



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 PROVISIONAL OPERATING LICENSE

Amendment No. 19
License No. DPR-18

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Rochester Gas and Electric Company (the licensee) dated January 6, 1978, as supplemented by letters dated January 10, 1978, March 27, 1978, April 6, 1978, April 17, 1978, and April 25, 1978, 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.

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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 Operating License No. DPR-18 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 19 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



Darrell G. Eisenhut, Assistant Director
for Systems & Projects
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance May 1, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 19

PROVISIONAL OPERATING LICENSE NO. DPR-18

DOCKET NO. 50-244

Change the Technical Specifications contained in Appendix A of License No. DPR-18 as indicated below. The revised pages contain the captioned amendment number and marginal lines to reflect the area of change.

Remove

3.10-2

3.10-4
3.10-8c

Insert

3.10-2
3.10-2a
3.10-4
3.10-8c

- 3.10.1.2 When the reactor is critical except for physics tests and control rod exercises, the shutdown control rods shall be fully withdrawn.
- 3.10.1.3 When the reactor is critical, except for physics tests and control rod exercises, each group of control rods shall be inserted no further than the limits shown by the lines on Figure 3.10-1 and moved sequentially with a 100 (+5) step overlap between successive banks.
- 3.10.1.4 During control rod exercises indicated in Table 4.1-2, the insertion limits need not be observed but the Figure 3.10-2 must be observed.
- 3.10.1.5 The part length control rods will not be inserted except for physics tests or for axial offset calibration performed at 75% power or less.
- 3.10.1.6 During measurement of control rod worth and shutdown margin, the shutdown margin requirement, Specification 3.10.1.1, need not be observed provided the reactivity equivalent to at least the highest estimated control rod worth is available for trip insertion and all part length control rods are fully withdrawn. Each full length control rod not fully inserted, that is, the rods available for trip insertion, shall be demonstrated capable of full insertion when tripped from at least the 50% withdrawn position within 24 hours prior to reducing the shutdown margin to less than the limits of Specification 3.10.1.1. The position of each full length rod not fully inserted, that is, available for trip insertion, shall be determined at least once per 2 hours.

3.10.2 Power Distribution Limits and Misaligned Control Rod

3.10.2.1 The movable detector system shall be used to measure power distribution after each fuel reloading prior to operation of the plant at 50% of rated power to ensure that design limits are not exceeded.

If the core is operating above 75% power with one excore nuclear channel out of service, then the quadrant to

- 3.10.2.4 If the quadrant to average power tilt ratio exceeds 1.02 but is less than 1.12 for a sustained period of more than 24 hours without known cause, or if such a tilt recurs intermittently without known cause, the reactor power level shall be restricted so as not to exceed 50% of rated power. If the cause of the tilt is determined, continued operation at a power level consistent with 3.10.2.2 above, shall be permitted.
- 3.10.2.5 Except for physics test, if the quadrant to average power tilt ratio is 1.12 or greater, the reactor shall be put in the hot shutdown condition utilizing normal operating procedures. Subsequent operation for the purpose of measuring and correcting the tilt is permitted provided the power level does not exceed 50% of rated power and the Nuclear Overpower Trip "set point is reduced by 50%".
- 3.10.2.6 Following any refueling and at least every effective full power month thereafter, flux maps, using the movable detector system, shall be made to confirm that the hot channel factor limits of Specification 3.10.2.2 are met.
- 3.10.2.7 The reference equilibrium indicated axial flux difference as a function of power level (called the target flux difference) shall be measured at least once per equivalent full power quarter. The target flux difference must be updated at least each equivalent full power month using a measured value or by interpolation using the most recent measured value and the predicted value at the end of the cycle life. The target flux difference shall be between +5.0 and -7.5% at the beginning of cycle life and between +2.0 and -7.5% at the end of cycle life. Linear interpolation shall be used to determine values at other times in cycle life.
- 3.10.2.8 Except during physics tests, control rod exercises, excore detector calibration, and except as modified by 3.10.2.9 through 3.10.2.12, the indicated axial flux difference shall be maintained within $\pm 5\%$ of the target flux difference (defines the target band on axial flux difference). Axial flux difference for power distribution control is defined as the average value for the four excore detectors. If one excore detector is out of service, the remaining three shall be used to derive the average.
- 3.10.2.9 Except during physics tests, control rod exercises, or excore calibration, at a power level greater than 90 percent of rated power, if the indicated axial flux difference deviates from its target band. The flux difference shall be returned to the target band immediately or the reactor shall be reduced to a level no greater than 90 percent of rated power.

different from those resulting from operation within the target band. The instantaneous consequence of being outside the band, provided rod insertion limits are observed, is not worse than a 10 percent increment in peaking factor for flux difference in the range +14 percent to -14 percent (+11 percent to -11 percent indicated) increasing by +1 percent of each 2 percent decrease in rated power. Therefore, while the deviation exists the power level is limited to 90 percent or lower depending on the indicated flux difference.

If, for any reason, flux difference is not controlled within the ± 5 percent band for as long a period as one hour, then xenon distributions may be significantly changed and operation at 50 percent is required to protect against potentially more severe consequences of some accidents.

As discussed above, the essence of the limits is to maintain the xenon distribution in the core as close to the equilibrium full power condition as possible. This is accomplished, without part length rods, by using the chemical volume control system to position the full length control rods to produce the required indication flux difference.

The effect of exceeding the flux difference band at or below half power is approximately half as great as it would be at 90% of rated power, where the effect of deviation has been evaluated.

The reason for requiring hourly logging is to provide continued surveillance of the flux difference if the normal alarm functions are out of service. It is intended that this surveillance would be temporary until the alarm functions are restored.

The quadrant power tilt ratio limit assures that the radial power distribution satisfies the design values used in the power capability analysis. Radial power distribution measurements are made during startup testing and periodically during power operation.

The limit of 1.02 at which corrective action is required provides DNB and linear heat generation rate protection with x-y plane power tilts. A limiting tilt of 1.025 can be tolerated before the margin for uncertainty in F_0 is depleted. Therefore, the limiting tilt has been set as 1.02. To avoid unnecessary power changes, the operator is allowed two hours in which to verify the tilt reading and/or to determine and correct the cause of the tilt. Should this action verify a tilt in excess of 1.02 which remains uncorrected, the margin for uncertainty in F_0 and F_{0H} is reinstated by reducing the power by 2% for each percent of tilt above 1.0. In accordance with the design margin above, or as required by the restrictions...