

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

March 7, 1980

Mr. James P. O'Reilly, Director  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303

Serial No. 185  
PO/RGS:smv  
Docket Nos: 50-280  
50-281  
50-338  
50-339  
License Nos: DPR-32  
DPR-37  
NPF-4  
CPR-78

Dear Mr. O'Reilly:

IE BULLETIN 79-27  
NORTH ANNA POWER STATION UNITS 1 AND 2  
SURRY POWER STATION UNITS 1 AND 2

This is in response to IE Bulletin 79-27; "Loss of Non-Class IE Instrumentation and Control Power System Bus During Operation".

We have not completed our review of the subject bulletin, but the following interim response to IE Bulletin 79-27 provides the status of our review to date.

MRC Request

- "(1) Review the class IE and non-class IE buses supplying power to safety and non-safety-related instrumentation and control systems which could affect the ability to achieve a cold shutdown condition using existing procedures or procedures developed under item 2 below. For each bus:
- a) Identify and review the alarm and/or indication provided in the control room to alert the operator to the loss of power to the bus.
  - b) Identify the instrument and control system loads connected to the bus and evaluate the effects of loss of power to these loads including the ability to achieve a cold shutdown condition.
  - c) Describe any proposed design modifications resulting from these reviews and evaluations, and your proposed schedule for implementing those modifications."

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Response

- 1.a The results of our review indicates that the operator has available in the control room alarm and/or direct indication for the loss of power to the vital and D.C. distribution systems for the North Anna and Surry stations. There are no alarms and/or direct indications for the loss of semi-vital buses in the control room. However, the operator can be alerted by a combination of alarms and/or indication from individual instruments or equipment and determine that a loss of power has occurred.
- 1.b All instrument and control system loads connected to the vital, semi-vital and D.C. buses have been identified for North Anna Units 1 & 2 and Surry Unit 1. The review of each bus for Surry Unit 2 will be completed in the near future. It is anticipated that the evaluation of the effects of loss of power to these loads including the ability to achieve hot and cold shutdown conditions will be completed by June 1, 1980.
- 1.c If any design modifications resulting from our review and evaluation are required, we will provide a schedule for the implementation of those modifications.

NRC Request

- "(2) Prepare emergency procedures or review existing ones that will be used by control room operators, including procedures required to achieve a cold shutdown condition, upon loss of power to each class IE and non-class IE bus supplying power to safety and non-safety-related instrument and control systems. The emergency procedures should include:
- a) The diagnostics/alarms/indicators/symptoms resulting from the review and evaluation conducted per item 1 above.
  - b) The use of alternate indication and/or control circuits which may be powered from other non-class IE or class IE instrumentation and control buses.
  - c) Methods for restoring power to the bus.

Describe any proposed design modification of administrative controls to be implemented resulting from these procedures, and your proposed schedule for implementing the changes."

Response

2. In an effort to provide the comprehensive review and evaluation of the emergency procedures that has been requested, it is our intent to complete the review and evaluation of

item 1 prior to addressing all the concerns set forth in item 2. We are continuing our review of existing procedures, but based on the above approach, we intend to respond with the results of our review and actions to be taken on or before June 1, 1980.

#### NRC Request

- "(3) Re-review IE Circular No. 79-02, Failure of 120 Volt Vital AC Power Supplies, dated January 11, 1979, to include both class IE and non-class IE safety-related power supply inverters. Based on a review of operating experience and your re-review of IE Circular No. 79-02, describe any proposed design modifications or administrative controls to be implemented as a result of the re-review."

#### Response

3. We have rereviewed IE Circular 79-02 to include non-class IE power supply inverters. The following describes the results of our review for both class IE and non-class IE inverters.

- a) For North Anna Units 1 and 2 class IE inverters, there is no time delay circuitry or direct alternate 120VAC current input. The alternate DC power supply is from batteries. There is an alternate 120VAC power source which is manually actuated through an external transfer switch. This is used only as a maintenance by-pass device. Based on this arrangement, items 1, 2 and 3 to the referenced Circular are not applicable. With regard to item 4, maintenance procedures include reset of the manual transfer switch after maintenance is complete and ensures operability of the safety system.

For North Anna Units 1 and 2 non-class IE inverters, there are two inverters which supply power to each of the two units computers. Unlike vital bus inverters, each computer inverter has a static transfer switch which switches automatically to an alternate AC source upon loss of inverter output. This transfer also may be done manually. There is no time delay between loss of inverter output and automatic transfer, therefore, item 1 of the Circular does not apply. There is no AC input to the computer inverter, therefore, item 2 does not apply. The station operating history indicates the maximum availability of the computer inverter to continuously supply the load and requires no modification of the transfer circuitry or setpoints per item 3. Administrative controls, item 4, exist to ensure operability of safety systems after subcomponents have been subjected to maintenance or testing.

- b) The rereview of IE Circular 79-02 for Surry Units 1 and 2 has not been completed. We expect to have this review complete by April 15, 1980.
- c) In general, the administrative controls employed at North Anna and Surry ensures the operability of safety systems after maintenance by the performance of associated periodic tests, which directly check the instrumentation and control logic without the initiation of the safety function.

Very truly yours,

*C. M. Stallings*

C. M. Stallings  
Vice President - Power Supply  
and Production Operations

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cc: Mr. Victor Stello, Director  
Office of Inspection and Enforcement