

NRCB No. 95-02

**PECO NUCLEAR**

A Unit of PECO Energy

PECO Energy Company
965 Chesterbrook Boulevard
Wayne, PA 19087-5691

April 3, 1997

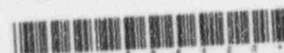
Docket Nos. 50-277
50-278
50-352
50-353License Nos. DPR-44
DPR-56
NPF-39
NPF-85U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555Subject: Peach Bottom Atomic Power Station, Units 2 and 3
Limerick Generating Station, Units 1 and 2
Response to Request for Additional Information Concerning
NRC Bulletin 95-02, "Unexpected Clogging of a Residual Heat
Removal (RHR) Pump Strainer While Operating in Suppression
Pool Cooling Mode"

Gentlemen:

This letter is being submitted in response to an NRC Request for Additional Information (RAI) issued by letter dated March 4, 1997, concerning PECO Energy Company's response to NRC Bulletin (NRCB) No. 95-02, "Unexpected Clogging of a Residual Heat Removal (RHR) Pump Strainer While Operating in Suppression Pool Cooling Mode," for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3, and Limerick Generating Station (LGS), Units 1 and 2.

NRCB 95-02 was issued on October 17, 1995, and requested that licensees evaluate the operability of their Emergency Core Cooling System (ECCS) pumps that draw suction from the suppression pool. The NRC requested that this evaluation be based on suppression pool cleanliness, suction strainer cleanliness, and the effectiveness of the licensee's Foreign Material Exclusion (FME) practices. NRCB 95-02 also requested that licensees implement appropriate procedural modifications and other actions (e.g., suppression pool cleaning), as necessary, to minimize foreign material in the suppression pool, drywell, and containment. By letter dated November 16, 1995, PECO Energy responded to NRCB 95-02 for PBAPS, Units 2 and 3, and LGS, Units 1 and 2. Te44

By letter dated May 9, 1996, the NRC issued an RAI concerning our response and implementation efforts that were instituted in response to this Bulletin. PECO Energy subsequently responded to this RAI by letter dated June 10, 1996.

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April 3, 1997

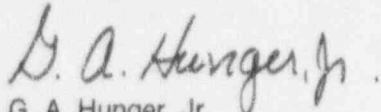
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However, as a result of the NRC's continued review of PECO Energy's response and implementation efforts for NRCB 95-02, several additional issues were identified in which supplementary information is needed in order for the NRC to complete its review of our response to NRCB 95-02. Specifically, in the March 4, 1997 letter, the NRC requested clarification concerning what surveillances/inspections would be conducted or implemented in the future regarding suppression pool and strainer cleanliness to ensure long-term operability of the ECCS. The NRC requested that we provide a response addressing the identified issues within 30 days.

Accordingly, the attachment to this letter provides PECO Energy's response to the specific issues identified by the NRC concerning future suppression pool surveillances/inspections for PBAPS, Units 2 and 3, and LGS, Units 1 and 2. The attachment to this letter includes a restatement of these issues followed by our response.

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

Very truly yours,



G. A. Hunger, Jr.
Director - Licensing

Attachment

cc: H. J. Miller, Administrator, USNRC, Region I (w/ attachment)
N. S. Perry, USNRC Senior Resident Inspector, LGS (w/ attachment)
W. L. Schmidt, USNRC Senior Resident Inspector, PBAPS (w/ attachment)

ATTACHMENT

Peach Bottom Atomic Power Station, Units 2 and 3
Limerick Generating Station, Units 1 and 2

Response to Request for Additional Information Concerning
NRC Bulletin 95-02, "Unexpected Clogging of a
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**Peach Bottom Atomic Power Station, Units 2 and 3
Limerick Generating Station, Units 1 and 2
Response to Request for Additional Information Concerning NRC Bulletin 95-02**

Question

In PECO's June 10, 1996 response to the NRC staff's May 9, 1996 RAI, PECO described a four part program for ensuring adequate suppression pool cleanliness which PECO stated was an effective program to demonstrate both short-term and long-term operability of the Emergency Core Cooling System (ECCS). However, your response to NRC Bulletin 96-03 appears to indicate that this program may not be maintained in the long-term as described in your June 10, 1996 response. Please describe what surveillances/inspections you intend to conduct or implement in the future regarding suppression pool and strainer cleanliness to ensure long-term operability of the ECCS. Please include a description of the frequency and acceptance criteria to be used. In addition, please describe your specific plans for implementing a suppression pool cleaning program, including frequency and acceptance criteria. Provide your basis for concluding that these actions will be adequate to ensure that the ECCS will always be sufficiently free from debris to ensure its capability to perform its intended function.

