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HOVEY,R.J. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Forwards evaluation & revised pages to Uprating Licensing Rept,(WCAP-14276,Rev 1) w/respect to reactor coolant flow-low reactor trip setpoint used in analyses.

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JUL 03 1996

L-96-176
10 CFR §50.36
10 CFR §50.90

FPL

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

Gentlemen:

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Updated Analysis
Proposed License Amendments
Thermal Power Uprate

By letter L-95-245, dated December 18, 1995, Florida Power and Light Company (FPL) submitted a request to amend Turkey Point Units 3 and 4 Operating Licenses and Technical Specifications, so as to allow operation at an uprated core thermal power of 2300 MWt.

While preparing specific documents to support the Thermal Uprate implementation, Florida Power and Light Company (FPL) identified a minor inconsistency in the Uprating Licensing Report (WCAP-14276, Revision 1), with respect to the Reactor Coolant Flow-Low Reactor Trip Setpoint used in two analyses. Specifically, reference is made in the Uprating Licensing Report (WCAP-14276, Revision 1), to derivation of the Reactor Coolant Flow-Low Reactor Trip Setpoint, based on a Reactor Coolant System Thermal Design Flow of 85,000 gpm/loop, as utilized in both (a) the Partial Loss of Forced Reactor Coolant Flow analysis, and (b) the Locked Rotor/Shaft Break analysis. In fact, as indicated in the Sequence of Events tabulation in the Uprating Licensing Report (WCAP-14276, Revision 1), the value of the Reactor Coolant Flow-Low Reactor Trip Setpoint used in both analyses was based on a Reactor Coolant System Minimum Measured Flow value of 88,000 gpm/loop.

This letter forwards FPL's evaluation and revised pages to the Uprating Licensing Report (WCAP-14276, Revision 1). The evaluation concludes that all acceptance criteria continue to be met and the Determination Of No Significant Hazards Consideration remains valid.

Should there be any questions, please contact us.

Very truly yours,

R. J. Hovey
Vice President
Turkey Point Plant

Attachments

JAH

cc: S. D. Ebneter, Regional Administrator, Region II, USNRC
T. P. Johnson, Senior Resident Inspector, USNRC, Turkey Point
W. A. Passetti, Florida Department of Health and Rehabilitative Services

A001

STATE OF FLORIDA)
) ss.
COUNTY OF DADE)

R. J. Hovey being first duly sworn, deposes and says:

That he is Vice President, Turkey Point Plant, of Florida Power and Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information and belief, and that he is authorized to execute the document on behalf of said Licensee.

R. J. Hovey

Subscribed and sworn to before me this 3 day of July, 1996.

Olga Hanek

OLGA HANEK
Name of Notary Public (Type or Print)

NOTARY PUBLIC, in and for the County of Dade, State of Florida

OLGA HANEK
MY COMMISSION # CC 562742
EXPIRES: June 18, 2000
Bonded Thru Notary Public Underwriters

My Commission expires_____
Commission No. _____

R. J. Hovey is personally known to me.

An inconsistency was identified between the Reactor Coolant Flow-Low Reactor Trip Setpoint in the proposed Thermal Power Uprate Licensing Amendment (L-95-245 dated December 18, 1995) and the corresponding setpoint used in the safety analyses described in the Uprating Licensing Report (WCAP-14276, Revision 1). Both setpoints are based on 84.5% of the reactor coolant system (RCS) flow. However, the proposed uprate value is based on a Thermal Design Flow (TDF) of 85,000 gpm/loop while the analysis value was based on the Minimum Measured Flow (MMF) of 88,000 gpm/loop.

The inconsistency was addressed by changing the analysis setpoint to correspond to 84.5% of the TDF and assessing the affected transients with the appropriate analytical trip value. Two analyses take credit for the Reactor Coolant Flow-Low Reactor Trip Setpoint and were evaluated for impact of the parameter change. These two analyses are both in the DNB category of events and are the following:

- Locked Rotor/Shaft Break
- Partial Loss of Forced Reactor Coolant Flow

The Locked Rotor/Shaft Break is a fast transient and the change in setpoint has an insignificant effect (0.01 seconds) on the time of trip actuation which occurs within the first 0.1 seconds of the event. Therefore, the proposed change has no impact on this transient and the results presented in the Uprating Licensing Report (WCAP-14276, Revision 1) remain valid.

