



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

MARCH 12, 1980

Docket No. 50-320

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

Dear Mr. Arnold:

Based on the Commission's October 16, 1979 Memorandum and Order, on October 18, 1979 the Director of Nuclear Reactor Regulation issued an Order for Modification of License which directed the use of the EPICOR-II system and proposed the amendment of Facility Operating License No. DPR-73 for the Three Mile Island Nuclear Station, Unit No. 2, as specified in the Commission's Memorandum and Order of October 16, 1979.

The Order for Modification of License provided that the licensee or any person whose interest may be affected may request a hearing on this matter on or before November 5, 1979 prior to formal amendment of the license. The Susquehanna Valley Alliance filed a timely petition to intervene and request for a hearing which was conditionally granted by the Atomic Safety and Licensing Board (the Board) in its Notice of Special Prehearing Conference on November 15, 1979. On November 30, 1979 the NRC staff filed a Joint Motion to Terminate Proceeding based on an Agreement executed by the intervenor, the licensees, and the NRC. On December 3, 1979 the Board issued an Order Granting Joint Motion to Terminate Proceeding.

Accordingly, the Commission has issued the enclosed Amendment No. 10 to License No. DPR-73. The amendment revises the Appendix B Technical Specifications relating to the operation of an EPICOR-II filtration and ion exchange decontamination system to decontaminate intermediate level radioactive waste water held in tanks in the TMI-2 auxiliary building. The amendment also adds license conditions regarding availability of storage tanks and shipment of resins offsite.

A copy of the Notice of Issuance is also enclosed.

Sincerely,

A handwritten signature in cursive script, appearing to read "R. H. Vollmer".

Richard H. Vollmer, Director
Three Mile Island Support

1. Amendment No. 10 to DPR-73
2. Notice of Issuance

MARCH 12, 1980

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 Streets
Harrisburg, Pennsylvania 17101

Robert Q. Pollard
Chesapeake Energy Alliance
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. Jordon
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
Commission
Box 3265
Harrisburg, Pennsylvania 17120

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

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

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

Ms. Karen Sheldon
Sheldon, Harmon, Roisman & 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

Ellyn Weiss, Esq.
Sheldon, Harmon, Roisman & Weiss
1725 I Street, N.W., Suite 506
Washington, D.C. 20006

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

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

Mr. R. F. Wilson, Acting Director
Three Mile Island 2 Recovery
Metropolitan Edison Company
P.O. Box 480
Middletown, Pennsylvania 17057

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

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

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

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

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

Dr. Edward O. Swartz
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

Mr. J. G. Herbein
Vice President Nuclear Operations
Metropolitan Edison Company
P.O. Box 480
Middletown, Pennsylvania 17057

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

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

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

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

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

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

Director, Technical Assessment Division
ATTN: MR. WILLIAM N. CROFFORD
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

R. C. Arnold

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Ms. Susan R. Barley
129 Cocoa Avenue
Hershey, Pennsylvania 17033

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

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

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

Mr. J. B. Logan,
Superintendent, Unit 2
Metropolitan Edison Company
P.O. Box 480
Middletown, Pennsylvania 17057

Mr. G. A. Kunder, Unit 2 Supt.
Technical Support
P.O. Box 480
Middletown, Pennsylvania 17057

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

*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

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METROPOLITAN EDISON COMPANY
JERSEY CENTRAL POWER AND LIGHT COMPANY
PENNSYLVANIA ELECTRIC COMPANY
DOCKET NO. 50-320
THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 2
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 10
License No. DPR-73

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The facility will operate in conformity with the Order for Modification of License dated October 18, 1979, the provisions of the Atomic Energy Act of 1954, as amended (the Act), and the rules and regulations of the Commission set forth in 10 CFR Chapter I;
 - B. 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;
 - C. 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,
 - D. 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, by changing paragraph 2.C.(2) and by adding paragraphs 2.E.(2), (3), and (4) to facility operating License No. DPR-73, to read as follows:

2.C.(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 10, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and all Commission Orders issued subsequent to March 28, 1979.

