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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO.39 TO FACILITY OPERATING LICENSE NO. NPF-57

PUBLIC SERVICE ELECTRIC & GAS COMPANY

ATLANTIC CITY ELECTRIC COMPANY

HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated September 4, 1990, Public Service Electric & Gas Company requested an amendment to Facility Operating License No. NPF-57 for the Hope Creek Generating Station. The proposed amendment would eliminate the Average Power Range Monitor (APRM) downscale RPS scram Technical Specification (TS) requirements. The APRM downscale scram was designed to reactivate the Intermediate Range Monitor (IRM) upscale scram functions when the associated APRM channel is downscale and the Reactor Mode switch is in the Run position. The surveillance tests for the APRM downscale trip function, required by the TS, require the plant to be placed in a "half scram" condition, thus increasing the probability of a spurious trip or ESF actuation.

2.0 EVALUATION

The IRM upscale scram functions (IRM "high high" and inoperable trips) are automatically bypassed when the Reactor Mode switch is placed in the Run position. The APRM downscale scram was designed to reactivate the IRM upscale scram functions when the associated APRM channel is downscale and the Reactor Mode switch is in the Run position. The licensee states that the only plant conditions under which this could occur are:

1. If the Reactor Mode switch is placed in the Run position before reactor power has increased to the indicating range of the APRMs during a plant startup, or

2. If the Reactor Mode switch remains in the Run position after reactor power has decreased below the indicating range of the APRMs during a plant shutdown.

Under these conditions, both of which are induced by operator error, the accidents of concern with respect to the APRM downscale scram are the Rod Drop Accident (RDA) and the low power Rod Withdrawal Error (RWE).

Normally, proper Reactor Mode switch positioning is administratively assured by compliance with the integrated operating procedures for plant startup and shutdown. Considering the amount of attention normally given by operators to the neutron monitoring system and integrated operating procedures during startup and shutdown, it is unlikely that the Reactor Mode switch would be improperly positioned.

If the Reactor Mode switch is improperly positioned during a startup or shutdown, it is unlikely that a RDA or RWE would occur prior to completion of corrective action due to the "Infrequent" frequency classification of both of these accidents.

If the Reactor Mode switch is improperly positioned, as a result of procedural non-compliance, and a RDA or RWE occurs prior to completion of corrective action, plant protection is ensured by automatic system response, completely independent of the APRM downscale scram, as follows:

1. If a RDA occurs while the Reactor Mode switch is in Run and the APRMs are downscale, reactor power will increase due to positive reactivity addition. The transient will be terminated when the RPS initiates an APRM neutron-flux upscale scram.

2. With the Reactor Mode switch in Run and the APRMs downscale, further control rod withdrawal is prohibited by the APRM Downscale Rod Block, thereby preventing a RWE.

In summary, procedural compliance normally ensures proper Reactor Mode switch positioning. If improper Reactor Mode switch positioning occurs, the probability of an accident or transient occurring prior to completion of corrective action is low. If an accident or transient does occur prior to completion of corrective action, the licensee is taking credit for the APRM 120% setpoint (upscale) scram and the APRM downscale trip in the Control Rod Block actuation circuitry. Since both the APRM upscale scram and the control rod block actuation circuitries are required by the plant TS operability and surveillance testing, there is reasonable assurance that these circuitries will perform their protection function when it is needed. We have reviewed the licensee's analysis and agree with their evaluation. It is therefore concluded that the requested change would not result in a significantly degraded APRM safety function. Lastly, it is noted that the requested change results in a reduction in the potential for spurious plant trips and ESF actuations; this reduction has a positive impact on safety.

The staff was informed that the proposed changes will involve a modification in the reactor protection system circuitry. The APRM downscale trip circuits will be bypassed to eliminate this signal. The staff will require the licensee to formally document this modification on the Docket, and fully test the RPS after the modification is implemented. All the RPS test procedures should be updated to reflect this modification.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this 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.

4.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (55 FR 40473) on October 3, 1990 and consulted with the State of New Jersey. No public comments were received and the State of New Jersey did not have any comments.

The staff 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, 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 nor to the health and safety of the public.

Dated: January 2, 1991

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