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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 68 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 August 19, 1997, as supplemented September 29, 1997, 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 Section 3.6.6 of the TSs to facilitate testing of selected motor-operated valves (MOVs). The September 29, 1997, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 DISCUSSION AND EVALUATION

2.1 Proposed TS Changes

2.1.1 Limiting Condition for Operation (LCO) Change

The LCO statement for TS 3.6.6 "Containment Spray (CS), Containment Recirculation Fan Cooler (CRFC), NaOH, and Containment Post-Accident Charcoal Systems" presently states:

LCO 3.6.6 Two CS trains, four CRFC units, two post-accident charcoal filter trains, and the NaOH system shall be OPERABLE.

The following NOTE would be added:

----------NOTE----------
In MODE 4, both CS pumps may be put in pull-stop for up to 2 hours for the performance of interlock and valve testing of motor operated valves (MOVs) 857A, 857B and 857C. Power may also be restored to MOVs 896A and 896B, and the valves placed in the closed position, for up to 2 hours for the purpose of each test.

2.1.2 Change to Associated Bases

The following statement would be inserted in the TS BASES:

> The LCO is modified by a Note which states that in MODE 4, both CS pumps may be placed in pull-stop, with power restored to motor operated valves 896A and 896B and the valves placed in the closed position for interlock and valve testing of motor operated valves 857A, 857B, and 857C. This Note provides 2 hours for each test of each motor operated valve 857A, 857B, and 857C. The Note is required since the installed interlocks on 857A, 857B, and 857C require closure of valves 896A and 896B while other valve testing (e.g., differential pressure tests) require a pressurized RHR system. Performance of these tests in MODEs 5 and 6 would render the RHR system inoperable when it is required for core cooling.

2.2 Required MOV Testing

New tests are being performed on the Residual Heat Removal (RHR) System as a result of the Improved Technical Specifications (ITSs) Program and Generic Letter 89-10 MOV Program. The licensee intends to normally perform these tests during the plant shutdown for each refueling outage. Performance of these tests at the beginning of an outage will provide for early detection of problems.

2.2.1 Testing of Emergency Core Cooling System (ECCS) Valve Interlocks

MOVs 857A, 857B, and 857C (RHR discharge to safety injection suction header) are interlocked with MOVs 896A and 896B (in Refueling Water Storage Tank (RWST) outlet to safety injection and containment spray pump suction that are normally deenergized in the OPEN position), and also with MOVs 897 and 898 (SI Pump mini-flow return to RWST). These interlocks serve to reduce the possibility of inadvertent discharge of contaminated sump water into the RWST during post-accident recirculation of reactor coolant. MOVs 896A and 896B are normally deenergized in the OPEN position, lined-up for ECCS operation. These interlocks prevent opening of MOVs 857A, 896B, and 896C unless either 896A or 896B is closed, and, either 897 or 898 is closed. MOVs 857A, 857B, and 857C are also interlocked with MOVs 850A and 850B to assure that RHR Pump suction is lined-up prior to attempting RHR pump recirculation discharge to containment spray and SI pumps. Testing of these valve interlocks requires that the automatic initiation feature of the containment spray pumps be disabled and that power be restored to MOVs 896A and 896B and they be closed. With these valves closed, no suction fluid is available to the CS pumps and the automatic feature of the pumps is therefore disabled for their protection. These new tests were implemented as part of the ITS program and are considered part of the ECCS surveillance requirement.

2.2.2 Pump Differential Pressure Testing

As part of the GL 89-10 Valve Operability Program, period differential pressure tests are required for certain valves to demonstrate their capability to OPEN under post-accident conditions. A differential pressure of approximately 200 psig is required to be produced across MOVs 857A, 857B and 857C during their tests.

2.3 Need for the TS Change

The MOV tests described above could be performed in any MODE of plant operation. The most preferable mode would be during MODE 6 with the reactor cavity flooded and the irradiated fuel is thus protected by a very large heat sink. However, restricting the MOV tests to refueling operations would unduly complicate outage management. Performing the tests in Mode 5 (cold shutdown) involves increased shutdown (loss of decay heat removal) risks due to the need for valve lineups that would significantly increase the potential for draining the RCS to the sump. Performing the tests in MODE 1 or MODE 2 involves increased loss-of-coolant (LOCA) vulnerability. It is thus preferred that the tests be performed during MODE 4. Testing in MODE 4 has the safety advantage of availability of steam generators for cooling of the reactor coolant system (RCS). With the current TSs, the tests can indeed be performed in MODE 4, but there is a required entry into the TS 3.0.3 (forced shutdown) action statement due to the fact that the CS System is rendered inoperable. The immediate shutdown action requirement invokes activation of certain Emergency Plan procedures and governmental notifications (and followup reporting requirements) that indicate that the facility is in a potentially unsafe condition. The purpose of the proposed TS change is to avoid the administrative actions associated with a forced shutdown.

2.4 Safety Concern of the Proposed Amendment

The proposed amendment would permit the licensee to render the containment spray system inoperable for up to 2 hours during MODE 4. The safety concern with the proposed amendment lies in the need for and capability for containment cooling should a LOCA occur during this relatively short (2 hours) and infrequent (end-of-cycle shutdown) plant condition. ECCS operability is also affected by this testing, however, the current TS (B3.5.3) already contain special provisions such that ECCS operability is considered to be maintained during such a condition, if the system can be automatically or manually reconfigured and activated within 10 minutes. The test procedures require that personnel be stationed at the valves and that they be in communication with the control room.

In MODE 4 operation, the potential need for post-accident containment cooling is greatly reduced and delayed due to the reduction in the potential mass and energy release from a coolant system pipe failure. During MODE 4 operation, the steam discharge into the containment atmosphere would be much less than if the reactor were at full power. The potential containment heat sources that contribute to the mass and energy load on the containment, include core stored energy, RCS water and metal, secondary system water and metal, fission heat, decay of actinides, fission product decay heat, and other lesser

contributions. With the RCS temperature ≤ 350 °F and the reactor subcritical, these heat sources are considerably reduced, thereby greatly reducing the potential challenge to the containment building. Also, the containment fan coolers would still be available for post-accident containment heat removal and the spray system could be readily restored. The staff therefore finds that the placing of the containment spray pump controls in pull-stop, and the energization of the normally deenergized, normally open RWST valves is acceptable during testing.

The Ginna TSs should be revised to provide a 2-hour allowable outage time for the Containment Spray System, when in MODE 4, to conduct MOV tests as described above. Acceptability of the TS change is based on the large reduction of the post-accident containment heat load that would result from a pipe break during MODE 4. The proposed TS 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 (62 FR 50011). 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.

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Date: October 29, 1997