

Docket No. 50-244

DEC 08 1978

Rochester Gas and Electric Corporation  
ATTN: Mr. Leon D. White, Jr.  
Vice President  
Electric and Steam Production  
89 East Avenue  
Rochester, New York 14649

Gentlemen:

The Commission has issued the enclosed Amendment No. 21 to Provisional Operating License No. DPR-18 for the R. E. Ginna Nuclear Power Plant. This amendment consists of changes to the Technical Specifications in response to your requests dated September 16, 1977 and May 8, 1978.

The amendment revises the Technical Specifications to allow:

1. reduction in the maximum pressurizer heatup rate from 200°F per hour to 100°F;
2. reduction in the frequency of the tests for Low Nuclear Power 25% trip setpoint; and
3. elimination of refueling water storage tank outlet valve test requirements.

Copies of our related Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Original signed by  
Dennis L. Ziemann

Dennis L. Ziemann, Chief  
Operating Reactors Branch #2  
Division of Operating Reactors

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Enclosures:

1. Amendment No. 21 to License DPR-18
2. Safety Evaluation
3. Notice

cc w/enclosures:

See next page

*CP-1*  
*subject to change*  
*on yellow sheet*  
*attached*

OFFICE	DOR:ORB #2	DOR:ORB #2	OELD	DOR:ORB #2		
SURNAME	JJSheehan	HSmith	BMBordewich	DLZiemann		
DATE	11/7/78	10/31/78	12/1/78	12/8/78		

December 8, 1978

cc w/enclosures:

Lex K. Larson, Esquire  
LeBoeuf, Lamb, Leiby & MacRae  
1757 N Street, N. W.  
Washington, D. C. 20036

Mr. Michael Slade  
1250 Crown Point Drive  
Webster, New York 14580

Rochester Committee for  
Scientific Information  
Robert E. Lee, Ph.D.  
P. O. Box 5236 River Campus  
Station  
Rochester, New York 14627

Jeffrey Cohen  
New York State Energy Office  
Swan Street Building  
Core 1, Second Floor  
Empire State Plaza  
Albany, New York 12223

Director, Technical Development Programs - (w/cy of RG&E filings dtd.  
State of New York Energy Office 9/16/77 and 5/8/78)  
Agency Building 2  
Empire State Plaza  
Albany, New York 12223

Rochester Public Library  
115 South Avenue  
Rochester, New York 14627

Supervisor of the Town of Ontario  
107 Ridge Road West  
Ontario, New York 14519

Director, Technical Assessment  
Division  
Office of Radiation Programs  
(AW-459)  
US EPA  
Crystal Mall #2  
Arlington, Virginia 20460

U. S. Environmental Protection  
Agency  
Region II Office  
ATTN: EIS COORDINATOR  
26 Federal Plaza  
New York, New York 10007

ROCHESTER GAS AND ELECTRIC CORPORATION

DOCKET NO. 50-244

R. E. GINNA NUCLEAR POWER PLANT

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 21  
License No. DPR-18

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The applications for amendment by Rochester Gas and Electric Corporation (the licensee) dated September 16, 1977 and May 8, 1978, comply 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 applications, 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 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. 2/, 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

Original signed by  
Dennis L. Ziemann

Dennis L. Ziemann, Chief  
Operating Reactors Branch #2  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: DEC 08 1978

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ATTACHMENT TO LICENSE AMENDMENT NO. 21  
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 are identified by the captioned amendment number and contain vertical lines indicating the area of change.

<u>Remove</u>	<u>Insert</u>
3.1-5	3.1-5
4.1-5	4.1-5
4.5-3	4.5-3
4.5-4	4.5-4

3.1.2 Heatup and Cooldown Limit Curves for Normal Operation

3.1.2.1 The reactor coolant temperature and pressure and system heatup and cooldown rates (with the exception of the pressurizer) shall be limited in accordance with Figures 3.1-1 and 3.1-2 for the first 10.6 effective full power years.

- a. Allowable combinations of pressure and temperature for specific temperature change rates are below and to the right of the limit lines shown. The heatup and cooldown rates shall not exceed 60°F/hr and 100°F/hr, respectively. Limit lines for cooldown rates between those presented may be obtained by interpolation.
- b. Figures 3.1-1 and 3.1-2 define limits to assure prevention of non-ductile failure only. The limit lines shown in Figures 3.1-1 and 3.1-2 shall be recalculated periodically using methods discussed in the Basis Section.

3.1.2.2 The secondary side of the steam generator must not be pressurized above 200 psig if the temperature of the steam generator vessel is below 70°F.

3.1.2.3 The pressurizer heatup and cooldown rates shall not exceed 100°F/hr and 200°F/hr, respectively. The spray shall not be used if the temperature difference between the pressurizer and the spray fluid is greater than 320°F.