For the Partial Loss of Forced Reactor Coolant Flow, the impact of the change in setpoint value is a delay of 0.3 seconds in the time of trip actuation. The original analysis resulted in a time to reactor trip of 2.0 seconds. The revised analysis establishes a time to reactor trip of 2.3 seconds. This delay has no significant impact on the results of the transient. Updated pages 3-69, 3-76, 3-77, 3-78 and 3-79 of the Uprating Licensing Report (WCAP-14276, Revision 1) which reflect the revised analysis are provided in Attachment 2.

The Total Loss of Forced Reactor Coolant Flow event continues to be limiting for Condition II events and is not affected by the change because it does not take credit for the Reactor Coolant Flow-Low Reactor Trip.

A comprehensive review of all analysis closeout documentation was performed. No other discrepancies were discovered. This event is considered to be an isolated case and appropriate corrective actions are in place to preclude recurrence.

In conclusion, the Reactor Coolant Flow-Low Reactor Trip of 84.5% of the TDF is acceptable and does not result in a significant change to the analysis results previously submitted. All acceptance criteria continue to be met and there is no change to the conclusions of the Determination Of No Significant Hazards Consideration originally submitted by the Thermal Power Uprate Proposed License Amendment (L-95-245 dated December 18, 1995).

Table 3.2.8-1

Sequence of Events - Loss of Flow Events

Case	Event	Time (sec)
Complete Loss of Forced Reactor Coolant Flow	Reactor coolant pump undervoltage trip setpoint reached, all pumps lose power and begin coasting down	0.0
	Rods begin to drop	2.0
	Minimum DNBR occurs	3.8
	Maximum RCS pressure	5.1
Partial Loss of Forced Reactor Coolant Flow	Two reactor coolant pumps lose power and begin coasting down	0.0
	Low flow reactor trip setpoint reached	2.3
	Rods begin to drop	3.3
	Minimum DNBR occurs	5.1
	Maximum RCS pressure	6.1
Reactor Coolant Pump Shaft Seizure (Locked Rotor)	Rotor on one pump locks	0.0
	Low flow reactor trip setpoint reached	0.05
	Rods begin to drop	1.05
	Maximum clad temperature occurs	3.5
	Maximum RCS pressure occurs	3.8

