



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

SAFETY EVALUATION

BY THE

OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 3 TO

FACILITY OPERATING LICENSE NO. R-101

UNIVERSITY OF CALIFORNIA AT BERKELEY

DOCKET NO. 50-224

Introduction

By letter dated August 7, 1980, the University of California at Berkeley (the licensee) requested an Amendment to Facility Operating License No. R-101 and to the Appendix A Technical Specifications of the same license. The changes requested by the licensee would permit possession of up to 25 grams of enriched uranium other than fuel elements (e.g., in fission chambers); permit the use of the one and ten-curie PuBe sources for activities not in connection with the operation of the reactor; correct a discrepancy in the maximum allowable rod drop time; and reduce ambiguity by more accurately describing current practice and using accepted terminology in two sections of the Technical Specifications. The NRC staff has modified the original request slightly and these changes were discussed with and agreed to by the licensee.

Evaluation

Paragraph 2.8.2 of the license has been reworded to allow possession of enriched uranium other than fuel elements. The licensee is now authorized to possess up to 25 grams of enriched uranium 235 in connection with operation of the reactor. The licensee has stated that this material will be used only in fission chambers. Also, the five 1-Ci PuBe sources and the one 10-Ci PuBe source permitted under this license may also be used in experimental activities not in connection with the operation of the reactor. We conclude that these changes will not reduce any margins of safety or significantly increase the level of hazard to the public and are, therefore, acceptable.

Section 3.4.1 of the Appendix A Technical Specifications has been changed by reducing the maximum rod drop time from 2 seconds to 1 second for the shim, safety and regulating rods, which are electromagnetically controlled. The transient rod, which is pneumatically controlled, will still have a maximum rod drop time of 2 seconds. This change, which is more conservative than previously required, insures an extra measure of speed of negative reactivity insertion in the event of a scram and is therefore acceptable.

Section 3.5 of the Appendix A Technical Specifications has been changed by requiring that the reactor scram whenever the power level reaches 110% of scale on the Safety Channel Meter, rather than at 1.1 MW. Because the reactor will now be automatically shutdown at power levels below 1.1 MW when the Safety Channel instrumentation has not been changed to the correct range, this change is conservative and therefore is acceptable.

Section 3.5 of the Technical Specifications has also been changed to bring description of the limit for pool water level to conform to accepted terminology. This change is administrative in nature and is acceptable.

Section 4.2.1.f of the Technical Specifications has been changed by specifying that control rod drop-times be verified to be within the limits specified by Section 3.4.1 at least semiannually. Because this section previously specified no verification schedule, this change is conservative and is acceptable.

#### Environmental Considerations

We have further 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 Section 51.5(a) or (b). Having made these determinations, we have further concluded that, pursuant to 10 CFR Section 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 determined that this amendment will not increase the probability of occurrence of an accident analyzed in the Safety Analysis Report, nor does it increase the consequences of such an accident. 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 accidents previously considered, and does not involve a significant decrease 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 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: November 19, 1980