



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

October 5, 1984

Docket No. 50-244  
LS05-84-10-008

Mr. Roger W. Kober, Vice President  
Electric and Steam Production  
Rochester Gas & Electric Corporation  
89 East Avenue  
Rochester, New York 14649

Dear Mr. Kober:

SUBJECT: DELETION OF RESTRICTION ON STORAGE PATTERN OF FUEL ASSEMBLIES

Re: R. E. Ginna Nuclear Power Plant

The Commission has issued the enclosed Amendment No. 64 to Provisional Operating License No. DPR-18 for the R.E. Ginna Nuclear Power Plant. This amendment is in response to your application dated January 18, 1984.

The amendment deletes the restriction on the storage pattern of fuel assemblies with less than 60 days decay since irradiation.

A Notice of Consideration of Issuance of Amendment to License and Proposed No Significant Hazards Consideration Determination and Opportunity for Hearing related to the requested action was published in the Federal Register on July 24, 1984 (49 FR 29919). No requests for hearing and no public comments were received.

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Mr. Roger W. Kober

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A copy of our related Safety Evaluation is also enclosed. This action will appear in the Commission's Monthly Notice publication in the Federal Register.

Sincerely,

Walter A. Paulson, Acting Chief  
Operating Reactors Branch #5  
Division of Licensing

Enclosures:

- 1. Amendment No. 64 to License No. DPR-18
- 2. Safety Evaluation

cc w/enclosures:  
See next page

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Mr. Roger W. Kober

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October 5, 1984

cc

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

ROCHESTER GAS AND ELECTRIC CORPORATION

DOCKET NO. 50-244

R. E. GINNA NUCLEAR POWER PLANT

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 64  
License No. DPR-18

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Rochester Gas and Electric Corporation (the licensee) dated January 18, 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 Provisional Operating License No. DPR-18 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 64, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

*Richard L. Emch, Jr.*  
for Walter A. Paulson, Acting Chief  
Operating Reactors Branch #5  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 5, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 64

PROVISIONAL OPERATING LICENSE NO. DPR-18

DOCKET NO. 50-244

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages contain the captioned amendment number and marginal lines which indicate the area of changes.

REMOVE

Pages 3.11-2 through 3.11-3  
3.11-5

INSERT

Pages 3.11-2 through 3.11-3  
\_\_\_\_\_

- e. Charcoal absorbers shall be installed in the ventilation system exhaust from the spent fuel storage pit area and shall be operable.
- 3.11.2 Radiation levels in the spent fuel storage area shall be monitored continuously.
- 3.11.3 The trolley of the auxiliary building crane shall never be stationed or permitted to pass over storage racks containing spent fuel.
- 3.11.4 The spent fuel pool temperature shall be limited to 150°F.
- 3.11.5 The spent fuel shipping cask shall not be carried by the auxiliary building crane, pending the evaluation of the spent fuel cask drop accident and the crane design by RG&E and NRC review and approval.

Basis:

Charcoal adsorbers will reduce significantly the consequences of a refueling accident which considers the clad failure of a single irradiated fuel assembly. Therefore, charcoal adsorbers should be employed whenever irradiated fuel is being handled. This requires that the ventilation system should be operating and drawing air through the adsorbers.

The desired air flow path, when handling irradiated fuel, is from the outside of the building into the operating floor area, toward the spent fuel storage pit, into the area exhaust ducts, through the adsorbers, and out through the ventilation system exhaust to the facility vent. Operation of a

main auxiliary building exhaust fan assures that air discharged into the main ventilation system exhaust duct will go through a HEPA and be discharged to the facility vent. Operation of the exhaust fan for the spent fuel storage pit area causes air movement on the operating floor to be towards the pit. Proper operation of the fans and setting of dampers would result in a negative pressure on the operating floor which will cause air leakage to be into the building. Thus, the overall air flow is from the location of low activity (outside the building) to the area of highest activity (spent fuel storage pit). The exhaust air flow would be through a roughing filter and charcoal before being discharged from the facility. The roughing filter protects the adsorber from becoming fouled with dirt; the adsorber removes iodine, the isotope of highest radiological significance, resulting from a fuel handling accident. The effectiveness of charcoal for removing iodine is assured by having a high throughput and a high removal efficiency. The throughput is attained by operation of the exhaust fans. The high removal efficiency is attained by minimizing the amount of iodine that bypasses the charcoal and having charcoal with a high potential for removing the iodine that does pass through the charcoal.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 64 TO PROVISIONAL OPERATING LICENSE NO. DPR-18

ROCHESTER GAS AND ELECTRIC CORPORATION

R. E. GINNA NUCLEAR POWER PLANT

DOCKET NO. 50-244

1.0 INTRODUCTION

By letter dated January 18, 1984, Rochester Gas and Electric Corporation (RG&E), the licensee, requested that the Technical Specifications set forth in Appendix A to Provisional Operating License DPR-18 be amended to delete the spacing restriction on storage of recently discharged fuel assemblies in the spent fuel pool.

