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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 6 TO

FACILITY OPERATING LICENSE NO. TR-5

NATIONAL BUREAU OF STANDARDS

DOCKET NO. 50-184

1.0 INTRODUCTION

By letter dated June 22, 1987 as supplemented on May 18, 1988, the National Bureau of Standards (the licensee) proposed to amend the Technical Specifications (TS). The Technical Specification change is required because the licensee plans to install seven neutron guide tubes through the confinement building to guide cold neutrons from the reactor into a new building called the Guide Hall. The new guide tubes will have isolation valves, which have to be either operable or closed as are other isolation valves in ventilation and process piping penetrations. The Technical Specification change addresses this requirement.

2.0 EVALUATION

The penetrations being added to the confinement building are the seven to accommodate the neutron guide tubes as well as some other penetrations to a new underground process room, which is being added to facilitate the replacement of the existing heat exchangers, if so required. The new process room will, however, be considered as part of the confinement boundary and will be subject to the confinement system Technical Specifications. The underground process penetrations are not considered to be penetrations leaving the confinement.

The installation of proposed penetrations to bring neutron beams out of the confinement building was considered in the original safety analysis report and is therefore not an unreviewed safety question. However, in order to be sure that the installation of the penetrations will not affect the structural integrity of the confinement building, NBS contracted with Burns and Roe to make a structural analysis to assess the effects of the penetrations on the confinement integrity. On the basis of the results of analysis the licensee concluded that the proposed penetrations through the confinement building would not affect its structural integrity. The staff has reviewed the assumptions, criteria and methods of analysis used in the structural calculations and found them to be acceptable. The staff concurs with the licensee's conclusion. The staff's evaluation is based on SRP Sections 3.8.1 and 3.8.3 for the consideration of loads and load combinations and the use of applicable ACI and AISC Codes, and on 10 CFR Parts 50.59 for the proposed change and Part 100 for the consideration of seismic effects.

The only required change to the TS is the addition, in section 1.3(2), of the guide tube isolation valves to the requirement that they either be operable or closed. Isolation valve closure is accomplished by venting the air in the pneumatic cylinders that keep the isolation valve open; the valve closes by gravity force. There are two separate paths that will vent the pneumatic cylinders automatically if a scram signal occurs. Each path has either a two way or three way solenoid valve which vents the pneumatic cylinder when power to these solenoids is interrupted. The automatic controls will be operated from the major scram system already used to initiate other building closure mechanisms. In addition these solenoid valves can be operated manually to vent the pneumatic cylinders from the Emergency Control Station.

The guide tube isolation valve is designed to be vacuum tight. The addition of these valves will not change the leak rate of the confinement building as presently specified in the TS.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of facility components located within the restricted areas defined in 10 CFR Part 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 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.

4.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the FEDERAL REGISTER (52 FR 32212) on August 26, 1987. No public comments were received.

The staff has 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 this amendment will not be inimical to the common defense and security or the health and safety of the public.

Principal Contributors: Theodore S. Michaels
Chen P. Tan

Dated: June 10, 1988