



March 3, 1982

Docket No. 50-320

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Mr. John J. Barton  
Acting Director of TMI-2  
General Public Utilities Nuclear Corp.  
P.O. Box 480  
Middletown, PA 17057

Dear Mr. Barton:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 20 to Facility Operating License No. DPR-73. This amendment is in response to your request dated October 30, 1981 (LL2-81-0237) and amended by letter dated December 3, 1981 (LL2-81-0270).

This amendment consists of changes in the radiological environmental monitoring program requirements as specified in Appendix B of the technical specifications.

We have determined that the amendment involves an action which is insignificant from the standpoint of environmental impact and that there is reasonable assurance that the health and safety of the public will not be endangered by this action. Having made this determination, we have further concluded that pursuant to 10 CFR §51.5 (d) (4) an environmental impact statement, negative declaration or environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Copies of the Notice of Issuance have been forwarded to the Office of the Federal Register for publication. In addition to the above, revised pages for the proposed Technical Specifications and the related Safety Evaluation and also enclosed.

Sincerely,

Bernard J. Snyder, Program Director  
TMI Program Office  
Office of Nuclear Reactor Regulation

Enclosures: As stated

cc: See attached list  
L.King  
J.Larson

*with correction*

OFFICE ▶	TMIPO:NRR	TMI PD:NRR	ELD ✓/XZ	PD:TMIPO:NRR		
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GENERAL PUBLIC UTILITIES NUCLEAR CORPORATION

DOCKET NO. 50-320

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 20  
License No. DPR-13

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Metropolitan Edison Company, Jersey Central Power and Light Company, and Pennsylvania Electric Company (the licensee), dated October 30, 1981 and amended by letter dated December 3, 1981, 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 be operated by GPU Nuclear Corporation (established by Amendment and Modification of Order dated 12/30/81 replacing Metropolitan Edison as the operating licensee) in conformity with the License, the Order for Modification of License dated July 20, 1979, the Order of February 11, 1980, as subsequently modified and amended, the application for amendment, 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 will 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 Operating License Technical Specifications as indicated in the attachment to this license amendment, by changing paragraph 2.C. (2) to Facility Operating License No. DPR-73, to read as follows:

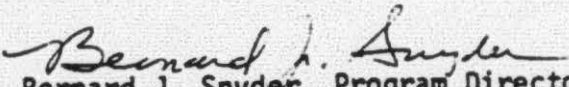
2.C.(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 20, and 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.

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

FOR THE NUCLEAR REGULATORY COMMISSION

  
Bernard J. Snyder, Program Director  
TMI Program Office  
Office of Nuclear Reactor Regulation

Attachment: Revised Technical  
Specifications

Date of Issuance: March 3, 1982

FACILITY OPERATING LICENSE NO. DPR-73

DOCKET NO. 50-320

Replace the following pages of Appendix "B" Technical Specifications with the enclosed pages as indicated. The revised pages contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Pages

3.2-1 through 3.2-11

5-6 through 5-12

## 3.2 RADIOLOGICAL ENVIRONMENTAL MONITORING

### 3.2.1 MONITORING PROGRAM REQUIREMENTS

#### LIMITING CONDITIONS FOR OPERATION:

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The radiological environmental monitoring program shall be conducted and samples shall be collected as specified in Table 3.2-1 from the locations given in the tables and figures in the Offsite Dose Calculation Manual (ODCM) and shall be analyzed pursuant to the requirements of Table 3.2-1 and 3.2-2. The NRC shall be notified of any intended changes of the environmental sample locations indicated in the ODCM prior to the effective date of such changes.

APPLICABILITY: At all times.

#### ACTION:

- a. With the radiological environmental monitoring program not being conducted as specified in Table 3.2-1, prepare and submit to the Commission the annual Radiological Operating Report, a description of the reasons for not conducting the program as required and the plans for preventing a recurrence.
- b. With the level of radioactivity in an environmental sampling medium exceeding the reporting levels of Table 3.2-3 when averaged over any calendar quarter, prepare and submit to the Commission within 30 days from the end of the affected calendar quarter, a report pursuant to 5.6 of Appendix B. When more than one of the radionuclides in Table 3.2-1 are detected in the sampling medium, this report shall be submitted if:

$$\frac{\text{concentration (1)}}{\text{limit level (1)}} + \frac{\text{concentration (2)}}{\text{limit level (2)}} + \dots > 1.0$$

When radionuclides other than those in Table 3.2-3 are detected and are the result of plant effluents, this report shall be submitted if the potential annual dose to an individual is equal to or greater than the calendar year limits of Specification 2.1.1 or 2.1.2 of Appendix B. This report is not required if the measured level of radioactivity was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Operating Report.