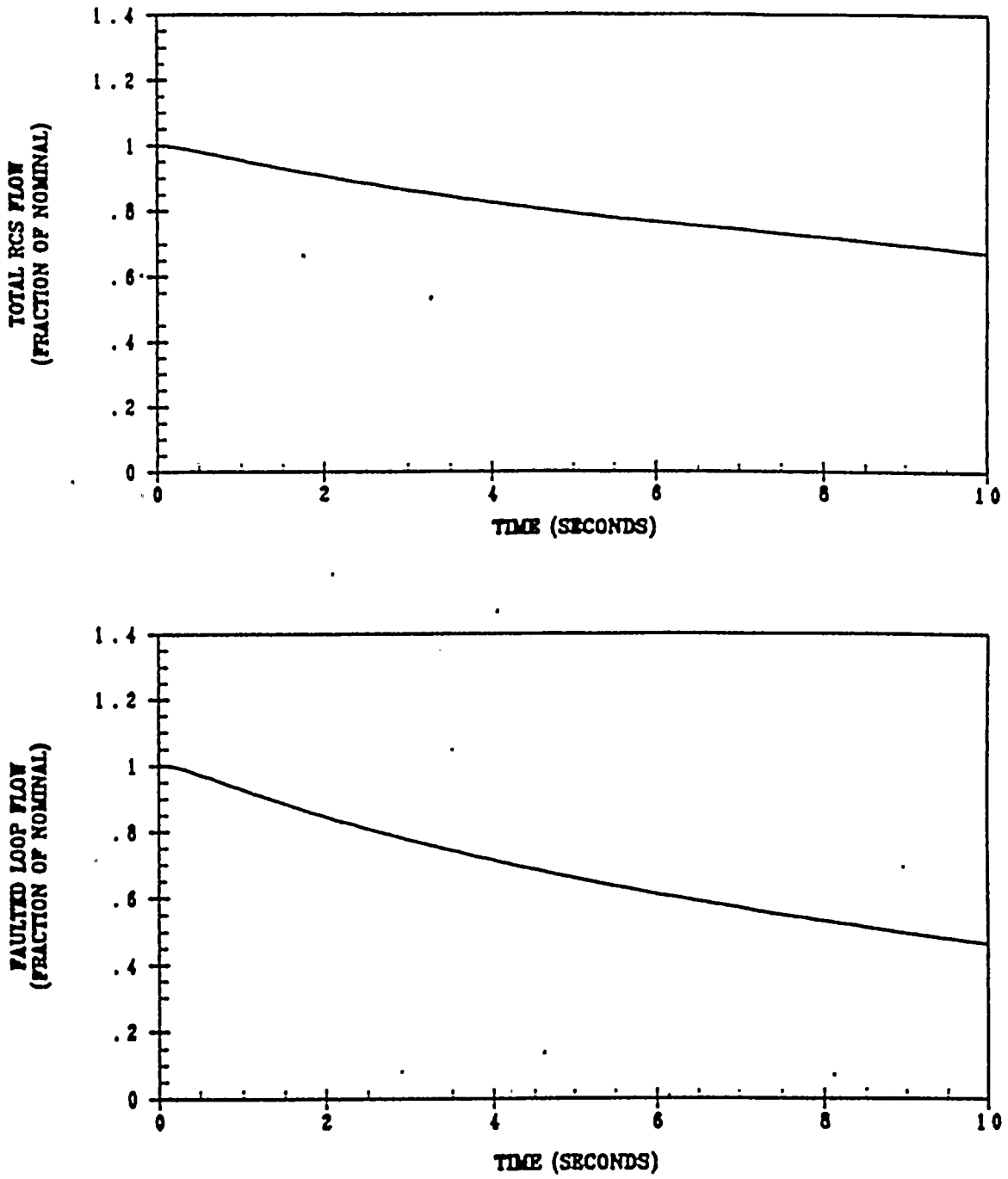
