



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 17 TO

FACILITY OPERATING LICENSE NO. R-56

UNIVERSITY OF FLORIDA

DOCKET NO. 50-83

1.0 INTRODUCTION

By letter dated June 2, 1987, the University of Florida (licensee) requested an amendment to their Technical Specifications (TS) for the University of Florida Training Reactor. The amendment would permit securing the reactor vent system when stack counts are above 10 counts per second (cps) under certain non-emergency conditions.

The need for the TS change was discovered by the licensee during a quarterly evacuation drill (December 11, 1986 and documented December 19, 1986) when two area radiation monitors were set at a high level trip set point, which secured the reactor vent system and sounded the evacuation alarm as required by TS. Securing the reactor vent system, however, above 10 cps under non-emergency conditions is not permissible by the TS. The stack count rate at the time was 300 cps. Therefore, the licensee proposed to clarify the TS to permit securing of the reactor vent system under certain non-emergency conditions. In addition the licensee proposed certain administrative changes to the TS.

The licensee's proposed changes were reviewed by Region II in a memorandum dated January 22, 1988 (D. Verrelli to T. Michaels) and the licensee responded to further suggested changes on March 7, 1988.

2.0 EVALUATION

The licensee has outlined, in the March 7, 1988 letter, the conditions under which the reactor vent can be secured above 10 cps. These conditions are (1) loss of building electrical power, (2) equipment failure (3) cycling console power to dump primary coolant or to conduct tests and surveillances, and (4) initiating the evacuation alarm for tests and surveillances including emergency drills. Each of these conditions would be applicable when the reactor is shut down. Also, for conditions 1, 2 and 4 there is no technical basis for requiring operation of the Reactor Vent System at stack count rates greater than 10 cps. When the core vent system is secured, any effluent that would be released is contained within the core/reactor vent system with the only potential release path being backflow (diffusion driven) into the cell. The licensee's calculations (see June 2, 1987 letter, page 2) show that the Argon-41 concentration in the cell air space is less than 10 CFR 20 restricted area concentration limits. These calculations assume all full power, equilibrium Argon-41 in core voids was instantaneously released into the cell air. Additionally, existing constraints to maintain

Argon-41 discharge within effluent limits will automatically prevent exceeding both restricted and unrestricted area concentration limits, if such excesses were possible. The licensee observed on December 11, 1986, after the core vent fan was secured and with a high stack count rate of 200-300 cps, that no increases in Air Particulate Detector level or Area Monitor indications resulted.

For condition 3, the interruption of power to the console and the securing of the Reactor Vent System is usually only momentary and in such a time frame, there is no cause for concern about back leakage of stack effluents into the cell or control room. The staff finds that the revisions to the TS (Section 3.3.2(1)), which permit securing the vent fan above 10 cps for the conditions previously outlined, are acceptable.

The licensee plans to install a backup means to quantify radioactive effluents to the environment during abnormal operating conditions such as when the vent monitor is inoperable or the absolute filter fails. Sections 3.3.1(6) and 3.4.3(2) have been revised to reflect this change, which increases the safety of the facility, and is acceptable. Other changes to TS 3.3, 3.4.3(3) and the addition of 3.4.7 are administrative; they improve the TS and are acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves changes in the installation or use of a facility components located within the restricted area as defined in 10 CFR Part 20 and changes in inspection and surveillance requirements. The staff has determined that the 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) there is reasonable assurance that the health and safety of the public will not be endangered by the 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 Contributor: Theodore S. Michaels

Dated: April 27, 1988