

May 6, 1986

CDM B016

Docket No. 50-289

Mr. Henry D. Hukill, Vice President
and Director - TMI-1
GPU Nuclear Corporation
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Dear Mr. Hukill:

The Commission has issued the enclosed Amendment No. 117 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 letter dated January 3, 1986, as supplemented January 31, 1986.

This amendment revises the TMI-1 TS's to delete the requirement to submit a Special Report and replace it with a requirement to provide more detail in an Annual Report when Dose Equivalent I-131 is above the specified normal limit. It also deletes the requirement to immediately shut down plant if Dose Equivalent I-131 exceeds a specified limit for more than 800 hours in a 12 month period.

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

Sincerely,

"ORIGINAL SIGNED BY:"

John O. Thoma, Project Manager
PWR Project Directorate #6
Division of PWR Licensing-B

Enclosures:

1. Amendment No. 117 to DPR-50
2. Safety Evaluation

cc w/enclosures:
See next page

PBD-6
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Three Mile Island Nuclear Station,
Unit No. 1

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Three Mile Island Nuclear Station
Unit No. 1

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Atomic Safety & Licensing Appeal
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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. 117
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 January 3, 1986, as supplemented January 31, 1986, 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.

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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.117, 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, Director
PWR Project Directorate #6
Division of PWR Licensing-B

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 6, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 117

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

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

Remove

3-8
3-9
3-9a
6-13
-
6-17

Insert

3-8
3-9
-
6-13
6-13a
6-17

3.1.4 REACTOR COOLANT SYSTEM ACTIVITY

3.1.4.1 LIMITING CONDITION FOR OPERATION

The specific activity of the primary coolant shall be limited to:

- a. Less than or equal to 1.0 microcurie/gram DOSE EQUIVALENT I-131, and
- b. Less than or equal to $100/\bar{E}$ microcuries/gram.*

3.1.4.2 APPLICABILITY: at all times except refueling.

3.1.4.3 ACTION:

MODES: Power Operation, Start-up, Hot Standby

- a. With the specific activity of the primary coolant greater than 1.0 microcurie/gram DOSE EQUIVALENT I-131 for more than 48 hours** during one continuous time interval or exceeding the limit line shown on Figure 3.1-2a, be in at least HOT SHUTDOWN within 6 hours. Power operation may continue when DOSE EQUIVALENT I-131 is below 1.0 microcuries/gram.
- b. With the specific activity of the primary coolant greater than $100/\bar{E}$ microcuries/gram be in at least HOT SHUTDOWN within 6 hours. Power operation may continue when primary coolant activity is less than $100/\bar{E}$ microcuries/gram.

MODES: At all times except refueling.

- c. With the specific activity of the primary coolant greater than 1.0 microcurie/gram DOSE EQUIVALENT I-131 or greater than $100/\bar{E}$ microcuries/gram perform the sampling and analysis requirements of Table 4.1-3 until the specific activity of the primary coolant is restored to within its limits.

BASES

The limitations on the specific activity of the primary coolant ensure that the resulting 2 hour doses at the site boundary will be well within the Part 100 limit following a steam generator tube rupture accident in conjunction with an assumed steady state primary-to-secondary steam generator leakage rate of 1.0 GPM. The values for the limits on specific activity represent limits based upon a parametric evaluation by the NRC of typical site locations. These values are conservative, in that the specific site parameters of TMI-1, such as site boundary, location and meteorological conditions, were not considered in this evaluation.

* \bar{E} shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

** The time period begins from the time the sample is taken.

The ACTION statement permitting POWER OPERATION to continue for limited time periods with the primary coolant's specific activity greater than 1.0 microcurie/gram DOSE EQUIVALENT I-131, but within the allowable limit shown on Figure 3.1-2a, accommodates possible iodine spiking phenomenon which may occur following changes in THERMAL POWER.

Proceeding to HOT SHUTDOWN prevents the release of activity should a steam generator tube rupture since the saturation pressure of the primary coolant is below the lift pressure of the atmospheric steam relief valves.

The surveillance requirements provide adequate assurance that excessive specific activity levels in the primary coolant will be detected in sufficient time to take corrective action. Information obtained on iodine spiking will be used to assess the parameters associated with spiking phenomena. A reduction in frequency of isotopic analyses following power changes may be permissible if justified by the data obtained.

The NRC staff has performed a generic analysis of airborne radiation released via the Reactor Building Purge Isolation Valves. The dose contribution due to the radiation contained in the air and steam released through the purge isolation valves prior to closure was found to be acceptable provided that the requirements of Specifications 3.1.4.1, 3.1.4.2 and 3.1.4.3 are met.

2. The following information on aircraft movements at the Harrisburg International Airport:
 - a. The total number of aircraft movements (takeoffs and landings) at the Harrisburg International Airport for the previous twelve-month period.
 - b. The total number of movements of aircraft larger than 200,000 pounds at the Harrisburg International Airport for the previous twelve-month period, broken down into scheduled and non-scheduled (including military) takeoffs and landings, based on a current estimate provided by the airport manager or his designee.
3. The following information from the periodic Leak Reduction Program tests shall be reported:
 - a. Results of leakage measurements,
 - b. Results of visual inspections, and
 - c. Maintenance undertaken as a result of Leakage Reduction Program tests or inspections.
4. The following information regarding pressurizer power operated relief valve and pressurizer safety valve challenges shall be reported:
 - a. Date and time of incident,
 - b. Description of occurrence, and
 - c. Corrective measures taken if incident resulted from an equipment failure.
5. The following information regarding the results of specific activity analysis in which the primary coolant exceeded limits of Technical Specification 3.1.4.1 shall be reported:
 - a. Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded;
 - b. Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations;

- c. Clean-up system flow history starting 48 hours prior to the first sample in which the limit was exceeded;
 - d. Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and
 - e. The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.
- C. Monthly Operating Reports. Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the U.S. Nuclear Regulatory Commission at the address specified in R.G. 10.1, no later than the fifteenth of each month following the calendar month covered by the report.

