PHILADELPHIA ELECTRIC COMPANY

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M. J. COONEY MANAGER NUCLEAR PRODUCTION ELECTRIC PRODUCTION DEPARTMENT

May 30, 1986

Docket Nos. 50-277 50-278

Dr. T. E. Murley, Administrator Region I U.S. Nuclear Regulatory Commission 631 Park Avenue King of Prussia, PA 19406

Subject: Response to IE Bulletin 86-01: (Minimum Flow Logic Problems that Could Disable RHR Pumps), Dated May 23, 1986

Dear Dr. Murley:

The purpose of this letter is to provide the Philadelphia Electric Company (PECo) response to IE Bulletin 86-01 for Peach Bottom Units 2 and 3. The bulletin discussed a situation at an operating nuclear power plant in which a single failure occurring under certain accident sequences could result in all Residual Heat Removal (RHR) system minimum flow bypass valves being signaled to close while all other pump discharge valves are also closed. The postulated single failure involves loss of a flow sensing instrument. As indicated in the bulletin, this condition could result in no flow through the RHR pumps and could lead to the pumps running dead headed with potential for pump damage in a few minutes. The actions required by the bulletin are restated below followed by our response:

- Promptly determine whether or not your facility has this single failure vulnerability.
- If the problem exists, immediately instruct all operating shifts of the problem and measures to recognize and mitigate the problem.

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- 3. Within 7 days of receipt of this bulletin, provide (a) a written report to the NRC which identifies whether or not this problem exists at your facility, (b) if the problem exists, identify the short-term modifications to plant operating procedures or hardware that have been or are being implemented to assure safe plant operations.
- 4. If the problem exists, provide a written report within 30 days of receipt of this bulletin informing the NRC of the schedule for long-term resolution of problems that are identified as a result of this bulletin.

Response

PECo has reviewed the RHR minimum flow logic for Peach Bottom Units 2 and 3 and has determined that the single failure condition discussed in IE Bulletin 86-01 does not exist at either Peach Bottom unit. The Units 2 and 3 RHR minimum flow logics are identical. Each unit has four RHR pumps, with each pump being protected by its own minimum flow valve. Further, each minimum flow valve is controlled by a separate differential pressure indicating switch (DPIS). Attachment 1 provides a list of the subject pumps, valves, and switches. Each DPIS senses pump suction pressure and discharge pressure to determine whether a high or low differential pressure condition exists across the pump. The resulting pump differential pressure is inversely related to pump flow.

Each DPIS has two sets of switch contacts. One switch closes on low differential pressure to provide an automatic closing signal for the minimum flow valve. This condition exists when the pump is either shutdown or has adequate discharge flow. The other switch closes on high differential pressure to provide an automatic opening signal for the minimum flow valve when the pump is running and high differential pressure exists across the pump for at least 10 seconds.

Because each DPIS provides open/close signals to only one minimum flow valve, the failure of a DPIS would only affect its associated pump.

Based on the foregoing discussion, the RHR minimum flow logic problem identified in IE Bulletin 86-01 does not exist at Peach Bottom Units 2 or 3. Dr. T. E. Murley

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Should you have any questions, or require additional information, please do not hesitate to contact us.

Very truly yours,

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Attachment

cc: T. P. Johnson, Resident Site Inspector Document Control Desk

ATTACHMENT 1 Bulletin 86-01 Response May 30, 1986 Docket Nos. 50-277 50-278

RHR PUMP MINIMUM FLOW PROTECTION PEACH BOTTOM UNITS 2 AND 3

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RHR Pump	Minimum Flow Valve	Control Device
2AP35	MO-2-10-16A	DPIS-2-10-121A
2CP35 2DP35	MO-2-10-16C MO-2-10-16D	DPIS-2-10-121C DPIS-2-10-121C DPIS-2-10-121D
3AP35 3BP35 3CP35 3DP35	MO-3-10-16A MO-3-10-16B MO-3-10-16C MO-3-10-16D	DPIS-3-10-121A DPIS-3-10-121B DPIS-3-10-121C DPIS-3-10-121D

COMMONWEALTH OF PENNSYLVANIA :

COUNTY OF PHILADELPHIA

M. J. Cooney, being first duly sworn, deposes and says:

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SS.

That he is Manager-Nuclear Production, of Philadelphia Electric Company, the Applicant herein; that he has read the foregoing response to I.E. Bulletin No. 86-01 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.

Chancy

Subscribed and sworn to before me this 30^{77} day of May , 1986

Melanie K. Carporella

Notary Public MELANIE R. CAMPANELLA Notary Public, Philadelphia, Philadelphia Co. My Commission Expires February 12, 1990