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NUCLEAR FACILITIES DIVISION  
UNIVERSITY OF FLORIDA



September 4, 1985

ATTACHMENT I

Nuclear Regulatory Commission  
Suite 2900  
101 Marietta Street, N.W.  
Atlanta, GA 30323

Attention: J. Nelson Grace  
Regional Administrator, Region II

Re: University of Florida Training Reactor (UFTR)  
Facility License: R-56, Docket No. 50-83

As per telephone call of 4 September 1985, we are reporting the failure of one of the reactor control blades (Safety-3) on the University of Florida Training Reactor to drop on demand from a 64% removed position. This failure (sticking about 31% removed) was discovered by a Reactor Operator as he commenced a power increase from the 1 watt critical position. The operator had accidentally raised the Safety-3 instead of the Regulating Blade for this power increase; in returning it to the normal 640 unit position he felt the response was sluggish and so he attempted to drop the blade from 640 units withdrawn to check it. Following clutch current release the blade stopped at the 310 unit position and was subsequently driven in with the other three blades to shut the reactor down.

Immediate checks involving subsequent removal to various heights show this sticking problem to be intermittent and to center in the 290-315 unit range but with some apparent sluggishness in the drop from other higher and lower heights. It should be noted that this is essentially a recurrence of the event reported by our facility in a letter dated January 28, 1985 with subsequent followup in an interim report dated February 9, 1985 and closed out in a report dated March 26, 1985.

The Executive Committee of the Reactor Safety Review Subcommittee (RSRS) has reviewed the occurrence and concluded that it is a potential abnormal occurrence as defined in UFTR Technical Specifications, Chapter 1. The RSRS has instructed NRC notification as per Section 6.6.2 of the UFTR Tech Specs.

Analysis of the current problem is underway with corrective action to follow based upon inspection results and RSRS recommendations. Based on previous experience with the January 28 event and subsequent corrective maintenance, indications are that the sticking problem may be due to a binding in the S-3 clutch possibly due to moisture or other effect reducing clearance. Such binding was found to be part of the problem in the January 28 event. If this preliminary evaluation is correct, this binding can be corrected by increasing the clutch clearance, a check of which has been approved by the RSRS Executive Committee.

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PDR ADOCK 05000083  
S PDR

*William G. Vernetson*  
William G. Vernetson  
Acting Director of Nuclear Facilities  
September 4, 1985

cc: RSRS Committee

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ATTACHMENT II

September 4, 1985

MEMORANDUM

TO: Reactor Staff  
FROM: W.G. Vernetson, Acting Director of Nuclear Facilities  
SUBJECT: Administrative Shutdown of the UFTR

Because of the need to evaluate and fix the sticking safety blade #3, the UFTR is placed on Administrative Shutdown until further notice.

This administrative shutdown precludes all reactor operations involving operating the reactor except for 1) performing weekly and daily checkouts as far as possible and 2) withdrawal of Safety 3 up to 50 units. Daily checkouts performed for training and non-operational uses of the facility such as for CFCC students are also permitted. Withdrawal of Safety-3 more than 50 units is precluded except as specifically authorized in RSRS-approved test and maintenance procedures.

The only other activities allowed during this administrative shutdown are routine administrative work (updating training records, etc.), tours of the facilities (no operations) as well as housekeeping and maintenance on the non-nuclear-safety-related equipment in the reactor room provided none of these affect the work in progress or cause unnecessary exposure. Major maintenance is also possible provided approved by proper levels.

WGV/ps

*weekly checkout full removal of S-3  
is approved until further notice*

*WGV  
J. Diaz*

*Sep 6, 85  
9/6/85*

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ATTACHMENT III

September 9, 1985

MEMORANDUM

TO: Reactor Staff

FROM: W.G. Vernetson *WGV*

SUBJECT: Allowable Control Blade Manipulations During the Current Administrative Shutdown

Two points should be noted relative to performance of weekly and daily checkouts during the administrative shutdown to correct the problem of the sticking S-3 blade:

First, the RSRS has agreed that the full removal of the S-3 control blade is allowable during the weekly checkouts. To do this will require my authorizing signature. Note that removal of S-3 up to 50 units has been allowed with the usual limitations. Obviously this full or partial removal will only be possible when the blade drive is connected.

Second, care should be exercised whenever the S-3 blade drive is disconnected to assure that the rupture disk is not broken. Recall that in the dump valve logic whenever the electrical connections to a blade are disconnected, this is like a partially removed blade. Each of the scram checks of one blade actually look like two blades and result in dump of primary coolant to the storage tank. Therefore, a three minute wait is required prior to reset.

WGV/ps