A Notice of Consideration of Issuance of Amendment to License and Proposed No Significant Hazards Consideration Determination and Opportunity for Hearing related to the requested action was published in the Federal Register on July 24, 1984 (49 FR 29919). No requests for hearing and no public comments were received.

2.0 BACKGROUND

The Technical Specifications require that fuel assemblies with less than 60 days decay since irradiation not be placed in storage positions with less than a specified intercellular spacing. The licensee requested the restriction be deleted in order to allow storage of spent fuel with less than 60 days decay in additional cells as well as in those already approved.

3.0 EVALUATION

3.1 Cask Drop/Tip Accidents

Technical Specification 3.11.5 states that "The spent fuel shipping cask shall not be carried by the auxiliary building crane, pending the evaluation of the spent fuel cask drop accident and the crane design by RG&E, and NRC review and approval." Since the shipping cask cannot presently be carried by the auxiliary building crane by this administrative control, a cask drop/tip accident is precluded for the proposed technical specification amendment. A request to delete section 3.11.5 is currently under review by the staff.

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### 3.2 Tornado Missile Accidents

The design values for tornado wind speed and missile characteristics were those established in the staff review of Systematic Evaluation Program (SEP) Topics III-2, Wind and Tornado Loadings, and III-4.A, Tornado Missiles. The design missile is stated to be a 1490 lb wooden pole, 35 feet in length and 13.5 inches in diameter, which could impact the racks with a vertical velocity of 70 ft/sec. The licensee's submittal states that the worst position for impact of this missile would be that centered on a fuel storage location where, because of the 13.5 inch missile diameter compared to a diagonal dimension of the spent fuel storage box of 11.9 inches, the corners of four other fuel storage cells would be damaged. This relative impact orientation of missile and storage cell configuration would have an extremely low likelihood of occurrence, however.

The staff judges that a conservative estimate of damage to stored spent fuel assemblies from impact of the design missile is sufficient damage to two assemblies to result in the release of their concomitant volatile gas activities. In performing the radiological consequence analysis, it is assumed that the fuel has been discharged from the reactor after operation at a steady-state power level of 1551 MW<sup>th</sup> for an extended period of time. The assumptions in the staff analysis are listed in Table 1 below. The calculated (0-2 hr) offsite radiological consequences are estimated to be 63 Rem thyroid and 0.1 Rem whole body at the Exclusion Area Boundary, well within the guidelines of 10 CFR Part 100.

The staff concludes that since the spent fuel shipping cask may not be carried by the auxiliary building crane, cask drop/tip accidents need not be considered.

The staff also concludes that a tornado missile accident resulting in damage to two 30,000 MWd/t spent fuel assemblies with at least 100 hours of cool-down time will result in atmospheric radionuclide releases with consequences which are well within the guidelines of 10 CFR Part 100.

Because the cask/tip accident does not need to be considered and the consequences of a tornado missile accident are within 10 CFR Part 100 limits, the staff concludes that the Technical Specification change is acceptable.

#### 4.0 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. The staff has 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). 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.

#### 5.0 CONCLUSION

The staff has further 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.

#### 6.0 ACKNOWLEDGEMENT

M. Wohl and A. Singh prepared this Safety Evaluation.

Dated: October 5, 1984

Table 1

Assumption in Staff Offsite Radiological Consequence Analysis of Postulated Tornado Missile Accident

Reactor Power Level	1551 MW <sub>th</sub>
Effective Pool Decontamination Factor for Iodine	100
Radial Power Peaking Factor	1.2
Fuel Exposure for Impacted Spent Fuel Assembly	30 000 MWd/t
Number of Equivalent Impacted Spent Fuel Assemblies	2
Cooldown Time for Impacted Spent Fuel Assembly	100 hr
Diffusion and Transport Atmospheric Relative Concentration, 0-2 hours, at Exclusion Area Boundary	$2.2 \times 10^{-4}$ sec/m <sup>3</sup>
Filters	none assumed operational