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PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4502

December 22, 1981

JOHN S. KEMPER
VICE-PRESIDENT
ENGINEERING AND RESEARCH

Docket Nos. 50-352
50-353

Mr. Robert L. Tedesco
Asst. Director for Licensing
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Limerick Generating Station
Resolution of Channel Box Deflection Issue
for Near-Term BWR OLS

Dear Mr. Tedesco:

Your letter of October 26, 1981 to E. G. Bauer transmitted Section 4.2.3.5 of Amendment No. 76 to the Zimmer FSAR, which proposes several steps that could be taken to mitigate the consequences of channel bowing, and requested Philadelphia Electric Company's commitment to a similar plan for Limerick Generating Station.

Philadelphia Electric Company proposes the following channel residence guidelines and testing procedures to mitigate potential fuel channel bowing and its effects.

Channel Residence Guidelines

1. Records will be kept of channel location and exposure for each cycle.*
2. When possible, channels will not reside in the outer row of the core for more than two operating cycles.
3. Channels that reside in the outer row for more than one cycle will be positioned in core locations that permit different channel sides to face the core edge on successive cycles.
4. Channels that reside in the outer row of the core for three or more cycles will not be shuffled inward.
5. At the beginning of each cycle, the combined (sum of) outer row residence times for any two channels in any control rod cell will not exceed four peripheral cycles.

* The term "cycle", as used in the following recommendations, is defined to be a nominal fuel cycle (12-18 months).

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Testing Procedures

Prior to beginning a new operating cycle, control rod motion testing will be performed for all core cells and therefore, for those cells that might be exceeding the above guidelines.

Rod motion testing currently performed by many operating BWR's as part of their Technical Specifications and Reload Startup Test Programs will adequately demonstrate the scrammability of the reactor.

The Standard Technical Specifications require that each control rod be moved at least one notch every 7 days. Technical Specifications also require periodic scram testing. In addition, Limerick Generating Station will perform a control rod motion test similar to that used by operating BWR's as part of Reload Startup Testing. This test will confirm that each control rod can move full stroke under normal control rod drive (CRD) operating pressures.

The tests discussed above demonstrate the mobility of the control rods at normal CRD operating pressure. The forces on the control blade during scram are orders of magnitude higher than those at normal operation. Therefore, control rods that are movable at normal CRD pressure will not prevent the scram function.

These tests will demonstrate that channel interference, if any, is not significant enough to effect the safety of the plant.

Should you require any additional information, please contact us.

Sincerely,

