



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 14

TO FACILITY OPERATING LICENSE NO. R-79

DOCKET NO. 50-123

UNIVERSITY OF MISSOURI, ROLLA

1.0 INTRODUCTION

By letter of July 26, 1995, the University of Missouri, Rolla (the licensee), requested that they be allowed to delay the visual inspection of shim and safety control rods related to Technical Specification 4.2.1(5) to October 17, 1996. This request is because of the nearly full fuel pit which does not allow the off-loading of the research reactor core that is required by licensee procedure to disassemble and remove the control rods for visual inspection. The fuel pit is in this condition because of the storage of High Enriched Uranium (HEU) fuel that was removed from the core for the conversion to Low Enriched Uranium (LEU) fuel, and the unavailability of a shipping cask in which to ship the HEU offsite. The licensee plans to ship the HEU fuel offsite within the next year. A similar request was made in 1993 and 1994, and the amendment of the Technical Specifications was approved (Amendment Nos. 12 and 13).

Also by letter dated July 26, 1995, the licensee proposed an update of the design description for the magnet contact light indications for the research reactor's shim/safety rods. This change is to remove the indication of magnet contacts from the description of indications for the control rod drive mechanisms.

2.0 EVALUATION

2.1 VISUAL INSPECTION OF SHIM AND SAFETY CONTROL RODS

The licensee stated that the annual, visual inspection of the control rods, since they were installed in November 1964, has found no pitting or cracking. Further, reactor thermal power generation and thus neutron fluence to the control rods has been typically very low. This low reactor usage is expected to continue and thus minimize the potential for operation related damage.

The staff concurs with the licensee's assessment in these regards, and also finds that the Technical Specification 3.3(2) limits on reactor coolant system resistivity provides additional assurance that the control rods (and other reactor pool components) will continue to be protected from corrosion. Additionally, the staff considers that the visual examination of the core that is conducted prior to each days reactor startup, and other control rod functional checks (e.g., semi-annual drop time surveillance and operational reactivity checks, such as, critical rod position and reactivity

determinations) will further confirm that the control rods maintain effectiveness. Therefore, this change in surveillance frequency will not change the physical function of the associated reactor systems, so that there is no additional risk associated with analyzed or potential accidents and the margin associated with the reactor safety limits for all operating conditions has not been reduced.

The licensee has confirmed that the HEU fuel stored at the facility is due for shipping before the October 17, 1996, requested extension date for control rod visual examination.

2.2 DESIGN DESCRIPTION FOR THE MAGNET CONTACT LIGHTS FOR THE SHIM/SAFETY RODS

With the request to change the description of the magnet contact lights for the shim/safety rods, the licensee indicated that the light indications have not functioned correctly for some time, that the NRC (back to the time of the Atomic Energy Commission) recognized the problem and concurred that the licensee procedural controls and training ensured that it would not be a safety problem. The reasoning for this conclusion by the licensee and NRC was that the indications are for a convenience and do not provide a safety function. The indications would ensure that reactor startup would not be delayed by an unconnected control rod. The indications also could provide a redundant indication of reactor scram above and beyond that of five diverse and redundant neutron instrumentation. The licensee has indicated that procedures and operator training rely on neutron instrumentation indication. This instrumentation consists of a fission chamber, a linear compensated ion chamber (CIC), a log N CIC (including reactor period indication) and two safety channels (uncompensated ion chambers). The licensee procedures for startup and shutdown require verification of proper neutron instrument response as the main operator safety function. The magnet lights have not been and are not used for this safety function and therefore, removal of the indication in technical specifications is acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment changes the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and changes inspection and surveillance requirements. 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 there is no significant increase in individual or cumulative occupational radiation exposure. 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 staff has 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 evaluated, or create the possibility of a new or different kind of accident from any accident previously evaluated, 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 the proposed changes, 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 the health and safety of the public.

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Date: August 28, 1995