

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

#### SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

#### SUPPORTING AMENDMENT NO. 85 TO FACILITY OPERATING LICENSE NO. DPR-50

## METROPOLITAN EDISON COMPANY JERSEY CENTRAL POWER AND LIGHT COMPANY PENNSYLVANIA ELECTRIC COMPANY GPU NUCLEAR CORPORATION

#### THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1

DOCKET NO. 50-289

## INTRODUCTION

By letter dated April 14, 1983, GPU Nuclear Corporation transmitted Technical Specification Change Request No. 121 (Rev. 1) requesting amendment to Appendix A of Facility Operating License No. DPR-50. The subject change involves Section 3.22.2.5 of the Technical Specifications for Three Mile Island Nuclear Station, Unit No. 1 (TMI-1). The licensee has proposed to amend Section 3.22.2.5 by the addition of a footnote providing alternative specifications to be met prior to Cycle 5 criticality. TMI-1 has been shutdown for approximately 4 years and radioactivity within the plant has steadily diminished over this time. The licensee has stated that these changes are needed to allow higher levels of oxygen in the waste gas ventilation system during times of maintenance and inspection of the system when the system is open to the atmosphere.

Technical Specification 3.22.2.5 provides requirements concerning the concentrations of oxygen and hydrogen in the waste gas holdup system. The specification is provided to ensure that the concentration of potentially combustible gas mixtures contained in the waste gas holdup system is maintained below the flammability limits of hydrogen and oxygen. Maintaining the concentrations of hydrogen and oxygen below the flammability limits provides assurance that the release of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

#### EVALUATION

The model Radiological Effluent Technical Specifications (RETS) described in NUREG-0472 are based on systems that meet the requirements of the Standard Review Plan (SRP), NUREG-0800. The TMI-1 hydrogen-oxygen monitoring equipment does not meet the requirements of SRP 11.3 of NUREG-0800 for dual and redundant gas analyzers with automatic control functions to preclude the formation or buildup of combustible hydrogen-oxygen mixtures. In this usage, redundant means two independent gas analyzers continuously operating and dual means providing two independent measurements for hydrogen and oxygen. Therefore, Technical Specification 3.22.2.5 is designed to afford a degree of protection against hydrogen-oxygen combustion similar to the provisions of the model RETS described in NUREG-0472.

9305180126 830505 PDR ADOCK 05000289 P PDR Technical Specification 3.22.2.5 provides that the concentrations in the waste gas holdup system are to be limited at all times to less than or equal to 2% and 4% oxygen and hydrogen, respectively, by volume, and that if the concentrations in the waste gas holdup system exceed either of these values, additions of waste gas to the system are to be immediately minimized and the concentrations are to be reduced to less than the limiting values within one hour. If the concentration of either hydrogen or oxygen is kept below a concentration of 4% by volume, any gas mixture within the system will be below the flammability limit. The proposed change to Technical Specification 3.22.2.5 would apply only during the present cold shutdown, prior to Cycle 5 criticality, and would limit the concentration in the waste gas holdup system to less than or equal to 2% hydrogen by volume with no limit on the oxygen concentration. This provides a margin between 2% and 4% hydrogen by volume outside the flammability limit. Therefore, with these limits, as determined under the specification by either two operable hydrogen monitors or one operable hydrogen monitor and the prescribed periodic sampling and analysis, adequate protection is afforded against hydrogen-oxygen combustion and assurance is provided that the release of radioactive materials will be controlled in conformance with the requirements of General Design Criteria 60 of Appendix A to 10 CFR Part 50.

## SUMMARY

In view of the above considerations, we have concluded that the proposed amendment to Section 3.22.2.5 of the TMI-1 Technical Specifications is acceptable.

## ENVIRONMENTAL CONSIDERATION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

#### CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of an accident of a type different from any evaluated previously, and does not involve a significant reduction in a margin of safety, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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 or to the health and safety of the public.

# Dated: May 5, 1983

The following NRC personnel have contributed to this Safety Evaluation: C. Nichols.