



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 130 AND 91 TO FACILITY OPERATING

LICENSE NOS. NPF-39 AND NPF-85

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION, UNITS 1 AND 2

DOCKET NOS. 50-352 AND 50-353

1.0 INTRODUCTION

By letter dated March 24, 1997, as supplemented September 4, 1998, the Philadelphia Electric Company (the licensee) submitted a request for changes to the Limerick Generating Station (LGS), Units 1 and 2 Technical Specifications (TSs). The current LGS TS requirements limit the operating time of the drywell and suppression chamber purge system to 180 hours each 365 days during Operational Conditions 1, 2, and 3, i.e. power operation, startup, and hot shutdown, respectively. The proposed changes would delete the above cited operational time limit for the containment purge supply and exhaust valves from TS Section 3.6.1.8 and 4.6.1.8, "Drywell and Suppression Chamber Purge System," and from the TS Bases 3/4.6.1.8, "Drywell and Suppression Chamber Purge System." However, specific criteria for when the containment purge supply and exhaust valves can be opened will be retained and a surveillance requirement will be added to ensure that these valves are closed as required or, if open, opened only for TS identified reasons. The September 4, 1998, letter revises the LGS, Unit 1 and Unit 2 TS pages 3/4 6-11 by removing footnote "" regarding the 1-inch and 2-inch valves and also revises TS bases page B 3/4 6-2. The September 4, 1998, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 BACKGROUND

The four criteria defined by 10 CFR 50.36 for determining whether a particular matter is required to be included in the technical specification limiting conditions for operations, are 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 risk assessment has shown to be significant to public health and safety.

Existing technical specification requirements which fall within or satisfy any of the above criteria must be retained in the Technical Specifications; those requirements which do not fall within or satisfy these criteria may be relocated to other licensee-controlled documents.

3.0 EVALUATION

At the present time, TS 3.6.1.8 states that, "The drywell and suppression chamber purge system may be in operation for up to 180 hours each 365 days with the supply and exhaust isolation valves in one supply line and one exhaust line open for inerting, deinerting, or pressure control."

The annual limit in operating time of the drywell and suppression chamber purge system during Operating Conditions 1, 2, and 3 was imposed to reduce the probability of, and minimize the consequences of, equipment damage resulting from a loss-of-coolant-accident (LOCA) during the time that the large purge and vent valves are open.

The licensee's submittal of March 24, 1997, as supplemented September 4, 1998, requested that the TS be revised to delete the drywell and suppression chamber purge system operational time limit, and add a surveillance requirement that would verify, at least once every 31 days, that each primary containment purge valve (18" or 24") is closed. The specific criteria for which the purge valves can be open will be retained. The specific criteria for opening the purge valves includes: inerting, de-inerting, pressure control, "as low as reasonably achievable" (ALARA), or air quality concerns for personnel entry or surveillances that require the valves to be open. The request was based on industry operating history which indicates when these purging lines are opened only for the specified reasons (identified during the development of NUREG 1433, "Standard Technical Specifications, General Electric Plants, BWR/4") and that the open hours are significantly less on average than the current General Electric Standard TS allowed cumulative times. A review of the operating history at the LGS indicates the average open hours for the purge system valves over the last five years is 43 hours for LGS, Unit 1 and 29 hours for LGS, Unit 2. The licensee's request is supported by their analysis which demonstrates that the probability of a large early release is still below the staff's safety goal value of $1.0E-6$ per year of reactor operation.

Deletion of the TS operating time limit of these purge valves do not directly or indirectly degrade the performance of any other safety system assumed to function in the design basis accident analysis. Since there are no changes to the design, function or performance of these valves, deleting the TS operating time limit does not meet the four criteria of 10 CFR 50.36 in that there are no changes that would affect:

- (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 risk assessment has shown to be significant to public health and safety.

The LGS, Units 1 and 2, Safety Analysis Report (SAR) and the level 2 Probabilistic Safety Assessment (PSA) analysis pertaining to containment failure were previously performed to evaluate the risk associated with the current 180 hour limit. The main parameter considered was the large early release frequency (LERF) which considers the release of radioactive material without the occurrence of public evacuation. The results of that evaluation indicated a 3% increase of the LERF from the Level 2 base value of $2.57E-8$ that considered all PSA initiators. The licensee performed an additional PSA analysis to support the current application which assumed an operating limit of 500 hours as an increase on the same level of magnitude that was previously used and approved by the NRC staff which increased the operating limit from 90 to 180 hours. The 500-hour purge deviation in the latest above cited PSA analysis increased the LERF by approximately 6.6% from the base value of $2.57 E-8$ for all PSA initiators which is below the NRC staff's safety goal value of $1.0E-6$ per year of reactor operation.

The September 4, 1998, letter revises the LGS, Unit 1 and Unit 2 TS pages 3/4 6-11 to remove footnote "" regarding the 1-inch and 2-inch valves and revises the TS bases page B 3/4 6-2. The September 4, 1998, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination. Regarding removal of footnote "" on TS pages 3/4 6-11 for Units 1 and 2, retention of the 1-inch and 2-inch valves footnote has the potential for misinterpretation that pressure control is restricted to the 1-inch and 2-inch valves only, which is not part of the LGS design basis, nor the intent of NUREG-1433.

The NRC staff recognizes the need to provide operational flexibility with regard to the use of the drywell and suppression chamber purge system for the uses specified in LGS's TS 3.6.1.8. The licensee's proposed change regarding operating time provides a reasonable margin to expected operational needs, and the licensee's request is well within the staff's safety goal and is not required to be in the TS by 10 CFR 50.36 as described above. Therefore, the proposed changes, including the added surveillance that verifies at least once every 31 days that each containment purge valve (18" or 24") is closed, and removal of footnote "" are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change 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 change surveillance requirements. The NRC 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 (62 FR 30643). 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.

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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: B. Buckley

Date: October 1, 1998