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SHIELDS L. DALTROFF
VICE PRESIDENT
ELECTRIC PRODUCTION

April 15, 1982

Docket Nos. 50-277
50-278

Mr. John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing
US Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Stolz:

During a conference call on March 8, 1982, between Mr. R. Prevatte, NRC, and Messrs. W. J. Mindick, L. C. Fletcher, and B. A. Allshouse, Philadelphia Electric Company, we were asked to provide additional clarification of information presented in our December 31, 1979 submittal on the Adequacy of Station Distribution Voltages. Following is an explanation of the cases discussed during the conference call.

Case 4 of our 12/31/79 submittal described the lowest steady state voltages on the 4 kV buses after the unit auxiliary buses are transferred from the unit auxiliary transformers to the startup transformers. The case represents the voltages that would exist following an accident in one unit with the other unit at power and only one startup source available. A modification, which we expect to complete by September 1, 1982, will automatically shed the cooling tower load when the unit auxiliary buses transfer to the startup transformers. When this modification is completed, the voltages will be those given in Case 5 of our 12/31/79 submittal.

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These voltages are the lowest steady state voltages that would exist during the first hour after an accident, before shutdown of the non-accident unit is started. These voltages are summarized below and can be seen to fall within acceptable limits.

220 kV bus	218.5 kV
13 kV bus	12.6 kV
4 kV bus	3.84 kV
460 V bus	421 V

Cases 6 and 7 of our 12/31/79 submittal described the steady state voltages that the units would experience during the shutdown of the non-accident unit following an accident in the other unit with only one startup source available. The voltage studies did not assume a simultaneous shutdown in the non-accident unit since manual operations would be required to shut down the unit. There is nothing resulting from the accident, or voltage dip caused by the accident, that would cause the non-accident unit to trip off.

The sequence of events for Case 7 were as follows:

a) Both units are at full power.

b) Accident occurs in one unit, other unit continues to operate.

c) In the period after 10 minutes to an hour, the accident unit would be stabilized and nonessential load reduced.

d) After the first hour, the power level in the nonaccident unit would be reduced in preparation for shutdown.

e) The non-accident unit auxiliary load would be transferred to the offsite source following shutdown procedures which will maintain bus voltages within acceptable limits and the unit would be tripped.

Case 6 of our 12/31/79 submittal represents the voltages that would occur after the first hour, if the nonaccident unit auxiliary loads were transferred to the single off-site source without regard to load on the start-up transformer. The system procedures have been modified to prevent manual

operations that would cause a degraded voltage condition. These procedures relate to operating with one offsite source, shutdown with one offsite source, and recovery following the loss of one offsite source. Since there is nothing that automatically initiates the shutdown of the nonaccident unit, it is realistic to use manual operations for adding and shedding loads during the shutdown. By following the procedures that are now in effect, the non-accident unit can be shutdown after the first hour and the resulting bus voltages are given in Case 7 of our 12/31/79 submittal. Case 6 can be avoided by following the new procedures. The resulting bus voltages for Case 7 are summarized below and can be seen to fall within acceptable limits.

220 kV bus	218.5 kV
13 kV bus	12.2 kV
4 kV bus	3.77 kV
460 V bus	416 V

If you have any questions or require additional information, please don't hesitate to call.

Very truly yours,