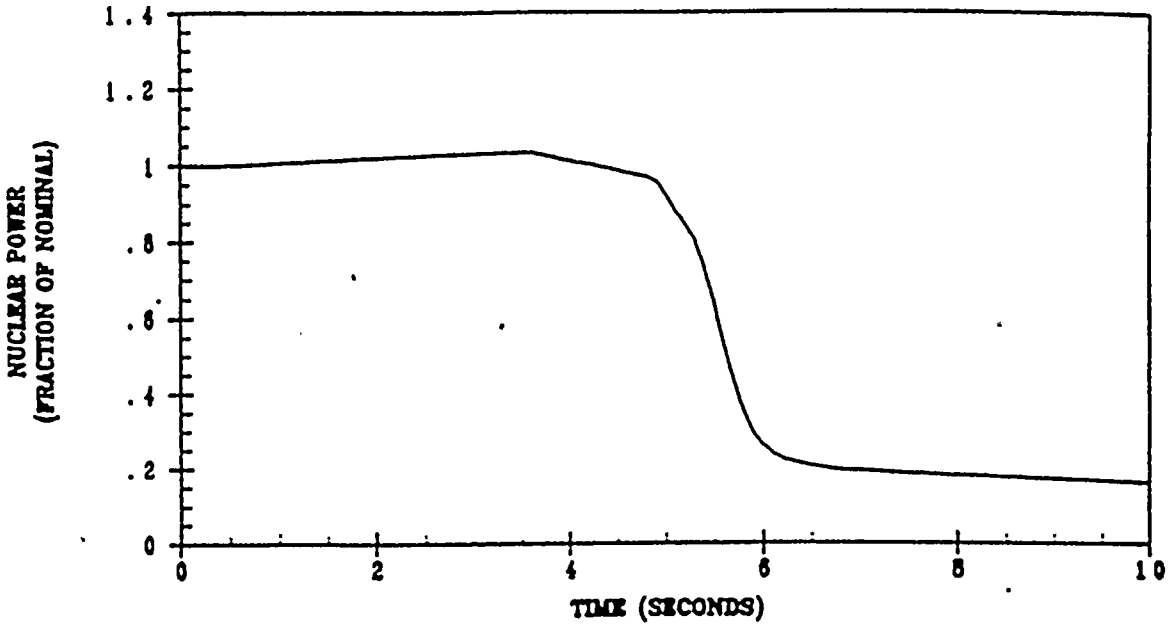


