VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

R. H. LEASBURG
VICE PRESIDENT
NUCLEAR OPERATIONS

June 4, 1982

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

Serial No. 316
PSE&CS/WCS/KSB:cdk
Docket Nos. 50-338
50-339

License Nos. NPF-4
NPF-7

Gentlemen:

GENERAL DESIGN CRITERIA 17 ANALYSIS
NORTH ANNA UNIT NOS. 1 AND 2

The purpose of this letter is to complete our responses to your questions concerning our General Design Criteria 17 submittal, Serial No. 076, dated February 26, 1982. The responses provided are those which were outstanding in our May 20, 1982 letter, Serial No. 233. The questions and responses are provided in Attachment I entitled "General Design Criteria 17 - Response to NRC Questions".

In review of our schedule submitted in our February 26, 1982 letter, we believe we should revise our targeted completion dates to provide for the possibility of an unanticipated response from the valve manufacturer regarding rerating motor operated valves at North Anna. A more realistic construction schedule in view of currently scheduled projects will be to complete all modifications by the second refueling outage of each unit after September 1, 1982.

Yours very truly,

W. L. Stewart

R. H. Leasburg

A001

KSB:cdk:2448A

Attachment

cc: Mr. J. P. O'Reilly
Regional Administrator
Office of Inspection and Enforcement
Region II

ATTACHMENT I

GENERAL DESIGN CRITERIA 17

RESPONSE TO NRC QUESTIONS

NORTH ANNA UNIT NOS. 1 AND 2

NRC Question 5 "What will be the setpoints for your overvoltage alarms? Will there be coincidence logic on each bus? Will they be designed to IEEE Std. 279?"

Vepco Response Preliminary design indicates the overvoltage setpoints will be 4400 V on the 4160 V emergency buses and 506 V on the 480 V emergency buses. These settings are based on 110% of the nominal voltage ratings for the IE motors.

Coincident logic will not be used on each bus. One relay will be installed on each 480 V bus, with an overvoltage setpoint as indicated above. A relay from the existing loss of voltage/degraded voltage protection will be used to alarm overvoltage on its respective 4 KV bus. This design provides three overvoltage monitors per protective train (H or J), which is sufficient protection. Upon receipt of an overvoltage alarm, manual action will be taken within 15 minutes to alleviate the overvoltage condition. Additionally, coincident logic is not required because manual, rather than automatic, action results from the

relay operation. Since the operator will check the bus voltage after receipt of an alarm, no spurious actions (e. g., separation from the offsite source) will occur.

The modification will not be in strict compliance with IEEE 279, although it will meet the intent of IEEE 279. With overvoltage monitoring of 3 buses per protective train, the single failure criteria of IEEE 279 is met and protective action at the system level will be maintained. Additionally, a channel may be removed from service without initiating protective action at the systems level. A channel may be tested with the unit operating at 100% power.

NRC Question 7

"What is the typical feeder voltage drop (both steady-state and transient conditions) from a 480 V bus to:

a. a MCC contactor

b. a non-MOV load, and

c. a MOV load

And from a 480 V MCC to:

a. a non-MOV load, and

b. a MOV load?"

Vepco Response

The voltage drops requested are listed in the table below, along with additional voltage drops which are included to provide a more complete view of our system.

TYPICAL FEEDER VOLTAGE DROPS

480 V SYSTEM

		STEADY STATE	TRANSIENT
I.	From a 480 V Load Center Bus To:		
A)	An MCC Contactor Coil	4V**	9V**
B)	A non-MOV Load (Fed From a Load Center)	13V	23V
C)	A non-MOV Load (Fed From an MCC)	16V	20V
D)	An MOV Load	*	22V
II.	From a 480 V MCC Bus To:		
A)	A non-MOV Load	10V	8V
B)	An MOV Load	*	10V
C)	An MCC Contactor Coil	2V**	6V**

* An MOV operates for a short time (e.g., 30 seconds) only; therefore, a steady state voltage drop was not calculated.

** These voltages are referenced to the 120 V system.

NRC Question 9 "What is the current schedule for the review being conducted by the MOV and valve manufacturers?"

Vepco Response Staggered receipt of information from the valve manufacturer is expected over the next two months. Review by the MOV manufacturers is ongoing and will continue as additional information is supplied by Vepco and/or the valve manufacturer. Vepco is committed to the rerating and/or replacement of the MOV's identified in our analysis.