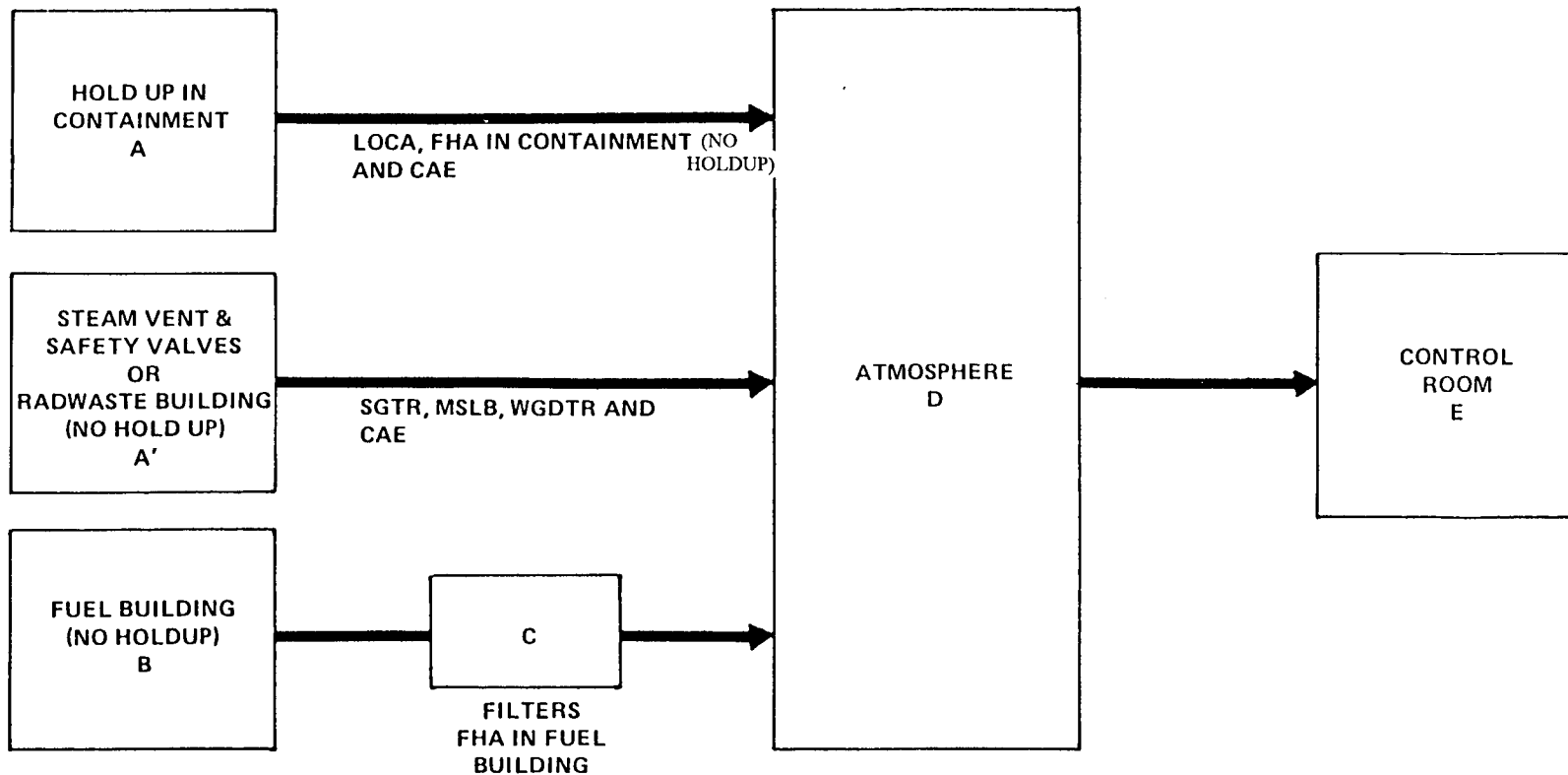
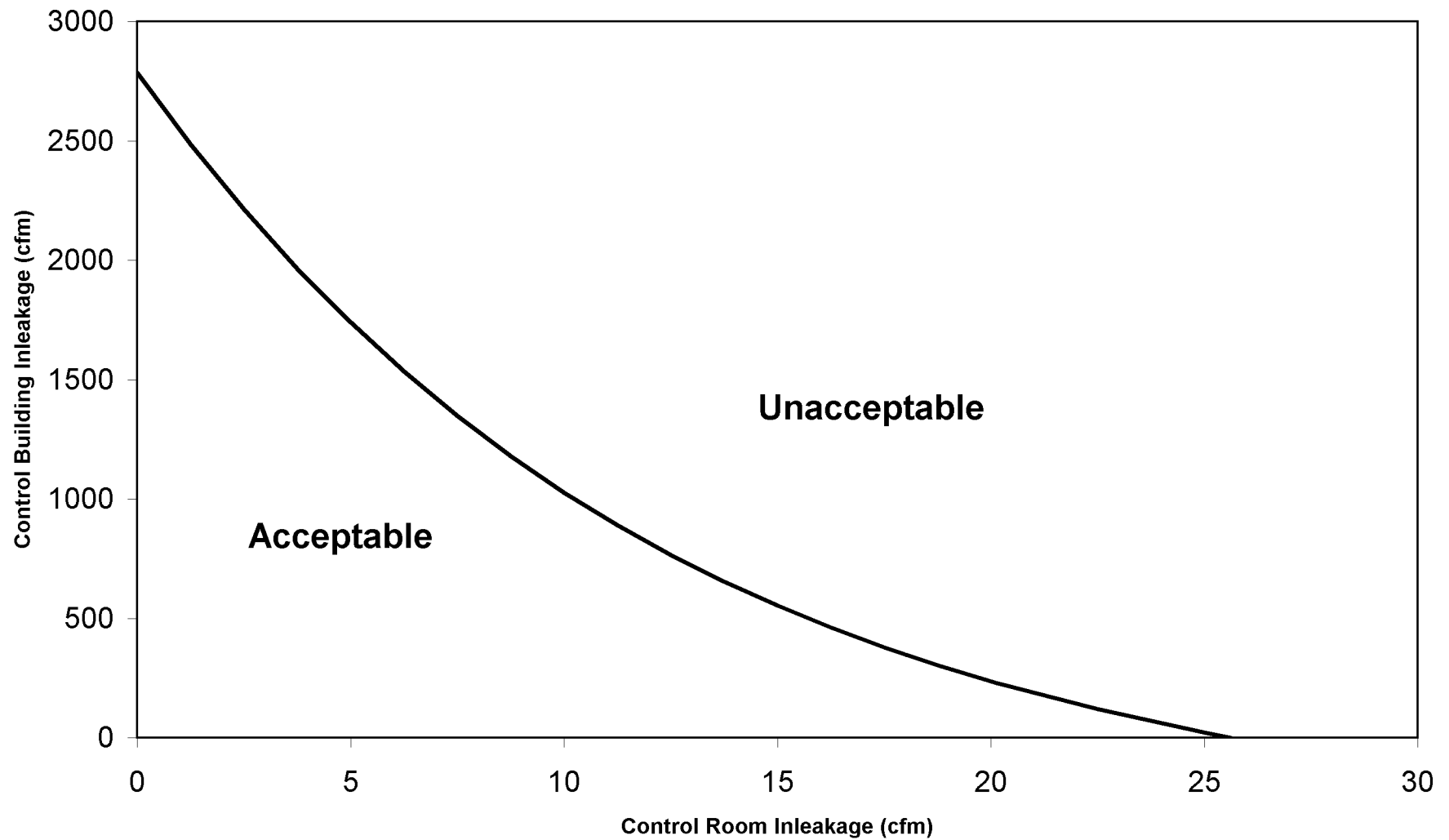




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CALLAWAY PLANT
FIGURE 15 A -1
RELEASE PATHWAYS

Allowable Inleakage Values

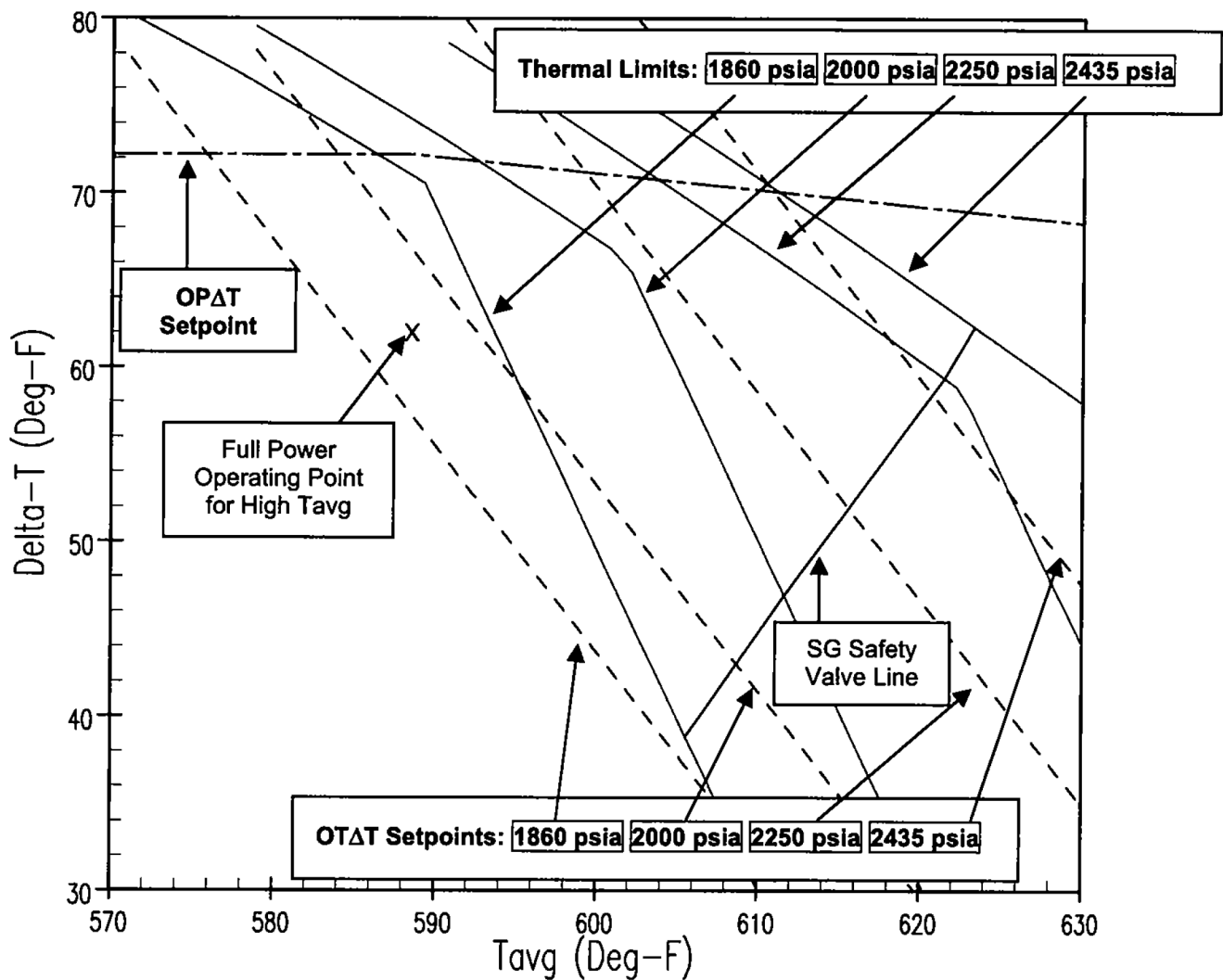


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CALLAWAY PLANT

FIGURE 15A-2

ALLOWABLE INLEAKAGE VALUES



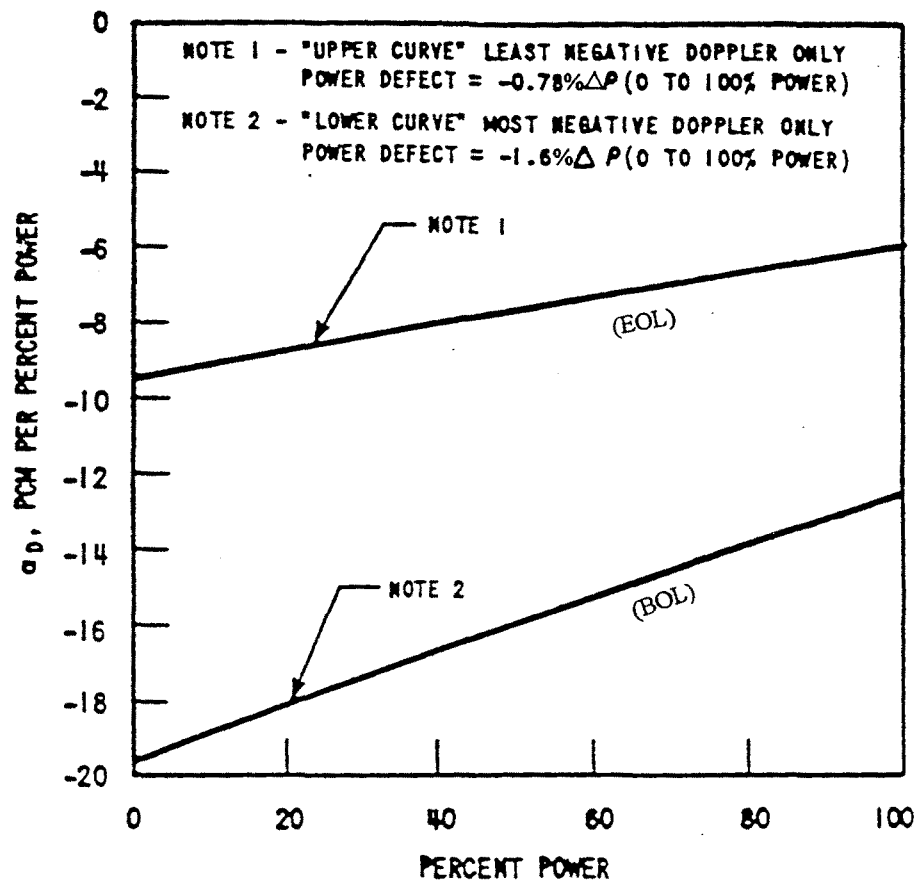
The analysis that produced the above figure conservatively bounds the actual plant configuration. This analysis uses different setpoint coefficients in the OPΔT reactor trip setpoint from what is currently configured. The effect of the differences between the analysis inputs and the plant configuration is that the analysis inputs result in delayed protection and more limiting results.

CALLAWAY PLANT

FIGURE 15.0-1

ILLUSTRATION OF OVERPOWER
AND
OVERTEMPERATURE PROTECTION

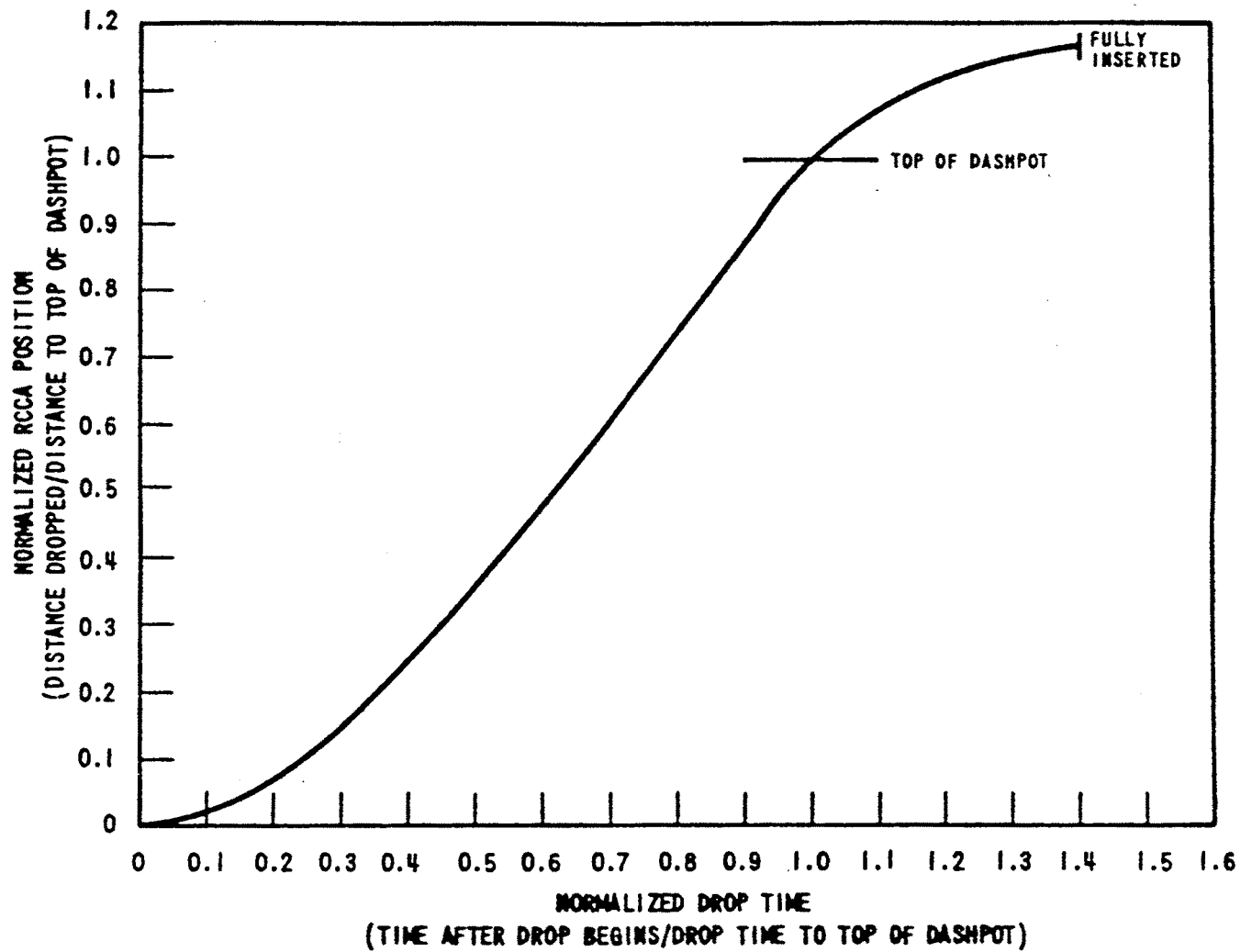
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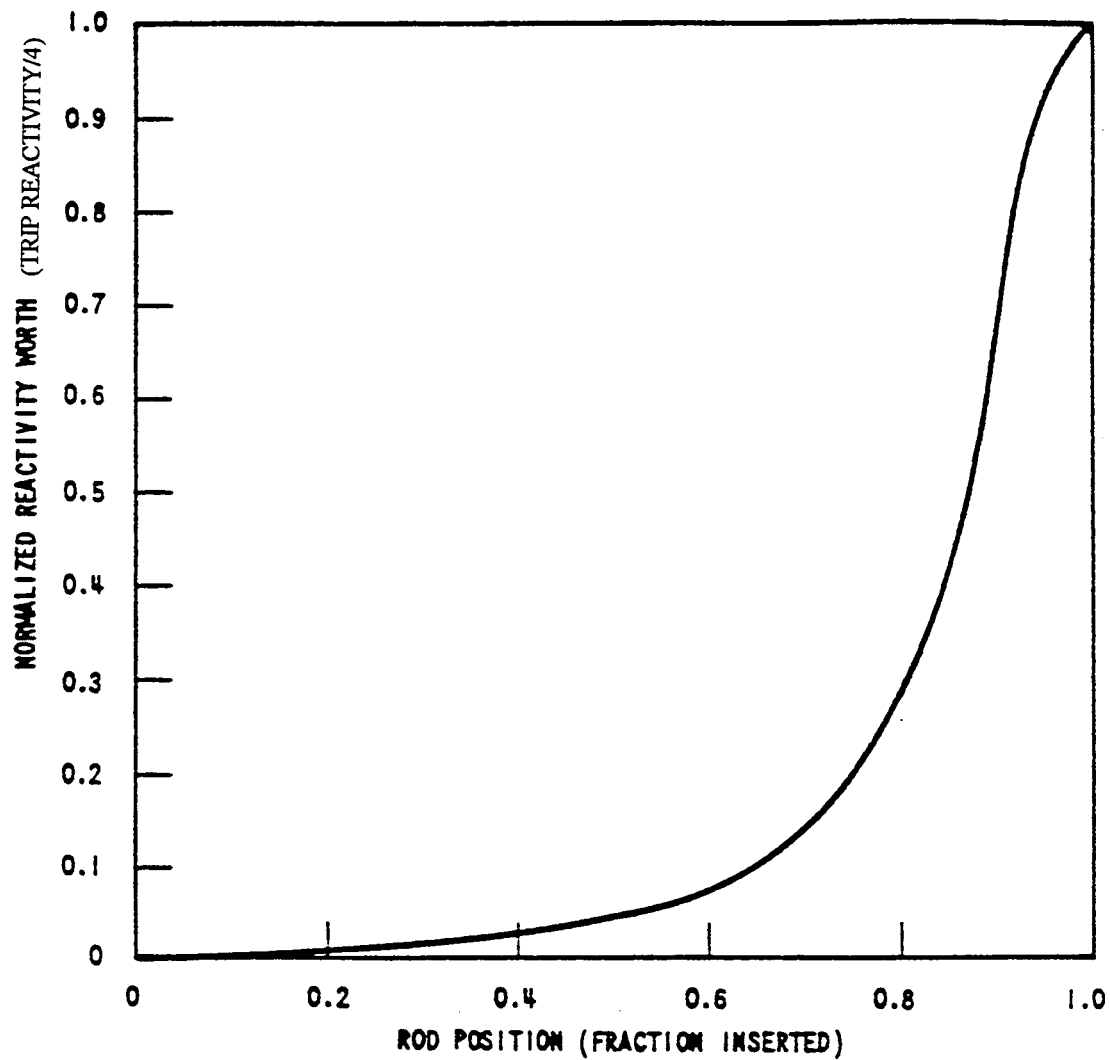
Figure 15.0-2
Doppler Power Coefficient Used
in Accident Analysis



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CALLAWAY PLANT

FIGURE 15.0-3
RCCA POSITION VERSUS
TIME TO DASHPOT

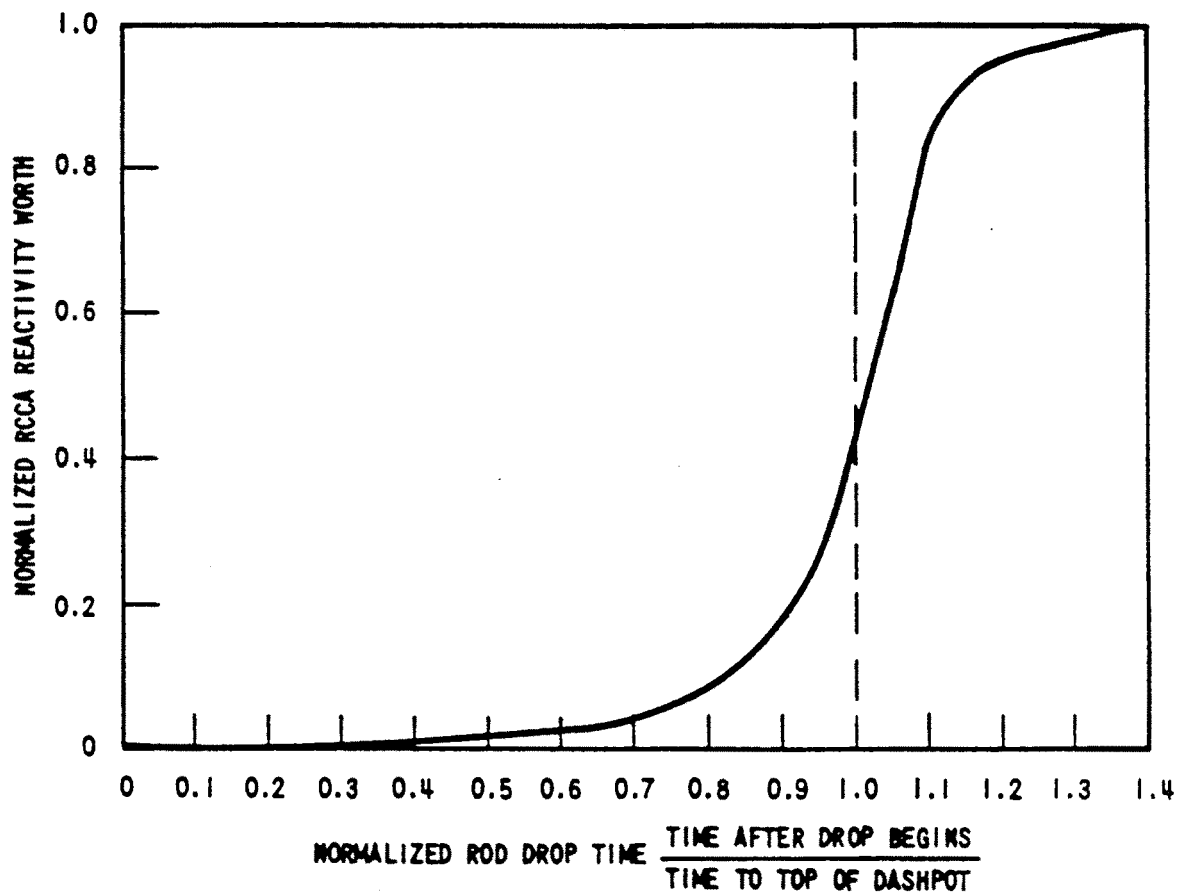


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CALLAWAY PLANT

FIGURE 15.0-4

NORMALIZED ROD WORTH VERSUS
PERCENT INSERTED



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CALLAWAY PLANT

FIGURE 15.0-5

NORMALIZED RCCA BANK REACTIVITY
WORTH VERSUS NORMALIZED DROP TIME

Figure 15.0-6 Deleted

ABBREVIATIONS USED:

AFWS - AUXILIARY FEEDWATER SYSTEM
CVCS - CHEMICAL AND VOLUME CONTROL
SYSTEM
ESFAS - ENGINEERED SAFETY FEATURES
ACTUATION SYSTEM
FW - FEEDWATER
RTS - REACTOR TRIP SYSTEM
SIS - SAFETY INJECTION SYSTEM
SI - SAFETY INJECTION
RT - REACTOR TRIP
CS - CONTAINMENT SPRAY

ECCS - EMERGENCY CORE COOLING SYSTEM
HL - HOT LEG
CL - COLD LEG
CCWS - COMPONENT COOLING WATER
SYSTEM
RCS - REACTOR COOLANT SYSTEM
SWS - SERVICE WATER SYSTEM
HPI - HIGH PRESSURE INJECTION
LPI - LOW PRESSURE INJECTION
CI - CONTAINMENT ISOLATION
SG - STEAM GENERATOR

NOTES:

1. FOR TRIP INITIATION AND SAFETY SYSTEM ACTUATION, MULTIPLE SIGNALS ARE SHOWN BUT ONLY A SINGLE SIGNAL IS REQUIRED. THE OTHER SIGNALS ARE BACKUPS.
2. NO TIMING SEQUENCE IS IMPLIED BY POSITION OF VARIOUS BRANCHES. REFER TO EVENT TIMING SEQUENCES PRESENTED IN TABULAR FORM IN PERTINENT ACCIDENT ANALYSIS SECTION OF CHAPTER 15.0 OF THE FSAR.
3. WHEN OVERTEMPERATURE AND OVERPOWER ARE USED IT REFERS TO OT-DELTA T AND OP-DELTA T.

DIAGRAM SYMBOLS:



- EVENT TITLE



- BRANCH POINT FOR DIFFERENT PLANT CONDITIONS



- SAFETY SYSTEM



- SAFETY ACTION



- SYSTEM REQUIRED TO MEET SINGLE-FAILURE CRITERIA

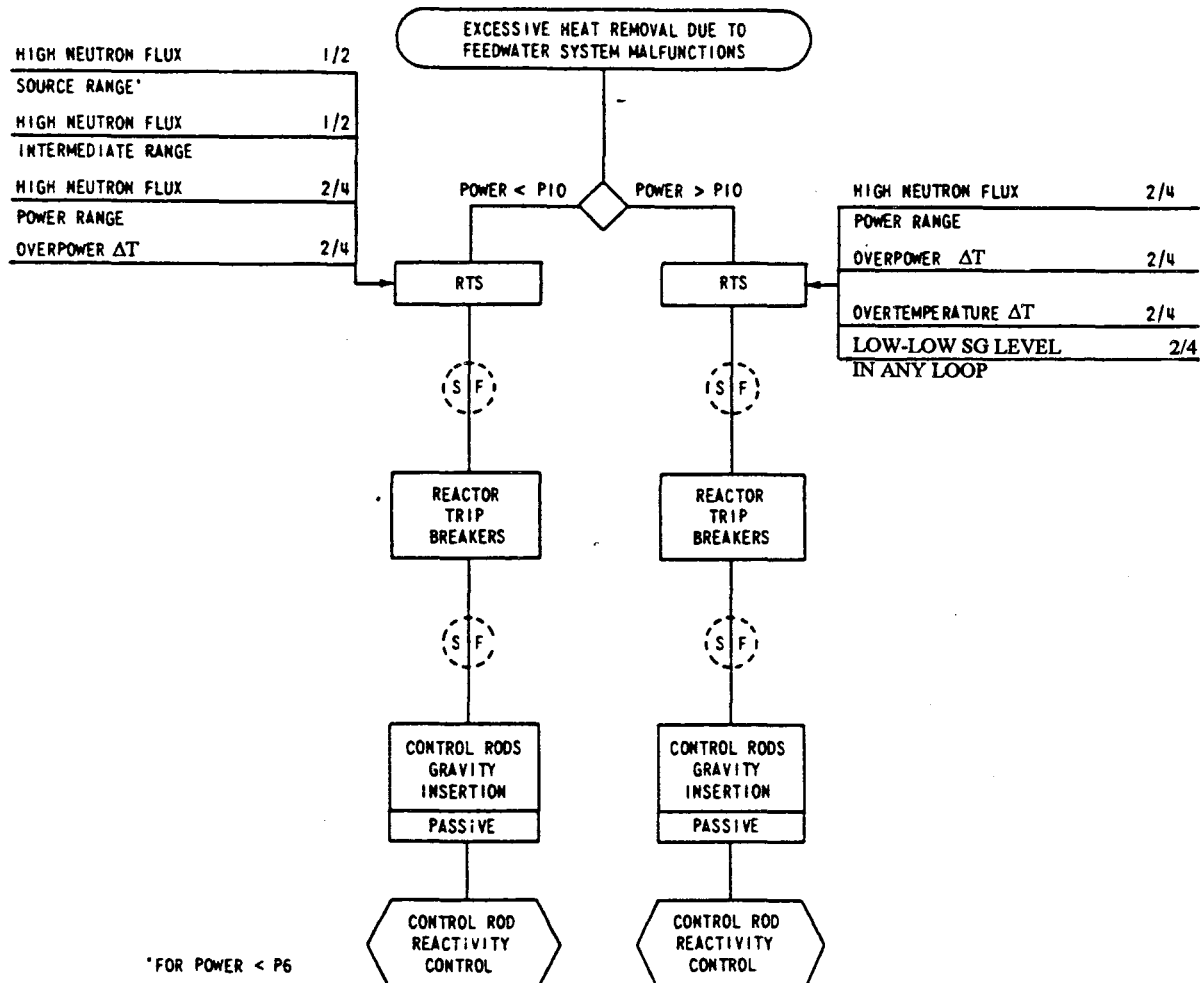


- MANUAL ACTION REQUIRED DURING SYSTEM OPERATION

CALLAWAY PLANT

FIGURE 15.0-7

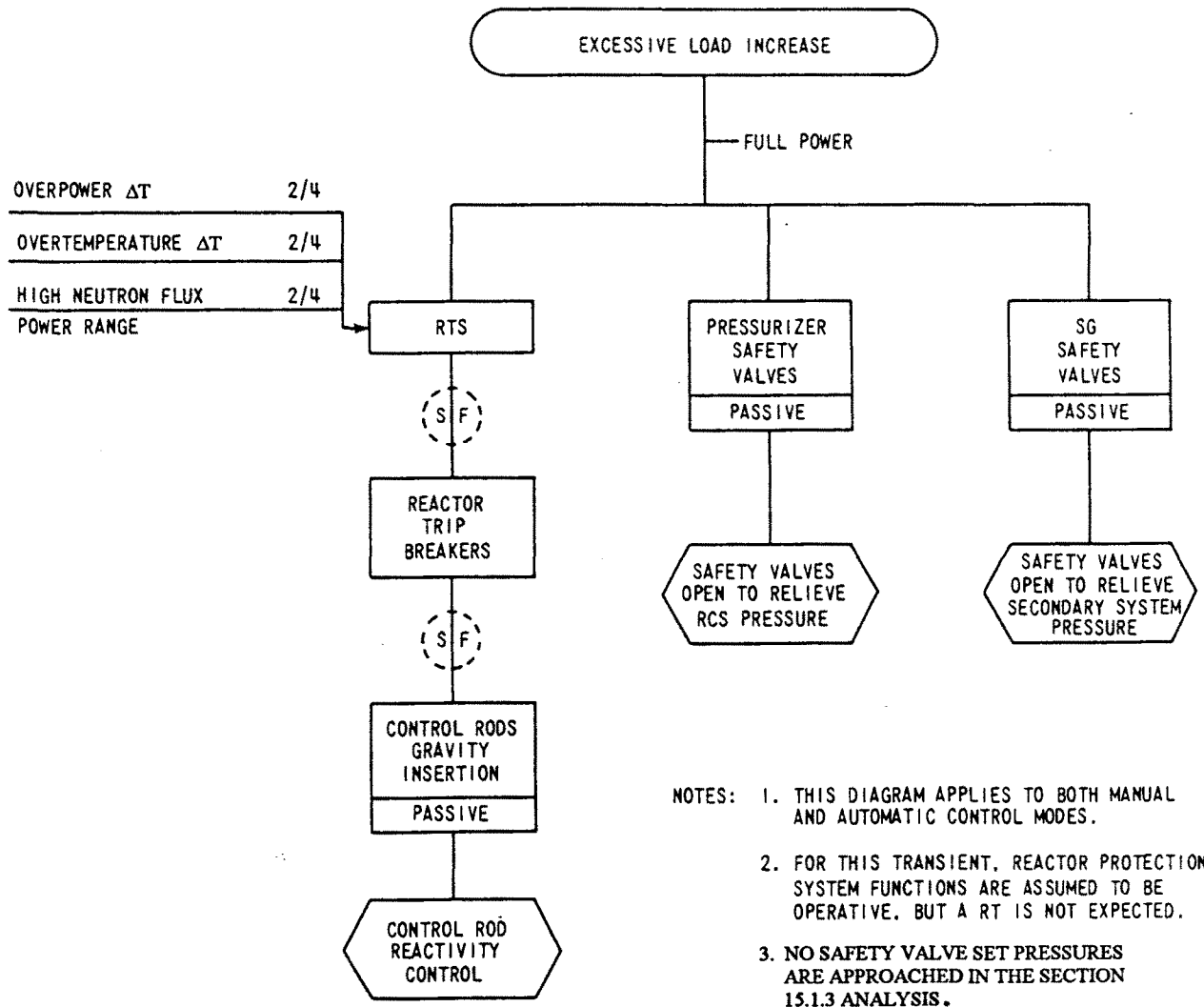
**ABBREVIATIONS AND SYMBOLS
USED IN SEQUENCE DIAGRAMS**



CALLAWAY PLANT

FIGURE 15.0-8

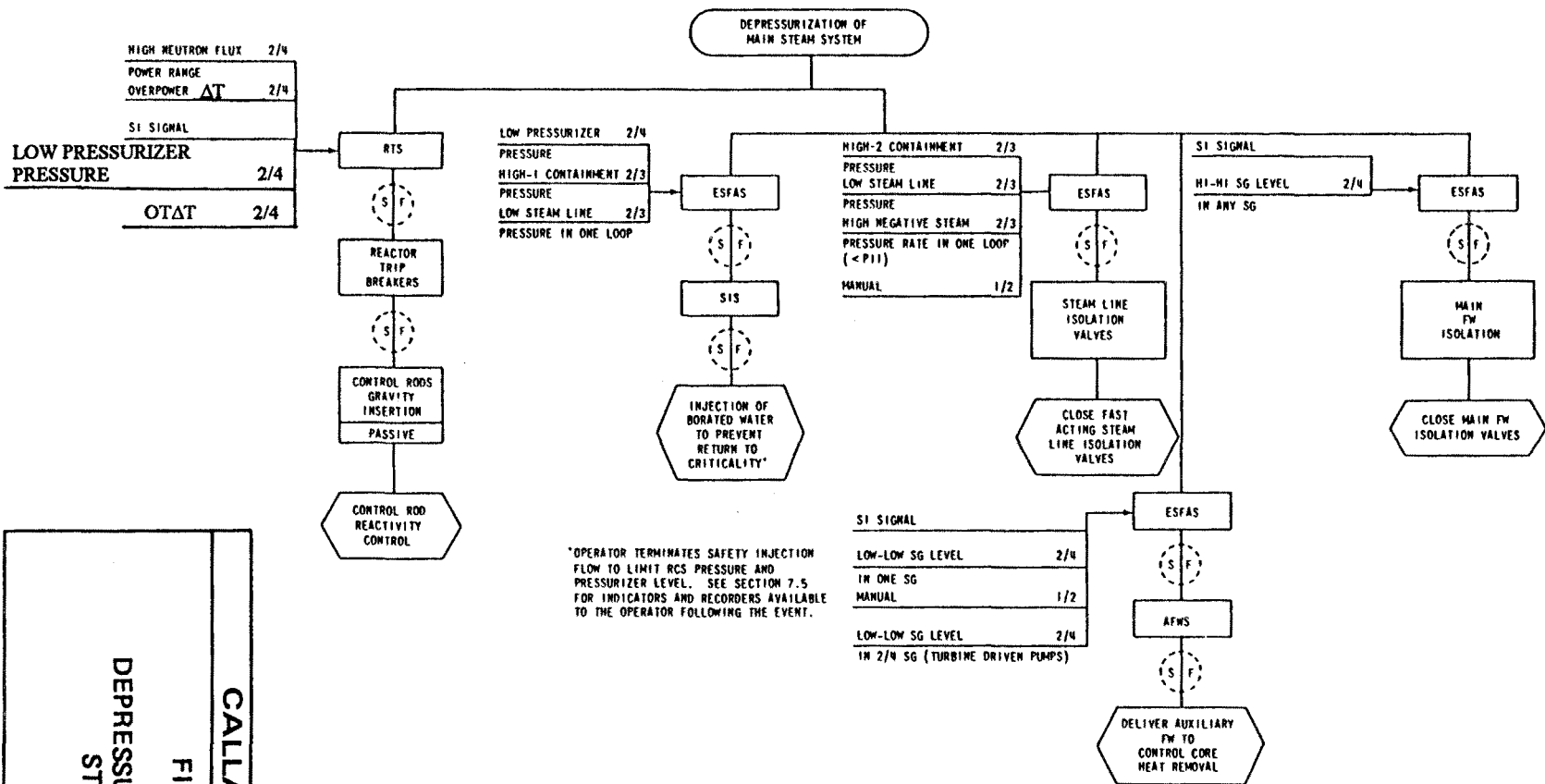
EXCESSIVE HEAT REMOVAL DUE TO
FEEDWATER SYSTEMS MALFUNCTION



CALLAWAY PLANT

FIGURE 15.0-9

EXCESSIVE LOAD INCREASE

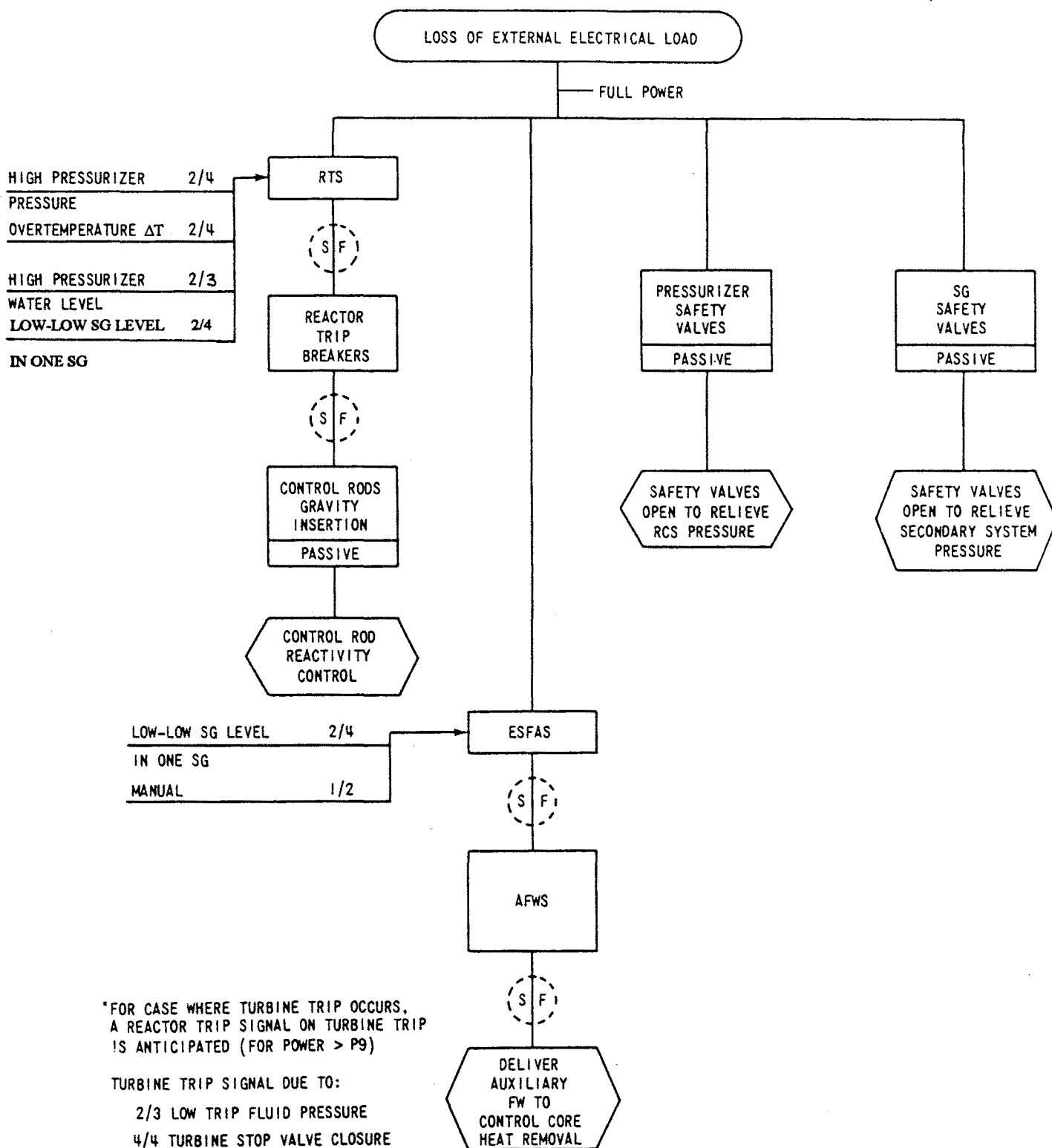


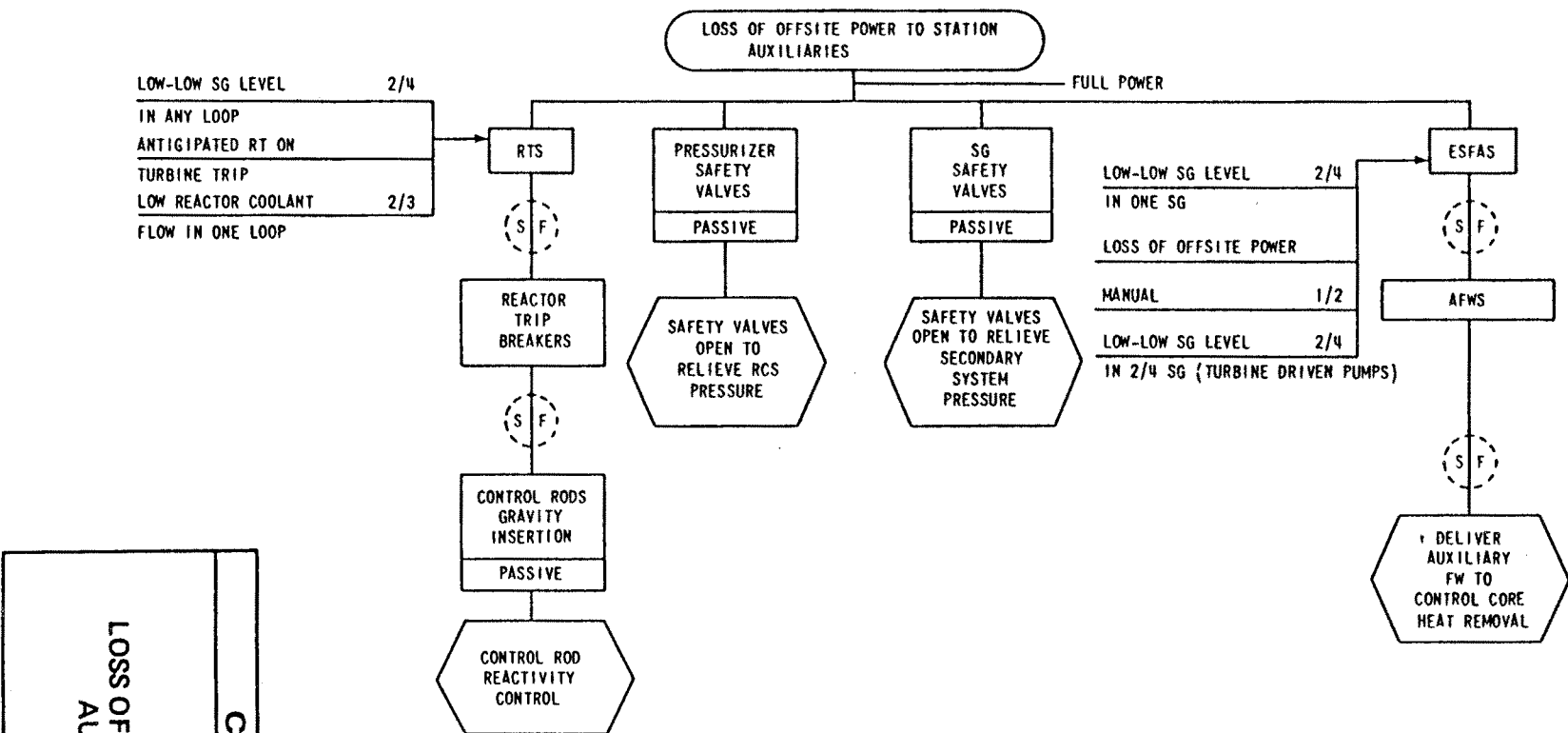
CALLAWAY PLANT

FIGURE 15.0-10

DEPRESSURIZATION OF MAIN STEAM SYSTEM

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**CALLAWAY PLANT****FIGURE 15.0-11****LOSS OF EXTERNAL LOAD**



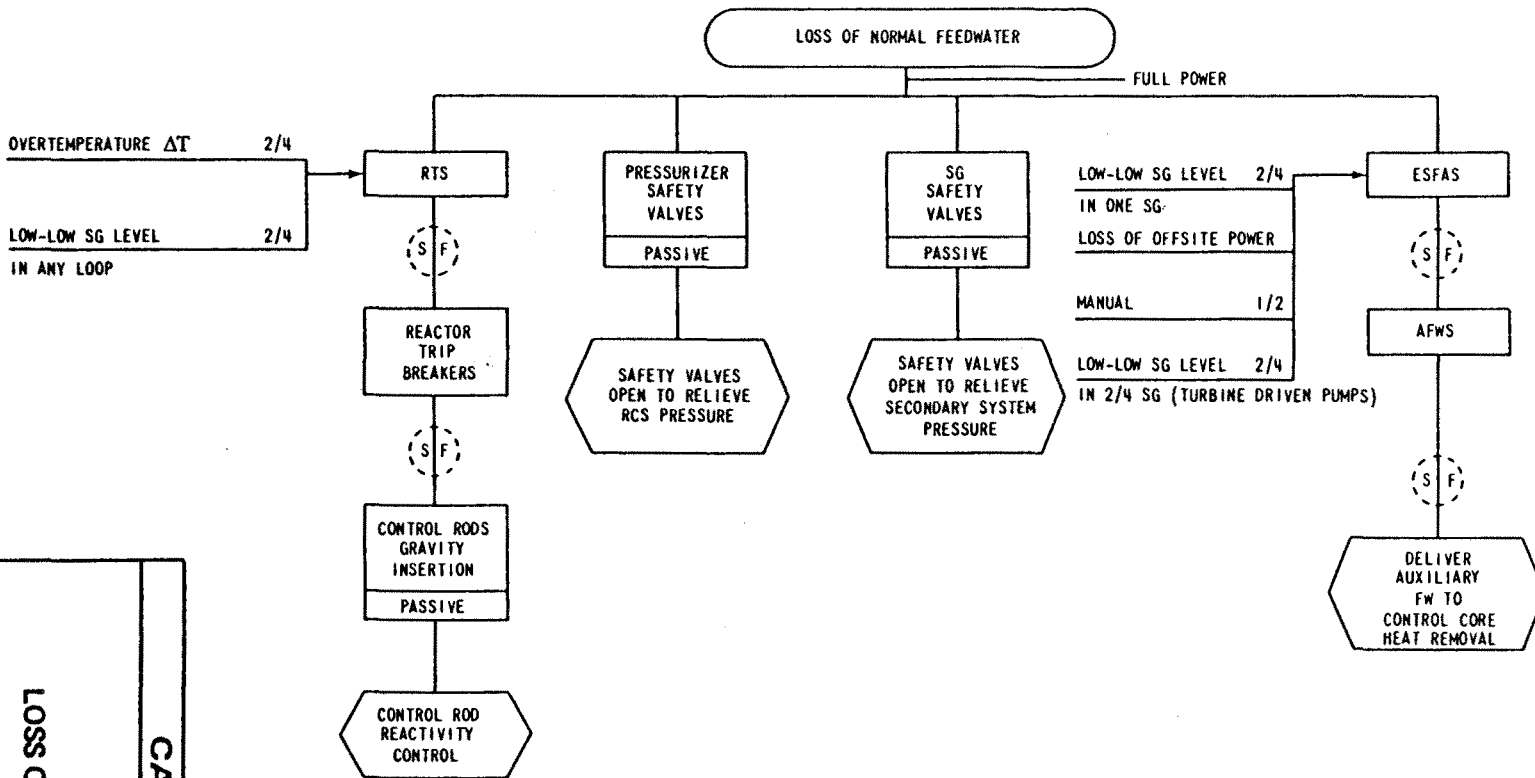
LOSS OF OFFSITE POWER TO STATION
AUXILIARIES

FIGURE 15.0-12

CALLAWAY PLANT

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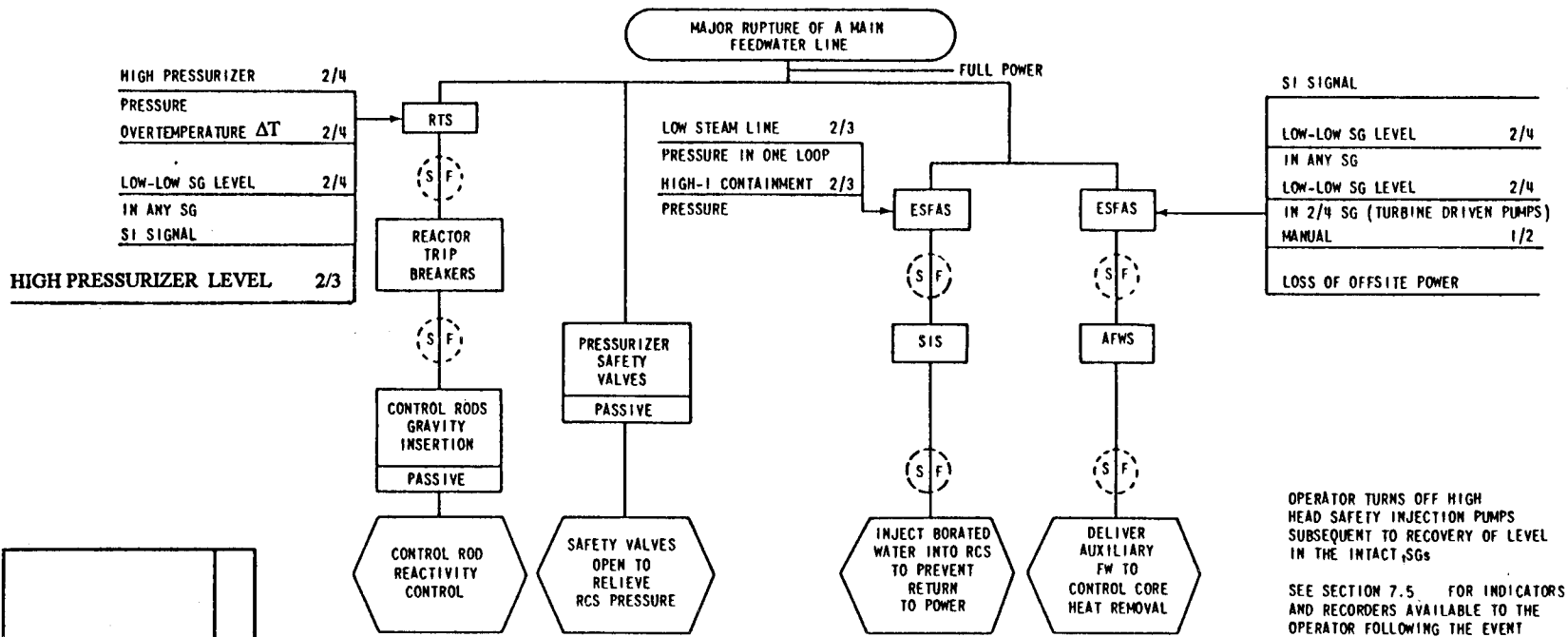
14,114-5



LOSS OF NORMAL FEEDWATER

FIGURE 15.0-13

CALLAWAY PLANT

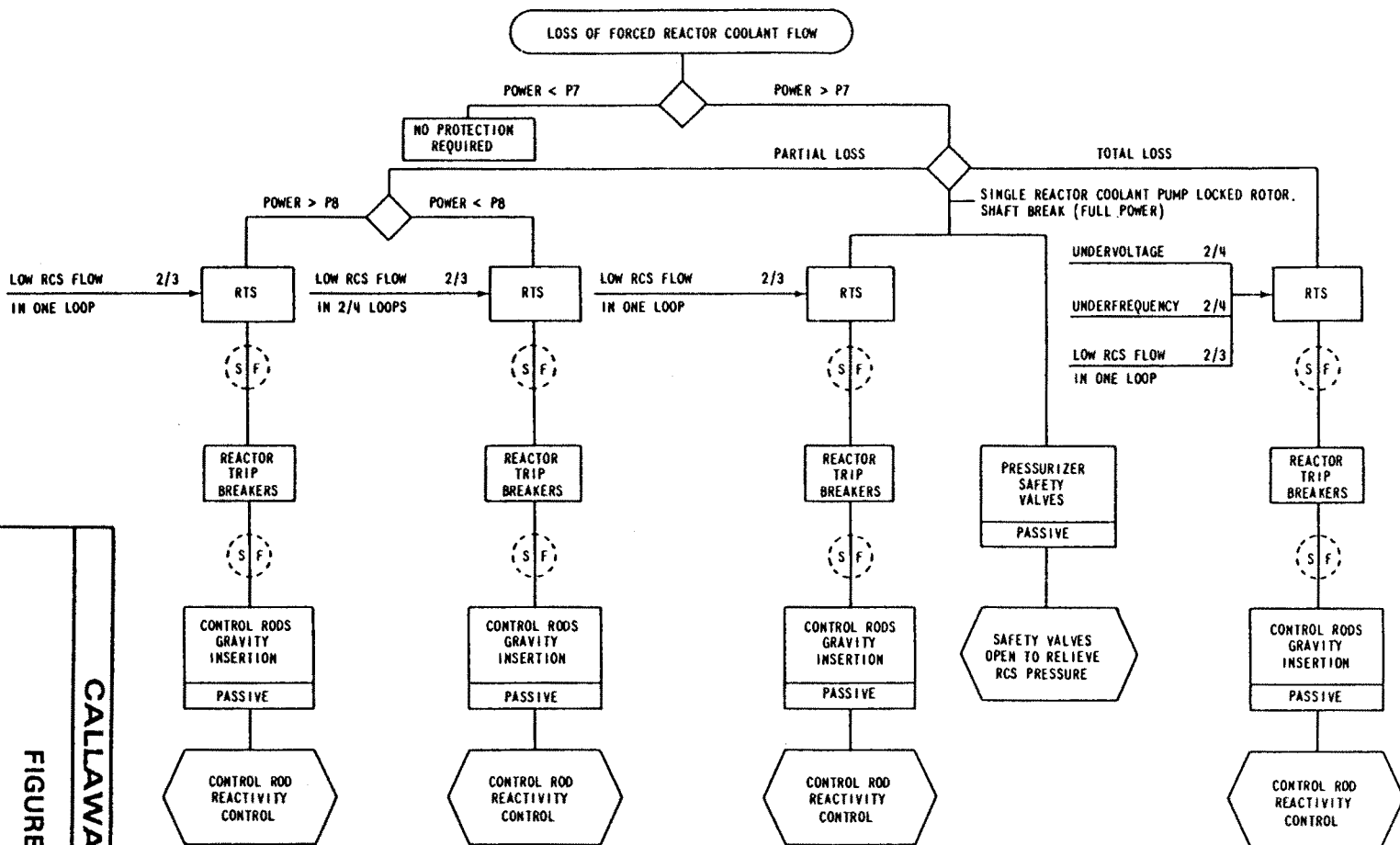


CALLAWAY PLANT

FIGURE 15.0-14

MAJOR RUPTURE OF A MAIN FEEDWATER LINE

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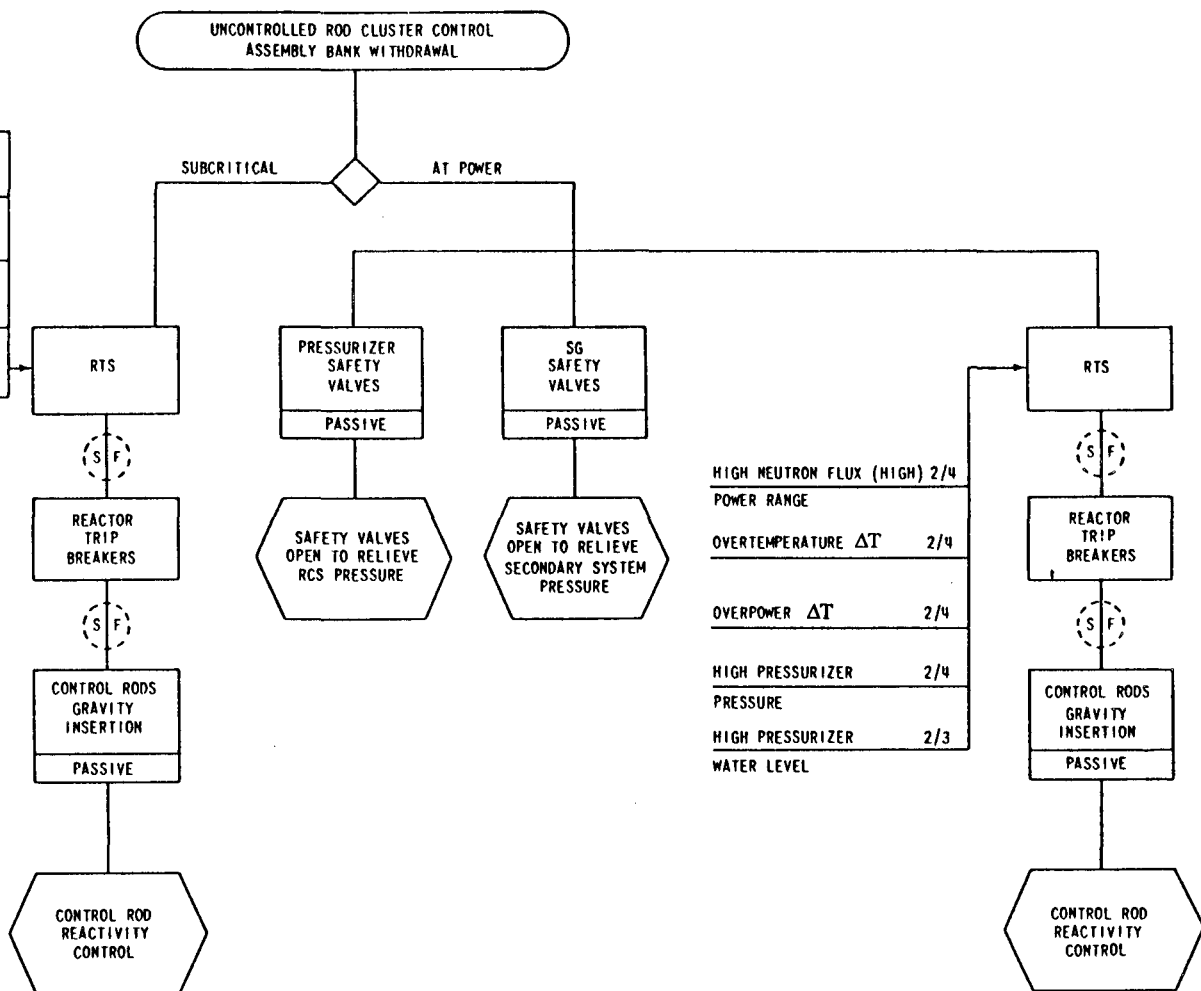


LOSS OF FORCED REACTOR
COOLANT FLOW

FIGURE 15.0-15

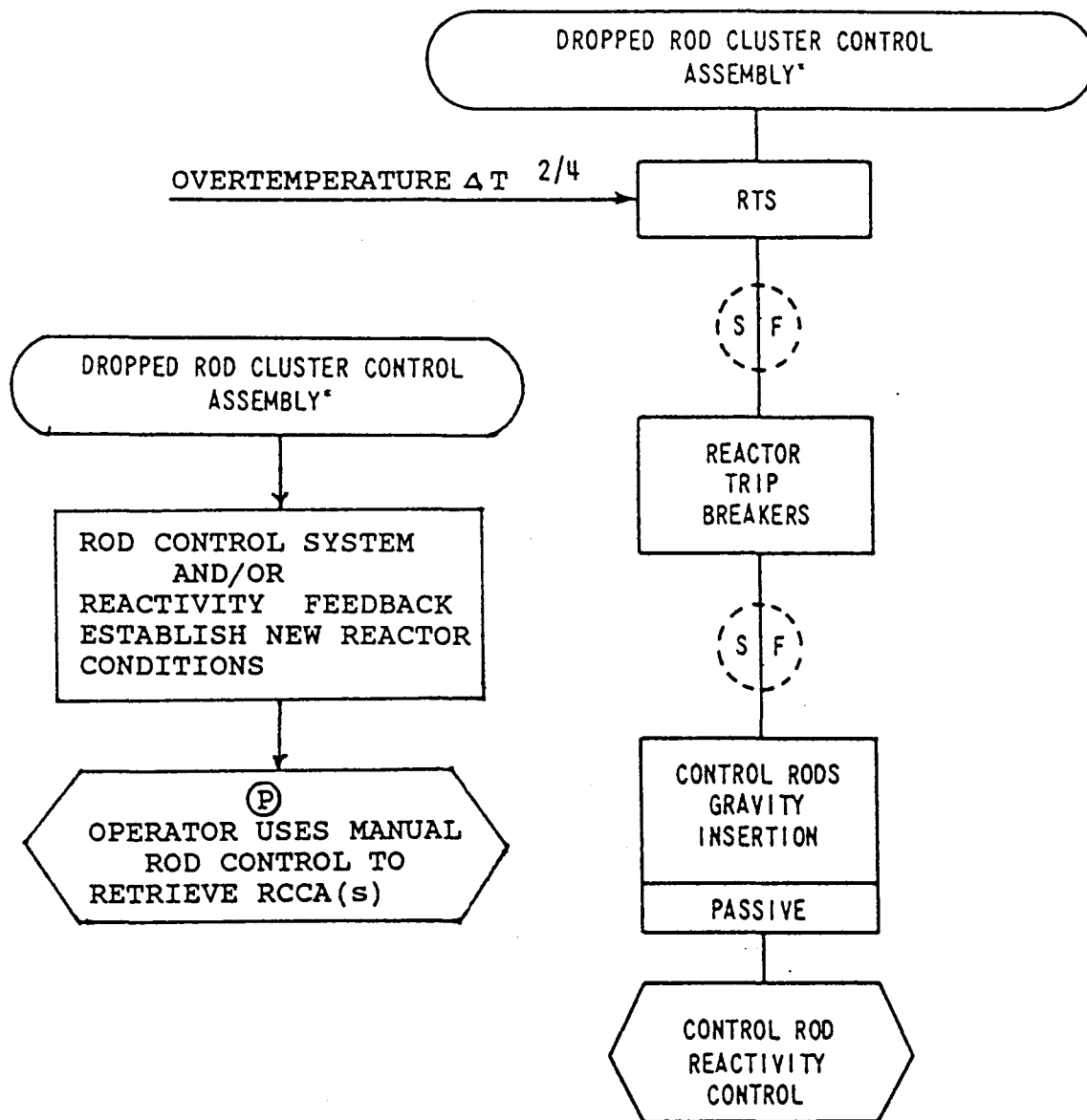
CALLAWAY PLANT

HIGH NEUTRON FLUX	1/2
SOURCE RANGE	
HIGH NEUTRON FLUX	1/2
INTERMEDIATE RANGE	
HIGH NEUTRON FLUX (LOW)	2/4
POWER RANGE	
HIGH NEUTRON FLUX (HIGH)	2/4
POWER RANGE	
HIGH NEUTRON FLUX RATE	2/4
POWER RANGE	



CALLAWAY PLANT
FIGURE 15.0-16
UNCONTROLLED ROD CLUSTER CONTROL
ASSEMBLY BANK WITHDRAWAL

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*TRIP SEQUENCE MAY OCCUR IF ROD WORTH IS LOW AND AUTOMATIC ROD WITHDRAWAL IS RAPID. TRIP IS NOT MODELED IN THE SAFETY ANALYSIS.

