PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-5001

SHIELDS L. DALTROFF
VICE PRESIDENT
ELECTRIC PRODUCTION

February 29, 1980

IE Bulletin 79-27

Mr. Boyce H. Grier, Director
Office of Inspection & Enforcement
Region I
US Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Dear Mr. Grier:

This is in response to your letter of November 30, 1979, which forwarded IE Bulletin 79-27. The actions requested and our responses are listed sequentially below.

Actions to Be Taken by Licensees

1. Review the class-1-E and non-class 1-E 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:

The Class 1-E and non-Class 1-E buses (distribution panels) supplying power to safety and non-safety related instrumentation and control systems which could affect the ability to achieve a cold shutdown using existing procedures have been reviewed.

a) The distribution panels listed in Table I supply power for all of the instruments identified in response 1.b. below. These panels have been reviewed to determine an alarm that would alert the operator to the loss of power to that panel. At least one alarm has been identified which specifically indicates loss of power to each panel with the exception of the 00Y02A, 00Y03, 20Y30, 30Y30, 20Y32, and 30Y32 panels. For these panels a review is still in progress to identify a process alarm that is associated with both the loss of feed and the instruments fed from that feed.

b) The power sources feeding the controls used to achieve a safe shutdown were designed to meet the single failure criteria. As a result, the plant can be placed in a hot shutdown condition following the loss of any power supply (to include either a set of fuses, distribution panel, diesel generator, or safeguard battery). The plant can be placed in a cold shutdown condition for the loss of any power source, with the exception of the controls for the valves in the shutdown cooling suction line. However, an alternate power source could be provided to these valves within the required time frame to permit them to be opened if their primary source of power and control were lost.

The instruments in the control room which provide information to the operator to achieve a cold shutdown have been identified and are listed in Table II. An analysis is being performed to determine if each of these instruments has an alternate instrument fed from a different distribution panel to monitor the same process parameter. For those instruments which do not have an alternate indication, additional review is in progress to determine if there is a procedural method for determining the missing variable. This review should be completed by March 31, 1980.

c) Possible design modifications and a schedule for implementing these modifications have not been determined pending the completion of the reviews mentioned above. It is anticipated that these reviews and a schedule for implementation of any proposed changes will be complete by March 31, 1980.

Action to be Taken by Licensees:

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 1-E and non-class 1-E bus supplying power to safety and non-safety related instrument and control systems. The emergency procedures should include:

   a) the diagnostics/alarms/indicators/symptom 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 1-E or class 1-E instrumentation and control buses.

   c) methods for restoring power to the bus.

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

Response

The review of emergency procedures and the development of one new procedure based on Action Items 2.a), b), and c) is continuing at the present time. A new procedure is being written for the loss of the non-class 1-E uninterruptuble AC distribution panel (Y50) to indicate what actions the operator should take in case of the loss of this panel. In addition, a list of all instruments associated with certain critical 120 volt feeds is being developed for use by the operators.

It is anticipated that a schedule for possible design modifications and administrative controls to be implemented as a result of the review of emergency procedures will be complete by March 31, 1980.

Actions to be Taken by Licensees

3. Re-review IE Circular No. 79-02, Failure of 120 Volt Vital AC Power Supplies, dated January 11, 1979, to include both class 1-E and non-class 1-E safety related power supply interters. Based on a review of operating experience and your re-review of IE Circular 79-02, describe any proposed design modifications or administrative controls to be implemented as a result of the re-review.

Response

Based on a re-review of IE Circular No. 79-02, there are no design modifications or administrative controls necessary for class 1-E or non-class 1-E safety related power supply inverters.

Very truly yours,

cc: US Nuclear Regulatory Commission
Office of Inspection & Enforcement
Division of Reactor Operations Inspection
Washington, DC 20555

TABLE I

DISTRIBUTION PANELS

Unit 2	Common	Unit 3
20Y15	00Y02	30Y15
20Y21	00Y03	30Y21
20Y22		30Y22
20Y30		30Y30
20Y32		30Y32
20Y33		30Y33
20Y34		30Y34
20Y35		30Y35
20Y37		30Y37
20Y50		30Y50
20D23		30D23
20D24		30D24
2AD25		3AD25
2BD25		3BD25
2AD45		3AD45
2BD45		3BD45
RPS Bus A		RPS Bus A
RPS Bus B		RPS Bus B

PBAPS

TABLE II

INSTRUMENTATION IDENTIFIED FOR REVIEW

Reactor - level, pressure
Vessel - temperature
Torus - level, temperature
Drywell - pressure, temperature
Rod Position Information System
Neutron Monitoring
Standby Liquid Control - level, pressure
High Pressure Coolant Injection - all instrumentation
Reactor Core Isolation Cooling - all instrumentation
Core Spray - all instrumentation
Residual Heat Removal/High Pressure Service Water - all instrumentation
Standby Gas Treatment System - flow, filter pressure differential
Emergency Cooling Towers
Relief Valves
Radiation Monitoring - reactor building vents, stack, control room
Condenser Vacuum
Condensate Storage Tank Level
Recirc. Pumps, M-G sets - flow, speed, temperature, controls
Instrument Air Pressure
Turbine Building Cooling Water - temperature
Reactor Building Cooling Water - temperature
Service Water - pressure