VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

August 22, 1985

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Edward J. Butcher, Acting Chief
Operating Reactors Branch No. 3
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 85-521
NAPS/JHL
Docket Nos. 50-338
50-339
License Nos. NPF-4
NPF-7

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNIT NOS. 1 AND 2
MECHNICAL CLEANING OF THE SERVICE
WATER PIPING AND VALVE REPAIRS

Representatives of VEPCO met with you on June 7, 1985 to discuss the mechanical cleaning of service water piping and valve repairs. Following that meeting two telephone conversations were held to further discuss a potential flooding scenario that was postulated to occur when cleaning piping 18 inches in diameter and larger. In the second telephone call, we discussed the contigency action of stopping (tripping) the running service water pump, as a means of limiting the flooding volume, should a boundary valve be opened that was providing isolation for cleaning. We have, after much discussion, completed our review of this action. We now conclude that more preferable actions are possible before it would be necessary to stop a running service water pump.

The need to stop the running pump was based on a preliminary evaluation of the number of "cross-ties" that could result in unwanted water flow. We have determined that there are only four plant areas where the service water system is "cross-tied" by lines of 18" diameter or greater. These areas are:

1) Auxiliary Service Water Supply (Turbine Building and Yard Area)
2) Recirculation Spray (RS) Heat Exchanger Return to Service Water (Quench Spray Building)
3) Component Cooling (CC) Heat Exchangers (Auxiliary Building Basement)
4) Service Water Pumphouse

The associated valves can be seen by reviewing the drawings in the Updated Final Safety Analysis Report, Chapter 9.

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Before discussing contingency actions in these areas, we want to reiterate our various levels of defense against accidental opening of cross-tie valves being employed on this project.

1) Manual boundary valves are tagged closed and then verified closed by a second individual.
2) Motor-operated boundary valves are closed, tagged, verified by a second individual, and the power removed from the motor circuit.
3) Boundary valves greater than or equal to 18 inches are chained and locked in the closed position.

The actions taken above prevent inadvertent opening of the boundary valves. Tagging serves as a warning to others and provides protection for the cleaning team. Tagging procedures similar to those discussed above are used daily at North Anna to insure personnel safety and plant integrity.

However, in the unlikely event that these actions are circumvented, VEPCO is developing an abnormal procedure to mitigate the postulated flooding. This procedure will be fully implemented prior to entering the action statement for service water pipe cleaning of 18 inches in diameter or greater. The procedure focuses on the four system cross-tie areas previously discussed. Actions will be taken in the control room to close the valves in two of these areas: Auxiliary Service Water Supply and RS Heat Exchanger Returns. A station security officer will be stationed in the Service Water Pumphouse to insure that cross-tie valves (all manually operated) are not tampered with. A "valve watch" operator will be stationed in the Auxiliary Building Basement to manually operate valves, if needed, in the CC Heat Exchanger area, except for two supply valves which can be remotely controlled from the control room. Additionally, abnormal operating procedures, such as for the Loss of Component Cooling Water, exist to provide additional guidance for operation should other systems be affected. Finally, we plan to partially seal the charging pump cubicles to the 44 inch level to prevent flooding of the charging pumps. Based on the above contingencies and calculated flooding rates, we have determined that the operator has in excess of ten minutes to complete actions to mitigate flooding due to a postulated inadvertent opening of a boundary valve in excess of 18 inches in diameter. We believe that operator action from the Auxiliary Building or control room as applicable can readily be accomplished in ten minutes, thereby preventing flooding of the charging pump cubicles.

As you can see, we have developed a logical approach to preventing and mitigating the consequences of the postulated flooding condition caused by the inadvertant opening of service water system cross-tie valves.

Very truly yours,

W. L. Stewart

cc: Dr. J. Nelson Grace
Regional Administrator
Region II

Mr. Virgil L. Brownlee
NRC Region II

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Operating Reactors Branch No. 3
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