CALLAWAY PLANT

FIGURE 15.0-17

DROPPED ROD CLUSTER CONTROL ASSEMBLY

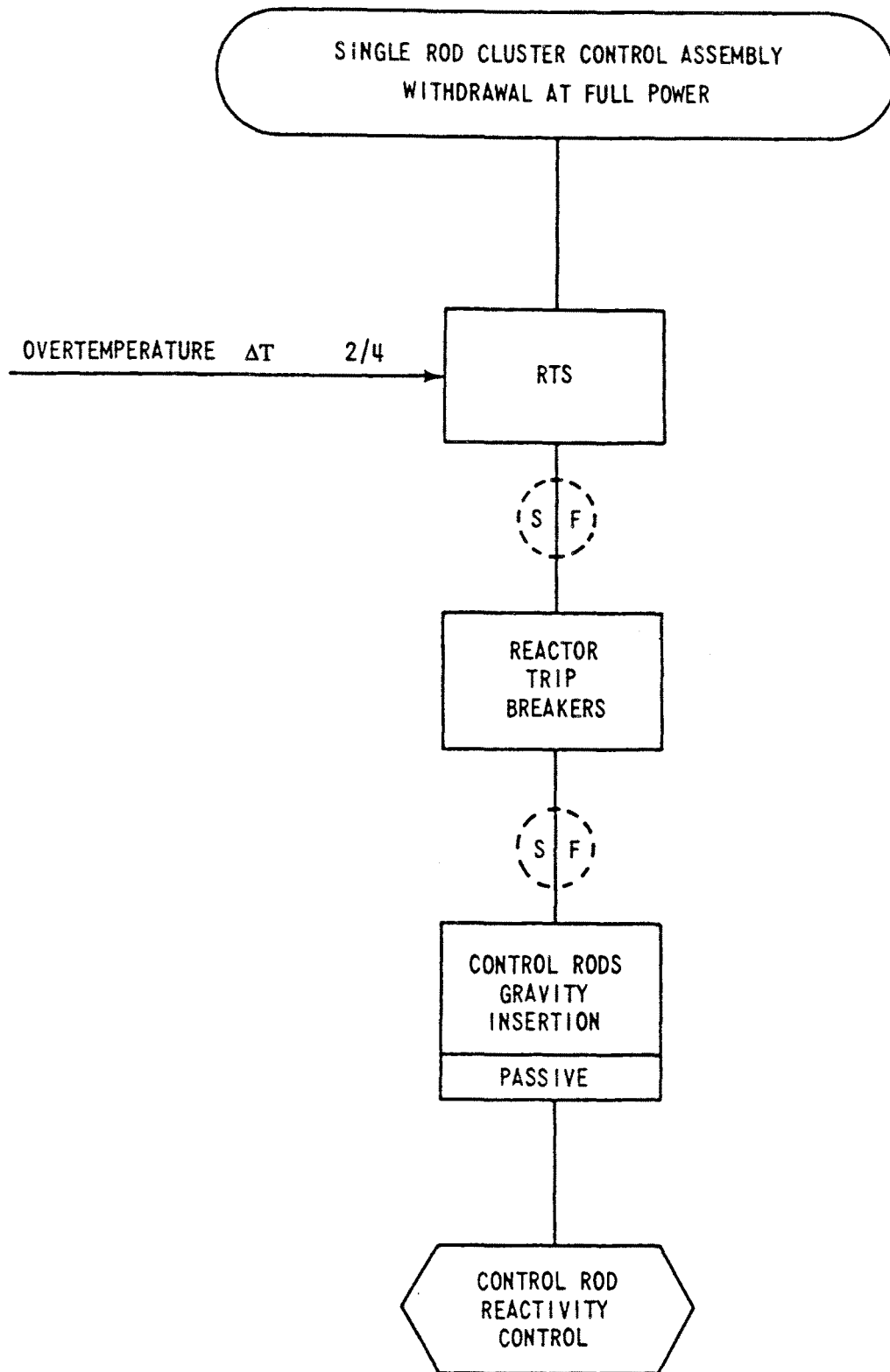
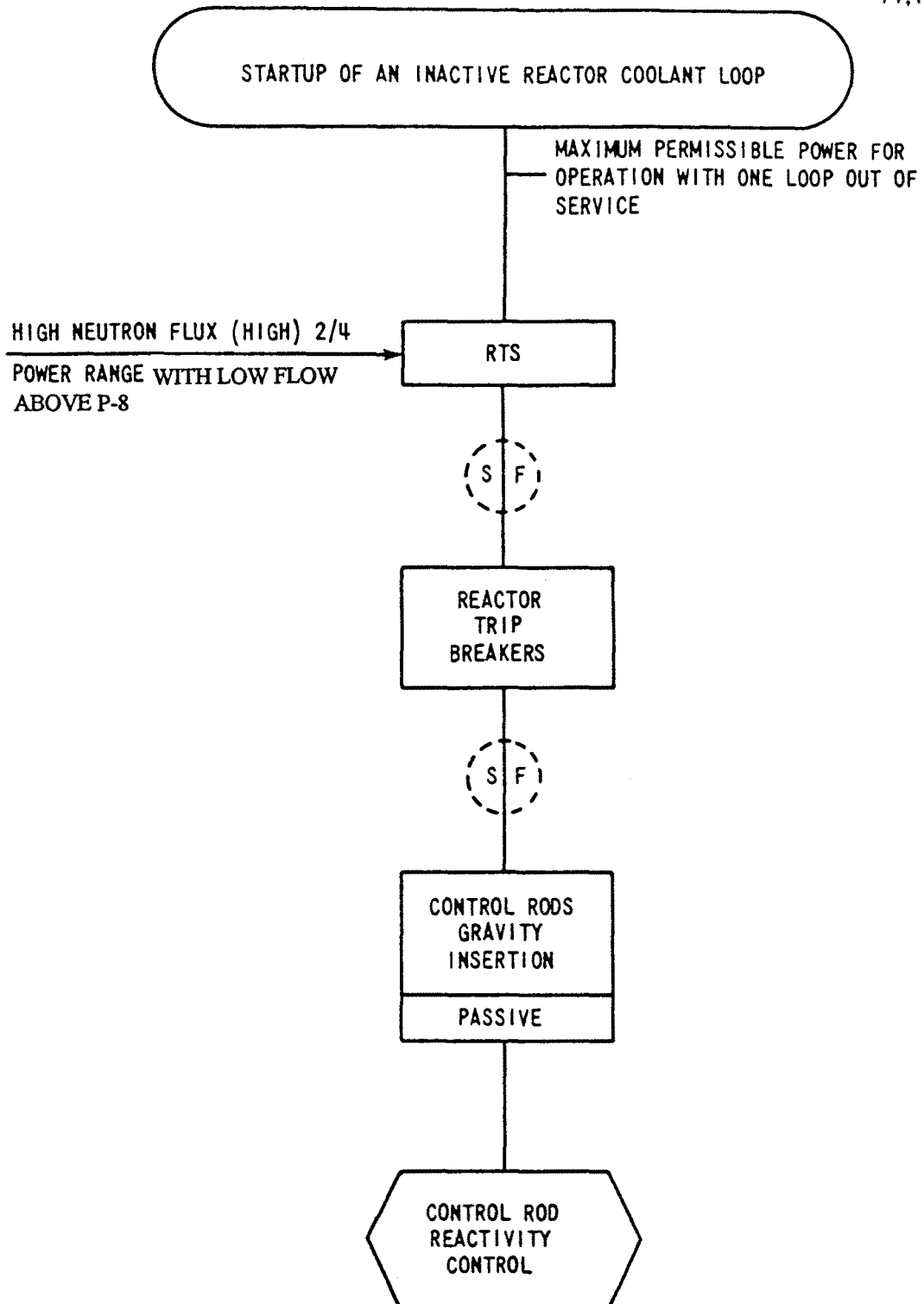
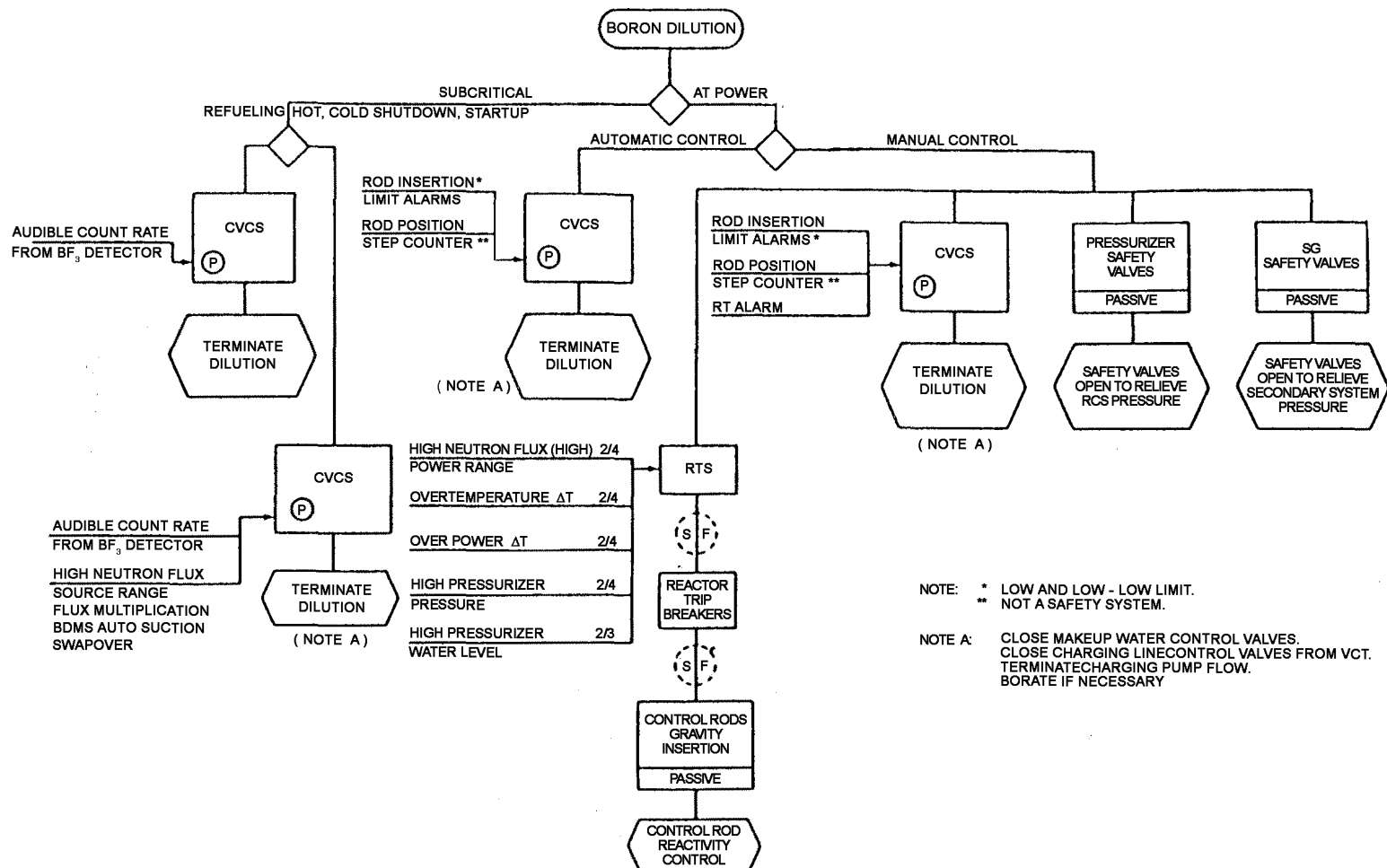
**CALLAWAY PLANT**

FIGURE 15.0-18

SINGLE ROD CLUSTER CONTROL ASSEMBLY
WITHDRAWAL AT FULL POWER

**CALLAWAY PLANT****FIGURE 15.0-19****STARTUP OF AN INACTIVE
REACTOR COOLANT LOOP**



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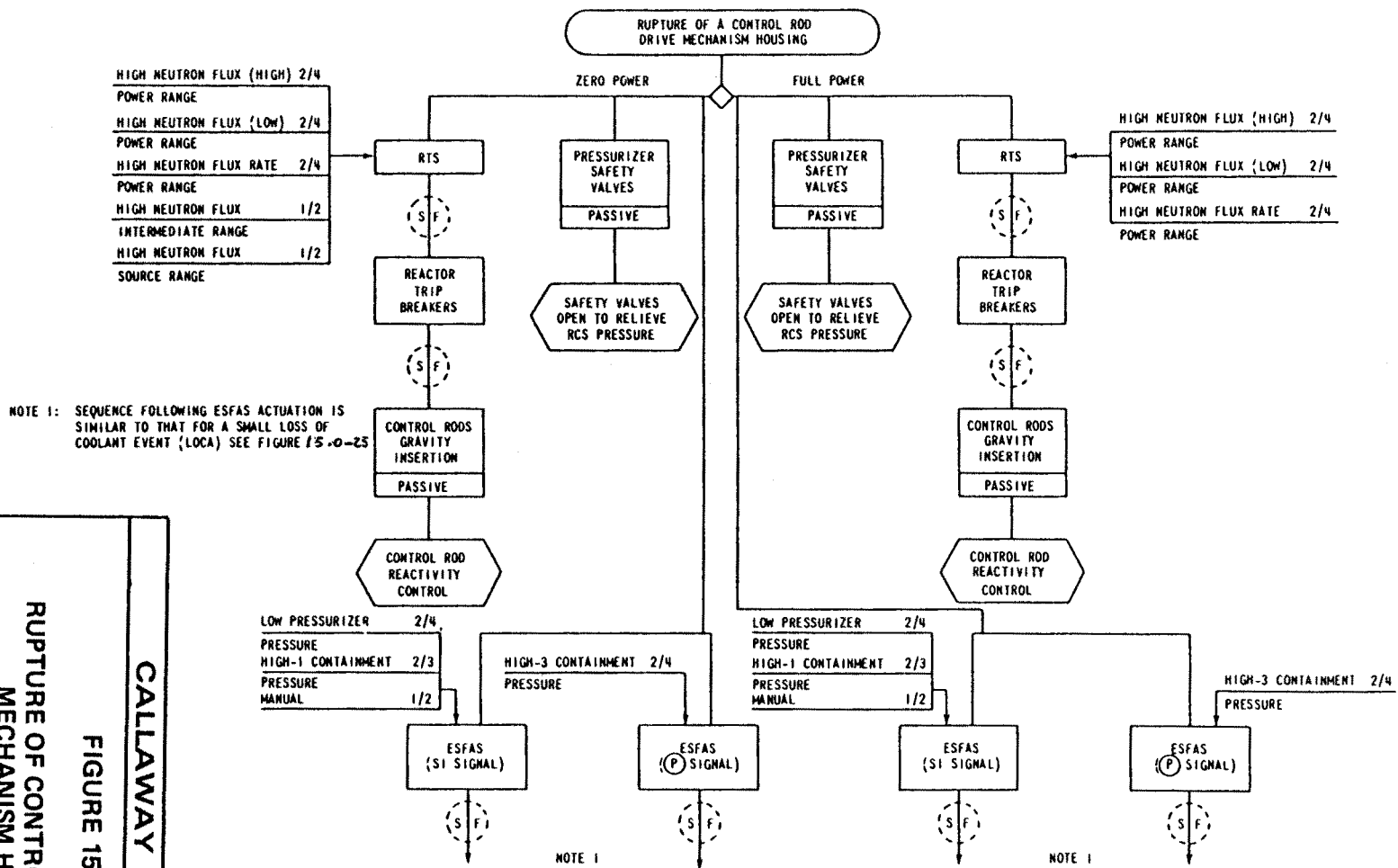
CALLAWAY PLANT

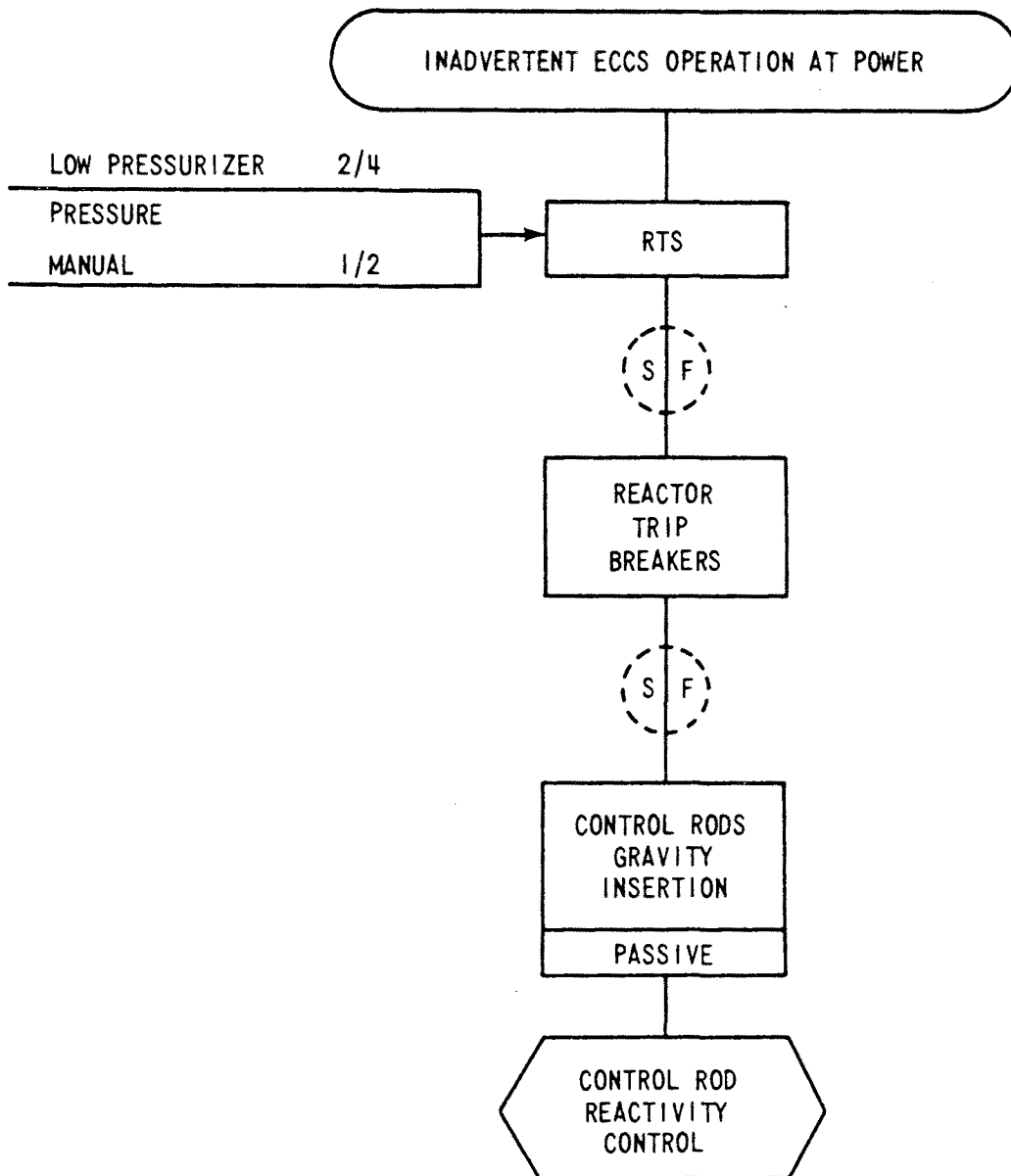
**FIGURE 15.0-20
BORON DILUTION**

RUPTURE OF CONTROL ROD DRIVE
MECHANISM HOUSING

FIGURE 15.0-21

CALLAWAY PLANT

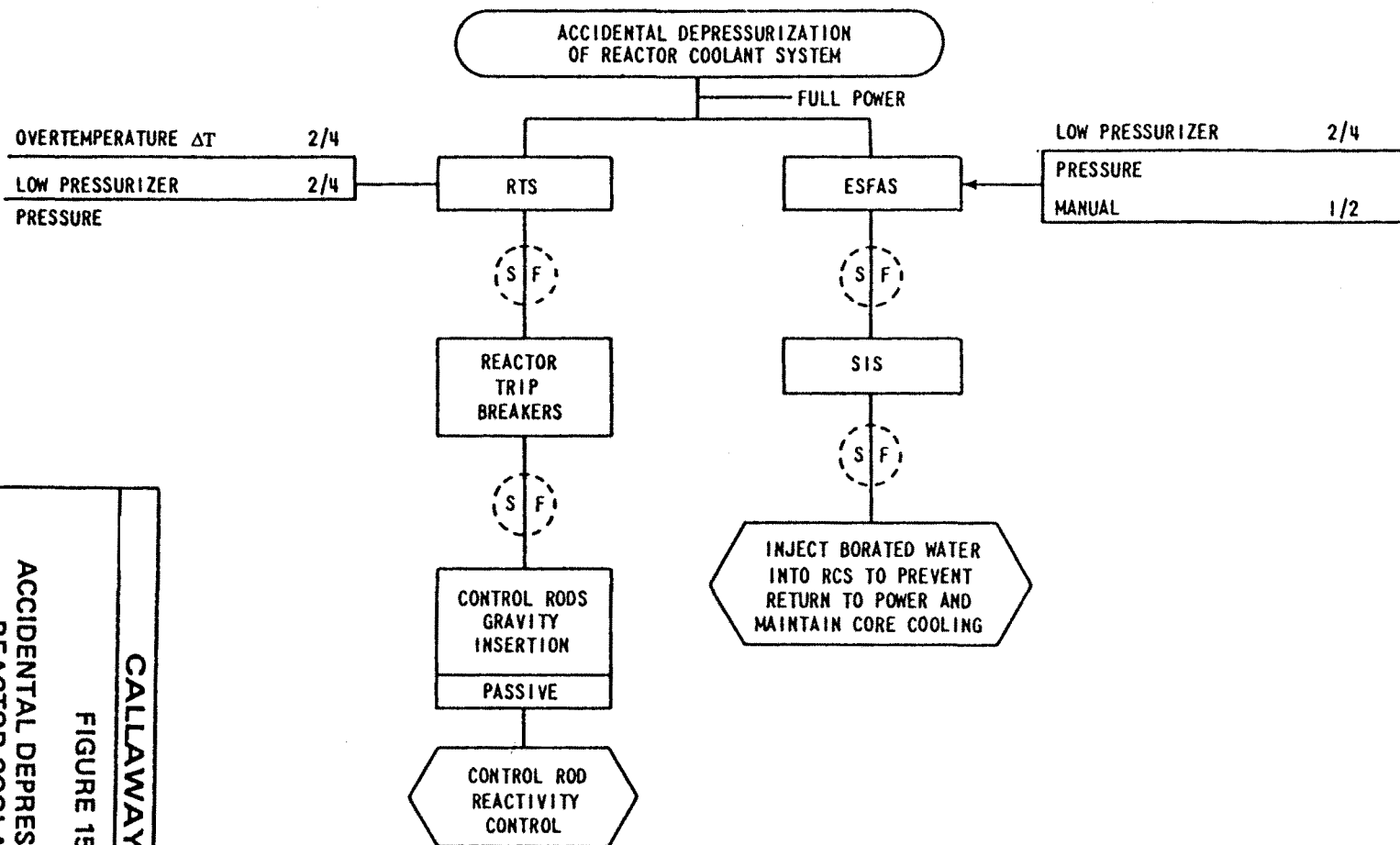


**CALLAWAY PLANT****FIGURE 15.0-22****INADVERTENT ECCS OPERATION
AT POWER**

ACCIDENTAL DEPRESSURIZATION OF
REACTOR COOLANT SYSTEM

FIGURE 15.0-23

CALLAWAY PLANT



STEAM GENERATOR TUBE RUPTURE

CALLAWAY PLANT

FIGURE 15.0-24

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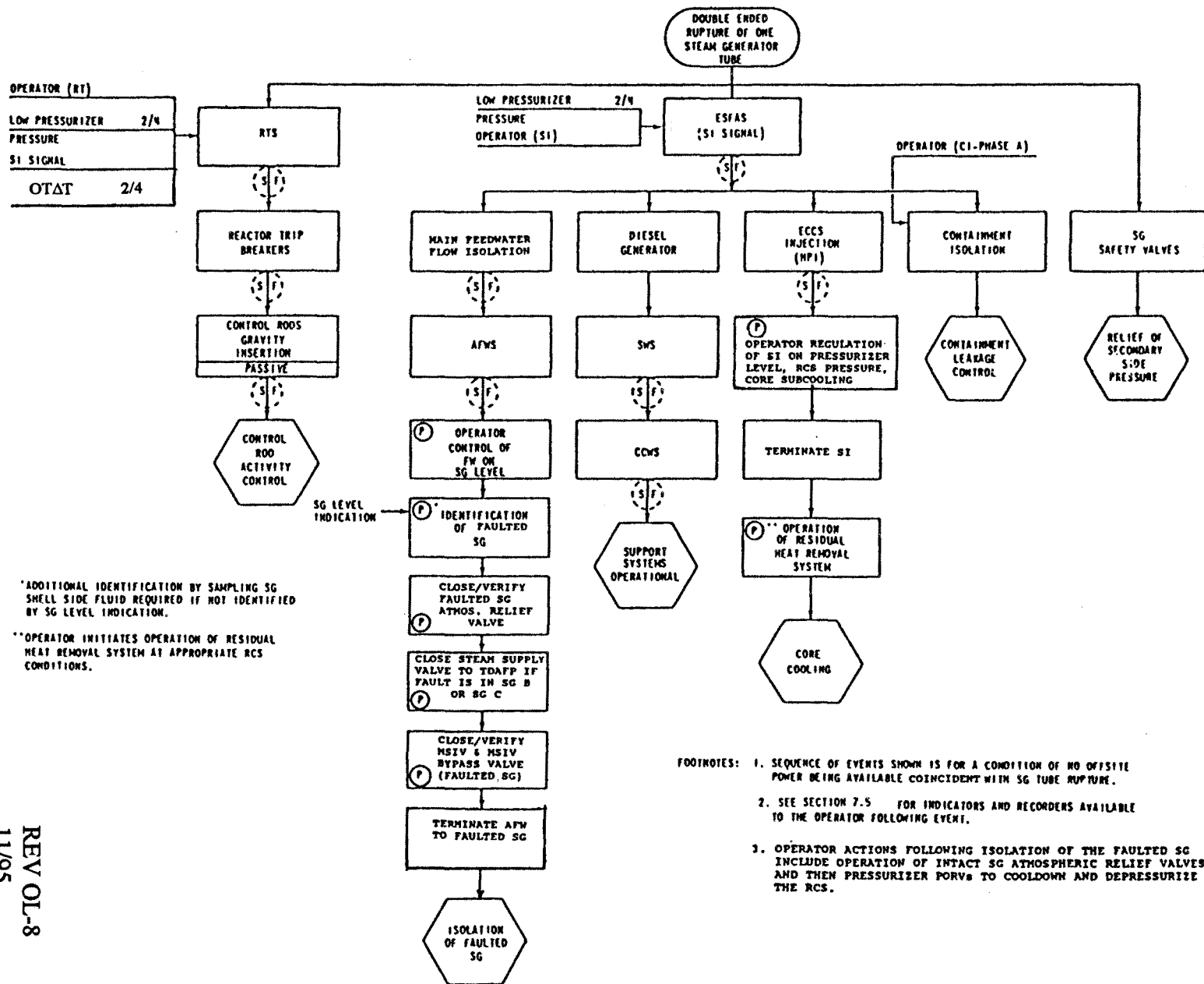
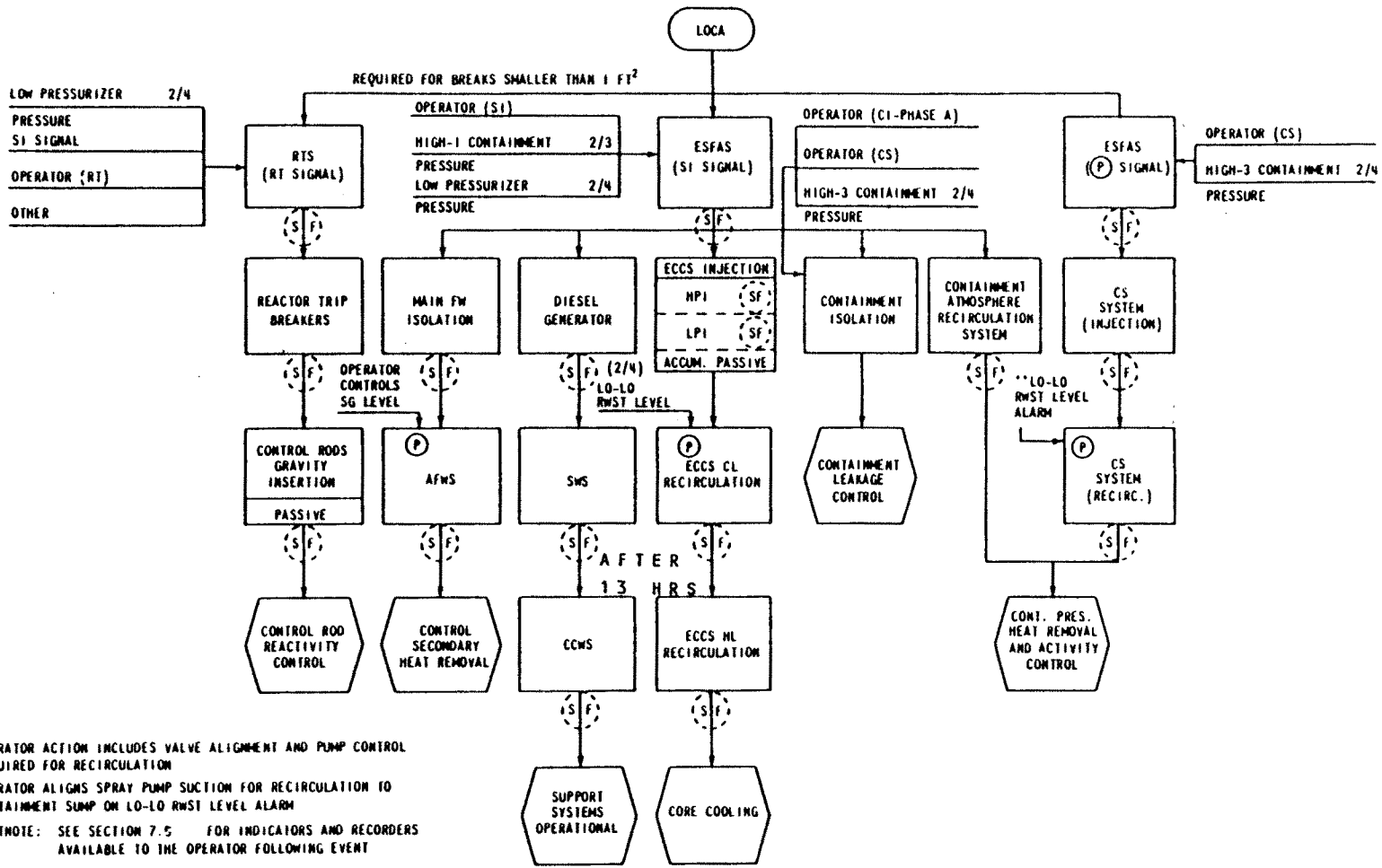
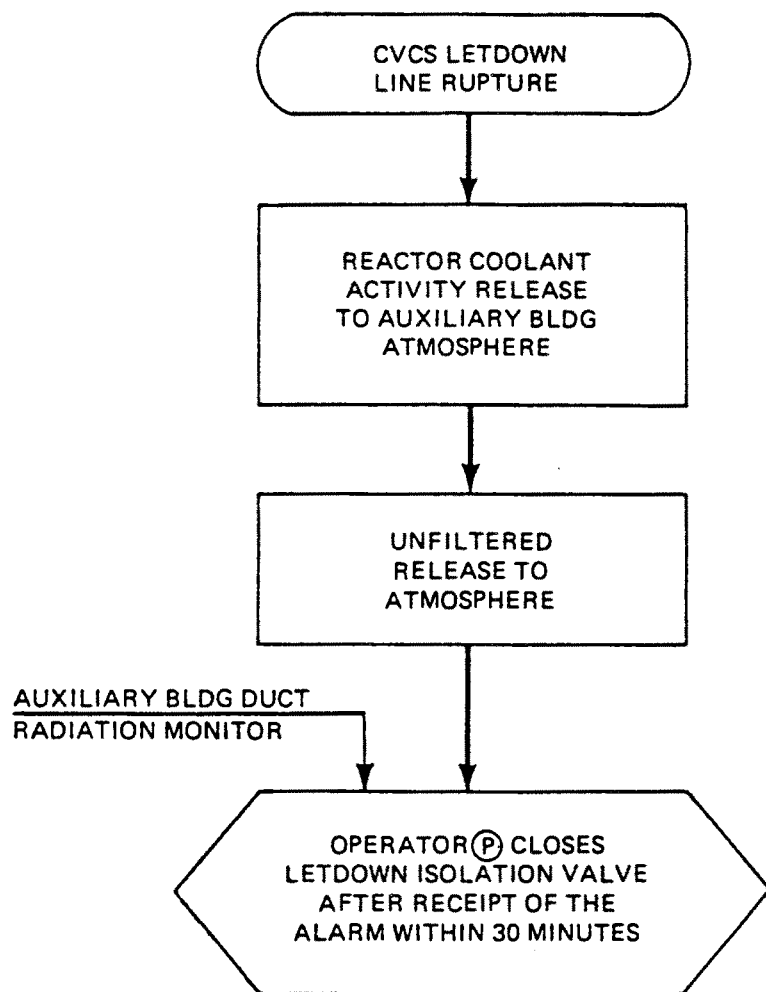


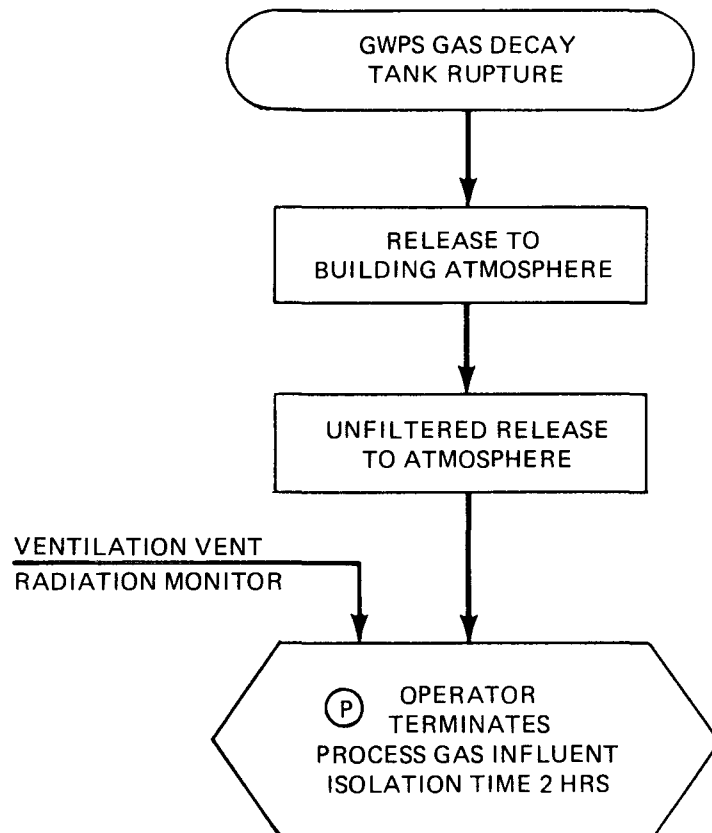
FIGURE 15.0-25

LOSS OF COOLANT ACCIDENT





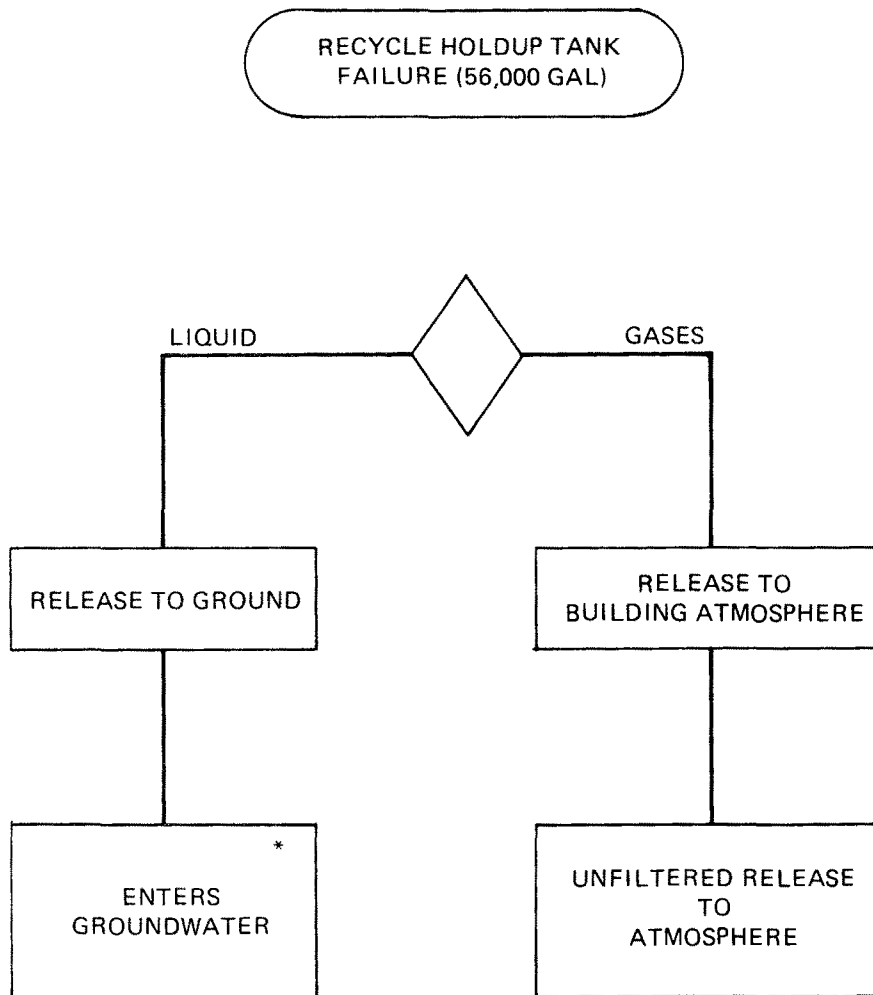
CALLAWAY PLANT
FIGURE 15.0-26
CVCS LETDOWN LINE RUPTURE



CALLAWAY PLANT

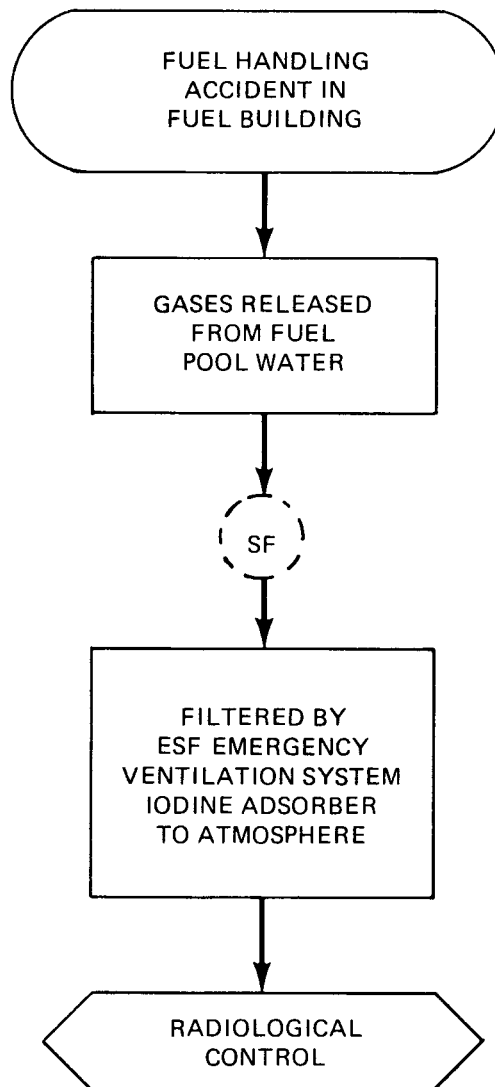
FIGURE 15.0-27

**GWPS GAS DECAY
TANK RUPTURE**

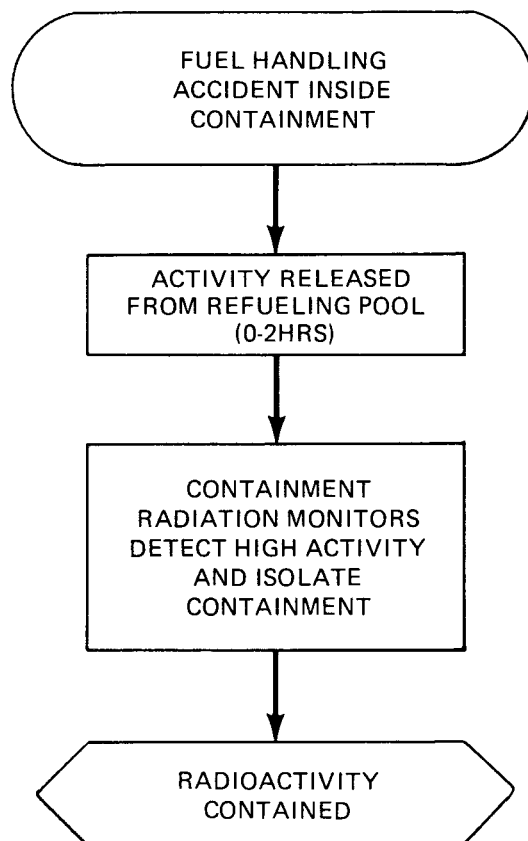


*See Section 2.4.13
of the Site Addendum

CALLAWAY PLANT
FIGURE 15.0-28
FLOOR DRAIN TANK FAILURE



CALLAWAY PLANT
FIGURE 15.0-29
FUEL HANDLING ACCIDENT IN FUEL BUILDING



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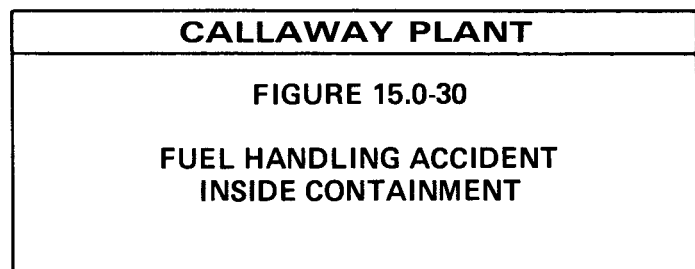
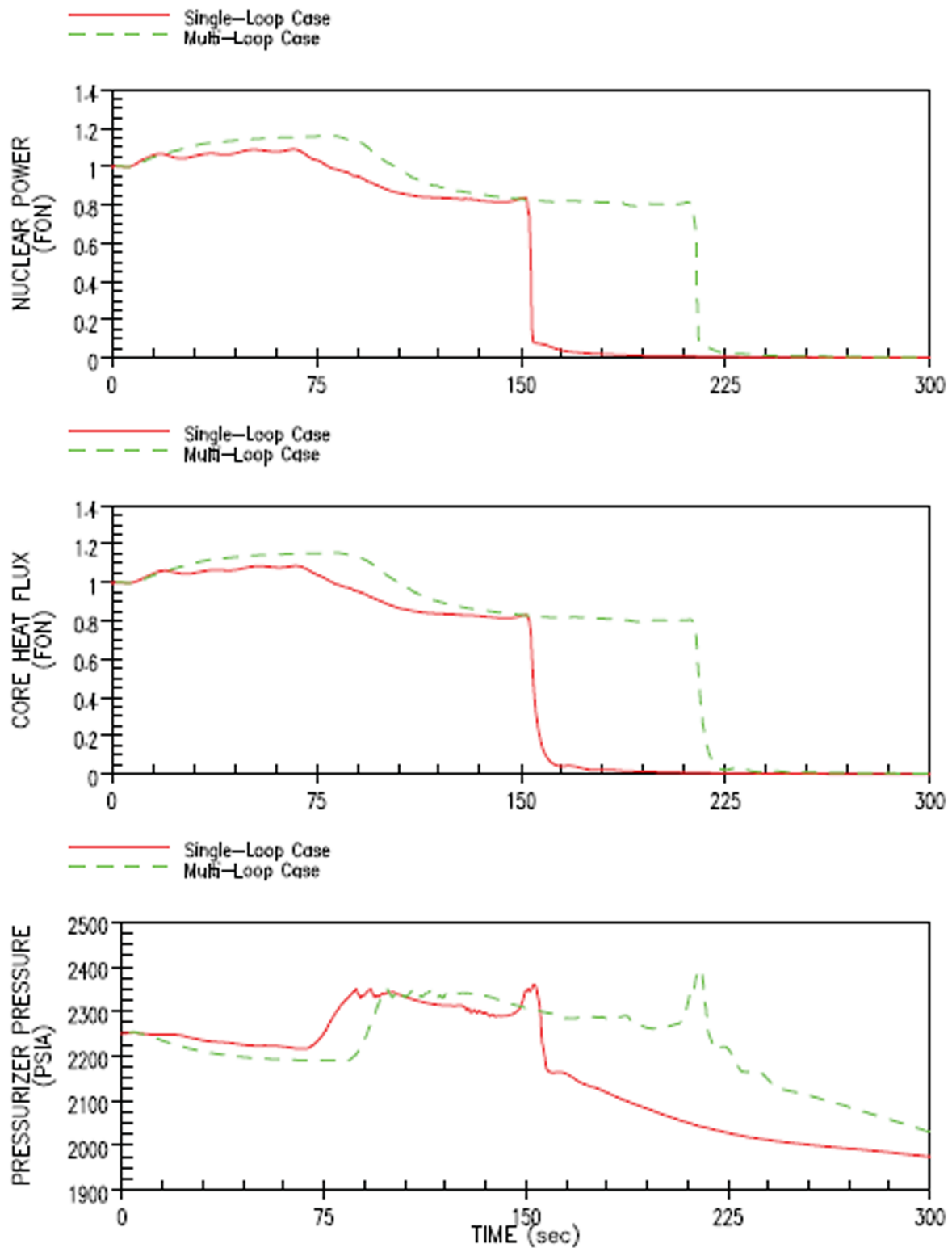


Figure 15.0-31 has been deleted.

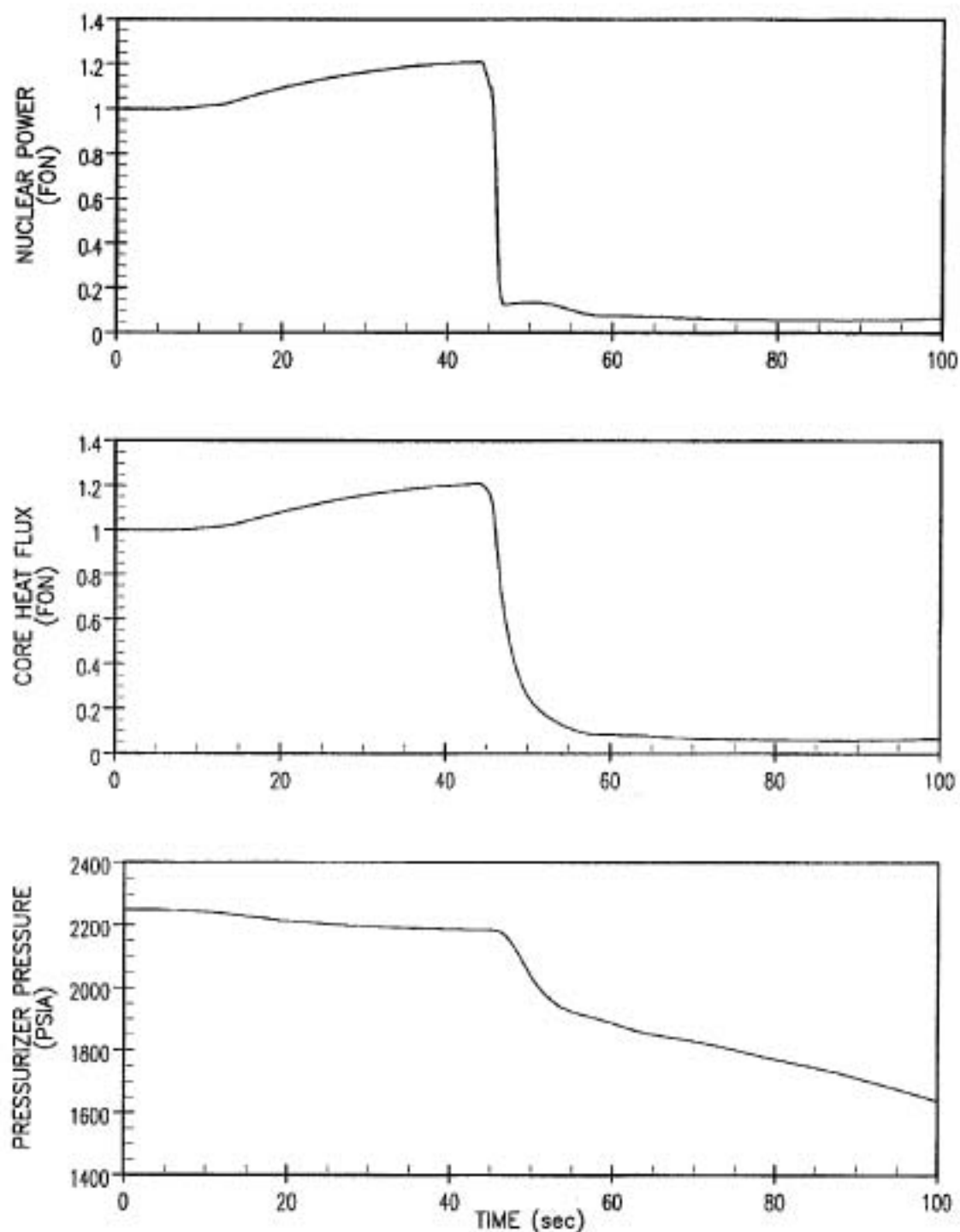


CALLAWAY PLANT

FIGURE 15.1-1

NUCLEAR POWER, CORE HEAT FLUX AND
PRESSURIZER PRESSURE TRANSIENTS
FOR HFP FEEDWATER MALFUNCTION
FLOW INCREASE CASE

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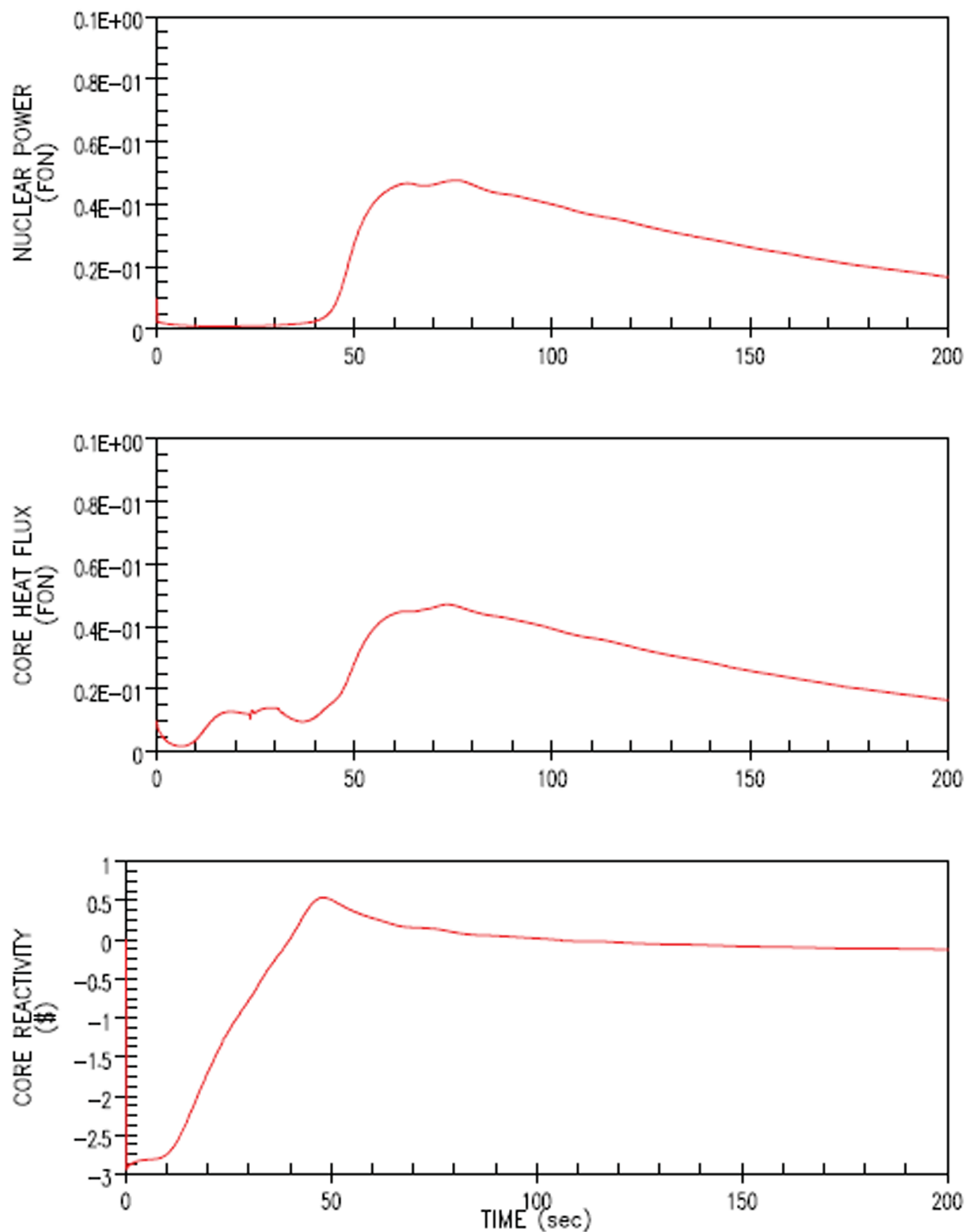
The analysis that produced the above figures conservatively bounds the actual plant configuration. This analysis uses different setpoint coefficients in the OPΔT reactor trip setpoint from what is currently configured. The effect of the differences between the analysis inputs and the plant configuration is that the analysis inputs result in delayed protection and more limiting results.

