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August 19, 1986 5211-86-2143

Office of Nuclear Reactor Regulation Attn: Mr. J. F. Stolz, Director PWR Projects Directorate No. 6 U. S. Nuclear Regulatory Commission Washington, D.C. 20555

Dear Mr. Stolz:

Three Mile Island Nuclear Station Unit 1 (TMI-1) Operating License No. DPR-50 Docket No. 50-289 Exemption Request to 10 CFR 50 Appendix R Section III. J - Emergency Lighting

GPU Nuclear Corporation (GPUN) requests exemption from 10 CFR 50, Appendix R, Section III. J, in accordance with 10 CFR 50.12 (a). This request is in addition to previous Appendix R exemptions submitted via GPUN Letter No. 5211-86-2066, dated May 17, 1986 and 5211-85-2177, dated November 7, 1985 (Fire Hazards Analysis Report and Appendix R Section III. G Safe Shutdown Evaluation, Rev. 7). A description of the requested exemption and the technical justification is provided in the enclosure.

The underlying purpose of 10 CFR 50 Appendix R, Section III.J, is to provide emergency lighting that aids the access and egress to equipment and components that must be manually operated by plant personnel to achieve safe plant shutdown during a fire emergency. This is being accomplished by providing additional dedicated, portable, hand-held emergency lights with at least 8-hour battery power supply in combination with existing fixed emergency lighting units, in lieu of additional permanently mounted emergency lighting units for lighting the access and egress routes to safe shutdown equipment and components. Fixed emergency lighting units, with at least an 8-hour battery power supply will be installed at all locations outside the Reactor Building containment where the manual operation of equipment is needed to achieve and maintain hot shutdown. Thus, application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the rule.

Providing additional permanently mounted emergency lighting units would not result in a significant increase in the level of plant safety and would result in undue hardship and costs. These costs would consist of additional engineering, procurement of materials, fabrication and installation costs.

GPU Nuclear Corporation is a subsidiary of the General Public Utilities Corporation

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The exemption being requested meets the special circumstances delineated in 10 CFR 50.12 (a) (2) (ii) and (iii) as discussed above.

Upon authorization, these exemptions will be reflected in Revision 8 to the Fire Hazards Analysis.

A check in the amount of \$150.00 will be submitted under separate cover.

Sincerely,

Vice President and Director, TMI-1

HDH: DJD: nk

Attachment

cc: J. Thoma - USNRC R. Conte - USNRC, Region I-TMI-1 Site D. Kubicki - USNRC PEISCB A. Krasopoulos - USNRC, Region I

## ATTACHMENT

## Exemption Requested

Exemption is requested from the requirements of Section III.J of Appendix R to 10CFR50 to the extent that it requires permanently mounted emergency lighting units, with at least 8-hour battery power supply, for lighting the access routes to, and the egress routes from, the areas needed for manual operation of safe shutdown equipment. For these access and egress routes, it is planned to utilize portable, hand-held emergency lights with at least 8-hour battery power supply. The subject portable lights will be administratively controlled in several locations and will be maintained at a charge level equal to a minimum of 8 hours at all times.

Fixed emergency lighting units, with at least 8-hour battery power supply, will be installed at all locations outside the Reactor Building containment where the manual operation of equipment is needed to achieve and maintain hot shutdown. The exemption request does not involve these locations.

Exemption is also requested from the requirements of Section III.J for permanently mounted emergency lighting units inside the Reactor Building. A supply of dedicated portable lights, with at least 8 hour power supply, will be provided at the Reactor Building personnel air lock, to illuminate access and egress routes and shutdown components which require manual operation within the Reactor Building containment.

## Justification

It is reasonable to assume that the operators, who are thoroughly trained, can carry portable, battery-powered lights to gain access to, and egress from, the areas where manual operations are required to achieve and maintain hot shutdown. The weight of the lights will not present a burden to the operators, and the operators will not be required to perform any manual operations while needing to hold the portable lights for obtaining proper vision, since permanently mounted, 8-hour battery-powered emergency lights will be provided to adequately illuminate the locations where the manual operations must be performed in all buildings except the Reactor Building containment.

The providing of portable, hand-held emergency lights is considered preferable to providing fixed emergency lighting for one access/egress route for many areas/zones. For areas/zones where there is more than one access/egress route, the provision of portable emergency lights will permit the operator to utilize the most preferable route. In addition, the provision of portable emergency lights for access/egress routes will greatly reduce the possible impact of any single lighting unit failure occurring during the on-line charging operations. Existing preventive maintenance procedures for emergency lighting will be revised to incorporate maintenance and replacement schedules for these portable lighting units. In lieu of permanently mounted emergency lighting units inside the Reactor Building containment, a group of rechargeable 8-hour battery-powered emergency portable lighting units will be provided and dedicated at the entrance of the Reactor Building where the operators could obtain them as they enter. The maintenance and replacement schedule will be implemented by administrative procedures. Since a Reactor Building containment entry would be a planned activity by at least two operators to perform specific tasks, the operators could carry enough lighting units to complete the manual operations. The portable lighting units will provide adequate illumination levels at the work place, as they could be held by one operator to illuminate the safe shutdown equipment while the other operator would be able to perform the manual actions with both hands.

Integrity and reliability of self-contained fixed emergency lighting units inside containment is undetermined since the battery packs are not qualified to LOCA temperatures and pressures inside containment and materials used in the construction of the battery packs are not compatible with the chemistry of the Reactor Building spray system. Fixed emergency lighting units inside the Reactor Building containment would also create additional burdens of maintenance and testing due to inaccessibility during normal plant operations.