Basis: Fracture Toughness Properties

The fracture toughness properties of the ferritic materials in the reactor vessel are determined in accordance with the Summer 1965

TABLE 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND  
TEST OF INSTRUMENT CHANNELS

Channel Description	Check	Calibrate	Test	Remarks
1. Nuclear Power Range	S M* (3)	D(1) Q*(3)	B/W(2) (4) P(2) (5)	1) Heat balance calculation** 2) Signal to $\Delta T$ ; bistable action (permissive, rod stop, trips) 3) Upper & lower chambers for axial offset** 4) High setpoint ( $\leq 109\%$ of rated power) 5) Low setpoint ( $\leq 25\%$ of rated power)
2. Nuclear Intermediate Range	S(1)	N.A.	P(2)	1) Once/shift when in service 2) Log level; bistable action (permissive, rod stop, trip)
3. Nuclear Source Range	S(1)	N.A.	P(2)	1) Once/shift when in service 2) Bistable action (alarm, trip)
4. Reactor Coolant Temperature	S	R	M(1)	1) Overtemperature-Delta T 2) Overpower - Delta T
5. Reactor Coolant Flow	S	R	M	
6. Pressurizer Water Level	S	R	M	
7. Pressurizer Pressure	S	R	M	
8. 4 Kv Voltage & Frequency	N.A.	R	M	Reactor Protection circuits only
9. Analog Rod Position	S(1,2)	R	M	1) With step counters 2) Each six inches of rod motion when data logger is out of service

\* by means of the movable in-core detector system.

\*\* Not required during hot, cold, or refueling shutdown but as soon as possible after return to power

- b. Acceptable levels of performance for the pumps shall be that the pumps start, operate, and develop the minimum discharge pressure listed in the table below:

PUMPS	RECYCLE FLOW RATE	DISCHARGE PRESSURE
Containment Spray Pumps	35 gpm	240 psig
Residual Heat Removal Pumps	200 gpm	140 psig
Safety Injection Pumps	50 gpm	1420 psig

4.5.2.2

Valves

- a. Except during cold or refueling shutdowns the spray additive valves shall be tested at intervals not to exceed one month. With the pumps shut down and the valves upstream and downstream



of the spray additive valves closed, each valve will be opened and closed by operator action. This test shall be performed prior to startup if the time since the last test exceeds one month.

- b. The accumulator check valves shall be checked for operability during each refueling shutdown.

#### 4.5.2.3 Air Filtration System

- a. Measurement of the pressure drop shall be performed at the frequency specified for the integrated leak tests. Any observable leak paths or other significant difference in appearance or deviation of the pressure drop from initial conditions shall be corrected. In addition, in-place Freon testing shall be performed under ambient conditions with a filter efficiency not less than 99%.
- b. The iodine removal efficiency of at least one charcoal filter cell shall be measured at the frequency specified for the integrated leakage rate tests. The filter cell to be tested shall be selected randomly from those cells with the longest in-bank residence time. The acceptance criteria for filter efficiency rate is 99.9% for removal of molecular iodine. If the acceptance criteria are not met, the activated charcoal in the installed filter units shall

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 27 TO PROVISIONAL OPERATING LICENSE NO. DPR-18

ROCHESTER GAS AND ELECTRIC CORPORATION

R. E. GINNA NUCLEAR POWER PLANT

DOCKET NO. 50-244

Introduction

By letters dated September 16, 1977 and May 8, 1978, Rochester Gas and Electric Corporation (the licensee) requested amendment of the Technical Specifications appended to the Provisional Operating License No. DPR-18 for the R. E. Ginna Nuclear Power Plant (Ginna). The amendment would authorize a reduction in the maximum pressurizer heatup rate from 200°F per hour to 100°F per hour, a reduction in the frequency of the tests for Low Nuclear Power 25% trip setpoint, and elimination of refueling water storage tank outlet valve test requirements.

Background

In August 1977, Mitsubishi Heavy Industries, Ltd., of Japan, noted an inconsistency in the pressurizer heatup rate stated in their Technical Specifications. Specification 3.4.9 limited heatup rate to 200°F/hr; Specification 5.7.1, however, limited heatup rate to 100°F/hr. This discrepancy was reported to the Westinghouse Electric Corporation (Westinghouse), who then reviewed the analysis of the pressurizer heatup rate and determined that the correct heatup rate is 100°F/hr, and the correct cooldown rate is 200°F/hr.

Shortly thereafter Westinghouse notified the Nuclear Regulatory Commission (the Commission) and the licensee that the Ginna Technical Specifications, Section 3.1.2.3, which similarly allowed a pressurizer heatup rate of 200°F/hr was in error and should be changed to 100°F/hr. The Technical Specification change proposed by the licensee's letter dated September 16, 1977, is responsive to the information provided by Westinghouse.

