



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

May 29, 1990

Docket No. 50-219

Mr. E. E. Fitzpatrick
Vice President and Director
Oyster Creek Nuclear Generating Station
Post Office Box 388
Forked River, New Jersey 08731

Dear Mr. Fitzpatrick:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. 75210)

The Commission has issued the enclosed Amendment No.139 to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station, in response to your application dated October 18, 1989 as supplemented February 21, 1990.

By letter dated May 16, 1989, GPU Nuclear Corporation (GPUN/licensee) provided a commitment to propose, in a separate submittal, technical specification revisions to include surveillance requirements for System B of the control room heating, ventilating, and air conditioning (HVAC) system, which was added by refueling cycle 12R system upgrades. By letter dated October 3, 1989, the NRC requested that the licensee submit appropriate technical specifications for chlorine detection and minimum air flow to the control room for chlorine protection or provide acceptable justification for not providing the technical specifications. As stated in the letter, the licensee previously had agreed to comply with the NRC request, in the letter dated March 31, 1987, that GPUN propose additional control room habitability technical specifications on plant shutdown if the control room HVAC system (except dampers) is inoperable for more than seven days and on the maximum control room temperature.

By letter dated October 18, 1989, the licensee proposed technical specification revisions to include surveillance requirements for System B of the control room HVAC system. The licensee justified not providing (1) technical specifications for plant shutdown if the control room HVAC system (except dampers) is inoperable for more than seven days, (2) maximum control room temperature, (3) chlorine detection, and (4) minimum air flow to the control room. The licensee provided additional information, by letter dated February 21, 1990, to justify not providing technical specifications for chlorine detection.

By letter dated February 27, 1990, the NRC requested that, as a separate action, with their prior commitment, GPUN provide a submittal that evaluates control room operator thyroid exposures, in accordance with NUREG-0737, Item III.D.3.4 requirements. By letter dated April 16, 1985, the NRC had stated that because the staff was reviewing the iodine source term for the design basis loss-of-coolant accident, in the interim the licensee must meet only the

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E. E. Fitzpatrick

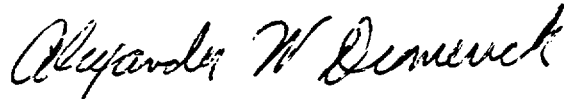
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5 rem whole body and the 30 rem beta skin exposure limits to control room operators; the thyroid exposure limit would be addressed as a separate action from NUREG-0737 after the source term resolution.

The amendment revises Technical Specifications 3.17 and 4.17. Specifically, the changes are as follows: (1) two control room HVAC systems shall be operable during all modes of operation, (2) addition of new limiting conditions for operation for the control room, and (3) delete surveillance to determine the makeup air plus infiltration air (less than or equal to 2000 cfm) to the Control Room envelope for each Control Room HVAC system.

A copy of the related Safety Evaluation is enclosed. Also enclosed is a notice of issuance which has been filed with the Office of the Federal for publication.

Sincerely,



Alexander W. Dromerick, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 139 to DPR-16
2. Safety Evaluation
3. Notice

cc w/enclosures:
See next page

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Sincerely,

/s/

Alexander W. Dromerick, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 139 to DPR-16
- 2. Safety Evaluation
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cc w/enclosures:

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Mr. E. E. Fitzpatrick
Oyster Creek Nuclear Generating Station

Oyster Creek Nuclear
Generating Station

cc:

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

GPU NUCLEAR CORPORATION

AND

JERSEY CENTRAL POWER & LIGHT COMPANY

DOCKET NO. 50-219

OYSTER CREEK NUCLEAR GENERATING STATION

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 139
License No. DPR-16

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by GPU Nuclear Corporation, et al., (the licensee), dated October 18, 1989 as supplemented February 21, 1990 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.

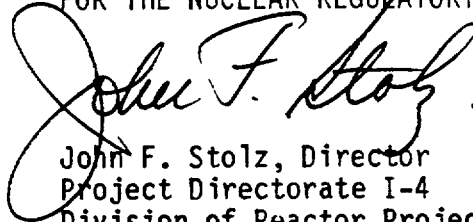
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Provisional Operating License No. DPR-16 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.139 , 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 the date of issuance, to be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 29, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 139

PROVISIONAL OPERATING LICENSE NO. DPR-16

DOCKET NO. 50-219

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove

Page 3.17-1
Page 4.17-1

Insert

Page 3.17-1
Page 4.17-1

3.17 Control Room Heating, Ventilating, and Air-Conditioning System

Applicability: Applies to the operability of the control room heating, ventilating, and air conditioning (HVAC) systems.

