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ACCESSION NBR: 9306140271    DOC.DATE: 93/06/08    NOTARIZED: YES    DOCKET #  
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50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv    05000388  
AUTH.NAME    AUTHOR AFFILIATION  
BYRAM, R.G.    Pennsylvania Power & Light Co.  
RECIP.NAME    RECIPIENT AFFILIATION  
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SUBJECT: Responds to NRC Bulletin 93-002, "Debris Plugging of CSS Suction Strainers." Fibrous air filter & other fibrous temporary matl not present in primary containment, based on actions taken to determine presence of subj matl.

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**Pennsylvania Power & Light Company**

Two North Ninth Street • Allentown, PA 18101-1179 • 215/774-5151

Robert G. Byram  
Senior Vice President-Nuclear  
215/774-7502

JUN 08 1993

U.S. Nuclear Regulatory Commission  
Attn.: Document Control Desk  
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**SUSQUEHANNA STEAM ELECTRIC STATION  
RESPONSE TO NRC BULLETIN 93-02  
DEBRIS PLUGGING OF ECCS STRAINERS  
PLA-3983 FILE R41-1A**

Docket Nos. 50-387  
and 50-388

This letter responds to NRC Bulletin 93-02, "Debris Plugging of Emergency Core Cooling Suction Strainers".

PP&L has performed the actions necessary to determine the presence of fibrous air filters and other fibrous temporary material inside primary containment. These actions indicate that none of this material is currently present inside the primary containment of Susquehanna Units 1 and 2. Based on this result no further compensatory actions are required in response to NRC Bulletin 93-02.

The enclosed report discusses, in more detail, the actions taken by PP&L to respond to Bulletin 93-02.

Should you have any questions, please call Mr. Terence Bannon at (215) 774-7918.

Very truly yours,

  
R. G. Byram

Enclosure

cc: NRC Region I  
Mr. G. S. Barber, NRC Resident Inspector  
Mr. R. J. Clark, NRC Sr. Project Manager

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## INTRODUCTION

The following provides PP&L's response to the concerns identified in NRC Bulletin No. 93-02 regarding the potential for debris plugging Emergency Core Cooling System (ECCS) suction strainers. The primary concern of this bulletin is the impact of corrosion products and other debris adhering to fibrous air filters and other temporary materials that may become trapped on ECCS suction strainers. These materials are used during outages and may remain within primary containment following the outage without being accounted for in calculations for ECCS suction strainer performance. It has been found that these materials can trap corrosion products that may not otherwise pose a threat to suction strainer blockage. The result of the combination of these fibrous materials and corrosion products on ECCS suction strainers can be a rapid decrease in ECCS pump suction pressure. It is also noted in the bulletin that the potential for permanently installed material of a similar nature causing similar problems is under further evaluation.

## REQUESTED ACTIONS

The following actions are requested in the bulletin with regard to the concerns over "temporary materials":

1. Identify fibrous air filters or other temporary sources of fibrous material, not designed to withstand a LOCA, which are installed or stored in your primary containment.
2. Take any immediate compensatory measures which may be required to assure the functional capability of the ECCS.
3. Take prompt action to remove any such material. Because of the low probability of a LOCA event, the NRC staff considers removal of this material at the next shutdown, or within 120 days, whichever comes first to be sufficiently prompt.
4. Within 30 days of the date of the bulletin, provide a written response stating whether the actions requested above have been or will be performed.

## RESPONSE TO REQUESTED ACTIONS

PP&L has reviewed the design, procedures, and work practices associated with air filters and temporary materials that are installed or used inside primary containment for the concerns raised in the bulletin. We have also reviewed past activities associated with the installation and use of air filters. These reviews have yielded the following conclusions with regard to the actions requested in NRC Bulletin No. 93-02:

1. No fibrous air filters or other temporary sources of fibrous material are currently installed in the primary containment of either Susquehanna unit. This is based on the following:
  - A. During outage periods, HEPA filter units and vacuum cleaner filters are used inside primary containment, however, the filters are contained within their respective enclosures and the filters are changed outside primary containment. At the conclusion of the outage both the HEPA filter units and the vacuum cleaners are removed from primary containment
  - B. The Drywell Cooling unit coolers do not have any filters installed as part of their design.
  - C. Temporary filters are not installed on Drywell Coolers during outages or plant operation.
  - D. Plant procedure NDAP-QA-0309 Attachment A, "Primary Containment Closeout Checklist", ensures all outage debris, trash, temporary equipment, etc. are removed prior to containment closeout.
  
2. Since no fibrous air filters or other temporary materials have been identified, no immediate compensatory actions are required to assure the functional capability of the ECCS. PP&L conducted an inspection of the coating on the liner plate at the floor and walls of the Unit 1 suppression pool in the spring of 1992. This inspection indicated that the sludge layer at the bottom of the pool is negligible (1/16 in. to 1/8 in.). Small floating debris observed at this time was removed. The following procedures are currently in place to minimize the possibility of materials being introduced into primary containment:
  - A. While material accountability is not performed in the drywell, housekeeping activities and procedures provide for as clean a work environment as practical. In addition to housekeeping during the outage, a significant effort and walkdown is performed at the end of the outage to ensure all debris is removed prior to containment closeout.
  - B. The drywell is separated from the wetwell (and suppression pool) by a diaphragm slab as part of Susquehanna's Mark II containment design. The only communication between the drywell and wetwell is via the 87 open downcomers. In accordance with Preventative Maintenance Activities M1227-01 and M1227-51, the downcomer lids on all but approximately 20 downcomers are lowered at the

start of an outage.<sup>1</sup> Those 20 downcomers have barriers installed around them to restrict free access to the downcomers, thereby preventing a worker from inadvertently dropping material down the downcomers.

- C. The use of HEPA filter units is controlled via plant procedures (WM-GP-005/006), and HEPAs are checked daily for proper operation. The installation and removal is controlled via a plant work authorization.
  - D. Procedure NDAP-QA-0503 includes provisions for excluding foreign material from entering the wetwell. Foreign material exclusion is provided at the entrance to the wetwell through material accountability, and restricting wetwell access to the extent possible. Additionally, via procedure NDAP-QA-0506 ("Foreign Material Exclusion"), any material inadvertently dropped into the suppression pool is documented on a Non-Conformance Report and retrieved or evaluated as acceptable to remain in the suppression pool.
3. No prompt actions are required to remove material in response to this bulletin.

#### RELATED ISSUES

PP&L is currently engaged in assessing the impact on ECCS suction strainers of debris and corrosion products adhering to permanently installed fibrous materials that become dislodged as a result of a pipe break (e.g., insulation). Prior to the issuance of NRC Bulletin No. 93-02, a PP&L Engineering Discrepancy Report (EDR) was issued identifying the need to address the impact that corrosion products may have on existing calculations for ECCS suction strainer plugging. PP&L is currently pursuing this issue and intends to perform inspections in the upcoming outages to further assess this issue. PP&L will inform the NRC of developments in this area as appropriate.

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<sup>1</sup> THESE 20 DOWNCOMERS ARE REQUIRED TO SUPPORT ECCS REQUIREMENTS DURING AN OUTAGE.





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