

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

November 28, 1984

Serial No. 253F
EC:BSD:ect:2004N
Docket Nos. 50-338
50-339
License Nos. NPF-4
NPF-7

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

Gentlemen:

GENERAL DESIGN CRITERIA 17 ANALYSIS
VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA UNIT NOS. 1 AND 2

Your letter of April 17, 1984 requested that Vepco provide a monthly status update for completing remaining open items regarding General Design Criteria 17 Analysis for North Anna Units 1 and 2. The attachment of this letter provides a complete report on our GDC-17 compliance for Units 1 and 2.

We stated in our June 4, 1982 letter, Serial No. 316, that we planned to have completed the modifications by the second refueling outage of each unit after September 1, 1982. This commitment has been met, except those portions related to the motor control center contactor coils.

Since the commitments under Item I, Operating Restrictions, and Item II, Modifications, have been completed, this will be our final report on these items.

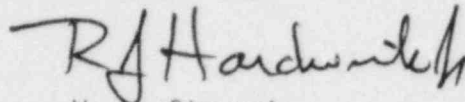
The motor control center contactor coil test results are scheduled to be available to Vepco in early February 1985 and our final report will be available in March 1985. This item is further discussed in the attachment to this letter.

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We will continue to provide you with updates on the motor control center contactor coil test results per your request.

Very truly yours,


for W. L. Stewart

Attachment

BSD/ect

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

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

NORTH ANNA UNIT 1
STATUS AND SCHEDULE FOR GDC-17 ANALYSIS
COMMITMENTS

Item I: Operating Restrictions:

Commitment A: Generator bus voltage must be maintained at an adequate level to ensure acceptable voltages are maintained on a "J" emergency bus fed from a station service bus.

Status A: There is no "J" bus fed from a Unit 1 station service bus at present. If a tie is installed, an operating procedure will be implemented for Unit 1.

Commitment B: Load on a station service bus must be limited when a "J" emergency bus is fed from it.

Status B: There is no "J" bus fed from a Unit 1 station service bus at present. If a tie is installed, an operating procedure will be implemented for Unit 1.

Commitment C: If Vepco installs the Unit 2 emergency to station service bus ties, then, when the emergency bus 2H is transferred to and fed from station service bus 2C, emergency bus 2J must be transferred to a power source other than Reserve Station Service Transformer C within 1 hour.

Status C: This commitment does not affect Unit 1.

Commitment D: The existing load shed, which is initiated when both units load to the Reserve Station Service Transformers (RSSTs), will be enabled at all times when 1) one unit is on line and the other unit is in startup, 2) both units are on line, and 3) both units are in startup.

Status D: The existing load shed is enabled at all times when 1) one unit is on line and the other is in startup, 2) both units are on line, or 3) both units are in startup.

Commitment E: A program will be established to ensure station operations is consistent with the assumptions made in the GDC-17 analysis. The program will specify the appropriate corrective actions to be taken if transmission system voltage goes outside the range of 505 KV to 535 KV.

Status E: Vepco has implemented a system-wide operating procedure to address this commitment and has provided these procedures in our letter of July 1, 1982 (Serial No. 374).