CALLAWAY PLANT

FIGURE 15.1-1A

NUCLEAR POWER, CORE HEAT FLUX AND
PRESSURIZER PRESSURE TRANSIENTS FOR HFP
FEEDWATER TEMPERATURE REDUCTION INCIDENT

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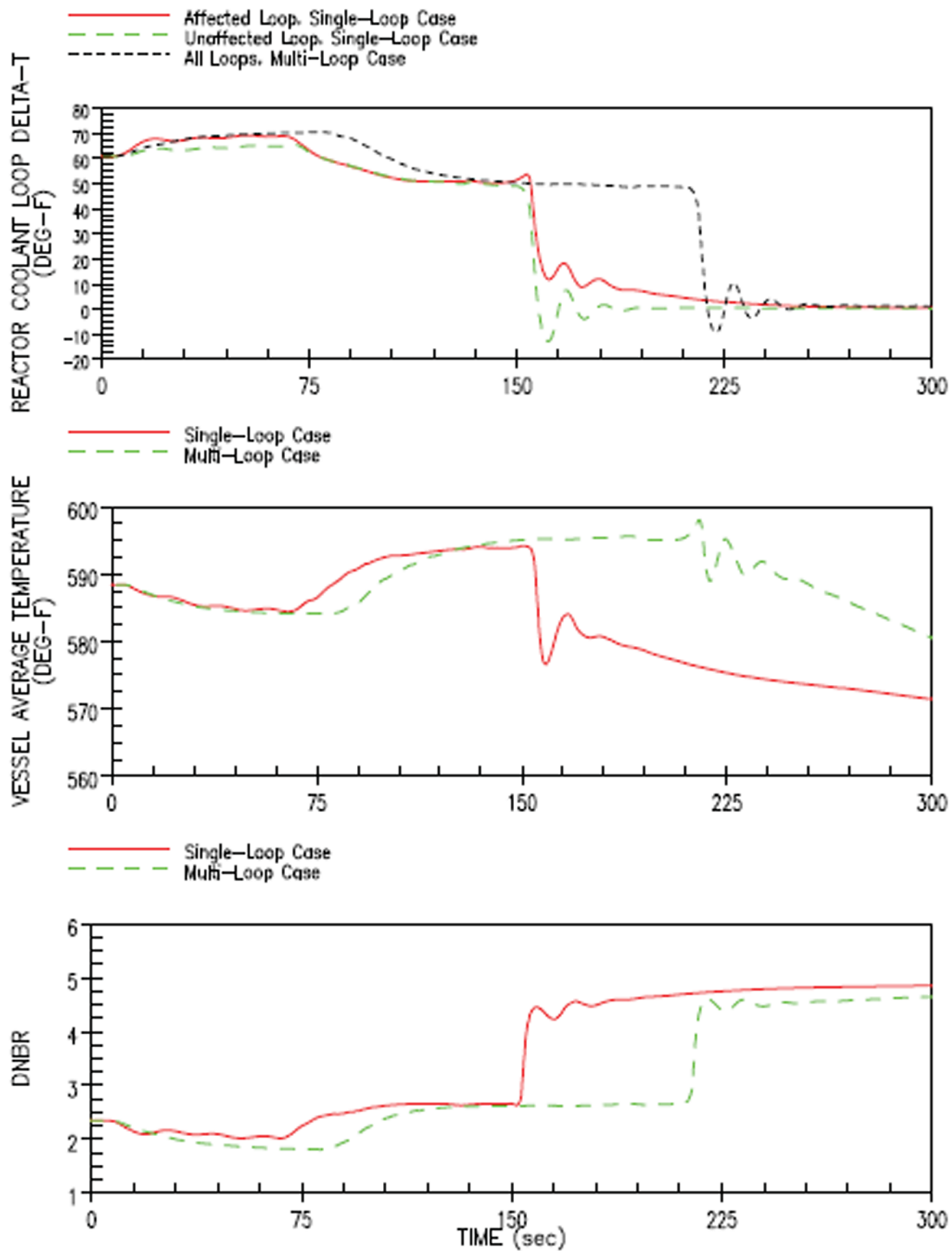


CALLAWAY PLANT

FIGURE 15.1-1B

NUCLEAR POWER, CORE HEAT FLUX AND
CORE REACTIVITY TRANSIENTS FOR
H2P FEEDWATER MALFUNCTION -
FLOW INCREASE, MULTI-LOOP CASE

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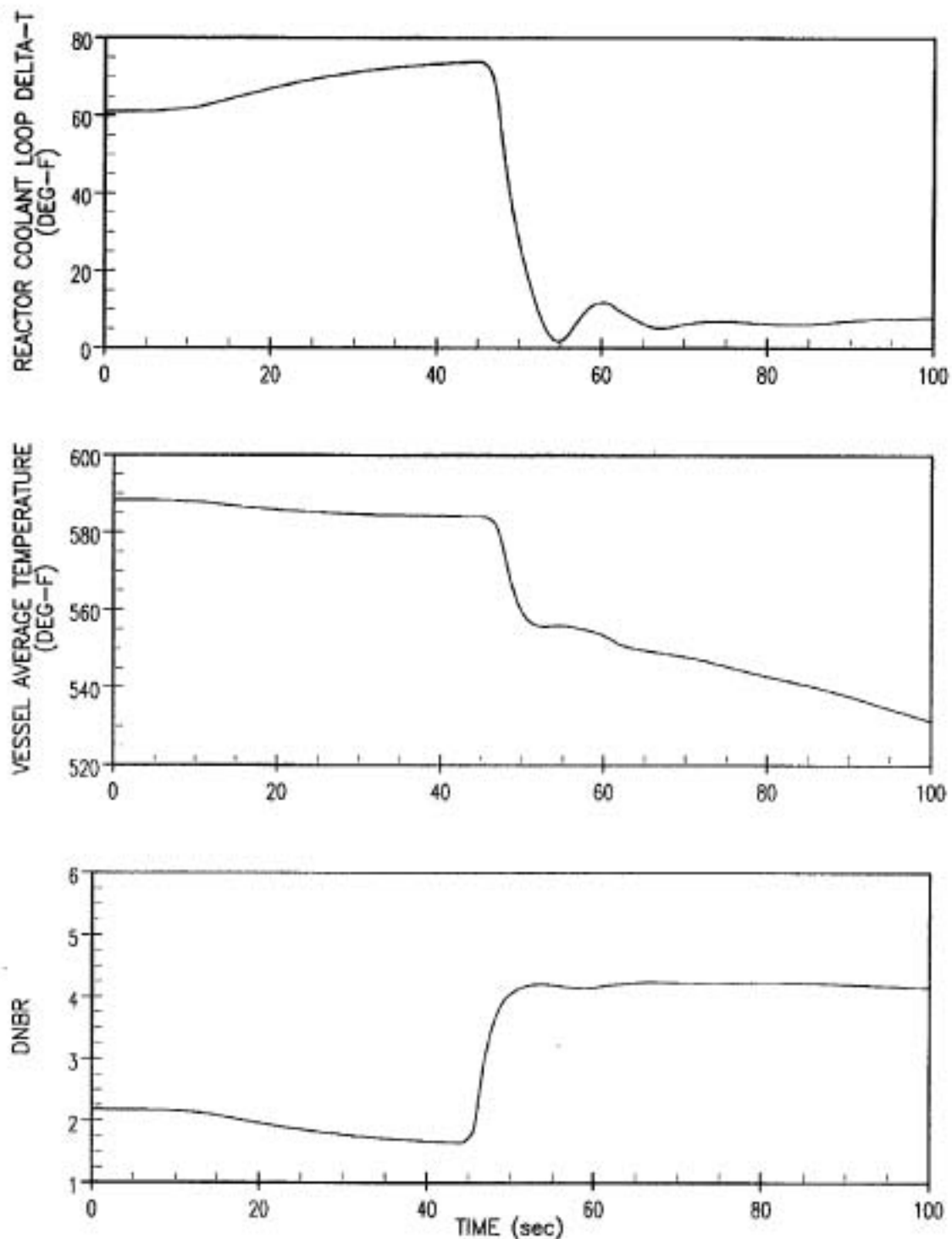


CALLAWAY PLANT

FIGURE 15.1-2

REACTOR COOLANT LOOP DELTA-T, VESSEL
AVERAGE TEMP AND DNBR TRANSIENTS
FOR HFP FEEDWATER MALFUNCTION -
FLOW INCREASE CASE

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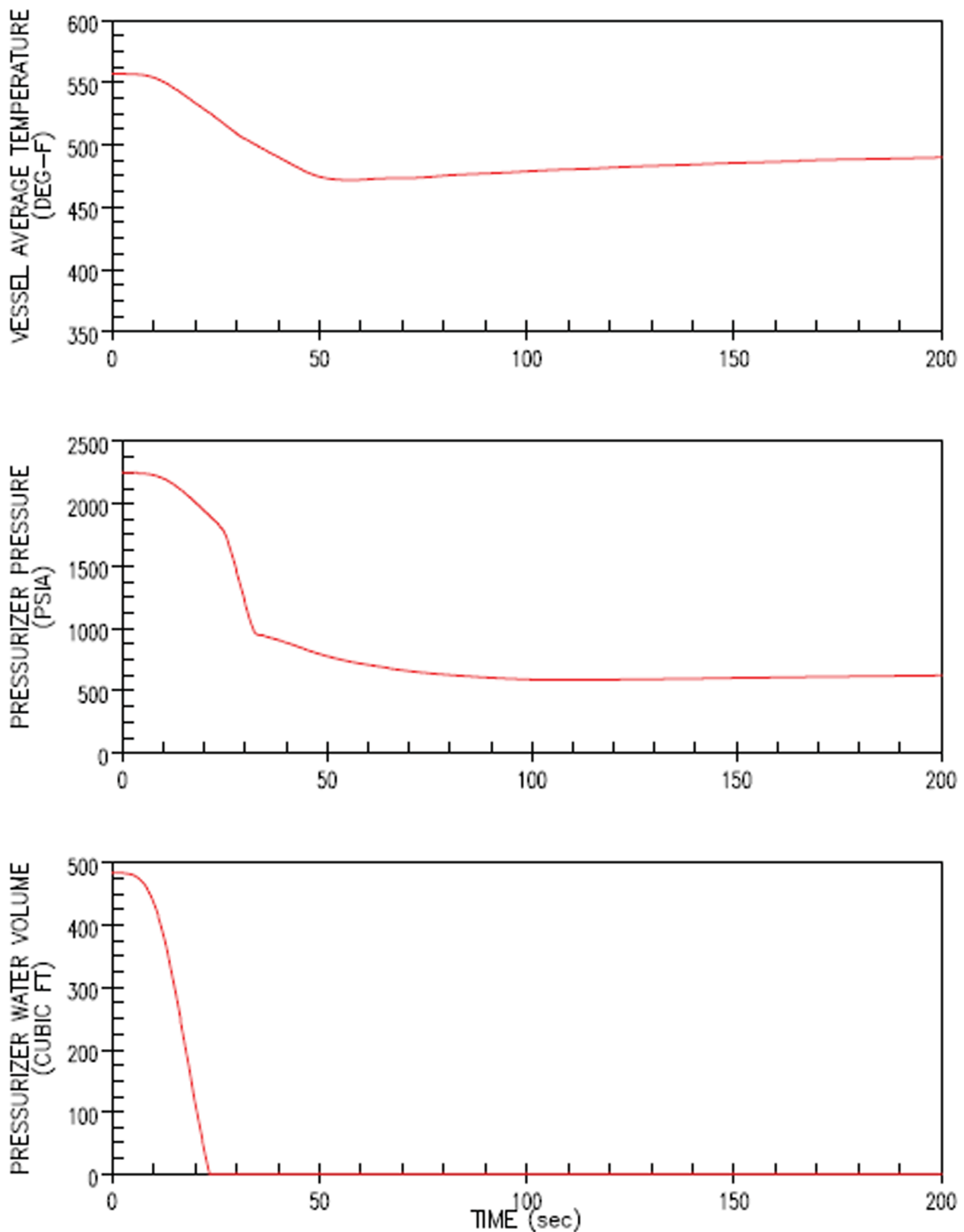
The analysis that produced the above figures conservatively bounds the actual plant configuration. This analysis uses different setpoint coefficients in the OPΔT reactor trip setpoint from what is currently configured. The effect of the differences between the analysis inputs and the plant configuration is that the analysis inputs result in delayed protection and more limiting results.

CALLAWAY PLANT

FIGURE 15.1-2A

REACTOR COOLANT LOOP DELTA-T VESSEL
AVERAGE TEMP AND DNBR TRANSIENTS FOR HFP
FEEDWATER TEMPERATURE REDUCTION INCIDENT

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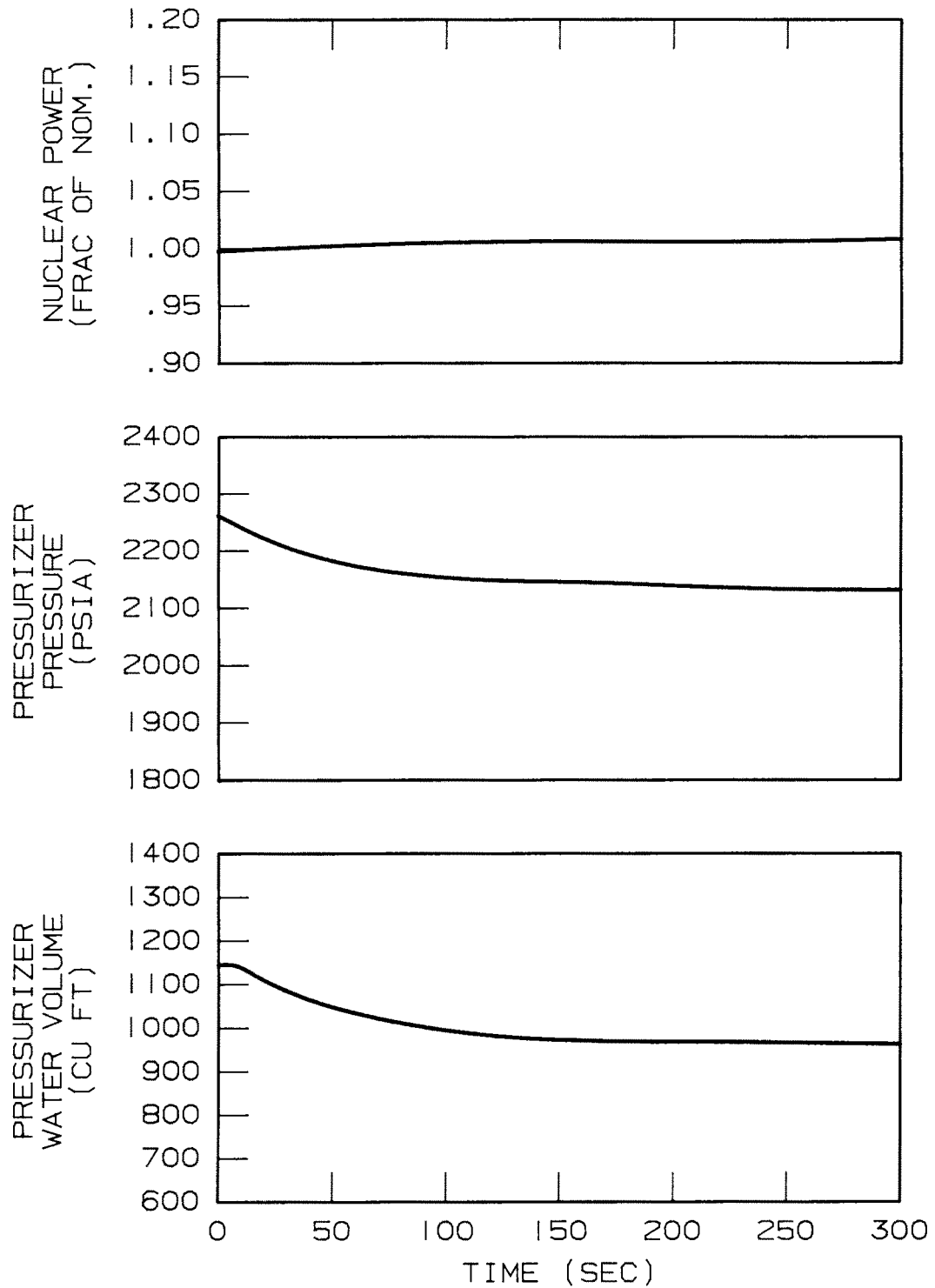


CALLAWAY PLANT

FIGURE 15.1-2B

VESSEL AVERAGE TEMP, PRESSURIZER
PRESSURE AND WATER VOLUME TRANSIENTS
FOR HZP FEEDWATER MALFUNCTION -
FLOW INCREASE, MULTI-LOOP CASE

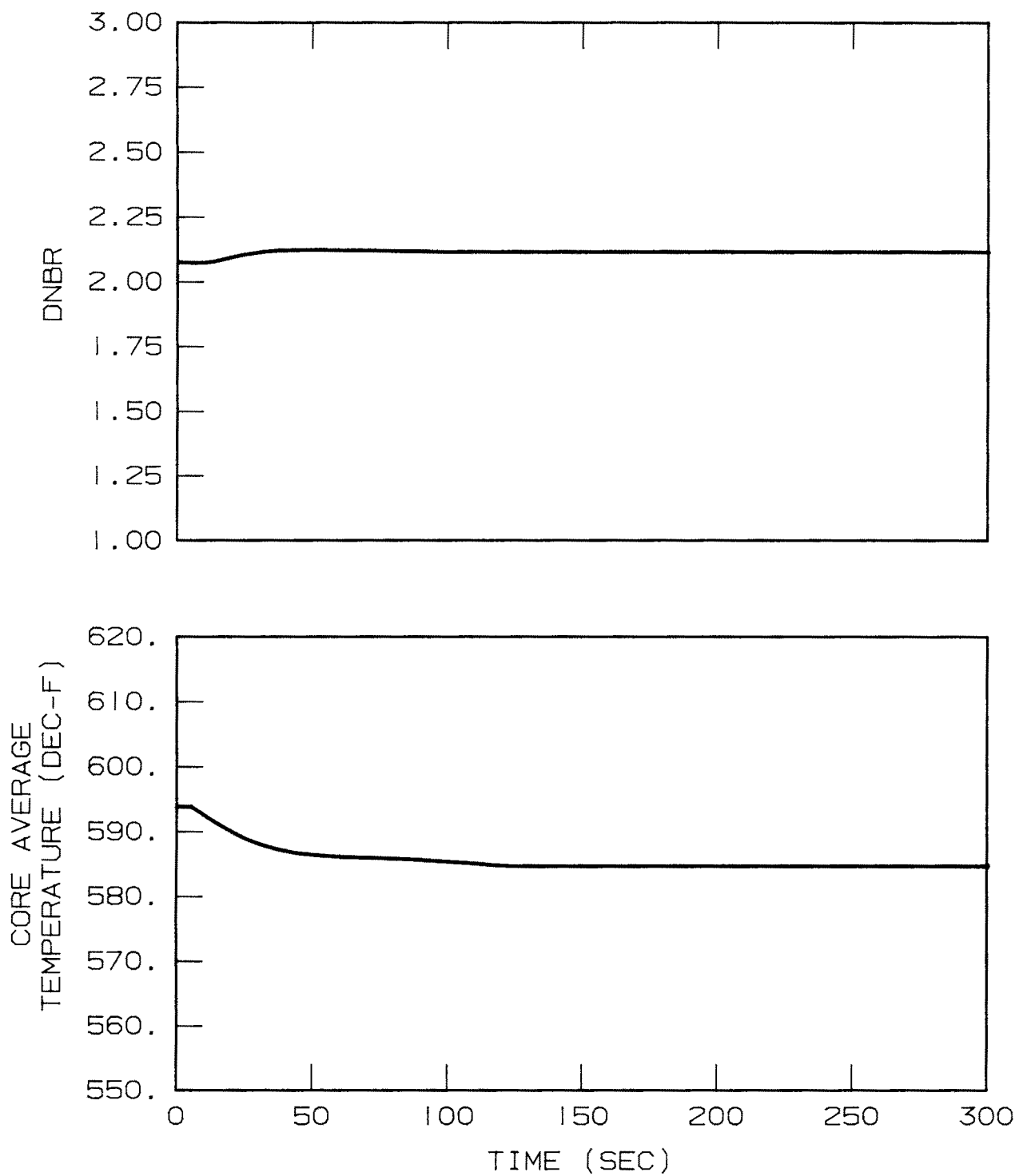
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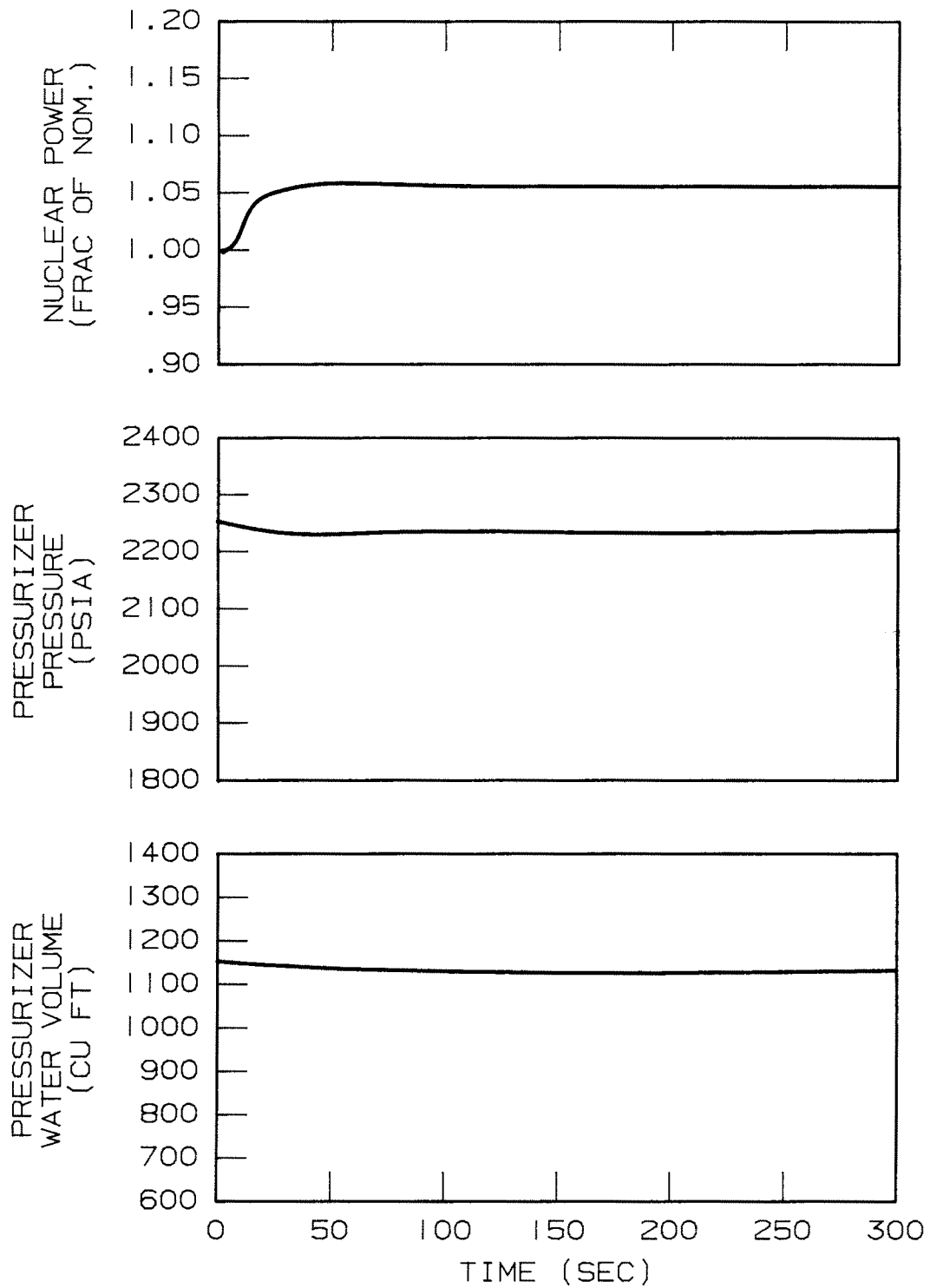
FIGURE 15.1-3
NUCLEAR POWER, PRESSURIZER PRES-
SURE AND WATER VOLUME TRANSIENTS
FOR TEN PERCENT STEP LOAD
INCREASE, MINIMUM REACTIVITY
FEEDBACK, MANUAL REACTOR CONTROL



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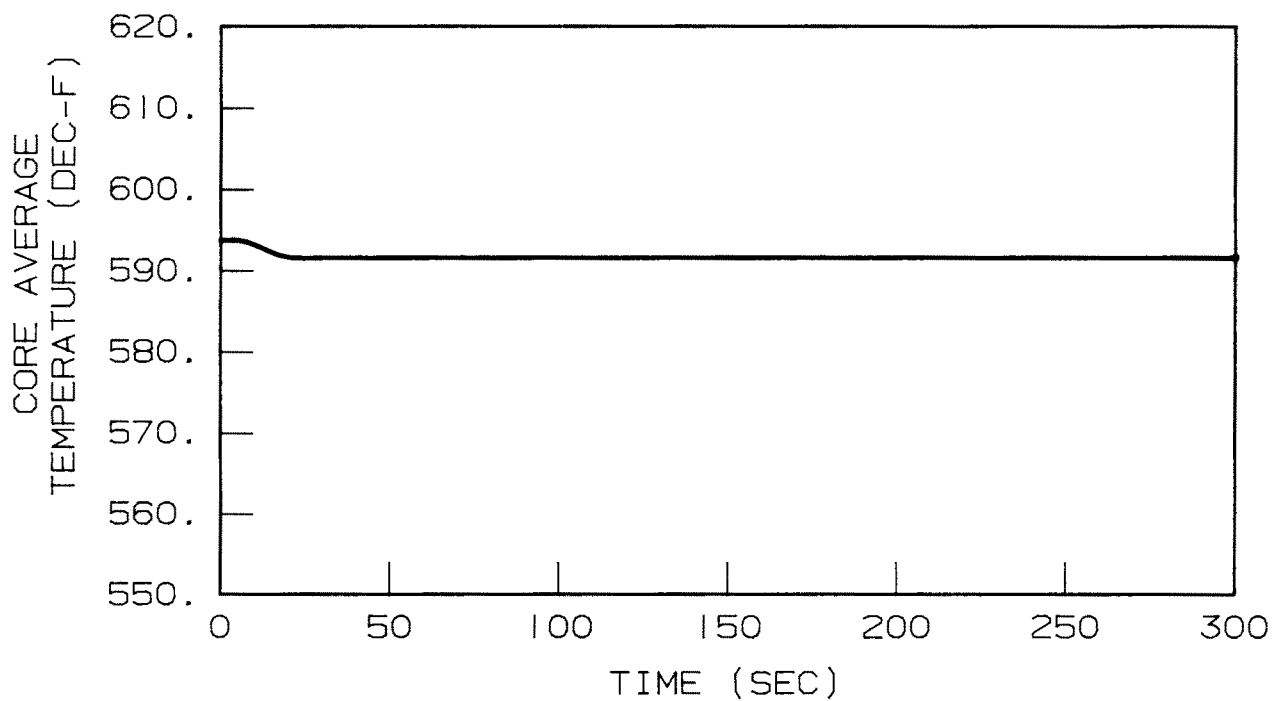
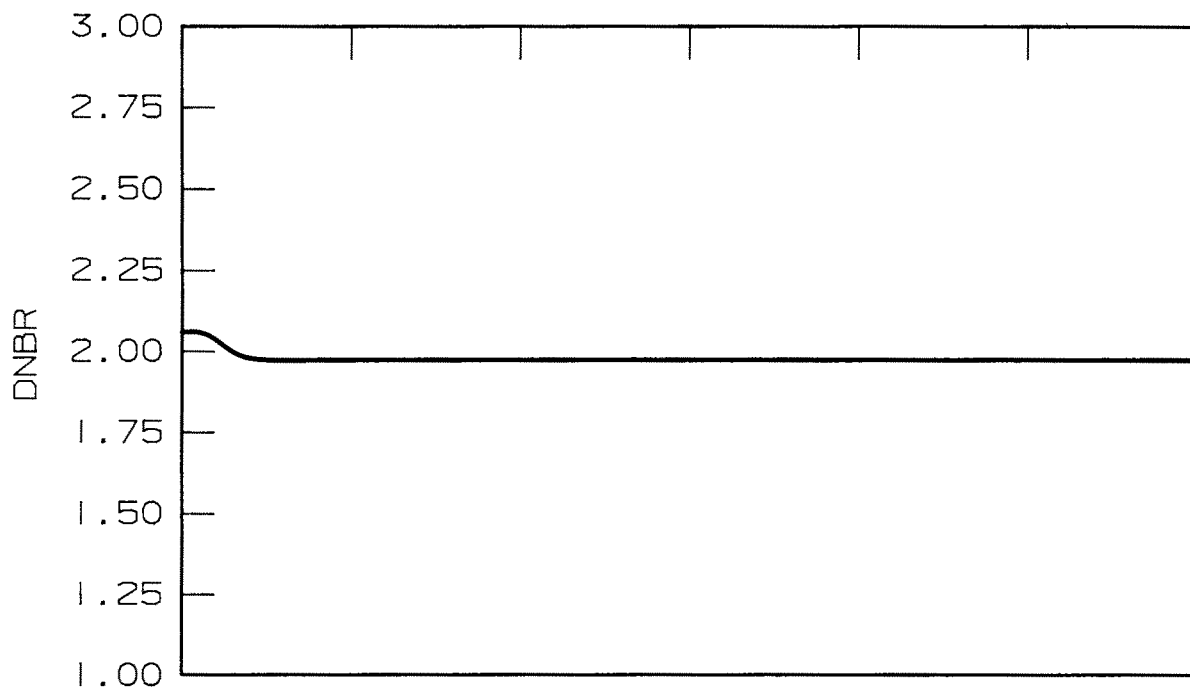
**FIGURE 15.1-4
DNBR AND VESSEL AVERAGE
TEMPERATURE TRANSIENTS FOR TEN
PERCENT STEP LOAD INCREASE,
MINIMUM REACTIVITY FEEDBACK,
MANUAL REACTOR CONTROL**



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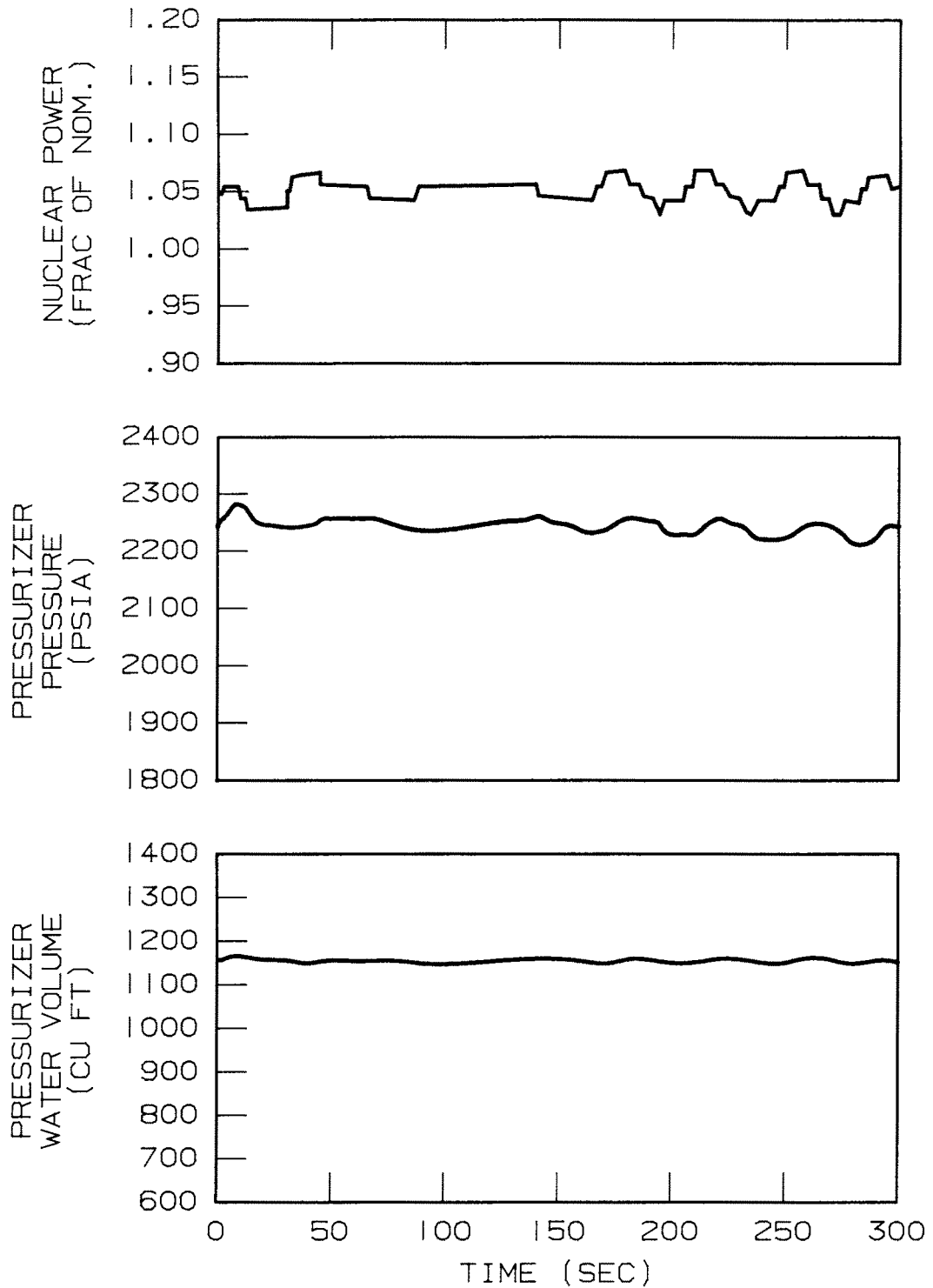
FIGURE 15.1-5
NUCLEAR POWER, PRESSURIZER PRES-
SURE AND WATER VOLUME TRANSIENTS
FOR TEN PERCENT STEP LOAD
INCREASE, MAXIMUM REACTIVITY
FEEDBACK, MANUAL REACTOR CONTROL



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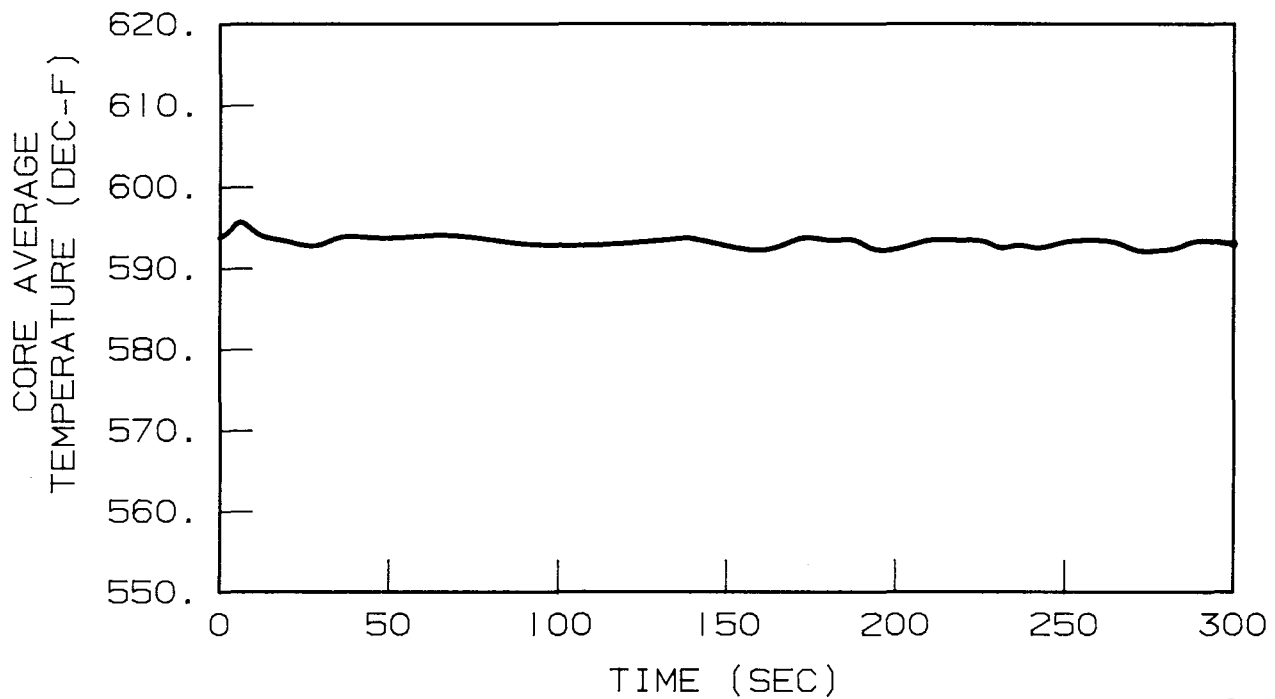
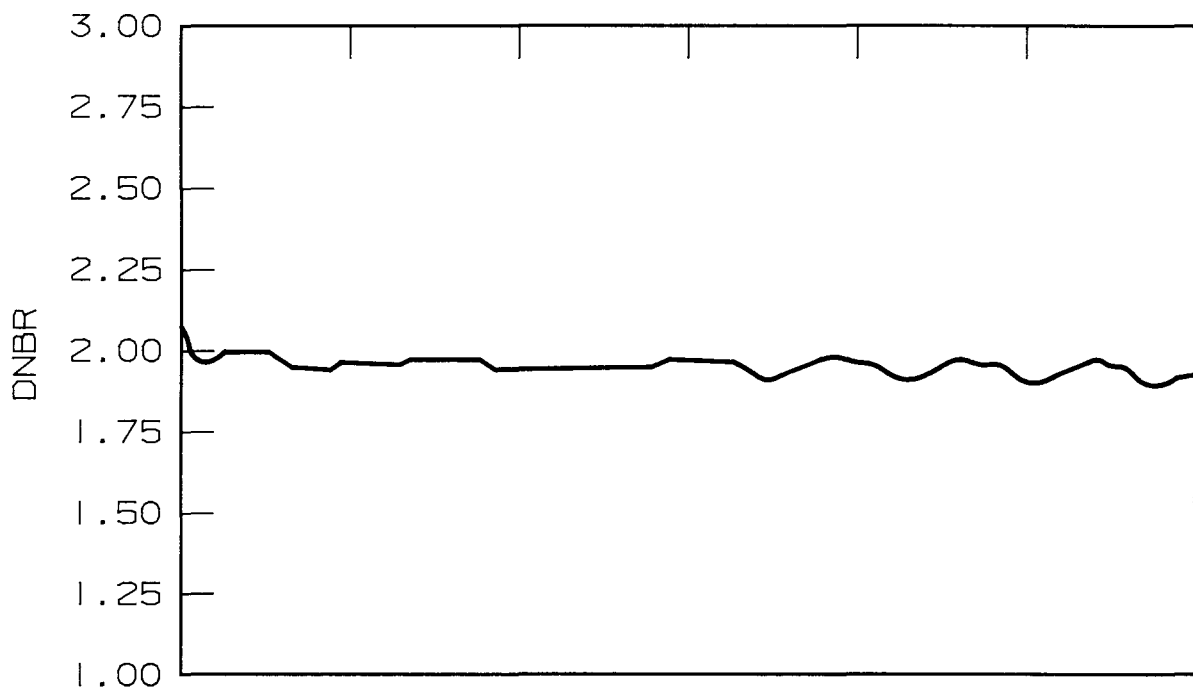
FIGURE 15.1-6
DNBR AND VESSEL AVERAGE
TEMPERATURE TRANSIENTS FOR TEN
PERCENT STEP LOAD INCREASE,
MAXIMUM REACTIVITY FEEDBACK,
MANUAL REACTOR CONTROL



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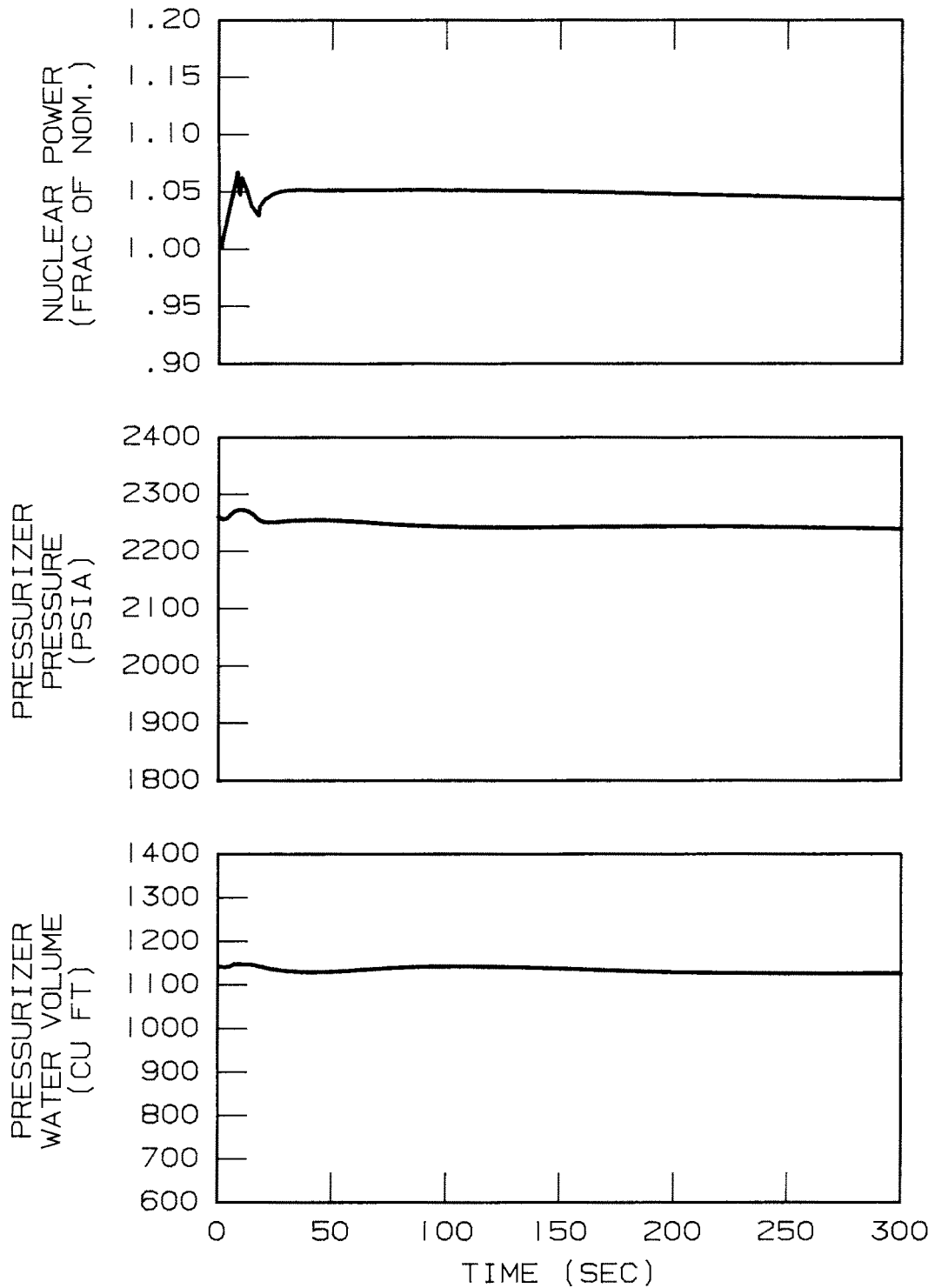
FIGURE 15.1-7
NUCLEAR POWER, PRESSURIZER PRES-
SURE AND WATER VOLUME TRANSIENTS
FOR TEN PERCENT STEP LOAD
INCREASE, MINIMUM REACTIVITY
FEEDBACK, AUTOMATIC REACTOR CONTROL



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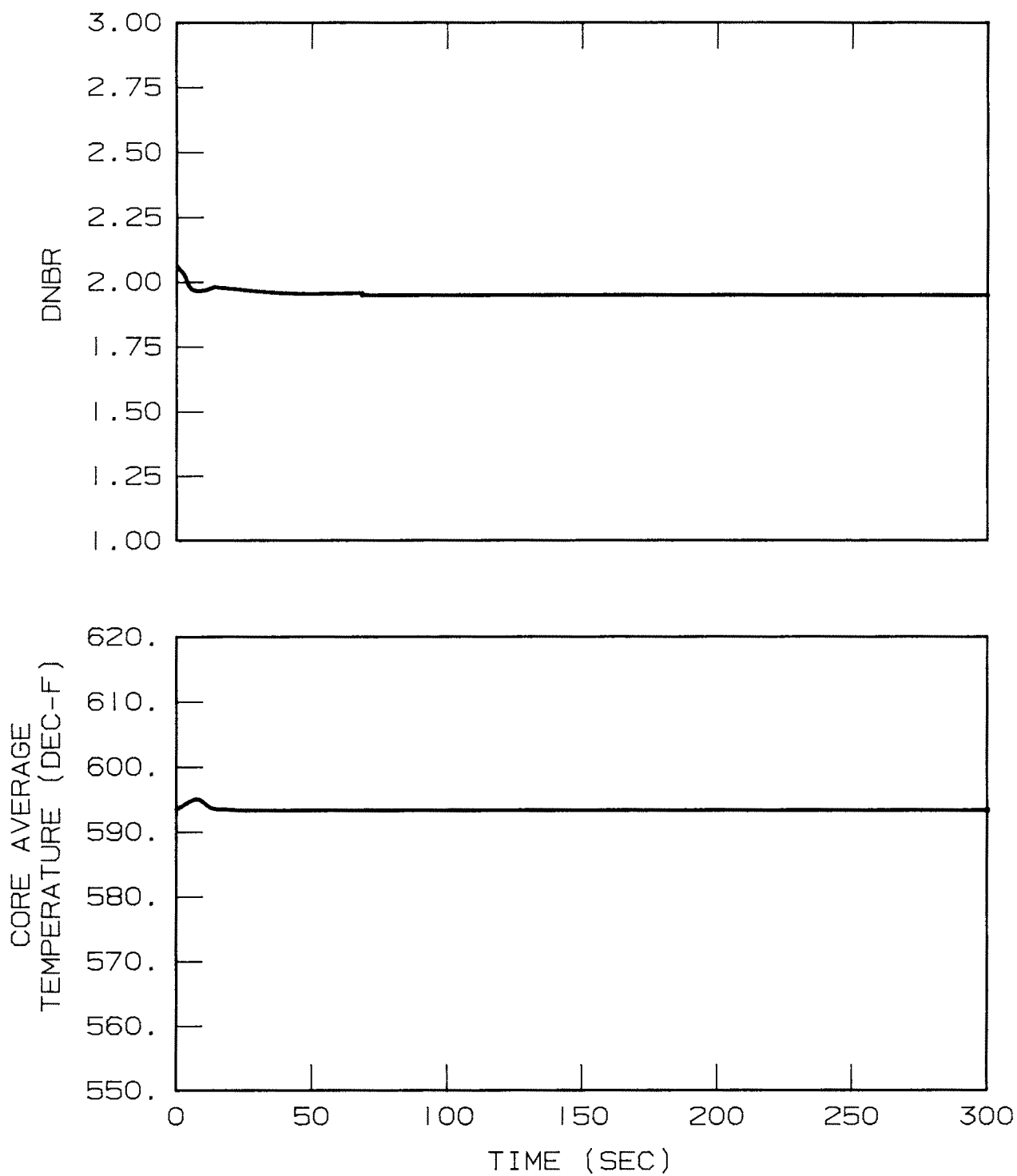
FIGURE 15.1-8
DNBR AND VESSEL AVERAGE TEMPERA-
TURE TRANSIENTS FOR TEN PERCENT
STEP LOAD INCREASE, MINIMUM
REACTIVITY FEEDBACK, AUTOMATIC
REACTOR CONTROL



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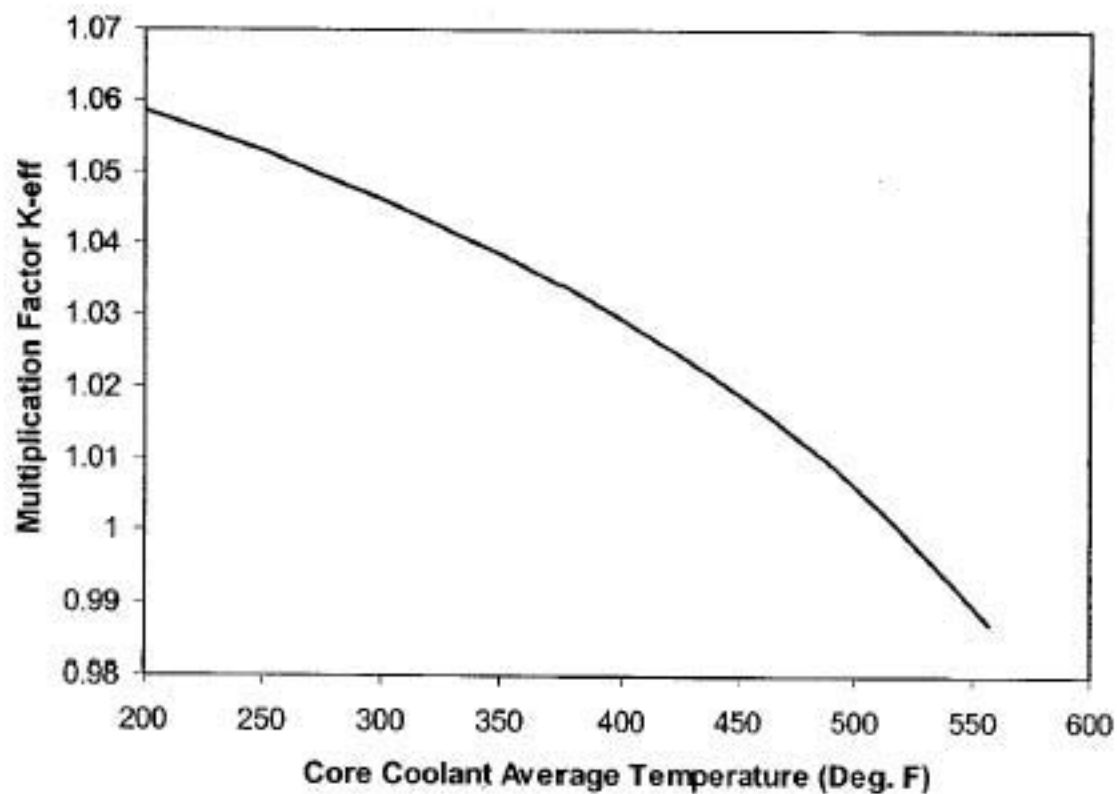
FIGURE 15.1-9
NUCLEAR POWER, PRESSURIZER
PRESSURE AND WATER VOLUME TRAN-
SIENTS FOR TEN PERCENT STEP LOAD
INCREASE, MAXIMUM REACTIVITY FEED-
BACK, AUTOMATIC REACTOR CONTROL



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CALLAWAY PLANT

FIGURE 15.1-10
DNBR AND VESSEL AVERAGE
TEMPERATURE TRANSIENTS FOR TEN
PERCENT STEP LOAD INCREASE,
MAXIMUM REACTIVITY FEEDBACK,
AUTOMATIC REACTOR CONTROL



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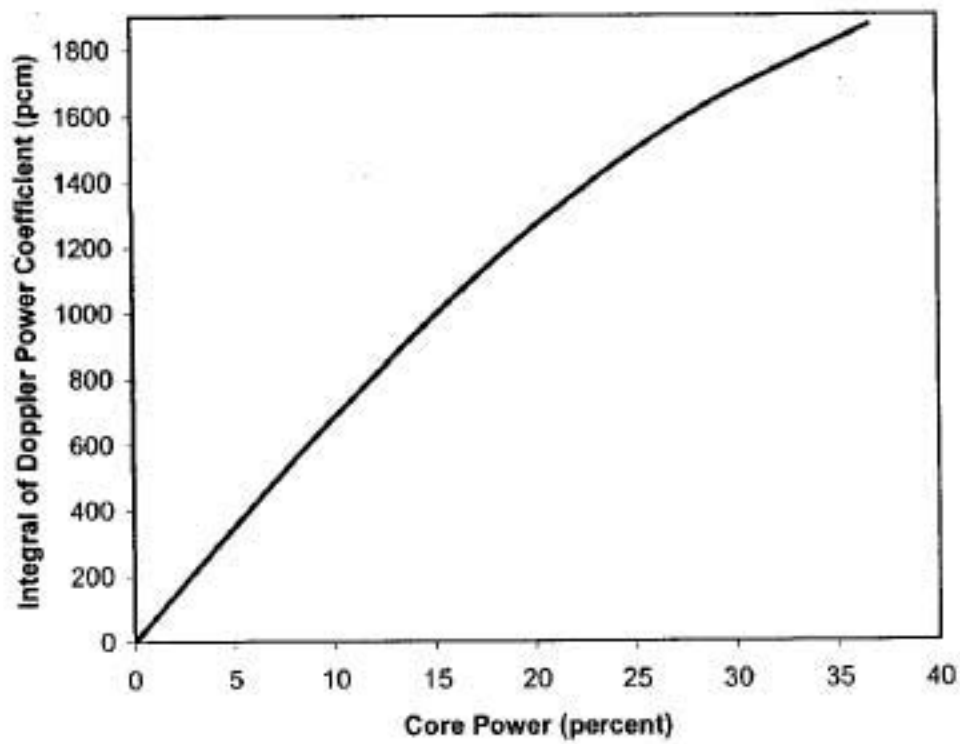
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FIGURE 16.1-11

K_{eff} VERSUS TEMPERATURE

Figure 15.1-12 Deleted

Figure 15.1-13 Deleted



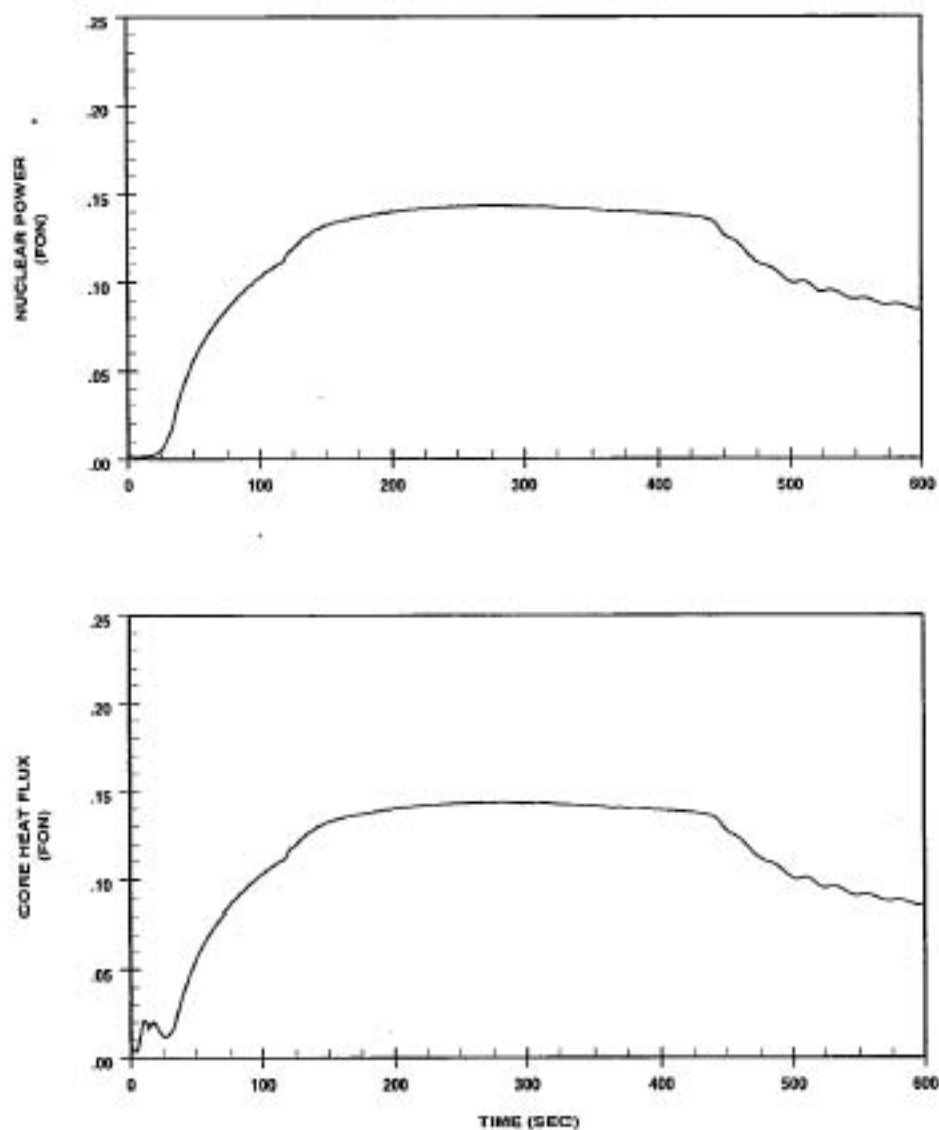
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CALLAWAY PLANT

FIGURE 16.1-14

DOPPLER POWER FEEDBACK

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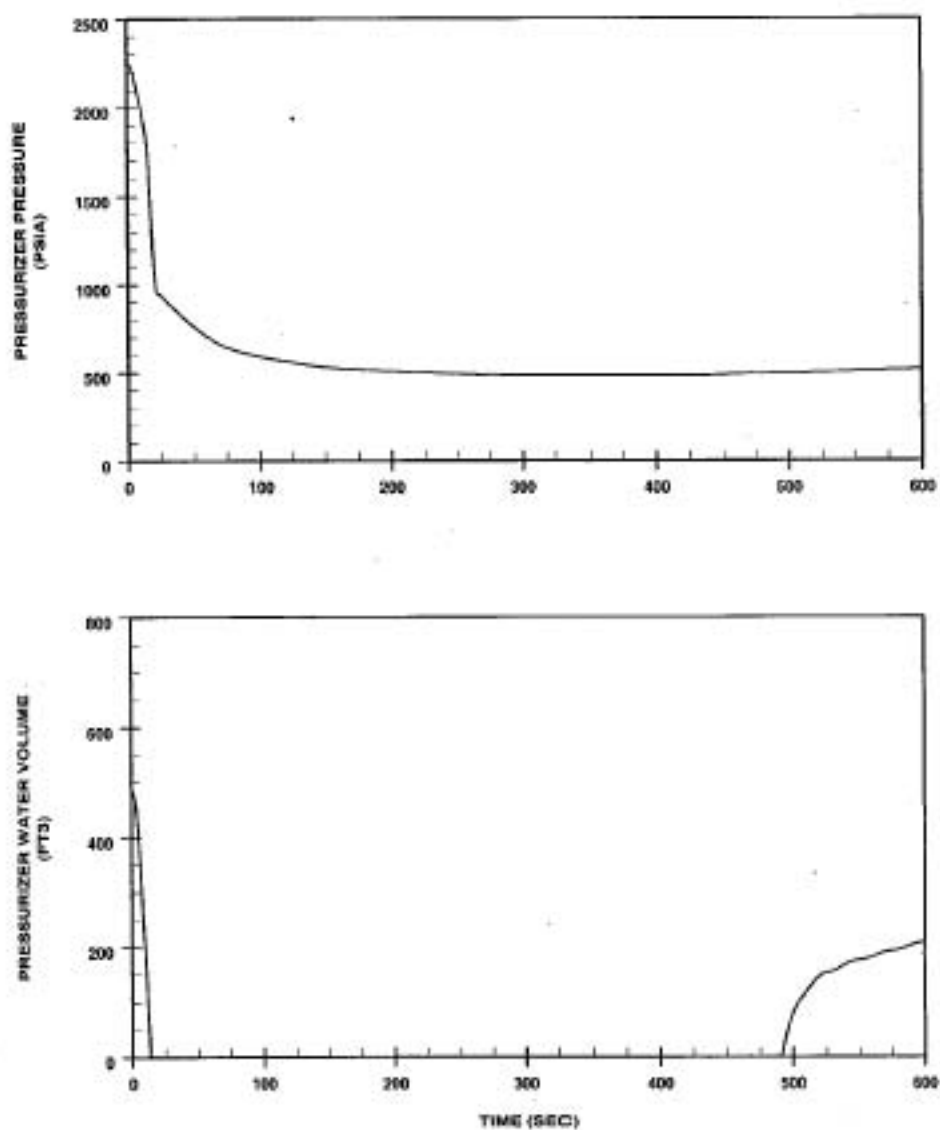


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CALLAWAY PLANT

FIGURE 15.1-15A

NUCLEAR POWER AND CORE HEAT FLUX
TRANSIENTS FOR A STEAM LINE DER,
OFFSITE POWER AVAILABLE



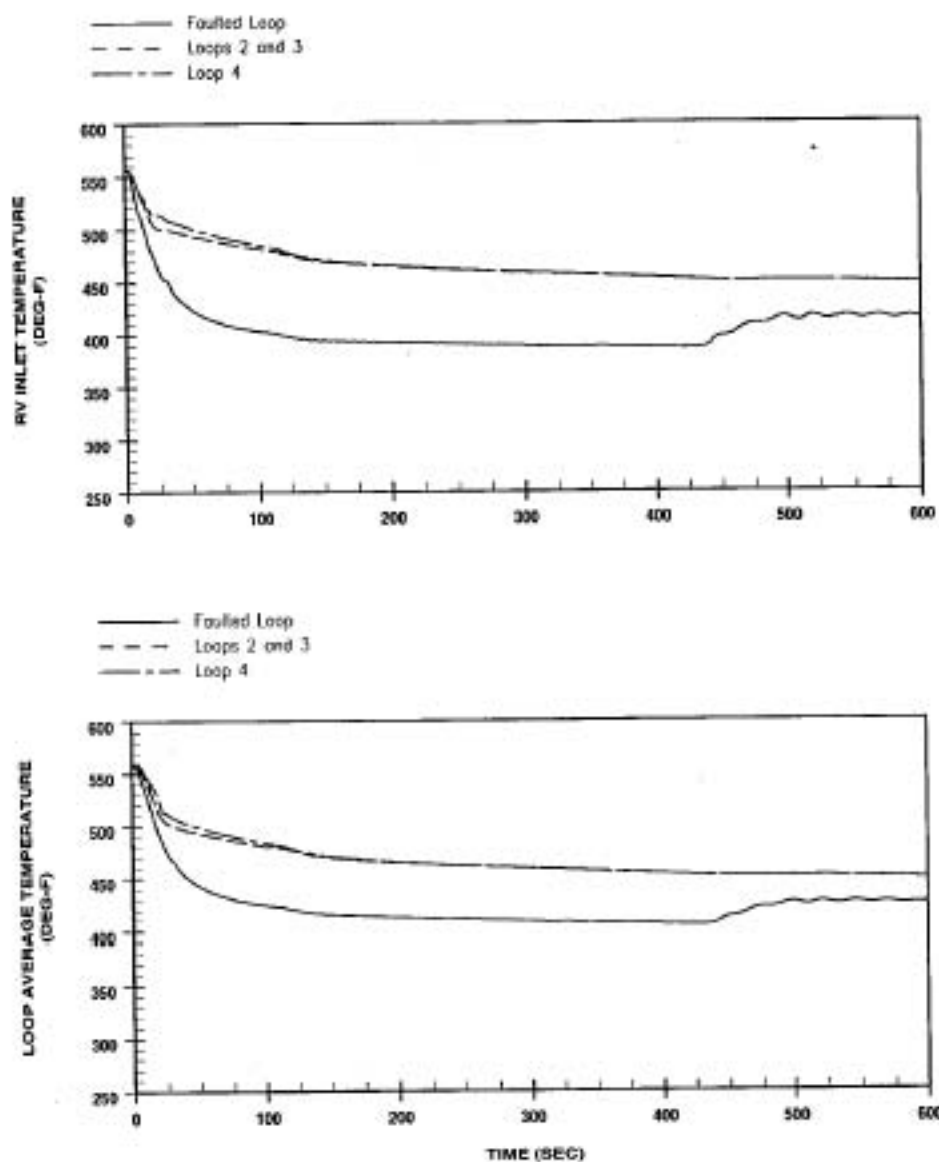
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CALLAWAY PLANT

