

PHILADELPHIA ELECTRIC COMPANY
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January 24, 1992

NUCLEAR ENGINEERING & SERVICES DEPARTMENT

Docket Nos. 50-277
50-278
50-352
50-353
License Nos. DPR-44
DPR-56
NPF-39
NPF-85

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: Peach Bottom Atomic Power Station, Units 2 and 3
Limerick Generating Station, Units 1 and 2
Response to Generic Letter 91-11, "Resolution of
Generic Issues 48, "LCOs for Class 1E Vital Instrument
Buses," and 49, "Interlocks and LCOs for Class 1E Tie
Breakers" Pursuant to 10 CFR 50.54(f)"

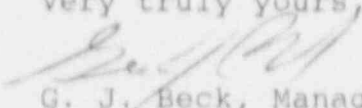
Dear Sir:

Enclosed are our responses to the recommended actions provided in the subject Generic Letter 91-11, dated July 18, 1991. Generic Letter 91-11 concerns the resolution of GI-48 and GI-49. GI-48 and GI-49 address vital AC buses and tie breakers that connect redundant safety-related buses. Enclosure 1 provides the responses for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. Enclosure 2 provides the responses for Limerick Generating Station (LGS), Units 1 and 2.

Philadelphia Electric Company certifies that LGS, Units 1 and 2 and PBAPS, Units 2 and 3 meet the guidance provided in this Generic Letter.

If you have any questions, please contact us.

Very truly yours,


G. J. Beck, Manager
Licensing Section

Enclosures

cc: T. T. Martin, Administrator, Region I, USNRC
J. J. Lyash, USNRC Senior Resident Inspector, PBAPS
T. J. Kenny, USNRC Senior Resident Inspector, LGS

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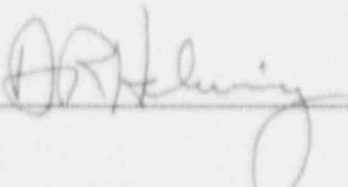
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COMMONWEALTH OF PENNSYLVANIA :
: SS.
COUNTY OF CHESTER :

D. R. Helwig, being first duly sworn, deposes and says:

That he is Vice President of Philadelphia Electric Company, that he has read the response to Generic Letter No. 91-11, and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.



Vice President

Subscribed and sworn to
before me this 24th day
of January 1992.



Notarial Seal
Erica A. Santori, Notary Public
Tredyffrin Twp. Chester County
My Commission Expires July 10, 1995

PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3
RESPONSE TO GENERIC LETTER 91-11

RECOMMENDED ACTION 1

"Ensure that your plant has procedures that include time limitations and surveillance requirements for

1. Vital instrument buses (typically 120V ac buses)."

RESPONSE

During plant operation, vital AC instrument buses and selected Class 1E DC instrument buses are supplied with normal power through a Manual Transfer Switch (MTS). The manual transfer switch (MTS) is located on the line side of each vital AC instrument bus and selected battery chargers which supply 1E DC instrument buses. One category of MTS's are installed such that alternate power sources can be used to supply the vital AC instrument buses and battery chargers while performing maintenance during plant shutdown. A second category of MTS's are installed such that the battery charger can be supplied by an alternate source during an Appendix R fire. The MTS is designed such that the normal and alternate sources cannot be connected in parallel. The MTS is the only method provided by the Peach Bottom Atomic Power Station (PBAPS) design which would allow the supplying of alternate power to the vital AC instrument buses or battery chargers.

The MTS's installed for maintenance purposes receive normal supply during all modes of plant operation. The maintenance MTSs' alternate supply, which can be used while performing maintenance during plant shutdown, is derived from the same channel but from the other unit. Since the emergency diesel generators (EDG) are common to both units, and each EDG supplies the same channel in both units, the single failure criterion and other plant design criteria are satisfied when the MTS's are used.