Figure 3.2.8-5 Flow Coastdown versus Time
Partial Loss of Forced Reactor Coolant Flow
(All loops initially operating, two loops coasting down)



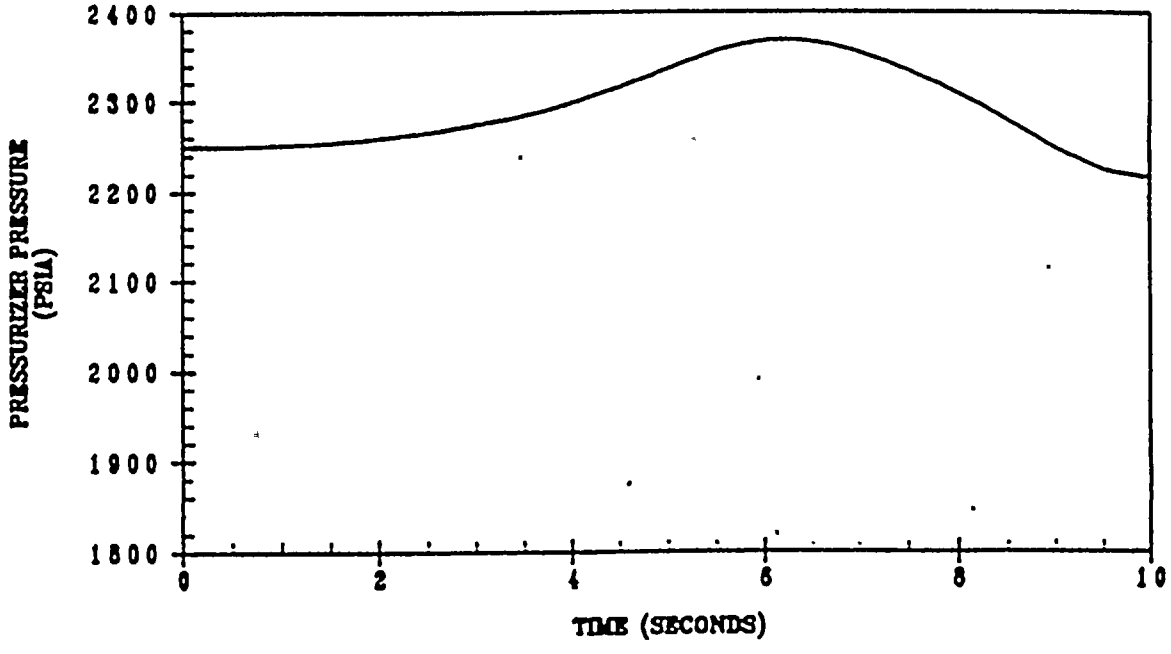
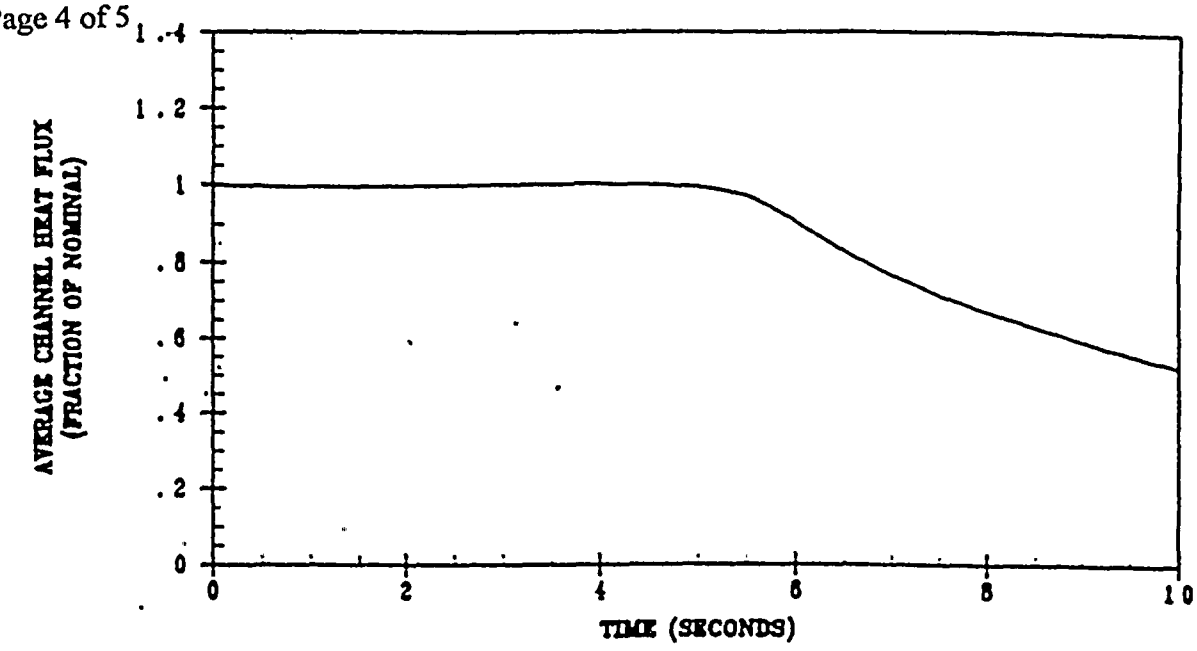


