



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

SAFETY EVALUATION BY THE
OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 8 TO FACILITY LICENSE R-61
WORCESTER POLYTECHNIC INSTITUTE (WPI)
DOCKET NO. 50-134

Introduction

By letter dated September 8, 1983, as supplemented July 26, 1984, Worcester Polytechnic Institute (WPI) requested a change to their existing Technical Specifications permitting the use of portable survey instruments with a less sensitive range than those presently specified in their Technical Specifications. Existing Technical Specifications require that the portable survey meter in the control room area have a range of 0.01 mrem/hr to 50 mrem/hr. WPI has requested to change that portable survey instrument range to 1 mrem/hr to 50 rem/hr. Other portable survey instruments located outside the reactor room had ranges from 2 mrem/hr to 50 mrem/hr. WPI wishes to replace those with portable survey instruments with ranges of 10 mrem/hr to 50 rem/hr.

Evaluation

Existing installed area radiation sensors that are capable of detecting gamma radiation in the range of 0.1 mrem/hr to 100 mrem/hr are located near points of potential radiation sources, such as above the core pool surface, beam port, thermal column, demineralizer, etc. These radiation detectors actuate alarms when levels exceed 50 mrem/hr or 20 mrem total in the fuel storage area.

The WPI wishes to utilize portable survey instruments (1) in the control room area that have a range of 1.0 mrem/hr to 50 rem/hr, and (2) in an external area that have a range of 10 mrem/hr to 50 rem/hr.

Inasmuch as the installed reactor room radiation survey instrumentation is capable of reading levels in the range 0.01 mrem/hr to 50 mrem/hr, the staff acknowledges that portable instrumentation should be utilized for follow-up surveys in the event the radiation alarms are actuated. The staff, therefore, concurs with the WPI scale changes to the portable survey instruments.

The staff concurs with WPI that the portable survey instrument with a proposed range of 10 mrem/hr to 50 rem/hr is more realistic than the currently specified range of 2 mrem/hr - 50 mrem/hr. The existing low range requirements would soon be blinded by an incident that resulted in a release of significant fission products.

Environmental Consideration

This amendment involves changes in the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and changes in inspection and surveillance requirements. The staff has determined that the amendment involves no significant hazards consideration (as discussed below), there is no significant change in the types, or significant increase in the amounts, of any effluents that may be released offsite, and there is no significant increase in individual or cumulative occupational radiation exposure. 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 or environmental assessment need be prepared in connection with the issuance of this amendment.

Conclusion

The staff has concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously evaluated, does not create the possibility of a new or different kind of accident from any accident previously evaluated, and does not involve a significant reduction in a safety margin, 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 the proposed activities, 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 the health and safety of the public.

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Dated: August 1, 1985

Worcester Polytechnic Institute

Docket No. 50-134

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