- c. With milk or fresh leafy vegetables unavailable from one or more of the sample locations required by Table 3.2-1 in lieu of any other report required by Specification 5.6 of Appendix B prepare and submit to the Commission within 30 days, a Special Report which identifies the cause of the unavailability of samples and identifies

Table 3.2-1. Radiological environmental monitoring program

Exposure Pathway and/or sample	Number of Samples and Sample Locations**	Sampling and Collection Frequency	Type and Frequency of Analysis
1. AIRBORNE  Radioiodine and Particulates	A minimum of 5 locations from Table 1 of the ODCM.	Continuous operation of sampler with sample col- lection as required by dust loading but at least once per 7 days.	Radioiodine canister. Analyze at least once per 7 days for I-131.  Particulate sampler. Analyze for gross beta radioactivity $\geq$ 24 hours following filter change. Perform gamma isotopic analysis on each sample when gross beta activity is $>$ 10 times the calendar yearly mean of control samples. Perform gamma isotopic analysis on composite (by location) sample at least once per 92 days.
2. DIRECT RADIATION	A minimum of 38 locations from Table 2 of the ODCM. (using either 2 dosimeters or at least 1 instrument for continuously measuring and recording dose rate at each location).	At least once per 92 days.	Gamma dose. At least once per 92 days.

See footnotes, last page of table.

Table 3.2-1 (Continued)

Exposure Pathway and/or sample	Number of Samples and Sample Locations**	Sampling and Collection Frequency	Type and Frequency of Analysis
3. WATERBORNE			
a. Surface	A minimum of 2 locations from Table 3 of the ODCM	Composite* sample collected over a period of $\leq$ 31 days	Gamma isotopic analysis of each composite sample. Tritium analysis of composite sample at least once per 92 days.
b. Drinking	A minimum of 2 locations from Table 3 of the ODCM.	Composite* sample collected over a period of $\leq$ 31 days.	Gross beta and gamma composite sample. Tritium analysis of composite sample at least once per 92 days.
c. Sediment from Shoreline	A minimum of 2 locations (1 Control and 1 Indicator) from Table 4 of the ODCM.	At least once per 184 days.	Gamma isotopic analysis of each sample.
4. INGESTION			
a. Milk	A minimum of 4 locations from Table 5 of the ODCM.	At least once per 15 days when animals are on pasture; at least once per 31 days at other times.	Gamma isotopic and I-131 analysis of each sample. Sr-90 analysis by composites for each location shall be conducted at least once per 92 days.

Table 3.2-1 (Continued)

Exposure Pathway and/or sample	Number of Samples and Sample Locations**	Sampling and Collection Frequency	Type and Frequency of Analysis
4. INGESTION (continued)			
b. Fish and Invertebrates	A minimum of 2 locations from Table 6 of the ODCM.	One sample in season, or at least once per 184 days if not seasonal. One sample of each of the following species: 1. Predator (channel cat- fish or Bluegill or Pumkinseed). 2. Prey	Gamma isotopic analysis on edible portions.
c. Food Products	A minimum of 4 locations from Table 7 of the ODCM (when available).	At time of harvest. One sample of each of the fol- lowing classes of food products: 1. Fruits 2. Vegetables	Gamma isotopic analysis on edible portion.
	Indicator Location and Control Location	At time of harvest. One sample of broad leaf vegetation.	I-131 analysis.

\* Composite samples shall be collected by collecting an aliquot at intervals not exceeding 24 hours.

\*\* Sample locations are shown on the figure in the ODCM.



