NEDO-24168-1
Class I
February 1979

SUPPLEMENTAL RELOAD LICENSING SUBMITTAL

FOR

MILLSTONE

UNIT 1 RELOAD 6

(Supplement 1)

Prepared: P. H. Henrikson

Approved: R. O. Brugge, Manager
Operating Licenses II

NUCLEAR ENERGY PROJECTS DIVISION • GENERAL ELECTRIC COMPANY
SAN JOSE, CALIFORNIA 95125

IMPORTANT NOTICE REGARDING

CONTENTS OF THIS REPORT

PLEASE READ CAREFULLY

This report was prepared by General Electric solely for Northeast Utilities Service Company (NUSCO) for NUSCO's use with the U.S. Nuclear Regulatory Commission (USNRC) for amending NUSCO's operating license of the Millstone 1 Nuclear Power Station. The information contained in this report is believed by General Electric to be an accurate and true representation of the facts known, obtained or provided to General Electric at the time this report was prepared.

The only undertakings of the General Electric Company respecting information in this document are contained in the contract between Northeast Utilities Service Company and General Electric Company for nuclear fuel and related services for the nuclear system for Millstone 1 Nuclear Power Station, dated April 14, 1967 and nothing contained in this document shall be construed as changing said contract, or for any purpose other than that for which it is intended, is not authorized; and with respect to any such unauthorized use, neither General Electric Company nor any of the contributors to this document makes any representation or warranty (express or implied) as to the completeness, accuracy or usefulness of the information contained in this document or that such use of such information may not infringe privately owned rights; nor do they assume any responsibility for liability or damage of any kind which may result from such use of such information.

COASTDOWN WITH FEEDWATER DERATE

Coastdown analysis with a feedwater temperature reduction of 75°F demonstrates that the results of the safety analysis in the main body of this document are applicable. For the worst case transients the pressure margin (130 psid) is greater and the ΔCPR is less (0.21 ΔCPR) for the feedwater derate condition. The accident analyses for reduced feedwater temperature are also less limiting.

Therefore, utilization of the safety limits given in the main body of this document for the derate condition will provide a conservative approach for the coastdown with feedwater derate.

Differences from NEDO-24168 are included for items 6, 7, 9, and 12.

6. RELOAD-UNIQUE TRANSIENT ANALYSIS INPUTS (3.3.2.1.5 and 5.2)

	EOC
Void Coefficient N/A (¢/% Rg)	-5.59/-7.28
Void Fraction (%)	34.41
Doppler Coefficient N/A (¢/% °F)	-0.2229/-0.2118
Average Fuel Temperature (°F)	1202
Scram Worth N/A ($)	-38.16/-30.53
Scram Reactivity vs Time	Figure 1

7. RELOAD-UNIQUE GETAB TRANSIENT ANALYSIS INITIAL CONDITION PARAMETERS (5.2)

Exposure	7x7 EOC + 700 MWd/t	8x8/8x8R EOC + 700 MWd/t
Peaking factors (local, radial and axial)	1.24/1.55/1.4	1.22/1.646/1.4
R-Factor	1.100	1.098
Bundle Power (MWt)	5.257	5.578
Bundle Flow (10^3 lb/hr)	110.48	94.02
Initial MCPR	1.23	1.28

9. CORE-WIDE TRANSIENT ANALYSIS RESULTS (5.2.1)

Transient	Exposure	Power (%)	Flow (%)	ϕ (%)	Q/A (%)	P_{sl} (psig)	P_v (psig)	ΔCPR 7x7	ΔCPR 8x8/8x8R	Plant Response
Load Rejection Without Bypass	EOC + 700 MWd/t	100	100	257	111	1174	1206	0.16	0.21	Figure 2
Loss of 100°F Feedwater Heating	EOC + 700 MWd/t	100	100	114	113	1031	1068	0.10	0.12	Figure 3
Feedwater Controller Failure	EOC + 700 MWd/t	100	100	115	107	1034	1070	0.07	0.09	Figure 4

