

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

June 26, 1980

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 458
NO/BMT:ms
Docket Nos. 50-280
50-281
50-338
License Nos. DPR-32
DPR-37
NFF-4

Dear Mr. Denton:

We have reviewed your letter of May 9, 1980 in reference to the history of experienced total and partial power outages at Surry and North Anna Power Stations. The attached response summarizes that history and addresses the specific questions contained in the "Loss of Offsite Power Survey".

Very truly yours,
Original Signed By
B. R. SYLVIA

B. R. Sylvia
Manager-Nuclear Operations
and Maintenance

Attachment

cc: Mr. James P. O'Reilly

Mr. Robert A. Clark, Chief
Operating Reactors Branch No. 3

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RESPONSE TO "LOSS OF OFFSITE POWER SURVEY"

REFERENCE: NRC letter dated May 9, 1980 from S. A. Varga - Operating Reactors Branch No. 1.

A review of Surry's experiences has been performed which indicated two partial losses of offsite power have been experienced; there have been no complete losses of offsite power.

The following are the responses to the survey questions:

A. Partial Loss of Offsite Power

- 1) HOW MANY CIRCUITS TO THE OFFSITE NETWORK ARE NORMALLY AVAILABLE AND HOW MANY WERE LOST DURING THE EVENT?

CASE 1 - There are two independent circuits from offsite transmission network available to energize the 4160 VAC and 480 VAC emergency buses - (two auto transformers which feed Bus 5 and Bus 6 respectively). Bus 5 was the only source lost, this resulted in a loss of two reserve station service transformers and a Unit 1 trip of the turbine and reactor.

CASE 2 - Initial conditions same as Case 1, except between event dates an additional source was added, transformer #4, which was added to supply buses 5 and 6.

The entire Bus #2 cleared itself as a result of a fault on the #2 auto-transformer. The #4 transformer energized the 34.5 Bus #6 automatically. There was no effect on either operating unit.

- 2) WHAT WAS THE CAUSE OF THE EVENT?

CASE 1 - The Buses 5 and 6 were tied together through the T562 Breaker. During testing on the LT-12 Breaker, the T562 breaker was mistakenly left in auto; it should have been in manual. When the LT-12 breaker was closed with its disconnects open, the breaker logic required the T562 to open, thus de-energizing the Bus #5.

Case 2 - While closing the Hi side breaker of the #2 auto transformer returning lightning arrestors to service, a ground fault occurred. This opened all of the #1 auto transformer breakers.

3) WHY DID THE OTHER LINES NOT FAIL WHEN SOME DID FAIL?

Case 1 - The event occurred as a result of breaker logic - nothing failed.

Case 2 - The tripping scheme functioned as designed, protecting the reset of the distribution system.

4) WAS ANY VOLTAGE INCREASE OR DECREASE EXPERIENCED JUST PRIOR TO OR DURING THE OUTAGES? IF SO, PLEASE GIVE DETAILS: LOWEST FREQUENCY REACHED, DECAY RATE, AFFECTS ON EQUIPMENT, OPERATION, ETC.

CASE 1 - None

CASE 2 - None

6) HOW LONG WAS POWER UNAVAILABLE FROM THE CIRCUIT?

CASE 1 - Approximately 45 minutes.

Case 2 - Power to the emergency buses was never interrupted.

7) DATE OF EVENT

CASE 1 - June 9, 1974

CASE 2 - November 10, 1978

B. For Losses of All Offsite Power:

NOTE: There have been no such events at Surry.

NORTH ANNA POWER STATION
RESPONSE TO "LOSS OF OFFSITE POWER SURVEY"

A thorough review of North Anna station records was conducted and it has been determined that no occurrences of the type mentioned in the survey have occurred.