VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

March 23, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Darrell G. Eisenhut, Director
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 047B
NO/DWL:acm
Docket Nos. 50-338
50-339
License Nos. NPF-4
NPF-7

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION
SUPPLEMENTAL INFORMATION ON ICCI SYSTEMS

In our letter dated January 30, 1984 (Serial No. 047) Vepco commited to provide additional information and a schedule for upgrade of the core exit thermocouple (CETC) and subcooling margin monitoring (SMM) systems in response to the NRC's request for additional information on these systems dated January 16, 1984. The information as requested that is presently available is provided in the attachment to this letter. The remaining information, primarily dealing with the CETC's, must be deferred until after August 1, 1984. This is because the vendor selection and final design of our replacement CETC system has not been completed. Replacement of the existing CETC system was determined to be necessary following the completion of our review of the Regulatory Guide 1.97 criteria. Vepco commited to provide information to the NRC Staff on the replacement CETC system by August 1, 1984 in our letter dated February 21, 1984 (Serial No. 088) which dealt with our implementation schedule of Regulatory Guide 1.97.

Information on the SMM system is provided in the attachment except where it pertains to the CETC system inputs to the SMM system. Additionally, the best available implementation schedule information is provided for Inadequate Core Cooling Instrumentation.

Very truly yours,

W. L. Stewart

cc: Mr. James P. O'Reilly
Regional Administrator
Region II,
USNRC

Mr. James R. Miller, Chief
Operating Reactors Branch No. 3
Division of Licensing
USNRC

Mr. Morris W. Branch
NRC Resident Inspector
North Anna Power Station

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ADDITIONAL INFORMATION REQUESTED BY ENCLOSURE 1 OF JANUARY 16, 1984 LETTER

Response to Question 1:

The Tsat meter is an analog meter mounted on the vertical backboards in the North Anna Control Room. The meter has horizontal indicator movement indicating degrees subcooled, saturation, and superheat. Indications are in ΔT degree units and range from 200°F subcooling to 2000°F superheat.

Response to Question 2:

Qualified isolation devices are installed between Class 1E and non-Class 1E devices and signals for the RVLIS systems as per the requirements of Regulatory Guide 1.97. Pressure and loop temperature indications for the SMM also have qualified isolators. The CETC system and CETC inputs to the SMM will have qualified isolators following the upgrade of the CETC system.

The SMM computer and display do not require environmental qualification since neither is in a harsh environment. The SMM displays are seismically qualified but the SMM computer is not. The SMM computer is a category 2 variable identified in Regulatory Guide 1.97, Revision 3, and therefore does not require seismic qualification. Options are available with regard to the upgraded CETC system to place the SMM computer in seismically qualified cabinets with the CETC hardware. This option depends on the final selection of CETC replacement materials. Therefore, the SMM computer may ultimately be seismically qualified, but details will not be available until after August 1, 1984.

Response to Question 3:

Vepco's plans to replace the existing CETC system will address the reference junction compensation issue. The final CETC system design will provide temperature inputs to the SMM system which meet the criteria of Regulatory Guide 1.97. Additional information on the final CETC design will be available after August 1, 1984.

Response to Question 4:

The CETC system will be upgraded by replacement to meet the criteria for qualification provided in Regulatory Guide 1.97. Details of the replacement design will be available after August 1, 1984.

Response to Question 5:

The design of the final backup display for the CETC system is part of the overall upgrade by replacement effort currently on-going. Details of the backup displays will be available after August 1, 1984.

Response to Question 6:

a) The primary display for CETC will be reviewed as part of the Control Room Design Review to be performed at North Anna. The primary and backup displays will be evaluated in conjunction with their use in the emergency procedures.

b) The primary CETC display will be electrically independent from the Class 1E backup display system.

c) The environmental qualification of inaccessable primary CETC display equipment will be addressed to the standards of Regulatory Guide 1.97 in the replacement CETC system previously discussed. Details of the replacement CETC system will be available after August 1, 1984.

d) The current primary CETC display system has the capability for spatially oriented core maps, time history, and trend information. As a result of the in-progress upgrade by replacement effort on the CETC system, use of a CRT in the control room is being evaluated to serve as the primary display. Final plans for the primary display will depend on the overall upgraded system design. Details of the primary display capabilities will be available after August 1, 1984.

Response to Question 7:

The final ICCI system will be composed of a SMM, CETC, and RVLIS system which are qualified to the criteria of Regulatory Guide 1.97. As previously discussed, the CETC system will be significantly upgraded by replacement. The schedule for this replacement is currently not firm. Our intent is to perform the upgrade along with other Regulatory Guide 1.97 upgrades during the 1986 refueling outages. We have clearly indicated to the NRC in our letter of February 21, 1984 (Serial No. 088) that since vendor selection, final design and procurement times are not yet firm, we cannot commit to the 1986 refueling outages. It is likely that the proposed upgrade may not be performed until the refueling outages following the 1986 outages. We have committed to installing upgraded CETC no later than the refueling outages following the 1986 outages. We currently have an installed CETC system which we believe to be reasonably reliable.

We currently have a SMM system which meets the criteria of Regulatory Guide 1.97 with the exception of fully environmentally qualified inputs. All inputs, except CETC's, will be environmentally qualified by the end of the next refueling outages as required by the EQ Rule (10 CFR 50.49). The CETC's will be upgraded as previously discussed.

The RVLIS for North Anna is installed. Some additional minor problems are being resolved and the systems are expected to be fully operational by the end of the next refueling outage. The commitment to be operational is tied to the upcoming refueling outages since we wish to perform a complete functional test (sensors to display) of the system prior to declaring the system operable.

As per our commitment to the requirement of NUREG-0737, Supplement 1, North Anna will have the revised Emergency Procedures based on the westinghouse Generic Emergency Response Guidelines in place by April 15, 1984. The procedures are currently written and training is in progress.

The procedures are written such that competent ICC guidance is available with or without the RVLIS. SMM and CETC's are available. Following the upcoming refueling outages, the ICCI and procedures will be in place and qualified to the criteria of Regulatory Guide 1.97 with the exception of the CETC's which will be upgraded at a later date.