

BEFORE THE UNITED STATES  
NUCLEAR REGULATORY COMMISSION

In the Matter of )  
 )  
ROCHESTER GAS AND ELECTRIC )  
CORPORATION ) Docket No. 52-244  
(R.E. Ginna Nuclear Power )  
Station, Unit No. 1) )

CERTIFICATE OF SERVICE

I hereby certify that I have served a document  
entitled "Application for Amendment to Operating License"  
with three (3) documents, Attachments A, B, and C, attached  
thereto, by mailing copies thereof first class, postage pre-  
paid, to each of the following persons this 3rd day of  
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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of

Rochester Gas and Electric Corporation  
(R. E. Ginna Nuclear Power Plant,  
Unit No. 1)

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Docket No. 50-244

APPLICATION FOR AMENDMENT  
TO OPERATING LICENSE

Pursuant to Section 50.90 of the regulations of the U.S. Nuclear Regulatory Commission (the "Commission"), Rochester Gas and Electric Corporation ("RG&E"), holder of Provisional Operating License No. DPR-18, hereby requests that the Technical Specifications set forth in Appendix A to that license be amended to add requirements for undervoltage protection. This request for a change in the Technical Specifications revises and supersedes our request of December 22, 1977, and is submitted in response to a letter from A. Schwencer, Chief, Operating Reactors Branch #1, dated June 3, 1977.

The proposed technical specification change is set forth in Attachment A to this Application. A safety evaluation is set forth in Attachment B. This evaluation also demonstrates that the proposed change does not involve a significant change in the types or a significant increase in the amounts of effluents or any change in the authorized power level of the facility. Attachment C describes why no fee under 10 CFR 170.22 is required.



WHEREFORE, Applicant respectfully requests that Appendix A to Provisional Operating License No. DPR-18 be amended in the form attached hereto as Attachment A.

Rochester Gas and Electric Corporation

By L.D. White, Jr.

L.D. White, Jr.  
Vice President,  
Electric and Steam Production

Subscribed and sworn to before me  
on this 31<sup>st</sup> day of July 1979.

*Rose Marie Perrone*

ROSE MARIE PERRONE  
NOTARY PUBLIC, State of N. Y., Monroe County.  
My Commission Expires March 30, 1980

Attachment A

1. Remove pages 2.3-4, 2.3-8, 3.5-4, 3.5-4a, and 4.1-7.
2. Insert the enclosed revised pages 2.3-4, 2.3-8, 2.3-9, 3.5-4a and 4.1-7.

f. Low reactor coolant flow -  $\geq 90\%$  of normal indicated flow.

g. Low reactor coolant pump frequency -  $\geq 57.5$  Hz.

2.3.1.3 Other reactor trips

a. High pressurizer water level -  $\leq 92\%$  of span

b. Low-low steam generator water level -  $\geq 5\%$  of narrow range instrument span

2.3.2 Protective instrumentation settings for reactor trip interlocks shall be as follows:

2.3.2.1 Remove bypass of "at power" reactor trips at high power (low pressurizer pressure and low reactor coolant flow) for both loops:

Power range nuclear flux -  $\leq 8.5\%$  of rated power

(1) (Note: During cold rod drop tests, the pressurizer high level trip may be bypassed.)

2.3.2.2 Remove bypass of single loss of flow trip at high power:

Power range nuclear flux -  $\leq 50\%$  of rated power

2.3.3 Relay settings for 480 volt safeguards bus protection shall be as follows:

2.3.3.1 Loss of voltage relay operating time  $\leq 8.5$  seconds for 480 volt safeguards bus voltages  $\leq 368$  volts

2.3.3.2 Acceptable degraded voltage relay operating times and setpoints, for 480 volt safeguards bus voltages  $\leq 414$  volts and  $\geq 368$  volts are defined by the safeguard equipment thermal capability curve shown in Figure 2.3-1.

Basis:

The high flux reactor trip (low set point) provides redundant protection in the power range for a power excursion beginning from low power. This trip value was used in the safety analysis.<sup>(1)</sup>



the minimum DNB ratio increases at lower flow because the maximum enthalpy rise does not increase. For this reason the single pump loss of flow trip can be bypassed below 50% power.

