REGULATORY DOCKET FILE COPY

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

July 1, 1980

Docket No. 50-289

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

Dear Mr. Arnold:

Recently we have been notified by the Toledo Edison Company that a number of fuel assembly holddown spring failures have been observed at the Davis-Besse, Unit No. 1 plant which is currently undergoing its first refueling outage. We understand that as a result of these failures, Babcock & Wilcox has requested that you conduct examinations of fuel assemblies at your facility to determine if any failures have occurred. We are interested in knowing the results of holddown spring inspections at your facility as well as the safety significance of operating with broken springs in the core.

Enclosed is a set of questions regarding this subject. It is requested that you provide responses to these questions within 60 days of receipt of this letter.

Sincerely,

R. W. Reid

Thomas M. Novak, Assistant Director
for Operating Reactors
Division of Licensing

Enclosure:
Holddown Spring
Questions

cc w/enclosure:
See next page

8007170651

cc w/enclosure(s):
Mr. Marvin I. Lewis
6504 Bradford Terrace
Philadelphia, Pennsylvania 19149

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

Robert L. Knupp, Esq.
Assistant Solicitor
Knupp and Andrews
P.O. Box P
407 N. Front Street
Harrisburg, Pennsylvania 17108

John E. Minnich, Chairman
Dauphin Co. Board of Commissioners
Dauphin County Courthouse
Front and Market Sts.
Harrisburg, Pennsylvania 17101

* Atomic Safety and Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

* Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

* Docketing and Service Section
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Robert Q. Pollard
609 Montpelier Street
Baltimore, Maryland 21218

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

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

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

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

Dr. Linda W. Little
5000 Hermitage Drive
Raleigh, North Carolina 27612

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

John Levin, Esq.
Pennsylvania Public Utilities Comm.
Box 3265
Harrisburg, Pennsylvania 17120

Jordan D. Cunningham, Esq.
Fox, Farr and Cunningham
2320 North 2nd Street
Harrisburg, Pennsylvania 17110

Theodore A. Adler, Esq.
WIDOFF REAGER SELKOWITZ & ADLER
Post Office Box 1547
Harrisburg, Pennsylvania 17105

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

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

Earl B. Hoffman
Dauphin County Commissioner
Dauphin County Courthouse
Front and Market Streets
Harrisburg, Pennsylvania 17101

Ms. Ellen R. Weiss, Esq.
Sheldon, Harmon & Weiss
1725 I Street, N.W.
Suite 506
Washington, D. C. 20006

Mr. Steven C. Sholly
304 South Market Street
Mechanicsburg, Pennsylvania 17055

Mr. Thomas Gerusky
Bureau of Radiation Protection
Department of Environmental Resources
P.O. Box 2063
Harrisburg, Pennsylvania 17120

Mr. G. P. Miller
Mr. R. F. Wilson
Mr. J. J. Barton
Metropolitan Edison Company
P. O. Box 480
Middletown, Pennsylvania 17057

G. F. Trowbridge, Esquire
Shaw, Pittman, Potts & Trowbridge
1800 M Street, N.W.
Washington, D. C. 20036

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

Pennsylvania Electric Company
Mr. R. W. Conrad
Vice President, Generation
1001 Broad Street
Johnstown, Pennsylvania 15907

Miss Mary V. Southard, Chairman
Citizens for a Safe Environment
Post Office Box 405
Harrisburg, Pennsylvania 17108

Government Publications Section
State Library of Pennsylvania
Box 1601 (Education Building)
Harrisburg, Pennsylvania 17126

Mr. David D. Maxwell, Chairman
Board of Supervisors
Londonderry Township
RFD#1 - Geyers Church Road
Middletown, Pennsylvania 17057

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

Metropolitan Edison Company
ATTN: J. G. Herbein, Vice President
P. O. Box 542
Reading, Pennsylvania 19603

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

Karin W. Carter, Esq.
505 Executive House
P. O. Box 2357
Harrisburg, Pennsylvania 17120

Honorable Mark Cohen
512 D-3 Main Capital Building
Harrisburg, Pennsylvania 17120

