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Docket No. 50-289

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

Dear Mr. Hukill:

SUBJECT: AMENDMENT NO. 104 TO FACILITY OPERATING LICENSE NO. DPR-50

The Commission has issued the enclosed Amendment No. 104 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 letters dated June 1, July 11, August 2, and September 11, 1984.

This amendment revises the TSs related to the allowable concentration of hydrogen and oxygen in the waste gas holdup system and the associated hydrogen/oxygen monitoring instrumentation. The amendment permits unlimited oxygen content provided that hydrogen content is below 4% and permits unlimited hydrogen content provided that the oxygen limit is below 2%. The TSs require two hydrogen monitors and two oxygen monitors to assure compliance with the above limits. Limiting conditions for operation are also included.

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

Sincerely,

ORIGINAL SIGNED BY
JOHN F. STOLZ

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

Enclosures:

- 1. Amendment No. 104
- 2. Safety Evaluation

cc w/enclosures:
See next page

*See previous white for concurrences.

ORB#4:DL RIngram 2/4/85	ORB#4:DL OThompson;cf* 1/23/85	ORB#4:DL JVan Vliet* 1/23/85	ORB#4:DL JStolz* 1/23/85	OELD JGoldberg* 1/25/85	AD:OR:DL GLainas* 2/5/85
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February 4, 1985

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ORB#4:DL
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1/27/85

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-1-

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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. 104
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 June 1, 1984, as revised and supplemented July 11, August 2, and September 11, 1984, 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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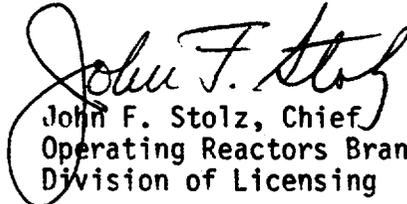
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.c.(2) of Facility Operating License No. DPR-50 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 104, are hereby incorporated in the license. GPU Nuclear Corporation shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION


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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 4, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 104

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

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

Remove

3-101

3-105

3-105a

3-116

4-91

Insert

3-101

3-105

3-105a

3-116

4-91

TABLE 3.21-2

RADIOACTIVE GASEOUS PROCESS AND EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
1. Waste Gas Holdup System			
a. Noble Gas Activity Monitor (RM-A7)	1	***	25
b. Effluent System Flow Rate Measuring Device (FT-123)	1	***	26
2. Waste Gas Holdup System Explosive Gas Monitoring System			
a. Hydrogen Monitor	2	* *	30
b. Oxygen Monitor	2	* *	30

TABLE 3.21-2
(Continued)

TABLE NOTATION

*At all times

**During waste gas holdup system operation.

***Operability is not required when discharges are positively controlled through the closure of WDG-V47, and RM-A8 and FT-151 are operable.

ACTION 25 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank may be released to the environment for up to 14 days provided that prior to initiating the release:

1. At least two independent samples of the tank's contents are analyzed, and
2. At least two technically qualified members of the Unit staff independently verify the release rate calculations and verify the discharge valve lineup.
3. The Operation and Maintenance Director Unit 1 shall approve each release.

Otherwise, suspend release of radioactive effluent via this pathway.

ACTION 26 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 28 days provided the flow rate is estimated at least once per 4 hours.

ACTION 27 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 28 days provided grab samples are taken at least once per 8 hours and these samples are analyzed for gross activity within 24 hours. (See also Specification 3.5.1 Table 3.5-1, Item 3.f).

ACTION 30

1. With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement a grab sample shall be collected and analyzed for the inoperable gas channel(s) at least once per 24 hours. With both channels inoperable a grab sample shall be collected and analyzed for the inoperable gas channels(s):
 - (a) at least once per 4 hours during degassing operations.
 - (b) at least once per 24 hours during other operations (e.g. Feed and Bleed).
2. If the inoperable gas channel(s) is not restored to service within 14 days, a special report shall be submitted to the Regional Administrator of the NRC Region I Office and a copy to the Director, Office of Inspection and Enforcement within 30 days of declaring the channel(s) inoperable. The report shall describe (a) the cause of the monitor inoperability, (b) action being taken to restore the instrument to service, and (c) action to be taken to prevent recurrence.

TABLE 3.21-2
(Continued)

TABLE NOTATION

ACTION 31 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 28 days, provided, that within four hours after the channel has been declared inoperable, samples are continuously collected with auxiliary sampling equipment.

