



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 101 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

1.0 Introduction

By letters dated December 1, 1983, May 30, and July 12, 1984, GPU Nuclear Corporation (the licensee) requested an amendment to the Three Mile Island Nuclear Station, Unit 1, Technical Specifications for the following:

1. The inclusion of additional numbers and locations of fire protection systems throughout the plant. This supplementary information reflects the additional fire protection systems which have been recently installed.
2. Additional administrative controls, surveillance requirements, and limiting conditions for operation (LOCs), on fire detection and suppression systems to conform with the Standard Technical Specifications.
3. Revisions to the surveillance requirements on the carbon dioxide system in the Cable Spreading Room and the halon fire suppression systems in the Air Intake Tunnel.

2.0 Evaluation

The proposed changes to the tables, which identify number and location of fire protection systems, have no safety significance other than to permit the Technical Specifications to accurately reflect conditions as they now exist in the plant, subsequent to the installation of additional fire protection. These changes do not affect our evaluation of the fire protection systems.

The additional administrative controls, surveillance requirements, and LOCs conform with the requirements of the Standard Technical Specifications and are therefore acceptable.

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The licensee proposes to change the surveillance requirements on the carbon dioxide fire suppression system in the Cable Spreading Room. The minimum storage tank pressure will be lowered from 300 psig to 285 psig. The modification is intended to more accurately reflect the design capabilities of the system and to avoid the implementation of a fire watch while the system is fully capable of suppressing a fire.

The system is designed to operate in the normal mode between 295 and 305 psig, according to the system technical manual. Discharge tests on the system have verified that the minimum design concentration of carbon dioxide (50%) was exceeded with a residual pressure in the tank of 270 psig. Therefore, a minimum storage tank pressure of 285 psig, as proposed, provides reasonable assurance that the system will perform its intended function when needed.

The licensee proposed to change the surveillance requirements of the halon fire suppression systems in the Air Intake Tunnel. The requirement for operability of the deluge system in the same area will be deleted when the halon systems are inoperable. The surveillance requirements for the Deluge System in Section 3.18.3 will not be changed.

The fire hazard in the tunnel for which the fire suppression systems have been provided is an explosion of jet fuel-air mix caused by a crash into the Air Intake Tunnel. The halon systems used are for explosion suppression. These systems operate on the principle that there is a short but measurable time delay between the ignition of a flame front and the buildup of destructive pressure (shock wave). The halon systems are designed to react quickly enough to prevent such an explosion.

There are no fixed combustibles in the Air Intake Tunnel that require protection by these deluge systems. The deluge systems in the Air Intake Tunnel serve to cool the tunnel, wash the fuel contaminants from the air, and prevent reignition of jet fuel after the Halon Systems have suppressed the incipient explosion. With the Halon Systems inoperable, the deluge system is not capable of reacting quickly enough to suppress an explosion, but would still provide protection for a conventional fire, tunnel cooling and fuel washdown. The operability of the deluge system is covered under Section 3.18.3 of the Technical Specifications. Therefore, decoupling the deluge system operability requirements from those for Halon Systems in the Air Intake Tunnel has no safety significance.

Our review indicated that the licensee changed areas of the Technical Specifications which were not identified by change bars on the Technical Specification pages nor were the changes addressed in the licensee's safety evaluation of the proposed change request (TSCR 97, Rev. 1). These changes, involving the fire barrier penetration seals, TS 3.18.7.2.a (P.3-94), the deluge and sprinkler systems, TS 3.18.3.2.a (P.3-89) and the fire hose stations, TS 3.18.6.1 (P.3-92), were brought to the licensee's attention. The licensee, by letter dated July 12, 1984, responded to our concerns regarding this matter. For changes involving TS 3.18.7.2.a and TS 3.18.3.2.a, the licensee claims these changes were unintentional errors that occurred when the change bars were incorrectly carried through to this proposed change (TSCR 97, Rev. 1) from

earlier proposed changes associated with TSCR 83, 96 and 97. We never acted upon these earlier proposed changes, but they were used internally by the licensee in preparing the proposed change TSCR 97, Rev. 1, now being considered. However, the licensee intends to request and provide a safety justification for changes to TS 3.18.3.2.a and TS 3.18.7.2.a at a later date. Although these errors appear to be an oversight on the part of the licensee, they have never resulted in lowering the level of plant safety since the errors never appeared in the Technical Specification document used by the plant personnel. On this basis, we conclude that these changes do not appear in the amended Technical Specifications and therefore have no affect on this amendment.

The apparent change to TS 3.18.6.1 was a clerical error that occurred when the amended page was observed to be of a poor quality for reproduction and was retyped by the licensee. The licensee has since discontinued this practice. In our judgment, this error appears as an oversight on the part of the licensee, and the plant would have been in a somewhat reduced level of safety if plant operations required the action of TS 3.18.6.1 with the error in place. The error involved a two-hour limit for routing an additional fire hose instead of the normal one-hour requirement (standard) accepted by the NRC staff. A review by the licensee indicates that at no time had the one-hour requirement been exceeded, and therefore the level of plant safety was never reduced while the error existed in Technical Specifications. Upon identification of the error, the licensee corrected all controlled copies and affected procedures to reflect the one-hour requirement. These corrections were also verified by the resident inspector. We conclude (1) that the licensee has adequately corrected the error, (2) the licensee has taken remedial action to assure such an error will not occur in the future, and (3) the error does not affect the issue being considered in TSCR 97, Rev. 1. On this basis, we consider this matter resolved.

Based on our evaluation, we find that the licensee's proposed changes to the Technical Specifications reflect appropriate surveillance requirements and administrative controls, and are acceptable.

3.0 Environmental Consideration

This amendment involves changes in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and in surveillance requirements and administrative procedures. We have 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) and (10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

4.0 Conclusic..

We have 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 security or to the health and safety of the public.

Dated: October 5, 1984

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