Item II: Modifications

- Commitment A: Rerate all motor operated valves (MOV's) to assure starting at predicted voltages. Motors on certain MOV's may have to be replaced. (The full scope for MOV rerating/motor replacement is still being developed.) In our February 26, 1982 letter, Serial No. 076, we stated 128 MOV's were involved. In January 20, 1984 letter, Serial No. 038, we stated only 56 MOV's would be required to operate during the period when voltage is between 80 and 90 percent.
- Status A: Motor operated valves, which are required to operate during an emergency when the voltage on the 480 volt bus is predicted to be between 80 and 90 percent of the rated motor voltage, have been reviewed and analyzed. The results of the review and analysis indicated that the motors for these valves will operate at the reduced voltage predicted by our GDC-17 analysis.
- Commitment B: Install a load shed scheme to remove certain motors when Unit 2 transfers to the RSSTs simultaneously with a Safety Injection (SI) or Containment Depressurization Actuation (CDA) occurrence on Unit 1.
- Status B: The installation of the new control circuitry for Unit 1 has been completed. The control circuitry for this item and items II C, E, F, and H is integrated and was issued as a single design. The control circuitry interconnects between Unit 1 and Unit 2. This circuitry has been activated and the commitment has been met.
- Commitment C: Trip the 34.5 KV reactors in the switchyard when an SI or CDA occurs on either unit.
- Status C: The installation of new control circuitry for the Unit 1 has been completed. The control circuitry for this item and Items II B, E, F, and H is integrated and was issued as single design. This circuitry has been activated and the commitment has been met.
- Commitment D: Install overvoltage alarms on 4160 and 480 volt emergency buses to alert station personnel to the need to protect equipment against high voltage.
- Status D: The modification has been completed and placed in service on Unit 1.
- Commitment E: Modify RSST load tap changer (LTC) control to eliminate all delays in LTC responses during the first three minutes of an SI or CDA event on either unit and on transfer of unit load to the RSS system.
- Status E: The control circuitry for this item and items II, B, C, F, and H is integrated and was issued as a single design. The installation of the new control circuitry for Unit 1 has been completed. We have resolved the problems with the new LTC control cards. This circuitry has been activated and the commitment has been met.

Commitment F: Block the auto starting of large non-IE motors, when the station service bus feeding the motor is fed from the same source as an emergency bus of a unit experiencing an SI or CDA.

Status F: The installation of the new control circuitry for Unit 1 has been completed. The control circuitry for this item and item II, B, C, E, and H is integrated and was issued as a single design. This circuitry has been activated and the commitment has been met.

Commitment G: Eliminate the automatic transfer of emergency buses from the Reserve Station Service to the Normal Station Service.

Status G: The modification of these control circuits has been completed and placed in service on Unit 1.

Commitment H: When a unit experiences an SI or CDA and the "G" bus tie breaker is closed, then all circulating water pumps on the unit experiencing the accident will be tripped.

Status H: The installation of the new control circuitry for Unit 1 has been completed. The control circuitry for this item and Items II B, C, E, and F is integrated and was issued as a single design. This circuitry has been activated and the commitment has been met.

Item III: Additional Commitments

Commitment A: In our letter of July 7, 1983 (Serial No. 326), Vepco stated that tests would be performed on motor control center contactor coils to determine the effects of overvoltage. In our letter of March 26, 1984 (Serial No. 326A), we stated our current schedule for completing the overvoltage test by May, 1984, obtaining a test report in June, 1984, and providing results to the NRC in July 1984.

Status A: Based on our presently available information we anticipate the test report will be available to Vepco in February, 1985. Based on the receipt of the report in February, Vepco will submit the results to the NRC in March, 1985.

Based on the aging which has been completed, the life of the contactor coils exceeds 10 years. Three of the ten size 1 coils have failed during thermal aging. We are presently evaluating the effect of this on test completion. We continue to believe that this is not a serious concern and that no immediate corrective actions will be required. However, we do anticipate that the replacement of size 1 coils may be required at some future date. Since most loads fed from size 1 starters operate intermittently and operate less than 20 per cent of the time, most size 1 coils will not require replacement.

NORTH ANNA UNIT 2
STATUS AND SCHEDULE FOR GDC-17 ANALYSIS
COMMITMENTS

Item I: Operating Restrictions:

Commitment A: Generator bus voltage must be maintained at an adequate level to ensure acceptable voltages are maintained on a "J" emergency bus fed from a station service bus.

Status A: An operating procedure has been implemented to comply with this requirement for Unit 2.

Commitment B: Load on a station service bus must be limited when a "J" emergency bus is fed from it.

Status B: An operating procedure has been implemented to comply with this requirement for Unit 2.

Commitment C: If Vepco installs the Unit 2 emergency to station service bus ties, then, when the emergency bus 2H is transferred to and fed from station service bus 2C, emergency bus 2J must be transferred to a power source other than Reserve Station Service Transformer C within 1 hour.