FIGURE 15.1-15B

PRESSURIZER PRESSURE AND PRESSURIZER
WATER VOLUME TRANSIENTS FOR A STEAM
LINE DER, OFFSITE POWER AVAILABLE

Figure 15.1-16 Deleted

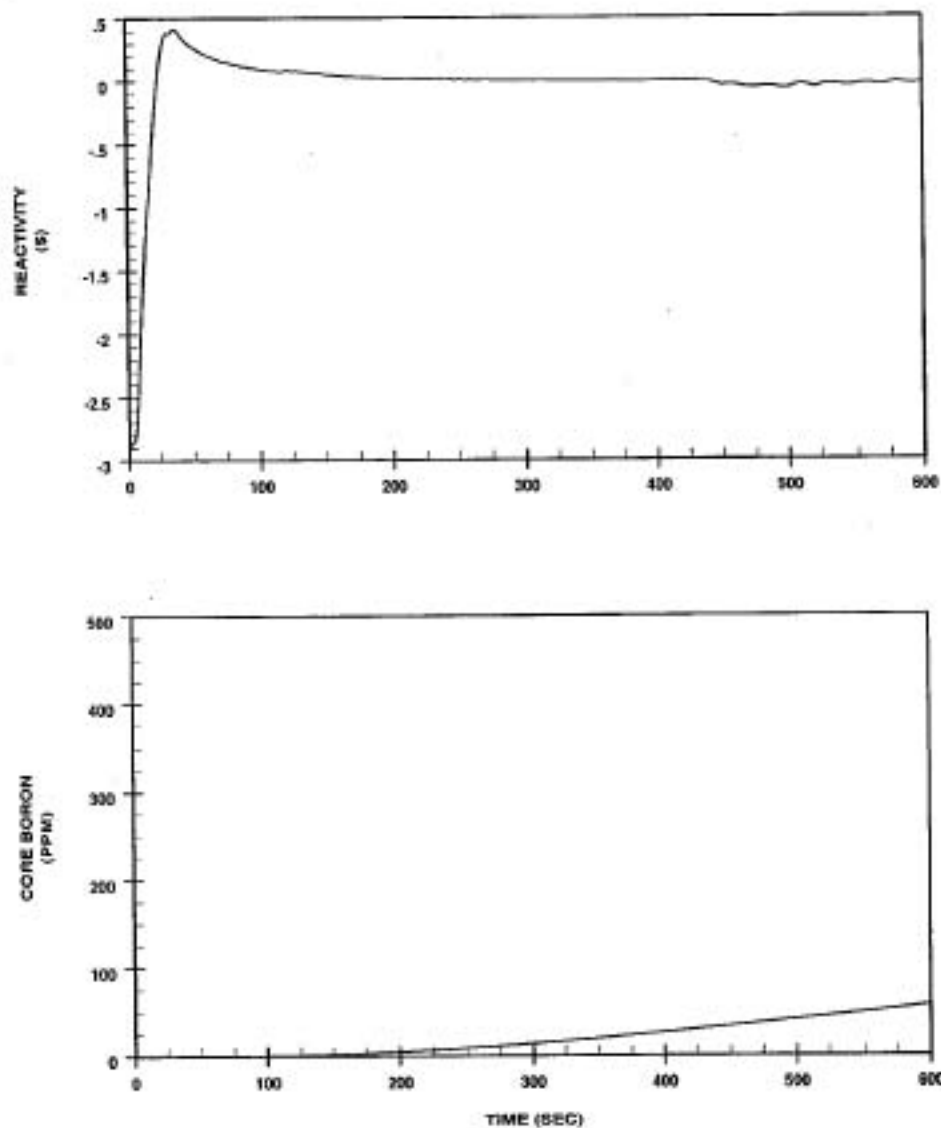


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CALLAWAY PLANT

FIGURE 16.1-16A

**VESSEL INLET AND LOOP AVERAGE
TEMPERATURE TRANSIENTS FOR A STEAM
LINE DER, OFFSITE POWER AVAILABLE**



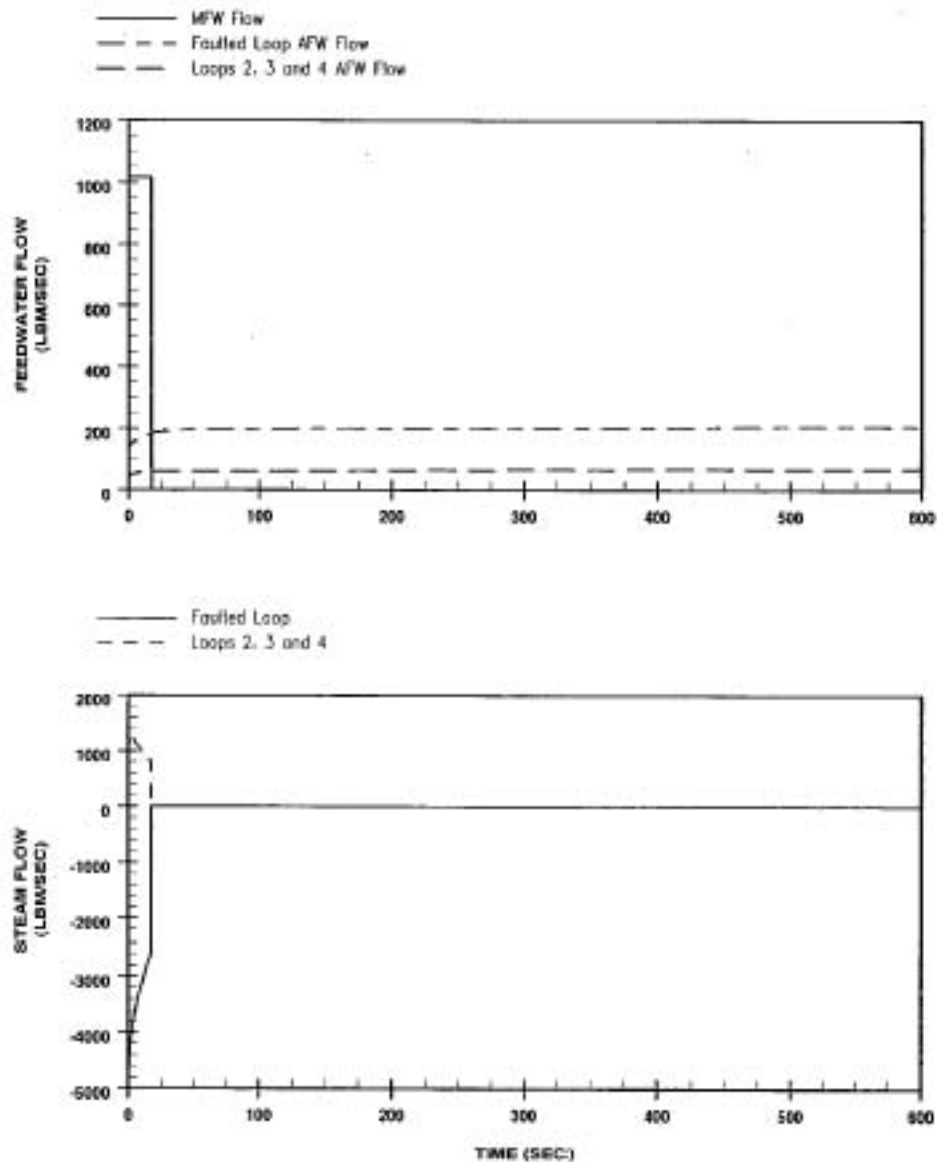
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CALLAWAY PLANT

FIGURE 15.1-15B

REACTIVITY AND CORE BORON
TRANSIENTS FOR A STEAM LINE DER,
OFFSITE POWER AVAILABLE

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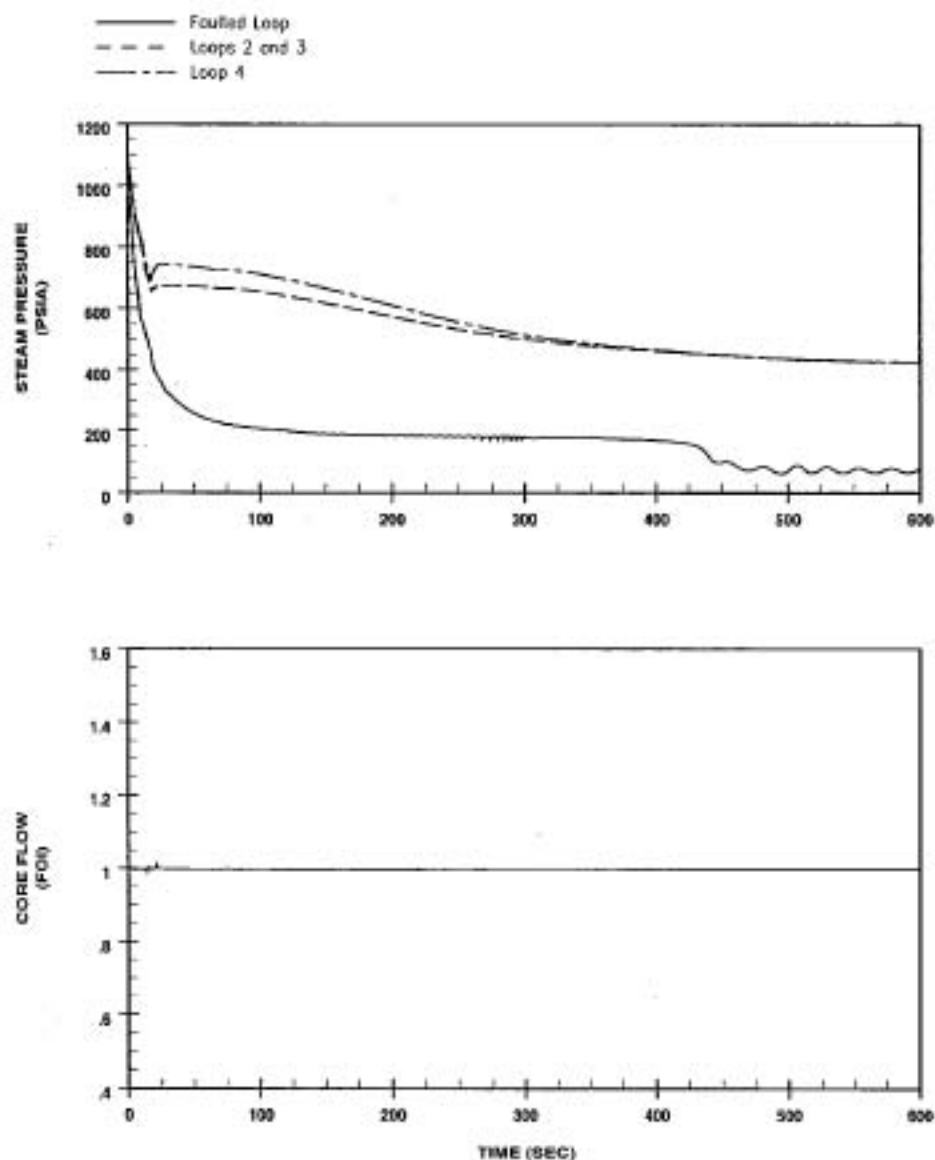


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CALLAWAY PLANT

FIGURE 16.1-17A

FEEDWATER FLOW AND STEAM
FLOW TRANSIENTS FOR A STEAM LINE DER,
OFFSITE POWER AVAILABLE



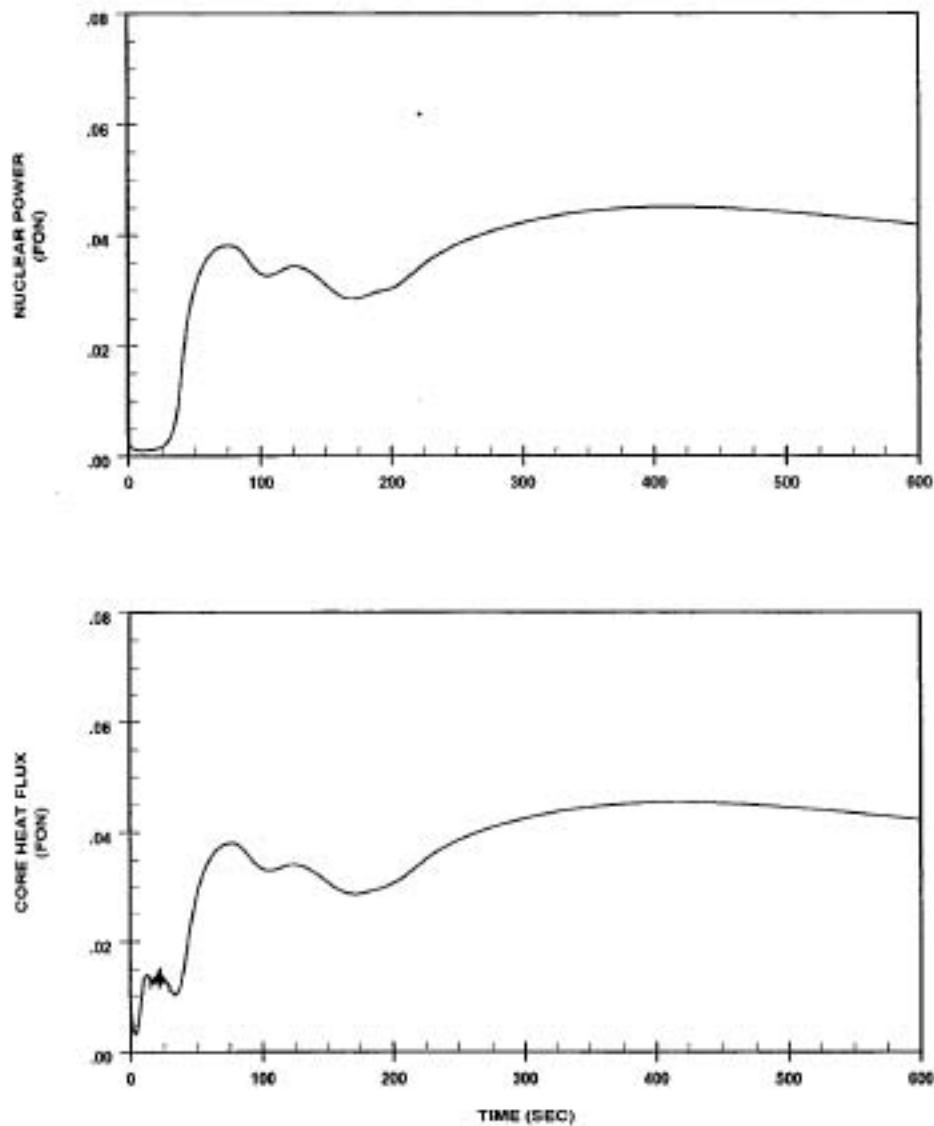
REV. OL-16
5/88

CALLAWAY PLANT

FIGURE 15.1-17B

STEAM PRESSURE AND CORE FLOW
TRANSIENTS FOR A STEAM LINE DER,
OFFSITE POWER AVAILABLE

Figure 15.1-18 Deleted

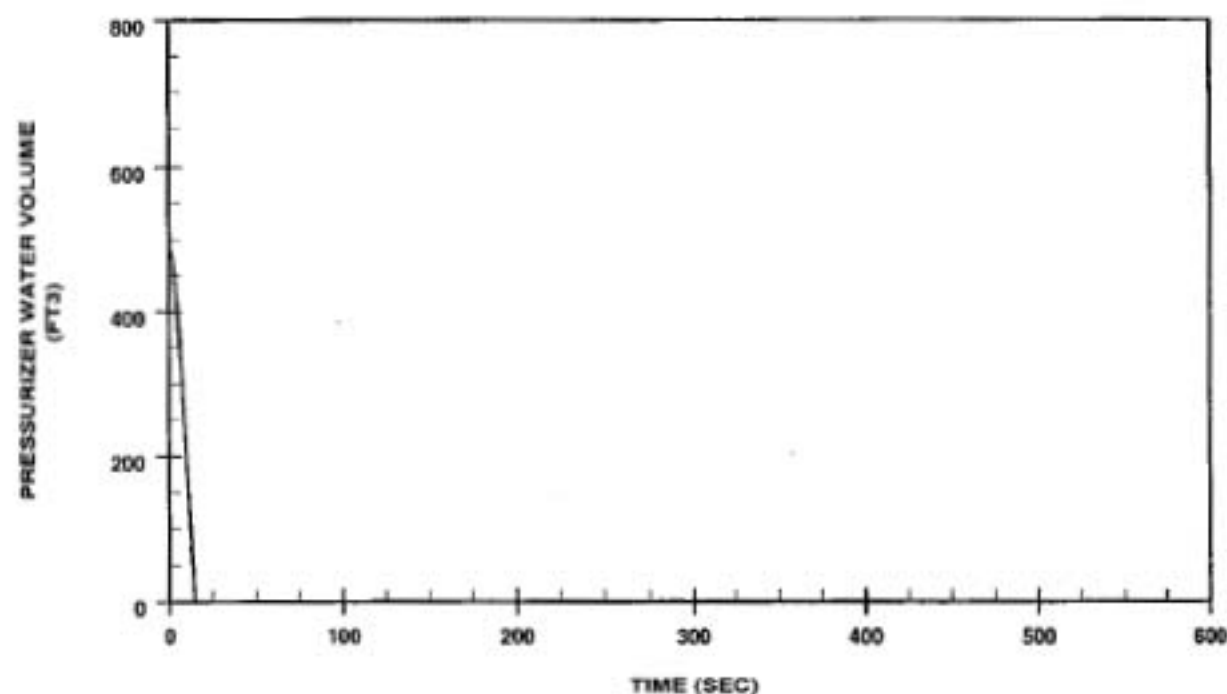
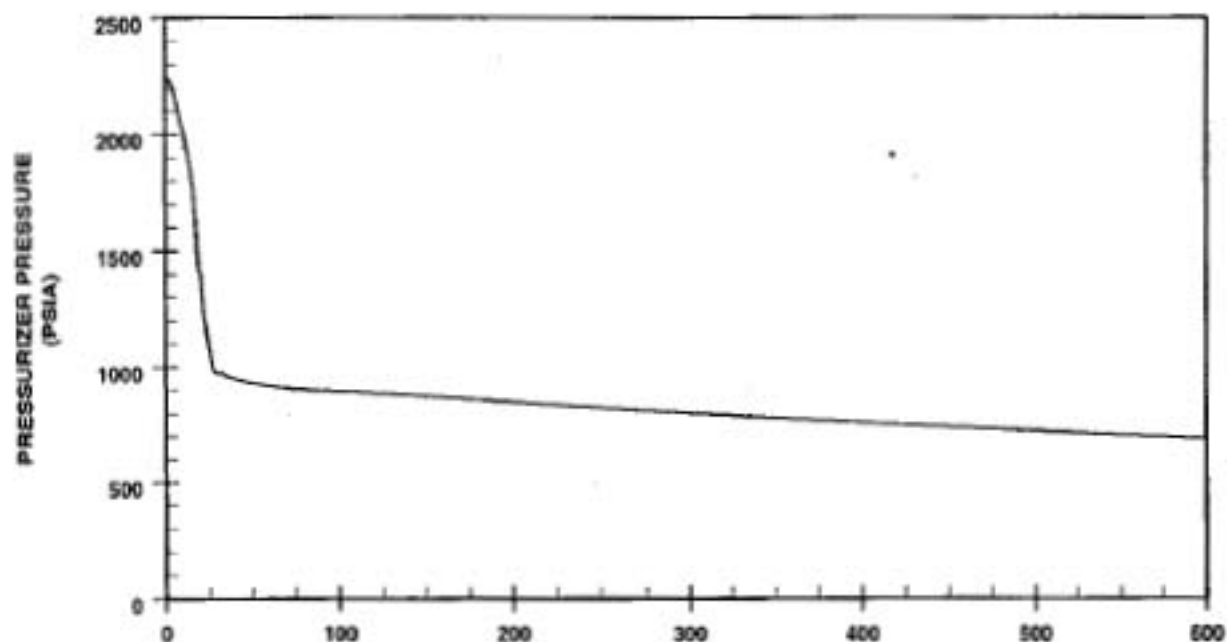


REV. OL-15
5/06

CALLAWAY PLANT

FIGURE 16.1-10A

**NUCLEAR POWER AND CORE HEAT FLUX
TRANSIENTS FOR STEAM LINE BRK,
NO OFFSITE POWER AVAILABLE**



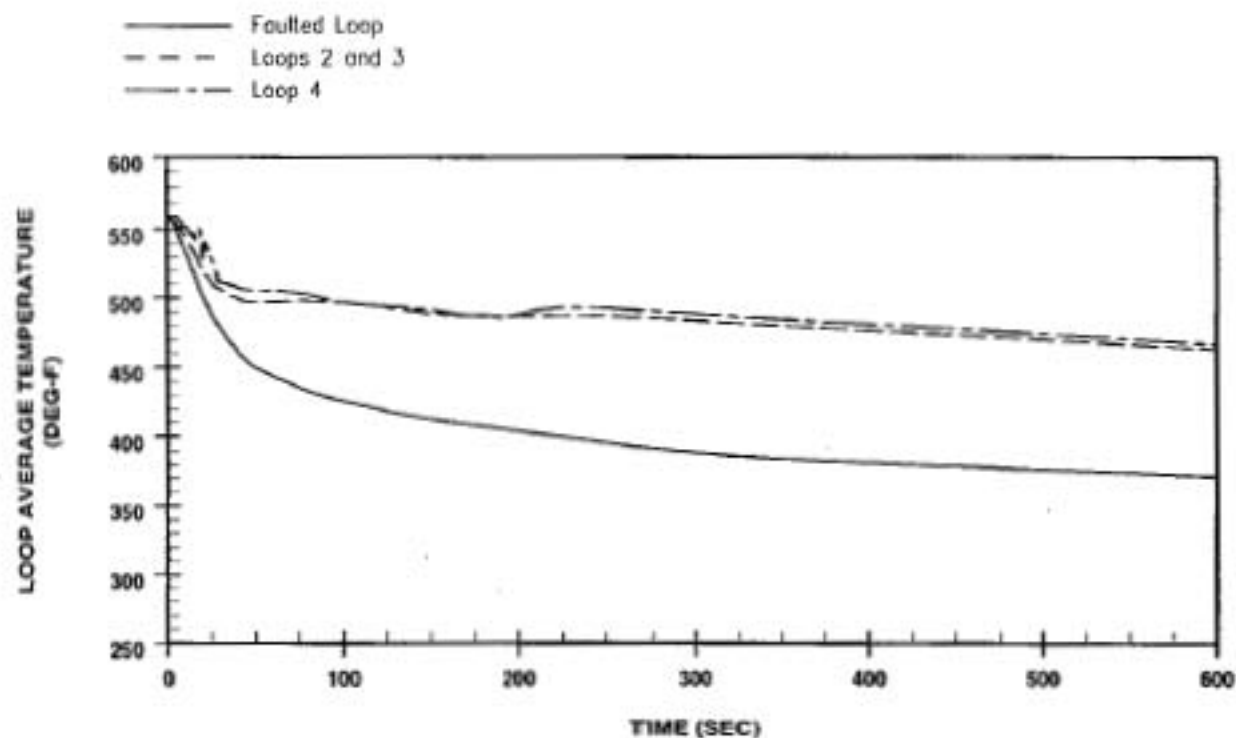
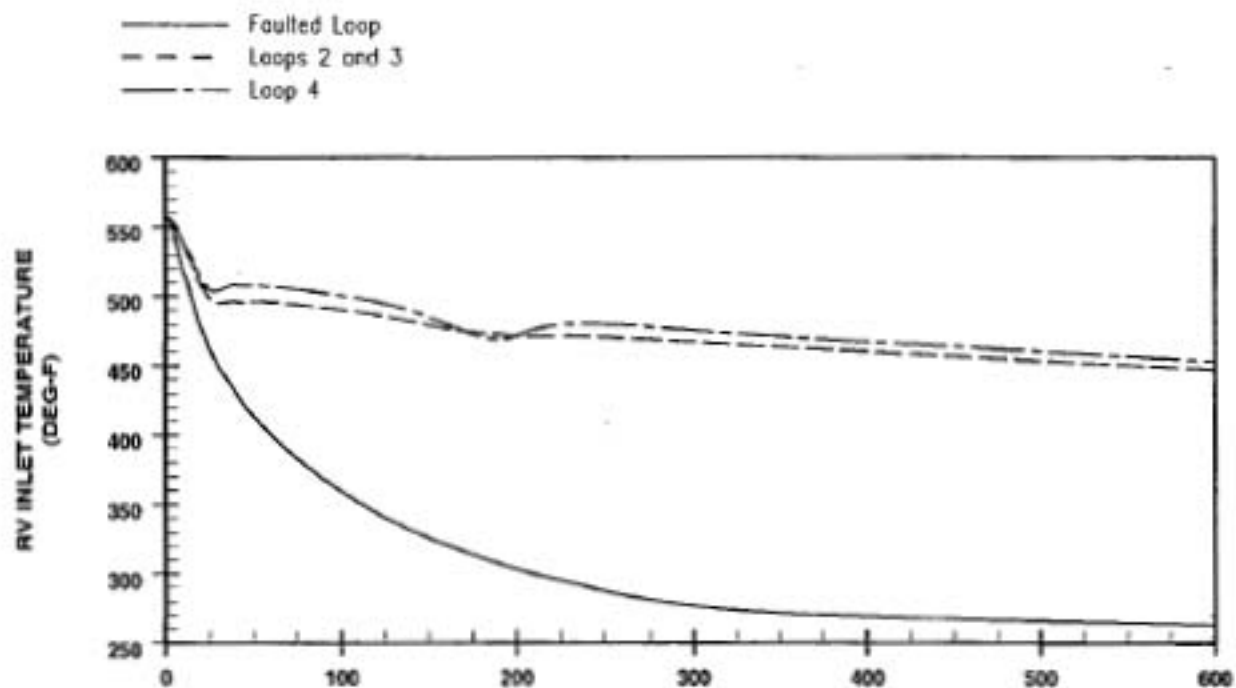
REV. OL-16
5/88

CALLAWAY PLANT

FIGURE 15.1-18B

PRESSURIZER PRESSURE AND PRESSURIZER WATER
VOLUME TRANSIENTS FOR A STEAM LINE DER,
NO OFFSITE POWER AVAILABLE

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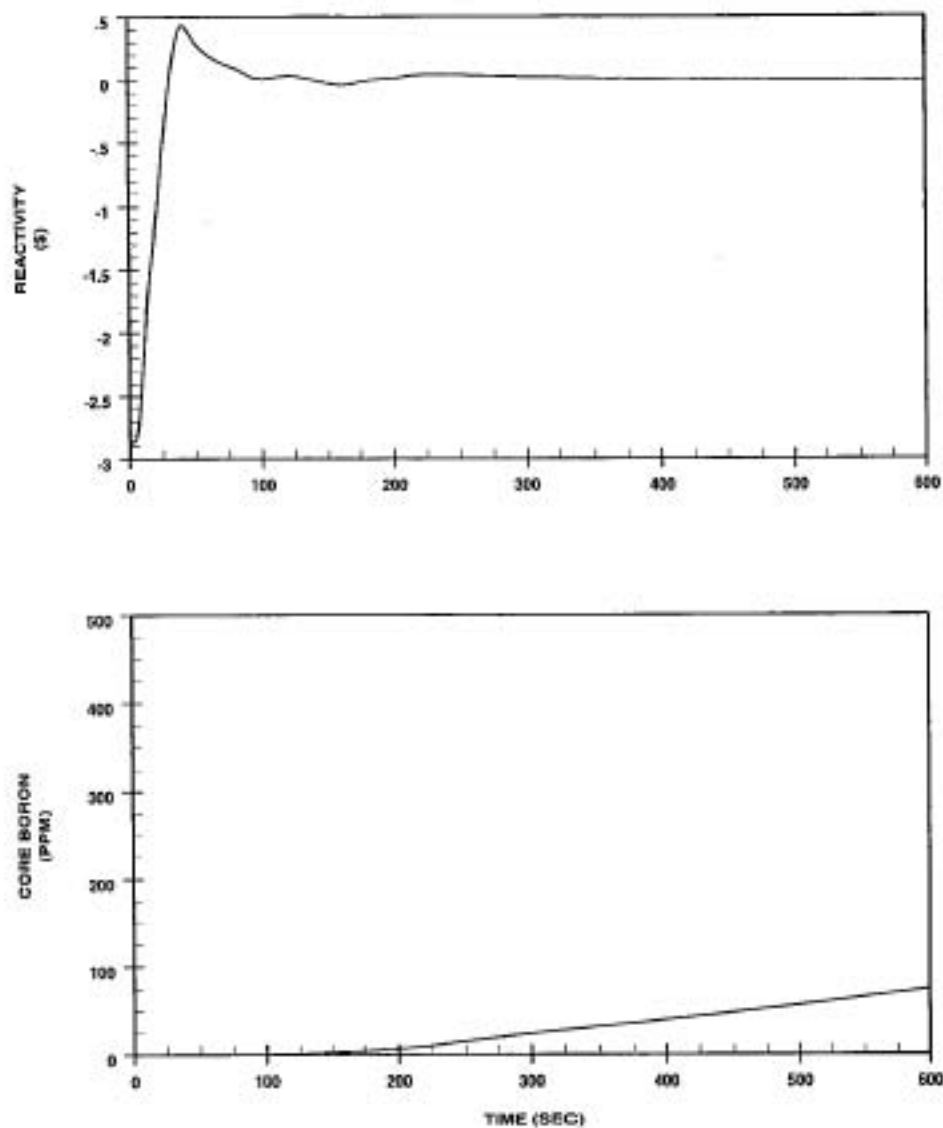


REV. OL-16
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CALLAWAY PLANT

FIGURE 15.1-19A

VESSEL INLET AND LOOP AVERAGE
TEMPERATURE TRANSIENTS FOR A STEAM
LINE DER, NO OFFSITE POWER AVAILABLE



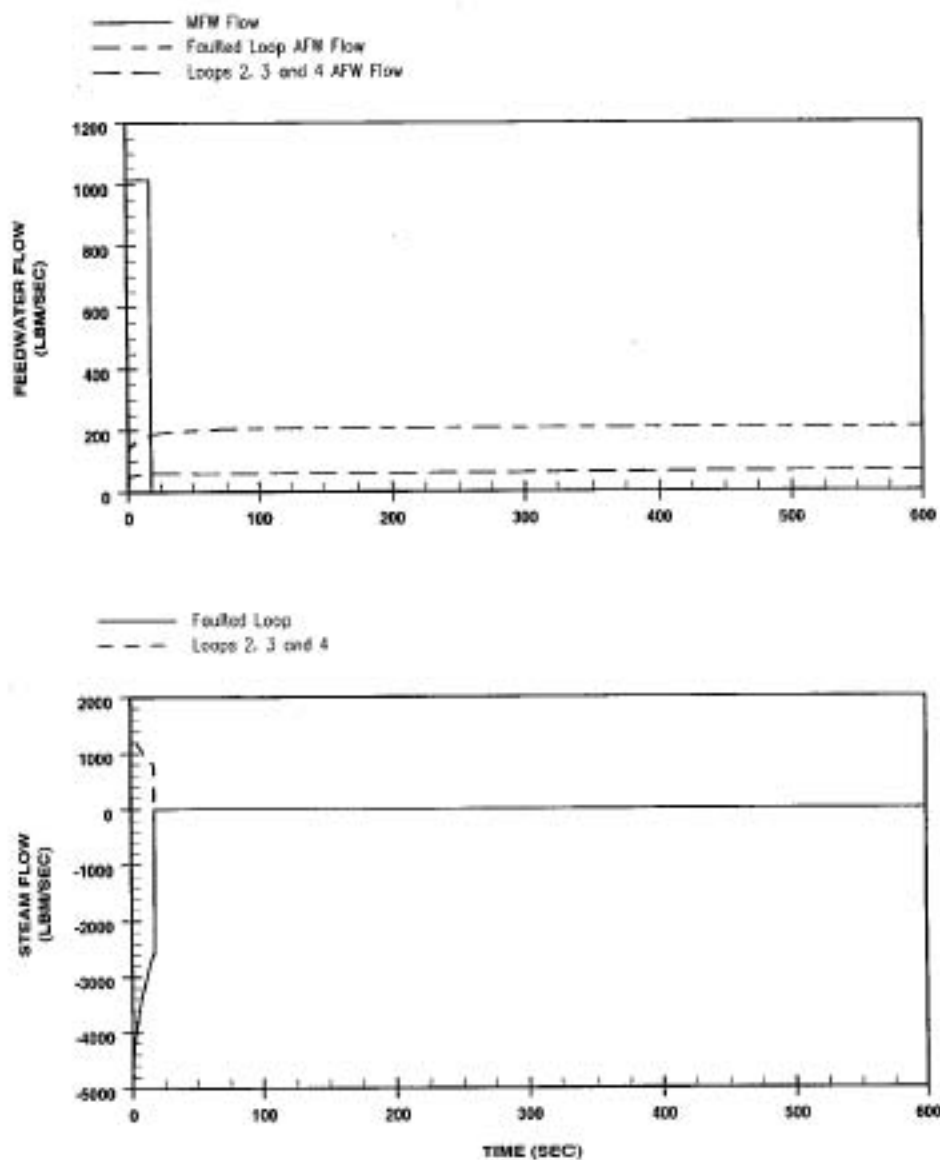
REV. OL-16
5/88

CALLAWAY PLANT

FIGURE 16.1-19B

REACTIVITY AND CORE BORON
TRANSIENTS FOR A STEAM LINE DER,
NO OFFSITE POWER AVAILABLE

Figure 15.1-20 Deleted

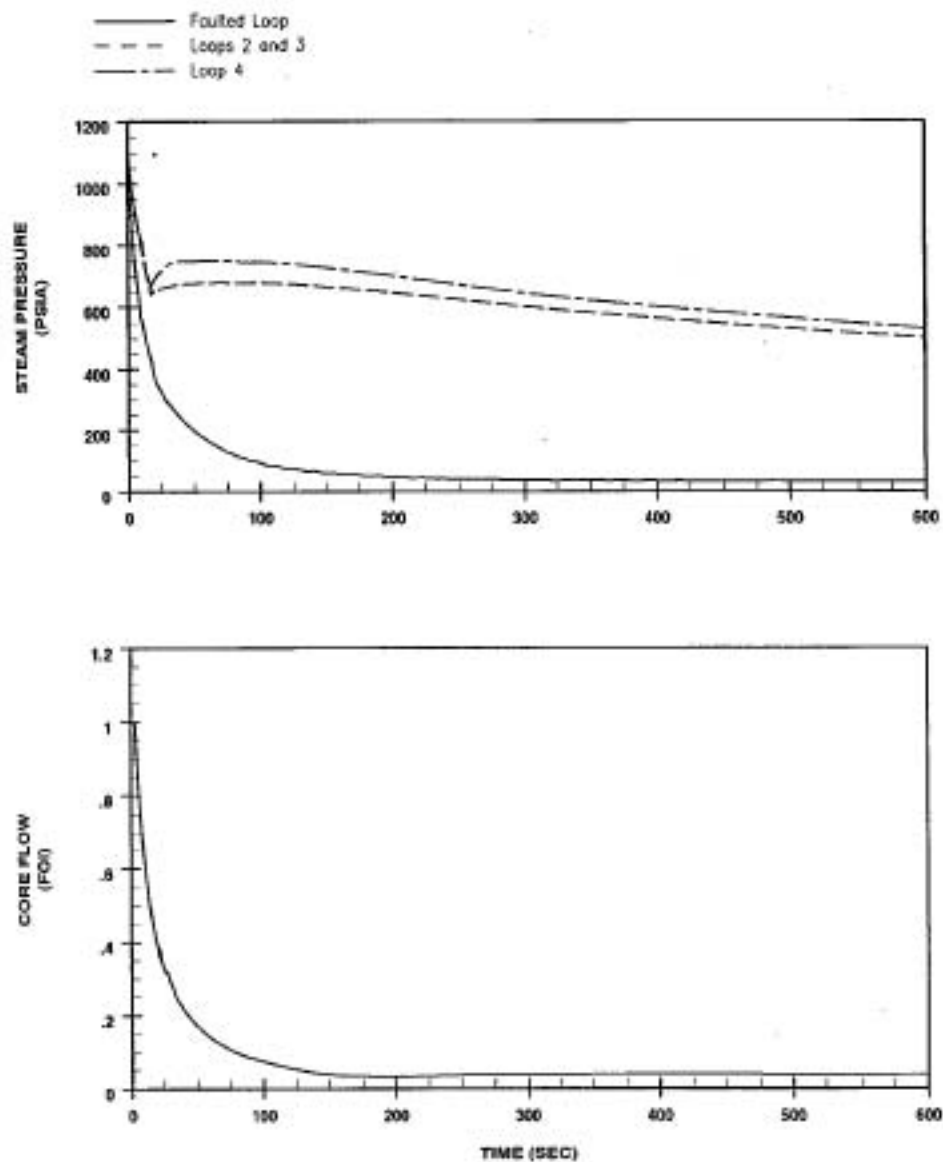


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CALLAWAY PLANT

FIGURE 16.1-20A

**FEEDWATER FLOW AND STEAM FLOW
TRANSIENTS FOR A STEAM LINE DER,
NO OFFSITE POWER AVAILABLE**

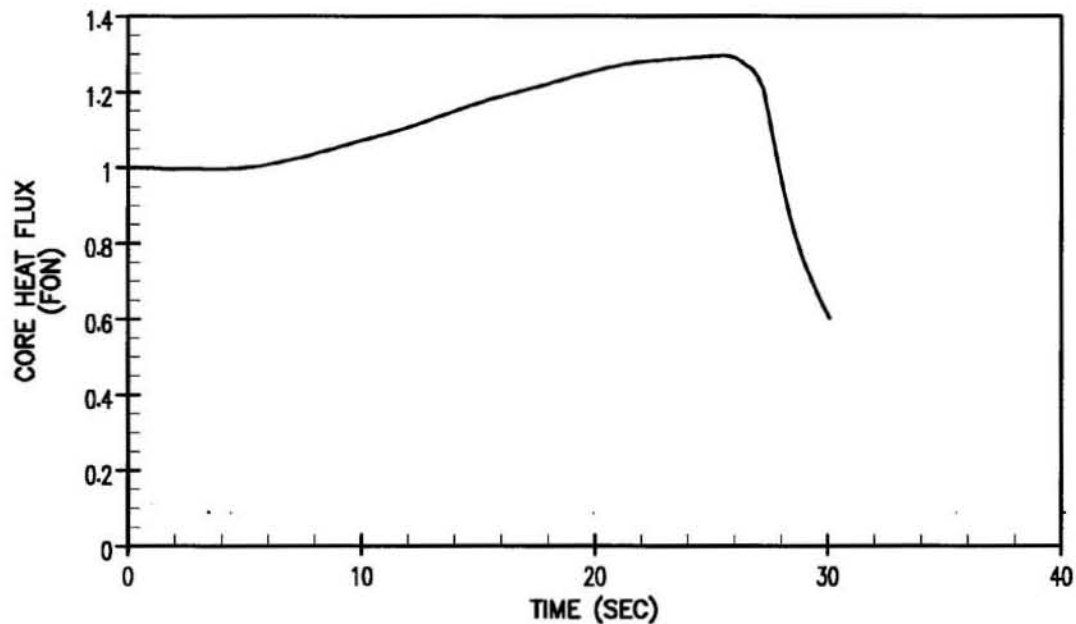
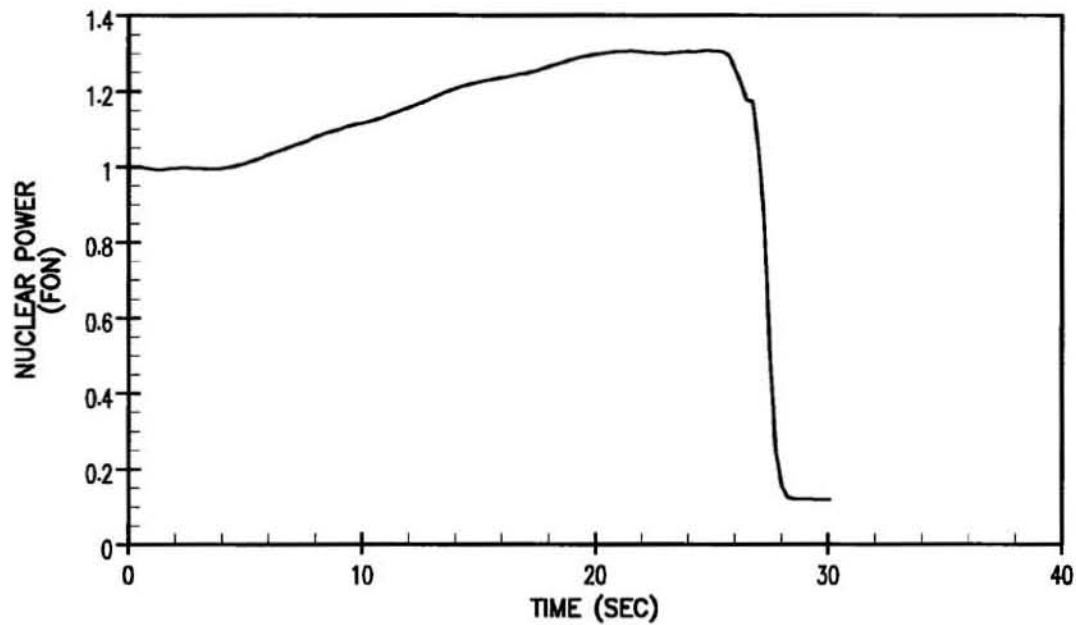


REV. OL-16
5/88

CALLAWAY PLANT

FIGURE 15.1-20B

STEAM PRESSURE AND CORE FLOW
TRANSIENTS FOR A STEAM LINE DER,
NO OFFSITE POWER AVAILABLE



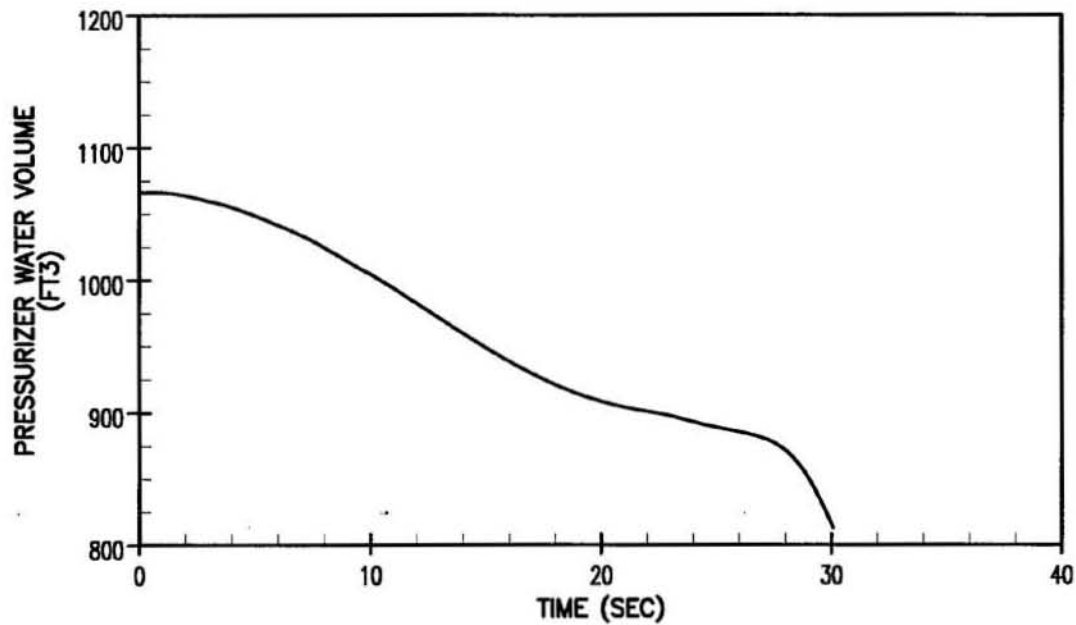
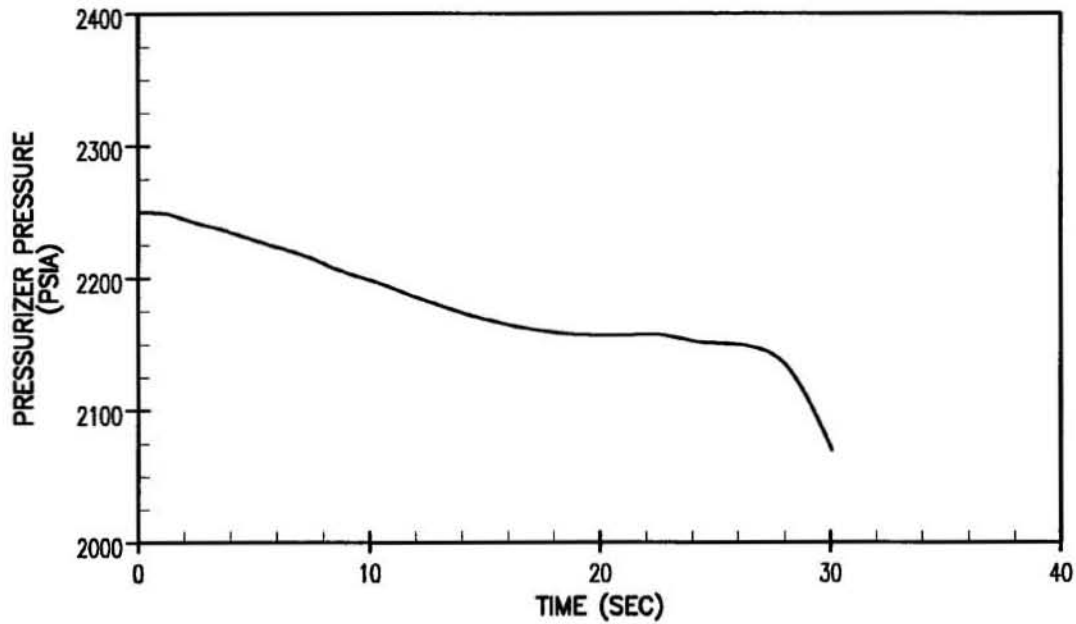
The analysis that produced the above figures conservatively bounds the actual plant configuration. This analysis uses different setpoint coefficients in the OPΔT reactor trip setpoint from what is currently configured. The effect of the differences between the analysis inputs and the plant configuration is that the analysis inputs result in delayed protection and more limiting results.

CALLAWAY PLANT

FIGURE 15.1-21

STEAMLINE RUPTURE FULL POWER
CORE RESPONSE

REV. 12 1/10



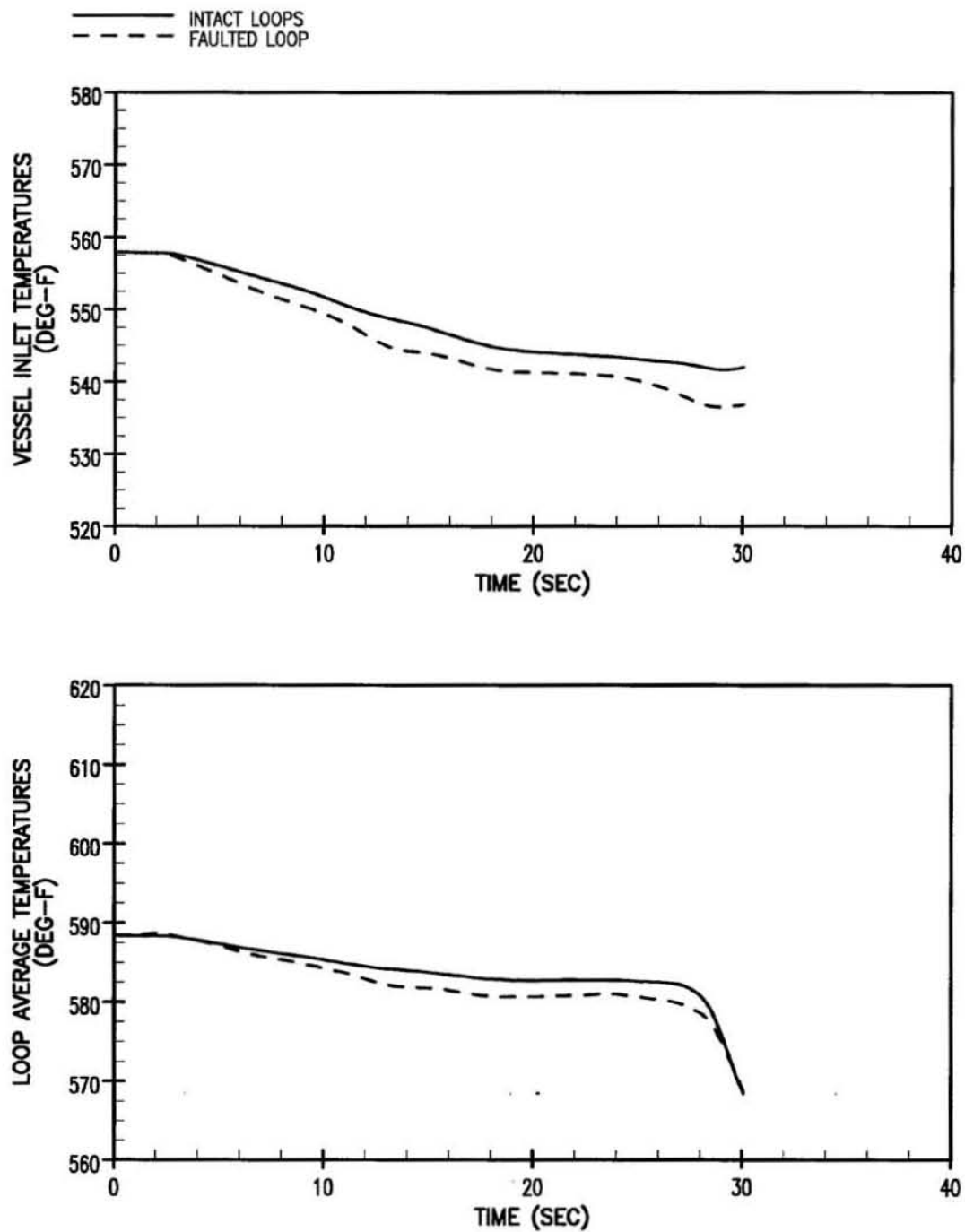
The analysis that produced the above figures conservatively bounds the actual plant configuration. This analysis uses different setpoint coefficients in the OPΔT reactor trip setpoint from what is currently configured. The effect of the differences between the analysis inputs and the plant configuration is that the analysis inputs result in delayed protection and more limiting results.

CALLAWAY PLANT

FIGURE 15.1-22

STEAMLINE RUPTURE FULL POWER
CORE RESPONSE

REV. 12 1/10



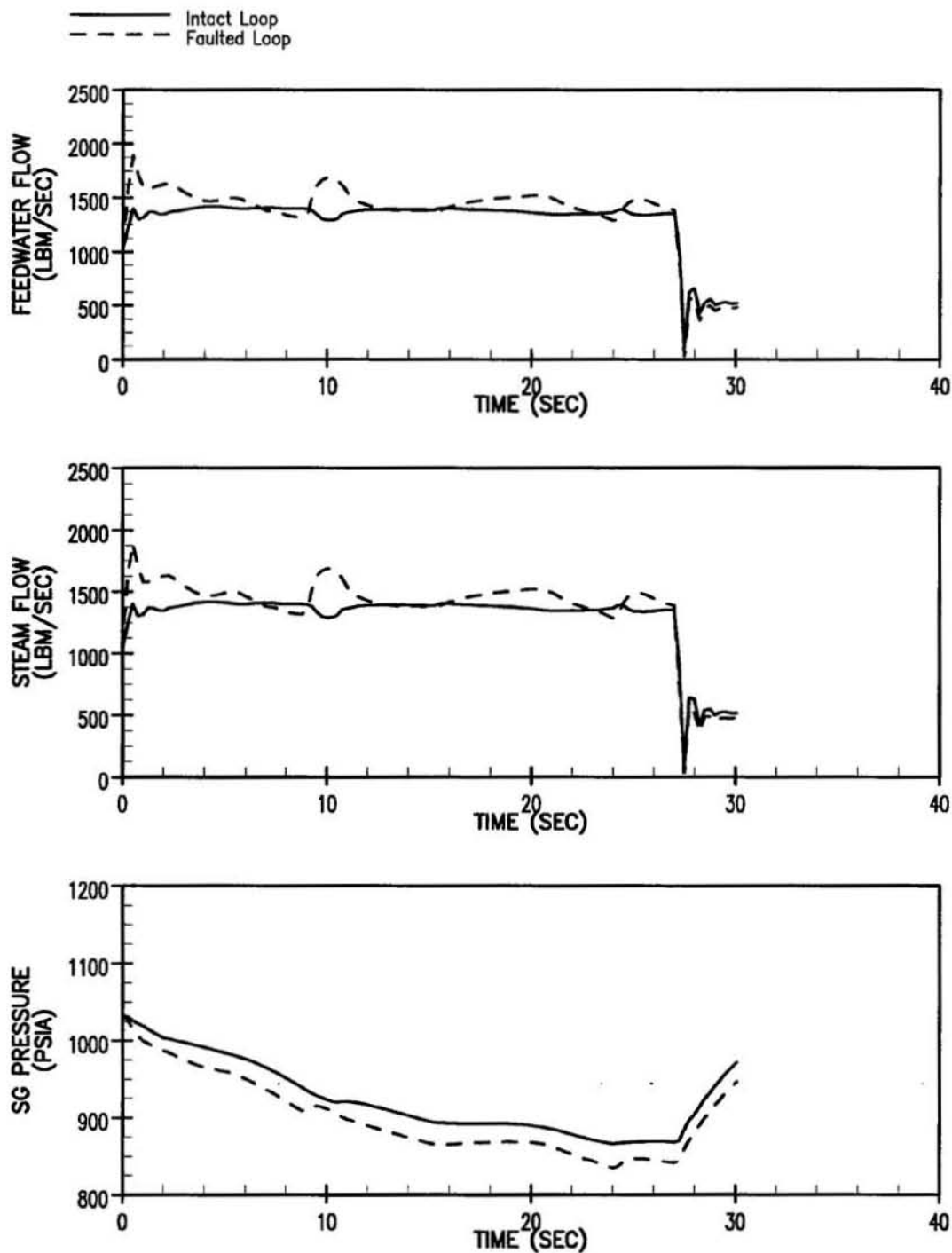
The analysis that produced the above figures conservatively bounds the actual plant configuration. This analysis uses different setpoint coefficients in the OPΔT reactor trip setpoint from what is currently configured. The effect of the differences between the analysis inputs and the plant configuration is that the analysis inputs result in delayed protection and more limiting results.

CALLAWAY PLANT

FIGURE 15.1-23

STEAMLINE RUPTURE FULL POWER
CORE RESPONSE

REV. 0 1/10

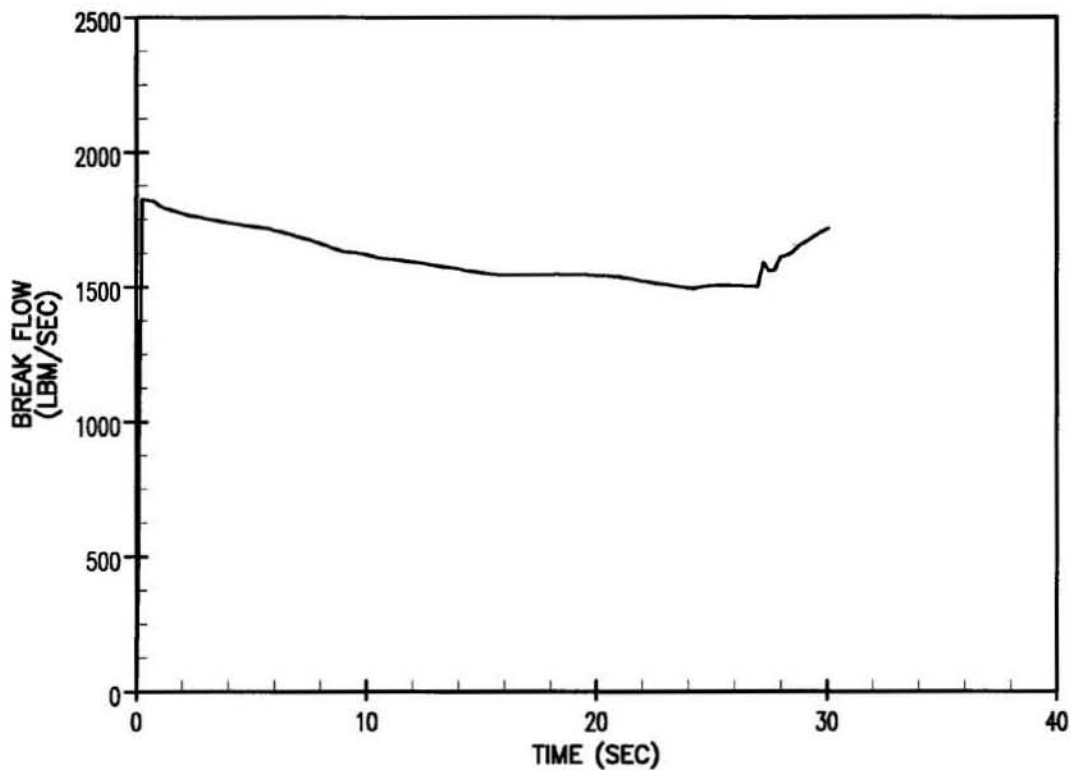


The analysis that produced the above figures conservatively bounds the actual plant configuration. This analysis uses different setpoint coefficients in the OPΔT reactor trip setpoint from what is currently configured. The effect of the differences between the analysis inputs and the plant configuration is that the analysis inputs result in delayed protection and more limiting results.

CALLAWAY PLANT

FIGURE 15.1-24
STEAMLINE RUPTURE FULL POWER
CORE RESPONSE

REV. 0 1/10



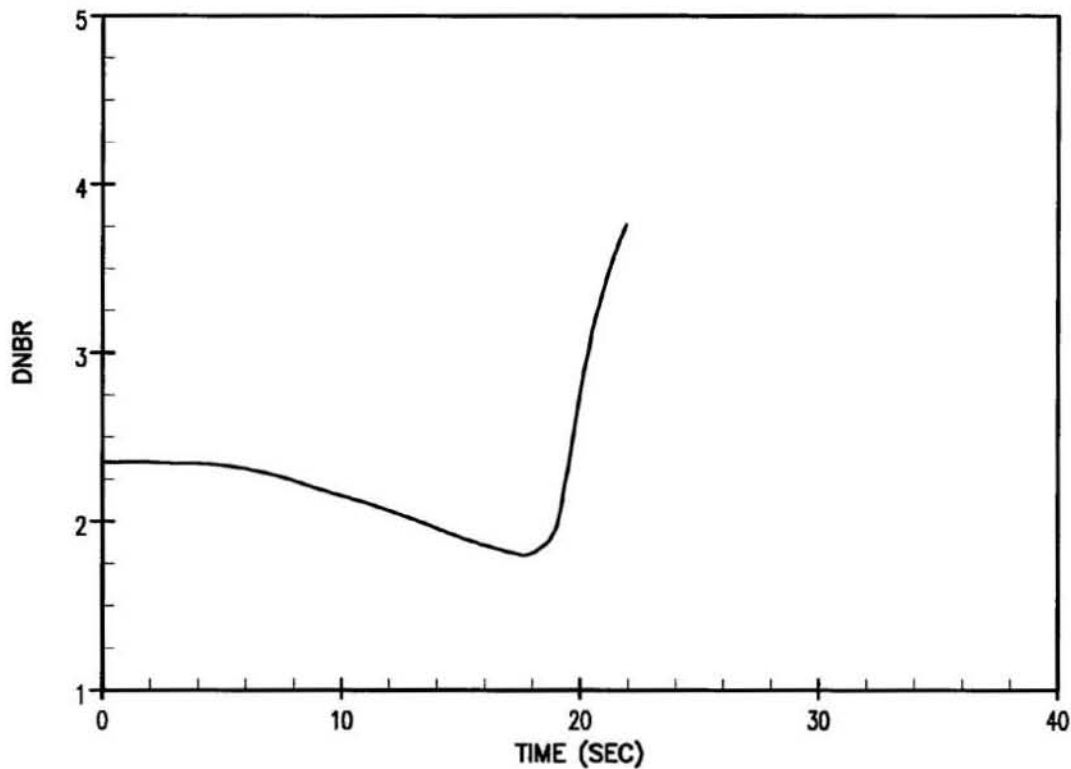
The analysis that produced the above figures conservatively bounds the actual plant configuration. This analysis uses different setpoint coefficients in the OPΔT reactor trip setpoint from what is currently configured. The effect of the differences between the analysis inputs and the plant configuration is that the analysis inputs result in delayed protection and more limiting results.

CALLAWAY PLANT

FIGURE 15.1-25

STEAMLINE RUPTURE FULL POWER
CORE RESPONSE

REV. 0 1/10



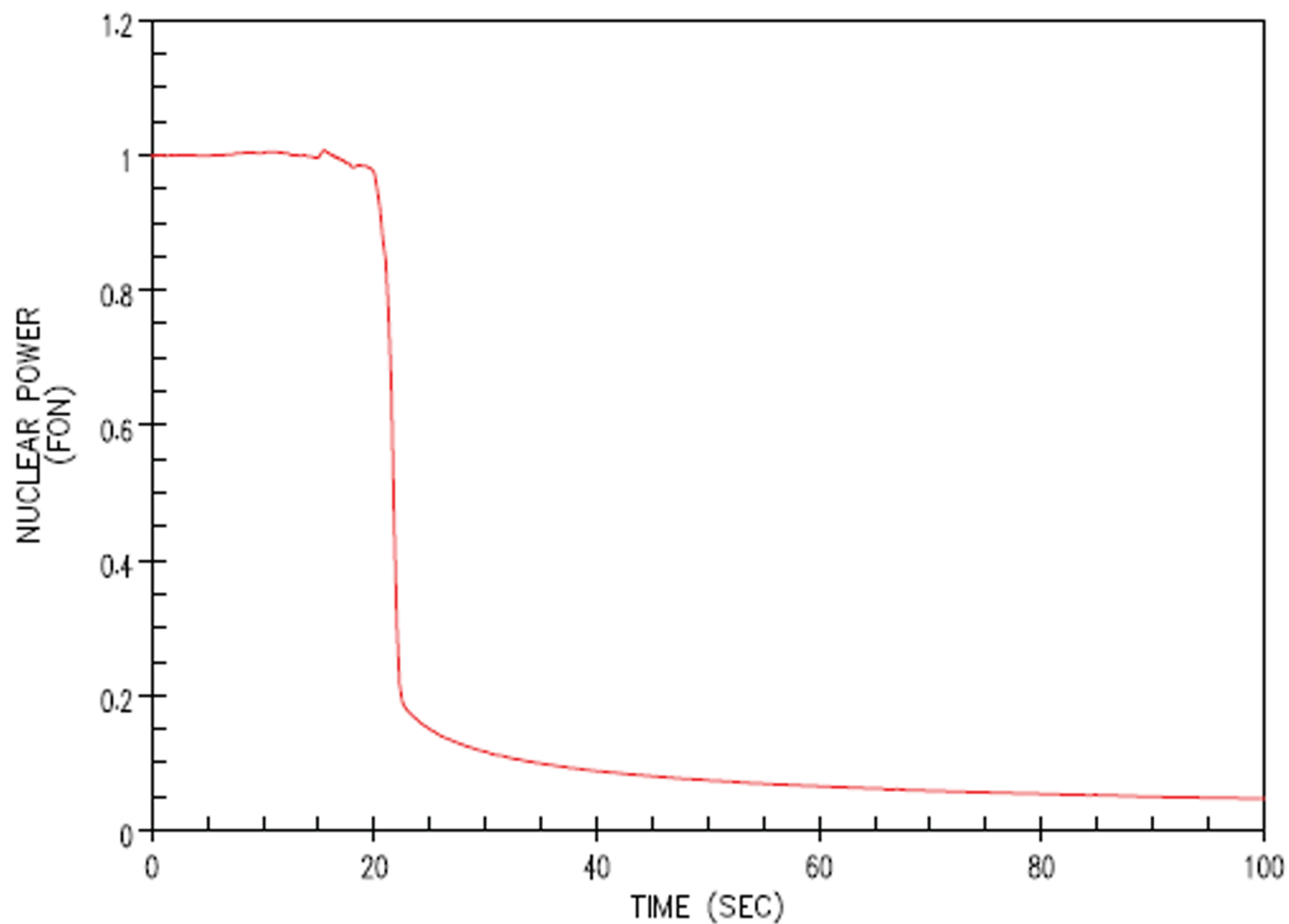
The analysis that produced the above figures conservatively bounds the actual plant configuration. This analysis uses different setpoint coefficients in the OPΔT reactor trip setpoint from what is currently configured. The effect of the differences between the analysis inputs and the plant configuration is that the analysis inputs result in delayed protection and more limiting results.