Table 3.2-2. Maximum values for the lower limits of detection (LLD)<sup>a,c</sup>

Analysis	Water (pCi/l)	Airborne Particu- late or gas (pCi/m <sup>3</sup> )	Fish (pCi/kg, wet)	Milk (pCi/l)	Food Products (pCi/kg, wet)	Sediment (pCi/kg, dry)
gross beta	4	$1 \times 10^{-2}$				
<sup>3</sup> H	2000					
<sup>54</sup> Mn	15		130			
<sup>59</sup> Fe	30		260			
<sup>58,60</sup> Co	15		130			
<sup>55</sup> Zn	30		260			
<sup>95</sup> Zr	30					
<sup>90</sup> Sr				8		
<sup>95</sup> Nb	15					
<sup>131</sup> I	1 <sup>b</sup>	$7 \times 10^{-2}$		1	60	
<sup>134</sup> Cs	15	$5 \times 10^{-2}$	130	15	60	150
<sup>137</sup> Cs	18	$6 \times 10^{-2}$	150	14	80	180
<sup>140</sup> Ba	60			60		
<sup>140</sup> La	15			15		

TABLE 3.2-2 (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):

$$LLD = \frac{4.66 S_b}{E \times V \times 2.22 \times 10^6 \times Y \times \exp(-\lambda \Delta t)}$$

Where:

LLD is the "a priori" lower limit of detection as defined above (as microcurie 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),

$2.22 \times 10^6$  is the number of transformations per minute per microcurie,

$Y$  is the fractional radiochemical yield (when applicable),

$\lambda$  is the radioactive decay constant for the particular radionuclide, and

$\Delta t$  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 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. Typical values of  $E$ ,  $V$ ,  $Y$ , and  $\Delta t$  shall be used in the calculation.

- b. LLD for drinking water.
- c. Other peaks which are measured and identifiable, together with the radioactivity in Table 3.2-2, shall be identified and reported.

Table 3.2-3. Reporting levels for radioactivity concentrations in environmental samples

Analysis	Reporting Levels				
	Water (pCi/l)	Airborne Particulate or Gases (pCi/m <sup>3</sup> )	Fish (pCi/kg, wet)	Milk (pCi/l)	Food Product (pCi/kg, wet)
H-3	2 x 10 <sup>4</sup> (a)				
Mn-54	1 x 10 <sup>3</sup>		3 x 10 <sup>4</sup>		
Fe-59	4 x 10 <sup>2</sup>		1 x 10 <sup>4</sup>		
Co-58	1 x 10 <sup>3</sup>		3 x 10 <sup>4</sup>		
Co-60	3 x 10 <sup>2</sup>		1 x 10 <sup>4</sup>		
Zn-65	3 x 10 <sup>2</sup>		2 x 10 <sup>4</sup>		
Sr-90				8	
Zr-Nb-95	4 x 10 <sup>2</sup>				
I-131	2	0.9		3	1 x 10 <sup>2</sup>
Cs-134	30	10	1 x 10 <sup>3</sup>	60	1 x 10 <sup>3</sup>
Cs-137	50	20	2 x 10 <sup>3</sup>	70	2 x 10 <sup>3</sup>
Ba-La-140	2 x 10 <sup>2</sup>			3 x 10 <sup>2</sup>	

(a) For drinking water samples. This is 40 CFR Part 141 value.

## RADIOLOGICAL ENVIRONMENTAL MONITORING

### MONITORING PROGRAM REQUIREMENTS

#### LIMITING CONDITIONS FOR OPERATION

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##### 3.2.1 (Continued)

locations for obtaining replacement samples. The locations from which samples were unavailable may then be deleted from those required by Table 3.2-1, provided the locations from which the replacement samples were obtained are added to the environmental monitoring program as replacement locations.

##### BASES:

The radiological monitoring program required by this specification provides measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides which lead to the highest potential radiation exposures of individuals resulting from the station operation. This monitoring program thereby supplements the radiological effluent monitoring program by verifying that the measureable concentrations or radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways. The initially specified monitoring program will be effective for at least the first three years of commercial operation. Following this period, program changes may be initiated based on operational experience.

## RADIOLOGICAL ENVIRONMENTAL MONITORING

### LAND USE CENSUS

#### LIMITING CONDITIONS FOR OPERATION

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##### 3.2.2 LAND USE CENSUS

A land use census shall be conducted at least once per 12 months during the grazing season (June 1 to October 1) to determine the location of the nearest milk animal in each of the 16 meteorological sectors within a distance of 5 miles. Broad leaf vegetation sampling at the site boundary or closest landsite location in a sector with the highest annual average D/Q shall be conducted during the harvest season.

