

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

July 14, 1998

SUBJECT: ISSUANCE OF AMENDMENT NO. 71 TO FACILITY OPERATING LICENSE NO.  
DPR-18, R. E. GINNA NUCLEAR POWER PLANT (TAC NO. M99702)

Dear Dr. Mecredy:

The Commission has issued the enclosed Amendment No. 71 to Facility Operating License No. DPR-18 for the R. E. Ginna Nuclear Power Plant. This amendment is in response to your application dated September 29, 1997, as supplemented February 6, 1998, April 17, 1998, and June 4, 1998.

This amendment revises the allowable value and trip setpoint for the main steam isolation high steam flow input into limiting condition for operation Table 3.3.2-1, Function 4.d.

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 Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-244

Enclosures: 1. Amendment No. 71 to License No. DPR-18  
2. Safety Evaluation

cc w/encls: 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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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,

A handwritten signature in black ink, reading "Guy S. Vissing", is positioned above the typed name.

Guy S. Vissing, Senior Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-244

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2. Safety Evaluation

cc w/encls: See next page

Dr. Robert C. Mecredy  
Rochester Gas and Electric Company

R.E. Ginna Nuclear Power Plant

cc:

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DATED: July 14, 1998

AMENDMENT NO. 71 TO FACILITY OPERATING LICENSE NO. DPR-18-GINNA NUCLEAR  
POWER PLANT

**Docket File**

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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. 71  
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 September 29, 1997, as supplemented February 6, 1998, April 17, 1998, and June 4, 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. 71 , 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 Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: July 14, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 71

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

3.3-26

Insert

3.3-26

Table 3.3.2-1 (page 2 of 3)  
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT
4. Steam Line Isolation						
a. Manual Initiation	1,2(b),3(b)	1 per loop	D,G	SR 3.3.2.4	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2(b),3(b)	2 trains	E,G	SR 3.3.2.7	NA	NA
c. Containment Pressure - High High	1,2(b),3(b)	3	F,G	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5	≤ 20 psig	≤ 18 psig
d. High Steam Flow	1,2(b),3(b)	2 per steam line	F,G	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5	≤ 0.66E6 lbm/hr @ 1005 psig	≤ 0.4E6 lbm/hr @ 1005 psig
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
and						
Coincident with T <sub>avg</sub> - Low	1,2(b),3(b)	2 per loop	F,G	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5	≥ 543°F	≥ 545°F
e. High - High Steam Flow	1,2(b),3(b)	2 per steam line	F,G	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5	≤ 3.7E6 lbm/hr @ 755 psig	≤ 3.6E6 lbm/hr @ 755 psig
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					

(continued)

(b) Except when both MSIVs are closed and de-activated.





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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO.71 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 September 29, 1997, as supplemented February 6, 1998, April 17, 1998, and June 4, 1998, the Rochester Gas and Electric Corporation (the licensee) submitted a request for changes to the R. E. Ginna Nuclear Power Plant Technical Specifications (TSs). The requested changes would revise the allowable (analytical) value from  $\leq 0.55E6$  lbm/hr at 755 psi to  $\leq 0.66E6$  lbm/hr at 1005 psi, and the trip setpoint from  $\leq 0.4E6$  lbm/hr at 755 psi to  $\leq 0.4E6$  lbm/hr at 1005 psi for the main steam isolation high steam flow input, TS limiting condition for operation (LCO) Table 3.3.2-1, Function 4.d. The associated TS Bases for LCO Table 3.3.2-1, Functions 4.d and 4.e would also be revised to clarify the applicability of different steam line break sizes. The February 6, 1998, April 17, 1998, and June 4, 1998, letters provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

Three automatic steam line isolation functions are installed at the Ginna plant. The first function (LCO Table 3.3.2-1, Function 4.c) isolates the main steam lines on a high-high containment pressure signal. This isolation function closes both main steam isolation valves (MSIVs) in the event of a loss-of-coolant-accident (LOCA) or a steam line break (SLB) inside containment to maintain at least one unfaulted steam generator (SG) as a heat sink for the reactor, and to limit the mass energy release to the containment.

The second function (LCO Table 3.3.2-1, Function 4.d) isolates the MSIVs on a coincident high steam flow, safety injection; and low  $T_{avg}$  signal. The third function isolates the MSIVs on a coincident high-high steam flow and safety injection signal (LCO Table 3.3.2-1, Function 4.e). The Bases for these two isolation functions currently state that they have a similar basic requirement, which is to provide closure of the MSIV during an SLB or inadvertent opening of an atmospheric relief or safety valve. However, inconsistencies associated with these two Bases have been identified and clarifications are discussed in the evaluation that follows.

## 2.0 EVALUATION

The proposed TS changes are a result of a review associated with the high steam flow input into LCO Table 3.3.2-1, Function 4.d. The licensee states that the review revealed that the current trip setpoint and allowable (analytical) value parameters have not changed since the provisional operating license was issued in September 1969. Subsequently, in the early 1970s, the Ginna licensee asked NRC for an increase in the thermal power rating from 1300 MWt to 1520 MWt

(Reference 4). However, there was no revision of TSs associated with the high steam flow setpoints for Function 4.d, even though the high-high steam flow allowable (analytical) value for LCO Table 3.3.2-1, Function 4.e was changed.