CALLAWAY PLANT

FIGURE 15.1-26

STEAMLINE RUPTURE FULL POWER
CORE RESPONSE

REV. 0 1/10

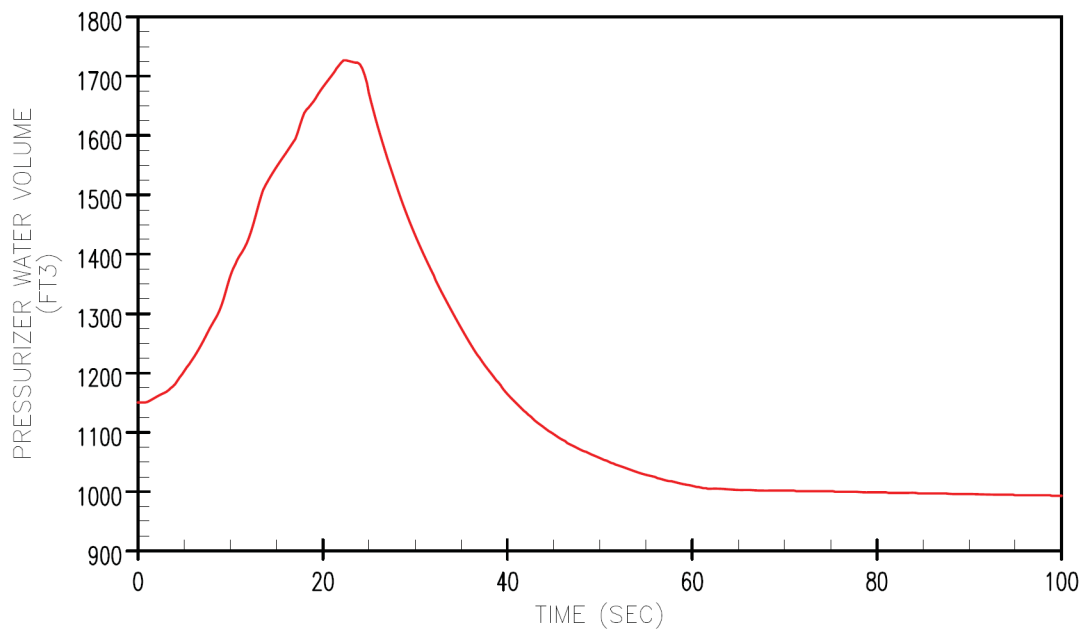
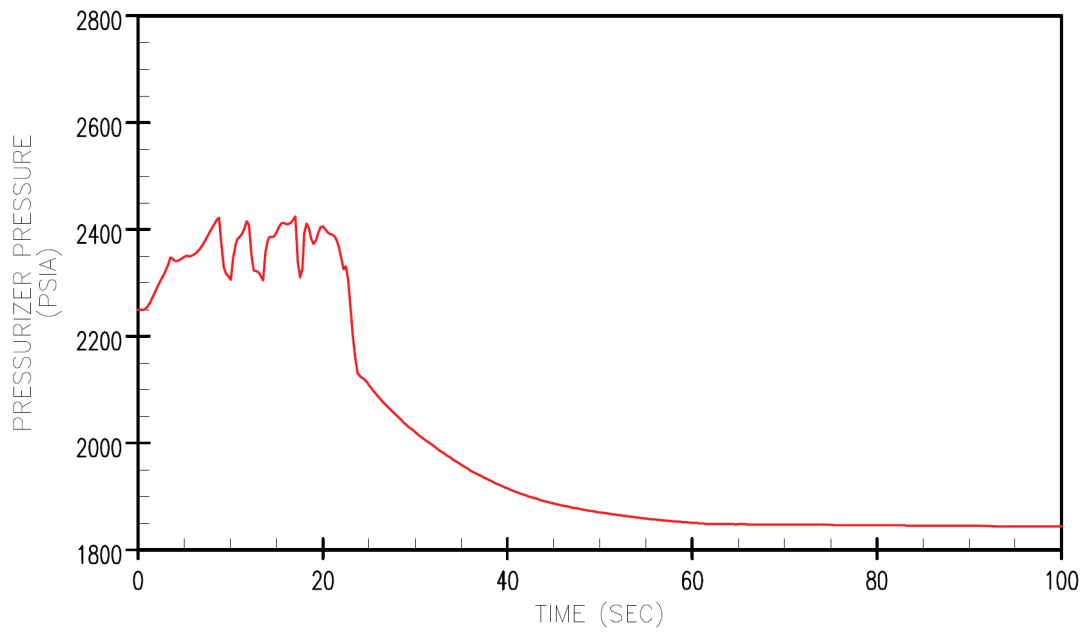


CALLAWAY PLANT

FIGURE 15.2-1

**TURBINE TRIP EVENT WITH
PRESSURIZER SPRAY AND POWER
OPERATED RELIEF VALVES**

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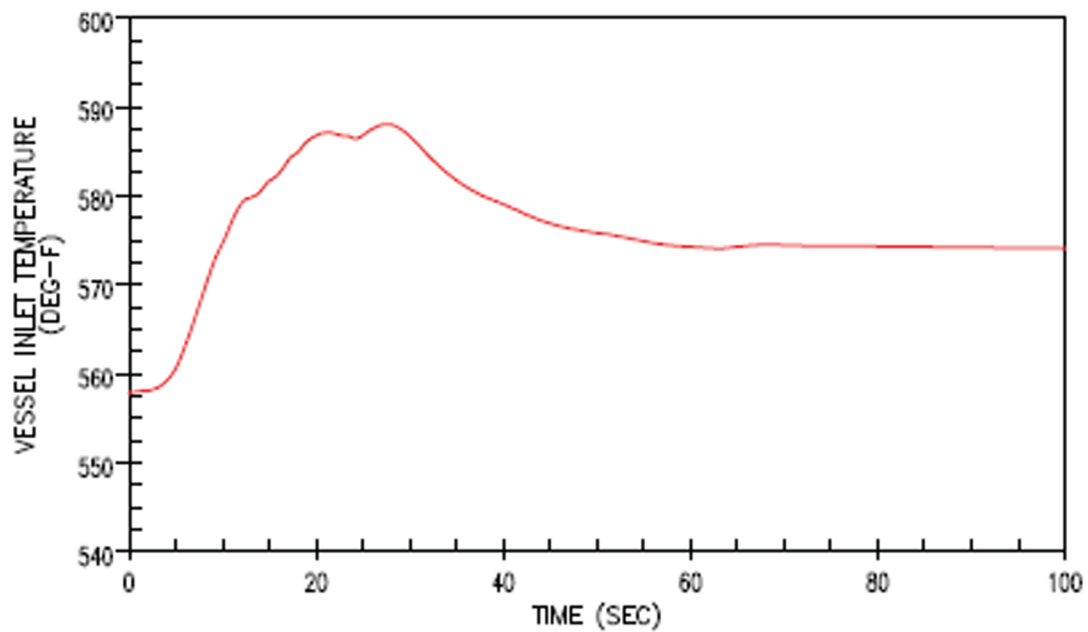
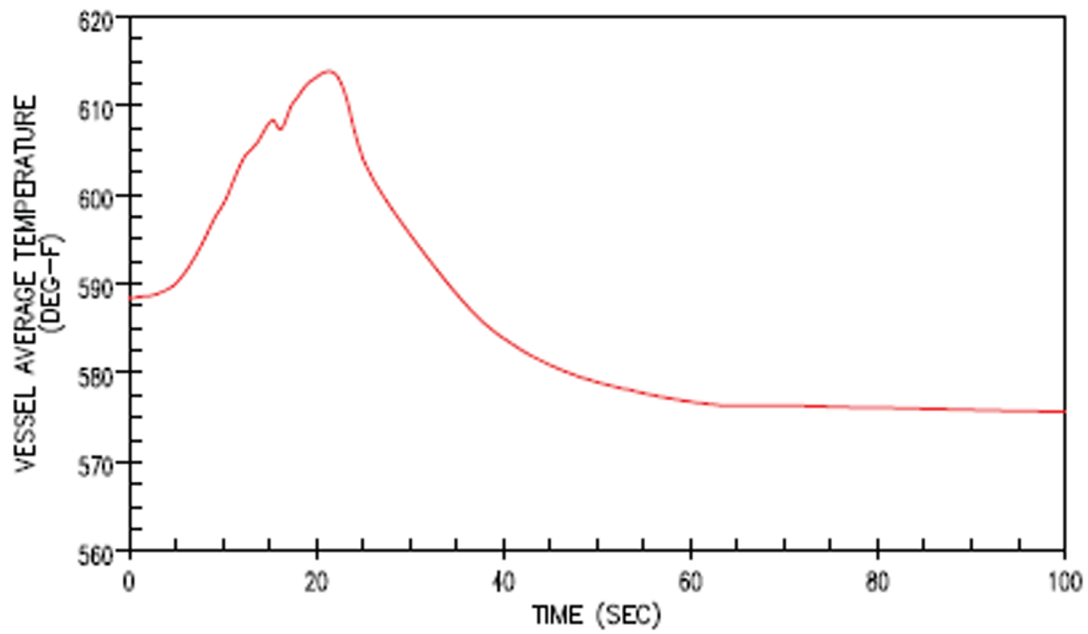


CALLAWAY PLANT

FIGURE 15.2-2

**TURBINE TRIP EVENT WITH
PRESSURIZER SPRAY AND POWER
OPERATED RELIEF VALVES**

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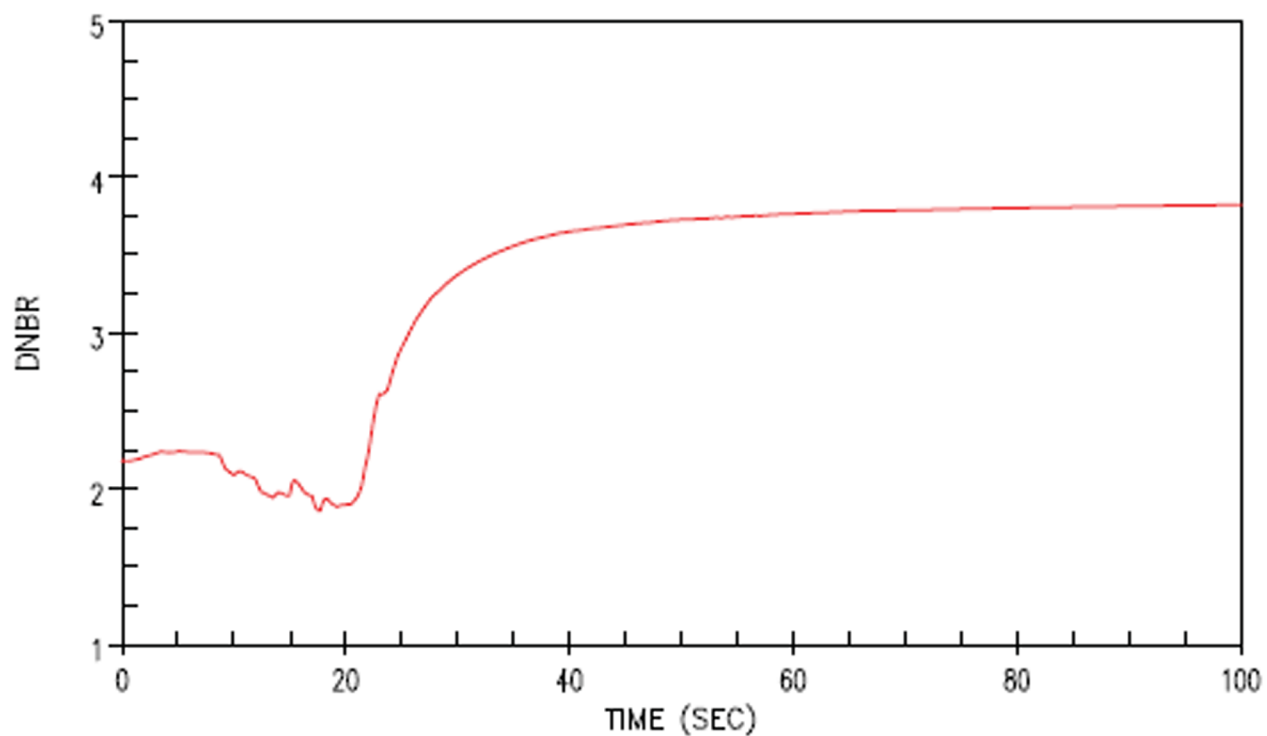
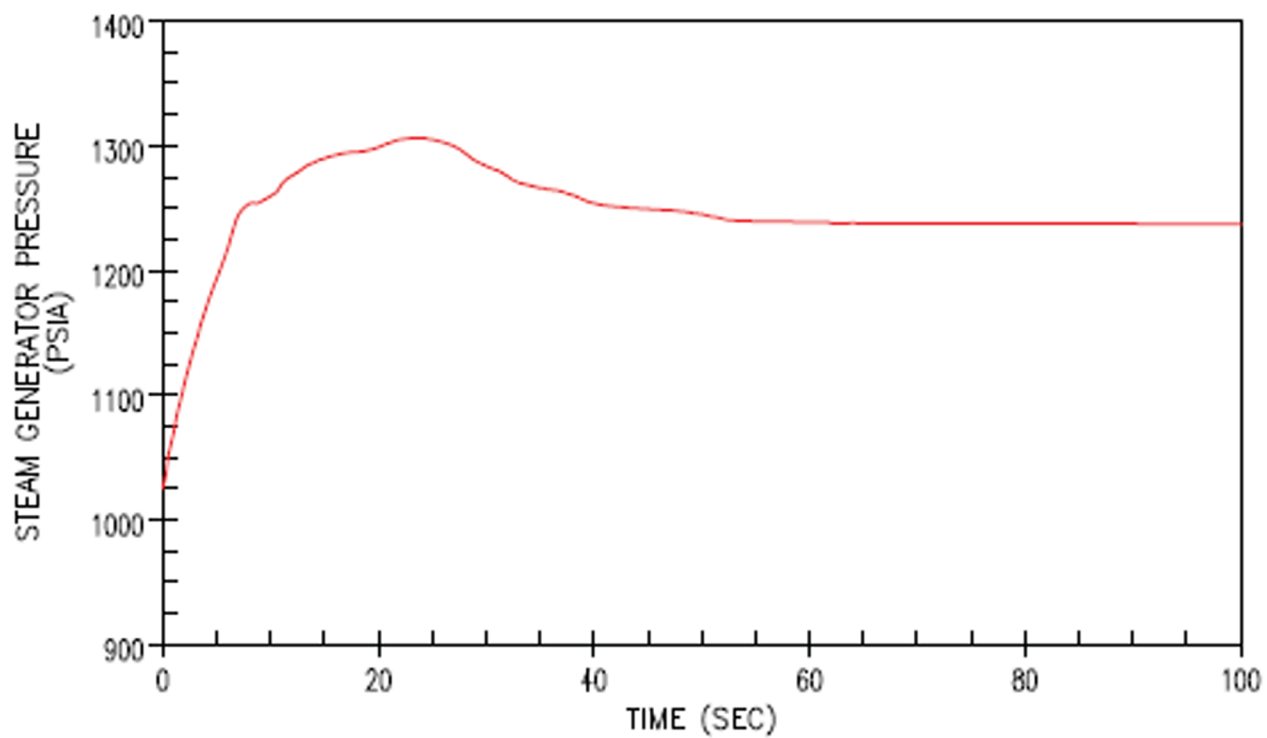


CALLAWAY PLANT

FIGURE 15.2-3

**TURBINE TRIP EVENT WITH
PRESSURIZER SPRAY AND POWER
OPERATED RELIEF VALVES**

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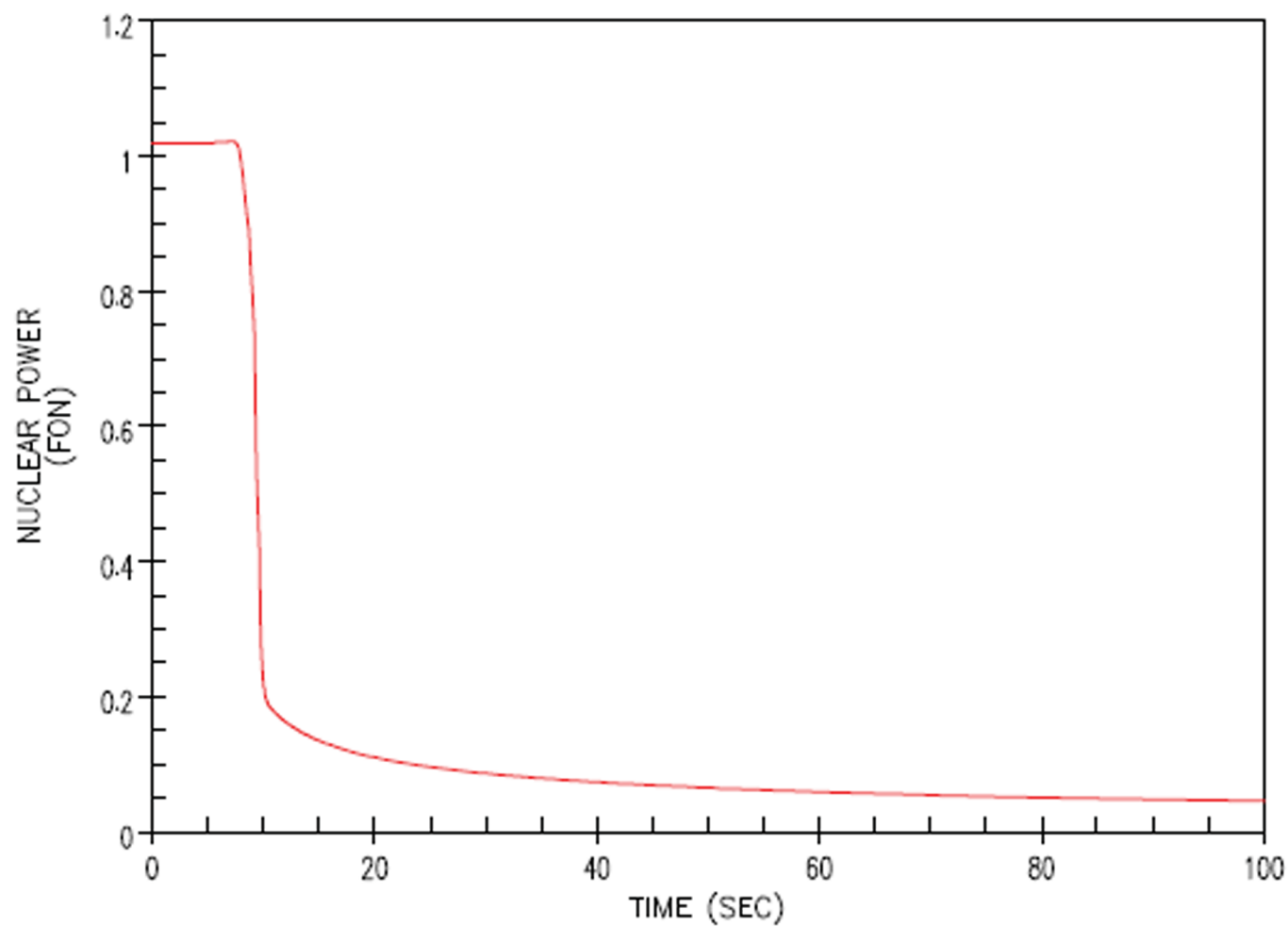


CALLAWAY PLANT

FIGURE 15.2-4

**TURBINE TRIP EVENT WITH
PRESSURIZER SPRAY AND POWER
OPERATED RELIEF VALVES**

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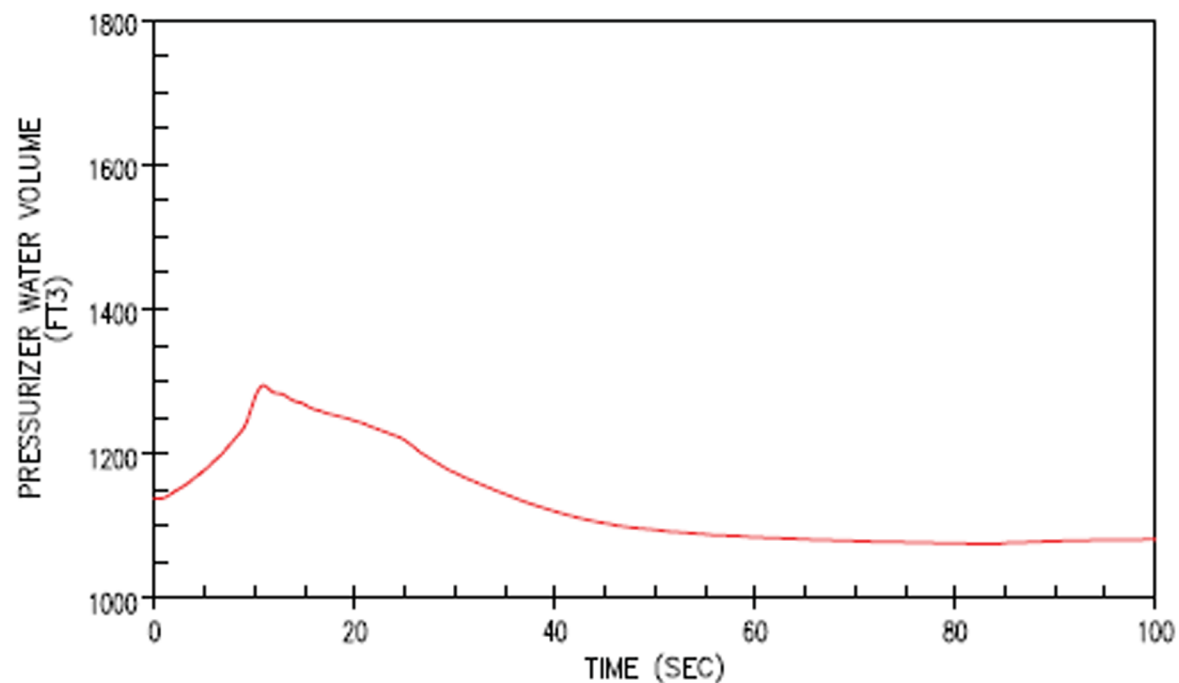
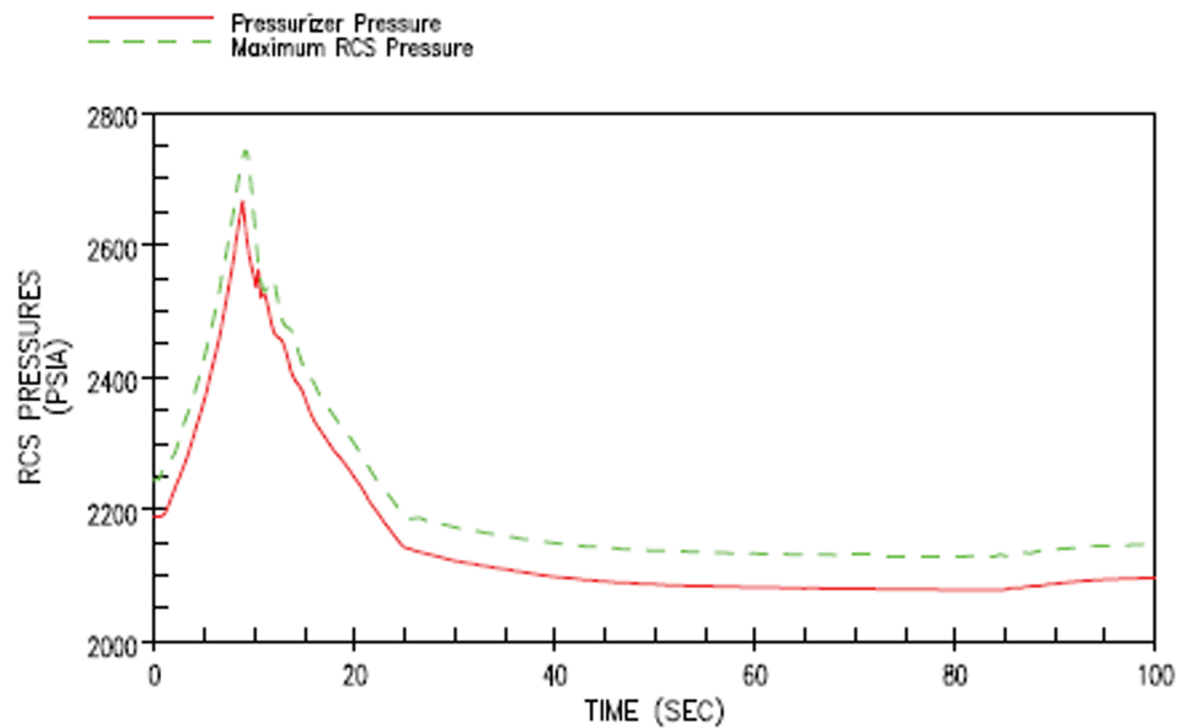


CALLAWAY PLANT

FIGURE 15.2-5

TURBINE TRIP EVENT WITHOUT
PRESSURIZER SPRAY AND POWER
OPERATED RELIEF VALVES

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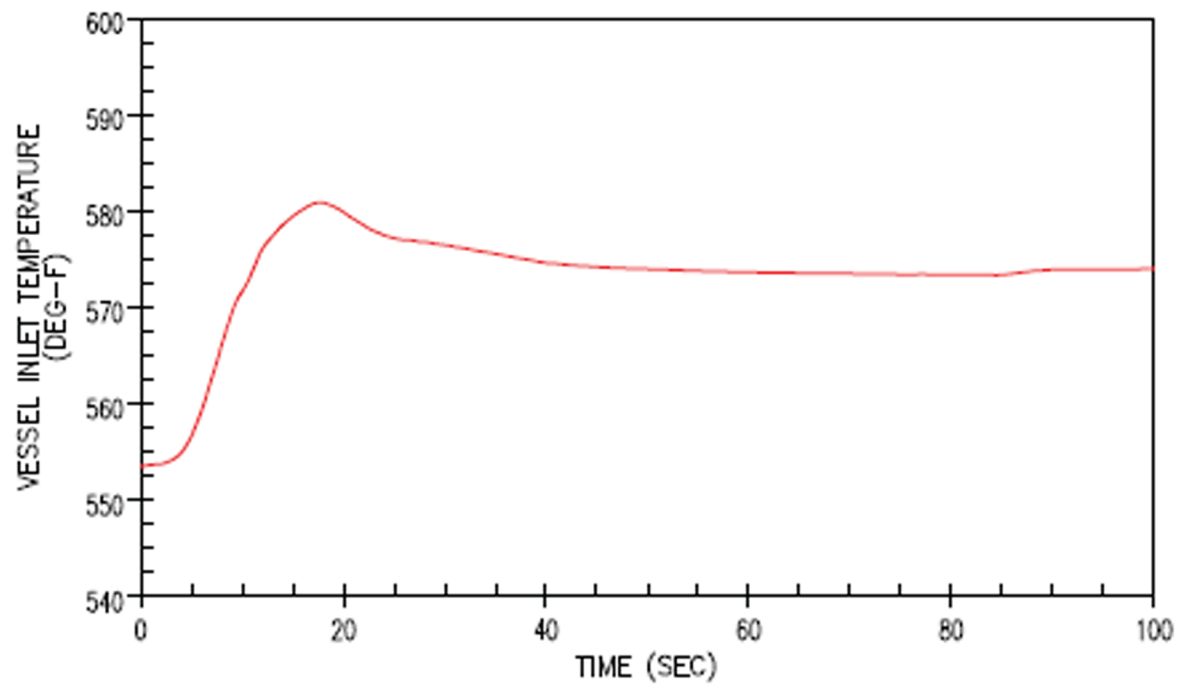
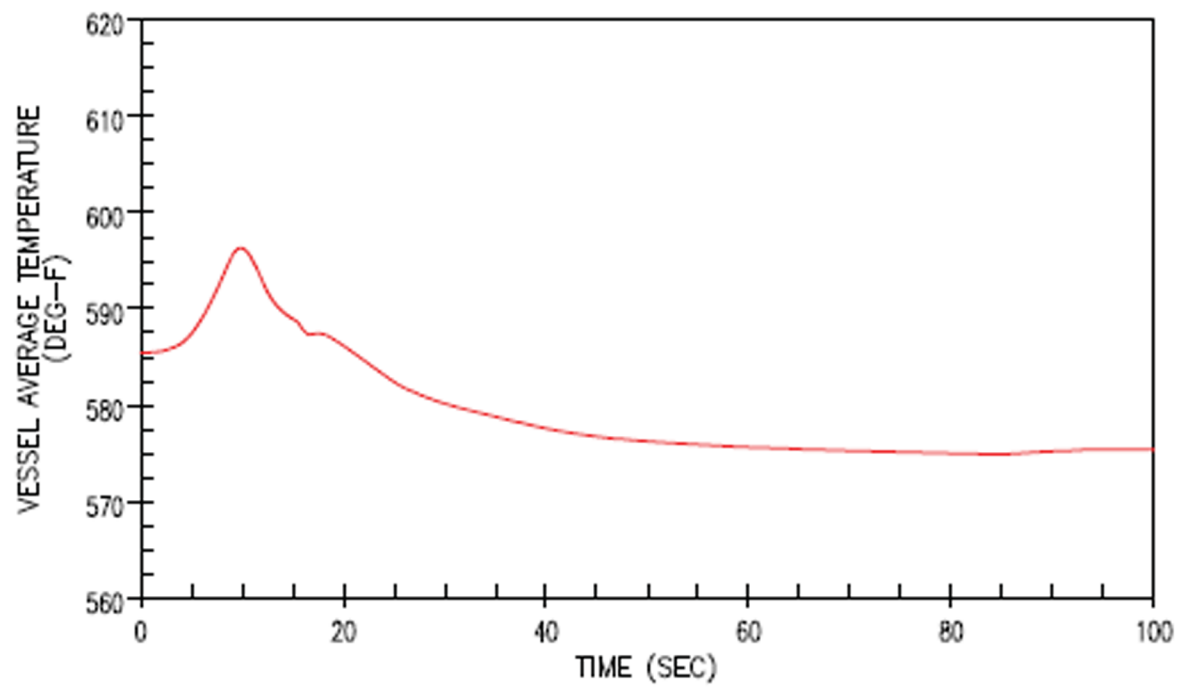


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FIGURE 15.2-6

**TURBINE TRIP EVENT WITHOUT
PRESSURIZER SPRAY AND POWER
OPERATED RELIEF VALVES**

Rev. 16 11/13

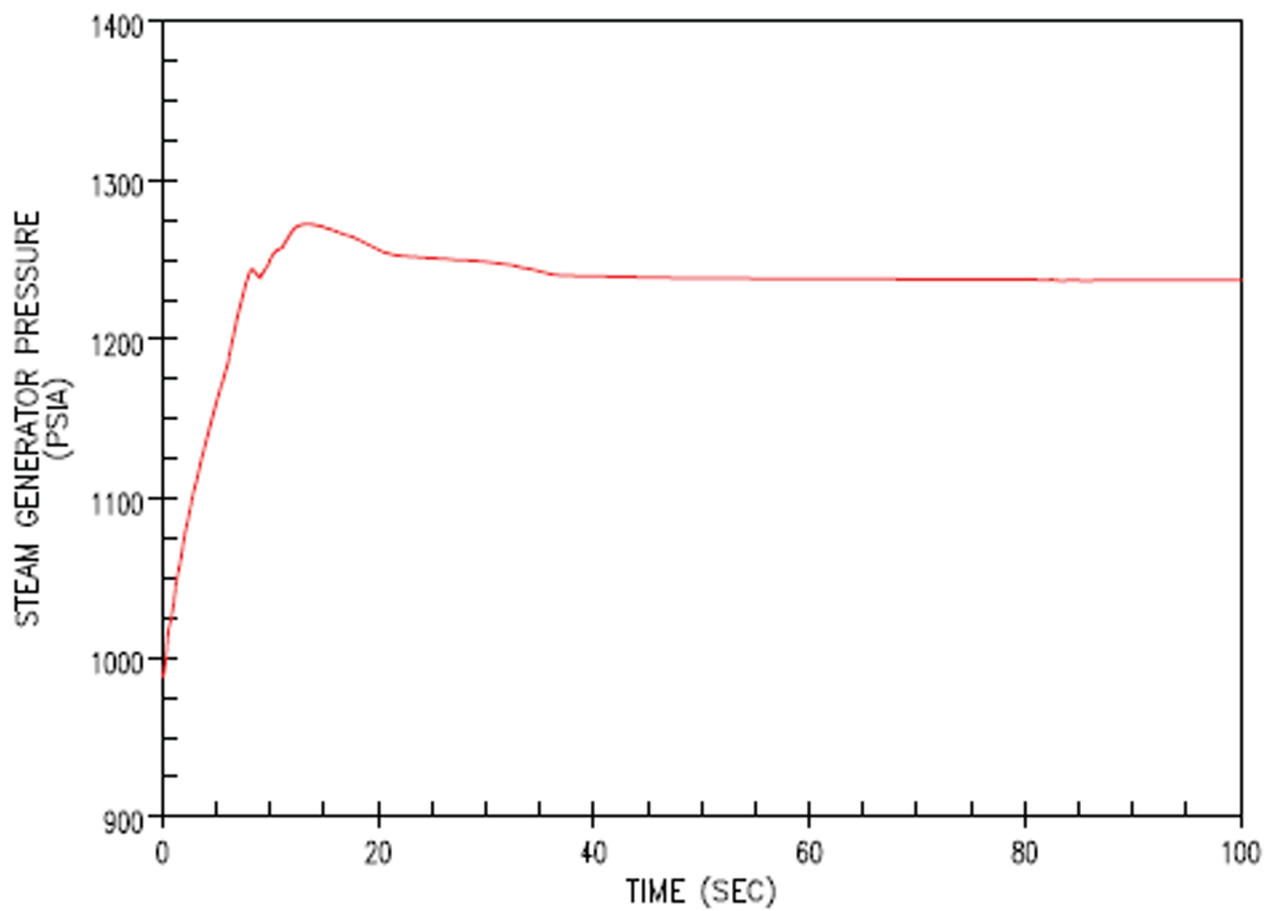


CALLAWAY PLANT

FIGURE 15.2-7

TURBINE TRIP EVENT WITHOUT
PRESSURIZER SPRAY AND POWER
OPERATED RELIEF VALVES

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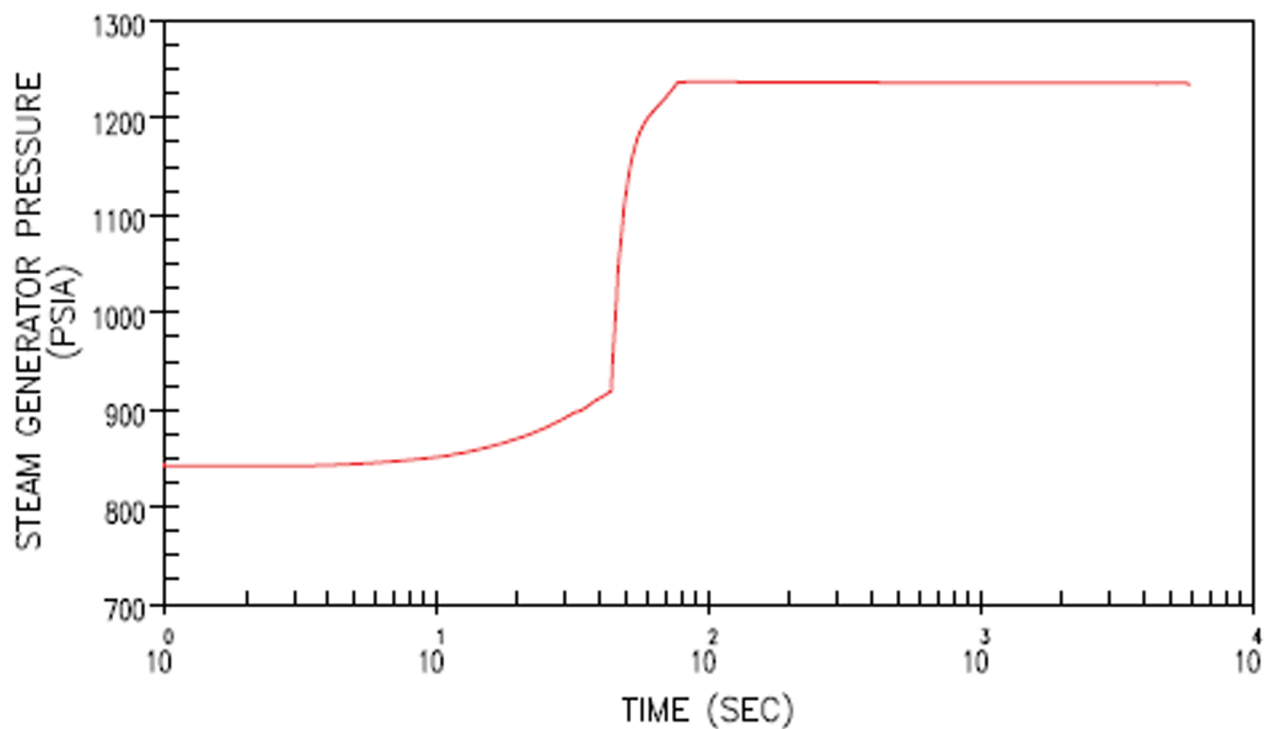
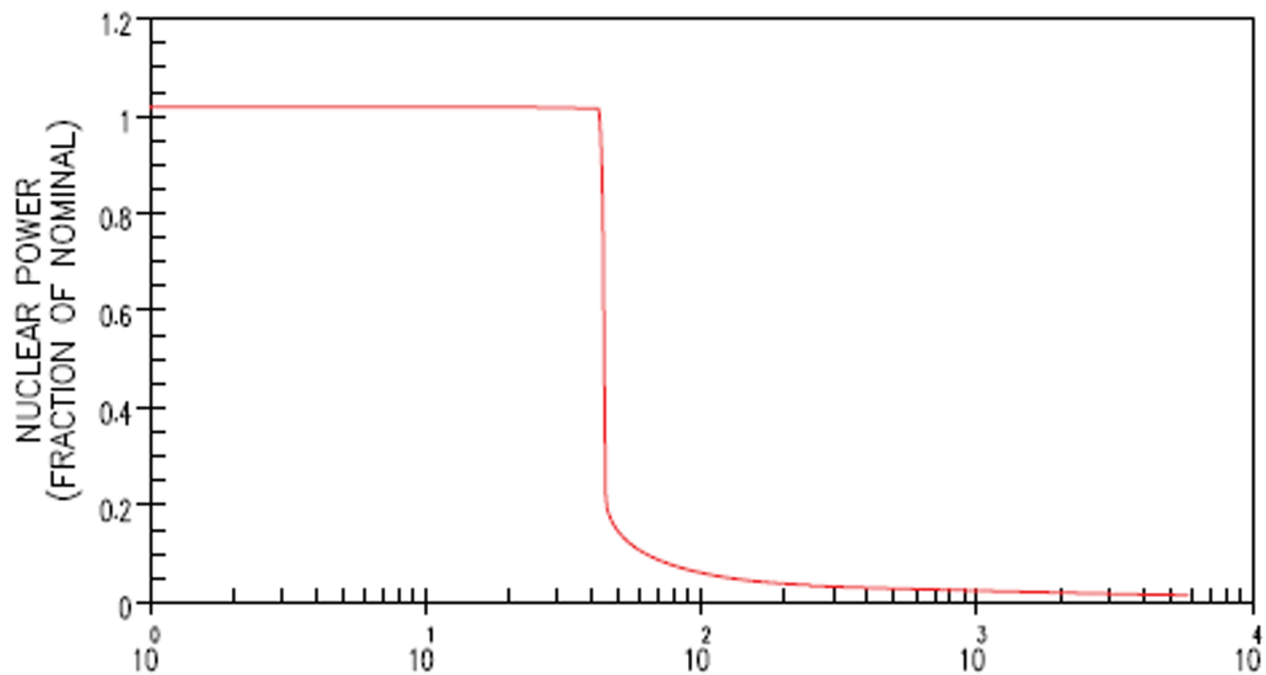


CALLAWAY PLANT

FIGURE 15.2-8

**TURBINE TRIP EVENT WITHOUT
PRESSURIZER SPRAY AND POWER
OPERATED RELIEF VALVES**

Rev. 16 11/13

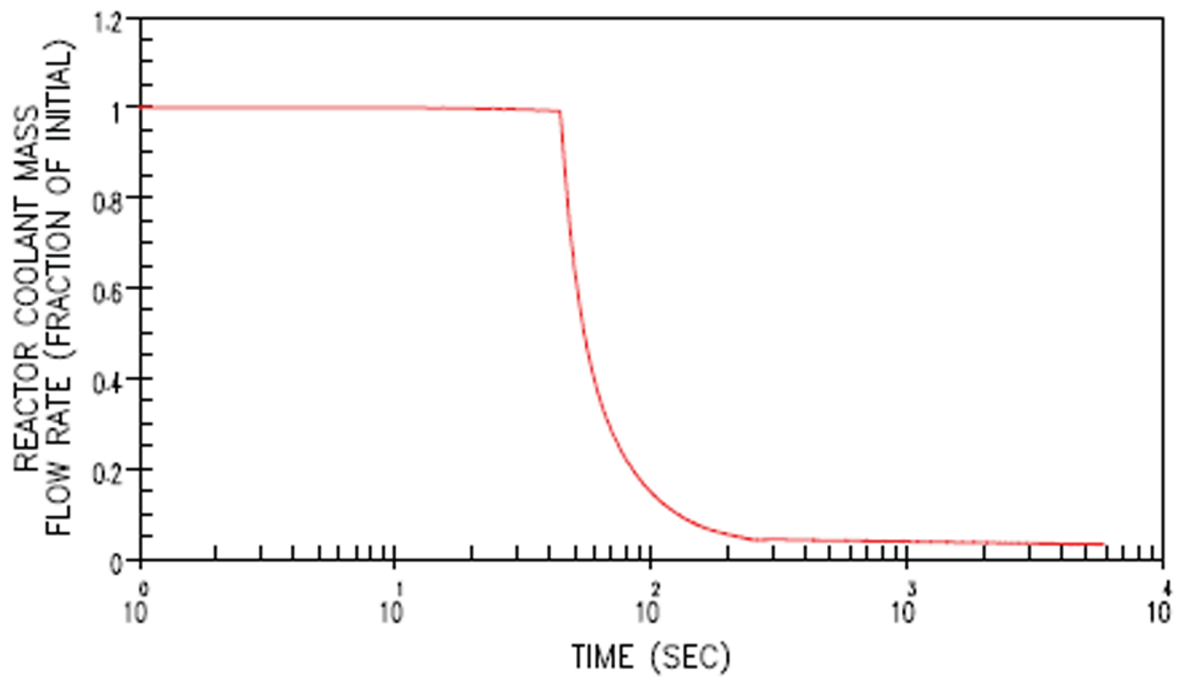
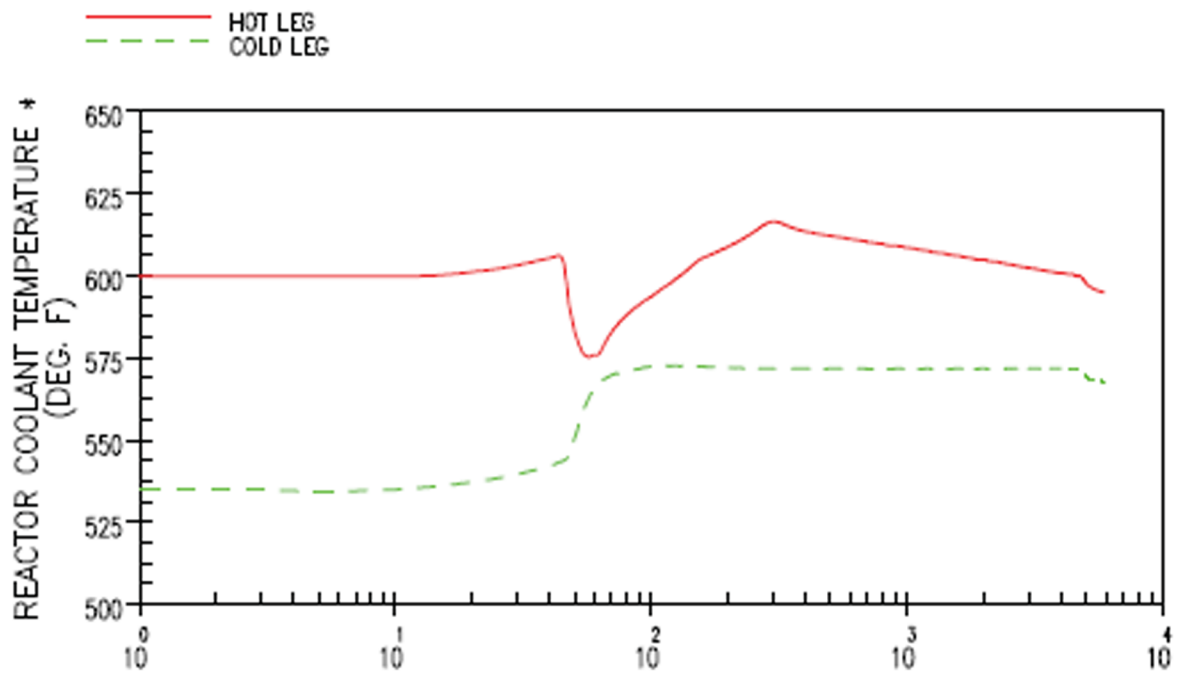


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FIGURE 15.2-9

NUCLEAR POWER AND STEAM
GENERATOR PRESSURE TRANSIENTS
FOR LOSS OF AC POWER

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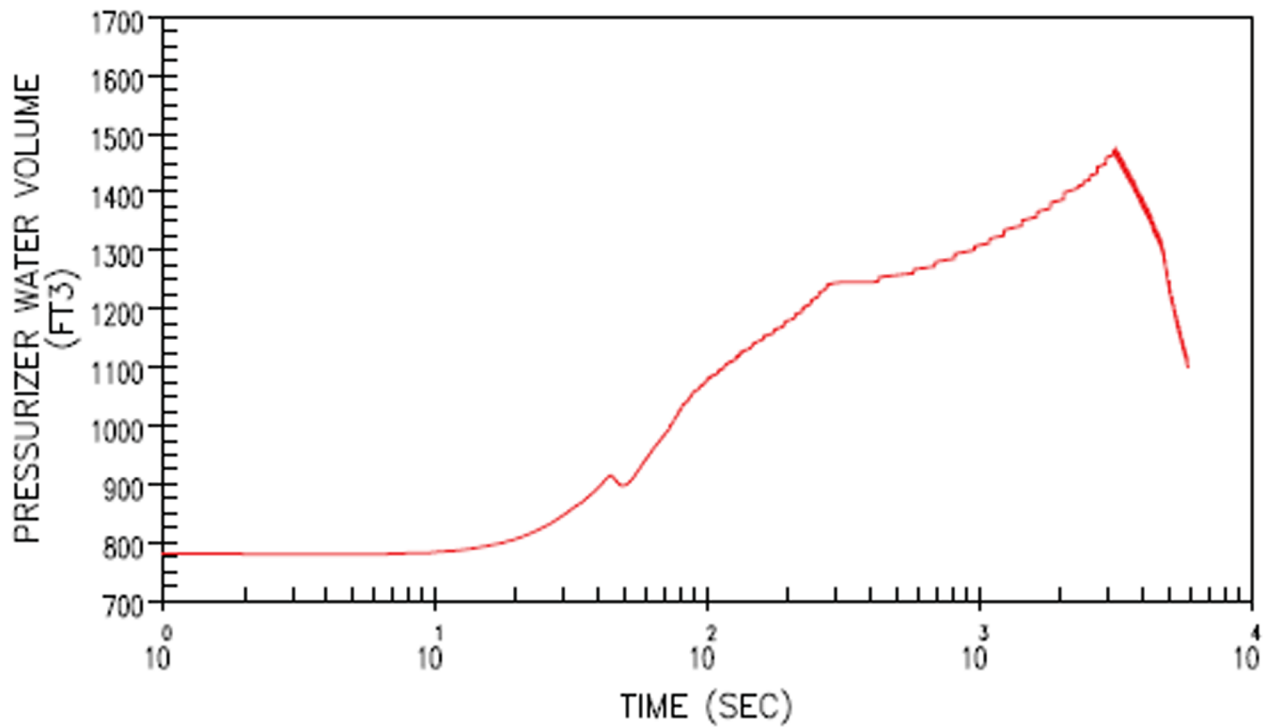
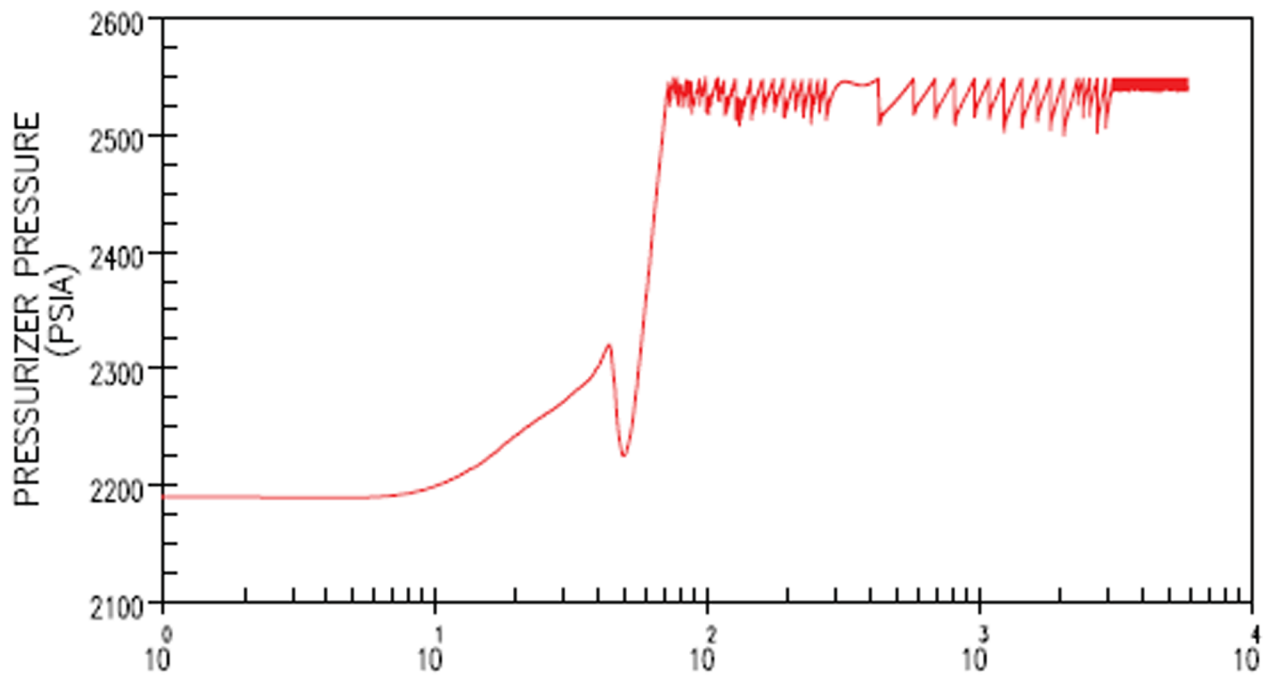
* All loops

CALLAWAY PLANT

FIGURE 15.2-10

REACTOR COOLANT TEMPERATURE
AND MASS FLOW RATE TRANSIENTS
FOR LOSS OF AC POWER

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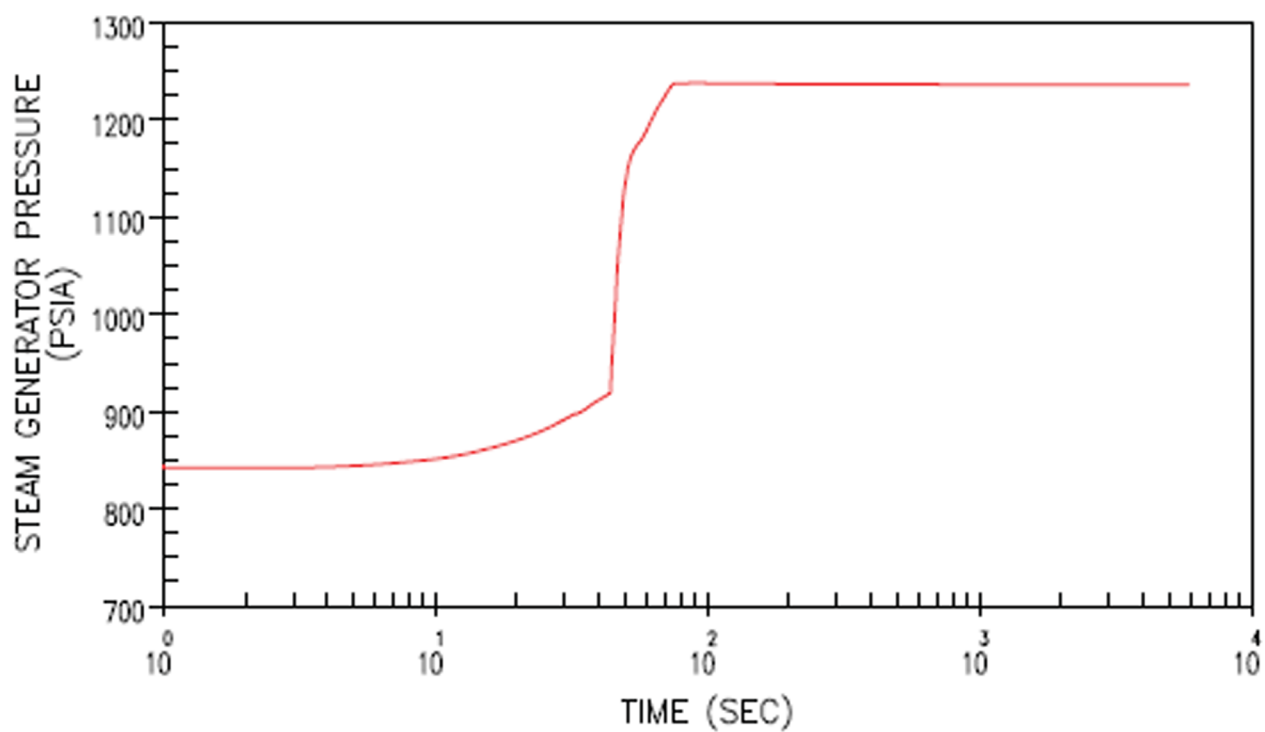
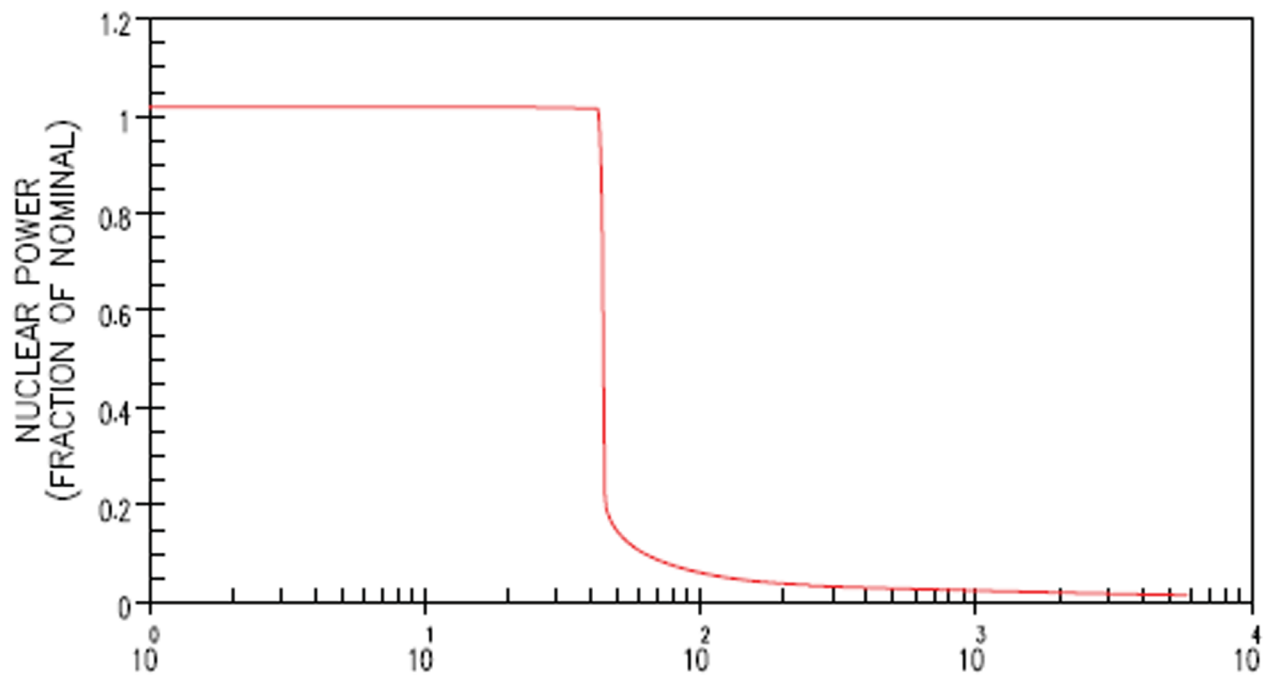


CALLAWAY PLANT

FIGURE 15.2-11

PRESSURIZER PRESSURE AND WATER
VOLUME TRANSIENTS FOR LOSS OF
AC POWER

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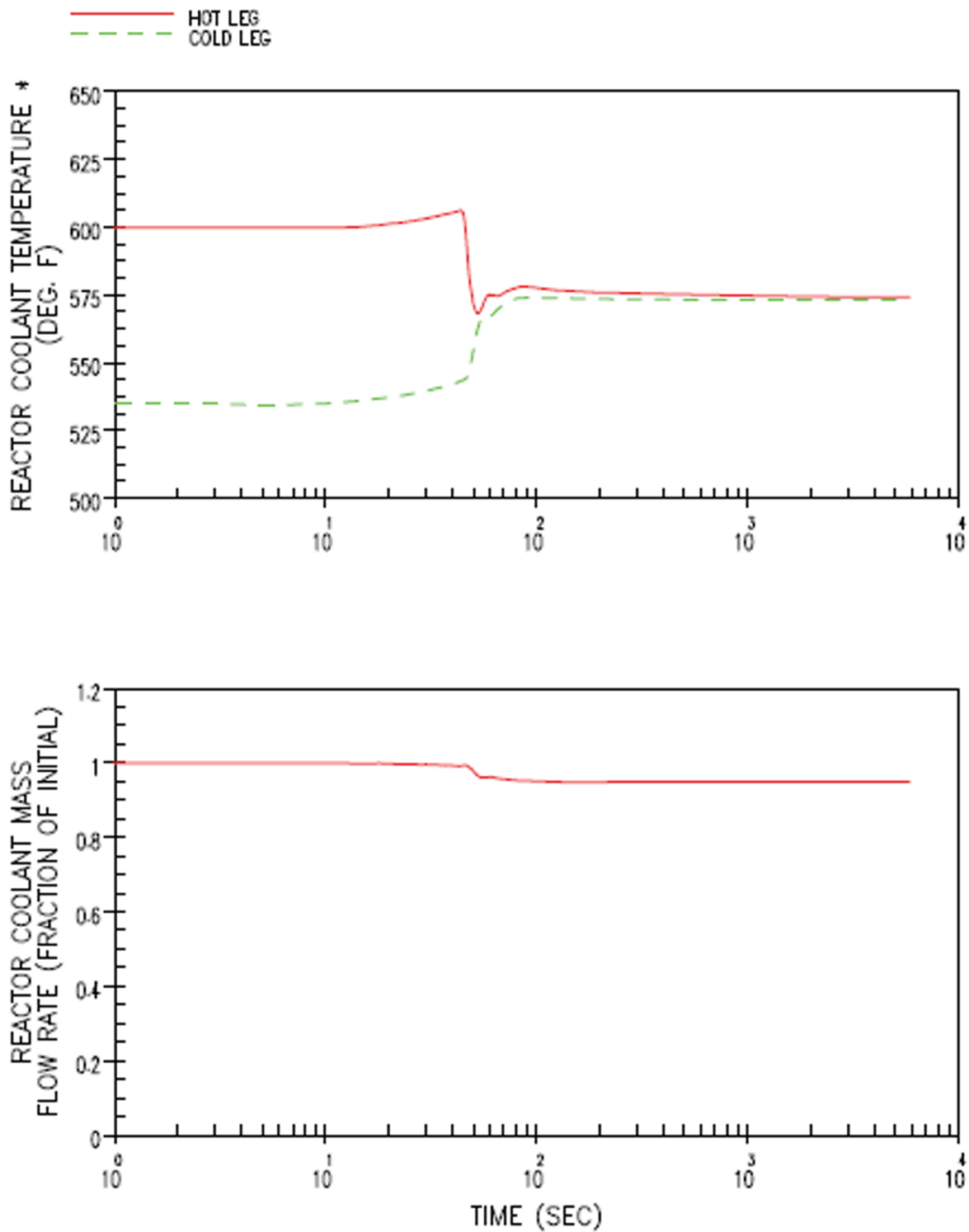