Dauphin County Office Emergency
Preparedness
Court House, Room 7
Front & Market Streets
Harrisburg, Pennsylvania 17101

Department of Environmental Resources
ATTN: Director, Office of Radiological
Health
Post Office Box 2063
Harrisburg, Pennsylvania 17105

Director, Technical Assessment
Division
Office of Radiation Programs
(AW-459)
U. S. Environmental Protection Agency
Crystal Mall #2
Arlington, Virginia 20460

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

* Ivan W. Smith, Esq.
Atomic Safety & Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

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

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

Mr. R. J. Toole
Manager, TMI-1
Metropolitan Edison Company
P. O. Box 480
Middletown, PA 17057

Mr. W. E. Potts
Radiological Controls Manager, TMI-1
Metropolitan Edison Company
P. O. Box 480
Middletown, PA 17057

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

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

Mr. J. J. Colitz
Plant Engineering Manager, TMI-1
Metropolitan Edison Company
P. O. Box 480
Middletown, Pennsylvania 17057

York College of Pennsylvania
Country Club Road
York, Pennsylvania 17405

Mr. G. K. Hovey
Director, TMI-2
Metropolitan Edison Company
P. O. Box 480
Middletown, PA 17057

Mr. B. Elam
Manager, Plant Engineering, Unit 2
Metropolitan Edison Company
P. O. Box 480
Middletown, PA 17057

Mr. Richard Roberts
The Patriot
812 Market Street
Harrisburg, PA 17105

Mr. R. W. Heward
Manager, Radiological Control, Unit 2
Metropolitan Edison Company
P. O. Box 480
Middletown, Pennsylvania 17057

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

Allen R. Carter, Chairman
Joint Legislative Committee on Energy
Post Office Box 142
Suite 513
Senate Gressette Building
Columbia, South Carolina 29202

Enclosure

HOLD-DOWN SPRING QUESTIONS TO LICENSEES

1. (If the reactor is down for refueling and the reactor vessel head is off) Examine all fuel assembly holddown springs in the core and in the spent fuel pool and report the number and extent of damage on the springs and affected assembly components.

or

(Alt.) (If the reactor is operating.) Review video tapes of the core from the last refueling and examine all assemblies in the spent fuel pools. Report the number and extent of damage on the springs and affected assembly components.

2. Provide a discussion of the safety significance of operating with one or more broken springs in the core. Your discussion should include, but not necessarily be limited to the following:

   a. Assume the holddown spring is broken, provide an estimate of the flow conditions under which the assemblies would be levitated. (Provide the value of the force required to lift the assembly, the flow conditions under which that force would be supplied, the number of coolant pumps that would be in operation under such conditions, and the schedule of reactor operations under which such conditions might have been achieved.) Contrarily, demonstrate the margin between the assembly weight and the calculated maximum applied lift-off force, if there is such margin.

   b. Have any loose assembly parts (i.e., broken springs, pieces of cladding) been observed anywhere in the primary system? Describe your methods for loose part detection. Are there installed noise detectors capable of detection of broken springs, pieces of cladding, or vibrating assemblies?

   c. Have there been any excore or in-core neutron detector indications of levitated assemblies? Describe the expected reactivity effects that would result from lift-off or reseating of assemblies with broken hold-down springs. What efforts are being utilized to detect loose assemblies by either nuclear or mechanical monitoring devices?

   d. Have there been any observed indications of lateral repositioning of loose assemblies? Describe the methods used to detect lateral assembly motion. Describe the degree of lateral repositioning that is physically (dimensionally) possible after lift-off. What are the postulated worst-case effects of a laterally displaced assembly?

   e. (i) Describe the degree of "worst-case" mechanical damage that would be expected as a result of movement of a "loose" assembly (one with a broken spring) against adjacent assemblies, core baffle, or other core components.

      (ii) Discuss the results of flow tests or other experiments that have provided measurements of axial or lateral vibratory motion of an assembly after lift-off or that would otherwise support the response to Q 2.e(i).

3. Provide a description of the cause of the failures and corrective action to reduce the likelihood of future failures at your facility.