APPLICABILITY: At all times.

ACTION:

- a. With land use census identifying a location(s) which yields a calculated dose or dose commitment greater than the values currently being calculated in Specification 2.1.1 or 2.1.2 of Appendix B, in lieu of any other report required by Specification 5.6 of Appendix B, prepare and submit to the Commission within 30 days, a Special Report which identifies the new locations.
- b. With a land use census identifying a location which yields a calculated dose or dose commitment (via the same exposure pathway) greater than at a location from which samples are currently being obtained in accordance with Specification 5.6 of Appendix B, prepare and submit to the Commission within 30 days, a Special Report which identifies the new locations. The new location shall be added to the radiological environmental monitoring program within 30 days. The sampling location, excluding the control station location, having the lowest calculated dose or dose commitments (via the same exposure pathway) may be deleted from this monitoring program after October 31 of the year in which this land use census was conducted.

BASIS:

This specification is provided to ensure that changes in the use of unrestricted areas are identified and that modifications to the monitoring program are made if required by the results of this census. The best survey information from the door-to-door or aerial surveys or consulting with local agricultural authorities shall be used. This census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR Part 50. Restricting the census to gardens of greater than 500 square feet provides assurance that significant exposure pathways via leafy vegetables will be identified and monitored since a garden of this size is the minimum required to produce the quantity (26 kg/ year) of leafy vegetables assumed in Regulatory Guide 1.109

RADIOLOGICAL ENVIRONMENTAL MONITORING

LAND USE CENSUS

LIMITING CONDITIONS FOR OPERATION

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3.2.2 (Continued)

for consumption by a child. To determine this minimum garden size, the following assumptions were used, 1) that 20% of the garden was used for growing broad leaf vegetation (i.e., similar to lettuce and cabbage), and 2) a vegetation yield of 2 kg/square meter.

RADIOLOGICAL ENVIRONMENTAL MONITORING

INTERLABORATORY COMPARISON PROGRAM

LIMITING CONDITIONS FOR OPERATION

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3.2.3 INTERLABORATORY COMPARISON PROGRAM

Analysis shall be performed on radioactive materials supplies as part of an Interlaboratory Comparison Program which has been approved by NPC.

APPLICABILITY: At all times.

ACTION:

With analyses not being performed as required above, report the corrective actions taken to prevent a recurrence to the Commission in the Annual Radiological Environmental Operating Report.

BASIS:

The requirement for participation in an Interlaboratory Comparison Program is provided to ensure that independent checks on the precision and accuracy of the measurements of radioactive material in environmental sample matrices are performed as part of a quality assurance program for environmental monitoring in order to demonstrate that the results are reasonably valid.

with Subsection 5.7.2. These reports shall describe the changes made, the reasons for making the changes, an evaluation of the environmental impact of these changes, and the statement required under the provisions of Subsection 5.5.5.

#### 5.5.5 Consistency with Initially Approved Programs

Any modifications or changes of the initially approved program descriptions developed in accordance with Subsection 5.5.1 shall be governed by the need to maintain consistency with previously used procedures so that direct comparisons of data are technically valid. Such modifications or changes shall be justified and supported by adequate comparative sampling programs or studies demonstrating the comparability of results or which provide a basis for making adjustments that would permit direct comparisons.

These demonstrations of comparability shall be submitted to the NRC in accordance with the provisions of Subsections 5.5.4 and 5.6.1.

#### 5.5.6 NRC Authority to Require Revisions

The NRC may require modifications or revisions in the program description document developed in accordance with Subsection 5.5.1 or require modification or revisions of changes made by the licensee in accordance with Subsection 5.5.4, as a result of NRC reviews of the results of these programs, if such modifications or revisions are judged necessary to maintain consistency with the initially approved programs or with the intent of these ETS. The NRC may also require modifications or revisions of procedures and programs as a result of changes in station operation or changes in environmental conditions or concerns associated with station operation.