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FIGURE 15.2-12

NUCLEAR POWER AND STEAM
GENERATOR PRESSURE TRANSIENTS
FOR LOSS OF NORMAL FEEDWATER
TO ALL STEAM GENERATORS

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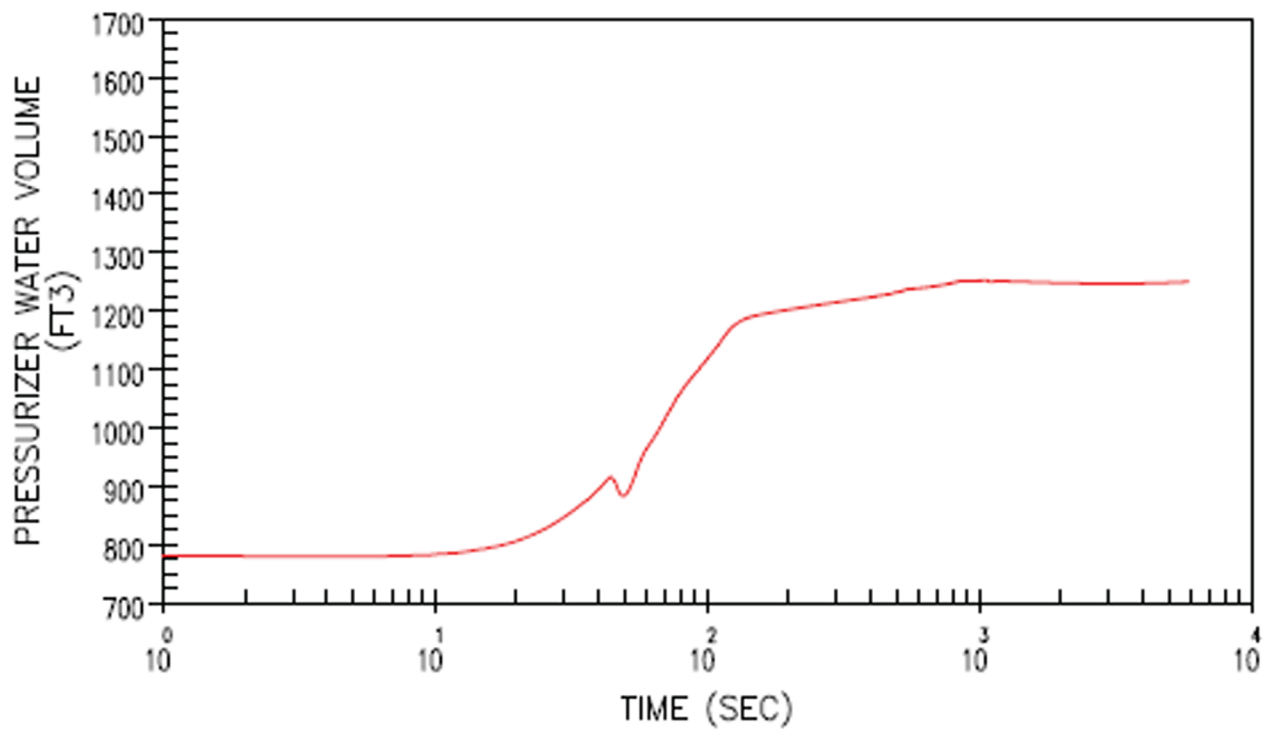
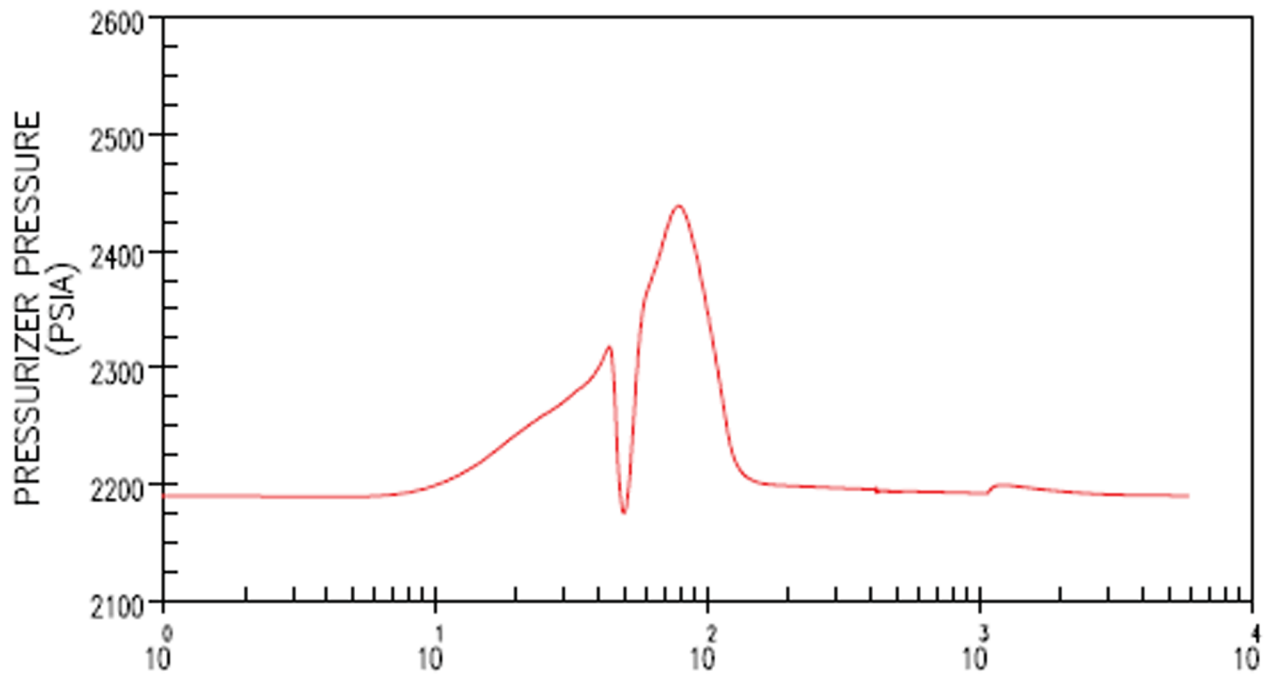
† All loops

CALLAWAY PLANT

FIGURE 15.2-13

REACTOR COOLANT TEMPERATURE
AND MASS FLOW RATE TRANSIENTS
FOR LOSS OF NORMAL FEEDWATER
TO ALL STEAM GENERATORS

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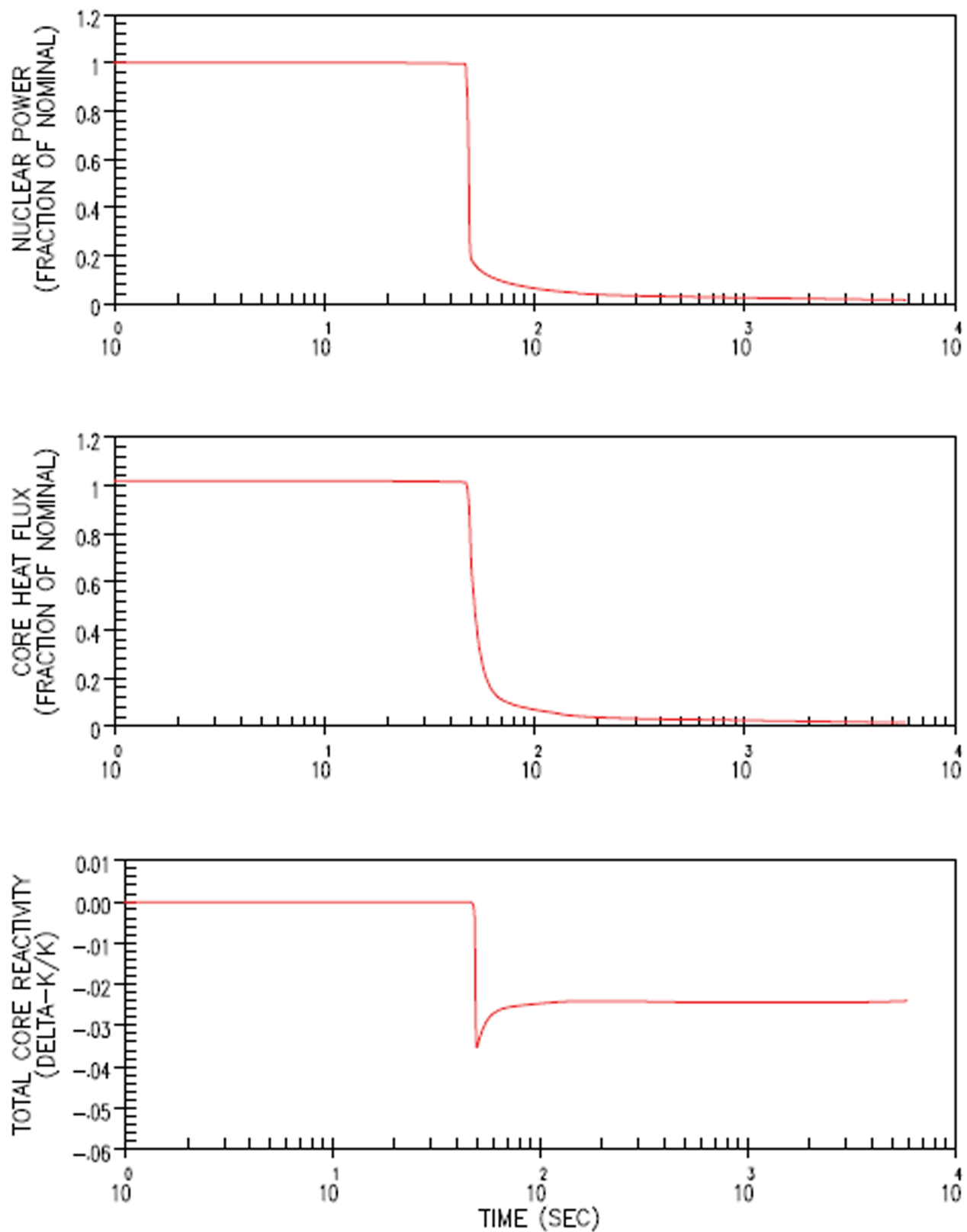


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FIGURE 15.2-14

PRESSURIZER PRESSURE AND WATER
VOLUME TRANSIENTS
FOR LOSS OF NORMAL FEEDWATER
TO ALL STEAM GENERATORS

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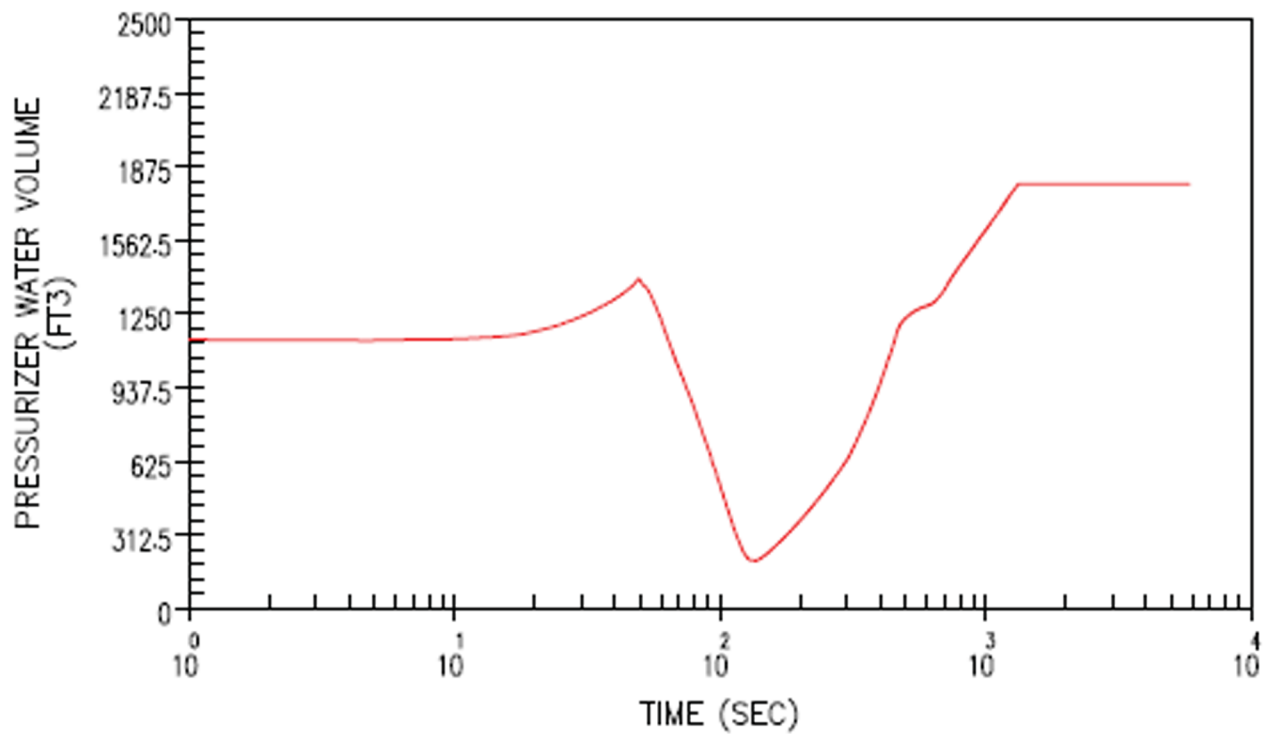
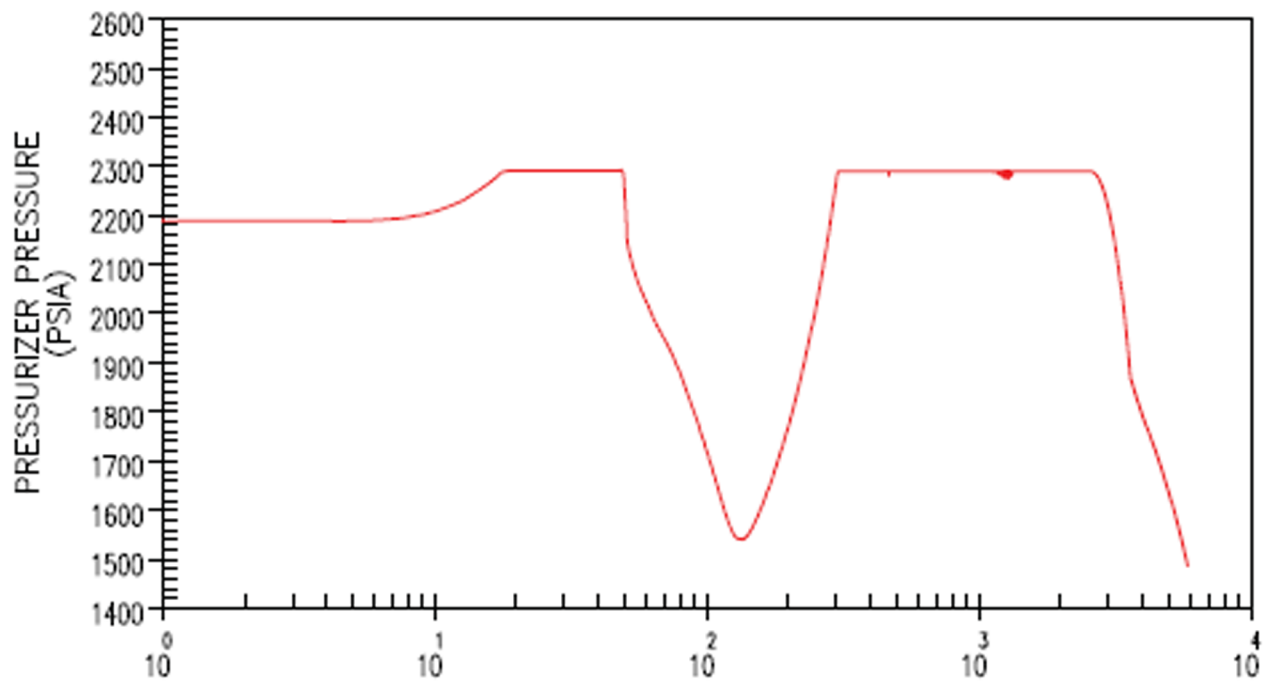


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FIGURE 15.2-15

NUCLEAR POWER, CORE HEAT FLUX AND
TOTAL CORE REACTIVITY TRANSIENTS
FOR MAIN FEEDLINE RUPTURE
WITH OFFSITE POWER AVAILABLE

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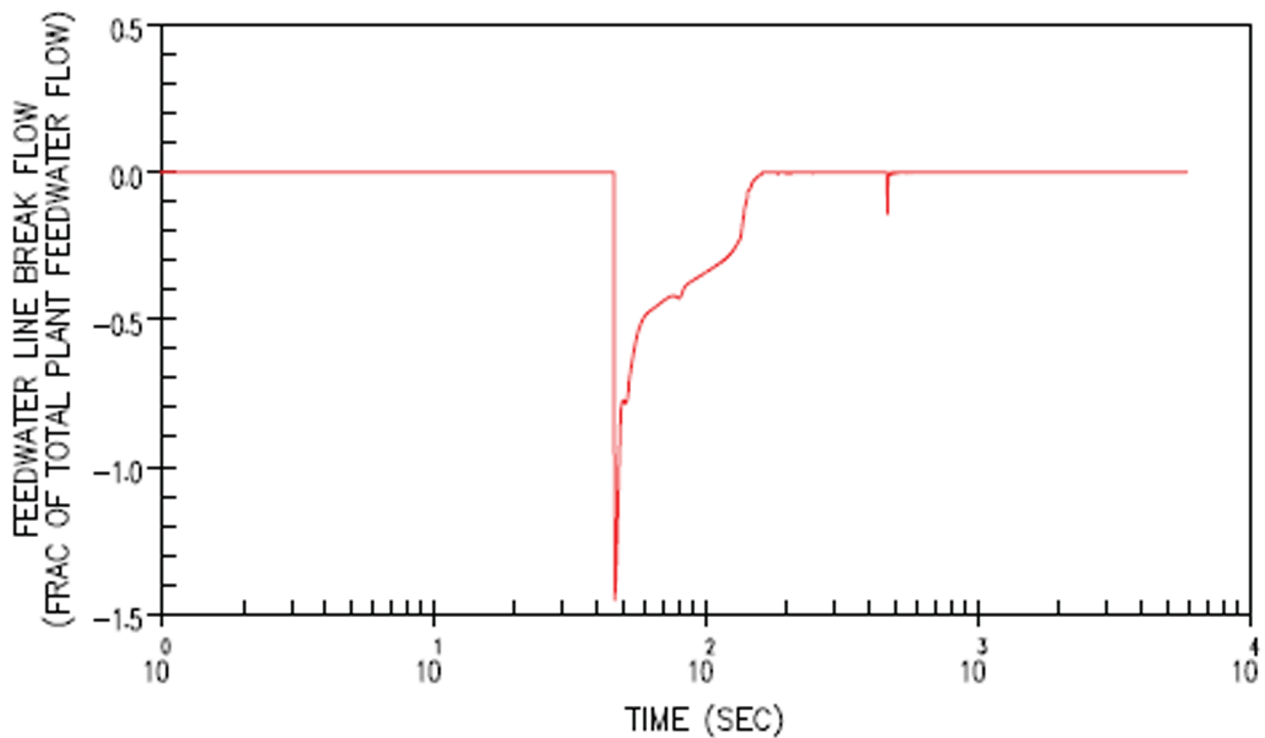
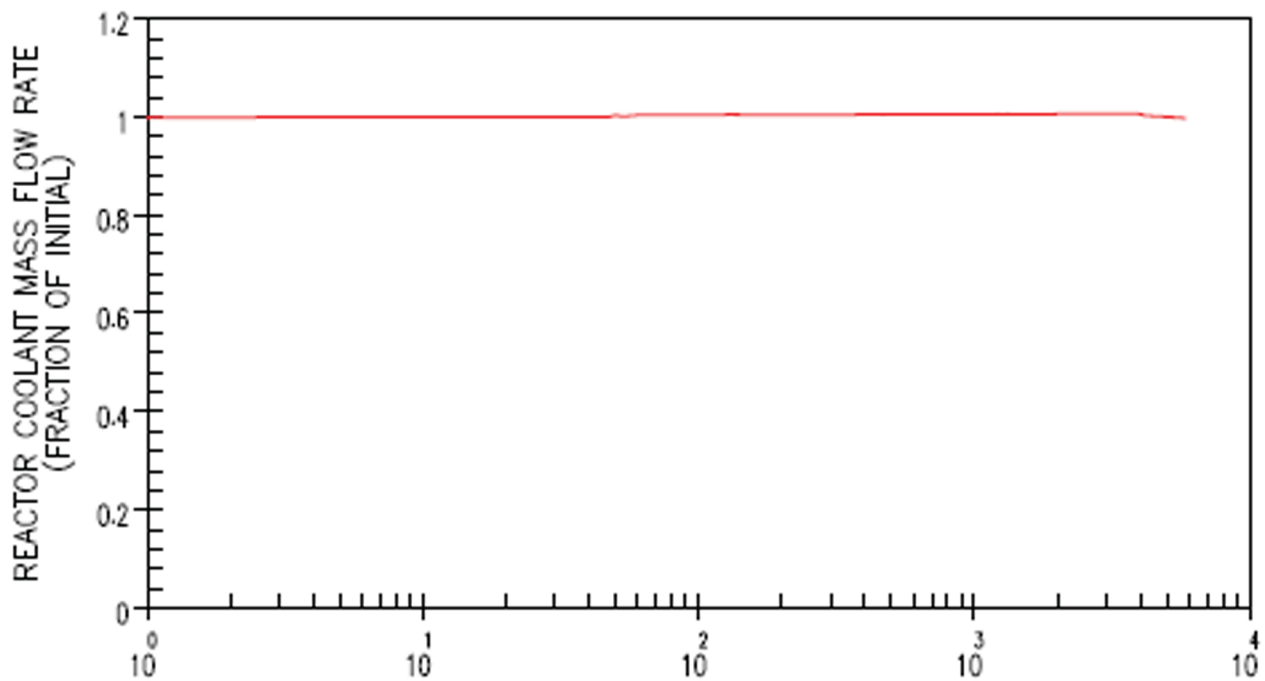


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FIGURE 15.2-16

PRESSURIZER PRESSURE AND
WATER VOLUME TRANSIENTS
FOR MAIN FEEDLINE RUPTURE
WITH OFFSITE POWER AVAILABLE

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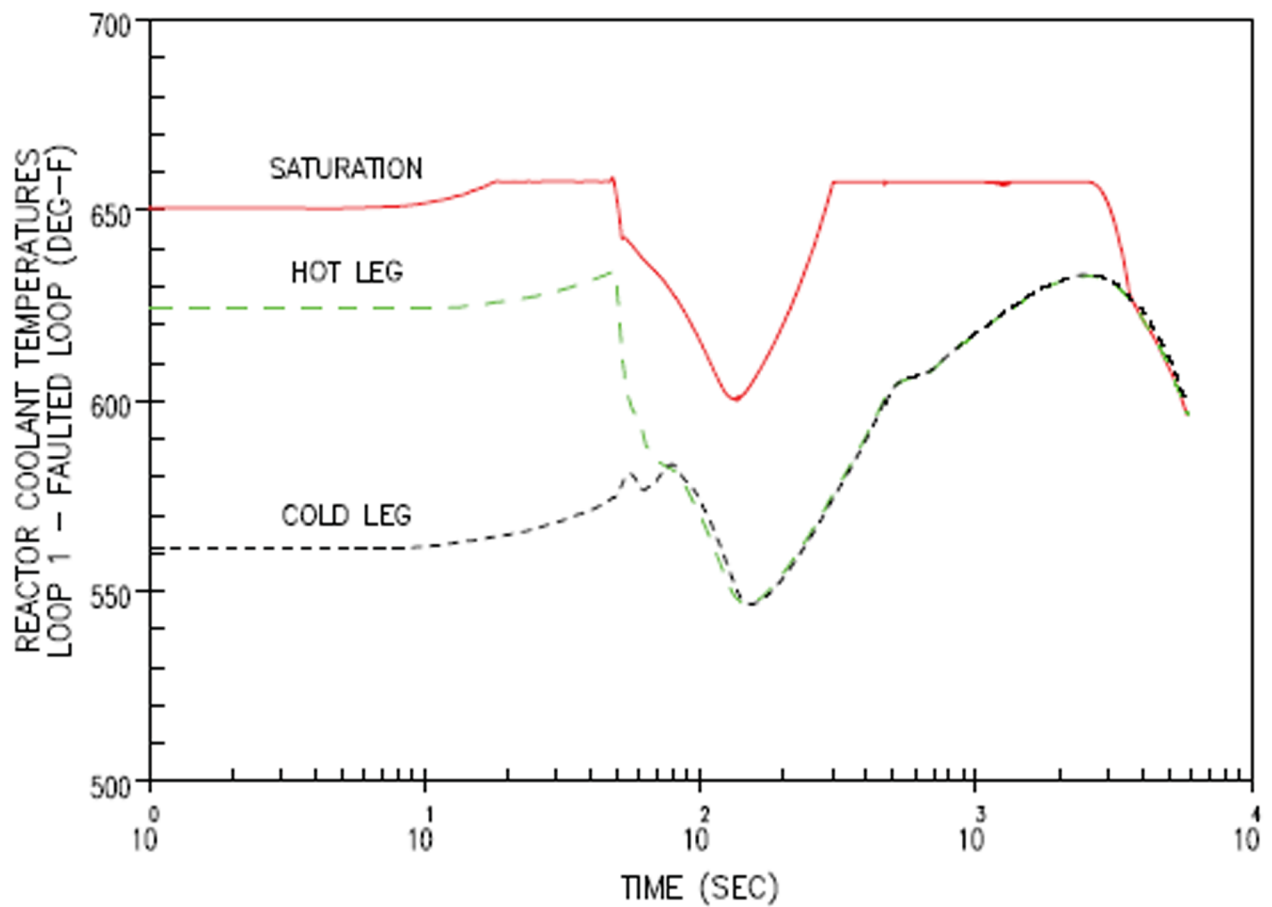


CALLAWAY PLANT

FIGURE 15.2-17

REACTOR COLLANT MASS FLOW FATE
AND REEDWATER LINE BREAK TRANSIENTS
FOR MAIN FEEDLINE RUPTURE
WITH OFFSITE POWER AVAILABLE

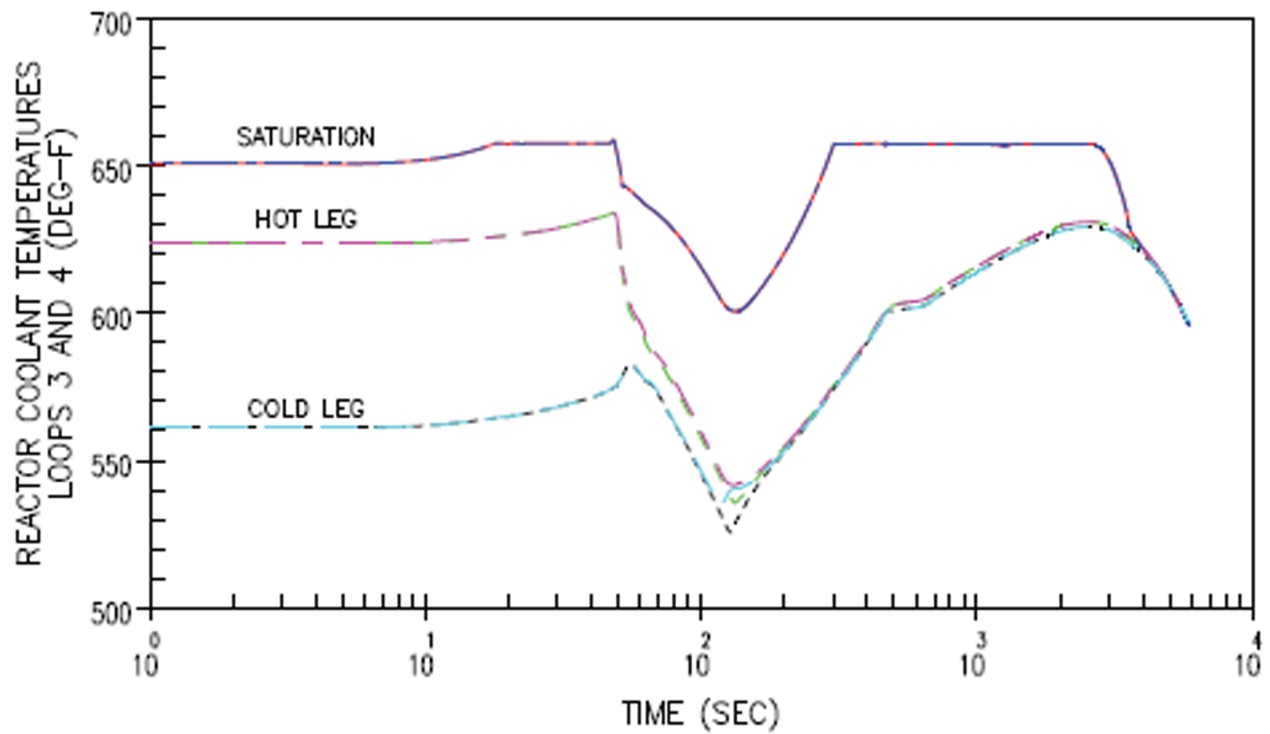
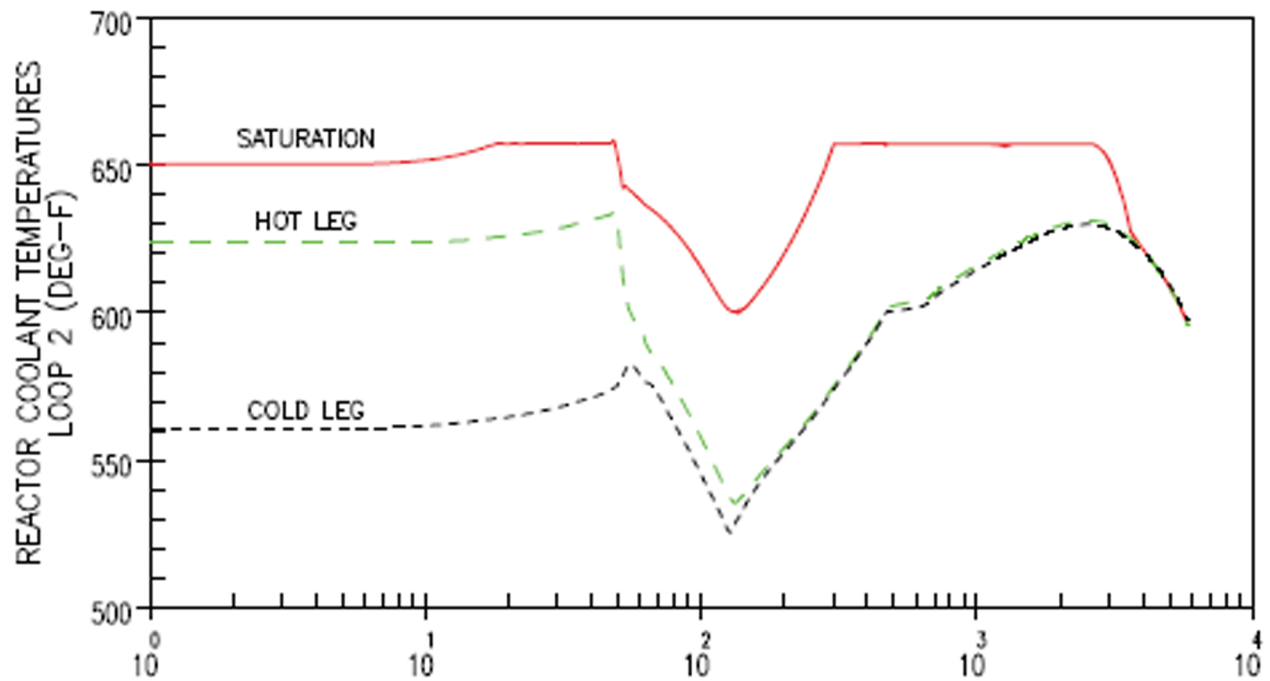
Rev. 17 11/13



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FIGURE 15.2-18

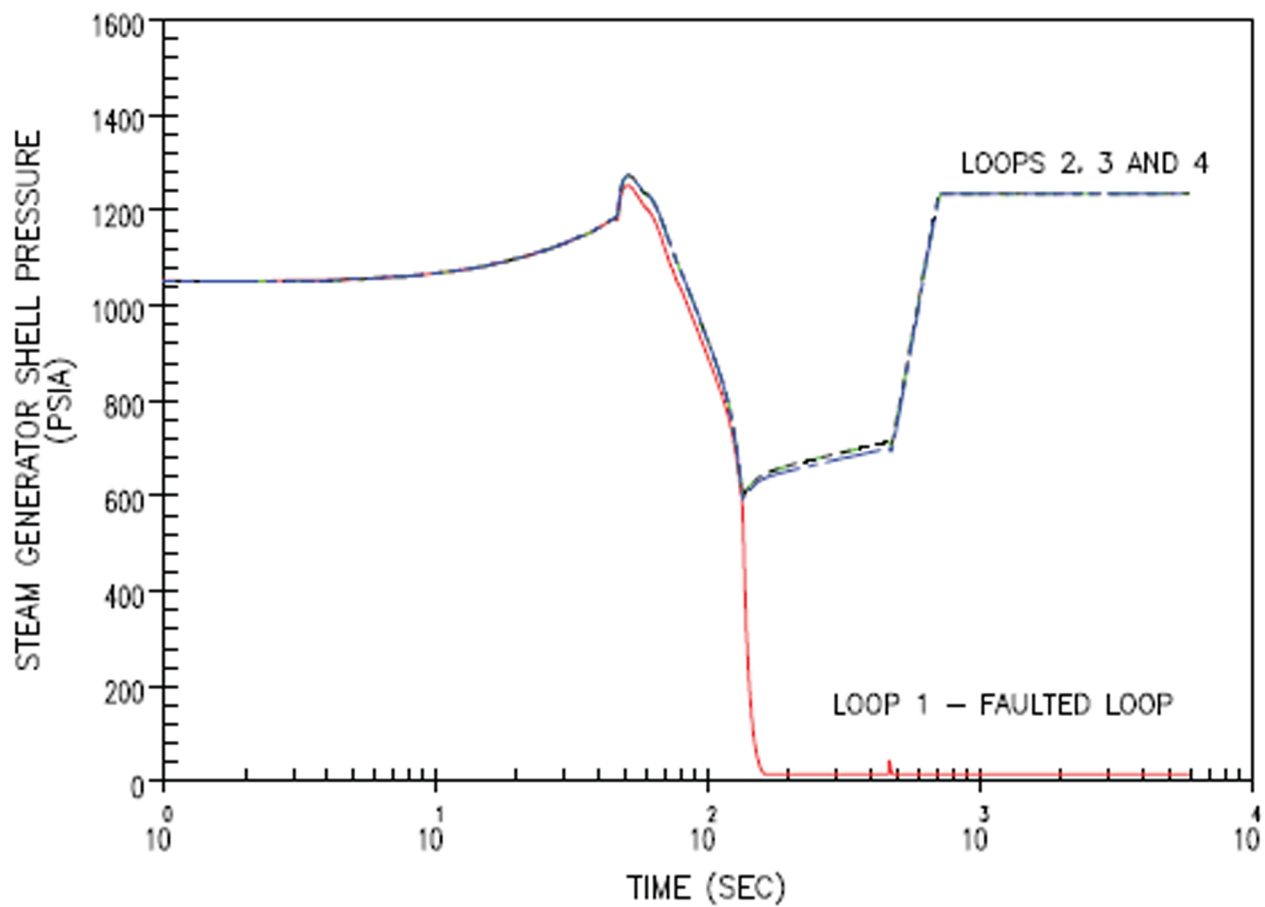
TEMPERATURE TRANSIENT
IN FAULTED LOOP
FOR MAIN FEEDLINE RUPTURE
WITH OFFSITE POWER AVAILABLE
Rev. 17 11/13



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FIGURE 15.2-19

TEMPERATURE TRANSIENT
IN INTACT LOOPS
FOR MAIN FEEDLINE RUPTURE
WITH OFFSITE POWER AVAILABLE
Rev. 17 11/13

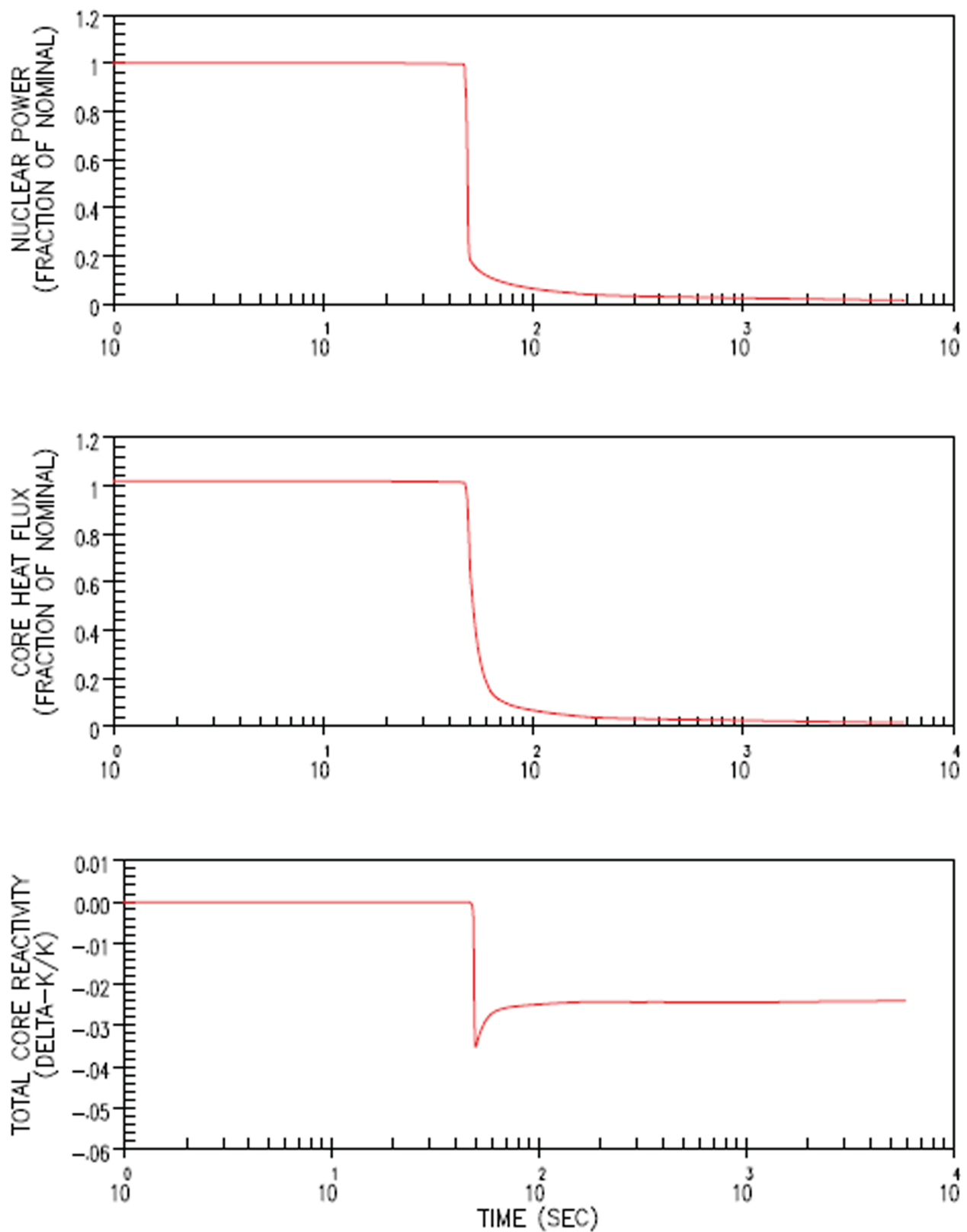


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FIGURE 15.2-20

STEAM GENERATOR SHELL
PRESSURE TRANSIENT
FOR MAIN FEEDLINE RUPTURE
WITH OFFSITE POWER AVAILABLE

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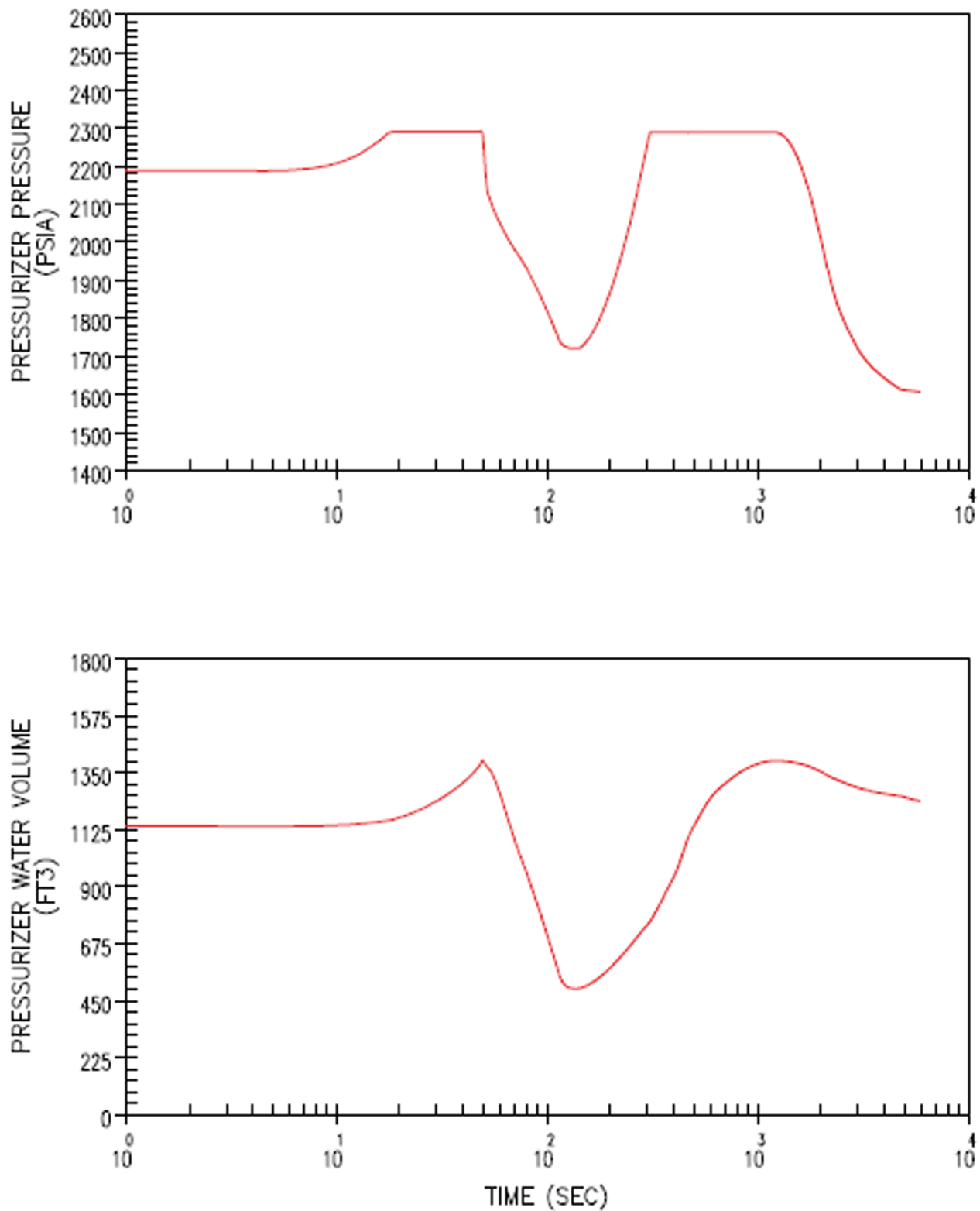


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FIGURE 15.2-21

NUCLEAR POWER CORE HEAT FLUX AND
TOTAL CORE REACTIVITY TRANSIENTS
FOR MAIN FEEDLINE RUPTURE
WITHOUT OFFSITE POWER

Rev. 17 11/13

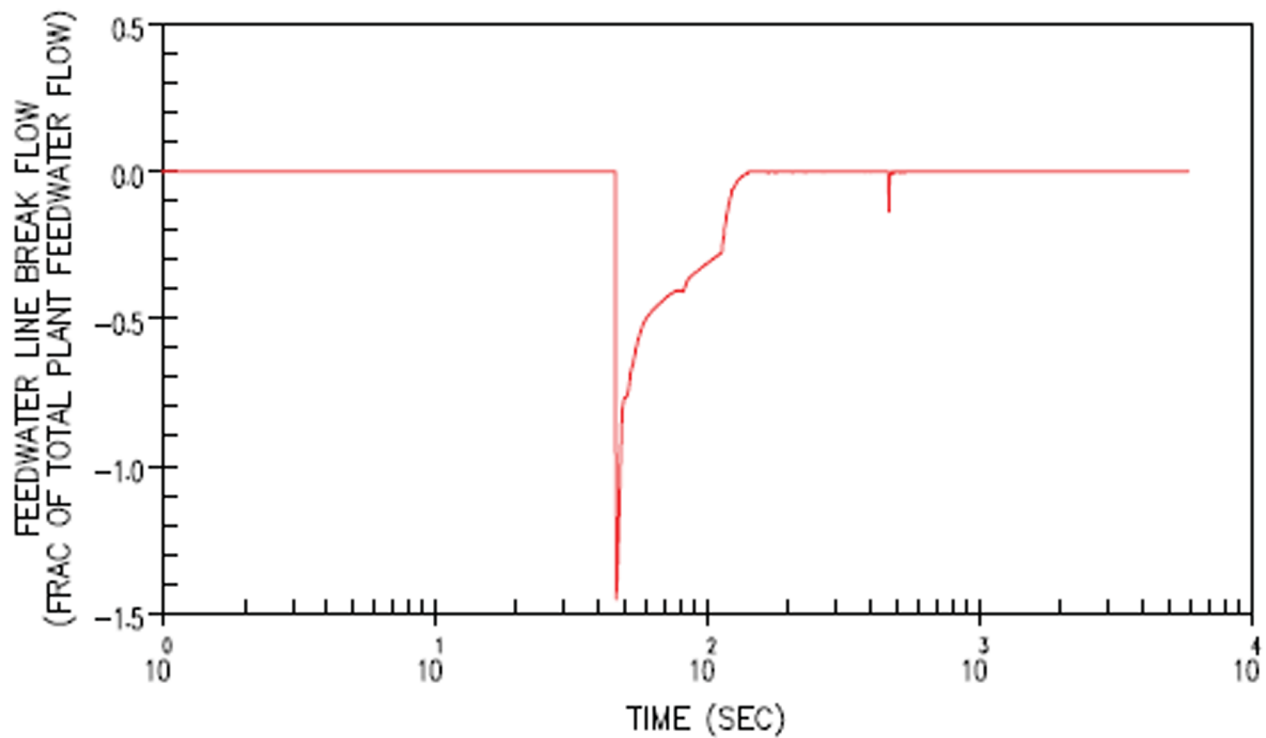
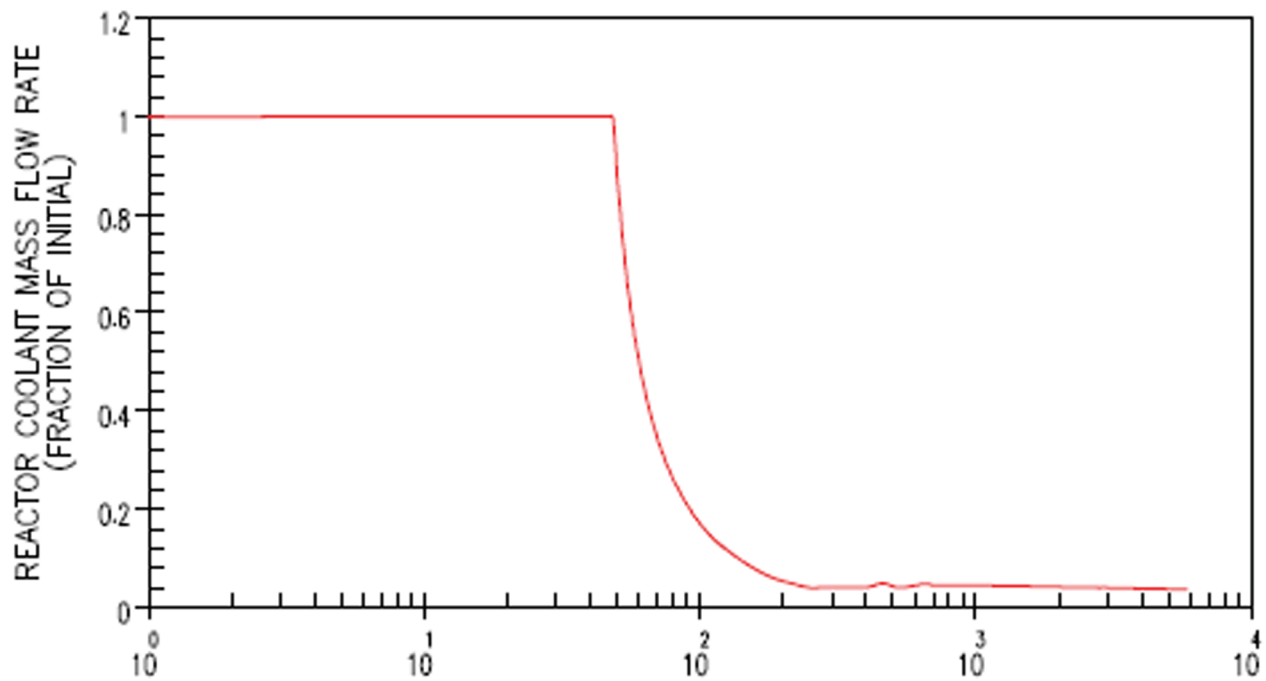


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FIGURE 15.2-22

PRESSURIZER PRESSURE AND
WATER VOLUME TRANSIENTS
FOR MAIN FEEDLINE RUPTURE
WITHOUT OFFSITE POWER

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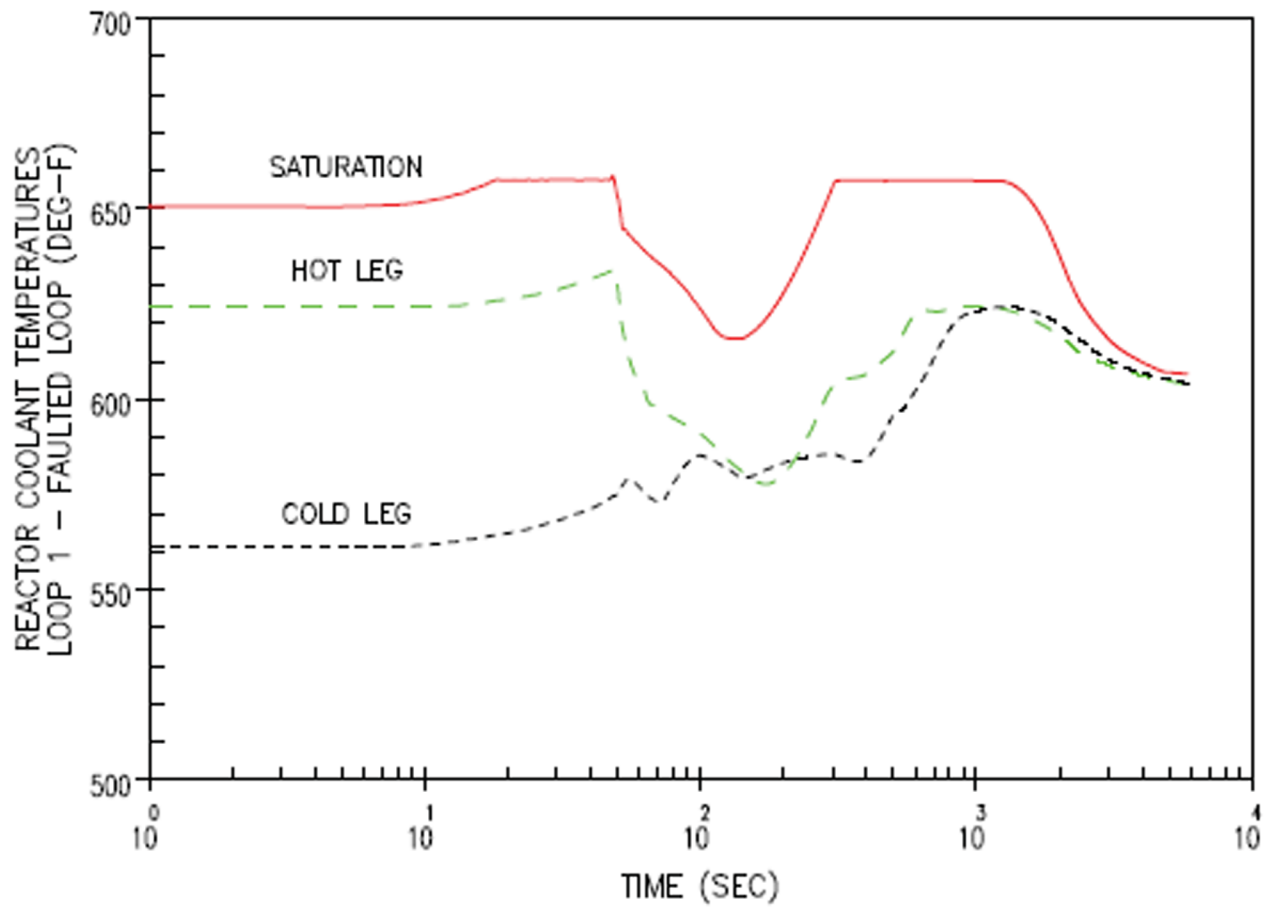


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FIGURE 15.2-23

REACTOR COOLANT MASS FLOW RATE
AND FEEDWATER LINE BREAK TRANSIENTS
FOR MAIN FEEDLINE RUPTURE
WITHOUT OFFSITE POWER

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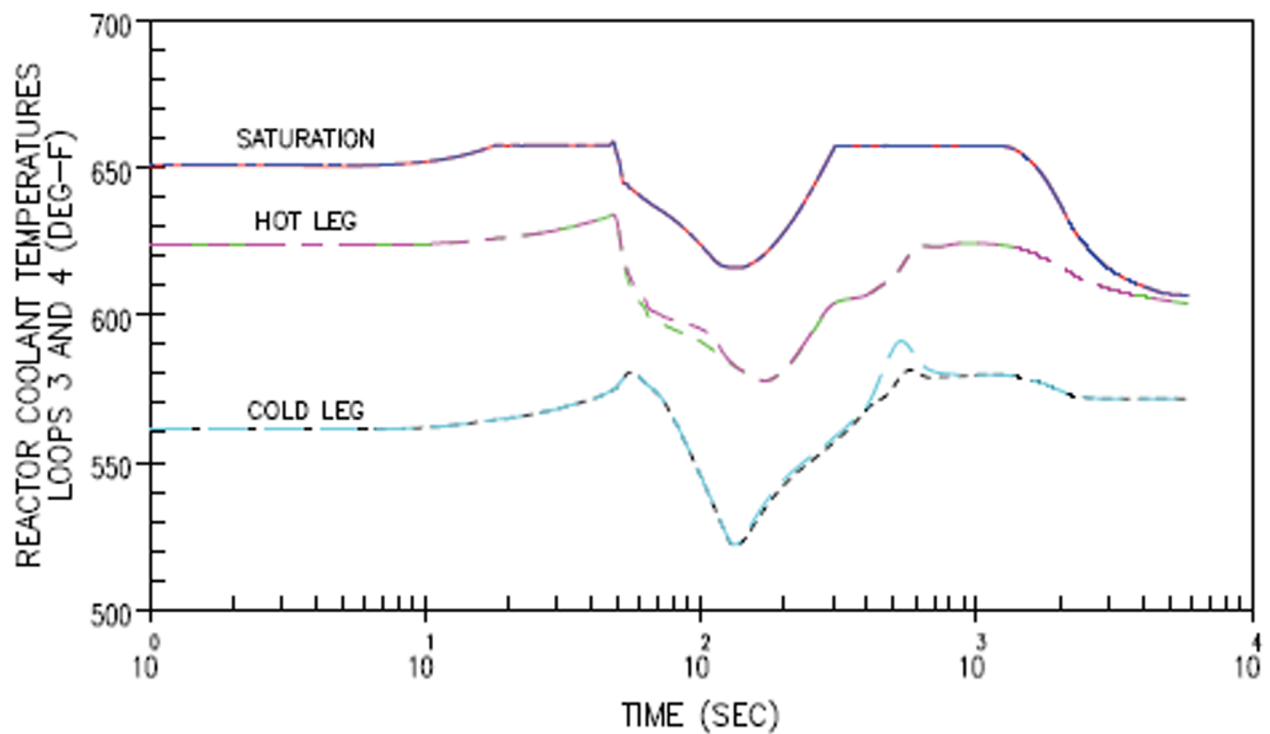
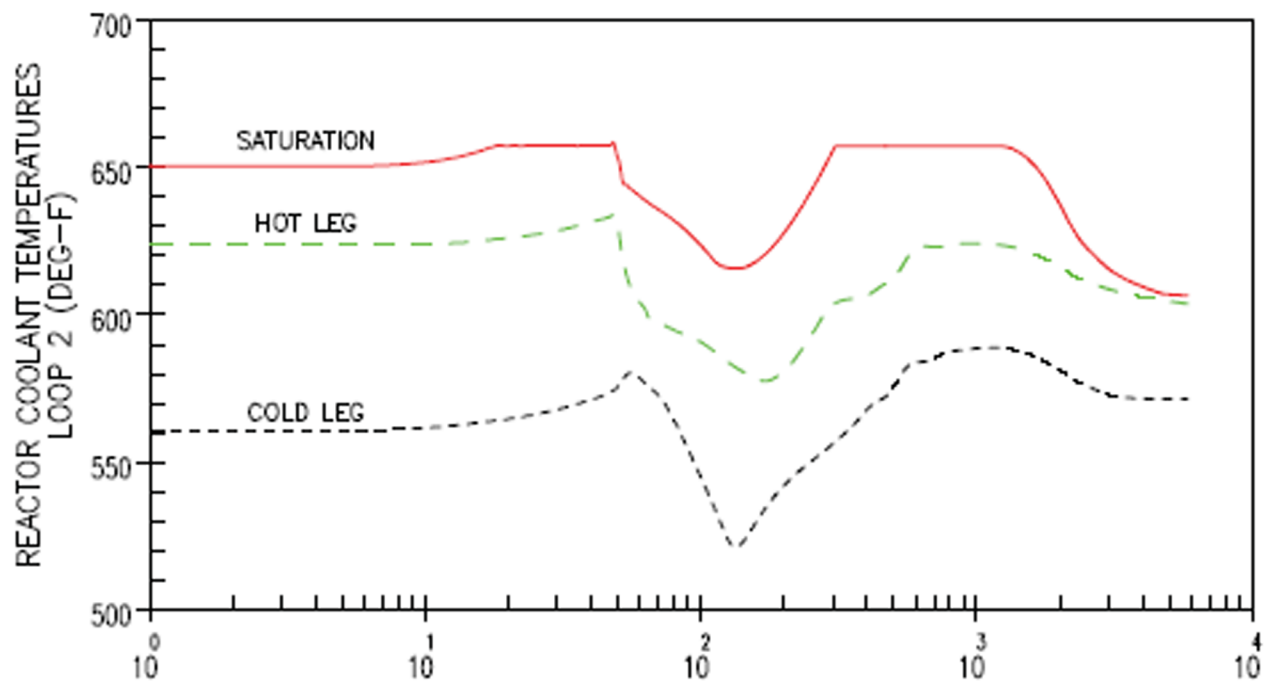


CALLAWAY PLANT

FIGURE 15.2-24

TEMPERATURE TRANSIENT
IN FAULTED LOOP
FOR MAIN FEEDLINE RUPTURE
WITHOUT OFFSITE POWER

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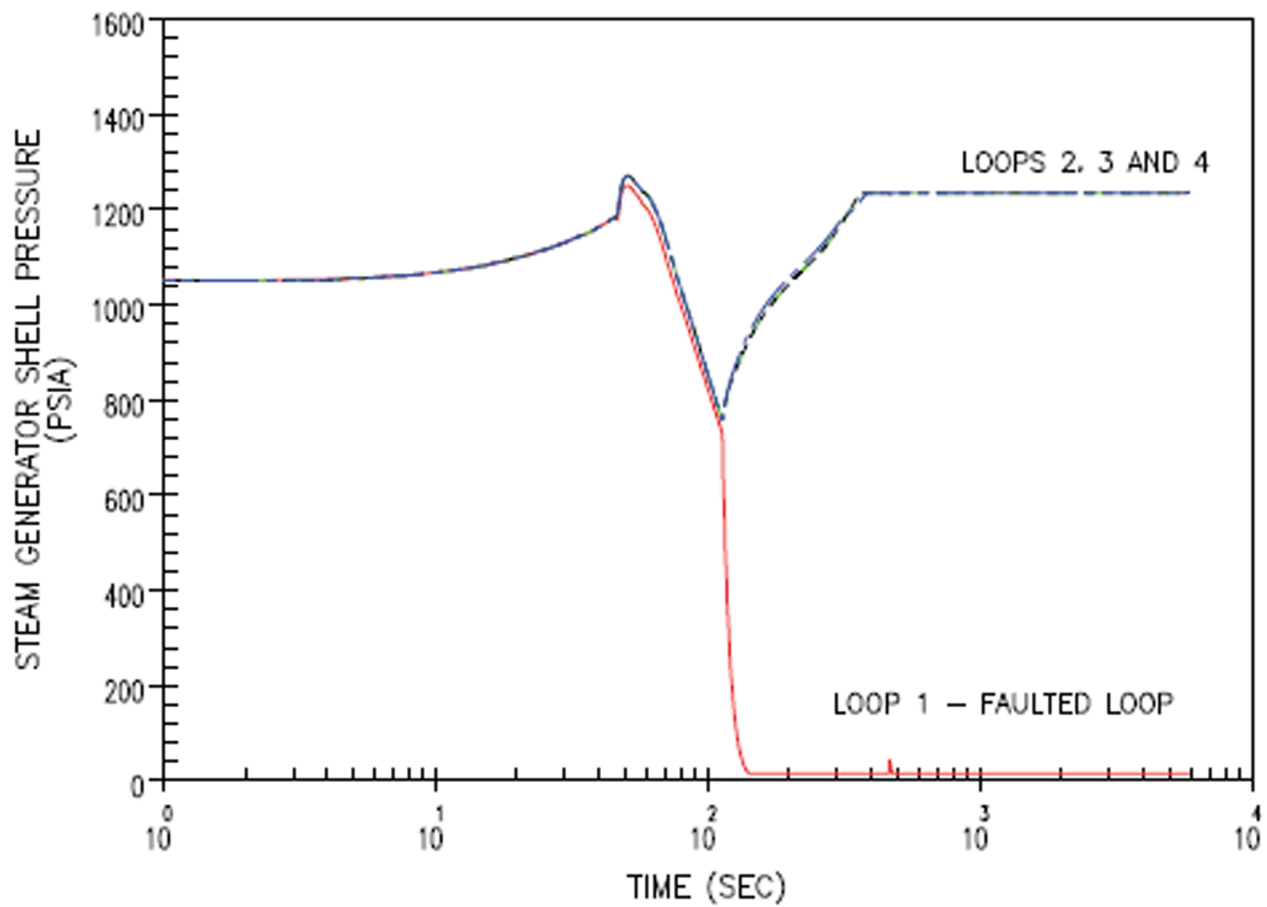


