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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 26 TO FACILITY OPERATING LICENSE NO. NPF-39

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION, UNIT 1

DOCKET NO. 50-352

1.0 INTRODUCTION

By letter dated January 27, 1989, Philadelphia Electric Company (the licensee) requested an amendment to Facility Operating License No. NPF-39 for the Limerick Generating Station, Unit 1. The proposed amendment would change the Technical Specifications (TSs) to revise the effluent dose limits to a per site rather than a per unit basis. The revision will allow the licensee to report the offsite dose consequences of the entire site rather than being required to quantify the portion of the offsite does consequences which are due to each unit.

2.0 DISCUSSION

The Limerick Generating Station is a two-unit site. At present, only Unit 1 has an operating license. Unit 2 is expected to be ready for operation within the next several weeks. The station has several liquid and gaseous waste processing systems that are common to both units. The liquid waste collection tanks and processing equipment serve both units. The arrangement precludes quantification of liquid waste sources from each unit. The station has four gaseous effluent release points, two of which are common to both units. The North Stack Exhaust Duct is the release point for the offgas systems (each unit), the mechanical vacuum pump and gland seal condenser exhaust system (each unit), the containment purge system (common for both units), the standby gas treatment system (common for both units), and the Turbine Enclosure ventilation systems (each unit) and other common and separated systems.

There is one "hot" maintenance shop for both units. Ventilation exhaust is released from a separate exhaust duct. There is a Unit 1 South Stack Exhaust Duct and a Unit 2 South Stack Exhaust Duct. The Unit 1 duct is the release point for the Unit 1 refuel floor ventilation exhaust and the Unit 1 Reactor Enclosure ventilation exhaust. Likewise, the Unit 2 duct is the release point for the Unit 2 refuel floor ventilation exhaust and the Unit 2 Reactor Enclosure ventilation exhaust. As is true for most BWRs, the refuel floor is one long open area above the reactors. This arrangement precludes quantification of the gaseous waste sources to a particular unit.

The activity released through all these gaseous effluent release points is monitored in accordance with the Technical Specifications and released under controlled conditions to ensure that the airborne concentrations meet the dose limiting objectives and requirements specified in 10 CFR Part 50, Appendix I and requirements specified in 10 CFR 20.106 and 10 CFR 50.34a. The offsite dose consequences from gaseous effluent releases are calculated in accordance with the equations and methodologies described in the Limerick Generating Station Offsite Dose Calculation Manual (ODCM).

3.0 EVALUATION

The proposed changes to the Technical Specifications would revise the effluent offsite dose limits to reflect a per site rather than a per unit limit. The current dose limits have been established as criteria for reporting the offsite dose consequences for operation at "each reactor unit" to the NRC. The current Technical Specifications are based on the assumption that a multi-unit site, like the Limerick Generating Station, (LGS) can distinguish as to which unit specific radioactive effluent releases originate. The licensee maintains that during two unit plant operation, there are no provisions, however, to distinguish the offsite dose attributable from a unit specific radioactive release origin at the Limerick Generating Station because of the common systems and common release points.

In accordance with NRC guidance provided in NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants," the LGS offsite dose assessment may be derived by estimating the contribution from each unit and allocating the doses accordingly. However, the sophistication of the Limerick offsite dose assessment system allows for a more realistic, yet conservative evaluation of the offsite dose consequences of the radioactive effluent releases without having to "estimate" the contribution from each unit. Doses are assigned (calculated for each hour) to receptors during a release based upon hourly meteorological data and corresponding hourly average effluent release rates. By accumulating the doses to each receptor over the entire year, and summing these for all of the release points for the entire site, a reliable estimate of the maximum potential offsite exposure is assured. Attempting to separate the releases and reporting the offsite dose consequences on a per-unit basis could potentially underestimate the dose to the maximum exposed individual. This underestimation could occur when each units' maximum exposed individuals are in different sectors than the maximum exposed individual resulting from the site's total releases.

The staff has reviewed the licensees request and agrees that the dose assessment being used by the licensee is conservative and will ensure the reporting of the maximum potential offsite exposure. The staff finds that the proposed changes do not change the magnitude of the offsite dose limits allowed for a two-unit site. The staff also concurs that the proposed changes continue to meet the dose-limiting objectives specified

in 10 CFR Part 50, Appendix I, and the requirements specified in 10 CFR 20.106 and 10 CFR 50.34a. Additionally, the proposed changes will not affect any plant hardware, plant design, plant system operation, or plant system operating procedure. For this reason, the Liquid Waste Management System and the Gaseous Waste Management System continue to meet the requirements of 10 CFR 50, Appendix A, General Design Criteria 60, 61 and 64.

4.0 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 nor environmental assessment need be prepared in connection with the issuance of this amendment.

5.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (54 FR 9922) on March 8, 1989 and consulted with the State of Pennsylvania. No public comments were received and the State of Pennsylvania 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 the security nor to the health and safety of the public.

Principal Contributor: Dick Clark

Dated: June 19, 1989