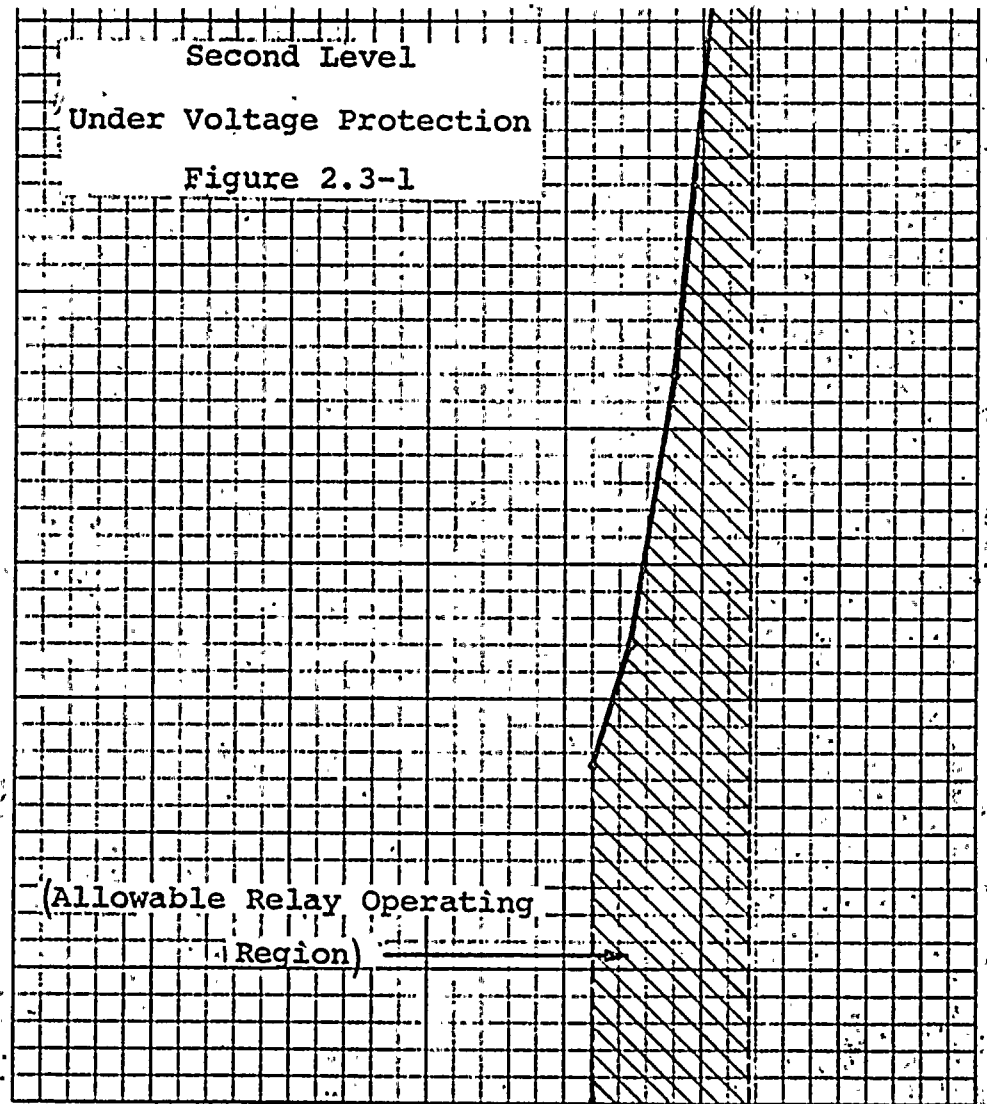
The loss of voltage and degraded voltage trips ensure operability of safeguards equipment during a postulated design basis event concurrent with a degraded bus voltage condition. (9)(10)(11)

References:

- (1) FSAR 14.1.1
- (2) FSAR, Page 14-3
- (3) FSAR 14.3.1
- (4) FSAR 14.1.2
- (5) FSAR 7.2, 7.3
- (6) FSAR 3.2.1
- (7) FSAR 14.1.6
- (8) FSAR 14.1.9
- (9) Letter from L.D. White, Jr. to  
A. Schwencer, NRC, dated September 30, 1977
- (10) Letter from L.D. White, Jr. to  
A. Schwencer, NRC, dated September 30 1977
- (11) Letter from L.D. White, Jr. to  
D. Ziemann, NRC, dated July 24, 1978

Second Level Relay Operating Time (Seconds)

1600  
1400  
1200  
1000  
800  
600  
400  
200  
0



Secondary Volts (120 Volts)	60	70	80	90	92	103.5	120
Primary Volts (480 Volts)	240		320		368	414	480
Percent Volts (460 Volt Base)	52%		70%		80%	90%	104%

Safeguards Bus Voltage

	1	2	3	4	5	6
	NO. of	NO. of	MIN.	MIN.	PERMISSIBLE	OPERATOR ACTION
	CHANNELS	CHANNELS	OPERABLE	DEGREE OF	BYPASS	IF CONDITIONS OF
		TO TRIP	CHANNELS	REDUNDANCY	CONDITIONS	COLUMN 3 or 5
						CANNOT BE MET
17. Circulating Water Flood Protection						
a. Screenhouse	2	1	2+	—*		Power operation may be continued for a period of up to 7 days with 1 channel inoperable or for a period of 24 hrs. with two channels inoperable.
b. Condenser	2	1	2+	—*		Power operation may be continued for a period of up to 7 days with 1 channel inoperable or for a period of 24 hrs. with two channels inoperable.
18. Loss of Voltage/ Degraded Voltage 480 Volt Safe- guards Bus	4/bus	2/bus	2/bus	*		Maintain hot shut-down or place bus on diesel generator.