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FIGURE 15.2-25

TEMPERATURE TRANSIENT
IN INTACT LOOPS
FOR MAIN FEEDLINE RUPTURE
WITHOUT OFFSITE POWER

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FIGURE 15.2-26

STEAM GENERATOR SHELL
PRESSURE TRANSIENT
FOR MAIN FEEDLINE RUPTURE
WITHOUT OFFSITE POWER

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Figure 15.2-27 Deleted

Figure 15.2-28 Deleted

Figure 15.2-29 Deleted

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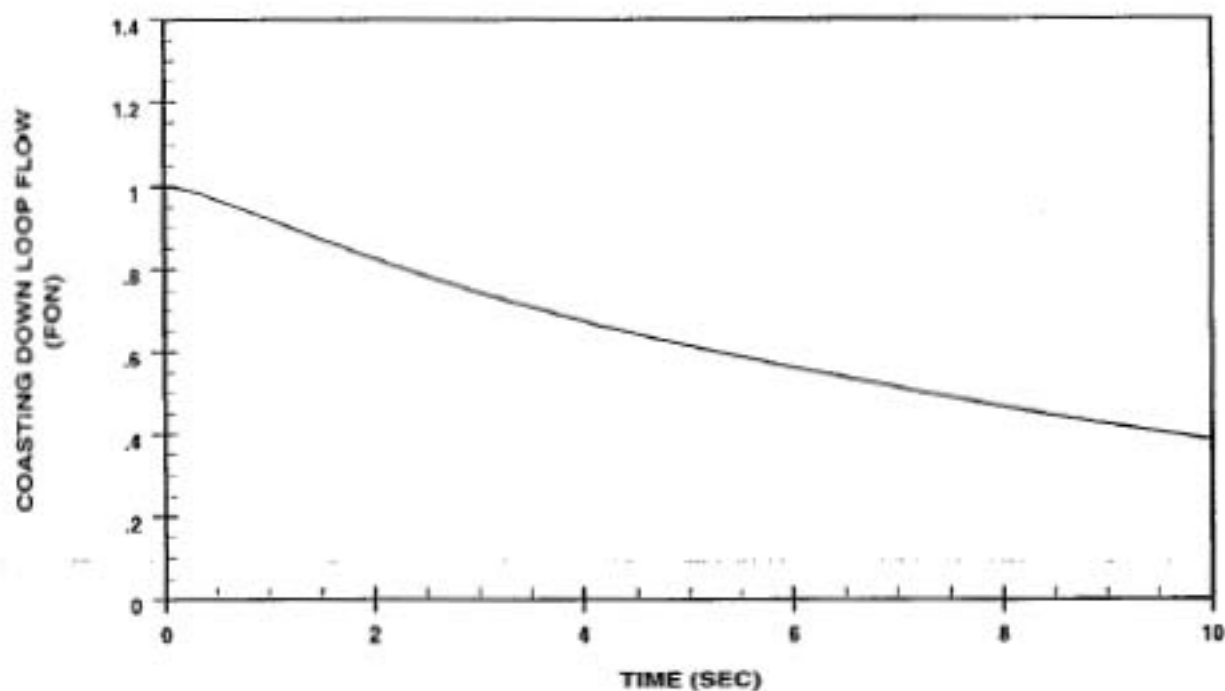
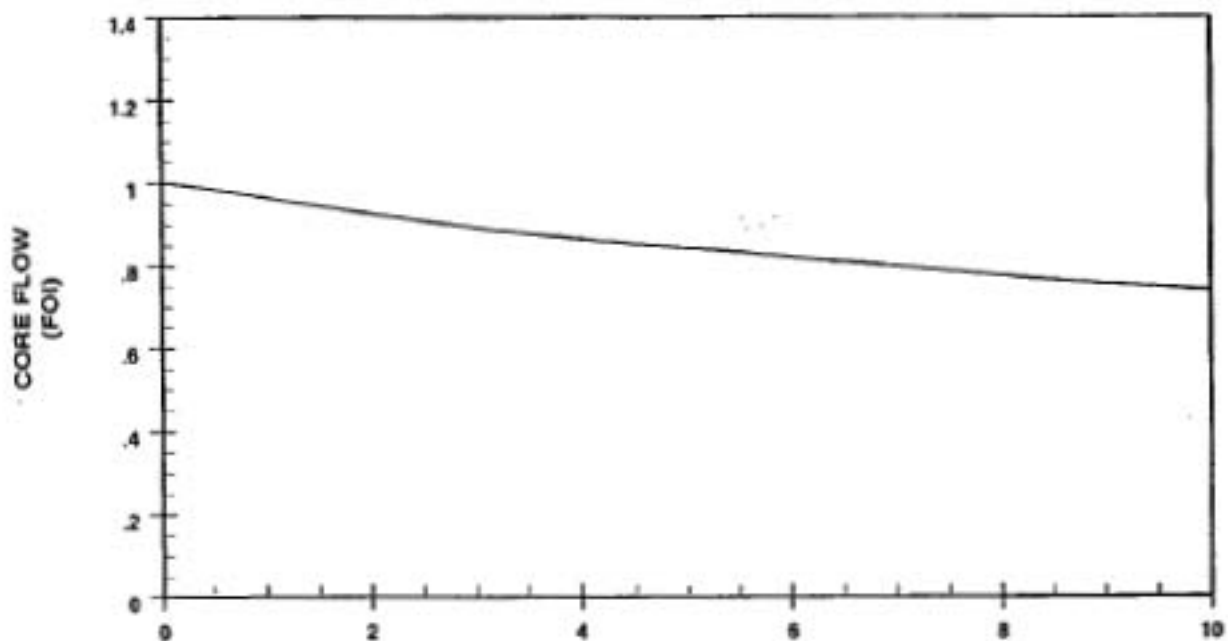
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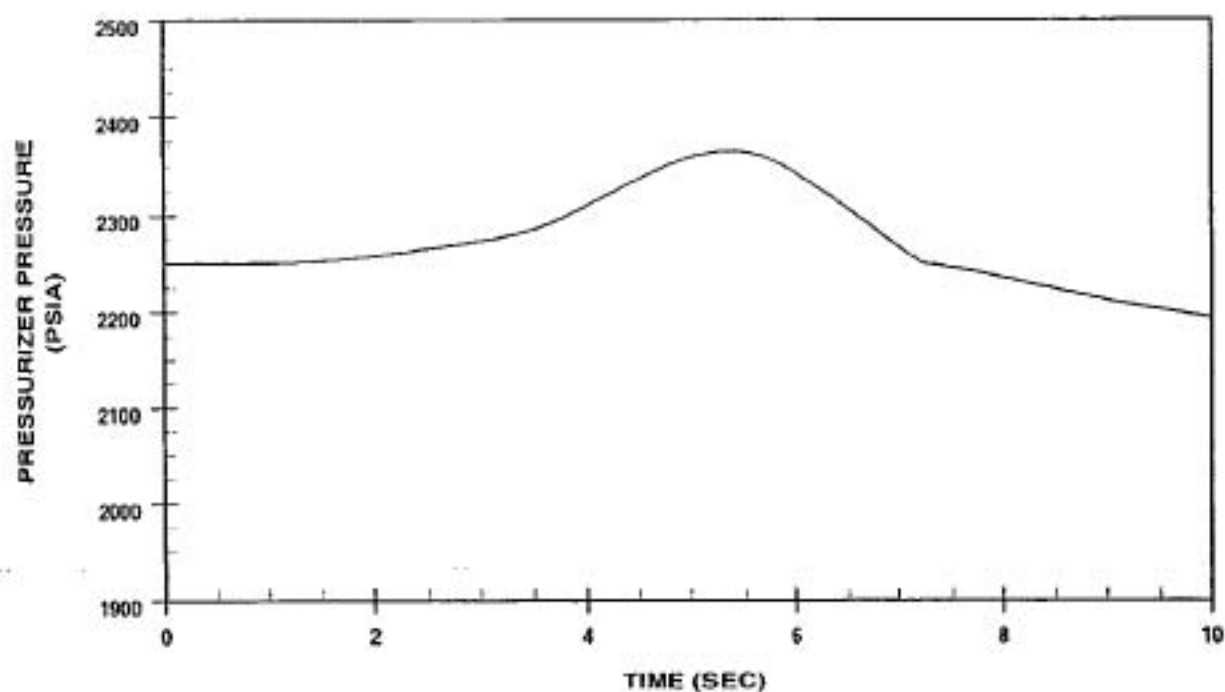
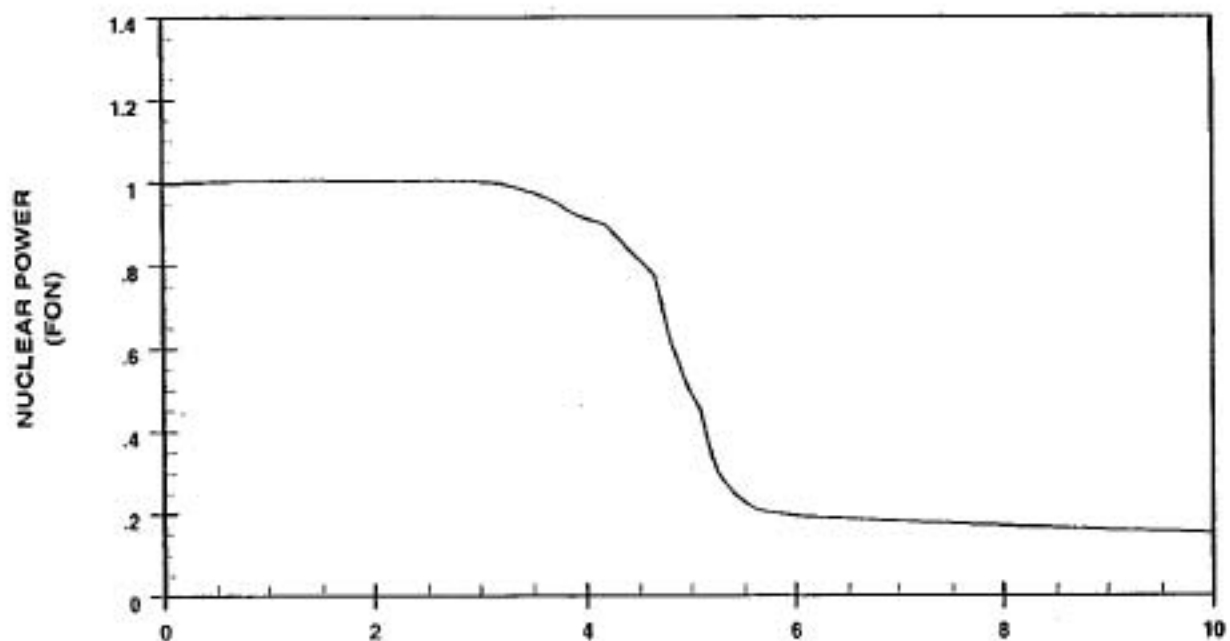


REV. OL-16
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CALLAWAY PLANT

FIGURE 15.3-1

FLOW TRANSIENTS FOR FOUR
LOOPS IN OPERATION, TWO
PUMPS COASTING DOWN

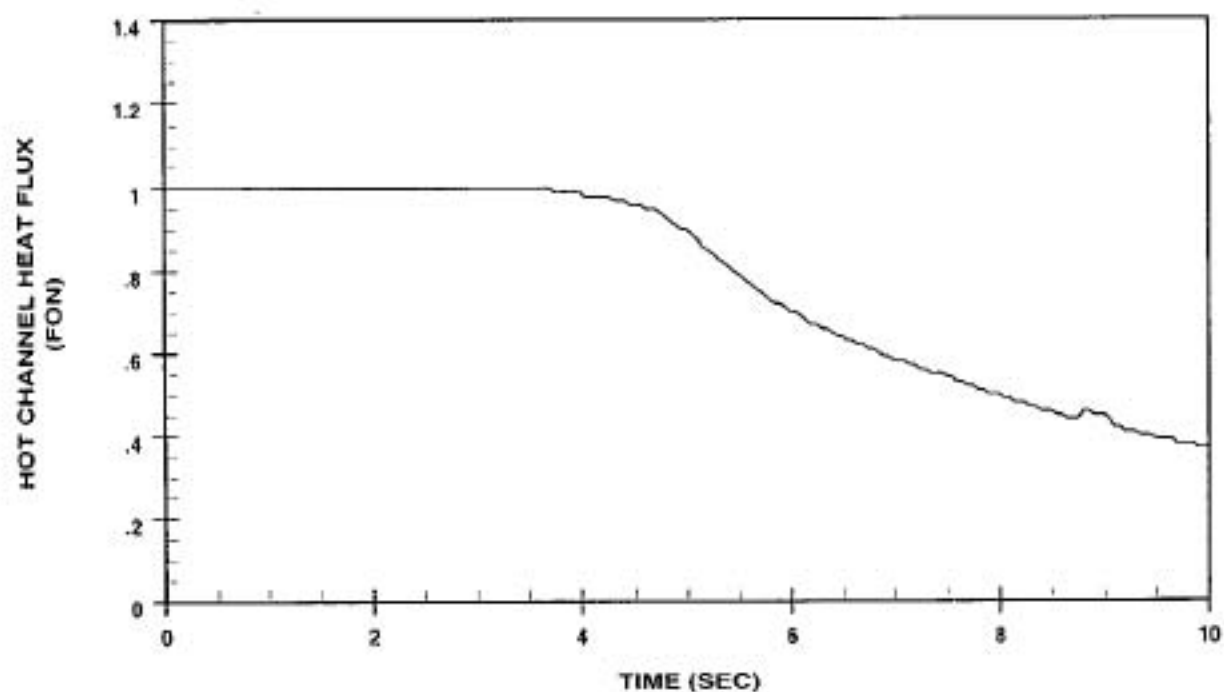
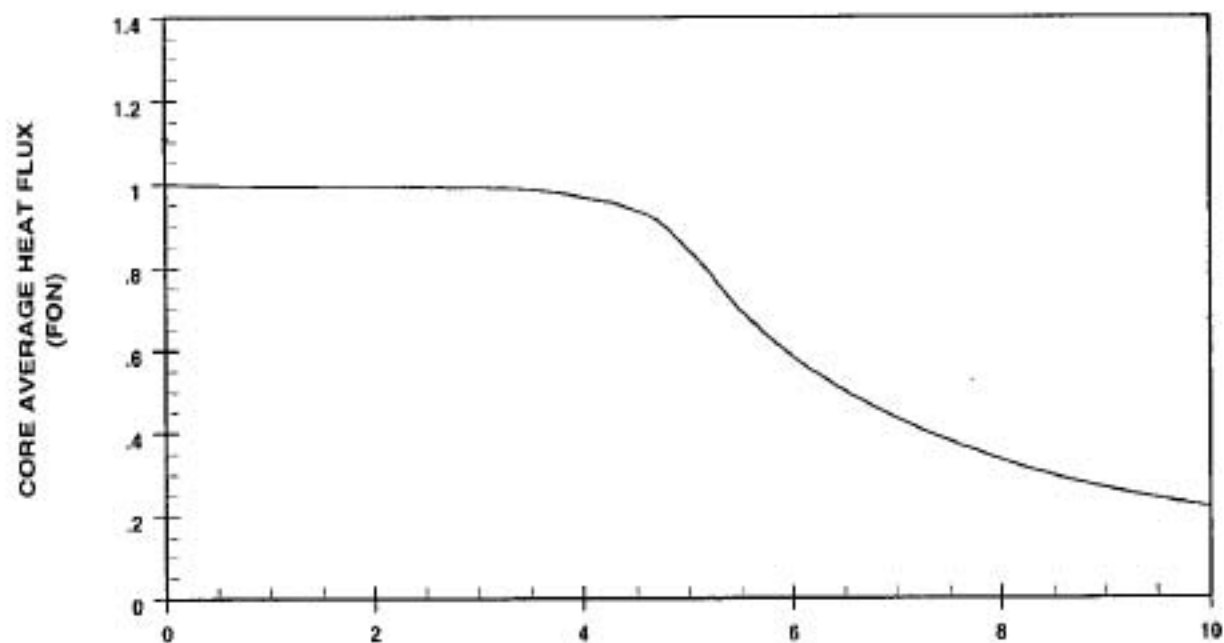


REV. OL-16
5/88

CALLAWAY PLANT

FIGURE 15.3-2

NUCLEAR POWER AND PRESSURIZER PRESSURE
TRANSIENTS FOR FOUR LOOPS IN OPERATION,
TWO PUMPS COASTING DOWN

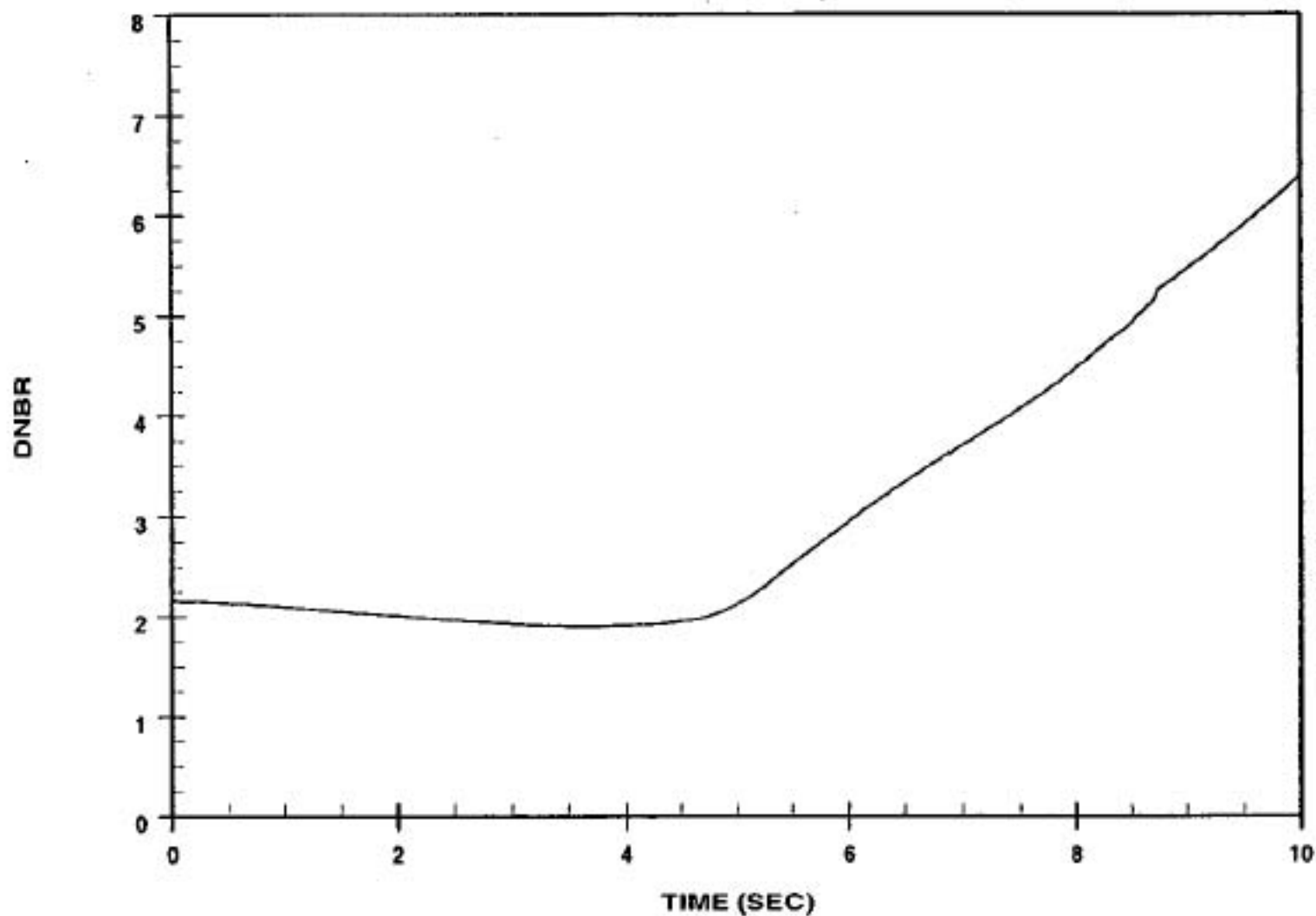


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5/88

CALLAWAY PLANT

FIGURE 16.3-3

CORE AVERAGE AND HOT CHANNEL HEAT
FLUX TRANSIENTS FOR FOUR LOOPS IN
OPERATION, TWO PUMPS COASTING DOWN



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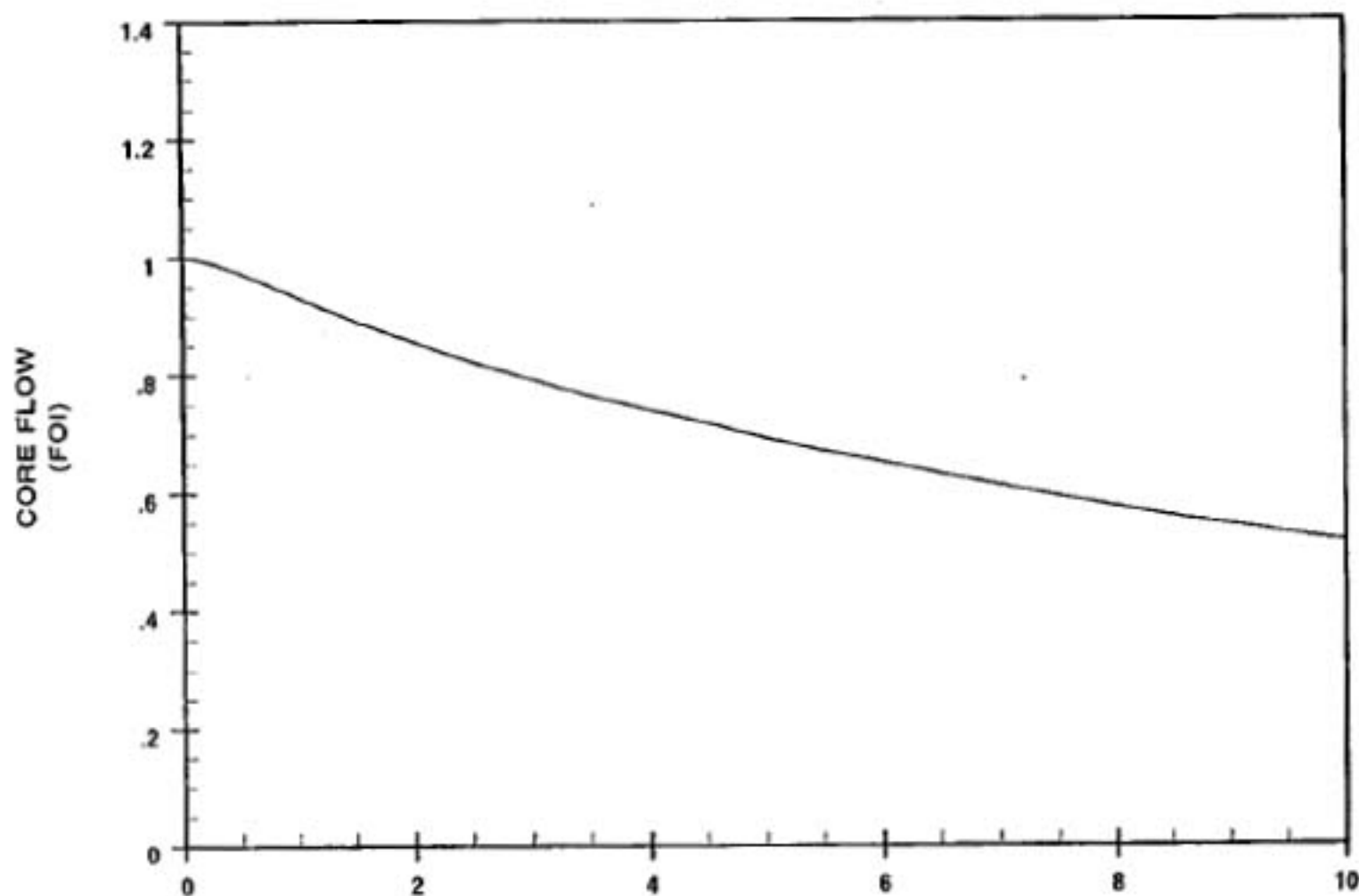
CALLAWAY PLANT

FIGURE 15.3-4

DNBR TRANSIENT FOR FOUR
LOOPS IN OPERATION,
TWO PUMPS COASTING DOWN

Figure 15.3-4A Deleted

Figure 15.3-4B Deleted

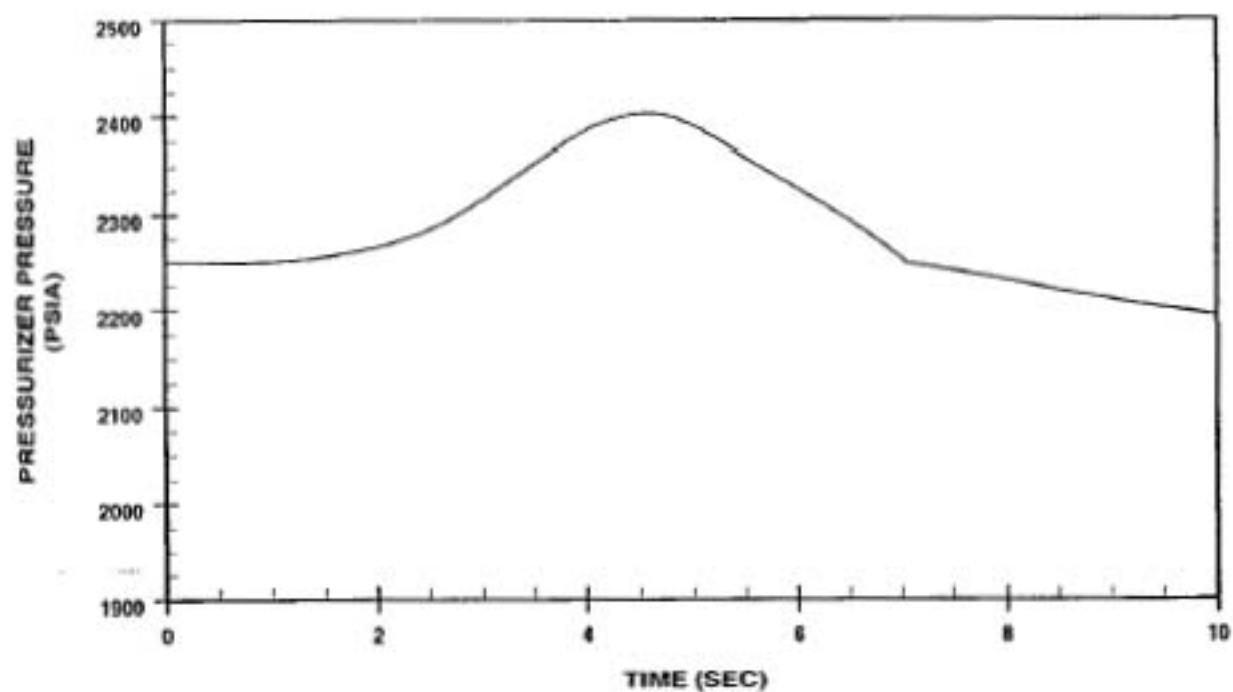
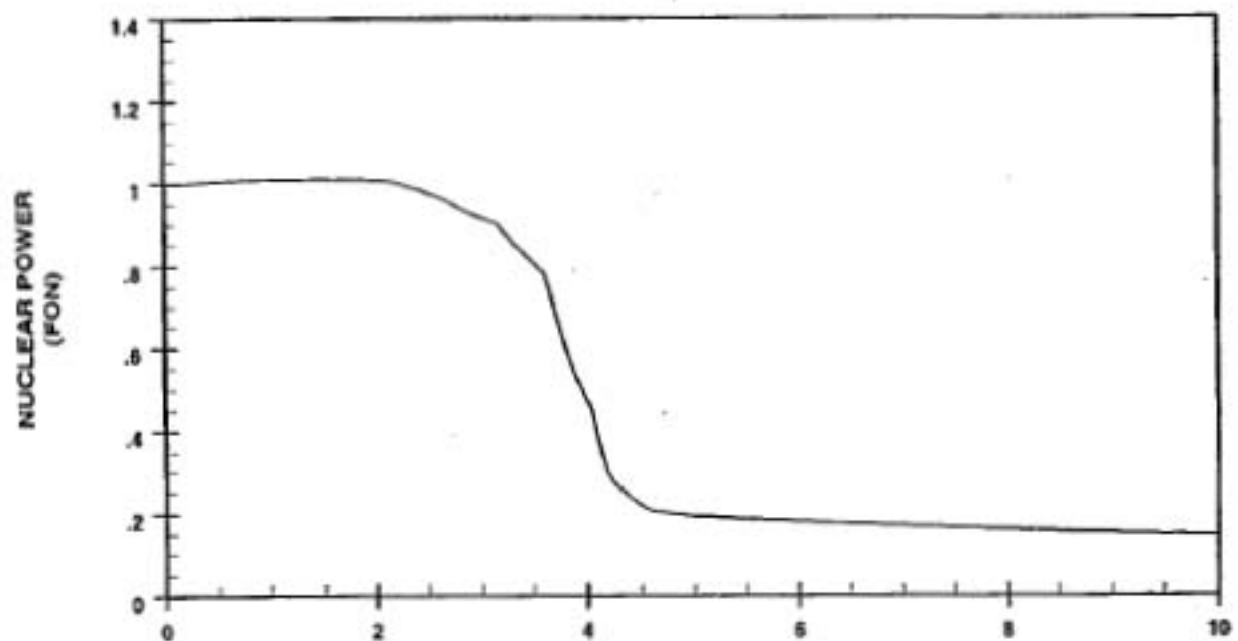


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FIGURE 16.3-6

CORE FLOW TRANSIENT FOR
FOUR LOOPS IN OPERATION,
FOUR PUMPS COASTING DOWN

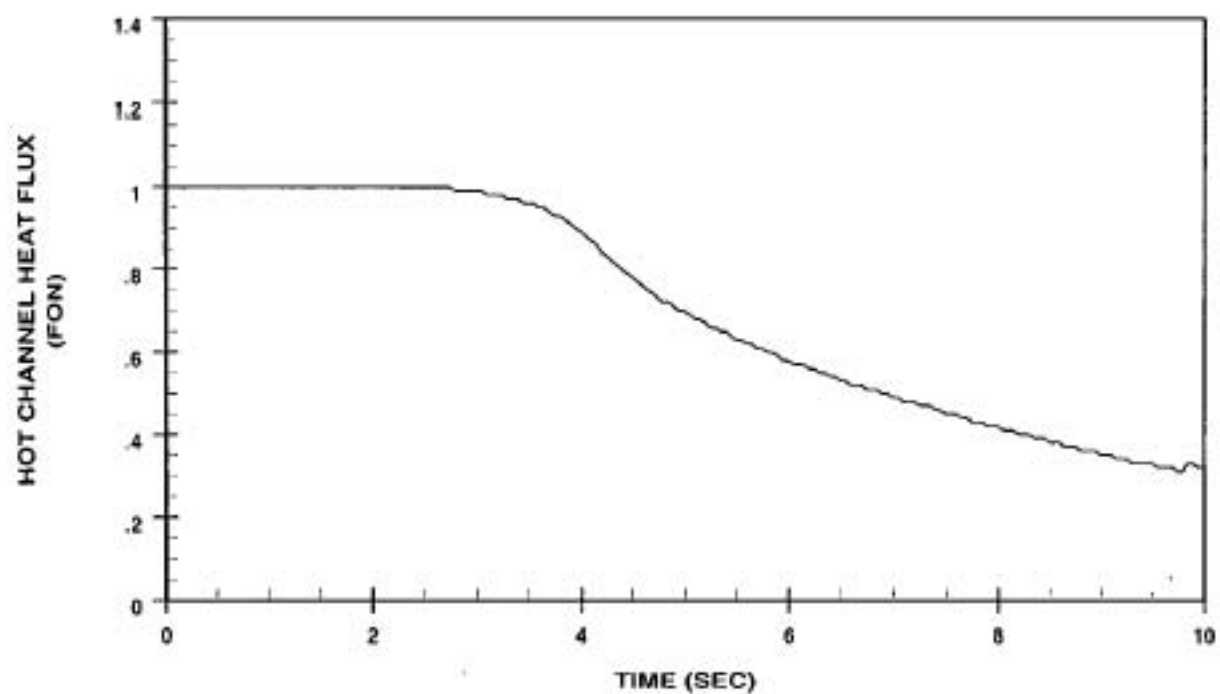
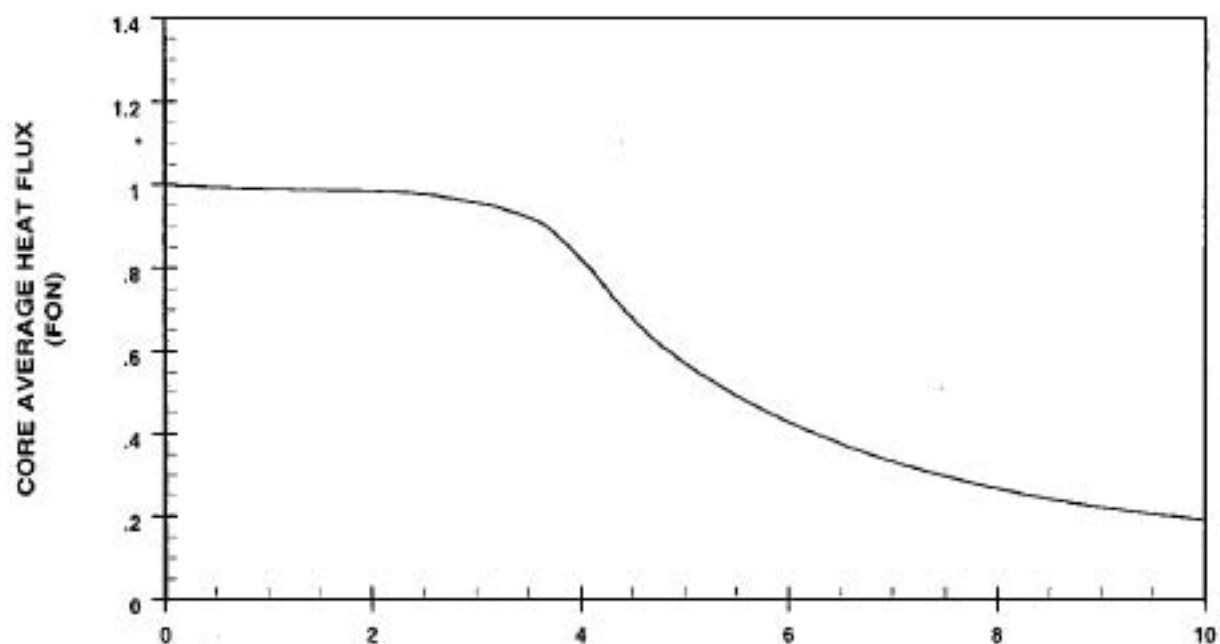


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CALLAWAY PLANT

FIGURE 16.3-8

NUCLEAR POWER AND PRESSURIZER PRESSURE
TRANSIENTS FOR FOUR LOOPS IN OPERATION,
FOUR PUMPS COASTING DOWN

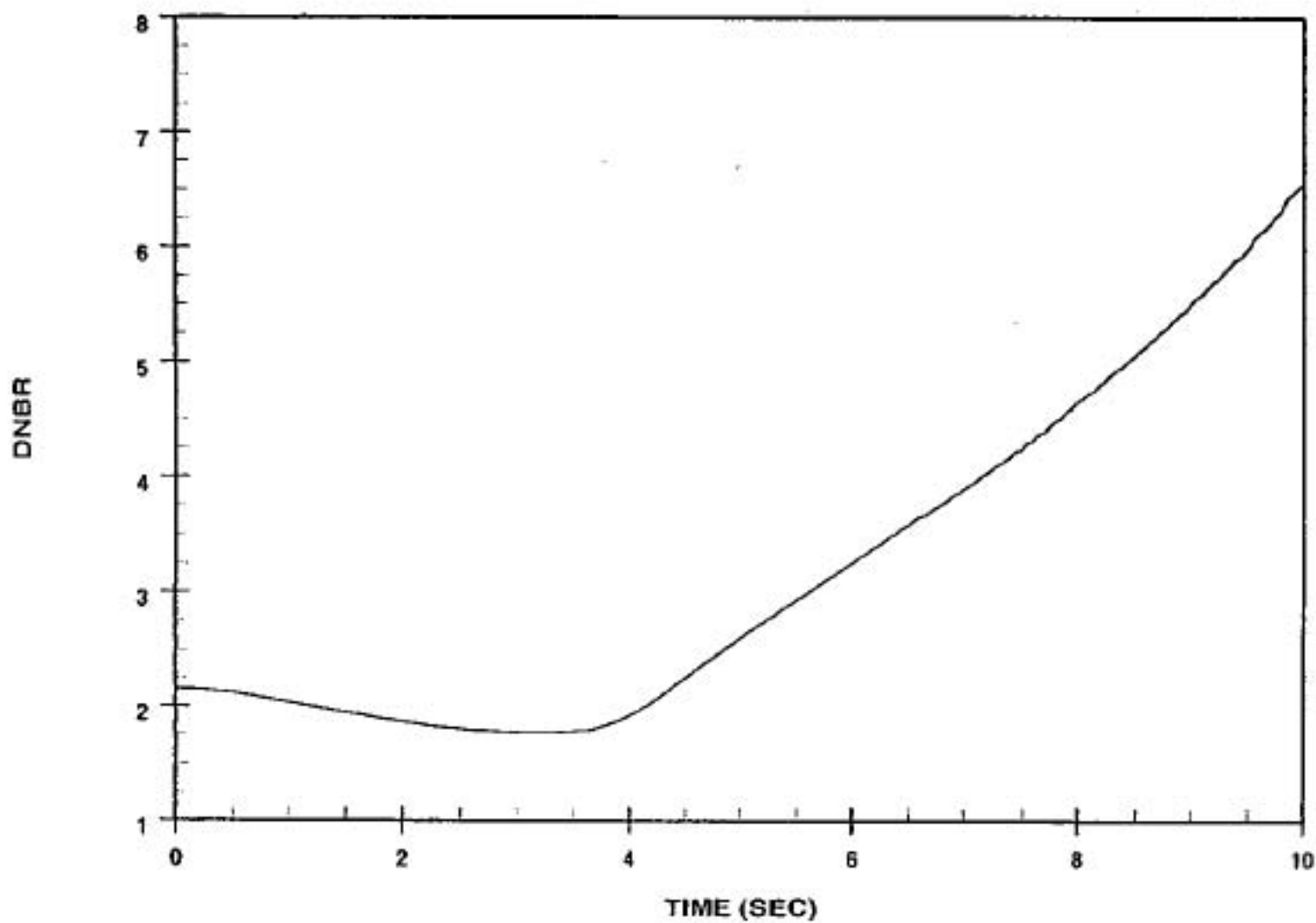


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FIGURE 15.3-7

CORE AVERAGE AND HOT CHANNEL HEAT FLUX
TRANSIENTS FOR FOUR LOOPS IN OPERATION,
FOUR PUMPS COASTING DOWN



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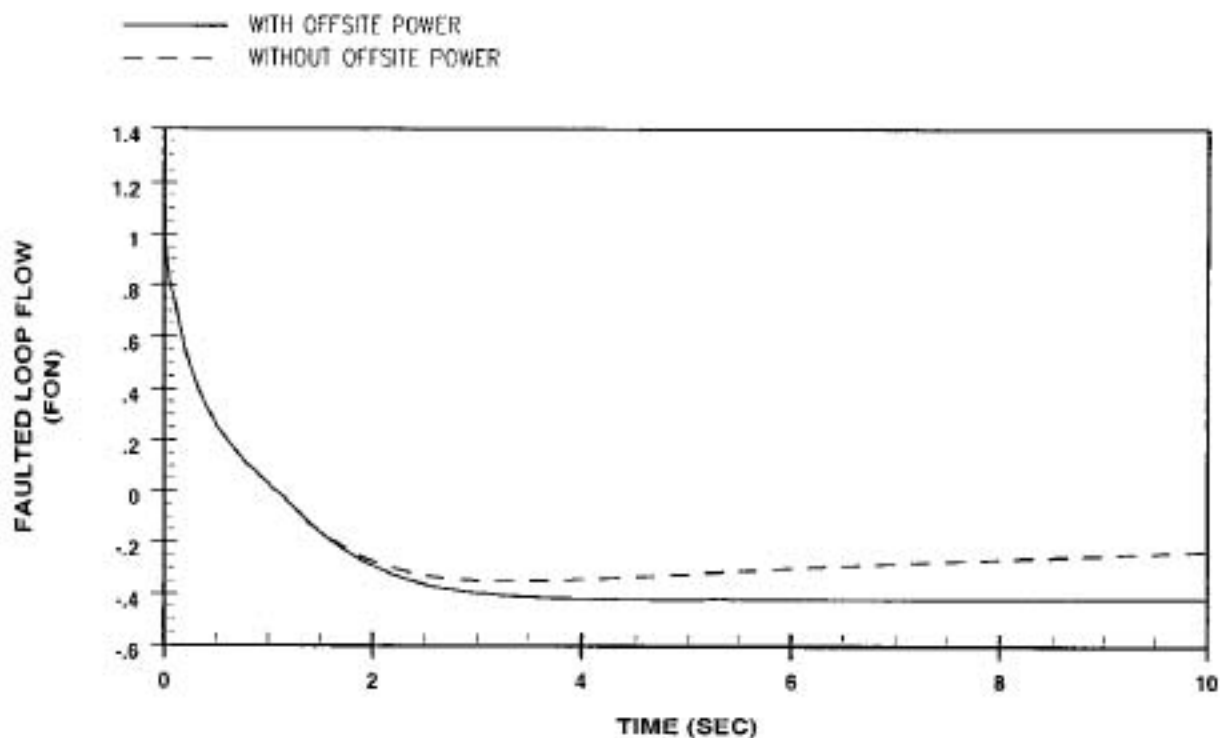
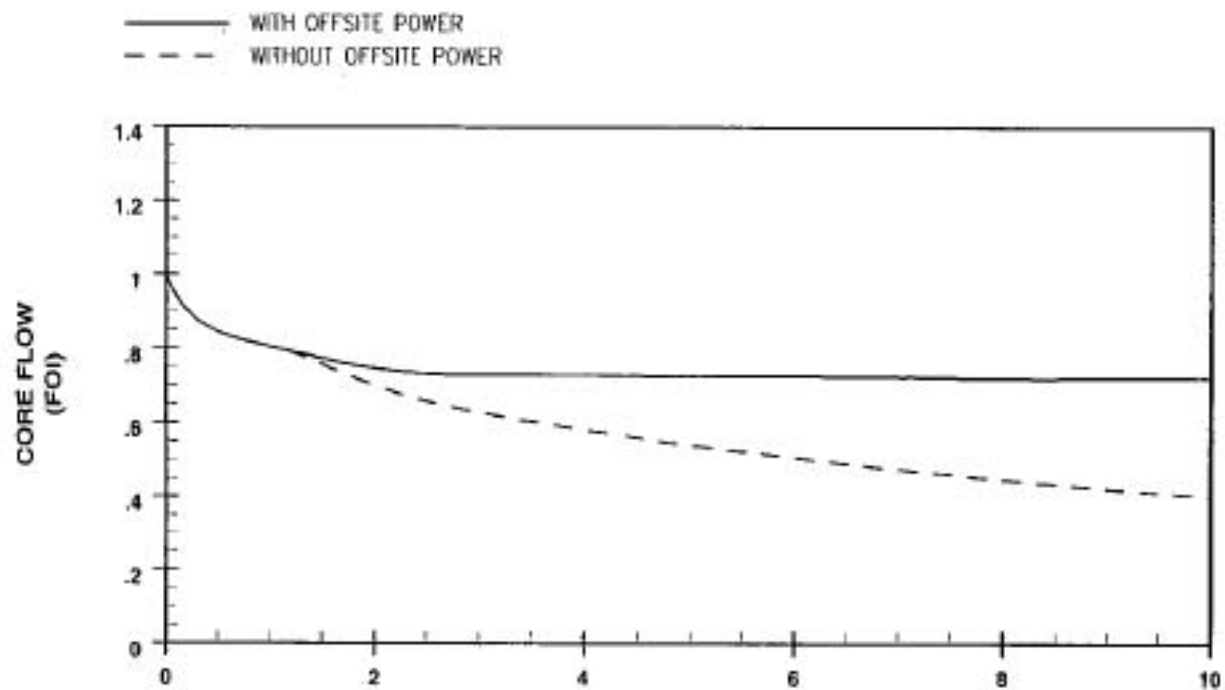
CALLAWAY PLANT

FIGURE 15.3-8

DNBR TRANSIENT FOR
FOUR LOOPS IN OPERATION,
FOUR PUMPS COASTING DOWN

Figure 15.3-8A Deleted

Figure 15.3-8B Deleted

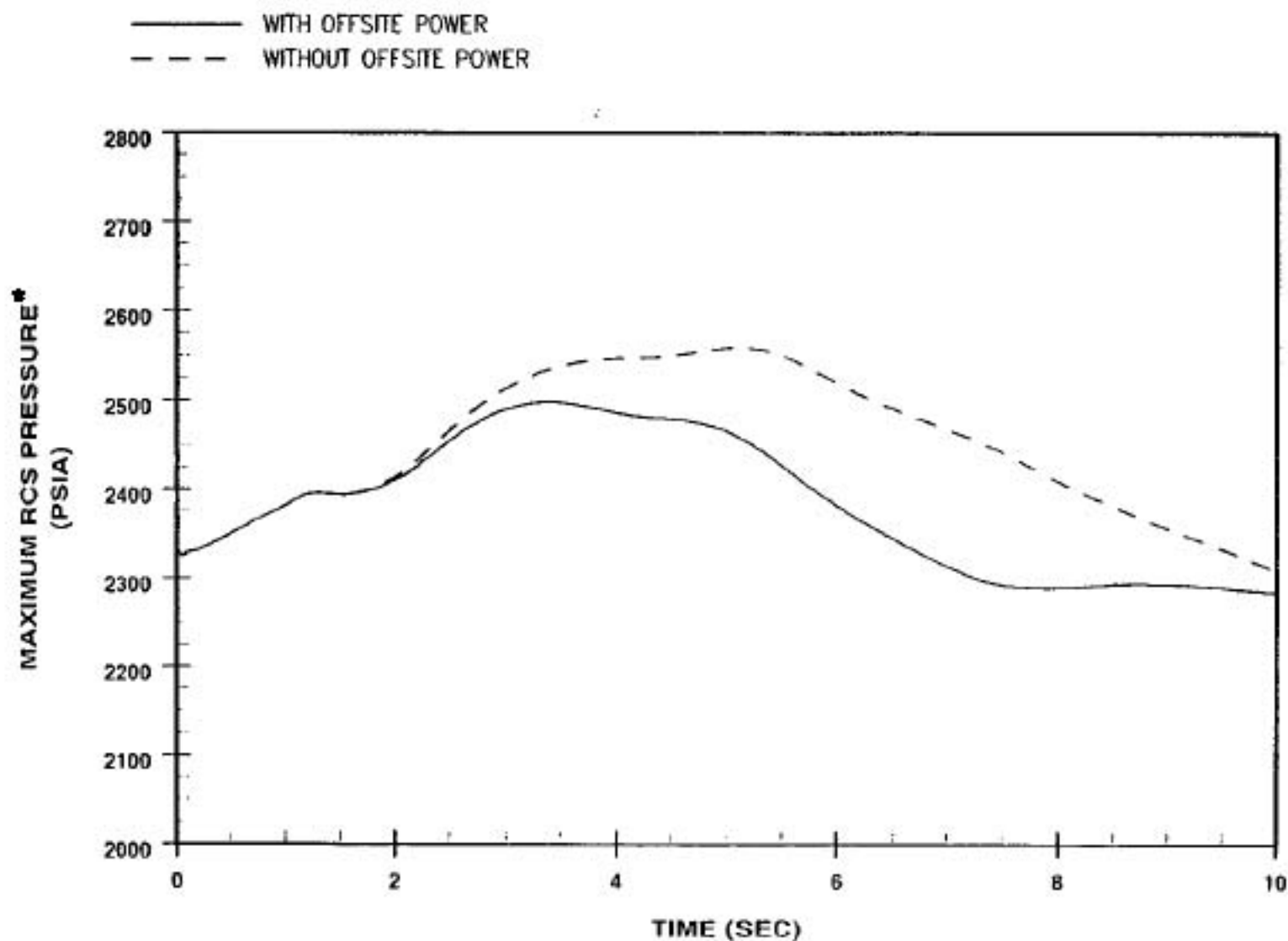


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5/88

CALLAWAY PLANT

FIGURE 16.3-9

FLOW TRANSIENTS FOR
FOUR LOOPS IN OPERATION,
ONE LOCKED ROTOR



NOTES:

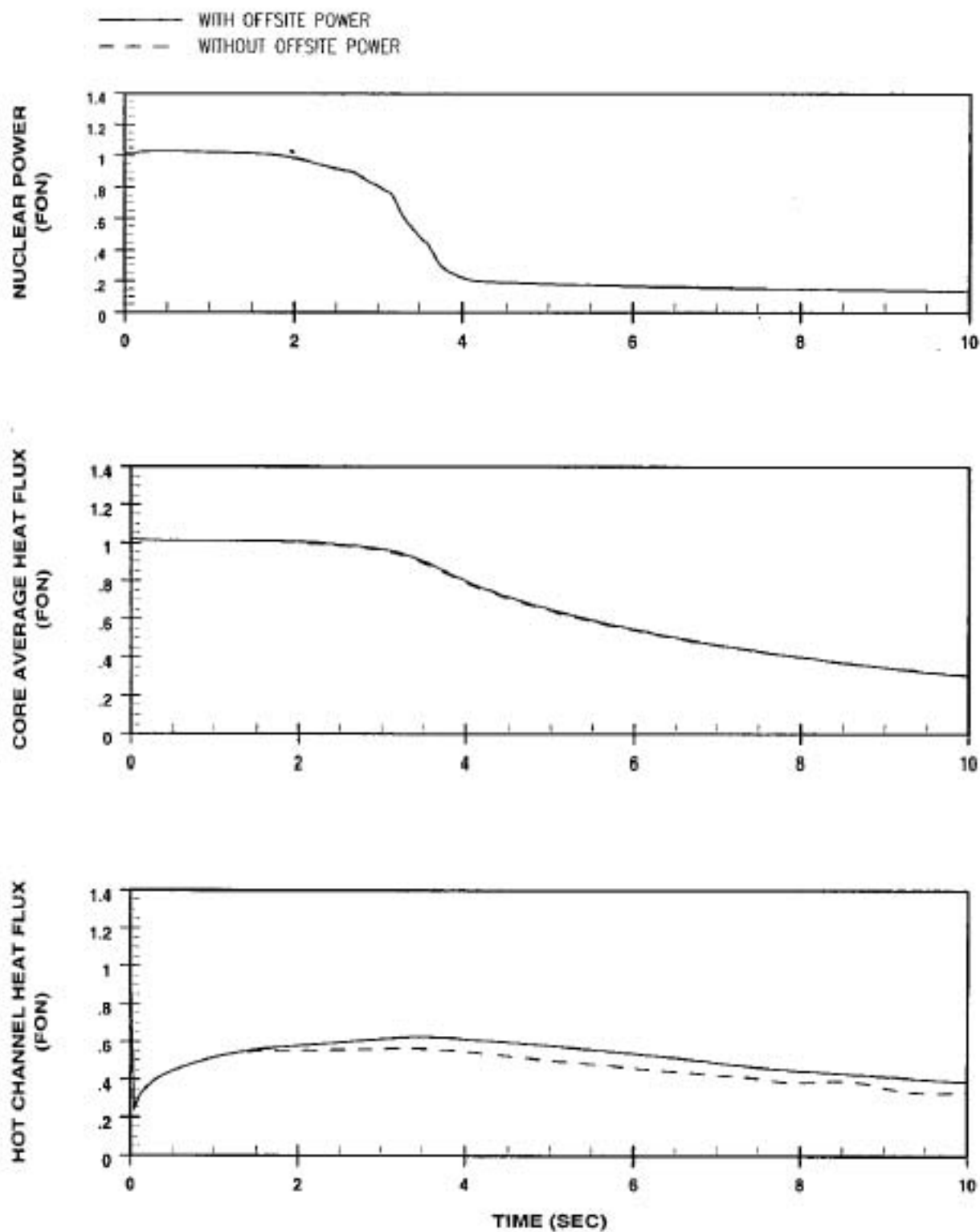
- * Per NEAL-09-2, a 45 psi penalty has been added to the calculated peak RCS pressure following a locked rotor accident. See Table 15.3-2.

CALLAWAY PLANT

FIGURE 15.3-10

**PEAK REACTOR COOLANT PRESSURE
FOR FOUR LOOPS IN OPERATION,
ONE LOCKED ROTOR**

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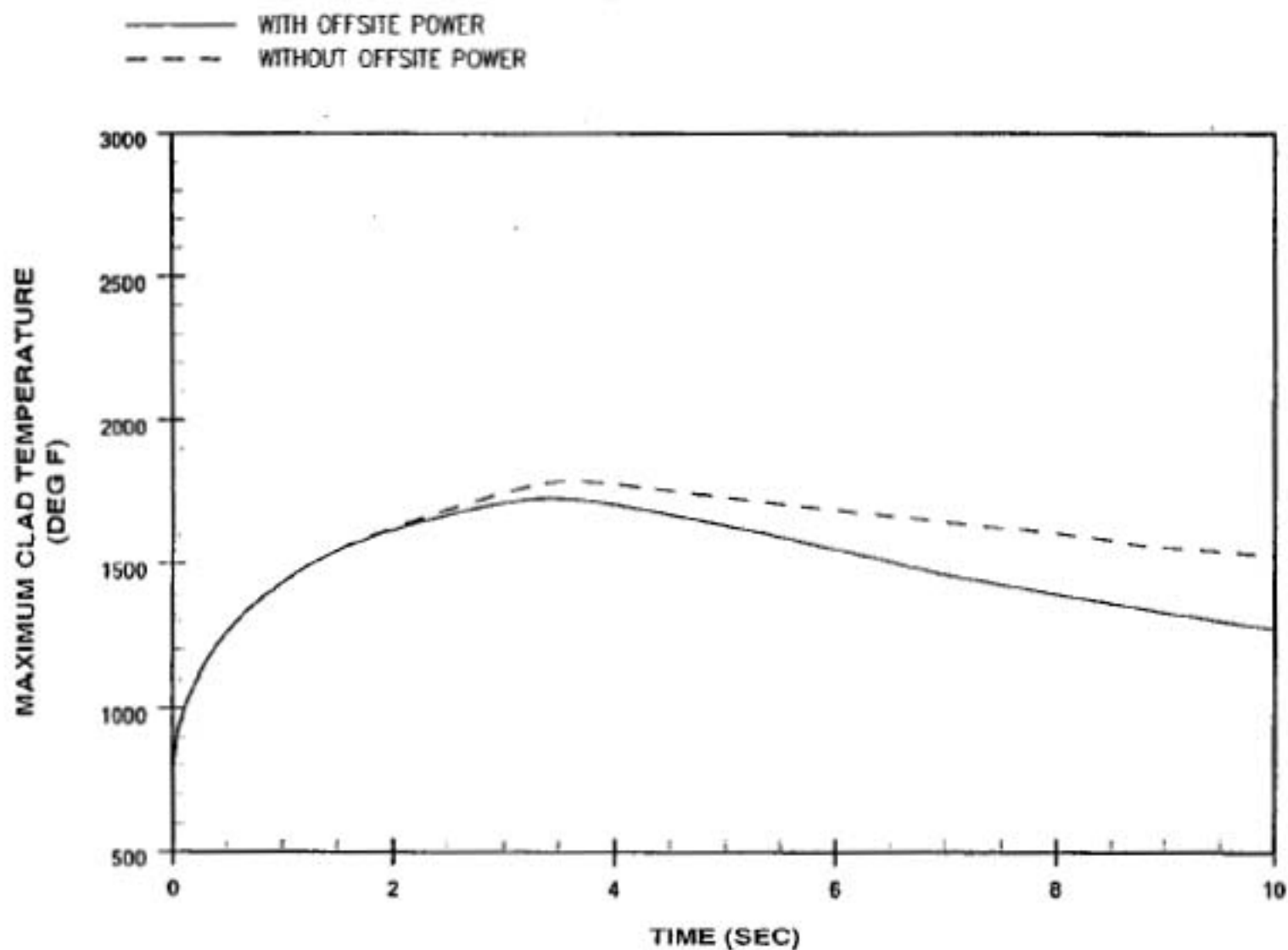


REV. OL-16
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CALLAWAY PLANT

FIGURE 15.3-11

NUCLEAR POWER, CORE AVERAGE AND
HOT CHANNEL HEAT FLUX TRANSIENTS FOR
FOUR LOOPS IN OPERATION, ONE LOCKED ROTOR



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CALLAWAY PLANT

FIGURE 15.3-12

MAXIMUM CLAD TEMPERATURE
AT HOT SPOT FOR FOUR LOOPS IN
OPERATION, ONE LOCKED ROTOR

Figures 15.3-13 thru 15.3-24 have been deleted.

Figures 15.3-13 thru 15.3-24 have been deleted.

Figures 15.3-13 thru 15.3-24 have been deleted.

Figures 15.3-13 thru 15.3-24 have been deleted.

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Figures 15.3-13 thru 15.3-24 have been deleted.

Figures 15.3-13 thru 15.3-24 have been deleted.