- 2.E.(2) The licensee shall promptly begin the process of decontaminating the intermediate-level waste water from TMI-2 by operating EPICOR-II. Prior to operation, the licensee shall consult the Director of NRR for approval of the final operating procedures and design and construction details. In order to reduce the inherent risk from the contaminated water most expeditiously and prudently, the licensee should, to the extent possible, process all the water once through the EPICOR-II system.
- 2.E.(3) The licensee shall maintain suitable tankage at TMI-1 that could be used to store waste water from TMI-2 at an appropriate state of readiness, should additional storage become necessary.
- 2.E.(4) The licensee shall not ship spent resins offsite unless they have been solidified, and only then with the prior approval of the Director of NRR, provided however, that the licensee may ship nonsolidified but dewatered spent resins offsite if it determines, and the Director of NRR concurs, that such a shipment is required to assure continued operation of EPICOR-II or otherwise required to protect public health and safety. The licensee shall expeditiously construct a facility for solidification of the spent resins and shall use such facilities for resin solidification upon receiving the Director of NRR's concurrence with the design and operating procedures.
3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard H. Vollmer, Director
Three Mile Island Support

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 12, 1980

ATTACHMENT TO AMENDMENT NO. 10

FACILITY OPERATING LICENSE NO. DPR-73

DOCKET NO. 50-320

Insert pages 2-10a, 2-10b, 2-10c, and 2-10d following page 2-10 in the Appendix B Technical Specifications. These pages include new specification 2.1.2.J and its associated bases.

Insert new pages 2-14a, 2-14b, 2-14c following page 2-14 in the Appendix B Technical Specifications.

GASEOUS EFFLUENTS

2.1.2.J The release rate of radioactive materials, other than noble gases, in gaseous effluents shall be determined to be within the limits calculated in accordance with this specification by obtaining representative samples and performing analyses in accordance with the sampling and analysis program, specified in Table 2.1-1.

BASES

2.1.2.J This specification is provided to ensure that the dose at any time at the site boundary from gaseous effluents from all units on the site will be within the annual dose limits of 10 CFR Part 20 for unrestricted areas. The annual dose limits are the doses associated with the concentrations of 10 CFR Part 20, Appendix B, Table II, Column 1. These limits provide reasonable assurance that radioactive material discharged in gaseous effluents will not result in the exposure of an individual in an unrestricted area, either within or outside the site boundary, to annual average concentrations exceeding the limits specified in Appendix B, Table II of 10 CFR Part 20 (10 CFR Part 20.106(b)). For individuals who may at times be within the site boundary, the occupancy of the individual will be sufficiently low to compensate for any increase in the atmospheric diffusion factor above that for the site boundary. The specified release rate limits restrict, at all times, the corresponding gamma and beta dose rates above background to an individual at or beyond the site boundary to less than or equal to 500 mrem/yr to the total body or to less than or equal to 3000 mrem/yr to the skin. These release rate limits also restrict, at all times, the corresponding thyroid dose rate above background to an infant via the cow-milk-infant pathway to less than or equal to 1500 mrem/yr for the nearest cow to the plant.

TABLE 2.1-1

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Gaseous Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) ($\mu\text{Ci}/\text{m}^3$) ^a
EPICOR -II Ventilation	M ^b Grab Sample	M	Principal Gamma Emitters ^c	1×10^{-4}
			H-3	1×10^{-6}

TABLE 2.1-1 (Continued)TABLE NOTATION

- a. The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66 s_b}{E \cdot V \cdot 2.22 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where

LLD is the lower limit of detection as defined above (as picocurie per unit mass or volume),

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per transformation),

V is the sample size (in units of mass or volume),

2.22 is the number of transformations per minute per picocurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt is the elapsed time between midpoint of sample collection and time of counting (for plant effluents, not environmental samples).

The value of s_b used in the calculation of the LLD for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background shall include the typical contributions of other radionuclides normally present in the samples. Typical values of E, V, Y, and Δt shall be used in the calculation. The background count rate is calculated from the background counts that are determined to be with \pm one FWHM (Full-Width-at-Half-Maximum) energy band about the energy of the gamma ray peak used for the quantitative analysis for that radionuclide.

TABLE 2.1-1 (Continued)TABLE NOTATION

- b. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area.
- c. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses shall be reported as "less than" the nuclide's LLD and shall not be reported as being present at the LLD level for that nuclide. The "less than" values shall not be used in the required dose calculations.

2.1.3 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

The radioactive gaseous effluent monitoring instrumentation channels shown in Table 2.1-3a shall be OPERABLE.

APPLICABILITY: As shown in Table 2.1-3a.

ACTION:

With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 2.1-3a.

SURVEILLANCE REQUIREMENTS

Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 2.1-3b (per occupational exposure considerations and detector sensitivity in ambient radiation areas).

