

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

August 22, 1990

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 29555

Serial No. 90-405  
NL&P/JBL/TAH R2  
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**  
**STEAM GENERATOR TUBE PLUGS - ALLOY 690 MATERIAL**

Pursuant to 10 CFR 50.55a(a)(3), this letter is written to request approval for the use of plugs fabricated of nickel-chromium-iron UNS N-06690 material (Alloy 690) to plug tubes in the steam generators of North Anna and Surry Power Stations for both mechanical and welded applications.

Code Case N-474-1 of the ASME Boiler and Pressure Vessel Code (approved November 30, 1989) addresses Alloy 690 material and authorizes its use in other forms for the construction of Section III, Division 1, Class 1 components. The material is specified in ASME Code, Section II, material specifications SB-163, SB-167, and SB-168 and added in an errata to SB-166. Also, Alloy 690, in tubing form (SB-163), was previously authorized for construction of Class 1 components.

The use of Alloy 690 for tube plugs as a proposed alternative to the use of Alloy 600, in accordance with the requirements of the ASME Boiler and Pressure Vessel Code, will provide an acceptable level of quality and safety. The use of Alloy 690 material for the fabrication of mechanical plugs for steam generator tubes was endorsed by the NRC Staff in NRC Bulletin No. 89-01, "Failure of Westinghouse Steam Generator Tube Mechanical Plugs," dated May 15, 1989. Alloy 690 has superior anti-corrosion properties and similar mechanical properties to the Alloy 600 material previously used for tube plugs. The Design Stress Intensity stipulated by the Code Case and used in the design and qualification of the tube plugs is the same for Alloy 690 material as for Alloy 600 material of the same form. Therefore, this material is being used in the fabrication of tube plugs which may be welded into steam generator tubes in the Surry and North Anna Units.

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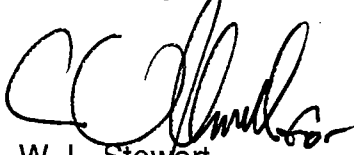
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Authorization of the use of the Alloy 690 material will confirm the acceptability of the use of Alloy 690 material for mechanical or welded plugs for removing steam generator tubes from service.

North Anna Unit 2 is currently in its refueling outage. It is our intent to use the Alloy 690 material plugs to replace certain in-place tube plugs and remove any other required tubes from service. We request that the NRC expedite review of this request so that approval for both mechanical and welded steam generator tube plugs fabricated from Alloy 690 material may be received prior to the end of the Unit 2 refueling outage. This is currently scheduled for November 5, 1990. This requested approval is similar to ones previously requested and granted for other utilities.

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

Very truly yours,

A handwritten signature in black ink, appearing to read 'W. L. Stewart', written over a horizontal line.

W. L. Stewart  
Senior Vice President - Nuclear

cc: U.S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, N.W., Suite 2900  
Atlanta, Georgia 30323

Mr. M. S. Lesser  
NRC Senior Resident Inspector  
North Anna Power Station

Mr. W. E. Holland  
NRC Senior Resident Inspector  
Surry Power Station

Mr. K. R. Wichman  
U.S. Nuclear Regulatory Commission  
One White Flint Plaza  
Rockville, Maryland

Mr. H. F. Conrad  
U.S. Nuclear Regulatory Commission  
One White Flint Plaza  
Rockville, Maryland

Mr. R. J. Bosnak  
U.S. Nuclear Regulatory Commission  
One White Flint Plaza  
Rockville, Maryland