Some MTS's have been installed for fire protection (Appendix R) circuits. The MTS's installed for fire protection (Appendix R) circuits receive normal supply during all modes of plant operation. In the event of an Appendix R fire, the alternate supply for some, but not all, MTS's in fire protection (Appendix R) circuits is derived from different channels in the other unit. The postulated single failure for circuits associated with Appendix R requirements is an Appendix R fire. Therefore, the alternate power supply for these circuits need not comply with the single failure requirements.

One MTS, associated with the 2BD003 battery charger, serves as both a maintenance and fire protection (Appendix R) feed. The MTS normal supply is utilized during all modes of plant operation. In the event of an Appendix R fire or maintenance, the alternate supply is derived from the same channel but from the other unit.

Startup procedure GP-2 requires a visual verification of each MTS (via procedure RT-0-56-300-2(3) entitled "Required Switch and Breaker Positions Prior to Unit 2(3) Startup"), including those MTS's associated with Appendix R circuits, prior to plant startup to ensure the MTS is in the normal supply position.

The PBAPS vital AC instrument buses are discussed in Section 8.6 of the PBAPS Updated Final Safety Analysis Report (UFSAR). The PBAPS class 1E DC buses are discussed in Section 8.7 of the PBAPS UFSAR.

RECOMMENDED ACTION 2

"Ensure that your plant has procedures that include time limitations and surveillance requirements for

2. Inverters or other onsite power sources to the vital instrument buses, and"

RESPONSE

The vital AC instrument power supply system and Class 1E DC power supply system at PBAPS does not rely on inverters for continuous power supply to vital AC instrument buses. Several vital loads are supplied from the vital AC instrument buses and Class 1E DC buses through dedicated power supplies. The dedicated power supplies receive power from only one channel of AC and/or DC power. In addition, the PBAPS design does not have provisions for cross connecting channels of on-site power sources supplying the vital AC instrument buses or Class 1E DC buses.

Vital loads for the vital AC instrument power supply system are supplied by EDG's during loss of off-site power. A discussion of the PBAPS vital AC instrument on-site power sources is provided in Section 8.5 of the PBAPS UFSAR.

The Class 1E DC power supply system relies on battery chargers for continuous power supply to essential loads. When AC power input to the battery chargers is available, the battery chargers provide rectified AC power to the essential loads. When AC power input to the battery chargers is unavailable, the 125V batteries provide DC power to the essential loads. The change between rectified AC power and DC power occurs automatically. The PBAPS Class 1E DC on-site power sources are discussed in Section 8.7 of the PBAPS UFSAR.

RECOMMENDED ACTION 3

"Ensure that your plant has procedures that include time limitations and surveillance requirements for

3. Tie breakers that can connect redundant Class 1E buses (ac or dc) at one unit or that can connect Class 1E buses between units at the same site."

RESPONSE

The Class 1E buses (AC and DC) are configured such that each channel is supplied with an independent, fully rated, on-site power source. Therefore, tie breakers do not exist and the need for procedures addressing time limitations and surveillance requirements for tie breakers that can connect redundant Class 1E buses (AC or DC) at one unit or that can connect Class 1E buses between units are not applicable. The PBAPS Class 1E buses (AC and DC) are documented in Sections 8.5 & 8.7 of the PBAPS UFSAR.

During plant shutdown only, selected Class 1E load centers/ motor control centers have provisions for supplying power to loads normally supplied from different channel load centers/ motor control centers. These provisions are designed as a convenience to maintenance personnel and are enacted by operating procedures which place affected equipment in a limiting condition for operation when maintenance is required on the normal supply.

SUMMARY

PBAPS is designed for a loss of off-site power (LOOP) concurrent with a worst-case single failure of one EDG as documented in PBAPS UFSAR Section 8.5.2. Additionally, the PBAPS circuitry is designed to withstand a time delay without creating unacceptable failure modes during EDG starting.

LIMERICK GENERATING STATION, UNITS 1 AND 2
RESPONSE TO GENERIC LETTER 91-11

RECOMMENDED ACTION 1

"Ensure that your plant has procedures that include time limitations and surveillance requirements for

1. Vital instrument buses (typically 120V ac buses),"

RESPONSE

The Limerick Generating Station (LGS), Units 1 and 2, Technical Specifications (TS) are based on the Standard Technical Specifications (STS) for General Electric (GE) Boiling Water Reactors (BWRs). The LGS, Units 1 and 2 TS specify time limitations for the inoperability of the vital AC instrument buses and Class 1E DC buses in the limiting conditions for operation in Section 3/4.8.3. This LGS TS section also specifies associated surveillance requirements.

