July 30, 1985

Docket No. 50-289

Mr. Henry D. Hukill, Vice President
and Director - TMI-1
GPU Nuclear Corporation
P. O. Box 480
Middletown, Pennsylvania 17057

Dear Mr. Hukill:

DISTRIBUTION
Docket File
NRC PDR
L PDR
ORB#4 Rdg
HThompson
TPoindexter
TMI Site Pouch
LHarmon
ACRS-10
TBarnhart-4
HOrnstein
EJordan
EButcher
WJones
BGrimes
RDiggs
JPartlow
RIngram
OThompson
Gray File+4
EBlackwood
BSnyder
WRussell
OELD
CMiles

SUBJECT: AMENDMENT NO. 109 TO FACILITY OPERATING LICENSE NO. DPR-50

The Commission has issued the enclosed Amendment No. 109 to Facility Operating License No. DPR-50 for the Three Mile Island Nuclear Station, Unit No. 1 (TMI-1). This amendment consists of changes to the Technical Specifications (TSs) in response to your TS Change Request No. 38, Rev. 1, dated March 5, 1985.

This amendment incorporates into the TMI-1 TSs your commitments regarding the control of heavy loads and specifically the potential drop of a fuel casks; these commitments were made in support of resolution of multiplant action MPA C-10, Control of Heavy Loads.

A copy of our Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

"ORIGINAL SIGNED BY
JOHN F. STOLZ"
John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing

Enclosures:
1. Amendment No. 109
2. Safety Evaluation

cc w/enclosures:
See next page

ORB#4:DL	ORB#4:DL	ORB#4:DL	OELD	AD:OR:DL
RIngram	OThompson;cr	JStolz	E. GRAY	GLainas
7/16/85	7/16/85	7/18/85	7/19/85	7/19/85

Mr. Henry D. Hukill
GPU Nuclear Corporation

Three Mile Island Nuclear Station
Unit No. 1

cc:
Mr. R. J. Toole
O&M Director, TMI-1
GPU Nuclear Corporation
Middletown, Pennsylvania 17057

Richard J. McGoey
Manager, PWR Licensing
GPU Nuclear Corporation
100 Interpace Parkway
Parsippany, New Jersey 70754

Mr. C. W. Smyth
TMI-1 Licensing Manager
GPU Nuclear Corporation
P. O. Box 480
Middletown, Pennsylvania 17057

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

Ivan W. Smith, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Sheldon J. Wolfe, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. Gustave A. Linenberger, Jr.
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. James Lamb, III
Administrative Judge
313 Woodhaven Road
Chapel Hill, North Carolina 17514

Mr. David Hetrick
Administrative Judge
Professor of Nuclear Energy
University of Arizona
Tucson, Arizona 85721

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

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

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

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

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

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

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

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

cc:
Thomas Y. Au, Esq.
Office of Chief Counsel
Department of Environmental Resources
505 Executive House
P. O. Box 2357
Harrisburg, Pennsylvania 17120

Mr. Bob Stein, Director of Research
Committee on Energy
P. O. Box 11867
104 Blatt Building
Columbia, South Carolina 29211

Ms. Jane Lee
183 Valley Road
Etters, Pennsylvania 17319

Ms. Marjorie M. Aamodt
Mr. Norman Aamodt
200 North Church Street
Parkesburg, Pennsylvania 19365

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

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

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

Mr. Bruce Molholt
Haverford College
Haverford, Pennsylvania 19041

Mr. Donald E. Hossler
501 Vine Street
Middletown, Pennsylvania 17057

Mr. Ad Crable
Lancaster New Era
8 West King Street
Lancaster, Pennsylvania 17602

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

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

William S. Jordan, III, Esq.
Harmon, Weiss & Jordan
20001 S Street, N.W.
Suite 430
Washington, D.C. 20009

Lynne Bernabei, Esq.
Government Accountability Project
1555 Connecticut Ave., N.W.
Washington, D.C. 20009

Michael W. Maupin, Esq.
Hunton & Williams
707 East Main Street
P. O. Box 1535
Richmond Virginia 23212

