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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 81 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 January 11, 1995, the Public Service Electric & Gas Company (the licensee) submitted a request for a change to the Hope Creek Generating Station (HCGS), Technical Specifications (TSs). The proposed change to Technical Specification (TS) Section 3/4.3.8 "Turbine Overspeed Protection System," would remove these requirements from the TS and relocate the Bases to the Hope Creek Updated Final Safety Analysis Report (UFSAR) and the Surveillance Requirements to the applicable surveillance procedures. The Limiting Conditions for Operation (LCOs) would be eliminated.

2.0 BACKGROUND

Section 182a of the Atomic Energy Act (the "Act") requires applicants for nuclear power plant operating licenses to include TS as part of the license. The Commission's regulatory requirements related to the content of the TS are set forth in 10 CFR 50.36. That regulation requires that the TS include items in five specific categories, including (1) safety limits, limiting safety system settings and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls. However, the regulation does not specify the particular requirements to be included in a plant's TS.

The Commission has provided guidance for the contents of the TS in its "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" ("Final Policy Statement"), published in t. Federal Register on July 22, 1993 (58 FR 39132), in which the Commission ndicated that compliance with the Final Policy Statement satisfies Section 182a of the Act. In particular, the Commission indicated that certain items could be relocated from the TS to licensee-controlled documents, consistent with the standard enunciated in *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 273 (1979). In that case, the Atomic Safety and Licensing Appeal Board indicated that "technical specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety."

Consistent with this approach, the Final Policy Statement identified four criteria to be used in determining whether a particular matter is required to be included in the TS, as follows:

(1) Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary;

(2) a process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier;

(3) a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier;

(4) a structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.[1]

As a result, existing TS requirements which fall within or satisfy any of the criteria in the Final Policy Statement must be retained in the TS, while those TS requirements which do not fall within or satisfy these criteria may be relocated to other. licensee-controlled documents.

3.0 EVALUATION

The purpose of turbine overspeed protection is to minimize the possible generation of turbine fragment missiles. Turbine overspeed protection is provided by the Electro-hydraulic Control (EHC) system and by separate mechanical and electrical trip mechanisms. Upon sensing an overspeed condition, the EHC initiates rapid throttling of the main steam control and intercept valves. If speed continues to increase, the main and intermediate stop valves are closed by the mechanical overspeed trip (at 10 percent above rated speed) and the electrical overspeed trip (at 12 percent above rated speed). Currently, TS 3/4.3.8 requires operability and surveillance requirements for the Turbine Overspeed Protection System which consists of the turbine stop, control, and intermediate valves, and mechanical and electrical overspeed trips. The licensee has proposed to relocate the TS 3/4.3.8 Bases

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[1] The Commission recently adopted amendments to 10 CFR 50.36, pursuant to which the rule was revised to codify and incorporate these criteria. See Final Rule, "Technical Specification," 60 FR 36953 (published in the Federal Register on July 19, 1995). The Commission indicated that reactor core isolation cooling, isolation condenser, residual heat removal, standby liquid control, and recirculation pump trip systems are included in the TS under Criterion 4, although it recognized that other structures, systems and components could also meet this criterion.

to the Hope Creek Updated Final Safety Analysis Report, where they will be controlled in accordance with 10 CFR 50.59, and the Surveillance Requirements to the applicable surveillance procedures. The operability requirements would be eliminated.

The following is an explanation of how the 10 CFR 50.36 criteria apply to the Turbine Overspeed Protection System:

Criterion 1 - Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

The Turbine Overspeed Protection System does not provide any indications relative to the integrity of the reactor coolant pressure boundary. The Turbine Overspeed Protection System senses conditions in the main turbine which is outside of the reactor coolant pressure boundary.

Criterion 2 - A process variable, design feature, or operating restriction that is an initial condition of a Design Basis Accident or Transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Failure of the Turbine Overspeed Protection System would not lead to a design basis accident within the definition of ANSI/ANS-51.1-1983 in that failure of the main turbine is not considered in Chapter 6 or 15 of the HCGS UFSAR. The HCGS UFSAR, Section 15.6.4 considers steam line failures including a rupture of a single main steam line. Moreover, SECY-88-304, "Staff Action to Reduce Testing At Power," identifies turbine valve testing as among those requirements in the TS that most frequently cause reactor trips with consequent challenge to the reactor coolant pressure boundary and safety-related equipment.

Criterion 3 - A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a Design Basis Accident or Transient that either assumes the failure of or presents a challenge to the integrity of the fission product barrier.

The operation of the Turbine Overspeed Protection System is not credited in the success path of any design basis event or transient.

Criterion 4 - A structure system or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.

Probabilistic risk assessment (PRA) and operating experience have demonstrated that proper maintenance of the turbine overspeed controls is important to minimize the potential for overspeed events and turbine damage; however, that experience has also demonstrated that there is low likelihood of significant risk to public health and safety because of turbine overspeed events. The HCGS UFSAR calculates the probability of significant damage due to turbine

failure to be 1E-7 per year. Further, the potential for and consequences of turbine overspeed events are diminished by the licensee's inservice testing program, which must comply with 10 CFR 50.55(a), and a surveillance program for the Turbine Overspeed Protection System which is in accordance with the turbine manufacturer's recommendations. Moreover, system failures and plant conditions resulting from missiles could be caused by events other than turbine failures.

The NRC staff concludes that the requirements for turbine overspeed protection do not meet the TS criteria in the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," as published in the Federal Register (58 FR 39132). The staff further concludes that these requirements are not required to be in the TS under 10 CFR 50.36 or Section 182a of the Atomic Energy Act, and are not required in order to provide adequate protection to the health and safety of the public. The NRC staff finds that sufficient regulatory control exists under 10 CFR 50.59 to address future changes to these requirements. The staff notes that the limiting conditions for operation and surveillance requirements for turbine overspeed protection were removed from the "Standard Technical Specifications, General Electric Plants, BWR," NUREG-1433. Based upon the above, the staff has determined that the Turbine Overspeed Protection System requirements of TS 3/4.3.8 and its associated Bases may be deleted from the HCGS TS.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State Official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 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. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluent 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 (60 FR 39451). 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.

6.0 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.

Principal Contributor: D. H. Jaffe

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