Status C: Vepco has not installed the Unit 2 Emergency to station service bus ties and their installation is not presently scheduled. Vepco will implement an operating procedure to comply with this requirement if bus ties are installed as designed.

Commitment D: The existing load shed, which is initiated when both units load to the Reserve Station Service Transformers (RSSTs), will be enabled at all times when 1) one unit is on line and the other unit is in startup, 2) both units are on line, and 3) both units are in startup.

Status D: The existing load shed is enabled at all times when 1) one unit is on line and the other is in startup, 2) both units are on line, or 3) both units are in startup.

Commitment E: A program will be established to ensure station operations is consistent with the assumptions made in the GDC-17 analysis. The program will specify the appropriate corrective actions to be taken if transmission system voltage goes outside the range of 505 KV to 535 KV.

Status E: Vepco has implemented a system-wide operating procedure to address this commitment and has provided these procedures in our letter of July 1, 1982 (Serial No. 374).

Item II: Modifications

Commitment A: Rerate all motor operated valves (MOV's) to assure starting at predicted voltages. Motors on certain MOV's may have to be replaced. (The full scope for MOV rerating/motor replacement is still being developed.) In our February 26, 1982 letter, Serial No. 076, we stated 128 MOV's were involved. In January 20, 1984 letter, Serial No. 038, we stated only 56 MOV's would be required to operate during the period when voltage is between 80 and 90 percent.

Status A: Motor operated valves, which are required to operate during an emergency when the voltage on the 480 volt bus is predicted to be between 80 and 90 percent of the rated motor voltage, have been reviewed and analyzed. The results of the review and analysis indicated that the motors for these valves will operate at the reduced voltage predicted by our GDC-17 analysis.

Commitment B: Install a load shed scheme to remove certain motors when Unit 2 transfers to the RSSTs simultaneously with a Safety Injection (SI) or Containment Depressurization Actuation (CDA) occurrence on Unit 1.

Status B: The installation of the new control circuitry for Unit 2 has been completed. The control circuitry for this item and items II C, E, F, and H is integrated and was issued as a single design. This circuitry has been activated and the commitment has been met.

Commitment C: Trip the 34.5 KV reactors in the switchyard when an SI or CDA occurs on either unit.

Status C: The installation of the new control circuitry for Unit 2 has been completed. The control circuitry for this item and Items II B, E, F, and H is integrated and was issued as single design. This circuitry has been activated and the commitment has been met.

Commitment D: Install overvoltage alarms on 4160 and 480 volt emergency buses to alert station personnel to the need to protect equipment against high voltage.

Status D: The modification has been completed and placed in service on Unit 2.

Commitment E: Modify RSST load tap changer (LTC) control to eliminate all delays in LTC responses during the first three minutes of an SI or CDA event on either unit and on transfer of unit load to the RSS system.

Status E: The installation of the new circuitry for Unit 2 has been completed. The control circuitry for this item and items II B, C, F, and H is integrated and was issued as a single design. The problems encountered with the new LTC control cards have been resolved. This new circuitry has been activated and the commitment has been met.

Commitment F: Block the auto starting of large non-IE motors, when the station service bus feeding the motor is fed from the same source as an emergency bus of a unit experiencing an SI or CDA.

Status F: The installation of the new control circuitry for Unit 2 has been completed. The control circuitry for this item and item II B, C, E, and H is integrated and was issued as a single design. This circuitry has been activated and the commitment has been met.

Commitment G: Eliminate the automatic transfer of emergency buses from the Reserve Station Service to the Normal Station Service.

Status G: This does not apply to Unit 2.

Commitment H: When a unit experiences an SI or CDA and the "G" bus tie breaker is closed, then all circulating water pumps on the unit experiencing the accident will be tripped.

Status H: The installation of the new control circuitry for Unit 2 has been completed. The control circuitry for this item and items II B, C, E, and F is integrated and was issued as a single design. This circuitry has been activated and the commitment has been met.

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