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MARCH 12, 1980

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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

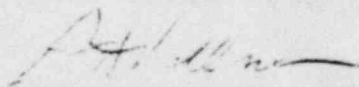
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The facility will operate in conformity with the Order for Modification of License dated October 18, 1979, the provisions of the Atomic Energy Act of 1954, as amended (the Act), and the rules and regulations of the Commission 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 leached 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) ($\mu\text{Ci/ml}$) ^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 within \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 2.1-3aRADIOACTIVE 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.