Additionally, the LGS, Units 1 and 2 design does not include provisions for cross connecting channels supplying the vital AC instrument buses or the Class 1E DC buses without modification to the plant. The vital AC instrument buses are supplied exclusively by their respective AC power supply system channel. The LGS Class 1E DC buses are supplied by battery chargers which are supplied exclusively by their respective AC power supply system channel. A description of the LGS vital AC instrument buses and the Class 1E DC buses is provided in Section 8.3 of the LGS Updated Final Safety Analysis Report (UFSAR).

RECOMMENDED ACTION 2

"Ensure that your plant has procedures that include time limitations and surveillance requirements for

2. Inverters or other onsite power sources to the vital instrument buses, and"

RESPONSE

The vital AC instrument power supply system at LGS does not rely on inverters for continuous power supply to vital AC instrument buses. Several vital loads are supplied from the vital AC instrument buses and Class 1E DC buses through dedicated power supplies. The dedicated power supplies receive power from only one channel of AC and/or DC power. Additionally, the vital loads are supplied by Emergency Diesel Generators (EDGs) during loss of off-site power.

The Class 1E DC power supply system relies on battery chargers for continuous power supply to essential loads. When AC power input to the battery chargers is available, the battery chargers provide rectified AC power to the essential loads. When AC power input to the battery chargers is unavailable, the 125V batteries provide DC power to the essential loads. The change between rectified AC power and DC power occurs automatically. A discussion of the LGS vital AC instrument and Class 1E DC on-site power sources is provided in Section 8.3 of the LGS UFSAR.

The LGS, Units 1 and 2 TS are based on the STS for GE BWRs. The LGS, Units 1 and 2 TS specify time limitations for the inoperability of the on-site power sources supplying the vital AC instrument buses and Class 1E DC buses in the limiting conditions for operation in Sections 3/4.8.1 and 3/4.8.2. These LGS TS sections also specify associated surveillance requirements. The LGS TS were reviewed and approved by the NRC through the licensing of LGS, Units 1 and 2.

The Reactor Protection System (RPS) power supply system at LGS, Units 1 and 2 utilizes an inverter as the preferred power source to the RPS bus; however, the RPS bus is a non-safeguard bus and the inverter is non-Class 1E. Power monitor channels, which monitor the power supply to the RPS bus, are subject to surveillance requirements and time limitations as defined in LGS, Units 1 and 2 TS Section 3/4.8.4.

RECOMMENDED ACTION 3

"Ensure that your plant has procedures that include time limitations and surveillance requirements for

3. Tie breakers that can connect redundant Class 1E buses (ac or dc) at one unit or that can connect Class 1E buses between units at the same site."

RESPONSE

The LGS, Units 1 and 2 Class 1E buses (AC and DC) are configured such that each channel is supplied with an independent, fully rated, on-site power source. Therefore, tie breakers do not exist. The LGS Class 1E buses (AC and DC) are discussed in Section 8.3 of the LGS UFSAR.

SUMMARY

LGS is designed in compliance with 10 CFR 50, Appendix A as documented in LGS UFSAR Section 3.1. This includes compliance with the appropriate General Design Criteria which ensures that no single failure would disable AC vital instrument buses or the Class 1E DC buses. LGS is also designed for a loss of off-site power (LOOP) concurrent with a worst-case single failure as discussed in LGS UFSAR Section 8.3.1.1.3. The LGS vital loads

are designed to withstand a time delay without creating unacceptable failure modes during EDG starting. The LGS design has been reviewed and approved by the NRC as documented in NUREG-0991, "Safety Evaluation Report Related to the Operation of Limerick Generating Station, Units 1 and 2," dated August 1983, and applicable supplements.