### 5.6 Station Reporting Requirements

#### 5.6.1 Routine Reports

##### A.(1) Annual Environmental Operating Report Part A Nonradiological

A report on the environmental monitoring programs for the previous calendar year shall be submitted to the NRC as a separate document by May 1 of each year. The period of the first report shall begin with the date of initial criticality subsequent to issuance of the operating license. The report shall include summaries, analyses, interpretations, and statistical evaluation of the results of the environmental monitoring required by the nonradiological environmental monitoring activities (Section 3), and the special studies and requirements (Section 4) for the report period, including a comparison with preoperational studies, operational controls (as appropriate) and previous environmental monitoring reports, and an assessment of the observed impacts of the station operation on the environment. If harmful effects or evidence of irreversible damage are suggested by the monitoring or special programs, the licensee shall provide a



more detailed analysis of the data and a proposed course of action to alleviate the problem.

The Annual Report shall also include a summary of:

- 1) All ETS noncompliances and the corrective actions taken to remedy them.
- 2) Changes made to state and federal permits and certification.
- 3) Changes made to the Environmental Program Description Document.
- 4) Changes in station design which could involve an environmental impact or change the findings of the FSFES.
- 5) All nonroutine reports submitted per ETS Section 4.6.
- 6) Changes in ETS.

A. (2) Annual Environmental Operating Report Part B Radiological

A report on the radiological environmental surveillance program for the previous calendar year shall be submitted to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) as a separate document by May 1 of each year. The period of the first report shall begin with the date of initial criticality. The report shall include a summary of Table 5.6-1, interpretations, and statistical evaluation of the results of the radiological environmental surveillance activities for the report period, as deemed appropriate by the licensee, including a comparison with operational controls, preoperational studies (as appropriate), and previous environmental surveillance reports and an assessment of the observed impacts of the station operation on the environment.

The report shall also include the following: a summary description of the radiological environmental monitoring program including sampling methods for each sample type, size and physical characteristics of each sample type, sample preparation methods, analytical methods, and measuring equipment used; a map of all sampling locations keyed to a table giving distances and directions from the site; the results of land use censuses; and the results of licensee participation in the Environmental Protection Agency's Environmental Radioactivity Laboratory Intercomparisons Studies (Crosscheck) Program.

In the event that some results are not available the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

B. Data Reporting Formats

Results of analysis of all nonradiological environmental data collected shall be summarized and tabulated on an annual basis. In the event that some results are not available by May 1, the report shall be submitted noting and explaining the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

C. Quarterly Radiological Releases and Estimated Dose Report

The following information shall be submitted to the Director of the Regional Office. This information shall be submitted on a calendar quarter basis (January-March, April-June, July-September, and October-December) and shall be submitted no later than 60 days following the end of each calendar quarter.

- (1) Estimates of the amounts and types of radioactivity that were released to the environment during the quarter and during the calendar year. This shall include estimates of the total activity of each nuclide and time rate of release of each nuclide.
- (2) Estimates of populations and maximum individual doses which occurred during the calendar quarter and during the calendar year shall be provided. The estimates shall be based on actual hydrological and meteorological conditions which occurred during the releases. Computational methods shall be those of U.S. NRC Regulatory Guides 1.109 (Revision 1, October 1977), 1.111 (Revision 1, July 1977), 1.112 (Revision 0-R, April 1976) and 1.113 (Revision 1, April 1977). These calculations shall be based on estimates of actual population distributions during the releases and shall take into consideration factors such as boating or fishing recreation.

5.6.2 Nonroutine Reports

A report shall be submitted in the event that a "Limiting Condition for Operation" (Section 2), if applicable, is exceeded, a report level as specified in Section 3, "Environmental Monitoring," is reached or if an "Exceptional Occurrence" as specified in Section 4.6 occurs. Reports shall be submitted under one of the report schedules described below.

5.6.2.a Prompt Report

Those events specified as prompt report occurrences shall be reported within 24 hours by telephone, telegraph, or facsimile transmission to the NRC followed by a written report to the NRC within 30 days.

#### 5.6.2.b Thirty Day Event

Nonroutine events not requiring a prompt report as described in Subsection 5.6.2.a, shall be reported to the NRC either within 30 days of their occurrence or within the time limit specified by the reporting requirement of the corresponding certification or permit issued pursuant to Sections 401 or 402 of PL 92-500, whichever time duration following the nonroutine event shall result in the earlier submittal.

#### 5.6.2.c Content of Nonroutine Reports

Written 30-day reports and, to the extent possible, the preliminary telephone, telegraph, or facsimile reports shall (a) describe, analyze, and evaluate the occurrence, including extent and magnitude of the impact, (b) describe the cause of the occurrence, and (c) indicate the corrective action (including any significant changes made in procedures) taken to preclude repetition of the occurrence and to prevent similar occurrences involving similar components or systems.

