



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 20 TO FACILITY OPERATING LICENSE NO. NPF-69
NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT NUCLEAR POWER STATION, UNIT NO. 2
DOCKET NO. 50-410

INTRODUCTION

By letter dated July 26, 1989, Niagara Mohawk Power Corporation (the licensee) proposed a license amendment for Nine Mile Point, Unit 2. This amendment requested a change to the Nine Mile Point, Unit 2 Technical Specification, Section 3/4.9.7, Crane Travel - Spent Fuel Storage Pool. This proposed change would allow use of a single-failure-proof handling system (SFPHS) to handle and transport loads in excess of 1000 pounds (heavy loads) over fuel assemblies in the spent fuel storage pool racks. The licensee's supporting application was applicable to the movement of the 1.4 ton spent fuel pool gates and, accordingly this evaluation addresses only the movement of these gates over the spent fuel pool. Additional technical information was provided by letter dated December 14, 1989.

EVALUATION

Staff guidelines for the handling of heavy loads near spent fuel and safe shutdown systems are provided in NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants," July 1980. The particular sections of NUREG-0612 that are most relevant to the issues of this amendment are as follows.

Section 5.1, "Recommended Guidelines," states that the objective of the guidelines is to assure that one of these two objectives is attained: (1) it is determined that the potential for a load drop is extremely small, or (2) for each area addressed four evaluation criteria for evaluating the consequences of a dropped load are satisfied.

Section 5.1.1, "General" discusses seven aspects that should be met in general so as to provide a defense-in-depth approach to the handling of heavy loads. These include safe load paths, procedures, the crane operator, special lifting devices, other lifting devices, the crane's inspection, testing and maintenance, and the crane's design. The licensee indicates in its application and in the UFSAR that the guidelines of NUREG-0612, including the seven general guidelines of Section 5.1.1, are satisfied.

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Section 5.1.4, "Reactor Building-BWR" states that to assure that the evaluation criteria of Section 5.1 are met, one of two options should be met in addition to satisfying the general guidelines of Section 5.1.1. The two options are (1) the crane and lifting devices should satisfy the single-failure proof guidelines of Section 5.1.6, or (2) the effects of load drops should be analyzed to show that the evaluation criteria of Section 5.1 are satisfied.

