



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO.13 TO FACILITY OPERATING LICENSE NO. DPR-18  
ROCHESTER GAS AND ELECTRIC CORPORATION  
R.E. GINNA NUCLEAR POWER PLANT  
DOCKET NO. 50-244

By letters dated October 22, 1985 and December 23, 1985, Rochester Gas and Electric Corporation (the licensee) requested an amendment to Appendix A of Operating License, No. DPR-18, for the Ginna Nuclear Power Plant to change the Technical Specifications (TS). Supplemental information was received in a letter dated January 8, 1986. The proposed TS changes are in response to the NRC letter, dated June 21, 1984, which transmitted staff's Safety Evaluation (SE) concerning the Multi-Plant Action (MPA) B-24 review of containment purging during normal plant operation.

The existing purge and vent systems at Ginna plant consist of a 48-inch purge system and a 6-inch containment vent (depressurization) system. In response to staff's previous evaluation, the licensee proposed to modify the 48-inch purge system to use it only when the reactor is in cold or refueling shutdown and to install a new mini-purge system to allow limited purging of the containment during normal plant operation. In order to implement these modifications, the licensee has proposed to amend the TS to incorporate the new mini-purge system and to modify the requirements associated with the existing 48-inch purge system.

In the purge system modification program, the licensee has proposed to close during normal plant operation the 48-inch purge supply and exhaust lines using blind flanges with double O-ring seals located inside containment; the blind flanges will replace the existing inboard 48-inch butterfly type isolation valves. The existing, outboard 48-inch butterfly type valves will remain in place for containment isolation purposes during refueling operations. The outboard valves are not required for containment isolation during normal plant operation. A new 2000 cfm mini-purge system will be installed to permit containment purging on a limited basis during all modes of reactor operation.

The mini-purge system uses the existing 6-inch Integrated Leak Rate Test (ILRT) vent line (penetration 309) as the supply line and the existing 6-inch, depressurization line (penetration 132) as the exhaust line. Two 6-inch, air-operated butterfly valves will be installed in the supply line, one inboard and one outboard, for automatic containment isolation. Two 8-inch, air-operated butterfly valves will replace the existing 6-inch inboard and outboard automatic isolation valves in the exhaust line. The inboard ends of the mini-purge supply and exhaust lines will be equipped with 1/2 inch mesh debris screens.

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Accordingly, the licensee requested to change the TS to reflect these physical modifications. The proposed TS changes include: (1) specifying the operable radiation monitoring instrumentation in Table 3.5-7 of the TS when the 48-inch purge system is being used, (2) adding new requirements in Section 3.6.5 of the TS to limit usage of the minipurge system, (3) revising TS Table 3.6-1 to add (or delete) certain isolation valves and blank flanges to reflect the purge system modifications and adding a note to clarify that the blind flanges in the 48-inch lines can only be removed during cold and refueling shutdowns, (4) revising Section 3.8.1 of the TS to allow the 48-inch purge system to be used during refueling outages and to specify a leakage acceptance limit (0.05 La) in the TS for the mini-purge system, and (5) revising Section 4.4.2.4 of the TS to specify a leak test frequency for the mini-purge valves and the blank flanges, and to delete the leak test requirements for the 48-inch butterfly valves.

The staff has reviewed the proposed modifications to the purge systems for compliance with containment isolation requirements set forth in BTP CSB 6-4, Item II.E.4.2 of NUREG-0737, and guidelines developed as part of MPA B-24, and finds that the proposed modifications are in compliance. The isolation provisions for the mini-purge system supply and exhaust lines meet the requirements of GDC-56. The blind flanges with testable double O-ring seals in the 48-inch supply and exhaust lines are acceptable containment isolation barriers in lieu of redundant isolation valves since the isolation provisions are similar to that for an equipment hatch. Therefore, the staff finds the design of the purge systems acceptable.

The licensee has proposed surveillance requirements in the TS for the modified purge systems. The licensee has committed to leak test the mini-purge system isolation valves at six-month intervals for the first two years; the staff has recommended a three-month test interval for an active purge system. The licensee has stated, however, that the smaller isolation valves in the mini-purge system use an improved resilient seat material that is not likely to wear out through limited use, and staff agrees. The staff, therefore, finds the proposed 6-month test interval over two years acceptable, but the licensee should maintain test records to check for onset of valve seat deterioration. The proposed leak testing of the blind flanges in the 48-inch lines at each refueling or after each use is in accordance with Appendix J to 10 CFR 50, and, therefore, acceptable. The licensee deleted the leak test requirement for the outboard, 48-inch butterfly valves on the basis that the valves are not required for containment isolation. The staff concurs with the licensee action.

The licensee has proposed leak test acceptance criteria in the TS. If the leakage through a mini-purge system supply or exhaust line is greater than 0.05 La an engineering evaluation shall be performed and a corrective action plan developed. This limit will serve as the basis for determining the

adequacy of test and repair frequencies for the valves. Furthermore, the summation of all Type B and C leakage tests should not exceed the 0.6 La limit established in Appendix J. The licensee's proposed surveillance requirements for leak rate testing the mini-purge supply and exhaust lines are acceptable since they reflect a continuing commitment to assuring satisfactory valve integrity and are compatible with Appendix J requirements.

Rochester Gas and Electric Cooperation performed an analysis using the CONTEMP-EI/28A code to determine the reduction in containment pressure due to the mini-purge system being in operation at the start of a LOCA. The results of the analysis showed that the peak containment pressure decreased 0.05 psi and this decrease resulted in an increase in the peak clad temperature of 4°F. The staff has agreed with the licensee's findings that this change is not significant as defined by paragraph II.1.b of 10 CFR 50 Appendix K and is, therefore, acceptable.

In addition, the licensee performed an analysis which demonstrated the radiological consequences of a LOCA were acceptable assuming the purge valves were open for the maximum interval required. The results of the analysis show that the 0-2 hour dose contribution from the open mini-purge system is approximately 0.375 rem to the thyroid. The thyroid dose from a LOCA is given in the updated Ginna FSAR as 130 rem (0-2 hour dose). The licensee found that the additional dose associated with the mini-purge valves being open was an insignificant increase (approximately 0.3%) in the LOCA dose. The staff reviewed the licensee's calculations and finds them acceptable.

In sum, the staff has completed its review of the licensee's submittal concerning the purge system modifications and associated TS changes, and concludes that the purge system design, operating practices, and surveillance requirements are acceptable.

#### ENVIRONMENTAL CONSIDERATION

This amendment involves changes to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and a surveillance requirement. We have 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 radiation exposure. The NRC staff has made a proposed determination that the amendment involves no significant hazards consideration, and there has been no public comment on such finding. 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 this amendment.

CONCLUSION

The Commission made a proposed determination that this amendment involved no significant hazards consideration which was published in the Federal Register (51 FR 1880) on January 15, 1986 and consulted with the state of New York. No public comments were received, and the State of New York did not have any comments.

We have 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, and (2) 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.

Principal Contributors: This Safety Evaluation was prepared by J. Guo and C. Miller.

Dated: February 15, 1986