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE

LIMITING CONDITIONS FOR OPERATION

3.22.2.5 The concentration of oxygen in the Waste Gas Holdup System shall be limited to less than or equal to 2% by volume whenever the concentration of hydrogen in the Waste Gas Holdup System is greater than or equal to 4% by volume.

APPLICABILITY: At all times.

ACTION: Whenever the concentration of hydrogen in the Waste Gas Holdup System is greater than or equal to 4% by volume, and:

- a. The concentration of oxygen in the Waste Gas Holdup System is greater than 2% by volume, but less than 4% by volume, without delay begin to reduce the oxygen concentration to within its limit.
- b. The concentration of oxygen in the Waste Gas Holdup System is greater than or equal to 4% by volume, immediately suspend additions of waste gas to the Waste Gas Holdup System and without delay begin to reduce the oxygen concentration to within its limit.

BASES:

Based on experimental data*, lower limits of flammability for hydrogen is 5% and for oxygen is 5% by volume. Therefore, if the concentration of either gas is kept below its lower limit, the other gas may be present in higher amounts without the danger of an explosive mixture. Maintaining the concentrations of hydrogen and oxygen such that an explosive mixture does not occur in the waste gas holdup system provides assurance that the release of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR 50.

*Bulletin 503, Bureau of Mines; Limits of Flammability of Gases and Vapors.

TABLE 4.21-2

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL TEST</u>	<u>APPLICABILITY</u>
1. Waste Gas Holdup System					
a. Noble Gas Activity Monitor (RM-A7)	P	P	R(3)	Q(1)	***
b. System Effluent Flow Rate Measuring Device (FT-123)	P	N/A	R	Q	***
2. Waste Gas Holdup System Explosive Gas Monitoring System					
a. Hydrogen Monitor	D	N/A	Q(4)	M	**
b. Oxygen Monitor	D	N/A	Q(5)	M	**



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 104 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 letters dated June 1, 1984, as revised and supplemented July 11, August 2 and September 11, 1984, the licensee has submitted Technical Specification (TS) Change Request No. 135 requesting a change to the TSs for Facility Operating License No. DPR-50 for the Three Mile Island Nuclear Station, Unit 1 (TMI-1).

The proposed amendment would revise Tables 3.21-2 and 4.21-2, and Section 3.22.2 of the TSs, that relate to the allowable concentration of hydrogen and oxygen in the waste gas holdup system and the associated hydrogen/oxygen monitoring instrumentation. The proposed amendment would remove the current limit on oxygen content provided that the hydrogen content is below 4% and would remove the current limit on hydrogen content provided that the oxygen content is below 2%. The proposed TSs would require two hydrogen monitors and two oxygen monitors to assure compliance with the proposed hydrogen and oxygen limits; the proposed TSs also include action statements to be followed if the hydrogen or oxygen limits are exceeded and operability requirements for the monitors.

EVALUATION

The objective of the Standard Radiological Effluent Technical Specifications (NUREG-0472) regarding hydrogen and oxygen monitoring and concentrations is to ensure that the concentration of potentially explosive gas mixtures contained in the waste gas holdup system is maintained below the flammability limits of hydrogen and oxygen to prevent an explosion that could rupture the system. Maintaining the concentration of hydrogen and oxygen below their flammability limits assures the integrity of the waste gas holdup system and therefore provides assurance that the release of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

The proposed specifications regarding the number of hydrogen and oxygen monitor channels required to be operable, and limits on concentrations of hydrogen and oxygen in the waste gas holdup system are consistent with the Standard Radiological Effluent Technical Specifications and, therefore, are acceptable.

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The proposed sampling and analysis requirements for operation during monitoring channel inoperability are consistent with the requirements of the Standard Radiological Effluent Technical Specifications and, therefore, are acceptable.

The proposed actions to be taken if the minimum operability requirement is not met differ from the Standard Radiological Effluent Technical Specifications in that operation of the waste gas holdup system is allowed if an inoperable hydrogen or oxygen channel is not restored to service within 14 days, provided that a special report is submitted to the NRC Regional Administrator describing the cause of monitor inoperability, the action being taken to restore the instrument to service, and the action to be taken to prevent recurrence. In regard to this, the proposed specification provides a level of protection against the uncontrolled release of radioactive materials which is equivalent to the level of protection afforded by the Standard Radiological Effluent Technical Specifications.

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. This amendment also relates to changes in recordkeeping, reporting, or administrative procedures or 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: February 4, 1985

The following NRC personnel have contributed to this Safety Evaluation:
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