BASES

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criterion 64 of Appendix A to 10 CFR Part 50.

TABLE 2.1-3a
RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
10. EPICOR-II VENTILATION SYSTEM			
a. Noble Gas Activity Monitor	1	*	37
b. Iodine Sampler	1	*	41
c. Particulate Sampler	1	*	41
d. Flow Rate Monitor	1	*	36
e. Sampler Flow Rate Monitor	1	*	36

TABLE NOTATION

* At all times.

ACTION 36 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided the flow rate is estimated at least once per 4 hours.

ACTION 37 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided grab samples are taken at least once per 8 hours and these samples are analyzed for gross activity within 24 hours.

ACTION 41 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via the affected pathway may continue for up to 30 days provided samples are continuously collected with auxiliary sampling equipment as required in Table 2.1-1.

TABLE 2.1-3bRADIOACTIVE GASEOUS EFFLUENT MONITORING
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>
10. EPICOR-II VENTILATION SYSTEM				
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)
b. Iodine Sampler	W	N.A.	N.A.	N.A.
c. Particulate Sampler	W	N.A.	N.A.	N.A.
d. Flow Rate Monitor	D	N.A.	SA	SA
e. Sampler Flow Rate Monitor	D	N.A.	SA	SA

TABLE NOTATION

- (2) CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exist.
1. Instrument indicates measures levels above the alarm setpoint.
 2. Circuit failure (alarm function only).
 3. Instrument indicates a downside failure (alarm function only).
 4. Instrument controls not set in operate mode or the switch position administratively monitored and controlled.
- (3) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION sources that have been related to the initial calibration shall be used.

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-320METROPOLITAN EDISON COMPANY, ET AL.NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 10 to Facility Operating License No. DPR-73, issued to Metropolitan Edison Company, Jersey Central Power and Light Company and Pennsylvania Power Company, which added license conditions and revised Technical Specifications for operation of the Three Mile Island Nuclear Station, Unit No. 2, located in Londonderry Township, Dauphin County, Pennsylvania. The amendment is effective as of its date of issuance.

The amendment revises the Appendix B Technical Specifications relating to the operation of an EPICOR-II filtration and ion exchange decontamination system to decontaminate intermediate level radioactive waste water held in tanks in the TMI-2 auxiliary building and adds license conditions regarding availability of storage tanks and shipment of resins offsite.

The amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment.

Notice of proposed issuance of this amendment was provided in the Order for Modification of License dated October 18, 1979 (44FR 61276) issued by the Director, Office of Nuclear Reactor Regulation. The Order provided that the licensee or any person whose interests may be affected could request

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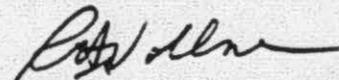
a hearing on this matter on or before November 5, 1979. The Susquehanna Valley Alliance filed a timely petition to intervene and request for a hearing which was conditionally granted by the Atomic Safety and Licensing Board (the Board) on November 15, 1979. On November 30, 1979 the NRC staff filed a Joint Motion to Terminate Proceeding based on an Agreement executed by the intervenor, the licensee, and the NRC. On December 3, 1979 the Board issued an Order Granting Motion to Terminate Proceeding.

In connection with issuance of this amendment, the Commission has issued a Negative Declaration and Environmental Assessment, "Use of EPICOR-II at Three Mile Island, Unit 2," NUREG-0591. The Environmental Assessment was revised to address comments which had been submitted and was supplemented by discussion at open Commission meetings on October 4 and 10, 1979. For further details with respect to this action, see (1) the Commission's Memorandum and Order dated October 16, 1979, (2) the Order for Modification of License dated October 18, 1979 (44 FR 61276-8 as clarified 62633), (3) the ASLB Order Granting Joint Motion to Terminate Proceeding dated December 3, 1979, (4) The Commission's Negative Declaration dated October 18, 1979 and the associated Environmental Assessment, and (5) the transcripts of the October 4 and 10, 1979 open Commission meetings. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. and at the Government Publications Section, State Library of Pennsylvania, Education Building, Harrisburg, Pennsylvania. A copy of

items (1), (2), (3) and (4) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Three Mile Island Support.

Dated at Bethesda, Maryland, this 12th day of March, 1980.

FOR THE NUCLEAR REGULATORY COMMISSION


Richard H. Vollmer, Director
Three Mile Island Support