#### 5.6.2.d Nonroutine Radiological Environmental Operating Reports

"If a confirmed<sup>1</sup> measured radionuclide concentration in an environmental sampling medium averaged over any quarter sampling period exceeds the reporting level given in Table 3.2-2, a written report shall be submitted to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) within 30 days from the end of the quarter. If it can be demonstrated that the level is not a result of plant effluents (e.g., by comparison with control station or preoperational data), a report need not be submitted, but shall be discussed in the annual report. When more than one of the radionuclides in Table 3.2-2 are detected in the medium, the reporting level shall have been exceeded if:

$$\frac{\text{concentration (1)}}{\text{reporting level (1)}} + \frac{\text{concentration (2)}}{\text{reporting level (2)}} + \dots > 1$$

If radionuclides other than those in Table 3.2-2 are detected and are due from plant effluents, a reporting level is exceeded if the potential annual dose to an individual is equal to or greater than the design objective doses of 10 CFR Part 50, Appendix I. This report shall include an evaluation of any release conditions, environmental factors, or other aspects necessary to explain the anomalous results.

<sup>1</sup>A confirmatory reanalysis of the original, a duplicate, or a new sample may be desirable, as appropriate. The results of the confirmatory analysis shall be completed at the earliest time consistent with the analysis, but in any case within 30 days.

## 5.7 Changes in Environmental Technical Specifications and Permits

### 5.7.1 Change in Environmental Technical Specifications

Request for changes in environmental technical specifications shall be submitted to the NRC for review and authorization per 10 CFR 50.90. The request shall include an evaluation of the environmental impact of the proposed change and a supporting justification. Implementation of such requested changes in ETS shall not commence prior to incorporation by the NRC of the new specifications in the license.

### 5.7.2 Changes in Permits and Certifications

Changes or addition to required Federal, State, local, and regional authority permits and certificates for the protection of the environment that pertain to the requirements of these ETS shall be reported to the NRC within 30 days. In the event that the licensee initiates or becomes aware of a request for changes to any of the water quality requirements, limits or values stipulated in any certification or permit issued pursuant to Sections 401 and 402 of PL 92-500 which is also the subject of an ETS reporting requirement, NRC shall be notified concurrently with the authorizing agency. The notification to the NRC shall include an evaluation of the environmental impact of the revised requirement, limit or value being sought.

If, during NRC's review of the proposed change, it is determined that a potentially severe environmental impact could result from the change, the NRC will consult with the authorizing agency to determine the appropriate action to be taken.

## 5.8 Records Retention

Records and logs relative to the following areas shall be made and retained throughout the term of the operating license. These records and logs shall be made available to NRC on request.

- a. Records and drawing changes detailing station and unit design changes made to systems and equipment which could potentially affect the environment.
- b. Records of all data from environmental monitoring, surveillance and study activities required by these environmental technical specifications.

Table 5.6-1. Environmental radiological monitoring program annual summary format example

Name of Facility \_\_\_\_\_ Docket No. \_\_\_\_\_  
 Location of Facility \_\_\_\_\_ Reporting Period \_\_\_\_\_  
 (County, State)

Medium or Pathway Sampled (Unit of Measurement)	Type & Total Number of Analyses Performed	Lower Limit of Detection <sup>a</sup> (LLD)	Indicator Locations Mean (f) <sup>b</sup> Range	Location with Highest Annual Mean Name Distance & Direction	Annual Mean Name (f) <sup>b</sup> Range	Control Locations Mean (f) <sup>b</sup> Range	Number of Nonroutine Reported Measurements
Air Particulates (pCi/m)	Gross B416	0.003	0.008 (200/312) (0.05-2.0)	Middletown 5 miles NNW	0.10(5/52) (0.08-2.0)	0/08 (8/104) (0.05-1.40)	1
	r-Spec. 32 <sup>137</sup> Co	0.003	0.05 (4/24) (0.03-(0.13))	Smithville 2.5 miles	0.08 (2/4) 0.03-(0.13)	<LLD	4
	<sup>140</sup> Ba	0.003	0.03 (2/24) (0.02-0.08)	Podunk 4.0 miles	0.05 (2/4) (0.01-0.08)	0.02 (2/4)	1
	<sup>89</sup> Sr 40	0.002	<LLD	-	-	<LLD	0
	<sup>90</sup> Sr 40	0.0003	<LLD	-	-	<LLD	0
Fish pCi/kg (net weight)	r-Spec. 8 <sup>137</sup> Ca	80	<LLD	-	<LLD	90 (1/4)	0
	<sup>134</sup> Ca	80	<LLD	-	<LLD	<LLD	0
	<sup>60</sup> Co	80	120 (3/4) (90-200)	River Mile 35 Podunk River	See Column 4	<LLD	0