To support the proposed TS for higher values of LCO Table 3.3.2-1, Function 4.d, the licensee performed an evaluation to determine the impact on design-basis transients and accidents for the Ginna Nuclear Power Plant. The licensee revised the allowable (analytical) value for steam flow of 0.66E6 lbm/hr, which is approximately 10 percent of the total SG design flow. This value was chosen to accommodate a 10 percent step load increase because the reactor control system is designed to accommodate a 10 percent step load or 5 percent ramp load increase within the load range of 15 percent to 100 percent of full power without tripping the reactor. Below 15 percent power, a reactor trip would occur with smaller load changes due to the design of the nuclear instrumentation system (NIS), which is intended to prevent a rapid uncontrolled power excursion from occurring that could exceed 100 percent reactor power before the trip instrumentation could terminate the event.

The pressure associated with the allowable (analytical) value and trip setpoint has been changed from 755 psig to 1005 psig. The licensee stated that Ginna TS LCO Table 3.3.2-1, Function 4.d is similar to the function in NUREG-1431, "Westinghouse Owner Group Standard Technical Specifications," Table 3.3.2-1, Function 4.g. In NUREG-1431, this function has a setpoint based on "no load" steam pressure. The no-load steam generator steam pressure of the Ginna plant is 1005 psig.

In a letter dated February 6, 1998, and in responses to subsequent staff requests for additional information dated April 17, 1998, and June 4, 1998, the licensee stated that transients and accidents that could potentially actuate the MSIVs were previously analyzed with the increased allowable (analytical) value of  $\leq 0.66\text{E}6$  lbm/hr at 1005 psi, and the trip setpoint of  $\leq 0.4\text{E}6$  lbm/hr at 1005 psi for the main steam isolation high steam flow in anticipation of a planned TS amendment. Therefore, the proposed TS is consistent with the design-basis transients and accident analyses in the updated safety analysis report (UFSAR).

In Section 15.1.6 of the Ginna UFSAR, the licensee described the failure of a SG atmospheric relief valve (ARV) as a credible SLB event. The overpower reactor coolant delta T trip function provides reactor protection for SLB that occur with the plant at power. SLB initiated at no load (hot zero power) conditions are bounded by SLB initiated at power. An SLB results in a cooldown of the reactor coolant system (RCS) due to excessive heat removal caused by the increased in steam flow.

At no-load, zero-power conditions, if an SLB occurred, steam flow would exceed 0.66E6 lbm/hr and steam line pressure would decrease relatively quickly. The differential pressure (dP) transmitter installed in the main steam flow instrument loops would send an output signal to the main control room indicator, and to the high and high-high flow bistable trips. Higher steam flowrates or lower pressures would generate a higher dP across the flow transmitter ensuring that the bistable trip setpoint is reached. These bistable have trip setpoints adjusted to the assumptions used in transient and accident analyses and to the TS requirements to ensure that a reactor trip, isolation of the main steam valves, isolation of feedwater regulating valves, and safety injection would occur.

The analysis of affected SLB equivalent to a total steam flow of 0.66E6 lbm/hr in one SG with no steam line isolation 10-minutes into the transient, and the main feedwater system operating normally, shows that the resulting nuclear power, RCS temperature reduction, total reactivity

insertion, rate of reactivity insertion, and the pressurizer pressure reduction are less than that of the reference case in which both ARV and both main feedwater regulating valves were assumed to fail.

The licensee has confirmed that the methodology used in its analyses is consistent with the NRC-approved methodology (Reference 3). The staff has reviewed the analyses and finds the revised values acceptable.

The licensee also identified an inconsistency associated with the isolation of MSIVs from an inadvertent opening of an ARV or a main steam safety valve (MSSV) in LCO Table 3.3.2-1, Function 4.e Bases. The steam flow trip setpoint for Function 4.e is 3.6E6 lbm/hr, which is 109 percent of rated capacity of each SG; the ARV relief capacity and the MSSV flow are 0.33E6 lbm/hr at 1005 psig and 0.82E6 lbm/hr, respectively. Therefore, Function 4.e will not close the MSIVs in response to an inadvertent opening of an ARV or a safety valve. The Function 4.e results in MSIV closure for larger SLB sizes that have mass flow rates that exceed the ARV relief capacity or MSSV flow at the full load condition. Consequently, TS LCO Table 3.3.2-1, Function 4.d, which has trip setpoint as indicated in this evaluation, will provide MISV closure for the inadvertent opening of an ARV or MSSV.

The licensee's proposed changes to the TS Bases of LCO Table 3.3.2-1, Functions 4.d and 4.e reflect the changes discussed above. The staff has reviewed the licensee's submittal and finds that the changes are acceptable.

### **3.0 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.

### **4.0 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 and changes surveillance requirements. 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 54876). Accordingly, the 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 the amendment.

### **5.0 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: D. Diec

Date: July 14, 1998

## REFERENCES

1. Letter from Dr. Robert C. Mecredy (Rochester Gas and Electric Corporation) to NRC, "Application for Amendment to Facility Operating License Change to Main Steam Isolation Setpoint (LCO Table 3.3.2-1, Function 4.d)," dated September 29, 1997.
2. Letter from Dr. Robert C. Mecredy (Rochester Gas and Electric Corporation) to NRC, "Response to Request for Additional Information dated November 20, 1997," dated February 6, 1998.
3. Westinghouse Topical Report WCAP-7907-P-A, "LOFTRAN Code Description," April 1984.
4. Letter from Donald J. Skovholt (the US Atomic Energy Commission) to Rochester Gas and Electric, "Amendment No. 2 to Provisional Operating License No. DPR-18," dated March 1, 1972.
5. Letter from Dr. Robert C. Mecredy (Rochester Gas and Electric Company) to NRC, "Response to Request for Additional Information dated April 3, 1998," dated April 17, 1998.
6. Letter from Dr. Robert C. Mecredy (Rochester Gas and Electric Company) to NRC, "Main Steam Isolation Setpoint License Amendment Request" dated June 5, 1998.