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U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555

Subject: Change to UVAR TS 3.1.1, referring to Shutdown Margin  
Calculation for the University of Virginia Reactor  
(UVAR), Facility License No. R-66, Docket 50-62

Gentlemen:

The U.Va. Reactor Safety Committee today approved the text of a proposed wording change to UVAR Technical Specification 3.1.1. The current and proposed TS wording is presented in attachment, together with the basis for the change. We respectfully request NRC review and approval of this change in the Technical Specifications.

Yours sincerely,

Robert U. Mulder, Director  
U. of Virginia Reactor Facility

Sworn to and subscribed before me this 30th

day of September 1988

Witness my hand and official seal.

Delores E. Lane Notary Public

My Commission Expires 9/17/89.

cc: USNRC Region II Administrator, Atlanta, Georgia  
Project Manager Mr. Al Adams, USNRC, Washington D.C.

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PRESENT WORDING OF UVAR TECHNICAL SPECIFICATION 3.1.1

" 3.0 LIMITING CONDITIONS FOR OPERATION

3.1 Reactivity

Applicability: These specifications apply to the reactivity condition of the reactor and the reactivity worths of control rods and experiment.

Objectives: The objectives are to ensure that the reactor can be shut down at all times and that the safety limit will not be exceeded.

Specifications: The reactor shall not be operated at powers in excess of 1 kW unless the following conditions exist:

(1) The minimum shutdown margin provided by control rods, with secured experiments (see Section 1.0) in place and referred to the cold, xenon-free condition with the highest worth control rod fully withdrawn, is greater than  $0.4\% \Delta k/k$ .

.... "

DEFINITION OF REGULATING ROD AND SHIM ROD LISTED  
IN UVAR TECHNICAL SPECIFICATION 1.0

" ....

Regulating Rod: The regulating rod is a control rod of low reactivity worth fabricated from stainless steel and used to control reactor power. The rod may be controlled by the operator with a manual switch or by an automatic controller.

....

Shim Rod: A shim rod is a control rod fabricated from borated stainless steel, which is used to compensate for fuel burnup, temperature, and poison effects. A shim rod is magnetically coupled to its drive unit allowing it to perform the function of a safety rod when the magnet is de-energized.

.... "

PROPOSED CHANGE TO UVAR TECHNICAL SPECIFICATION 3.1.1

"....

Specifications: The reactor shall not be operated at powers in excess of 1 kW unless the following conditions exist:

(1) The minimum shutdown margin provided by shim rods, with secured experiments (see Section 1.0) in place and referred to the cold, xenon-free condition with the highest worth shim rod fully withdrawn, is greater than  $0.4\% \Delta k/k$ .

.... "

BASIS

With the present TS wording, the shutdown margin for the UVAR reactor may legally take into account the worth of the regulating rod, which is a "control rod" by definition. However, the regulating rod is not a scrammable rod, and therefore can't perform the function of a safety rod. Admittedly, the shutdown margin should reflect the total scrammable negative reactivity available for rapid reactor shutdown. The suggested wording change in TS 3.1.1, where the words "control rods" have been replaced with "shim rods", requires that the worth of the regulating rod not be counted toward the shutdown margin, which is the point of this technical specification.