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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION, UNIT NO. 1

DOCKET NO. 50-220

NUREG-0737 ITEM III.D.3.4., "CONTROL ROOM HABITABILITY"

Position

In accordance with Task Action Plan item III.D.3.4, "Control Room Habitability," licensees shall assure that control room operators will be adequately protected against the effects of accidental releases of toxic and radioactive gases and that the nuclear power plant can be safely operated or shut down under design basis accident conditions (Criterion 19, "Control Room," of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50).

Staff Evaluation

In response to the requirements of the Task Action Plan as promulgated in NUREG-0737, the licensee submitted an evaluation of its existing control room habitability systems and a proposal for modifying those systems, dated December 31, 1980. Pacific Northwest Laboratories (PNL), under contract to the staff (FIN #B2323), evaluated this submittal using the guidance and criteria of Standard Review Plan (NUREG-0800) sections 2.2.1, 2.2.2, 2.2.3 and 6.4, and Regulatory Guides 1.78 and 1.95. The attached PNL letter report outlines the results of this evaluation. The PNL report, however, indicated that the HVAC systems appeared to have adequate redundancy to meet single failure criteria and this conclusion

was subsequently found to be incorrect and additional discussions were held with the licensee.

Following the discussions between the licensee and the staff, the licensee agreed, in a letter dated March 11, 1983, to re-examine its control room habitability system design. In a further submittal, dated March 28, 1983, the licensee committed to make modifications sufficient to meet the single-failure criterion. These modifications consist of the installation of redundant emergency intake dampers, redundant normal intake isolation dampers, redundant cooling water coils, and redundant radiation monitors in the normal intake. The radiation monitors are to provide a signal to automatically isolate the normal intake and initiate the emergency ventilation system. In addition, the licensee has committed to provide additional self-contained breathing apparatus within the control room to meet single failure criteria of Reg. Guide 1.78.

The staff has reviewed the licensee's submittal, and has concluded that the modifications committed to by the licensee are sufficient to meet the staff's single-failure criterion.

The staff also reviewed the recalculations of the control room operator doses, which were submitted by the licensee on January 31, 1984 and March 19, 1984. The staff's conclusion is that control room operator doses following design basis accidents would be within GDC-19 guidelines and are acceptable.

In reaching its conclusions, the staff reviewed the PNL findings as well as the licensee submittals in accordance with NUREG-0737. Based upon this review and the implementation of the licensee's commitments as outlined above, the staff finds that the control room habitability systems are acceptable. The staff concludes that these systems will provide safe, habitable conditions within the control room under both normal and accident radiation and toxic gas conditions, including loss-of-coolant accidents. The staff also concludes that occupancy can be maintained under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident. Therefore, with the inclusion of the previously identified modifications, the design meets the criteria of item III.D.3.4 of NUREG-0737 and is acceptable.

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