Response

PECO Energy intends to continue with its monitoring program described in our June 10, 1996 letter, at PBAPS, Units 2 and 3, and LGS, Units 1 and 2, until the installation of the replacement strainers is completed on each unit. Following completion of the installation and satisfactory testing of the replacement strainers on each unit at PBAPS and LGS, PECO Energy intends to implement the following changes to its current monitoring program on the associated unit:

- 1) Sampling of water and sludge for the presence of fiber. This activity will be discontinued since the size of the replacement strainers will preclude operational debris from impacting ECCS pump performance.
- 2) Trending of ECCS pump differential pressure (dP) data from Inservice Inspection Testing (IST). This activity will be discontinued since the size of the replacement strainers would preclude this test from ever yielding meaningful data. Furthermore, the size of these replacement strainers will also preclude operational debris from impacting ECCS pump performance.
- 3) Visual inspection of strainer surfaces for fibrous foreign material. The Foreign Material Exclusion (FME) controls and practices that have been in place at PBAPS and LGS during the last several years have been successful in maintaining vital areas (e.g., suppression chambers and drywells) in an operable condition. Therefore, when the replacement strainers are installed at PBAPS, Units 2 and 3, and LGS, Units 1 and 2, the units will have been operated for two (2) refueling cycles under these current FME controls. Based on the results of previous inspections and those to be performed during the next refueling outages for each of the units, baseline data regarding suppression chamber and ECCS pump strainer surface cleanliness can be ascertained. Therefore, if no appreciable amounts of fibrous material or debris are discovered (i.e., less than approximately 1% of the strainer surface matted with fibrous material) during inspections in these two (2) consecutive refueling cycles, the inspection interval will be extended to every other refueling outage. The 1% value is only being established in order to help assess the adequacy of our FME controls. Any changes in the inspection frequency will be appropriately evaluated to ensure there is no adverse impact on plant operations.

- 4) Inspection of the suppression chamber floor. When the replacement strainers are installed at PBAPS, Units 2 and 3, and LGS, Units 1 and 2, each of the units will have been operated for two (2) refueling cycles, during which inspections have been, or will be performed. Based on the results of inspections that were performed, and those planned to support the replacement strainer installations, baseline data regarding suppression chamber cleanliness and sludge accumulation can be determined. If the amount of sludge material discovered on the suppression chamber floor during the inspections in these two (2) consecutive refueling cycles does not exceed the design basis assumptions for the strainers (i.e., 100 lbs/year), the inspection interval will be increased to every other refueling outage. Any changes in the inspection frequency will be appropriately evaluated to ensure there is no adverse impact on plant operations.
- 5) Suppression chamber cleaning at PBAPS, Units 2 and 3, and LGS, Units 1 and 2, will be performed as necessary based on the results of inspections performed during subsequent refueling outages. However, PECO Energy will establish a maximum suppression chamber cleaning frequency at 10-year intervals based on the design aspects of the replacement strainers. This frequency coincides with other 10-year interval Inservice Inspection (ISI) activities. However, if subsequent inspections demonstrate that the actual sludge accumulation rate is less than the rate assumed in the strainer design, the maximum cleaning interval may be changed. Any changes in the cleaning frequency will be appropriately evaluated to ensure there is no adverse impact on plant operations.

The monitoring program changes discussed above are justifiable based on the design of the replacement strainers. The design debris loading for the replacement strainers is approximately 650 ft³ of NUKON insulation material and 1000 lbs of corrosion products for the PBAPS units, and approximately 900 ft³ of NUKON insulation material and 1000 lbs of corrosion products for the LGS units. However, the actual debris loading used to size the replacement strainers will be 1800 ft³ of NUKON insulation material and 1000 lbs of corrosion products for the PBAPS units, and 2000 ft³ of NUKON insulation material and 1000 lbs of corrosion products for the LGS units, which affords an operational margin of at least 100% to 150%. This operational margin far exceeds the amount of anticipated debris that would be expected to be generated. Therefore, even a gross failure of the FME controls at PBAPS and LGS would not impact the performance of the ECCS pumps. As a result, the monitoring program that will be implemented following installation of the replacement strainers does not need to be as rigorous with regard to operational debris, but needs to identify changes in the expected rate of corrosion product accumulation and gross failures of the FME controls at PBAPS and LGS.
