



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NOS. 85 AND 58 TO FACILITY OPERATING  
LICENSE NOS. DPR-70 AND DPR-75  
PUBLIC SERVICE ELECTRIC & GAS COMPANY  
PHILADELPHIA ELECTRIC COMPANY  
DELMARVA POWER AND LIGHT COMPANY  
ATLANTIC CITY ELECTRIC COMPANY  
SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-272 AND 50-311

1.0 INTRODUCTION

By letter dated July 2, 1987, as supplemented July 7, 1987, Public Service Electric & Gas Company (PSE&G) requested an amendment to Facility Operating License Nos. DPR-70 and DPR-75 for the Salem Nuclear Generating Station, Unit Nos. 1 and 2. The proposed amendments would revise the reactor trip system interlocks given in Table 3.3-1 of the Technical Specifications by changing the reactor trip block with a turbine trip from the P-7 (11% power) permissive up to the P-9 (50% power) permissive. This would allow the reactors to sustain a turbine trip without causing a reactor trip below 50% of rated thermal power.

2.0 EVALUATION AND SUMMARY

Currently, there is a reactor trip at the Salem Units in the event of a loss of external electrical load or a turbine trip when operating above 11% of rated thermal power. This setpoint is designated the P-7 permissive interlock and is specified in Table 3.3-1 of the Technical Specifications. Although this reactor trip is not required for any design basis events, Item II.K.3.12 of NUREG-0737, "Clarification of TMI Action Plan Requirements" requires licensees with Westinghouse designed operating plants to confirm that their plants have this anticipatory reactor trip upon turbine trip.

In order to assess the impact of increasing the turbine-reactor trip setpoint to 50% from 11% of rated thermal power, PSE&G has reevaluated various plant transients and accidents previously analyzed in the Updated Final Safety Analysis Report (UFSAR). Since these analyses did not take credit for the anticipatory reactor trip on turbine trip they are still valid and remain a conservative bound for the proposed setpoint increase. These reevaluations have also confirmed that the consequences

of a turbine trip event below 50% of rated thermal power with or without turbine-generator motoring is bounded by the UFSAR accident analyses. The turbine-generator motoring feature is provided so that full reactor coolant flow can be maintained for at least 30 seconds during Condition II overpower transients to remove core heat and to prevent any pump overspeed conditions.

The steam generator system turbine bypass system provides the capability to dump up to 40% of full load steam flow directly to the condenser. Since the nuclear steam supply system has the inherent capability to accept a 10% step load change, the plant can, therefore, accept a step load decrease of 50% of full load from full load without a reactor trip. Therefore, with the operation of the steam dump system, a reactor trip when the plant is operating below 50% of rated thermal power is not required following a loss of load or turbine trip from a pressure standpoint.

In addition, PSE&G presented the results of a Westinghouse study concerning the potential for increased pressurizer power operated relief valves (PORV) opening from a turbine trip without a reactor trip at 50% of rated thermal power. The NRC has previously expressed concerns regarding the potential increase in probability of a stuck-open pressurizer PORV following the implementation of deletion of reactor trip on turbine trip below 50% power.

The staff position is addressed in NUREG-0737, Item II.K.3.10. The results of the Westinghouse analysis indicate that a turbine trip below 50% of rated thermal power will not result in opening the PORVs even with degraded control system performance (i.e., steam dump system, pressurizer spray system or rod control system failure). These results are acceptable to the staff and the analytical study was performed with approved methods and suitably conservative assumptions.

The staff has reviewed the proposed changes to Technical Specification Table 3.3-1 for Salem Units 1 and 2. These changes would increase the reactor trip block with a turbine trip to 50% power from 11% power. As discussed above the staff finds the proposed changes meet the applicable NRC requirements and are, therefore, acceptable.

In addition, typographical errors were corrected that were made in the licensee's submittal.

### 3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve 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. The staff has determined that the amendments involve 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 amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendments meet 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 amendments.

#### 4.0 CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (52 FR 39305) on October 21, 1987 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 the amendments will not be inimical to the common defense and security nor to the health and safety of the public.

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Dated: June 27, 1988