Objective: To assure the capability of each control room HVAC system to minimize the amount of radioactivity from entering the control room in the event of an accident.

- Specification:
- A. Two control room HVAC systems shall be operable during all modes of plant operation.
 - B. With one control room HVAC system determined inoperable:
 - (1) Demonstrate once per 24 hours the partial recirculation mode of operation for the operable system, or place the operable system in the partial recirculation mode; and
 - (2) Restore the inoperable system within 7 days, or prepare and submit a special report to the Commission in lieu of any other report required by Section 6.9, within the next 14 days, outlining the action taken, the cause of the inoperability and the plans/schedule for restoring the HVAC system to operable status.
 - C. With both control room HVAC systems determined inoperable.
 - (1) During Power Operation: place the reactor in the cold shutdown condition within 30 hours
 - (2) During Refueling:
 - (a) Cease irradiated fuel handling operations; and
 - (b) Cease all work on the reactor or its connected systems in the reactor building which could result in inadvertent releases of radioactive materials.

Basis: The operability of each control room HVAC system ensures that the control room will remain habitable for operations personnel during a postulated design basis accident. The control room envelope includes the control room panel area, the shift supervisor's office, toilet room, kitchen, and lower cable spreading room. Since Systems A and B do not have HEPA filters or charcoal adsorbers, the supply fan and dampers for each system minimize the beta and gamma doses to the operators by providing positive pressurization and limiting the makeup and infiltration air into the control room envelope. For the supply of 100% outside air to the control room envelope, the doses increase to 29.1 rem beta and 3.14 rem gamma for the assumed 30 days; however, these values are within the allowable limits.

4.17 Control Room Heating, Ventilating, and Air-Conditioning System

Applicability: Applies to surveillance requirements for the control room heating, ventilating, and air conditioning (HVAC) systems.

Objective: To verify the capability of each control room HVAC system to minimize the amount of radioactivity from entering the control room in the event of an accident.

Specification: Surveillance of each control room HVAC system shall be as follows:

- A. At least once monthly: by initiating, from the control room, the partial recirculation mode of operation, and by verifying that the system components are aligned such that the system is operating in this mode.
- B. At least once every refueling outage: by verifying that in the partial recirculation mode of operation, the control room and lower cable spreading room are maintained at a positive pressure of $\geq 1/8$ in. WG relative to the outside atmosphere.

Basis: Periodic surveillance of each control room HVAC system is required to ensure the operability of the system. The operability of the system in conjunction with control room design provisions is based upon limiting the radiation exposure to personnel occupying the control room to less than a 30-day integrated gamma dose of 5 rem, and a 30-day integrated beta dose of 30 rem.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 139

TO PROVISIONAL OPERATING LICENSE NO. DPR-16

GPU NUCLEAR CORPORATION AND

JERSEY CENTRAL POWER & LIGHT COMPANY

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

1.0 INTRODUCTION

By letter dated May 16, 1989, GPU Nuclear Corporation (GPUN/licensee) provided a commitment to propose, in a separate submittal, technical specification revisions to include surveillance requirements for System B of the control room heating, ventilating, and air conditioning (HVAC) system, which was added by refueling cycle 12R system upgrades. By letter dated October 3, 1989, the NRC requested that the licensee submit appropriate technical specifications for chlorine detection and minimum air flow to the control room for chlorine protection or provide acceptable justification for not providing the technical specifications. In a letter dated March 31, 1987, the licensee had agreed to comply with NRC request, that GPUN propose additional control room habitability technical specifications on plant shutdown if the control room HVAC system (except dampers) is inoperable for more than seven days and on the maximum control room temperature.

By letter dated October 18, 1989, the licensee proposed technical specification revisions to include surveillance requirements for System B of the control room HVAC system. The licensee justified not providing (1) technical specifications for plant shutdown if the control room HVAC system (except dampers) is inoperable for more than seven days, (2) maximum control room temperature, (3) chlorine detection, and (4) minimum air flow to the control room. The licensee provided additional information, by letter dated February 21, 1990, to justify not providing technical specifications for chlorine detection.

By letter dated February 27, 1990, the NRC requested that, in accordance with their prior commitment, GPUN provide a submittal that evaluates control room operator thyroid exposures, in accordance with NUREG-0737, Item III.D.3.4 requirements. By letter dated April 16, 1985, the NRC had stated that because the staff was reviewing the iodine source term for the design basis loss-of-coolant accident, in the interim the licensee must meet only the 5 rem whole body and the 30 rem beta skin exposure limits to control room operators; the thyroid exposure limit would be addressed as a separate action from NUREG-0737 after the source term resolution.

