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

SAFETY EVALUATION BY THE

OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 18 TO

FACILITY OPERATING LICENSE NO. R-81

UNION CARBIDE SUBSIDIARY B, INC.

DOCKET NO. 50-54

Introduction

By letter dated May 7, 1982, Union Carbide (hereinafter the licensee or UC) requested an amendment to Facility License No. R-81 for the pool type research reactor. The request involves a modification to the Technical Specifications that adjusts the partitioning of core cooling between the experimental activation components and the core proper.

Background and Evaluation

The Union Carbide reactor conducts extensive in-core irradiations of various target materials. The current Technical Specifications provide that the minimum amount of coolant through the core be 5/6 of the total primary coolant flow. This had been based upon unfueled experiments. When fueled targets are utilized to the experiments, UC wishes to increase the amount of coolant in a ratio commensurate with the ratio of power from the experiments and the core.

UC suggests that coolant flow to the experiment be expressed by the following formula:

$\leq$1-5/6 (fraction of rated power produced in the fuel elements).

With a maximum of 13 kw per experiment capsule, it is possible to get approximately 780 kw of power from fueled experiments. UC recommends a modification to the Technical Specifications, that permits adjusting the coolant flow to the capsule container and other core areas commensurate with their respective power equivalents. The above formula facilitates the requisite coolant flow adjustments. Other Technical Specifications limit the volume of fueled capsules and total amount of experimental nuclear fuel permitted in the core.

The staff agrees that coolant flows should be adjusted in accordance with the respective power levels of the core and experimental areas, and that the appropriate coolant flow is expressed by the above formula.

Environmental Consideration

We have determined that this amendment will not result in any significant environmental impact and that it does not constitute a major Commission action significantly affecting the quality of the human environment. We have also determined that this action is not one of those covered by 10 CFR § 51.5(a) or (b). Having made these determinations, we have further concluded that, pursuant to 10 CFR § 51.5(d)(4), an environmental impact statement or environmental impact appraisal and negative declaration need not be prepared in connection with issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of an accident of a type different from any evaluated previously, and does not involve a significant reduction in a margin of safety, 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 operation in the proposed manner, 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 to the health and safety of the public.

Dated: AUG 12 1982

This Safety Evaluation was conducted by H. Bernard, Project Manager, Division of Licensing, Standardization & Special Projects Branch.