

NUCLEAR ENGINEERING SCIENCES DEPARTMENT
Nuclear Reactor Facility
University of Florida



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March 31, 1989

Final 14 Day Report:
Trip on High PC Temperature
Indication Due to Monitoring
System Failure

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

Attention: Malcolm L. Ernst
Acting Regional Administrator, Region II

RE: University of Florida Training Reactor
Facility License: R-56, Docket No. 50-83

SCENARIO

On Friday, March 17, 1989 the University of Florida Training Reactor (UFTR) was started up at 1038 hrs; at 1836, hours after approximately 7-hours of sample irradiation at full power (supporting neutron activation analysis), the reactor tripped with a high primary coolant temperature indication. The SRO on call (P.M. Whaley) was in the reactor cell conducting radiation surveys and responded immediately to assist in evaluation and response to the occurrence. The reactor operator (Mike Wachtel) at the controls responded promptly to shut down and secure the reactor at 1837 hours.

Since the trip indicator was high primary coolant temperature, the temperature recorder was left in operation following the trip event. In this way the RO and SRO were able to observe indications that the cooldown was normal with no one fuel box outlet temperature significantly higher or lower than the group; this data indicates normal flow. The trip itself was noted to have occurred on fuel box temperature #6, not fuel box #1, so the recording instrument did not start to drive to that point from very far down scale which could have resulted in an overdrive to give a trip. It was also noted that there was no trend on the temperature prior to the trip as one point printing indication was slightly high and the next jumped over 10°F to cause the trip. Finally, it was noted that the trip occurred at an indicated temperature of about 151.5°F which is 3.5°F below the nominal limiting safety system (trip) setting of 155°F. The audible warning alarm set at 150°F was also noted to occur.

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per McKnight
Jim IE22
4/22/89 telephone
call ~ 3:30pm

Malcolm L. Ernst
March 31, 1989
Page 2

This entire scenario as well as readiness to restart was communicated to Mr. Paul Frederickson (Region II NRC) on March 21, 1989 after initial attempts at telephone communication were unsuccessful on March 20, 1989 due to problems with the Region II telephone system.

EVALUATION/CORRECTIVE ACTION

Under Maintenance Log Page #89-18, the specific temperature recorder system failure has been determined to be dust/corrosion buildup on the slide wire which caused excessive resistance and drift of the indicator upscale through the upscale burnout feature. This dust/corrosion buildup was cleaned off and the temperature recorder was checked out to assure proper response. The required reactor systems were then checked out with restart confirming proper operation on March 21, 1989.

To prevent recurrence of this event, further corrective action is being instituted as a standard maintenance action to require cleaning the temperature recorder slidewire and associated recorder connections and contacts quarterly at intervals not to exceed four (4) months as part of the Q-1 Surveillance.

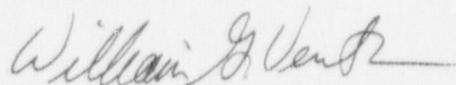
CONSEQUENCES

The Reactor Safety Review Subcommittee (RSRS) Executive Committee met on March 20, 1989 and agreed with the trip evaluation and that it was probably not promptly reportable but that it should be reported anyway in conjunction with a report on a "failure to post a radiation area". The committee authorized restart for normal operations upon successful completion of the temperature recorder repair. The full RSRS was updated on the occurrence at its regularly scheduled meeting on Tuesday, March 21, 1989 where all members were in attendance.

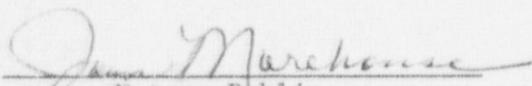
Reactor staff and administration including Director W. G. Vernetson present on Friday, March 17, 1989 agreed there was no compromise to reactor safety in this event, nor was there danger of personnel receiving excessive radiation doses. All other reactor safety review and control systems responded properly.

If further information is needed, please advise.

Sincerely,



William G. Vernetson
Director of Nuclear Facilities



Notary Public

cc: P.M. Whaley
Reactor Safety Review Subcommittee
Document Control Desk