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

Ms. Ellyn R. Weiss
Harmon, Weiss & Jordan
2001 S Street, N.W.
Suite 430
Washington, D.C. 20009

Michael McBride, Esq.
LeBoeuf, Lamb, Leiby & McRae
Suite 1100
1333 New Hampshire Avenue, N.W.
Washington, D.C. 20036

cc:
Atomic Safety & Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Atomic Safety & Licensing Appeal
Board Panel (8)
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docketing and Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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

METROPOLITAN EDISON COMPANY

JERSEY CENTRAL POWER AND LIGHT COMPANY

PENNSYLVANIA ELECTRIC COMPANY

GPU NUCLEAR CORPORATION

DOCKET NO. 50-289

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 109
License No. DPR-50

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by GPU Nuclear Corporation, et al (the licensees) dated March 5, 1985, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.c.(2) of Facility Operating License No. DPR-50 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 109, are hereby incorporated in the license. GPU Nuclear Corporation shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 30, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 109

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

Pages
vii
3-55
3-56
3-56a
3-56b (new page)

LIST OF FIGURES

3.11 Handling of Irradiated Fuel

Applicability

Applies to the operation of the fuel handling building crane when within the confines of Unit 1 and there is any spent fuel in storage in the Unit 1 fuel handling building.

Objective

To define the lift conditions and allowable areas of travel when loads to be lifted and transported with the fuel handling building crane are in excess of 15 tons or between 1.5 tons and 15 tons or consist of irradiated fuel elements.

Specification

3.11.1 Spent fuel elements having less than 120 days for decay of their irradiated fuel shall not be loaded into a spent fuel transfer cask in the shipping cask area.

3.11.2 The key operated travel interlock system for automatically limiting the travel area of the fuel handling building crane shall be imposed whenever loads in excess of 15 tons are to be lifted and transported with the exception of fuel handling bridge maintenance.

3.11.3 The lowest surface of all loads in excess of 15 tons shall be administratively limited to an elevation one foot or less above the concrete surface at the nominal 348 ft-0 in. elevation in the fuel handling building.

3.11.4 Loads in excess of hook capacity shall not be lifted, except for load testing.

3.11.5 Following modifications or repairs to any of the load bearing members, the crane shall be subjected to a test lift of 125 percent of its rated load.

3.11.6 Administrative controls shall require the use of an approved procedure with an identified safe load path for loads in excess of 3,000 lbs. handled above the Spent Fuel Pool Operating Floor (348' elevation).

3.11.7 During transfer of the cask to and from the cask loading pit, the cask will be restricted to the transfer path shown in Figure 3.11-1. Administrative controls will be used to ensure that all lateral movements of the cask are performed at slow bridge and trolley speeds. During this transfer the cask lifting yoke shall be oriented in the East-West direction.

Bases

This Specification will limit activity releases to unrestricted areas resulting from damage to spent fuel stored in the spent fuel storage pools in the postulated event of the dropping of a heavy load from the fuel handling building crane. An analysis(1) was performed assuming that the cask and its entire contents of ten fuel assemblies are sufficiently damaged as a result of dropping the cask, to allow the escape of all noble gases and iodine in the gap. This release was assumed to be directly to the atmosphere and to occur instantaneously. The site boundary doses resulting from this accident are 5.25 R whole body and 1.02 R to thyroid, and are within the limits specified in 10 CFR 100.

Specification 3.11.1 requires that spent fuel, having less than 120 days decay post-irradiation, not be loaded in a spent fuel transfer cask in order to ensure that the doses resulting from a highly improbable spent fuel transfer cask drop would be within those calculated above.

Specification 3.11.2 requires the key operated interlock system, which automatically limits the travel area of the fuel handling crane while it is lifting and transporting the spent fuel shipping cask, to be imposed whenever loads in excess of 15 tons are to be lifted and transported while there is any spent fuel in storage in the spent fuel storage pools in Unit 1. This automatically ensures that these heavy loads travel in areas where, in the unlikely event of a load drop accident, there would be no possibility of this event resulting in any damage to the spent fuel stored in the pools, any unacceptable structural damage to the spent fuel pool structure, or damage to redundant trains of safety related components. The shipping cask area is designed to withstand the drop of the spent fuel shipping cask from the 349 ft-0 in. elevation without unacceptable damage to the spent fuel pool structure.