12. OVERPRESSURIZATION ANALYSIS SUMMARY (5.3)

Transient	Power (%)	Core Flow (%)	P_{sl} (psig)	P_v (psig)	Plant Response
MSIV Closure (Flux Scram)	100	100	1214	1245	Figure 5

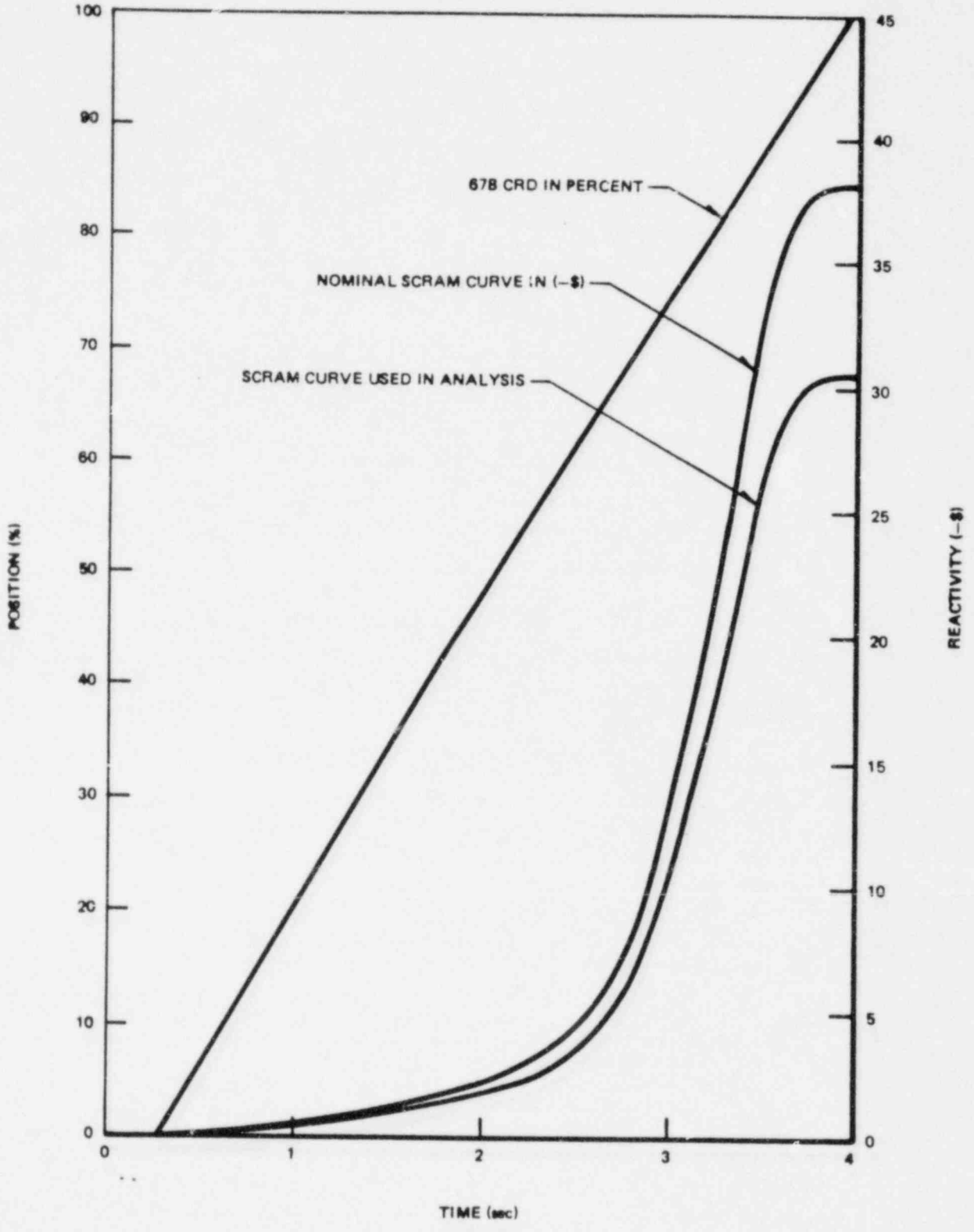

Figure 1. Scram Reactivity