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The 25% low power reactor trip is used as a backup to the intermediate range detectors, 100/125% of range, reactor trip point during startup only. In the power range, the high (109%) reactor trip provides reactor protection. The proposal to test the low power 25% setpoint prior to startup rather than biweekly is consistent with the test schedule for the intermediate range detector and is intended to clarify the Technical Specification test frequency requirement.

The requirement for testing the refueling water storage tank outlet valves closure capability was specified originally in technical specification 4.5.2.2. By letter dated October 31, 1977, the licensee submitted a revised Inservice Pump and Valve Testing Program that included the refueling water storage tank outlet valves, thereby eliminating the need for such requirements in the Technical Specifications.

### Evaluation

In designing the pressurizer, Westinghouse performed a thermal stress fatigue analysis that allows for a heatup rate of 100°F/hr and a cooldown rate of 200°F/hr. This analysis satisfies the requirements of ASME Code, Section III, and is acceptable to us. The new heatup limit is more restrictive than the old limit. The licensee has informed us by telephone that the pressurizer heatup rate has never exceeded 100°F/hr since the plant startup in 1969 and therefore the new limit will not require new operating restrictions. Furthermore, calculations show that the maximum heating rate possible, assuming the maximum heater power and smallest mass of water in the pressurizer, is less than 100°F/hr.

For any piece of equipment certain components receive more stress than others. For the pressurizer, this component is the surge nozzle, which has a usage factor of 0.9. This usage factor is such that if the heatup rates used in the analysis were exceeded more than a few times, the actual usage factor for the surge nozzle could exceed 1.0, which is not allowable under the ASME Code. Thus, we conclude that reducing the heatup rate limit from 200°F/hr to 100°F/hr is necessary to assure thermal stresses in the pressurizer are within allowable levels thereby preventing degradation of the pressurizer.

We have talked with Westinghouse representatives and they are reviewing the stress analyses for other components of the reactor coolant pressure boundary to assure that there are no similar errors in other sections of the Technical Specifications. This action will be confirmed by Westinghouse.

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This amendment would also reduce the frequency for the testing of the 25% reactor trip setting. In order to perform the test on the existing system, while at power, the signal from the nuclear instrumentation channel must be removed and a "dummy" signal fed into the circuit. Such manipulations are not justified because the low power setpoint is used as a backup to the intermediate range detectors reactor trip circuits during startup and also because at power reactor safety is based on the high setpoint trips. This amendment would change item 1 in Table 4.1-1 to distinguish between high and low reactor trip setpoint test frequency. The change would be consistent with the Standard Technical Specifications for Westinghouse pressurized water reactors. Based on the above considerations, this proposed change is acceptable.

The last change would eliminate the technical specification requirement to test the capability of the refueling water storage tank outlet valves to close monthly. The referenced valves have been identified in the revised Inservice Pump and Valve Testing Program submitted by the licensee letter dated October 31, 1977, as 896A, 896B and 856. All licensees have been given guidance for excluding exercising tests of certain safety-related valves during plant operation. Specifically, we stated all safety-related valves whose failure in a nonconservative position during cycling tests would cause a loss of an engineered safety system function should not be exercised. We noted that valves in this category would typically include all nonredundant valves in lines such as a single discharge line from the refueling water storage tank. The valves 896A, 896B, and 856 are within this category; and therefore, these valves should be relieved from the three-month exercising requirement of Section XI and instead be exercised at cold shutdowns and refueling outages when risks associated with valve failure in the closed position are significantly reduced because stored energy in the core and coolant system is drastically reduce. Since we have verified that these valve test requirements are clearly identified in the review program Appendix C Revision 2 of the Ginna Station Quality Assurance Manual and consistent with the Standard Technical Specifications, we conclude that repetitive requirements in the Technical Specifications are unjustified and should be deleted.

Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this

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determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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.

Date: DEC 08 1978

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UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-244

ROCHESTER GAS AND ELECTRIC CORPORATION

NOTICE OF ISSUANCE OF AMENDMENT TO PROVISIONAL  
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 2) to Provisional 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 Plant (the facility) located in Wayne County, New York. The amendment is effective as of its date of issuance.

The amendment changes the Technical Specifications to authorize a reduction in the pressurizer heatup rate from 200°F per hour to 100°F per hour, a reduction in the frequency of the tests for Low Nuclear Power 25% trip setpoint and elimination of refueling water storage tank outlet valve test requirements.