Specification 3.11.3 ensures that the lowest surface of any heavy load never gets higher than one foot above the concrete surface of the 348 ft-0 in. elevation in the fuel handling building (nominal elevation 349 ft-0 in.) thereby keeping any impact force from an unlikely load drop accident within acceptable limits.

Specification 3.11.4 ensures that the proper capacity crane hook is used for lifting and transporting loads thus reducing the probability of a load drop accident.

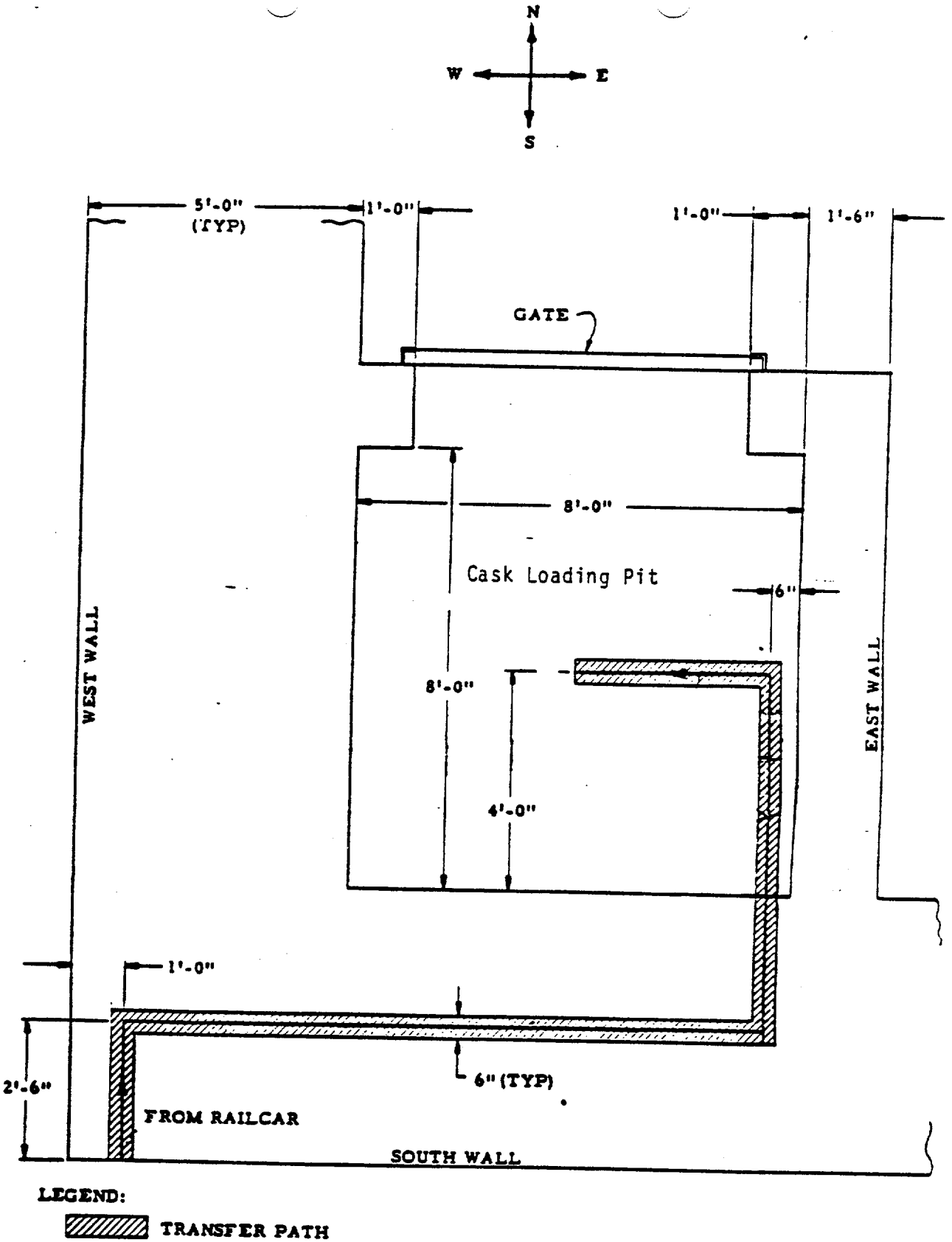
Following modification or repairs, Specification 3.11.5 confirms the load rating of the crane.