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The proposed changes would affect Technical Specifications 3.17 and 4.17, "Control Room Heating, Ventilating, and Air Conditioning System." The changes would provide the following:

- (1) that two control room HVAC systems be operable during all modes of plant operation;
- (2) new specifications for the control room HVAC systems; and
- (3) deletion of the surveillance to determine the makeup air plus infiltration air (less than or equal to 2000 cubic feet per minute) to the control room envelope for each control room HVAC system.

2.0 EVALUATION

As a result of the 12R system upgrades, a second independent HVAC system (System B) has been added, which includes a fan, dampers, and a refrigeration unit. Each system has four manual operating modes: normal, purge, partial recirculation, and full recirculation. The safety functions of the control room HVAC system are:

- (1) protect operators against the effects of an accidental release of toxic or radioactive gases; and
- (2) provide a habitable environment so that the plant can be safely operated or shut down under design basis accident conditions.

The present technical specifications recognize only a single system.

The installation of a separate system provides remedial measures to address a potential single failure of an active component in either system. The control room HVAC systems share common passive equipment.

New specifications for the control room HVAC system are proposed as described and evaluated below.

- (1) Where the current specification provides that the dampers be manually aligned for the partial recirculation mode of operation when the single system is inoperable, the proposal would require, with one control room HVAC system inoperable, that the operable system be placed in the partial recirculation mode, or that the operability of the partial recirculation mode be demonstrated once per 24 hours. The licensee stated that, since the supply fan runs continuously in the normal and partial recirculation modes, its inoperability would be immediately apparent to the control room operators. Therefore, the failure of the dampers to realign the partial recirculation mode of operation is the area of concern subsequent to a release of radioactivity within the reactor building. This new specification would provide a level of assurance of the capability of the operable system to perform its design function during a design basis accident. The staff concurs with this evaluation.

- (2) The proposal would add the requirements, with both HVAC systems inoperable, that the reactor be placed in the cold shutdown condition within 30 hours, and, during refueling, irradiated fuel handling operations cease, and all work cease on the reactor or its connected systems in the reactor building which could result in inadvertent releases of radioactive materials. The staff considers that this provision satisfies the licensee's commitment to propose a technical specification on plant shutdown if the control room HVAC system is inoperable.

Further, the proposed amendment would retain the surveillance requirement for verifying, in the partial recirculation mode of operation, that the control room and lower cable spreading room are maintained at a positive pressure of greater than or equal to 1/8 inch water gage relative to the onsite atmosphere. However, the provision which requires that the specific positive pressure be maintained with the total flow rate of makeup air plus infiltration air less than or equal to 2000 cubic feet per minute would be deleted.

The licensee stated that they have reviewed the radiological analysis to determine the limiting air flow rate for the partial recirculation mode of operation. The results of these calculations demonstrated that the beta and gamma doses remain below their respective limits even with 100% outside air for 30 days. The licensee concluded, based on this analysis, that the current technical specification limit of 2000 cubic feet per minute is not warranted and, therefore, should not be considered a factor for determining the operability of either control room HVAC system. The staff has performed an independent analysis of the control room operator doses and concurs with the licensee's conclusion.

The licensee stated that the need has been identified for control room air temperature control during normal operations and that it has revised station procedures to provide precautions and remedial actions for a loss of normal ventilation. Since the existing station procedures already recognize the importance of the control room temperature during normal plant operations, an additional technical specification requirement is not warranted. The standard technical specifications require verification every 12 hours that the control room air temperature is less than or equal to (120)°F. This acceptance criterion temperature is based on environmental considerations concerning essential equipment in the control room. In practice, however, more-detailed procedures are needed to implement this requirement as well as to assure that air temperatures remain in the range appropriate for the operators, which is well below the technical specification limit. The staff, therefore, concurs with the licensee's conclusions.

The staff requested that GPUN submit appropriate technical specifications for chlorine detection and minimum air flow to the control room for chlorine protection, based on the fact that the licensee removed only the 1-ton liquid chlorine cylinders and retained a 150-pound cylinder to treat the new radwaste service water system. The licensee performed an analysis of chlorine gas concentrations in the control room envelope considering instantaneous and continuous releases of chlorine from the 150-pound tank. The licensee stated that a chlorine detector is provided within the chlorine storage enclosure, which alarms at the chlorine room on detection of chlorine. Procedures require that the control room operators, in response to a chlorine alarm, don protective breathing apparatus and manually initiate the full recirculation mode if not

