

April 12, 1990

Dr. Robert C. Mecredy
General Manager, Nuclear Production
Rochester Gas & Electric Corporation
89 East Avenue
Rochester, New York 14649

Dear Dr. Mecredy:

SUBJECT: ISSUANCE OF AMENDMENT NO. 39 TO FACILITY OPERATING LICENSE NO.
DPR-18 - R. E. GINNA NUCLEAR POWER PLANT (TAC NO.75989)

The Commission has issued the enclosed Amendment No. 39 to Facility Operating License No. DPR-18 for the R. E. Ginna Nuclear Power Plant. This amendment is in response to your application dated February 16, 1990 as supplemented on March 15, 1990.

This amendment revises the requirements of the Technical Specifications to allow use of reconstituted fuel assemblies in order to reduce coolant activity and utilize the remaining energy in fuel assemblies.

A copy of our Safety Evaluation is also enclosed along with a copy of the Notice of Issuance, the original of which has been forwarded to the Office of the Federal Register for publication.

The Environmental Assessment and Finding of No Significant Impact has been forwarded to the Office of the Federal Register under separate cover.

Sincerely,

AS

Allen Johnson, Project Manager
Project Directorate I-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 39 to License No. DPR-18
- 2. Safety Evaluation
- 3. Notice of Issuance

cc w/enclosures:
See next page

OFC	:PDI-3/LA	:PDI-3/PM	:OGC	:PDI-3/DIR	:	:
NAME	:MRushbrook	:AJohnson	:	:RWessman	:	:
DATE	:4/7/90	:4/3/90	:4/11/90	:4/12/90	:	:

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Document Name: AMENDMENT PKG.GINNA TAC75989

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

April 12, 1990

Docket No. 50-244

Dr. Robert C. Mecredy
General Manager, Nuclear Production
Rochester Gas & Electric Corporation
89 East Avenue
Rochester, New York 14649

Dear Dr. Mecredy:

SUBJECT: ISSUANCE OF AMENDMENT NO. 39 TO FACILITY OPERATING LICENSE NO.
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Allen Johnson, Project Manager
Project Directorate I-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

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cc w/enclosures:
See next page

Dr. Robert C. Mecredy

- 2 -

April 12, 1990

cc w/enclosures:
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AMENDMENT NO. 39 TO DPR-18 - R. E. GINNA NUCLEAR POWER PLANT DATED April 12, 1990

DISTRIBUTION:

Docket File 50-244 ←

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Local PDR

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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 FACILITY OPERATING LICENSE

Amendment No. 39
License No. DPR-18

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the Rochester Gas and Electric Corporation (the licensee) dated February 16, 1990, as supplemented on March 15, 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 set forth in 10 CFR Chapter I;
 - 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 Facility 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. 39, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

for Patrick M. Sears

Richard H. Wessman, Director
Project Directorate I-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 12, 1990

DFC	: PDI-3/LA	: PDI-3/PM	: OGC	: PDI-3/D	:	:	:
NAME	: MRushbrook	: AJohnson	:	: RWessman	:	:	:
DATE	: 4/7/89	: 4/12/89	: 4/11/89	: 4/12/89	:	:	:

OFFICIAL RECORD COPY

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

FOR THE NUCLEAR REGULATORY COMMISSION

Patrick M. Sears
for Richard H. Wessman, Director
Project Directorate I-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 12, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 39

FACILITY OPERATING LICENSE NO. DPR-18

DOCKET NO. 50-244

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change.

Remove
5. 3-1

Insert
5. 3-1

5.3

Reactor Design Features

5.3.1

Reactor Core

- a. The reactor core contains approximately 45 metric tons of uranium in the form of uranium dioxide pellets. The pellets are encapsulated in Zircaloy 4 tubing to form fuel rods. The reactor core is made up of 121 fuel assemblies⁽⁴⁾ with each fuel assembly containing 179 fuel rod locations. Fuel rod locations at any time during plant life, may consist of fuel rods clad with Zircaloy -4 or filler rods fabricated from Zircaloy - 4 or stainless steel if justified by cycle-specific reload analysis. Should more than 30 rods in the core, or 10 rods in any assembly be replaced per refueling, a report describing the number of rods replaced and associated cycle-specific evaluation shall be submitted to the Commission prior to criticality. Each fuel assembly also contains 16 guide tubes and one instrumentation thimble all arranged in a 14 x 14 array to form a fuel assembly.
- b. The enrichment of reload fuel shall be no more than 3.5 weight per cent U-235 for regions delivered prior to January 1, 1984 (Regions 1-15), 4.25 weight per cent U-235 for regions delivered after January 1, 1984, or their equivalents in terms of reactivity.
- c. There are 29 full-length assemblies in the reactor core. Each RCC assembly contains 16 144 inch lengths of silver-indium-cadmium alloy clad with stainless steel which act as neutron absorbers when inserted into the core.⁽⁵⁾

Basis

The DNBRs for the reconstituted assemblies are conservatively determined by assuming the filler rods are operating at the highest power in the reconstituted fuel assembly.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 39 TO FACILITY 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 February 16, 1990, as supplemented on March 15, 1990, Rochester Gas and Electric Corporation submitted an application for amendment to the Technical Specifications for the R.E. Ginna Nuclear Power Plant. The changes involve an expansion of the use of dummy rods (Zircaloy-4 or stainless steel rods) in fuel assemblies from the core peripheral location to other locations. However, in order to justify this expansion of utilizing dummy rods in other locations, cycle-specific reload analysis is required. The licensee has provided such an analysis. The Office of Nuclear Reactor Regulation's evaluation is as follows:

2.0 EVALUATION

The dummy rods (Zircaloy-4 or stainless steel rods) were originally used in fuel assemblies to replace those fuel rods damaged by the baffle jetting problem in the Westinghouse reactors. The concept was extended further to replace failed rods during reconstitution of fuel assemblies in other locations. However, in order to satisfy generic fuel design criteria as described in the NRC Standard Review Plan (NUREG-0800), the dummy rods require thermal-hydraulic analyses to demonstrate that inclusion of the dummy rods in fuel assemblies with the specific configurations and core locations chosen for a specific fuel cycle is acceptable with respect to the overall fuel performance and safety-significant conclusions.

The licensee has analyzed the dummy rods by assuming that dummy rods operate at power levels equal to the highest power in any of the fueled rods in the reconstituted assembly. The licensee stated that this results in a conservative analysis with less margin than actually exists to the DNBR acceptance limit in the reconstituted assembly. The staff agrees that this analysis procedure should be sufficiently conservative to offset uncertainties associated with application of the approved DNBR correlation to reconstituted fuel assemblies which have fuel rod configurations slightly different than those represented in the DNBR test data base. However, core wide analyses will result in a

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non-conservative calculation with erroneous redistribution of flow from the reconstituted fuel assemblies to other assemblies in the core. This effect should be small and is probably negligible for the limited core alterations planned for Ginna Cycle 20 based on telephone discussions between the staff and the licensee. However, the licensee should perform confirmatory analyses using realistic power distributions for the reconstituted assemblies to assure that DNBR limits are not violated for the conventional fuel assemblies during Cycle 20 operation. This additional evaluation should also be included in the safety analyses for all future cycles employing fuel assemblies reconstituted with dummy pins at high power core locations.

The licensee has also addressed the impact of up to 10 dummy fuel rods in a regular fuel assembly on the capability of a reconstituted assembly to withstand seismic and LOCA loading conditions. The filler rod(s) have outside diameters identical to the fuel rod diameter and the rod length is also the same. The grid strength will remain unchanged since the filler rod(s) will provide the same support in the grid cells as the fuel rods. For a small number of filler rod(s) (10 or less), the change in mass and stiffness of the fuel assembly will be insignificant. There will be negligible effects on fuel assembly dynamic properties, such as fuel fundamental frequency. Thus, the load carrying capability of the fuel assembly and grid spacers is not affected under the seismic and LOCA design loading conditions for the reconstituted fuel. The staff concludes that this assessment is reasonable and acceptable.

The licensee stated that each reload that contains reconstituted assemblies will be evaluated using approved methods described in WCAP-9273A, "Westinghouse Reload Safety Evaluation Methodology," dated July 1985. The effect of the actual reconstitution on core performance parameters, peaking factors, core average linear heat rate, and LOCA-related analyses will be evaluated to ensure that the existing safety criteria and design limits and the original fuel assembly design criteria are satisfied. The staff finds that this approach is acceptable since the analysis methods have previously been approved except for the DNBR evaluation for the reconstituted assemblies. A method for the latter evaluation, assuming that filler rods are operating at the highest power in the reconstituted assembly, is approved for Ginna by incorporation in the Technical Specification Basis.

Technical Specifications changes are as follows:

(1) Section 5.3.1 Reactor Core

In Section 5.3.1, the fuel assembly at any time may consist of fuel rods clad with Zircaloy-4 or dummy rods with Zircaloy-4 or stainless steel if justified by cycle-specific analysis. The proposed Technical Specification further restricts the use of dummy rods; if there are more than 30 rods in the core or 10 rods in any assembly, a report describing the number of dummy rods and associated cycle-specific evaluation shall be submitted to NRC prior to criticality. We agree with the licensee approach.

(2) 5.3.1 Basis

In Section 5.3.1 Basis, the licensee states that the DNBR for the reconstituted assemblies is conservatively determined by assuming that the filler rods are operating at the highest power in the reconstituted fuel assembly as previously described. We approve the licensee analysis.

The Office of Nuclear Reactor Regulation concludes this evaluation as follows:

We have reviewed the licensee submittal of Technical Specification changes for R. E. Ginna and the proposed approach to safety analyses to assure that fuel assembly design changes will not result in failure to meet the pertinent design safety criteria. We conclude that the proposed Technical Specification revisions are acceptable and that the required cycle-specific evaluation approach, including DNBR evaluation of the reconstituted fuel assembly as described in the proposed Technical Specification Basis, is acceptable when the use of dummy rods is restricted to no more than 10 rods in any fuel assembly or 30 rods in the core. The licensee is cautioned that the application of these methods to cores with more extensive use of dummy fuel rods will require further justification, which should be provided to the NRC for review well in advance of the intended application. In addition, the DNB evaluation methods described herein are not approved for generic applications.

ENVIRONMENTAL CONSIDERATION

Notice of Consideration by the staff of issuance of the proposed amendment was published in the Federal Register on March 2, 1990 (55 FR 7611) and no comments or request for hearing was received. The Commission also consulted with the State of New York and no comments were received. An Environmental Assessment (EA) and Finding of No Significant Impact was published in the Federal Register on April 12, 1990 (55 FR 13864). Based upon the EA, the staff has determined not to prepare an environmental impact statement for the proposed license amendment, and has concluded that the proposed action will not leave a significant adverse effect on the quality of the human environment.

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 or to the health and safety of the public.

Principal Contributor: R. C. Jones

Dated: April 12, 1990

UNITED STATES NUCLEAR REGULATORY COMMISSIONROCHESTER GAS AND ELECTRIC CORPORATIONDOCKET NO. 50-244NOTICE OF ISSUANCE OF AMENDMENT TO FACILITYOPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 39 to Facility Operating License No. DPR-18 issued to Rochester Gas and Electric Corporation (the licensee), which revised the Technical Specifications for operation of the R. E. Ginna Nuclear Power Plant located in Wayne County, New York. The amendment was effective as of the date of issuance.

The amendment revised the Technical Specifications to reflect and allow the use of reconstituted fuel assemblies in order to reduce coolant activity and utilize the remaining energy in fuel assemblies. In the reconstitution process, the fuel rods which have been identified as defective, will be, removed and replaced with dummy rods. The reconstituted assembly will meet the original design criteria.

The application for 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 is 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 March 2, 1990 (55 FR 7611). No request for a hearing or petition for leave to intervene was filed following this notice.

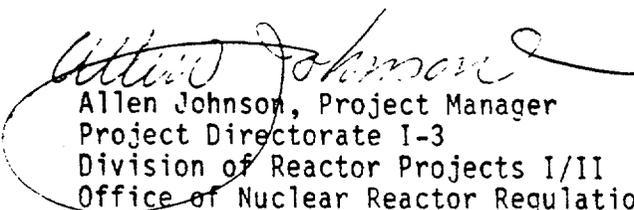
The Commission has prepared an Environmental Assessment and Finding of No Significant Impact (55 FR 13864) related to the action and has concluded that an environmental impact statement is not warranted and that the issuance of this amendment will not have a significant adverse effect on the quality of the human environment.

For further details with respect to the action, see (1) the application for amendment dated February 16, 1990 as supplemented on March 15, 1990; (2) Amendment No. 39 to License No. DPR-18; 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, 2120 L Street, N.W., Washington, D.C. and at the Rochester Public Library, 115 South Avenue, Rochester, New York 14610. 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 12th day of April 1990.

FOR THE NUCLEAR REGULATORY COMMISSION


Allen Johnson, Project Manager
Project Directorate I-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

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Dated at Rockville, Maryland, this th 12 day of April, 1990:

FOR THE NUCLEAR REGULATORY COMMISSION

With changes in SEP 4-11-90
Allen Johnson, Project Manager
Project Directorate I-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation
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