<sup>a</sup>See Table 3.2-2, note b.

<sup>b</sup>Mean and range based upon all measurements with LLD treated as positive value.

Fraction of detectable measurements at specified locations is indicated in parentheses. (f)

<sup>c</sup>Note: the example data are provided for illustrative purposes only.

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

GENERAL PUBLIC UTILITIES NUCLEAR CORPORATION

DOCKET NO. 50-320

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 2

Introduction

By letter dated October 30, 1981 (LL2-81-0237) and amended by letter dated December 3, 1981 (LL2-81-0270) the Metropolitan Edison Company (then managing licensee, now the General Public Utilities Nuclear Corporation) requested changes to the Technical Specifications of Operating License No. DPR-73 for the Three Mile Island Nuclear Station, Unit No. 2 (TMI-2). The requested changes to Appendix B of Operating License No. DPR-73 pertain to the following: (1) deleting the actual environmental sampling locations from the technical specifications and in turn replacing them with references to tables in the Offsite Dose Calculation Manual (ODCM); (2) Changing the Lower Limits of Detection (LLD) for gross beta, H-3, Zr-95, Nb-95, I-131 in water, milk and food products and for Cs-134, Cs-137 and Ba-140 in airborne particulates and food products and changing the reporting level of H-3 in water; (3) Requiring sampling and analysis for Sr-90 in milk at least once per 92 days, together with specifications on LLD and reporting the level for Sr-90 concentration and (4) Adding to Section 5.6, reporting requirements which were deleted from Section 3.2 of the Environmental Monitoring Program.

Discussion and Evaluation

The staff has reviewed the proposed amendments and has the following findings for each of the proposed changes:

- (1) Deletion of the environmental sample location tables (Tables 3.2-1, 2) from the Technical Specifications and replacing them with reference to the

locations stated in the ODCM does not change the actual locations where environmental monitoring samples are to be taken for analysis. This amendment would provide the licensee with the flexibility of permitting future changes of environmental sampling locations to be reflected in the ODCM without an amendment to the Technical Specifications. However, the amended Technical Specifications, as proposed, would also require the licensee to provide the NRC with prior notification of any intended changes of environmental sampling locations in the ODCM. Thus, the NRC would have an opportunity to review those intended changes, prior to their implementation, to assure that the environmental monitoring program would remain adequate and that continuity with the previous, baseline data, would be maintained. On the other hand, explicit specification of those locations in the technical specifications is not necessary to provide the equivalent degree of assurance to meet the requirement that radioactive materials in effluents released to unrestricted areas be kept as low as reasonably achievable per 10 CFR Part 50.36a.

- (2) The licensee has proposed to replace the table on "Detection Capabilities for Environmental Sample Analysis" (Table 3.2-3) with the table on "Maximum Values for the Lower Limits of Detection (LLD)" (Table 3.2-2). By the proposed amendment, the values of LLD would be raised by factors ranging from about 1.2 (e.g., for I-131 in milk) to a factor of about 5 (e.g., for Cs-134 in airborne particulates) for a number of isotopes. The LLD for H-3 in water would be raised to 2,000 pCi/l from 330 pCi/l. Although the proposed LLD values are less stringent than those in the present technical specifications, the amended table of LLD values is consistent with those values presented in NUREG-0472, Revision 2,