already in effect. Procedures also require that the control room HVAC system be in the full recirculation mode during chlorine system maintenance, tank delivery, and tank handling. The refueling cycle 12R control room HVAC tests have demonstrated a makeup air plus infiltration rate less than 1750 cubic feet per minute for the full recirculation mode with the kitchen/toilet exhaust fan off. A timer on the fan switch limits continuous operation to a maximum of five minutes. The licensee's analysis conservatively assumed that the wind direction causes the maximum concentrations of chlorine at ground level to move from the chlorine cylinder directly toward the control room outside air intake. The enclosure that houses the cylinder is located at ground level, 380 feet northwest of the control room air intakes. The intakes are located on the roof of the office building at elevations 64 and 73 feet. There are tanks and buildings between the cylinder enclosure and the air intakes with heights up to 100 feet. There is no straight line path from the chlorine cylinder to the control room; and the local obstructions produce a large-scale turbulence that alters the wind path. The analysis further conservatively takes no credit for the effects of the enclosure that houses the chlorine cylinder or for the mixing of the chlorine plume due to building wake effects.

The results of the licensee's analysis show that the Regulatory Guide 1.78 toxicity limit concentration of chlorine (15 parts per million) is not attained in the control room envelope until after two minutes have elapsed following the alarm in the control room after assumed instantaneous or continuous (3/8-inch line break) releases. Regulatory Guide 1.78 provides that a minimum operator response time of two minutes should be provided to allow the operators to don protective breathing apparatus. The licensee also stated that, as per Regulatory Guide 1.78, the air exchange rate of the control room (3.8 changes per hour at an infiltration rate of 1750 cubic feet per minute) does not require verification by field testing. The licensee concluded, based on the above, that technical specifications for chlorine detection and minimum air flow to the control room are not needed for chlorine protection. The staff has performed independent analyses of chlorine concentrations in the control room for postulated instantaneous and continuous releases. Based on the staff review of the licensee's evaluation and the results of the staff's independent analyses, the staff concurs with the licensee's conclusions.

Based on the above evaluation, the staff concludes that the licensee's proposal meets the intent of GDC 19 (except for consideration of control room operator thyroid exposures) and the Standard Technical Specifications and, therefore, is acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32 and 51.35, an environmental assessment and finding of no significant impact have been prepared and published in the Federal Register on May 24, 1990 (55 FR 21465). Accordingly, based upon the environmental assessment, we have determined that the issuance of the amendment will not have a significant effect on the quality of the human environment.

4.0 CONCLUSION

The staff has 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 (3) the issuance of the amendment will not be inimical to the common defense and security nor to the health and safety of the public.

Dated: May 29, 1990

Principal Contributor: C. Nichols

UNITED STATES NUCLEAR REGULATORY COMMISSION
GPU NUCLEAR CORPORATION AND JERSEY CENTRAL POWER & LIGHT COMPANY
DOCKET NO. 50-219
NOTICE OF ISSUANCE AMENDMENT TO
FACILITY OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (Commission) has issued Amendment No. 139 to Provisional Operating License No. DPR-16 issued to GPU Nuclear Corporation, et al., which revised the Technical Specifications for operation of the Oyster Creek Nuclear Generating Station located in Ocean County, New Jersey. The amendment is effective as of the date of issuance.

The amendment revises Technical Specifications 3.17 and 4.17. Specifically, the changes are as follows: (1) two control room HVAC System shall be operable during all modes of operation, (2) addition of new limiting conditions for operation for the control room and (3) delete surveillance to determine the makeup air plus infiltration air (less than or equal to 2000 cfm) to the control room envelope for each control room HVAC system.

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 I, which are set forth in the license amendment.

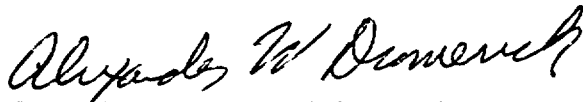
Notice of Consideration of Issuance of Amendment and Opportunity for Hearing in connection with this action was published in the FEDERAL REGISTER on November 22, 1989 (54 FR 48339). No request for a hearing or petition for leave to intervene was filed following this notice.

The Commission has prepared an Environmental Assessment related to the action and has determined not to prepare an environmental impact statement. Based upon the environmental assessment, the Commission has concluded that the issuance of this amendment will not have a significant effect on the quality of the human environment.

For further details with respect to the action see (1) the application for amendment dated October 18, 1989, supplemented February 21, 1990, (2) Amendment No. 139 to License No. DPR-16, and (3) the Commission's related Safety Evaluation and Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, N.W., Washington, D.C., and at the Local Public Document Room located at the Ocean County Library, Reference Department, 101 Washington Street, Toms River, New Jersey 08753. 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: Director, Division of Reactor Projects - I/II.

Dated at Rockville, Maryland this 29th day of May, 1990 .

FOR THE NUCLEAR REGULATORY COMMISSION



Alexander W. Dromerick, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation