

March 3, 1999

Dr. Robert C. Mecredy
Vice President, Nuclear Operations
Rochester Gas and Electric Corporation
89 East Avenue
Rochester, NY 14649

SUBJECT: ISSUANCE OF AMENDMENT NO. 73 TO FACILITY OPERATING LICENSE NO. DPR-18, R. E. GINNA NUCLEAR POWER PLANT (TAC NO. MA4256)

Dear Dr. Mecredy:

The Commission has issued the enclosed Amendment No. 73 to Facility Operating License No. DPR-18 for the R. E. Ginna Nuclear Power Plant. This amendment is in response to your application dated November 24, 1998.

This amendment revises the Ginna Station Improved Technical Specifications description of the fuel cladding material (TS 4.2.1) and updates the list of references provided in Specification 5.6.5 for the Core Operating Limits Report.

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

Sincerely,

ORIGINAL SIGNED BY:

Guy S. Vissing, Senior Project Manager
Project Directorate I-1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-244

Enclosures: 1. Amendment No.73 to License No. DPR-18
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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Rochester Gas and Electric Corporation
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Sincerely,

A handwritten signature in cursive script, reading "Guy S. Vissing".

Guy S. Vissing, Senior Project Manager
Project Directorate I-1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-244

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DATED: March 3, 1999

AMENDMENT NO. 73 TO FACILITY OPERATING LICENSE NO. DPR-18-GINNA NUCLEAR
POWER PLANT

Docket File

PUBLIC

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Rochester Gas and Electric Company

R.E. Ginna Nuclear Power Plant

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ROCHESTER GAS AND ELECTRIC CORPORATION

DOCKET NO. 50-244

R. E. GINNA NUCLEAR POWER PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 73
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 November 24, 1998, 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 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. 73, 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 its date of issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



S. Singh Bajwa, Director
Project Directorate I-1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 3, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 73

FACILITY OPERATING LICENSE NO. DPR-18

DOCKET NO. 50-244

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

4.0-1
5.0-20
5.0-21

Insert

4.0-1
5.0-20
5.0-21

4.0 DESIGN FEATURES

4.1 Site Location

The site for the R.E. Ginna Nuclear Power Plant is located on the south shore of Lake Ontario, approximately 16 miles east of Rochester, New York.

The exclusion area boundary distances from the plant shall be as follows:

<u>Direction</u>	<u>Distance (m)</u>
N (including offshore)	8000
NNE	8000
NE	8000
ENE	8000
E	747
ESE	640
SE	503
SSE	450
S	450
SSW	450
SW	503
WSW	915
W	945
WNW	701
NW	8000
NNW	8000

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 121 fuel assemblies. Each assembly shall consist of a matrix of zircaloy or ZIRLO clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zircaloy, ZIRLO, or stainless steel filler rods for fuel rods, in accordance with NRC approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or cycle specific analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

(continued)

5.6 Reporting Requirements

5.6.5 COLR (continued)

- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:
1. WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology," July 1985.
(Methodology for LCO 3.1.1, LCO 3.1.3, LCO 3.1.5, LCO 3.1.6, LCO 3.2.1, LCO 3.2.2, LCO 3.2.3, and LCO 3.9.1.)
 2. WCAP-13677-P-A, "10 CFR 50.46 Evaluation Model Report: WCOBRA/TRAC Two-Loop Upper Plenum Injection Model Updates to Support ZIRLO™ Cladding Option," February 1994.
(Methodology for LCO 3.2.1.)
 3. WCAP-8385, "Power Distribution Control and Load Following Procedures - Topical Report," September 1974.
(Methodology for LCO 3.2.3.)
 4. WCAP-12610-P-A, "VANTAGE + Fuel Assembly Reference Core Report," April 1995.
(Methodology for LCO 3.2.1.)
 5. WCAP 11397-P-A, "Revised Thermal Design Procedure," April 1989.
(Methodology for LCO 3.4.1 when using RTDP.)
 6. WCAP-10054-P-A and WCAP-10081-A, "Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code," August 1985.
(Methodology for LCO 3.2.1)
 7. WCAP-10924-P-A, Volume 1, Revision 1, "Westinghouse Large-Break LOCA Best-Estimate Methodology, Volume 1: Model Description and Validation Responses to NRC Questions," and Addenda 1,2,3, December 1988.
(Methodology for LCO 3.2.1)

(continued)

5.6 Reporting Requirements

5.6.5 COLR (continued)

8. WCAP-10924-P-A, Volume 2, Revision 2, "Westinghouse Large-Break LOCA Best-Estimate Methodology, Volume 2: Application to Two-Loop PWRs Equipped with Upper Plenum Injection," and Addendum 1, December 1988. (Methodology for LCO 3.2.1)
 9. WCAP-10924-P-A, Volume 1, Revision 1, Addendum 4, "Westinghouse Large-Break LOCA Best-Estimate Methodology, Volume 1: Model Description and Validation, Addendum 4: Model Revisions," March 1991. (Methodology for LCO 3.2.1)
- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
- d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.6.6 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

- a. RCS pressure and temperature limits for heatup, cooldown, criticality, and hydrostatic testing as well as heatup and cooldown rates shall be established and documented in the PTLR for the following:

LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits"
- b. The power operated relief valve lift settings required to support the Low Temperature Overpressure Protection (LTOP) System, and the LTOP enable temperature shall be established and documented in the PTLR for the following:

LCO 3.4.6, "RCS Loops - MODE 4";
LCO 3.4.7, "RCS Loops - MODE 5, Loops Filled";
LCO 3.4.10, "Pressurizer Safety Valves"; and
LCO 3.4.12, "LTOP System."

(continued)



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 73 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 November 24, 1998, Rochester Gas and Electric Corporation (the licensee) submitted a license amendment request of proposed technical specification (TS) changes for R. E. Ginna Nuclear Power Plant. The proposed TS changes include the use of ZIRLO alloy fuel assemblies in Cycle 28 and subsequent cycles, and administrative changes in the core operating limits report (COLR). The ZIRLO alloy was approved in the topical report WCAP-12610-P-A, "VANTAGE+ Fuel Assembly Reference Core Report." The ZIRLO alloy is chosen to obtain additional operational benefit from the alloy's improved corrosion resistance and dimensional stability under irradiation. The ZIRLO fuel design has been tested through lead test assembly (LTA) programs, and was selected as reload fuel by other utilities.

2.0 EVALUATION

The ZIRLO fuel design is presented in the Westinghouse topical report WCAP-12610-P, "VANTAGE+ Fuel Assembly Reference Core Report." The staff approved the mechanical, neutronic, and thermal-hydraulic performance of the ZIRLO fuel design in a safety evaluation dated July 1, 1991. The staff approved the loss of coolant accident (LOCA) methodologies in another safety evaluation dated October 9, 1991, which addressed WCAP-12610-P, Appendices F, "LOCA NOTRUMP Evaluation Model: ZIRLO Modifications," and G, "LOCA Plant Specific Accident Evaluation." Westinghouse published the approved version of WCAP-12610-P-A in April 1995 for the ZIRLO fuel design. These methodologies are appropriate for use at Ginna and 10 CFR 50.44, 50.46, and Part 50, Appendix K indicate that both zircaloy and ZIRLO are acceptable cladding materials for nuclear power reactors. Therefore, the staff concludes that the use of ZIRLO fuel is acceptable for Ginna's Cycle 28 and subsequent cycles.

3.0 TECHNICAL SPECIFICATION CHANGES

3.1 Section 4.2 Reactor Core, 4.2.1 Fuel Assemblies

The licensee proposes to add ZIRLO in addition to zircaloy as an acceptable material for fuel rod and assembly designs, and to replace the zirconium alloy with zircaloy or ZIRLO as acceptable material for filler rods in fuel designs. The licensee also proposed two administrative changes to conform to the staff requirements. The new paragraph includes the following statements:

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Each assembly shall consist of a matrix of zircaloy or ZIRLO clad ... Limited substitution of zircaloy, ZIRLO, or stainless steel filler rods ... in accordance with NRC approved applications ... shown by tests or cycle specific analyses ...

These modifications to Section 4.2.1 are acceptable to Ginna based on the above staff evaluation of the acceptability of ZIRLO as a cladding material, the acceptability of using cycle specific analyses to ensure that fuel designs satisfy applicable safety limits, and the TS, as modified, are consistent with the staff position regarding standard language for a fuel design specification.

3.2 Section 5.6.5 COLR

The licensee proposed that (1) References 2, 4, and 9 be removed due to other existing references, (2) References 6, 7, 8, and 10 be modified to reflect more accurate information, and (3) two new documents, WCAP-13677-P-A (10 CFR 50.46 Evaluation Model Report: WCOBRA/TRAC Two-Loop Upper Plenum Injection Model Updates to Support ZIRLO Cladding Option) dated February 1994, and WCAP-12610-P-A (VANTAGE+ Fuel Assembly Reference Core Report) dated April 1995, be added for the new approved material ZIRLO.

These changes clarify the TSs and add methodologies applicable to the ZIRLO fuel design that will ensure that the valves for cycle-specific parameters will be determined such that applicable limits of the plant safety analyses are met. Thus, these changes acceptable.

3.3 Conclusions on Technical Specification Changes

The staff reviewed the licensee's submittal of proposed TS changes for the use of the approved ZIRLO fuel assembly design for Ginna Cycle 28 and subsequent cycles and the administrative changes to the COLR. Based on the staff's evaluation, the staff concludes that the ZIRLO fuel design and the administrative changes to the COLR are acceptable for reload licensing applications, and thus the proposed TS changes are acceptable for the R. E. Ginna Nuclear Power Plant.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding

(63 FR 71972). The amendment also relates to changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendment meets the eligibility criteria for categorical exclusions 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 the amendment.

6.0 CONCLUSION

The Commission 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, (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: S. Wu

Date: March 3, 1999