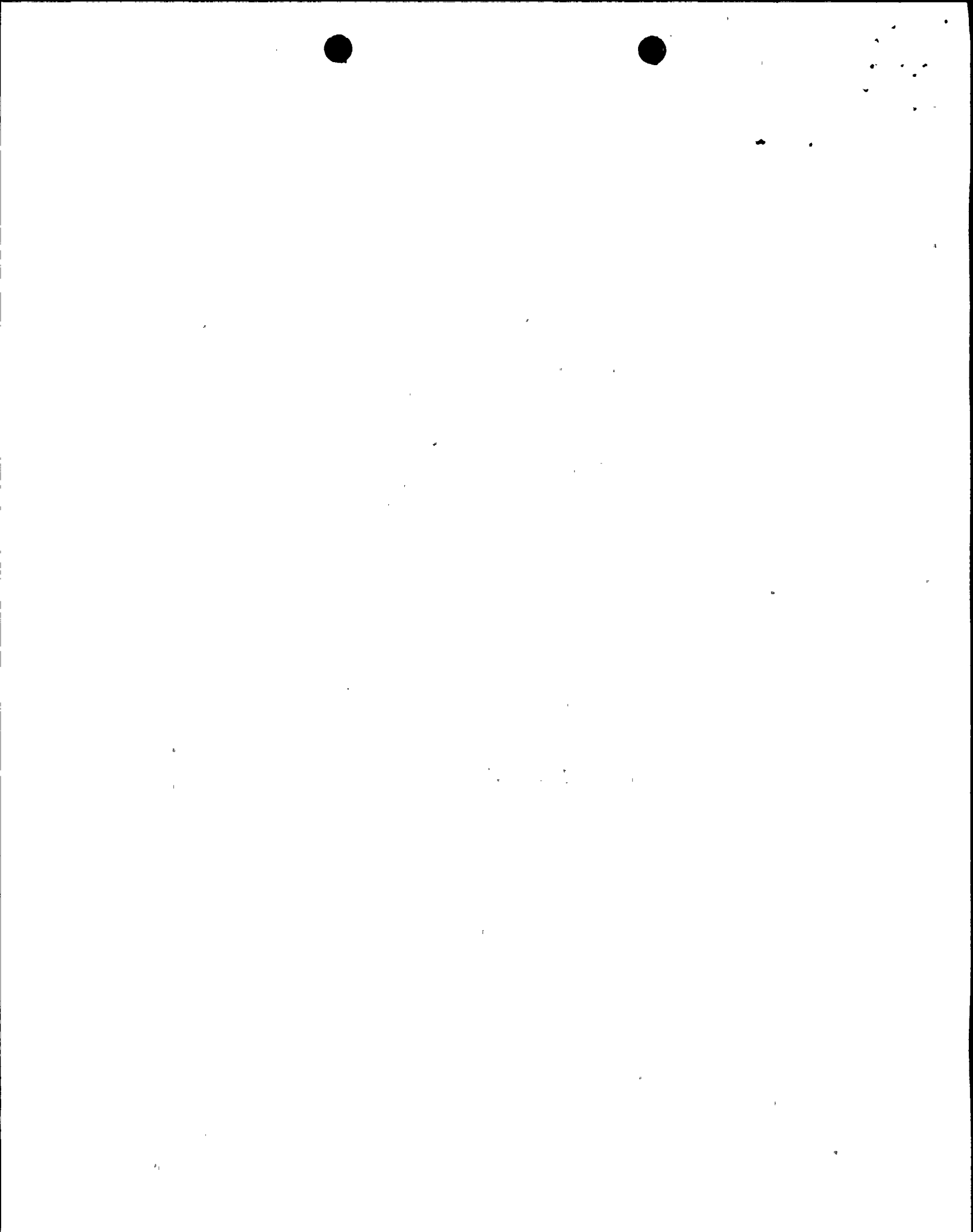
NUREG-0612, Section 5.1.6, Single-Failure-Proof Handling Systems (SFPHS), states, "For certain areas, to meet the guidelines of 5.1.2, 5.1.3, 5.1.4, or 5.1.5, the alternative of upgrading the crane and lifting devices may be chosen. The purpose of the upgrading is to improve the reliability of the handling system through increased factors of safety and through redundancy or duality in certain active components." The SFPHS is to consist of both a single failure proof crane and lifting devices. Item (2) of Section 5.1.6 states, "New cranes should be designed to meet NUREG-0554, Single-Failure-Proof Cranes for Nuclear Power Plants."

According to NUREG-0554, "... when reliance for the safe handling of critical loads is placed on the crane system itself, the system should be designed so that a single failure will not result in the loss of the capability of the system to safely retain the load." The NRC staff has previously found the 120 ton reactor building crane to be single failure proof and to meet the guidelines of NUREG-0554, as stated in Section 9.1.5 of the Safety Evaluation Report (NUREG-1047) for the operating license review. However, the SER did not specifically address the spent fuel pool gate lifting devices as single failure proof.

Therefore, the licensee submitted additional information to verify that Nine Mile Point, Unit 2, has a single-failure-proof lifting device for these gates as a part of the SFPHS. The lifting rigs and sling assemblies were designed for three times the static load multiplied by a factor of 1.05. The calculated stresses were less than the minimum yield strength of the respective materials. These findings are set forth in Appendix 9C.8 of the UFSAR in a comparison of NMP-2 to NUREG-0554 guidelines. The licensee also committed to compliance with the guidelines recommended in NUREG-0612 (ANSI B30.9-1971) for such lifting devices.

SUMMARY

On the basis of the above, the staff concludes that the licensee's request for the Technical Specification change to permit a SFPHS to handle and transport the spent fuel pool storage gates over the spent fuel pool is in accordance with the guidelines of NUREG-0612 and NUREG-0554 for ensuring safe heavy loads handling in order to ensure against accidental load drop and possible radioactivity release. Therefore, the proposed Technical Specification change is acceptable.



Should the licensee propose to handle and transport heavy loads that are beyond the scope of this review of the spent fuel pool gates then it must, in accordance with 10 CFR 50.59, include a written safety evaluation in its records that shows that an unreviewed safety question is not involved. The licensee should also determine that such activities are consistent with commitments made in the UFSAR and prior documentation.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change in a requirement with respect to the installation or use of the facility components located within the restricted areas as defined in 10 CFR 20. The staff has determined that this 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 Sec 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

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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: July 17, 1990

PRINCIPAL CONTRIBUTORS:

S. Sanders and
Robert Martin



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