

PHILADELPHIA ELECTRIC COMPANY

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JUN 15 1988

S. J. KOWALSKI
VICE-PRESIDENT
NUCLEAR ENGINEERING

Mr. W. T. Russell, Administrator
United States Nuclear Regulatory Commission
Attention: Document Control Clerk
Washington, DC 20555

SUBJECT: Limerick Generating Station, Unit 2
Significant Deficiency Report No. 232-2
Westinghouse Type DS Fused Disconnect Switch
NRC Construction Permit No. CPPR-107

REFERENCE: 1) Telecon of PECO to NRC, dated April 15, 1988
2) Interim Report, SDR No. 232-2, dated May 13, 1988

FILE: QUAL 2-10-2 SDR No. 232-2

Dear Mr. Russell:

In compliance with 10CFR50.55(e), we are submitting our final Significant Deficiency Report concerning the subject Westinghouse Type DS Fused Disconnect Switches.

We trust that this satisfactorily resolves the item. If further information is required, please do not hesitate to contact us.

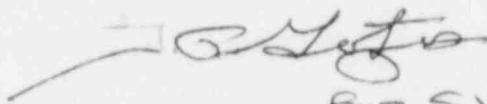
Sincerely,

JJMC/GHR/06138801

Attachment

Copy to: W. T. Russell, Administrator
U.S. Nuclear Regulatory Commission, Region 1
631 Park Avenue
King of Prussia, PA 19406

R. A. Gram, Senior Resident Inspector
Limerick Generating Station - Unit 2
U.S. Nuclear Regulatory Commission
P.O. Box 46
Sanatoga, PA 19464



FOR SJK.

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NUCLEAR ENGINEERING
ENGINEERING DIVISION
N2-1, 2301 Market Street

Significant Deficiency Report - SDR No. 232-2
Westinghouse Type DS Fused Disconnect Switches
Limerick Generating Station, Unit 2
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Description of Deficiency

During the connection of Unit 2 field cables to Westinghouse Type DS fused disconnect switches used in B-K electrical panels, it was noted that mechanical connectors integral to the fuse mounting assembly would not adequately secure some #8 AWG wires although the connectors themselves were marked #14-1/0. This condition was documented on Bechtel NCR No. 12991 and PECO SNCR S-1-E. This condition has the potential to result in excessive heating of the cable connector interface, or a cable could possibly become disconnected, thereby disabling a circuit. The connector is designed with a set screw engaging threads within the fuse clip holder. Some set screws, when inserted into the block to the maximum depth (determined by the block's threading) do not contact the opposing face of the block.

A sample of connectors removed from Unit 2 indicated a large variation in the gap that results after setting the screw to its maximum depth. In certain instances, connectors with the widest gaps could not be used to adequately terminate wires up to size #6 AWG.

At Limerick Generating Station, #10 AWG wires (the smallest used for power conductors) are terminated with a compression lug and do not use mechanical connectors.

Corrective Action

Connections using size #8 AWG and #6 AWG wires were reterminated with compression lugs similar to the #10 AWG wires.

Connections where two #8 AWG wires are in tandem on a single connector were determined and inspected for thread depth. If the connector was improperly manufactured, the connector was replaced with a properly manufactured connector and the #8 AWG wire pair was reterminated.

In the case of the #8 AWG wire pairs, the mechanical screw could be tightened as designed and provides a good electrical connection. Corrective action described above was performed per disposition of the NCR and SNCR, which were closed on 4/26/88 and 4/25/88, respectively.

Action to Prevent Recurrence

The Limerick Generating Station Specification, Wire and Cable, Notes and Details, E-1412, Rev. 15, Section 4.5 specifies compression terminations for all power cables. The use of vendor supplied mechanical connectors in B-K electrical panels, addressed in this SDR, is permitted by exception A to 4.5 of E-1412. Because all mechanical connector deficiencies in B-K electrical panels have been identified and corrected under Bechtel NCR No. 12991 and PECO. SNCR S-1-E, no action to prevent recurrence is required.

Safety Implications

These mechanical connectors are used in all four divisions of the safeguard 125 Volt D.C. system. Loose wire connections can be postulated to cause a loss of 125 Volt D.C. power to all four divisions of several Class 1E circuits, thereby, jeopardizing plant safety. Therefore, this deficiency, if left uncorrected, could have affected the safe operation of the plant.

JJMC/GHR/06138802