



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

February 4, 1980  
NRC/THI-80-020

Docket no. 50-320

Mr. R. C. Arnold  
Senior Vice President  
Metropolitan Edison Company  
100 Interpace Parkway  
Parsippany, New Jersey 07054

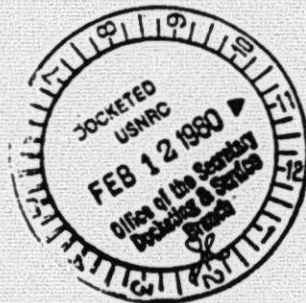
Dear Mr. Arnold:

Subject: Reactor Building Purge

Reference: GPU letter, GQL 1416, R. C. Arnold to R. H. Vollmer,  
dated November 12, 1979

The NRC staff review of the hardware intended for use during the proposed purge of the Reactor Building (R.B.) has identified the following concerns:

1. The purge discharge fan and filter housing do not appear to be compatible. The fan, AH-E34, is capable of producing a negative pressure in excess of 40 inches W.G. at the fan inlet during zero flow conditions. The filter housing, which is connected to the fan inlet, is rated to a minimum pressure of -11 inches W.G. This disparity in pressure ratings provides a potential for filter housing failure and a resultant radioactive release to the Auxiliary Building (A.B.). Several situations can be identified which would result in underpressurization of the filter housing as a result of the pressure rating disparity. These include:
  - a. Automatic closure of valve AH-V3A on high R.B. pressure.
  - b. Inadvertent closure of any one of the valves upstream of the filter housing.
  - c. High pressure drop across the filters and/or high R.B. negative pressure. Please note that a R.B. pressure of -.4 PSIG is in itself sufficient to exceed the filter housing negative pressure rating.
2. To ensure against inadvertent release of R.B. gases through the air inlet valve, AH-V7, controls should be established to maintain the R.B. at a negative pressure with respect to the A.B. throughout the purge. The automatic closure set point of AH-V3B should be reset from +.5 PSIG to some negative value. The feasibility of adding a check valve type device to the air inlet line should be investigated.



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3. The filters are situated in a low point with respect to the other purge system components. Any condensation would, therefore, collect in the filter housing. Filter housing drains directed to a liquid waste collecting system should be added to the design.
4. Please provide additional information on the type of sensors and indicators which will be used to measure purge flow rates. What is the accuracy of these devices at the projected purge rates?

The concerns addressed in this letter are hardware oriented and as such do not affect the progress of the R.B. Purge Environmental Assessment, which is currently being prepared by the NRC staff. The release of the Environmental Assessment, however, will be contingent upon satisfactory resolution of all hardware and technical concerns.

*John T. Collins*

John T. Collins  
Deputy Director  
NRC/TMI Technical Support Staff

cc: See Distribution List

Mr. R. C. Arnold  
Metropolitan Edison Company

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STATE OF PENNSYLVANIA

Walter W. Cohen, Consumer Advocate  
Department of Justice  
Strawberry Square, 14th Floor  
Harrisburg, PA 17127

Robert L. Knupp, Esquire  
Assistant Solicitor  
Knupp and Andrews  
P. O. Box P  
407 H. Front Street  
Harrisburg, PA 17108

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Dauphin Co. Board of Commissioners  
Dauphin County Courthouse  
Front and Market Streets  
Harrisburg, PA 17101

Robert Q. Pollard  
Chesapeak Energy Alliance  
609 Montpelier Street  
Baltimore, MD 21218

Chauncey Kepford  
Judith H. Johnsrud  
Environmental Coalition on Nuclear Power  
433 Orlando Avenue  
State College, PA 16801

Ms. Frieda Berryhill, Chairperson  
Coalition for Nuclear Power Plant  
Postponement  
2610 Grendon Drive  
Wilmington, DE 19808

Holly S. Keck  
Anti-Nuclear Group Representing York  
245 W. Philadelphia Street  
York, PA 17404

John Levin, Esquire  
Pennsylvania Public Utilities Commission  
P. O. Box 3265  
Harrisburg, PA 17120

Jordon D. Cunningham, Esquire  
Fox, Farr and Cunningham  
2320 N. Second Street  
Harrisburg, PA 17110

Ms. Kathy McCaughin  
Three Mile Island Alert, Inc.  
23 South 21st Street  
Harrisburg, PA 17104

Ms. Marjorie M. Aamodt  
R. D. #5  
Coatesville, PA 19320

Ms. Karen Sheldon  
Sheldon, Harmon, Roisman & Weiss  
1725 I Street, N.W., Suite 506  
Washington, DC 20006