NOTE 1: When block condition exists, maintain normal operation.

F.P. = Full Power

\* Not Applicable

\*\* If both rod misalignment monitors (a and b) inoperable for 2 hours or more, the nuclear overpower trip shall be reset to 93% of rated power in addition to the increased surveillance noted.

\*\*\* If a functional unit is operating with the minimum operable channels, the number of channels to trip the reactor will be column 3 less column 4.

+ A channel is considered operable with 1 out of 2 logic or 2 out of 3 logic.

3.5-4a

Amendment No. 14

PROPOSED

TABLE 4.1-1 (CONTINUED)

<u>Channel Description</u>		<u>Check</u>	<u>Calibrate</u>	<u>Test</u>	<u>Remarks</u>
25.	Containment Pressure	S	R	M	Narrow range containment pressure (-3.0, +3 psig excluded)
26.	Steam Generator Pressure	S	R	M	
27.	Turbine First Stage Pressure	S	R	M	
28.	Emergency Plan Radiation Instruments	M	R	M	
29.	Environmental Monitors	M	N.A.	N.A.	
30.	Loss of Voltage/Degraded Voltage 480 Volt Safe-guards Bus	N.A.	R	R	
S	- Each Shift	M	- Monthly		
D	- Daily	P	- Prior to each startup if not done previous week		
B/W	- Biweekly	R	- Each Refueling Shutdown		
Q	- Quarterly	N.A.	- Not applicable		

4.1-7

PROPOSED

## Attachment B

By letter dated June 3, 1977, the NRC requested that RG&E assess the susceptibility of safety related electrical equipment with regard to (1) sustained degraded voltage conditions at the offsite power sources and (2) interaction between the offsite and onsite emergency power sources.

An analysis of undervoltage protection at Ginna Station was performed and submitted to the NRC in a letter dated July 21, 1977. This analysis reviewed the current undervoltage protection and described the basis for a modification which would reduce the Station's susceptibility to a sustained degraded voltage. However, due to lack of specific information regarding equipment, setpoints for the additional undervoltage protection were not established at that time.

Following receipt of additional information, RG&E submitted setpoints in a letter to the NRC dated September 30, 1977. The proposed specifications are identical to those presented in the September 30 letter.

These Specifications will provide protection for a complete loss of 480 volt bus voltage as well as for degraded voltage conditions. Both relaying systems will assure that assumptions of all safety analysis are met. Specifically, equipment will be loaded onto the diesel generators within the time assumed in the safety analyses. The undervoltage relay protection, which was identified as "second-level protection" in the June 3, 1977 NRC letter and in our two subsequent letters, will protect equipment

against a bus voltage which is greater than the loss of voltage relay setpoint but less than the voltage guaranteed by equipment manufacturers for continuous duty for Ginna safeguards equipment. The proposed undervoltage setpoints will provide the required protection while also assuring that spurious trips will not occur while equipment is being sequenced onto the diesel generators. The NRC Staff requested that the proposed system be modified to provide "coincident logic" as described in position 1, part b of their June 3, 1977 letter. Provision for "coincident logic" does not effect the setpoint information contained in the December 16, 1977 Application for Change to Operating License and re-submitted herewith. However, it has changed the required number of relays necessary to trip. The coincident logic scheme is described in our July 24, 1978 letter (ref. 11 to the Technical Specification Basis).

Loss of voltage and degraded voltage conditions simulated during the refueling shutdown are performed to verify both system performance and relay calibration. The safeguards 480 volt loss of voltage and degraded voltage protection systems are not part of the reactor protection system. It is not practical to simulate these conditions during plant operation to satisfy a monthly test requirement.

Based on the analyses provided in our letters of July 21, 1977, September 30, 1977, and July 24, 1978 the proposed Technical Specification will provide protection against 480 volt bus undervoltage.



As stated in our letter of July 21, 1977, we expect that, following receipt of approval of the modification design by the NRC, detailed engineering and procurement of equipment will require approximately 9 months. Installation must be performed at a cold or refueling shutdown and would require approximately two weeks. The effective date of a Technical Specification should be set consistent with this schedule.



### Attachment C

The Technical Specification change proposal revises a proposal originally submitted December 22, 1977 which was filed prior to the effective date of 10 CFR 170.22. The revision is necessary to incorporate a change in design which was requested by the NRC Staff. The design change was described in our submittal of July 24, 1978. Because it is a revision which the Staff requested and is now reviewing, and is not a new request, no fee is required.

