POWER RESPONSE

Please find attached a copy of Virginia Power Calculation CE-1181, Revision 0, pages 1 through 25, including Attachments A through D, which contain the requested static analysis portion of the North Anna ISFSI storage pad.

ATTACHMENT 2