Earl B. Hoffman  
Dauphin County Commissioner  
Dauphin County Courthouse  
Front and Market Street  
Harrisburg, PA 17101

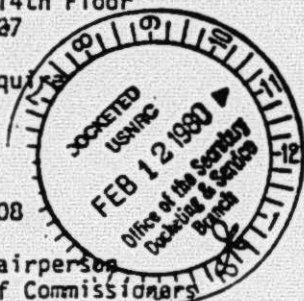
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Dr. Edward O. Swartz  
Board of Supervisors  
Londonderry Township  
RFD #1 Geyers Church Road  
Middeltown, PA 17057

U. S. Environmental Protection Agency  
Region III Office  
ATTN: EIS COORDINATOR  
Curtis Building (Sixth Floor)  
6th and Walnut Streets  
Philadelphia, PA 19106

Dauphin County Office Emergency  
Preparedness  
Court House, Room 7  
Front and Market Streets  
Harrisburg, PA 17101

Department of Environmental Resources  
ATTN: Director, Office of  
Radiological Health  
P. O. Box 2063  
Harrisburg, PA 17105



R. C. Arnold  
Metropolitan Edison Company

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Mr. R. F. Wilson  
Director, TMI-2  
Metropolitan Edison Company  
P. O. Box 480  
Middletown, PA 17057

Mr. J. J. Barton  
Manager, Site Operations, TMI-2  
Metropolitan Edison Company  
P. O. Box 480  
Middletown, PA 17057

Mr. R. W. Heward  
Radiological Control Manager, TMI-2  
Metropolitan Edison Company  
P. O. Box 480  
Middletown, PA 17057

Mr. B. Elam  
Manager, Plant Engineering  
Metropolitan Edison Company  
P. O. Box 480  
Middletown, PA 17057

Mr. L. W. Harding  
Supervisor of Licensing  
Metropolitan Edison Company  
P. O. Box 480  
Middletown, PA 17057

Mr. E. G. Wallace  
Licensing Manager  
GPU Service Corporation  
100 Interpace Parkway  
Parsippany, NJ 07054

Mr. I. R. Finrock, Jr.  
Jersey Central Power & Light Company  
Madison Avenue at Punch Bowl Road  
Morristown, NJ 07950

Mr. R. W. Conrad  
Pennsylvania Electric Company  
1007 Broad Street  
Johnstown, PA 15907

J. B. Lieberman, Esquire  
Berlock, Israel, Lieberman  
26 Broadway  
New York, NY 10004

George F. Trowbridge, Esquire  
Shaw, Pittman, Potts & Trowbridge  
1800 M Street, N.W.  
Washington, DC 20036

Ms. Mary V. Southard, Chairperson  
Citizens for a Safe Environment  
P. O. Box 405  
Harrisburg, PA 17108

Dr. Walter H. Jordan  
881 W. Outer Drive  
Oak Ridge, TN 37830

Dr. Linda W. Little  
5000 Hermitage Drive  
Raleigh, NC 27612

Karin W. Carter, Esquire  
505 Executive House  
P. O. Box 2357  
Harrisburg, PA 17120

Honorable Mark Cohen  
512 E-3 Main Capital Building  
Harrisburg, PA 17120

Ellyn Weiss, Esquire  
Sheldon, Harmon, Roisman & Weiss  
1725 I Street, N.W., Suite 506  
Washington, DC 20006

Mr. Steven C. Sholly  
304 S. Market Street  
Mechanicsburg, PA 17055

Mr. Thomas Gerusky  
Bureau of Radiation Protection  
P. O. Box 2063  
Harrisburg, PA 17120

Mr. Marvin I. Lewis  
6504 Bradford Terrace  
Philadelphia, PA 19149

Ms. Jane Lee  
R. D. 3, Box 3521  
Etters, PA 17319

Mr. R. C. Arnold  
Metropolitan Edison Company

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Governor's Office of State  
Planning and Development  
ATTN: Coordinator, Pennsylvania  
Clearinghouse,  
P. O. Box 1323  
Harrisburg, PA 17120

Mrs. Rhoda D. Carr  
1402 Marene Drive  
Harrisburg, PA 17109

Mr. Robert B. Borsum  
Babcock & Wilcox  
Nuclear Power Generation Division  
Suite 420, 7735 Old Georgetown Road  
Bethesda, MD 20014

Ivan W. Smith, Esquire  
Atomic Safety and Licensing Board  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Atomic Safety and Licensing Board Panel  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Atomic Safety and Licensing Appeal Panel  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Docketing and Service Section  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555