"Radiological Effluent Technical Specifications for PWR's" and is also consistent with the technical specification requirements of most operating PWR licensees. These LLD values as proposed, represent detection limits for routine environmental measurements in industrial laboratories and also represent concentration levels well within any levels which would likely result in doses to the exposed public in excess of design objectives of Appendix I to 10 CFR Part 50 (those design objectives are technical specification limits for TMI-2). Radioactivity releases are controlled by the Technical Specifications Section 2.1, Radioactive Discharges. The environmental monitoring program thereby supplements the radiological effluents monitoring program by verifying that measurable concentrations of radioactive materials are no higher than expected on the basis of the effluents measurements and mode of environmental exposure pathways. The proposed amendment, therefore, would not change the permissible level of effluents released to the environment. At the same time, the proposed LLD values, would still enable the licensee to detect measurable concentrations of radioactive materials in the environment, with a substantial margin, at levels which would be likely to result in doses to the public in excess of the numerical design objectives of Appendix I to 10 CFR Part 50. On this basis, the proposed amendment on LLD values should be acceptable. The licensee has also proposed to change the reporting level of H-3 from  $3 \times 10^4$  pCi/l in water to  $2 \times 10^4$  pCi/l in drinking water samples. The lower level of concentration is consistent with the EPA's Drinking Water Standard concentration set forth in 40 CFR Part 141.

- (3) The requirement to sample and analyze for Sr-90 in milk is proposed to be "at least once per 92 days" instead of "if I-131 is greater than 10 pCi/l."



Although since the accident, I-131 has decayed to insignificant amounts, Sr-90 remains one of the dominant contaminants during the cleanup of TMI-2. Therefore, the proposed amendment to require sampling and analysis of Sr-90 independent of I-131 concentration, is appropriate for TMI-2.

- (4) The proposed amendment to delete wordings associated with reporting requirements from Section 3 of the Technical Specifications and replace them in Section 5, "Administrative Control", is editorial in nature and introduces no substantive changes to the requirements of the technical specifications. The proposed amendment will not result in a significant increase in the probability or consequences of accidents previously considered, nor a significant reduction in a margin of safety and does not therefore involve a significant hazards consideration.

#### Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types of total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR 51.5 (d) (4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

#### Conclusion

Based on the considerations discussed above, we have concluded that:

- (1) Because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant reduction in a margin of safety, it does not

involve a significant hazards consideration.

- (2) There is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner.
- (3) 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.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-320

GPU NUCLEAR CORPORATION

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 20 to Facility Operating License No. DPR-73, issued to GPU Nuclear Corporation, Metropolitan Edison Company, Jersey Central Power & Light Company, and Pennsylvania Electric Company (the licensee).


Operating License No. DPR-73 formerly authorized operation of the Three Mile Island Nuclear Station, Unit 2 (TMI-2) located in Dauphin County, Pennsylvania, but that authorization was limited, by an Order for Modification of License dated July 20, 1979 to maintaining the facility in its present safe shutdown condition. 44 Fed. Reg. 45271 (August 1, 1979). This amendment effects changes to License No. DPR-73 with respect to the radiological-environmental monitoring program requirements as specified in Appendix B of the Technical Specifications. Specifically, this amendment consists of changes to Appendix B of Operating License No. DPR-73 pertaining to the following: (1) Deleting the actual environmental sampling locations from the technical specifications and in turn replacing them with references to tables in the Offsite Dose Calculation Manual (ODCM); (2) Changing the Lower Limits of Detection (LLD) for gross beta, H-3, Zr-95, Nb-95, I-131 in water, milk and food products and for Cs-134, Cs-137 and Ba-140 in airborne particulates and food products and changing the reporting level of H-3 in water; (3) Requiring sampling and analysis for Sr-90 in milk at least once per 92 days, together with specifications on LLD and reporting level for Sr-90 concentration and (4) Adding to Section 5.6, reporting requirements which were deleted from Section 3.2 of the Environmental Monitoring Program.

The application for 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 1, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

For further details with respect to this action, see (1) the application for amendment dated October 30, 1981 and amended by letter dated December 3, 1981, (2) Amendment No. 20 to License No. DPR-73 consisting of changes in the radiological environmental monitoring program requirements as specified in Appendix B of the Technical Specifications, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Document Room, 1717 H Street, N.W., Washington, D.C. 20555 and at the Government Publications Section, State Library of Pennsylvania 17126. A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Program Director, TMI Program Office, Office of Nuclear Reactor Regulation.

Dated at Bethesda, Maryland, this 3rd day of March , 1982.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Bernard J. Snyder, Program Director  
TMI Program Office  
Office of Nuclear Reactor Regulation