

AUGUST 2 1982

DISTRIBUTION

Docket File RJacobs
 NRC PDR RIngram
 L PDR Gray File+4
 ORB#4 Rdg ASLAB
 DEisenhut EBlackwood
 OELD Hornstein
 AEOD MPadovan
 IE-2 ERossi
 ACRS-10 BSnyder
 TBarnhart-4
 LSchneider
 OGC
 OPA
 DBrinkman
 RDiggs

DMB016

Docket No. 50-289

Mr. Henry D. Hukill
 Vice President
 GPU Nuclear Corporation
 P. O. Box 480
 Middletown, Pennsylvania 17057

Dear Mr. Hukill:

The staff has completed its review of your response to NUREG-0737, Item II.K.2.9 (Long Term Order Item 1) "Failure Mode Effects Analysis on the Integrated Control System" for Three Mile Island Nuclear Station, Unit No. 1 (TMI-1). We find that the Unit 1 design meets all current regulatory requirements. The staff has not identified any control system failures or actions that would lead to unacceptable consequences at TMI-1. Our supplemental Safety Evaluation is enclosed.

The issue of ICS failures will no longer be pursued on a plant by plant basis. All vendor designs and all control systems that affect plant safety will now be reviewed under Unresolved Safety Issue (USI) A-47. The purpose of this USI is to perform in depth evaluations of control systems and to evaluate the adequacy of current licensing requirements.

Consequently, no additional licensing action is to be taken at this time, and NUREG-0737 Item II.K.2.9 is considered closed for TMI-1. Resolution of USI A-47 will determine if it will be necessary to impose additional and more stringent requirements on control systems in the future.

Sincerely,

*ORIGINAL SIGNED BY
 JOHN F. STOLZ*

John F. Stolz, Chief
 Operating Reactors Branch #4
 Division of Licensing

Enclosure:
 Safety Evaluation

cc w/enclosure:
 See next page

8208170358 820802
 PDR ADOCK 05000289
 P PDR

OFFICE	ORB#4:DL	C-ORB#4:DL					
SURNAME	RJacobs:cf	JStolz					
DATE	8/1/82	8/2/82					

Mr. R. J. Toole
Manager, TMI-1
GPU Nuclear Corporation
P. O. Box 480
Middletown, Pennsylvania 17057

*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

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

*Judge Gary J. Edles, Chairman
Atomic Safety and Licensing Appeal Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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

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

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

Ms. Gail P. Bradford
Anti-Nuclear Group Representing
York
245 W. Philadelphia Street
York, Pennsylvania 17404

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

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

Ms. Louise Bradford
TMIA
1011 Green Street
Harrisburg, Pennsylvania 17102

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

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

Union of Concerned Scientists
c/o - Harmon & Weiss
1725 I Street, N. W.
Suite 506
Washington, D. C. 20006

Mr. Steven C. Sholly
Union of Concerned Scientists
1346 Connecticut Avenue, N. W.
Dupont Circle Building, Suite 1101
Washington, D. C. 20036

GPU Nuclear Corporation

- 2 -

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

Professor Gary L. Milhollin
1815 Jefferson Street
Madison, Wisconsin 53711

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

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

William S. Jordan, III, Esq.
Harmon & Weiss
1725 I Street, NW, Suite 506
Washington, DC 20006

Ms. Virginia Southard, Chairman
Citizens for a Safe Environment
264 Walton Street
Lemoyne, Pennsylvania 17043

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

Regional Radiation Representative
EPA Region III
Curtis Building (Sixth Floor)
6th and Walnut Streets
Philadelphia, Pennsylvania 19106

Mr. Richard Conte
Senior Resident Inspector (TMI-1)
U.S.N.R.C.
P. O. Box 311
Middletown, Pennsylvania 17057

General Counsel
Federal Emergency Management Agency
ATTN: Docket Clerk
1725 I Street, NW
Washington, DC 20472

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

York College of Pennsylvania
Country Club Road
York, Pennsylvania 17405

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
P. O. Box 2063
Harrisburg, Pennsylvania 17105

Ms. Lennie Prough
U. S. N. R. C. - TMI Site
P. O. Box 311
Middletown, Pennsylvania 17057

Mr. Robert B. Borsum
Babcock & Wilcox
Nuclear Power Generation Division
Suite 220, 7910 Woodmont Avenue
Bethesda, Maryland 20814

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

Mr. C. W. Smyth
Supervisor of Licensing TMI-1
GPU Nuclear Corporation
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

*Judge John H. Buck
Atomic Safety and Licensing Appeal
Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

*Judge Christine N. Kohl
Atomic Safety and Licensing Appeal
Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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

Mr. Ronald C. Haynes, Regional Administrator
U. S. N. R. C., Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Board of Directors
P. A. N. E.
P. O. Box 268
Middletown, Pennsylvania 17057

*Dr. Lawrence R. Quarles
Atomic Safety and Licensing Appeal
Board
U. S. Nuclear Regulatory Commission
Mail Stop EW-529
Washington, D. C. 20555

SUPPLEMENTAL SAFETY EVALUATION REPORT

JUL 30 1969

THREE MILE ISLAND NUCLEAR STATION, UNIT 1 (TMI-1)

D. LONG TERM ACTIONS

ORDER ITEM 1

(NUREG-0737, ITEM II.K.2.9)

ICS FAILURE MODE AND EFFECTS ANALYSIS

It was ordered that the licensee demonstrate reasonable progress toward satisfactory completion of the following action:

- "1. Submit a failure mode and effects analysis of the ICS to the NRC staff as soon as practicable."

In NUREG-0680 (P. D1-1) and Supplement No. 3 to NUREG-0680 (P. 49) the staff reported that Metropolitan Edison had referenced BAW-1564, "Integrated Control System Reliability Analysis," for the failure mode and effects analysis applicable to TMI-1 and responded to the B&W recommended actions contained in BAW-1564. The staff further indicated in Supplement No. 3 to NUREG-0680 (P. 49) that the staff had not identified any ICS related malfunctions that could not be adequately mitigated by plant safety systems and that the licensee had:

1. committed to modify the electrical distribution systems to the ICS to ensure that the operator can take prompt action to minimize the consequences of a failure in the normal power supply
2. committed to investigating other modifications which would increase the reliability of the ICS power supply
3. described actions taken at TMI to minimize feedwater oscillations
4. described procedures and operator training for operation of the ICS.

In letters LIL 310 dated November 9, 1981, and 5211-82-149 dated June 25, 1982, the licensee described a design review, verification tests, changes in controls, additional instrumentation, controls and alarms, and new operating procedures for the purpose of:

- 1) reducing the probability of loss of NNI/ICS power
- 2) enabling operators to recognize loss of power
- 3) providing guidance to operators for dealing with loss of power.

The staff has reviewed the licensee's responses submitted in LIL 310 and 5211-82-149 and concluded that these responses satisfactorily complete required licensee actions related to the ICS Failure Mode and Effects Analysis and that the Three Mile Island Nuclear Station, Unit 1 ICS design meets all current regulatory requirements.

However, for the longer term Unresolved Safety Issue USI A-47, "Safety Implications of Control Systems," which was begun in December, 1980, has as its principle task, the assessment of the adequacy of current regulatory requirements for control systems. Resolution of A-47 will determine whether it will be necessary to impose additional and more stringent requirements on control systems in the future.