**Figure 3.2.8-6 Nuclear Power and Pressurizer Pressure Transients
Partial Loss of Forced Reactor Coolant Flow
(All loops initially operating, two loops coasting down)**



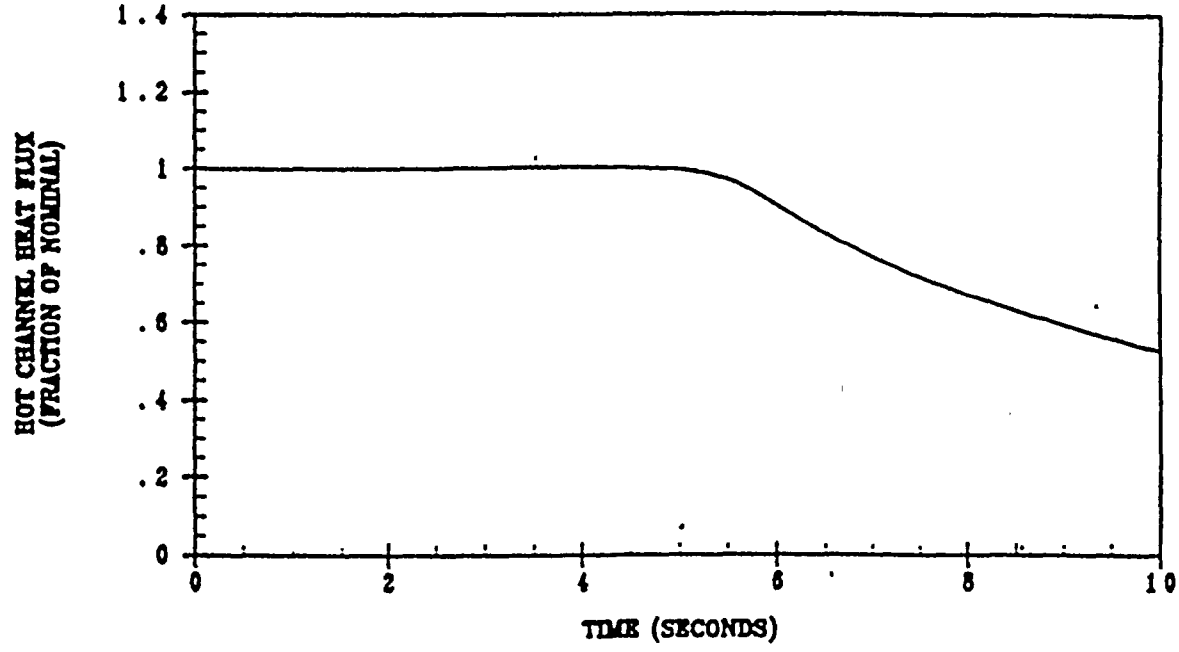


Figure 3.2.8-7 Average and Hot Channel Heat Flux Transients
Partial Loss of Forced Reactor Coolant Flow
(All loops initially operating, two loops coasting down)

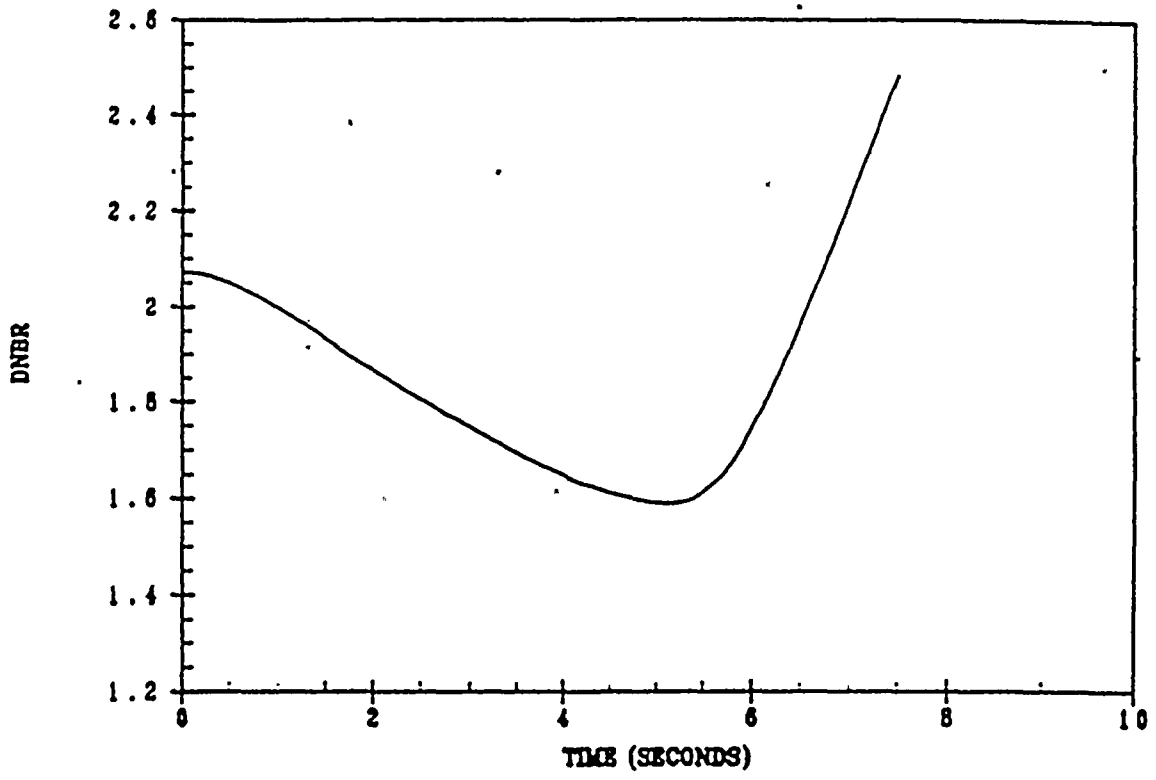


Figure 3.2.8-8 DNBR versus Time
Partial Loss of Forced Reactor Coolant Flow
(All loops initially operating, two loops coasting down)