Curve, EOC + 700 MWd/t

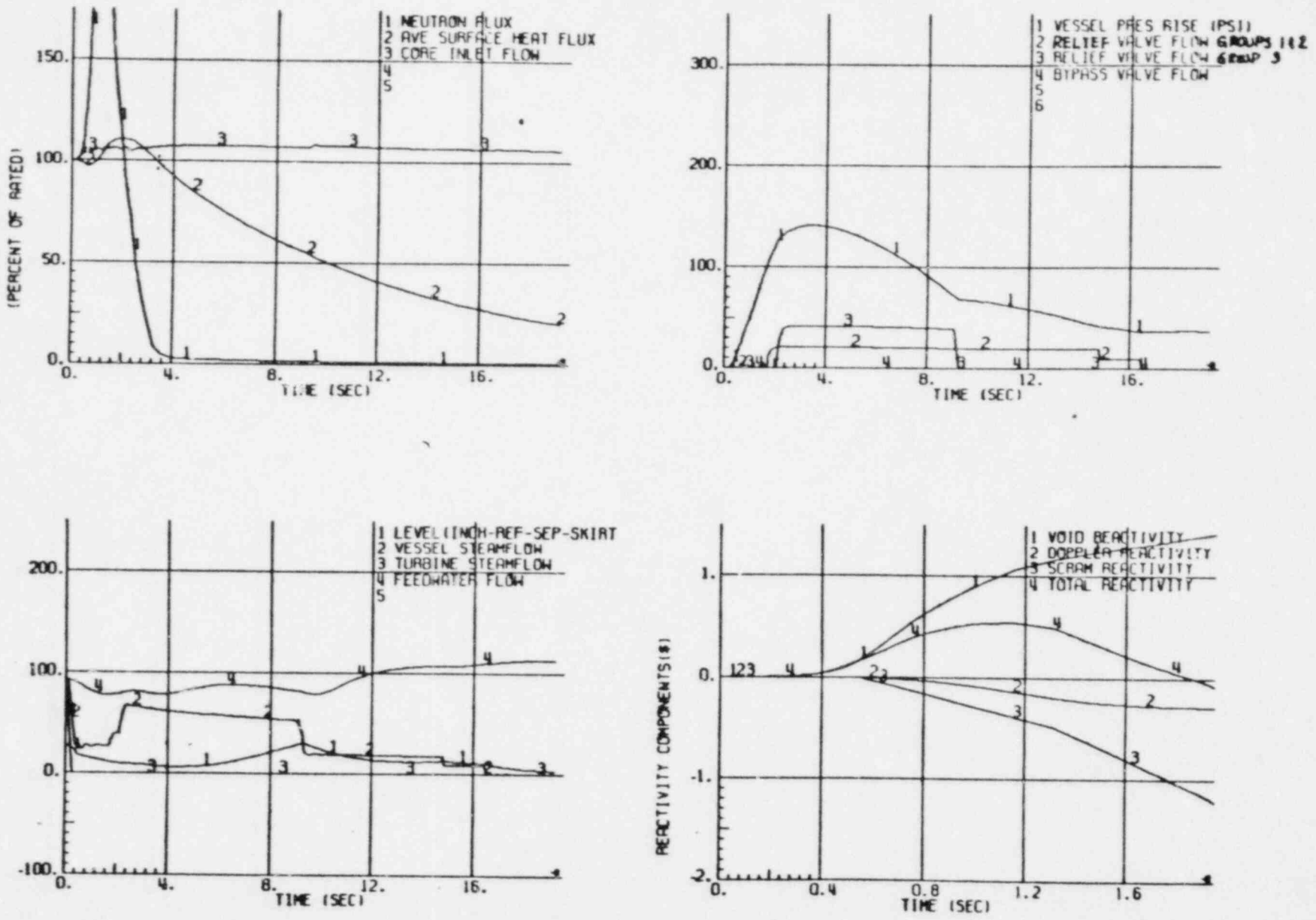

Figure 2. Generator Load Rejection, without Bypass