The applications for the amendment comply 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. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

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The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the applications for amendment dated September 16, 1977 and May 8, 1978, (2) Amendment No. 21 to License No. DPR-18, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Rochester Public Library, 115 South Avenue, Rochester, New York 14627. 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 Operating Reactors.

Dated at Bethesda, Maryland, this 21<sup>st</sup> day of December, 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by  
Dennis L. Ziemann

Dennis L. Ziemann, Chief  
Operating Reactors Branch #2  
Division of Operating Reactors

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The 25% low power reactor trip is used as a backup to the intermediate range detectors, 100/125% of range, reactor trip point during startup only. In the power range, the high (109%) reactor trip provides reactor protection. The proposal to test the low power 25% setpoint prior to startup rather than biweekly is consistent with the test schedule for the intermediate range detector and is intended to clarify the Technical Specification test frequency requirement.

*Is this trip tested following shutdown? Yes, prior to startup if more than one week has elapsed since last tested*

The requirement for testing the refueling water storage tank outlet valves closure capability was specified originally in technical specification 4.5.2.2. By letter dated October 31, 1977, the licensee submitted a revised Inservice Pump and Valve Testing Program that included the refueling water storage tank outlet valves, thereby eliminating the need for such requirements in the Technical Specifications.

Evaluation

In designing the pressurizer, Westinghouse performed a thermal stress fatigue analysis that allows for a heatup rate of 100°F/hr and a cooldown rate of 200°F/hr. This analysis satisfies the requirements of ASME Code, Section III, and is acceptable to us. The new heatup limit is more restrictive than the old limit. The licensee has informed us by telephone that the pressurizer heatup rate has never exceeded 100°F/hr since the plant startup in 1969 and therefore the new limit will not require new operating restrictions. Furthermore, calculations show that the maximum heating rate possible, assuming the maximum heater power and smallest mass of water in the pressurizer, is less than 100°F/hr.

For any piece of equipment, certain components receive more stress than others. For the pressurizer, this component is the surge nozzle, which has a usage factor of 0.9. This usage factor is such that if the heatup rates used in the analysis were exceeded more than a few times, the actual usage factor for the surge nozzle could exceed 1.0, which is not allowable under the ASME Code. Thus, we conclude that reducing the heatup rate limit from 200°F/hr to 100°F/hr is necessary to assure thermal stresses in the pressurizer are within allowable levels. *thereby*

*preventing degradation of the pressurizer*

We have talked with Westinghouse representatives and they are reviewing the stress analyses for other components of the reactor coolant pressure boundary to assure that there are no similar errors in other sections of the Technical Specifications. This action will be confirmed by Westinghouse.

*This piece is why it's safe!*

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*Justified because the low power set point is used as a back up to the intermediate range detector's start-up reactor trip circuits during a power reactor set point safety is based on the high trip.*

*on the existing system*

This amendment would also reduce the frequency for the testing the 25% reactor trip setting. In order to perform the test while at power, the signal from the nuclear instrumentation channel must be removed and a "dummy" signal fed into the circuit. Such manipulations are not prudent and do not in fact enhance the safety of plant operation. This amendment would change item 1 in Table 4.1-1 to distinguish between high and low reactor trip setpoint test frequency. The change would be consistent with the Standard Technical Specifications for Westinghouse pressurized water reactors. Based on the above considerations, this proposed change is acceptable.

*State basis for this conclusion*

*Why? State basis in one or two sentences. See reasons in license submitted.*

The last change would eliminate the technical specification requirement to test the capability of the refueling water storage tank outlet valves to close monthly. The referenced valves have been identified in the revised Inservice Pump and Valve Testing Program submitted by the licensee letter dated October 31, 1977, as 896A, 896B and 856. All licensees have been given guidance for excluding exercising tests of certain safety-related valves during plant operation. Specifically, we stated all safety-related valves whose failure in a nonconservative position during cycling tests would cause a loss of an engineered safety system function should not be exercised. We noted that valves in this category would typically include all nonredundant valves in lines such as a single discharge line from the refueling water storage tank. We note that the valves 896A, 896B, and 856 are within this category; and therefore, we agree that these valves should be relieved from the three-month exercising requirement of Section XI and instead be exercised at cold shutdowns and refueling outages. Since we have verified that these valve test requirements are clearly identified in the review program Appendix C Revision 2 of the Ginna Station Quality Assurance Manual and consistent with the Ginna Standard Technical Specifications, we conclude that repetitive requirements in the Technical Specifications are unjustified and should be deleted.

*When risks associated with valve failures in the closed position are significantly reduced due because stored energy in the core and coolant systems is drastically reduced.*

*However, licensee should include in a program that all valves not in a test program are available with person in charge. Attachment A to Lic. 19377. Please explain.*

Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR 51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

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*Subject Evaluation*

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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.

Date:

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