6.9.2 Reportable Occurrences

Reportable Occurrences, including corrective actions and measures to prevent recurrence, shall be reported to the NRC. Supplemental reports may be required to fully describe final resolution of an occurrence. In case of corrected or supplemental reports, reference shall be made to the original report date. (These reporting requirements apply only to Appendix A Technical Specifications.)

- A. Prompt Notification With Written Follow-Up. The types of events listed below shall be reported as expeditiously as possible, but within 24 hours by telephone and confirmed by telegraph, mailgram, telecopy or facsimile transmission to the Administrator of the NRC Region I Office, or his designate no later than the first working day following the event, with a written

(Continued on Page 6-14)

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|---|---|
| (2) Steam Generator Tube Inspection Program (See Section 4.19.5) | within 3 months after completion of inspection. |
| (3) Containment Integrated Leak Rate Test | within 6 months after completion of test. |
| (4) Inservice Inspection Program | within 6 months after five years of operation. |
| (5) Radioactive Sealed Source Leakage Test revealing the presence of ≥ 0.005 microcuries of Removable Contamination. | within 90 days after completion of test. |
| (6) Deleted | |

6.9.4 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

NOTE: A single submittal may be made for the station. The submittal should combine those sections that are common to both units at the station however, for units with separate radwaste systems, the submittal shall specify the release of radioactive material from each unit.

6.9.4.1 Routine radiological environmental operating reports covering the operation of the unit during the previous calendar year shall be submitted prior to May 1 of each year.

6.9.4.2 The annual radiological environmental operating reports shall include summaries, interpretations, and an analysis of trends of the results of the radiological environmental surveillance activities for the report period, including a comparison with preoperational studies, operational controls (as appropriate), and previous environmental surveillance reports and an assessment of the observed impacts of the plant operation on the environment. The reports shall also include the results of the land use censuses required by Technical Specification 3.23.2. If harmful effects or evidence of irreversible damage are detected by the monitoring, the report shall provide an analysis of the problem and a planned course of action to alleviate the problem.

The annual radiological environmental operating reports shall include summarized and tabulated results in the format of the Radiological Assessment BTP on the REMP March 1978 of all radiological environmental samples taken during the report period. In the event that some results are not available for inclusion with the report, 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.

The reports shall also include the following: a summary description of the radiological environmental monitoring program; a map of all sampling locations keyed to a table giving distances and directions from one reactor; and the results of licensee participation in the



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 117 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

By letter dated January 3, 1986, as supplemented January 31, 1986, GPU Nuclear Corporation (GPU or the licensee) requested an amendment to the Technical Specifications (TSs) appended to Facility Operating License No. DPR-50 for the Three Mile Island Nuclear Station, Unit No. 1 (TMI-1). The proposed amendment would change the TS reporting requirements on primary coolant iodine spikes from a Special Report to providing more detail in the Annual Report. It also deletes the requirement to immediately shut down the plant if Dose Equivalent I-131 exceeds a specified limit for more than 800 hours in a 12-month period.

EVALUATION

Generic Letter No. 85-19 issued September 27, 1985, provided the NRC staff's position for reporting requirements on primary coolant iodine spikes. In this generic letter, the NRC staff determined that the reporting requirements for iodine spiking can be reduced from a short-term report (Special Report or Licensee Event Report) to an item which is to be included in the Annual Report. The information to be included in the Annual Report is similar to that previously required in the Licensee Event Report but has been changed to more clearly designate the results to be included from the specific activity analysis and to delete the information regarding fuel burnup by core region.

The NRC staff also determined that the existing requirements to shut down a plant if coolant iodine activity limits are exceeded for 800 hours in a 12-month period can be eliminated. The quality of nuclear fuel has been greatly improved over the past decade with the result that normal coolant iodine activity (i.e., in the absence of iodine spiking) is well below the limit. Appropriate actions would be initiated long before accumulating 800 hours of operation above the iodine activity limit. In addition, 10 CFR 50.72(b)(1)(ii) requires the NRC to be immediately notified of fuel cladding failures that exceed expected values or that are caused by unexpected factors. Therefore, this TS limit is no longer considered necessary on the basis that proper fuel management by licensees and existing reporting requirements should preclude ever approaching the limit.

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Licensees are expected to continue to monitor iodine activity in the primary coolant and take responsible actions to maintain it at a reasonably low level.

By letter dated January 3, 1986, as supplemented by letter dated January 31, 1986, the licensee responded to Generic Letter 85-19 and proposed changes to the TMI-1 TSs. These changes are consistent with the sample TSs provided in Generic Letter 85-19. These changes are acceptable because proper fuel management by GPU and existing reporting requirements should preclude the plant from operating anywhere near 800 hours in a 12-month period with coolant iodine activity limits exceeded. Therefore, this change simply deletes an unnecessary TS requirement and changes a reporting requirement from a Special Report to including more detailed data in the Annual Report.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and a change in reporting requirements. We have determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation 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) and (10). 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.

Dated: May 6, 1986

Principal Contributors: J. Thoma