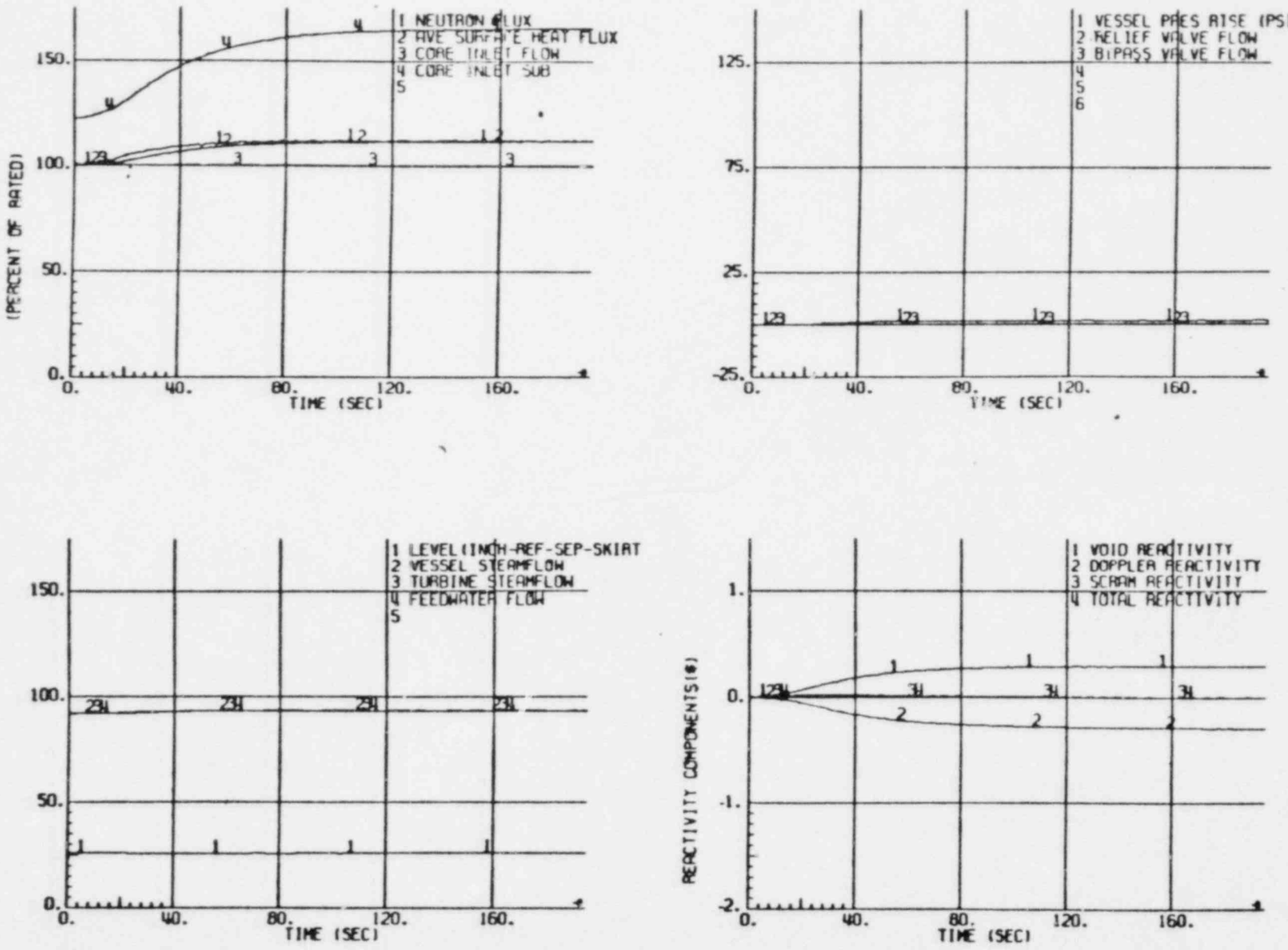

Figure 3. Loss of 100°F Feedwater Heating

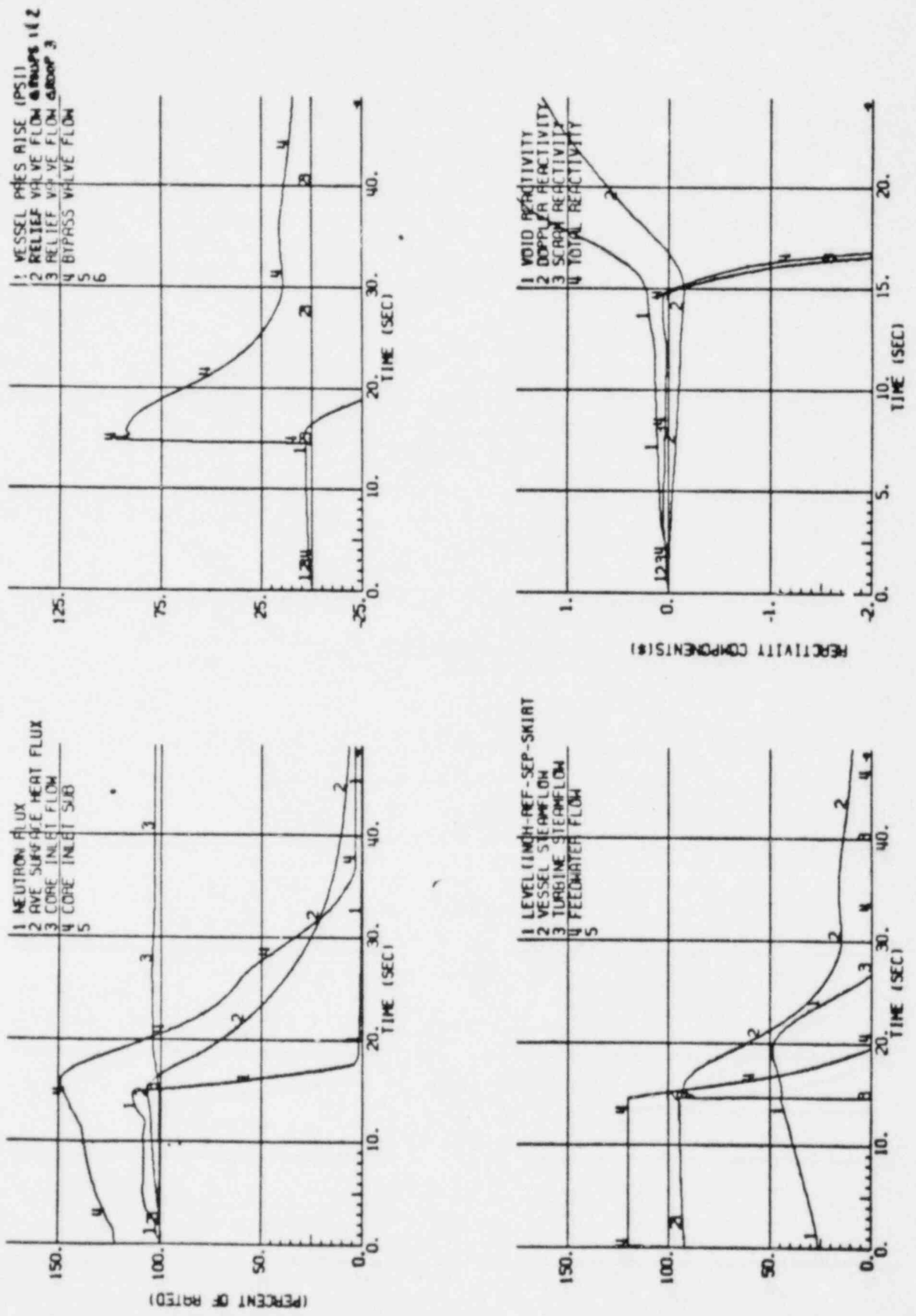