(1)FSAR, Section 14.2.2.1

Specification 3.11.6 imposes administrative limits on handling loads weighing in excess of 3,000 lbs. to minimize the potential for heavy loads, if dropped, to impact irradiated fuel in the spent fuel pool, or to impact redundant safe shutdown equipment. The safe load path shall follow, to the extent practical, structural floor members, beams, etc., such that if the load is dropped, the structure is more likely to withstand the impact. Handling loads of less than 3,000 lbs. without these restrictions is acceptable because the consequences of dropping loads in this weight range are comparable to those produced by the fuel handling accident considered in the FSAR and found acceptable.

Specification 3.11.7 in combination with 3.11.3 ensures the spent fuel cask is handled in a manner consistent with the load drop analysis(2).

(2) GPU Evaluation of Heavy Load Handling Operations at TMI-1 February 21, 1984.



TRANSFER PATH TO AND FROM CASK LOADING PIT
(EL. 348'-0")

FIGURE 3.11-1

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 109 TO FACILITY OPERATING LICENSE NO. DPR-50

METROPOLITAN EDISON COMPANY

JERSEY CENTRAL POWER AND LIGHT COMPANY

PENNSYLVANIA ELECTRIC COMPANY

GPU NUCLEAR CORPORATION

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1

DOCKET NO. 50-289

Introduction and Background

In nuclear power plants, heavy loads may be handled in several plant areas. If these loads were to drop, they could impact spent fuel, fuel in the core, or equipment that may be required to achieve safe shutdown and continued decay heat removal. As a result of Generic Task A-36, "Control of Heavy Loads Near Spent Fuel," the NRC staff issued NUREG-0612, "Control of Heavy Loads At Nuclear Power Plants." Following issuance of NUREG-0612, a Generic Letter dated December 22, 1980, was sent to all licensees of operating plants, applicants for operating licenses and holders of construction permits, requesting responses to indicate the degree of compliance with the guidelines of NUREG-0612. This request was sent to the TMI-1 licensee on June 26, 1980, in advance of the request to other licensees.

In accordance with the above Generic Letter, the licensee was requested to review the provisions for handling and control of heavy loads at TMI-1, to determine the extent to which the guidelines of NUREG-0612 were satisfied, and to commit to mutually agreeable changes and modifications that would fully satisfy these guidelines. The NRC staff reviewed the licensee's submittals under multiplant action (MPA) C-10 and concluded in a January 11, 1985 Safety Evaluation that the licensee satisfied Phase I of NUREG-0612; therefore, MPA C-10 was completed. However, the licensee was requested to revise the Technical Specifications (TSs) in accordance with the staff's conclusions regarding MPA C-10. The licensee accordingly submitted Technical Specification Change Request (TSCR) No. 38, Rev. 1, dated March 5, 1985, which is evaluated herein.

Evaluation

TSCR No. 38, Rev. 1, affects TS Section 3.11, "Handling of Irradiated Fuel." The proposed TS defines the lift conditions and allowable areas of travel when loads in excess of 1.5 tons are to be lifted and transported with the fuel handling building crane. These loads include a fuel shipping cask and the

fuel pool gates. Administrative controls require that approved procedures be used and that identified safe load paths be followed. The proposed TS for heavy load movement at TMI-1 is consistent with the guidance of NUREG-0612 and the January 11, 1985 SE. Therefore we find the proposed TSs acceptable. Also, the staff has inspected and found acceptable the licensee's heavy load procedures as documented in Inspection Report 85-08.

Environmental Consideration

This amendment involves changes in the installation or use of heavy load handling equipment located within the restricted area, as defined in 10 CFR Part 20. We have determined that the amendment involves no significant change in the types, and no significant increase in the amounts, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor:
R. Urban

Dated: July 30, 1985