Figure 4. Feedwater Controller Failure

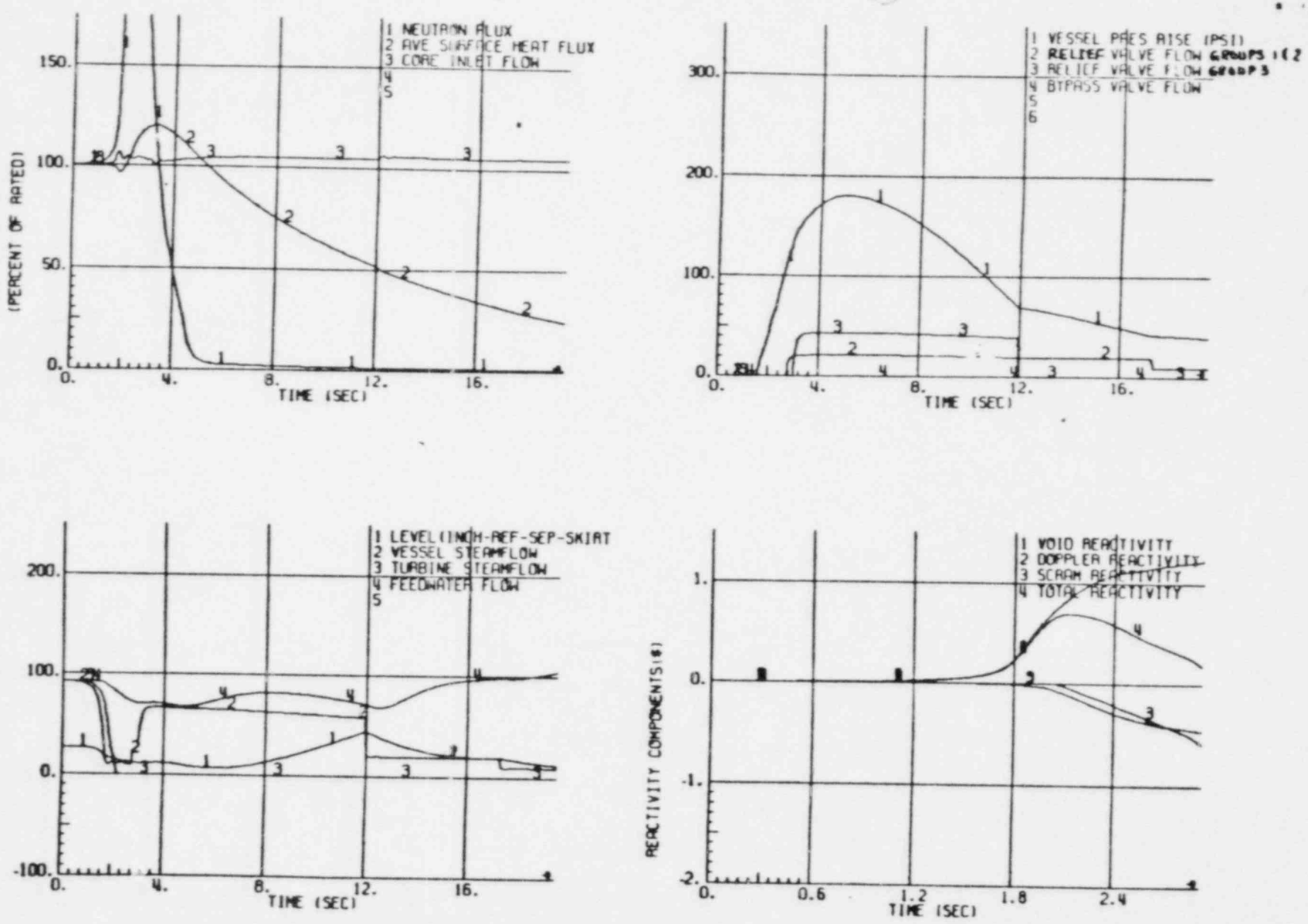

Figure 5. MSIV Closure, Flux Scram