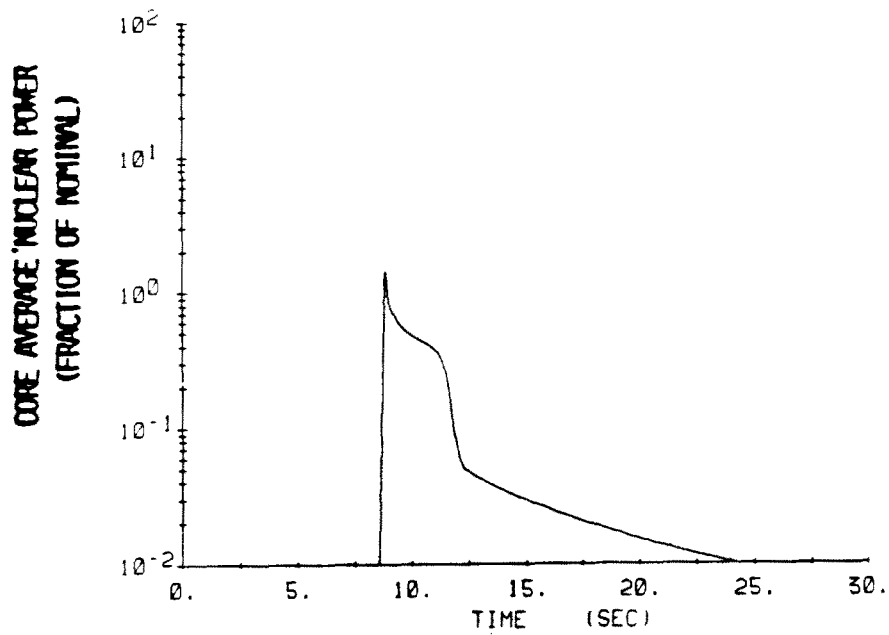
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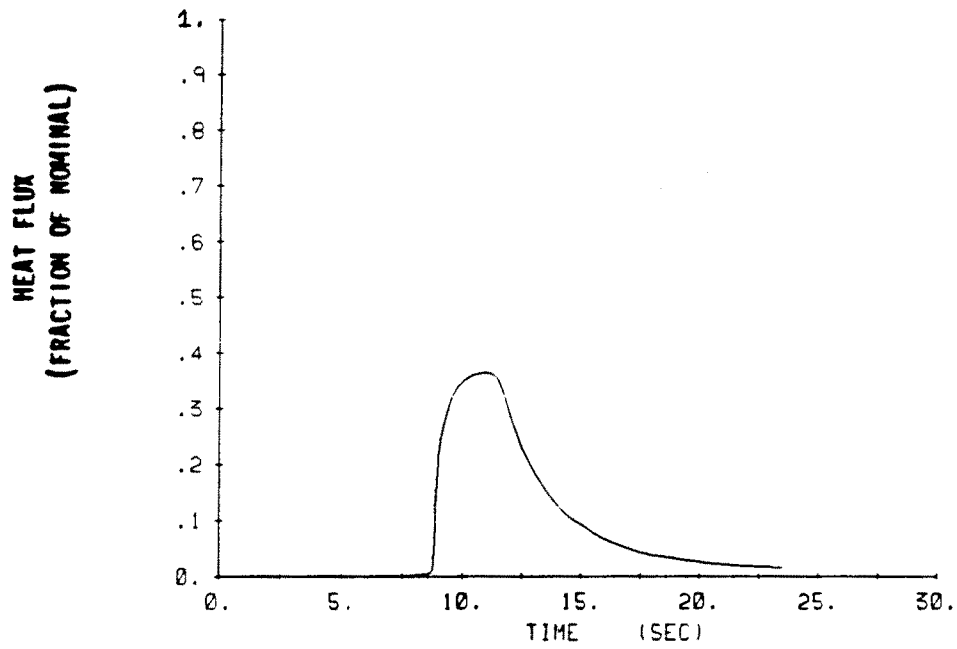


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6/91

CALLAWAY PLANT

FIGURE 15A-1

**CORE AVERAGE NUCLEAR POWER
TRANSIENT FOR UNCONTROLLED ROD
WITHDRAWAL FROM A SUBCRITICAL
CONDITION**

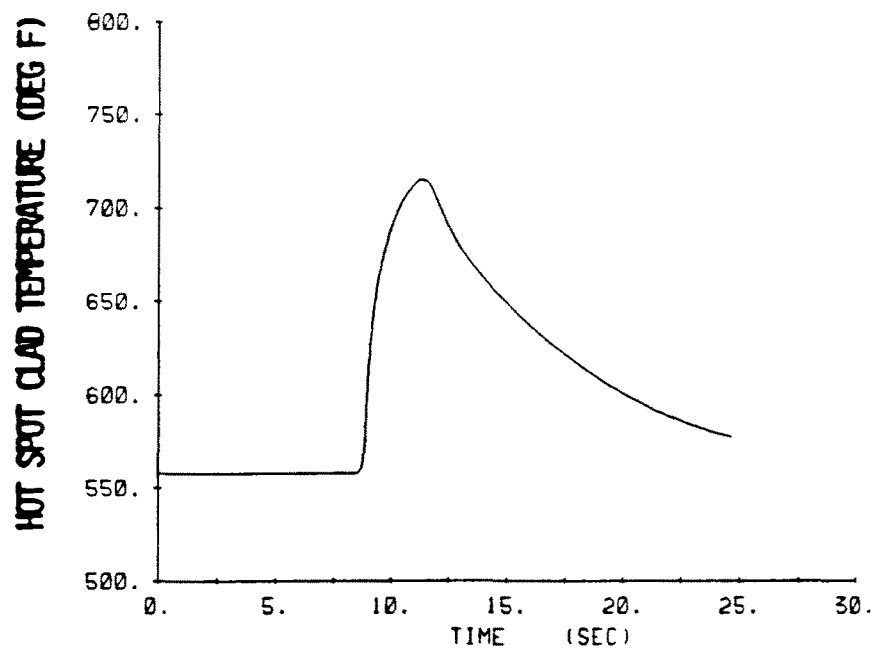
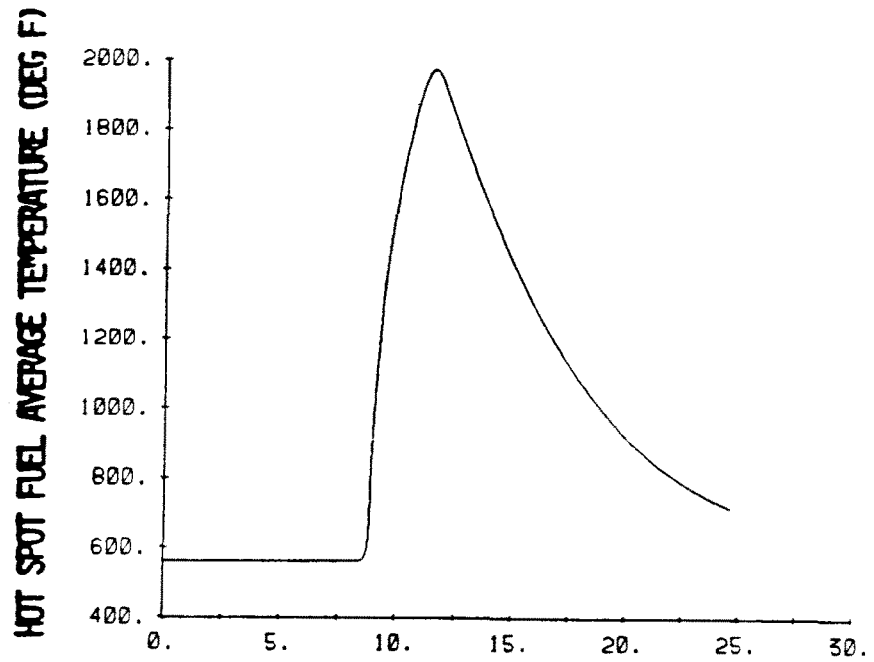


REV. OL-5
6/91

CALLAWAY PLANT

FIGURE 15.4-2

**THERMAL FLUX TRANSIENT FOR
UNCONTROLLED ROD WITHDRAWAL
FROM A SUBCRITICAL
CONDITION**

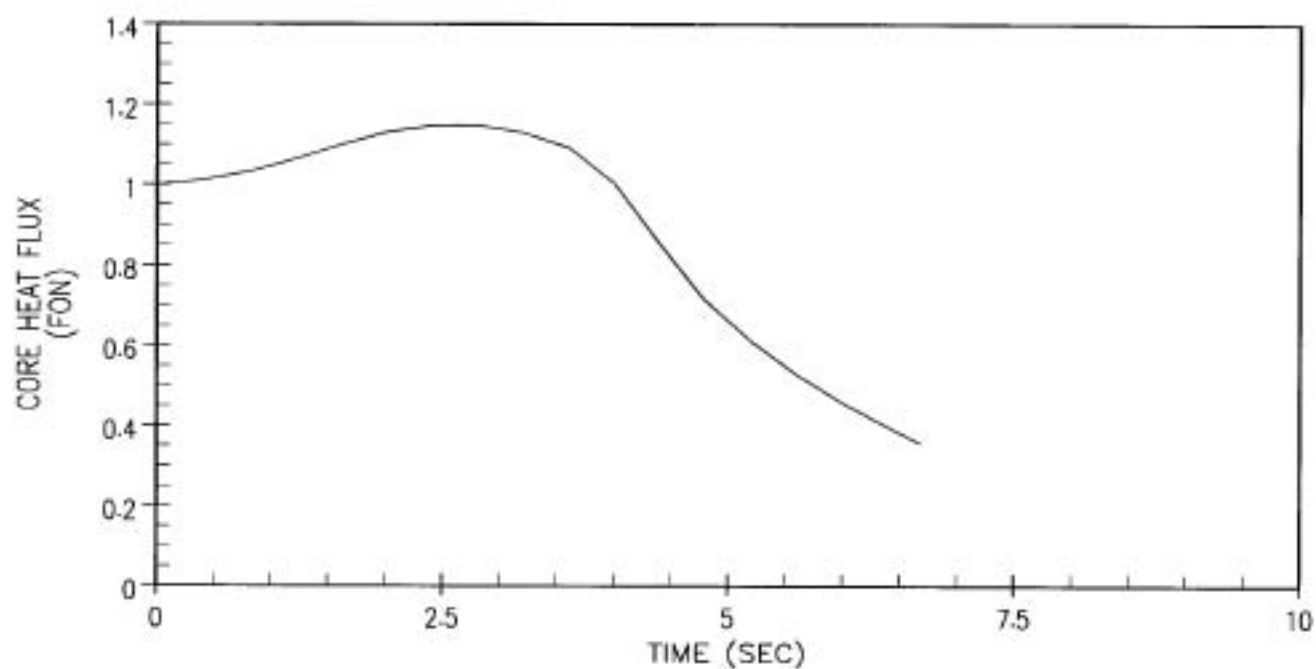
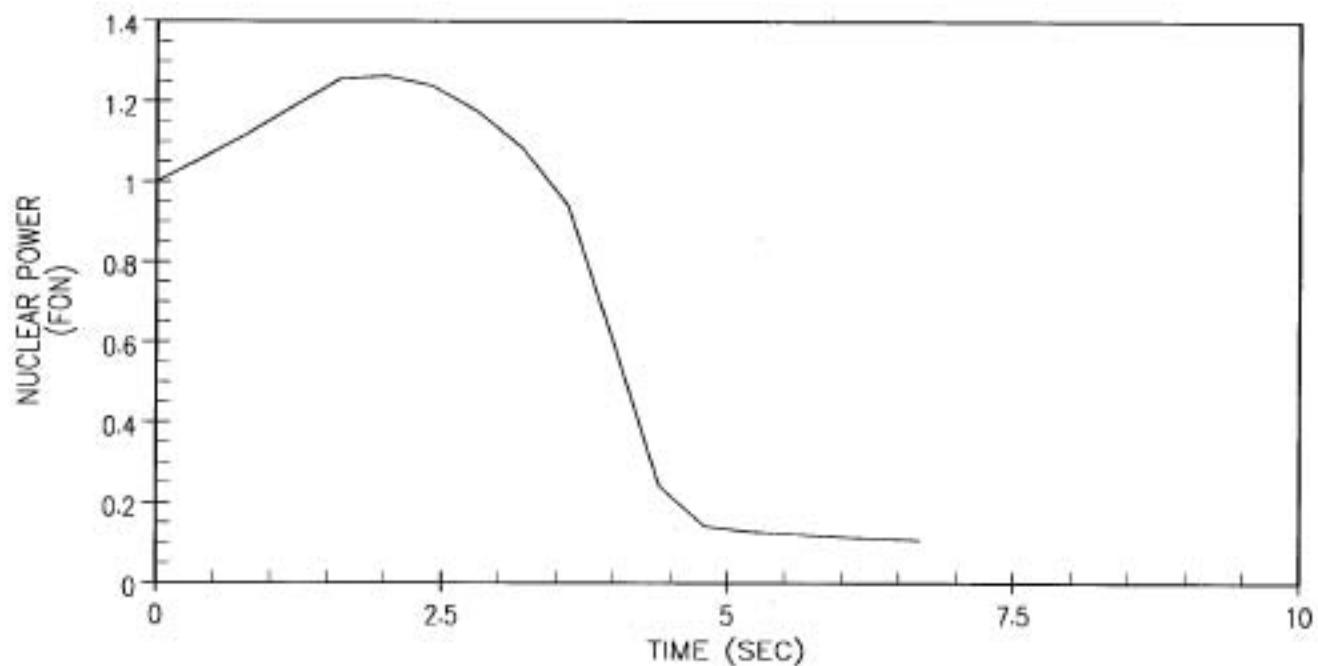


REV. OL-5
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CALLAWAY PLANT

FIGURE 15.4-3

**FUEL AND CLAD TEMPERATURE
TRANSIENTS FOR UNCONTROLLED
ROD WITHDRAWAL FROM A SUB-
CRITICAL CONDITION**

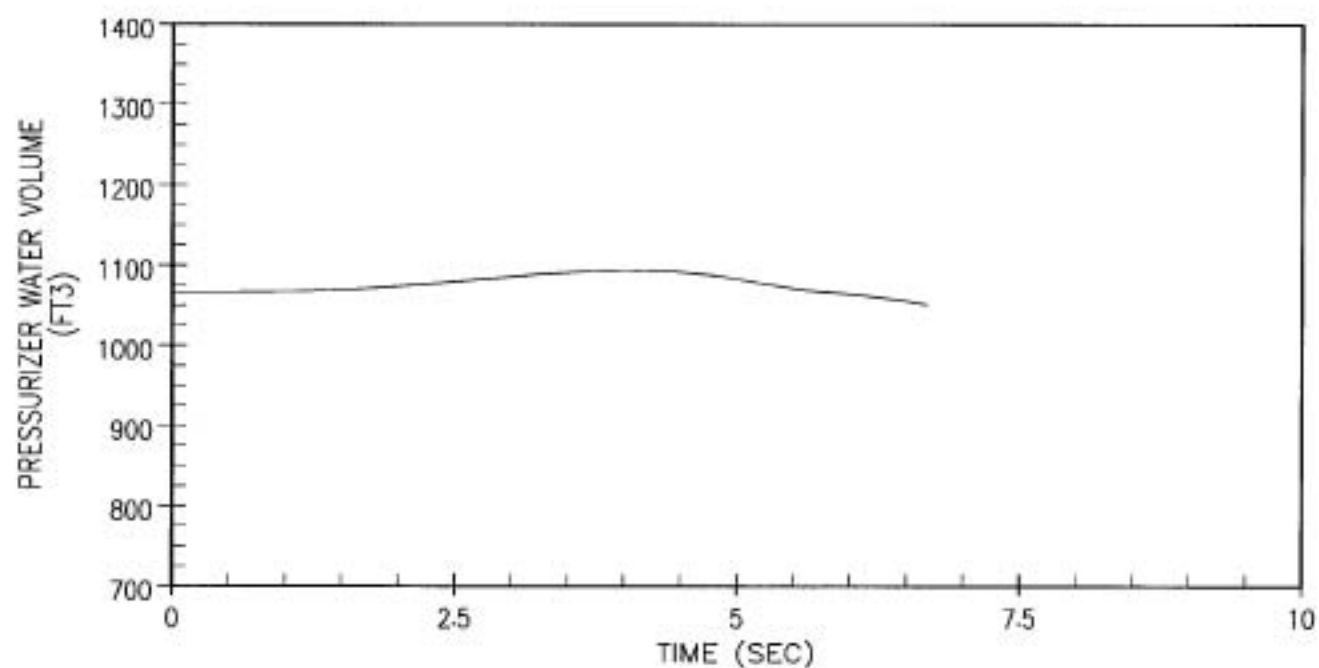
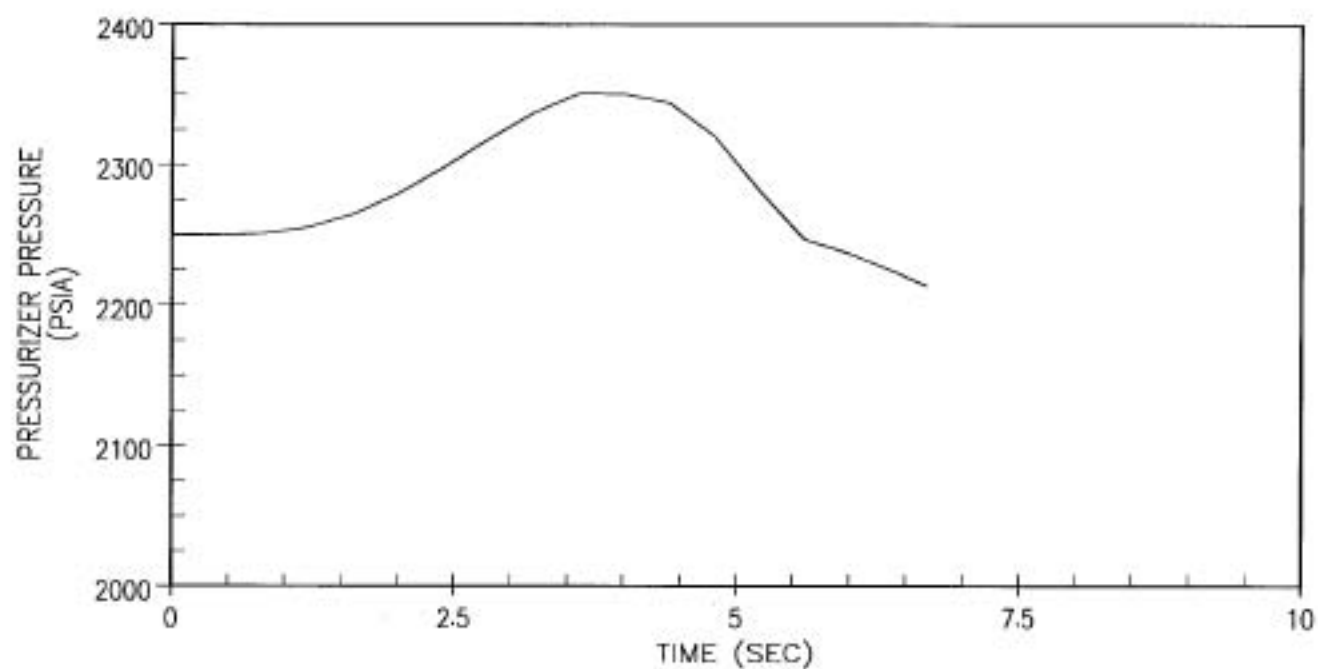


CALLAWAY PLANT

FIGURE 15.4-4

UNCONTROLLED RCCA BANK WITHDRAWAL
FROM FULL POWER WITH MINIMUM
REACTIVITY FEEDBACK
(110 PCM/SEC WITHDRAWAL RATE)

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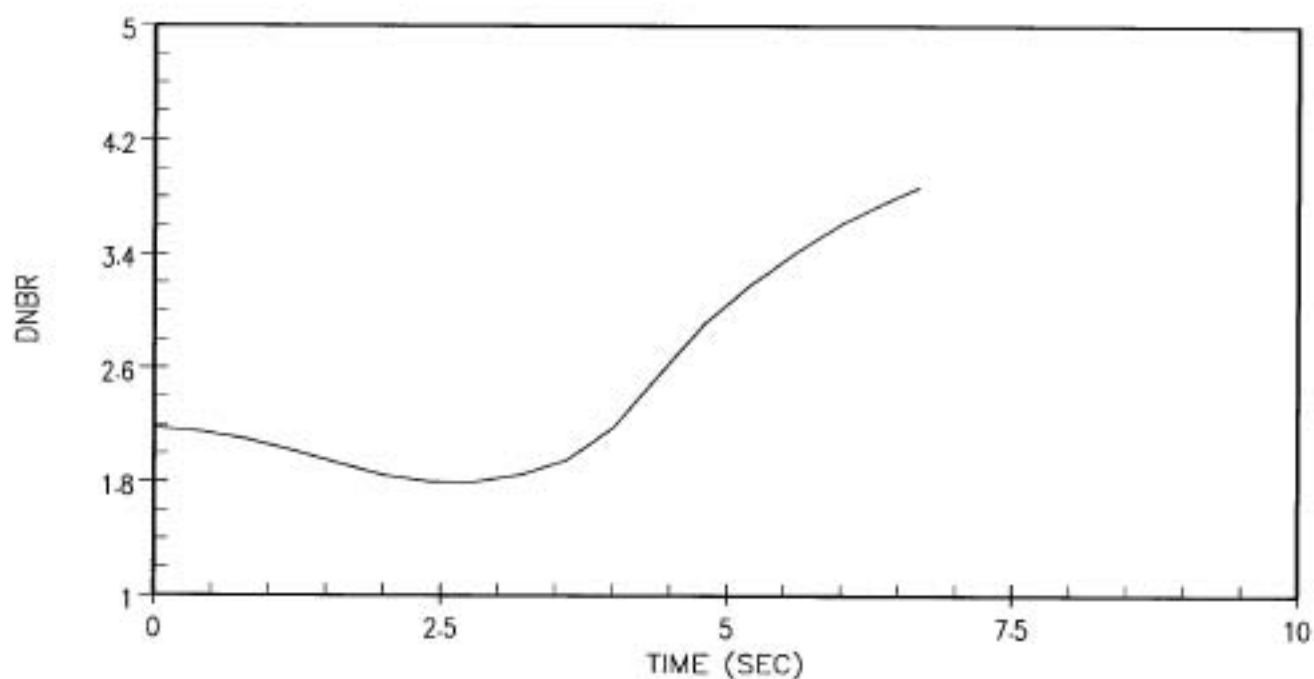
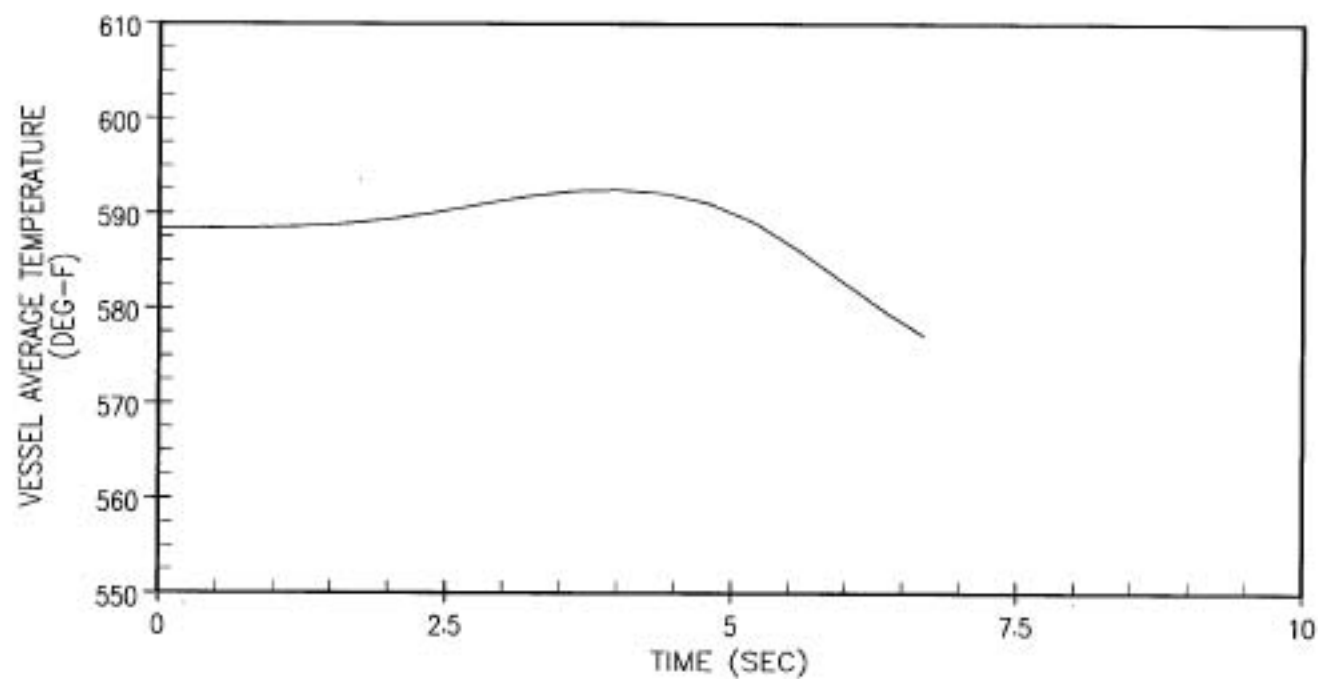


CALLAWAY PLANT

FIGURE 16.4-6

UNCONTROLLED RCCA BANK
WITHDRAWAL FROM FULL POWER WITH
MINIMUM REACTIVITY FEEDBACK
(110 PCM/SEC WITHDRAWAL RATE)

REV. 10 1/10

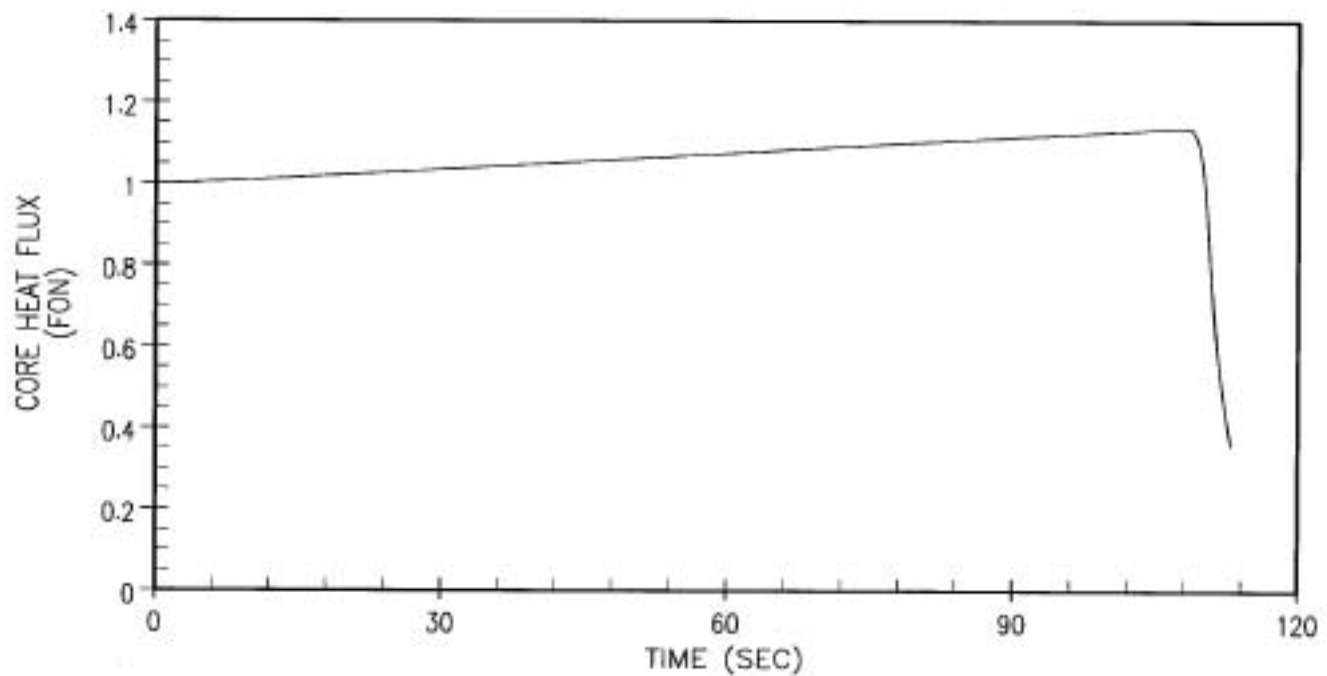
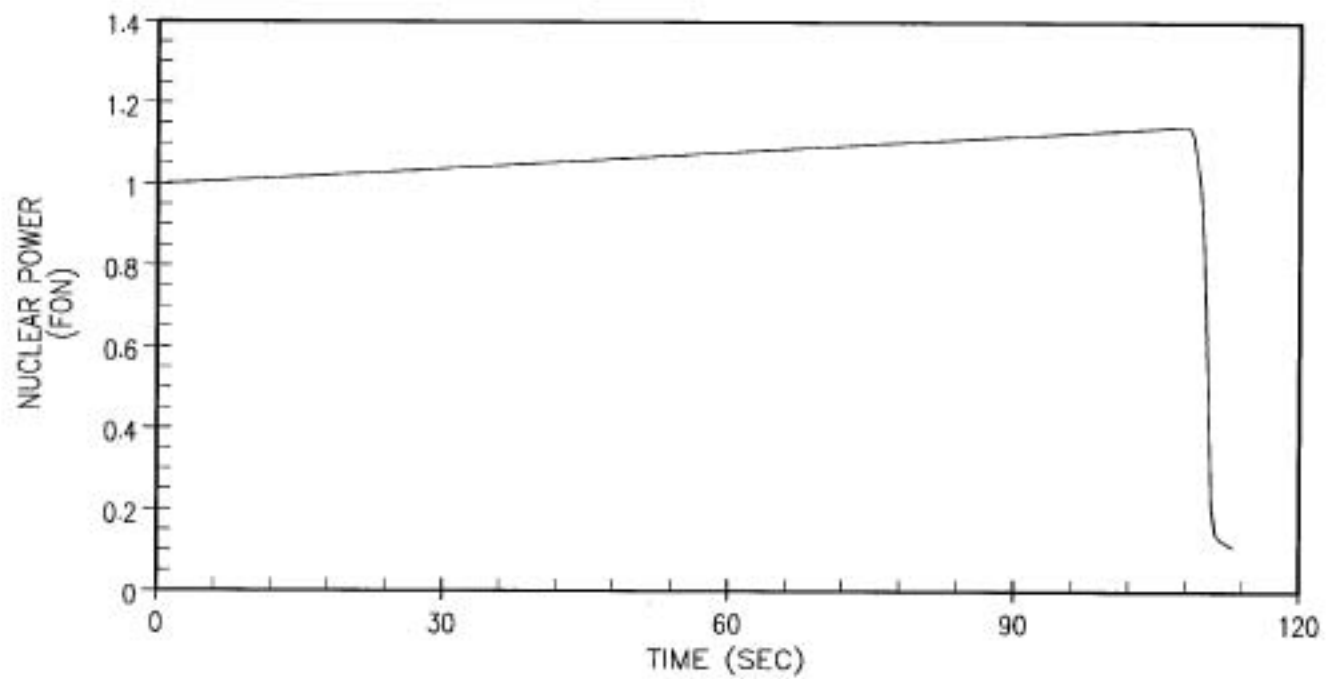


CALLAWAY PLANT

FIGURE 16.4-8

UNCONTROLLED RCCA BANK
WITHDRAWAL FROM FULL POWER WITH
MINIMUM REACTIVITY FEEDBACK
(110 PC/MSEC WITHDRAWAL RATE)

REV. 10 1/10

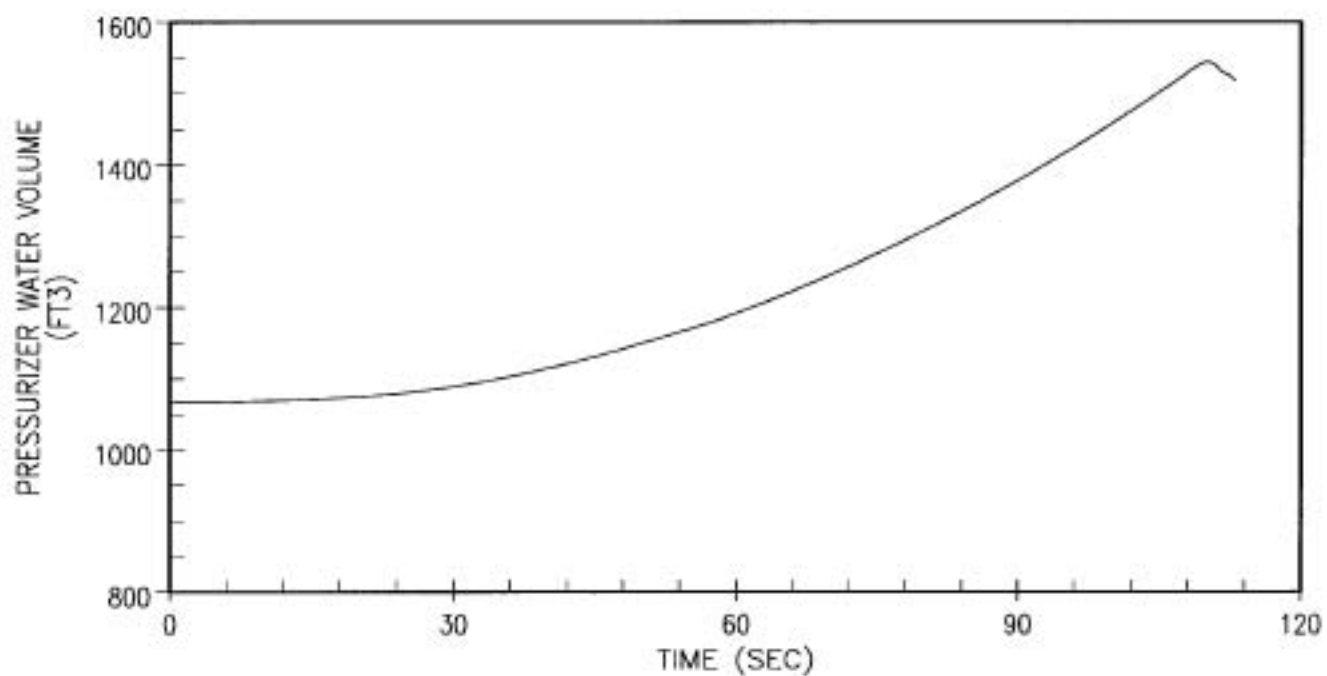
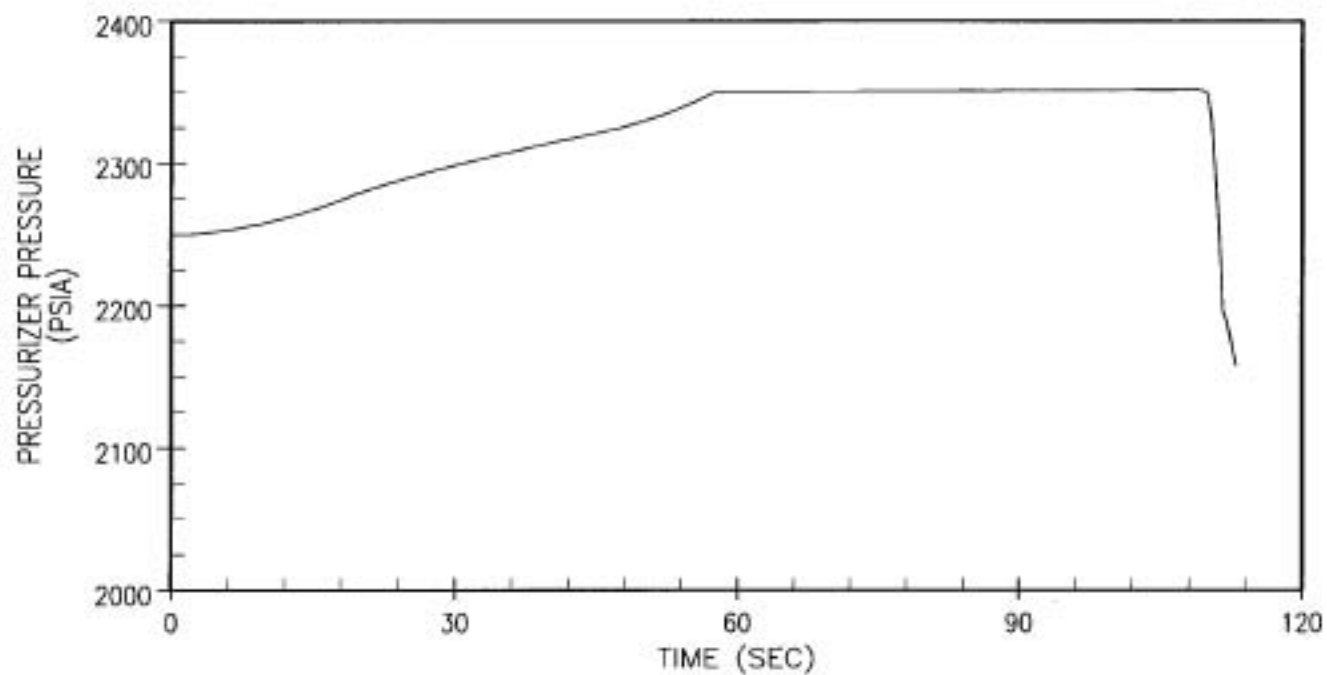


CALLAWAY PLANT

FIGURE 15.4-7

UNCONTROLLED RCCA BANK
WITHDRAWAL FROM FULL POWER
WITH MINIMUM REACTIVITY FEEDBACK
(1 PCMI/SEC WITHDRAWAL RATE)

REV. 15 1/10

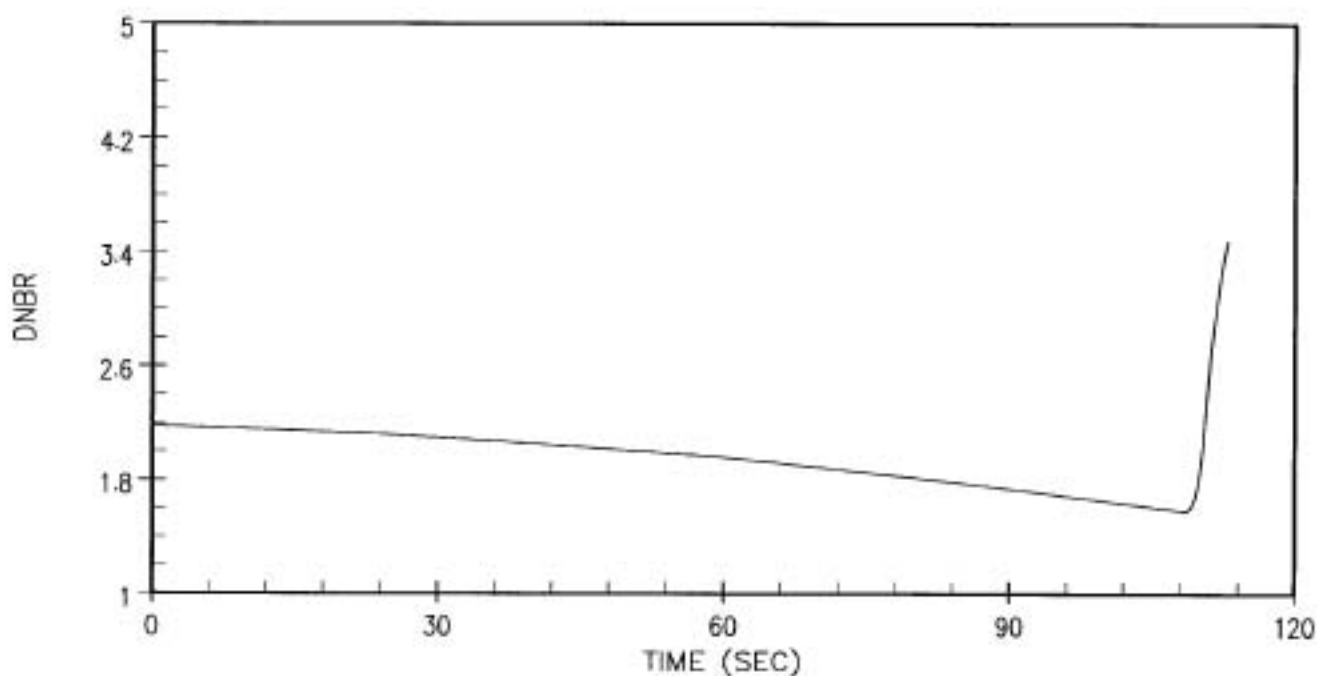
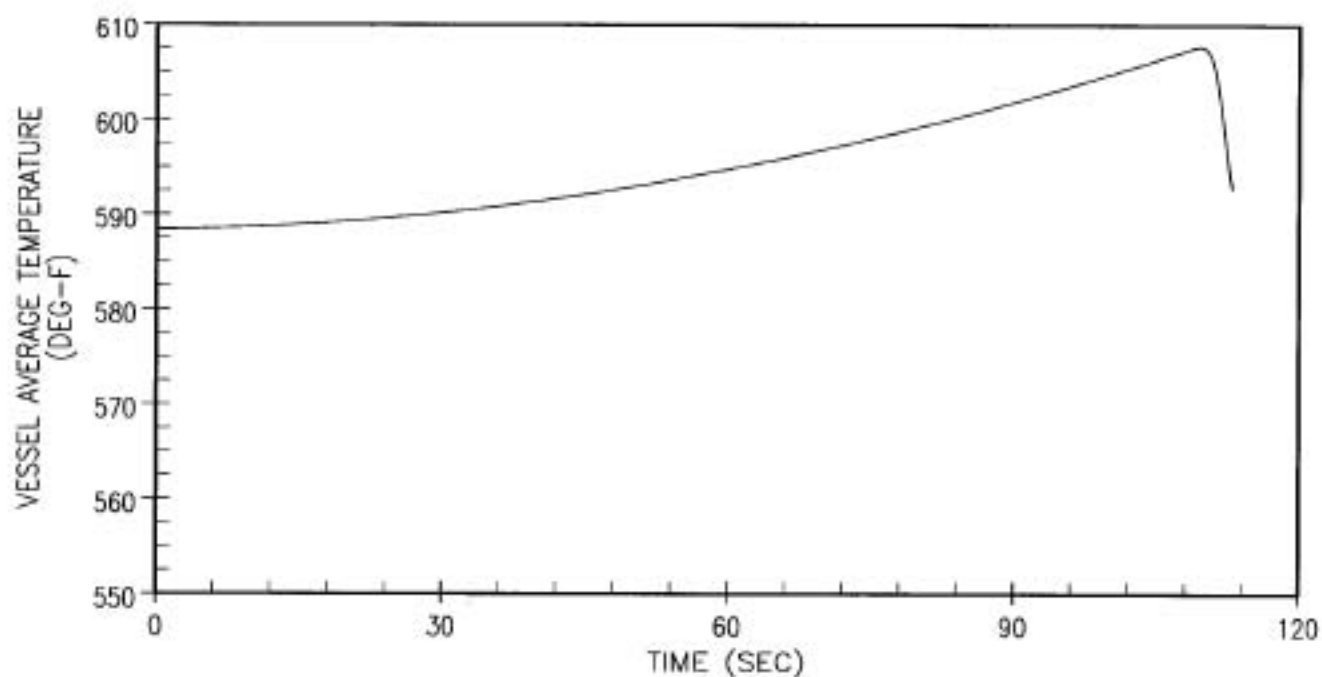


CALLAWAY PLANT

FIGURE 16.4-8

UNCONTROLLED RCCA BANK
WITHDRAWAL FROM FULL POWER
WITH MINIMUM REACTIVITY FEEDBACK
(1 PCM/SEC WITHDRAWAL RATE)

REV. 16 1/10

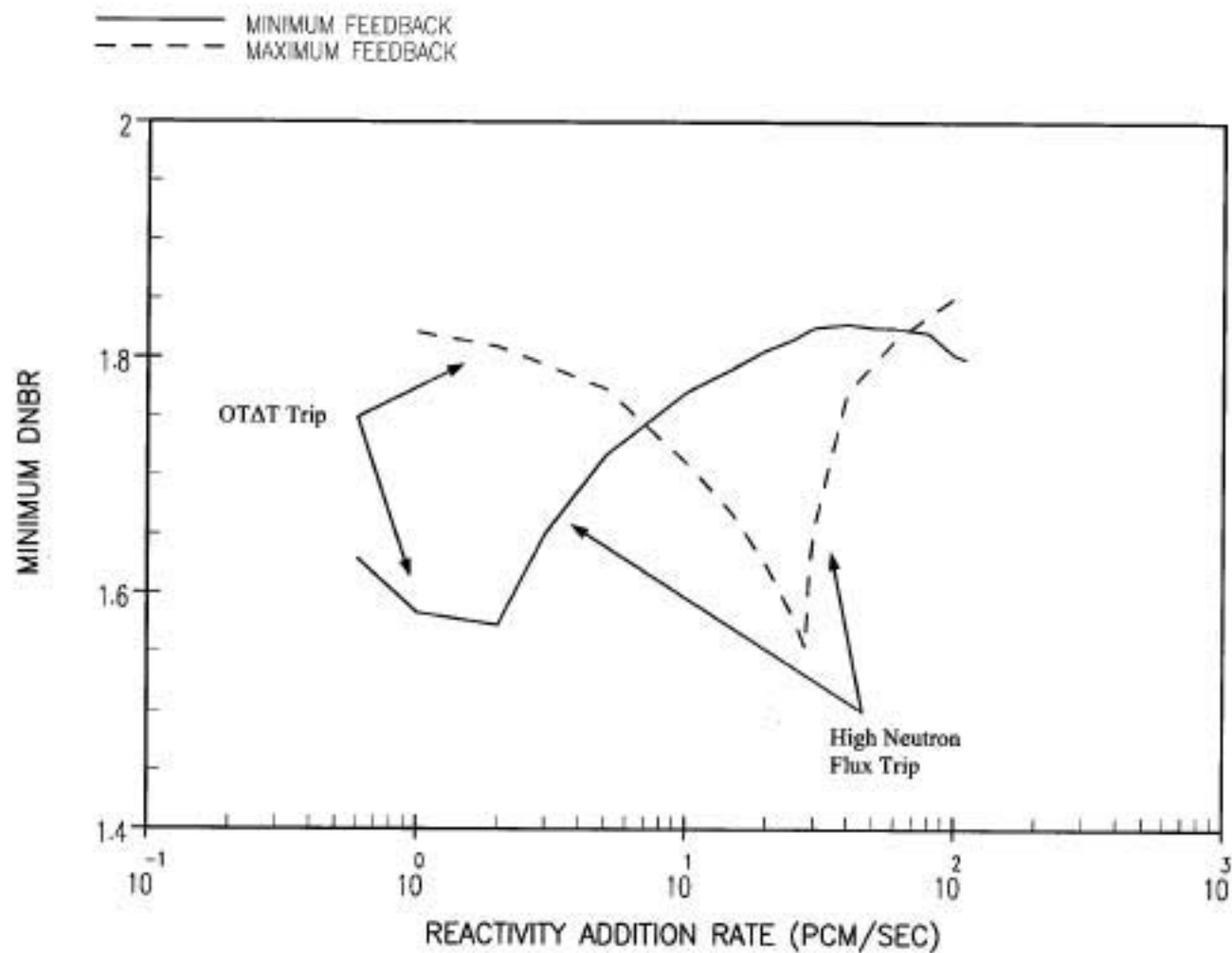


CALLAWAY PLANT

FIGURE 15.4-9

UNCONTROLLED RCCA BANK
WITHDRAWAL FROM FULL POWER
WITH MINIMUM REACTIVITY FEEDBACK
(1 PCM/SEC WITHDRAWAL RATE)

REV. 16 1/10

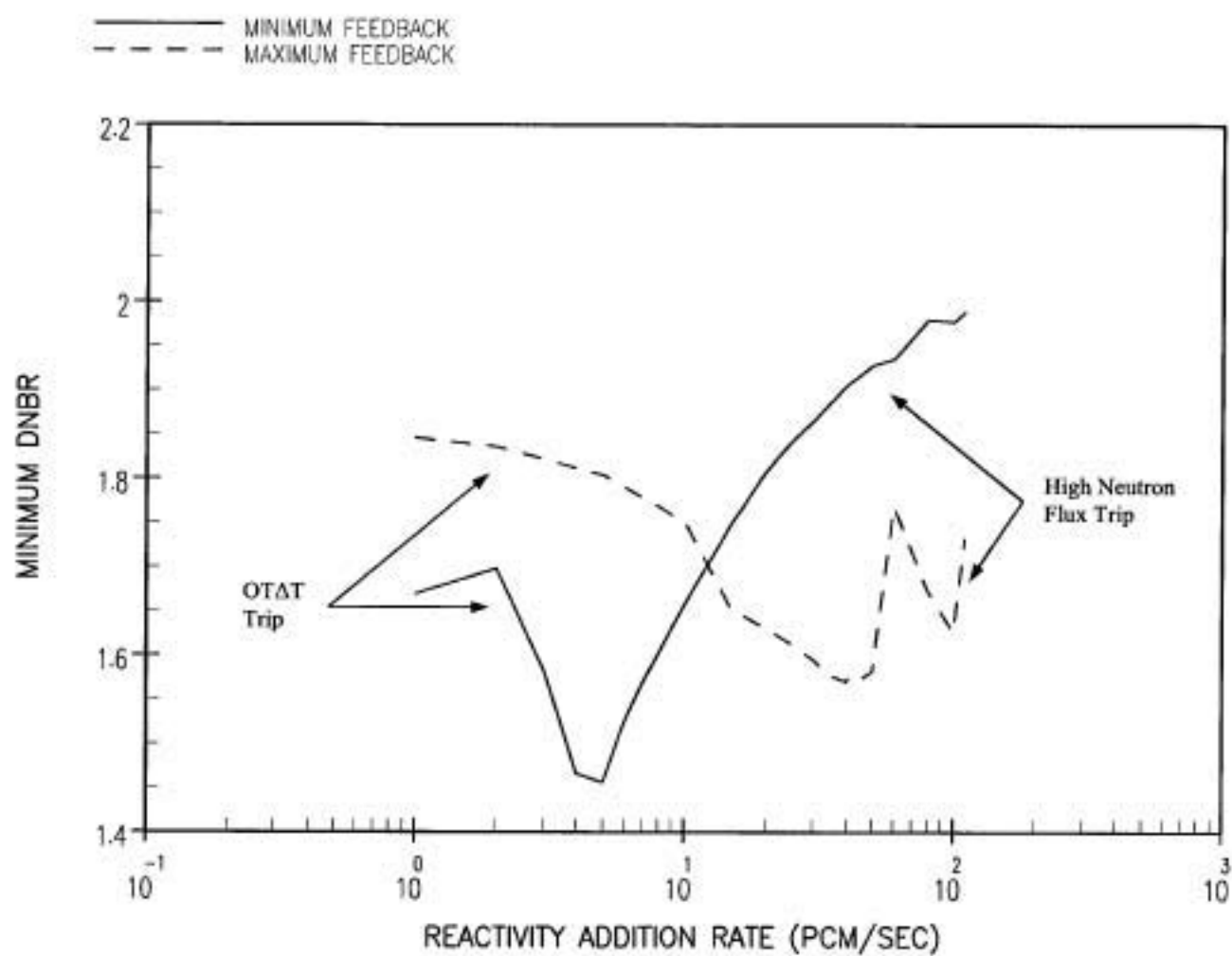


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FIGURE 15.4-10

MINIMUM DNBR VERSUS REACTIVITY
INSERTION RATE, ROD WITHDRAWAL
FROM 100 PERCENT POWER

REV. 10 1/10

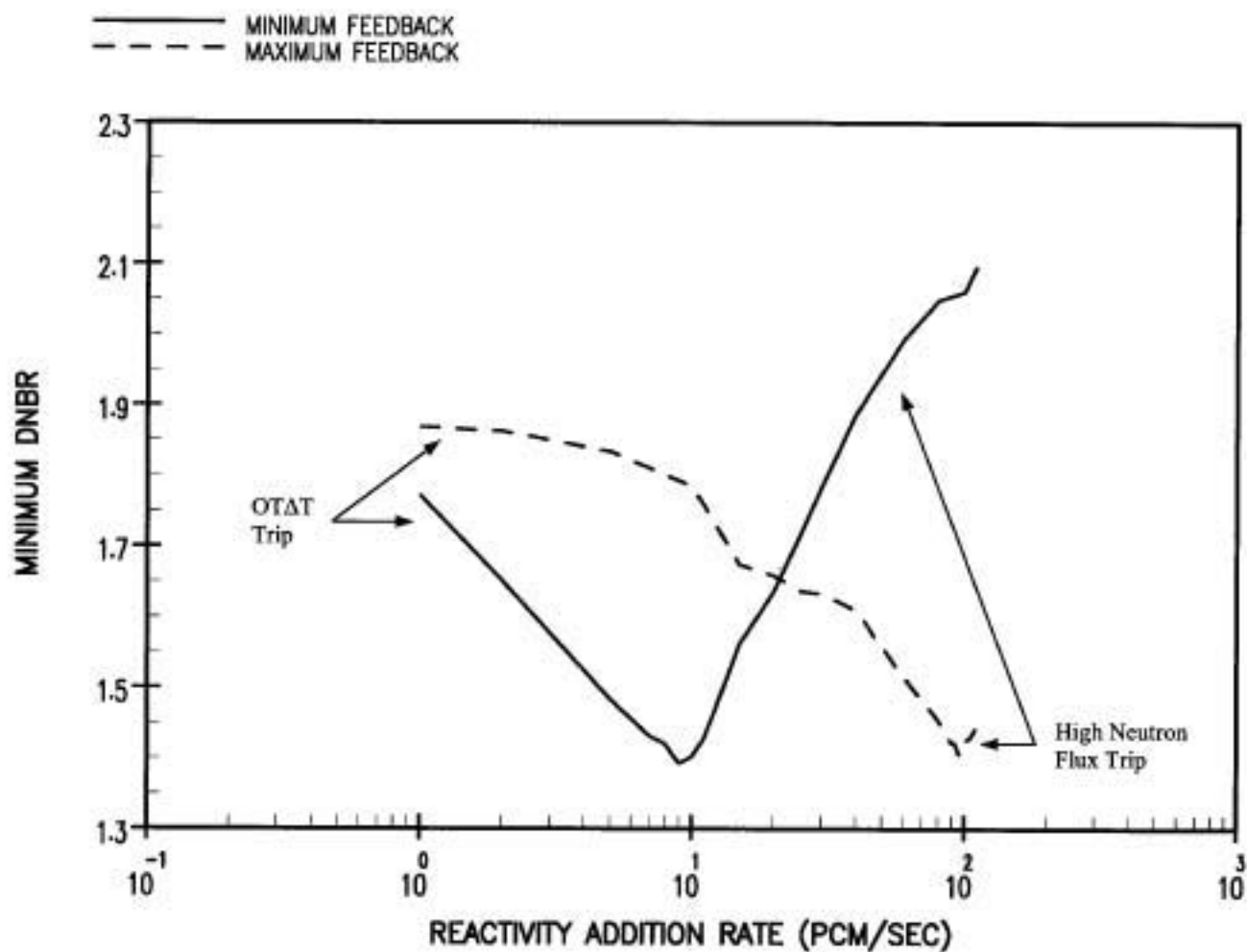


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FIGURE 15.4-11

MINIMUM DNBR VERSUS REACTIVITY
INSERTION RATE, ROD WITHDRAWAL
FROM 60 PERCENT POWER

REV. 16 1/10

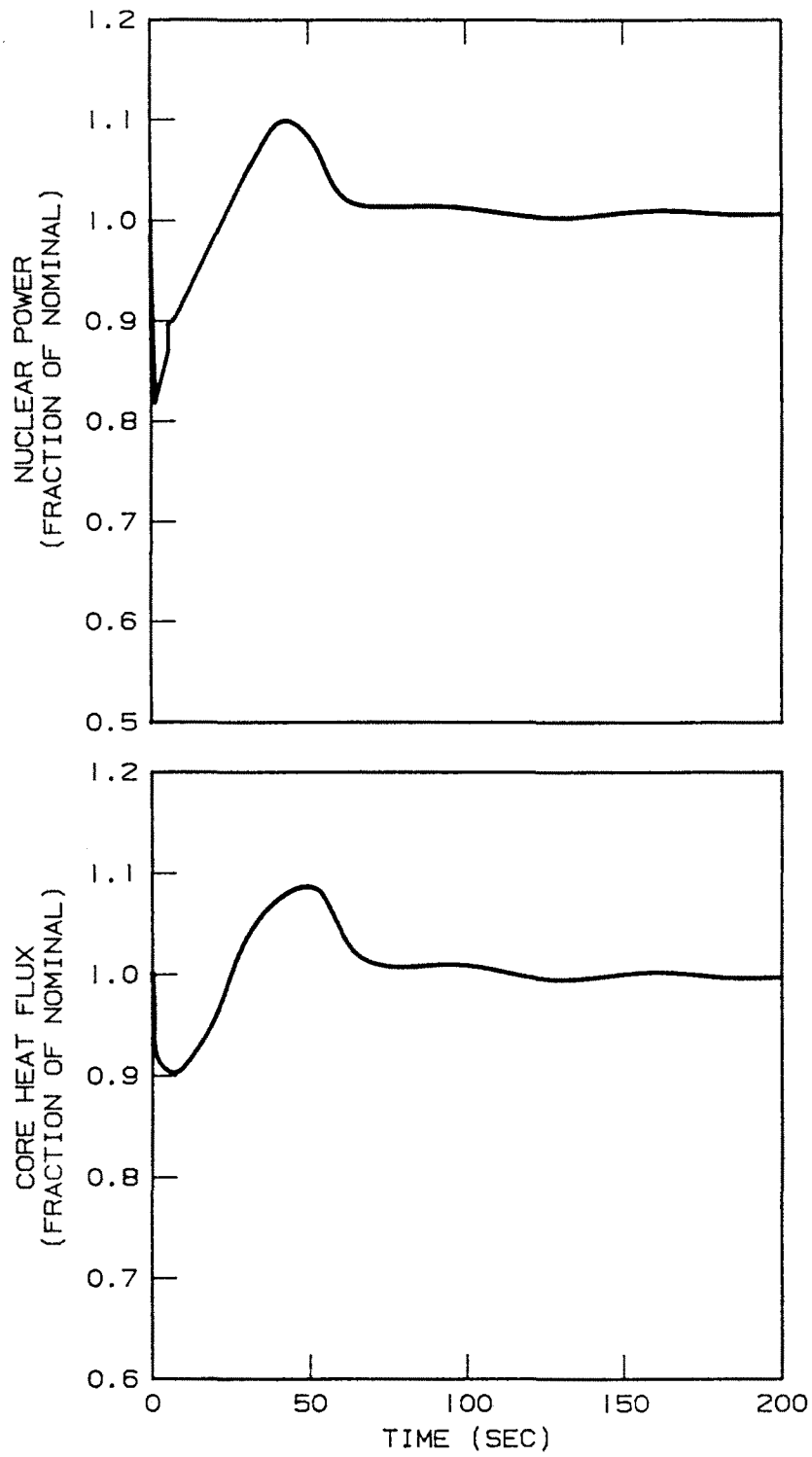


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FIGURE 15.4-12

MINIMUM DNBR VERSUS REACTIVITY
INSERTION RATE, ROD WITHDRAWAL
FROM 10 PERCENT POWER

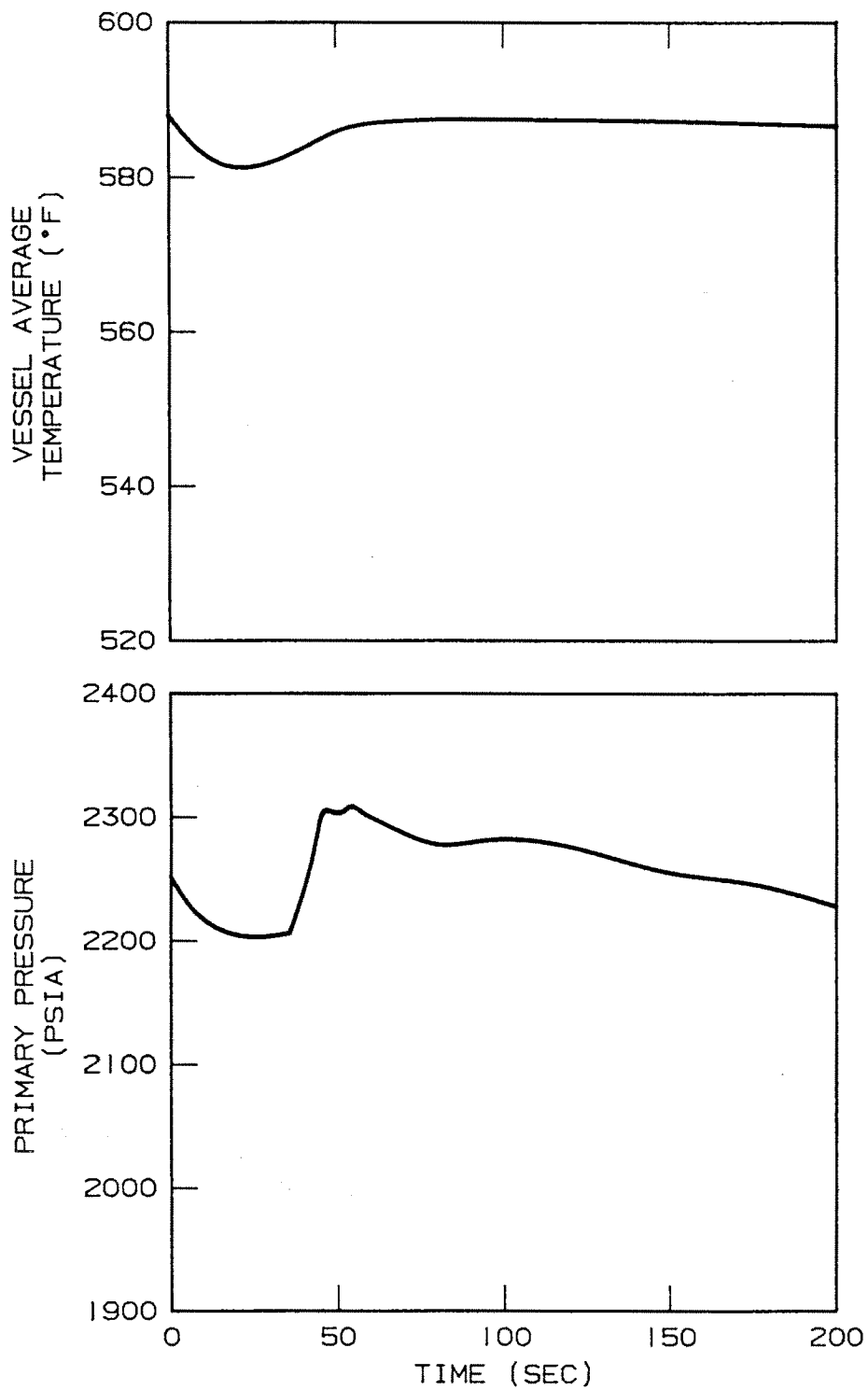
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REV. 16
10/06

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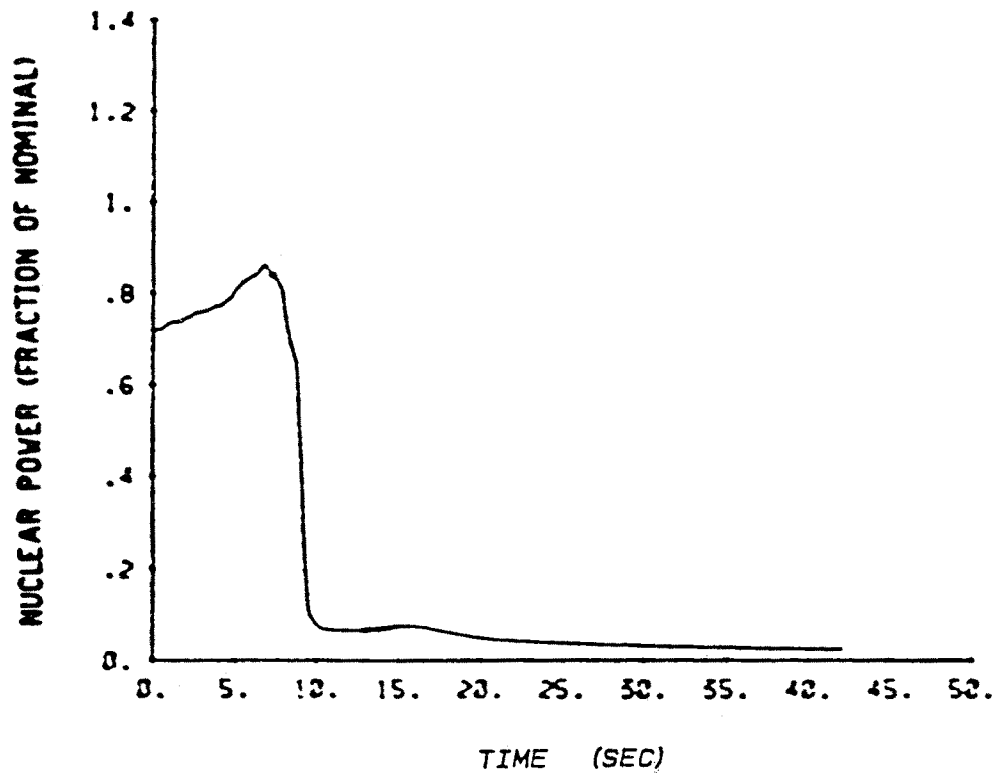
**FIGURE 15.4-12a
NUCLEAR POWER TRANSIENT AND
CORE HEAT FLUX TRANSIENT FOR
DROPPED ROD CLUSTER
CONTROL ASSEMBLY**



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10/06

CALLAWAY PLANT

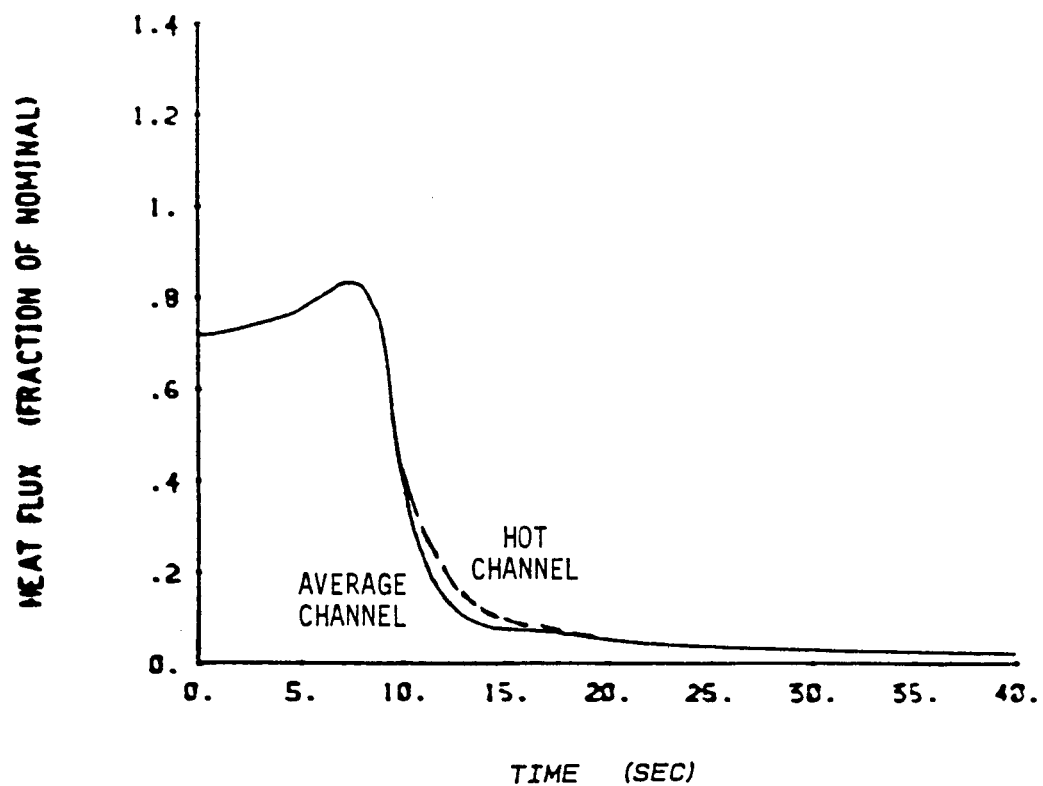
**FIGURE 15.4-12b
PRESSURIZER PRESSURE TRANSIENT AND
CORE AVERAGE TEMPERATURE TRANSIENT
FOR DROPPED ROD CLUSTER
CONTROL ASSEMBLY**



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FIGURE 15.4-13
NUCLEAR POWER TRANSIENT
FOR STARTUP OF AN INACTIVE
REACTOR COOLANT LOOP

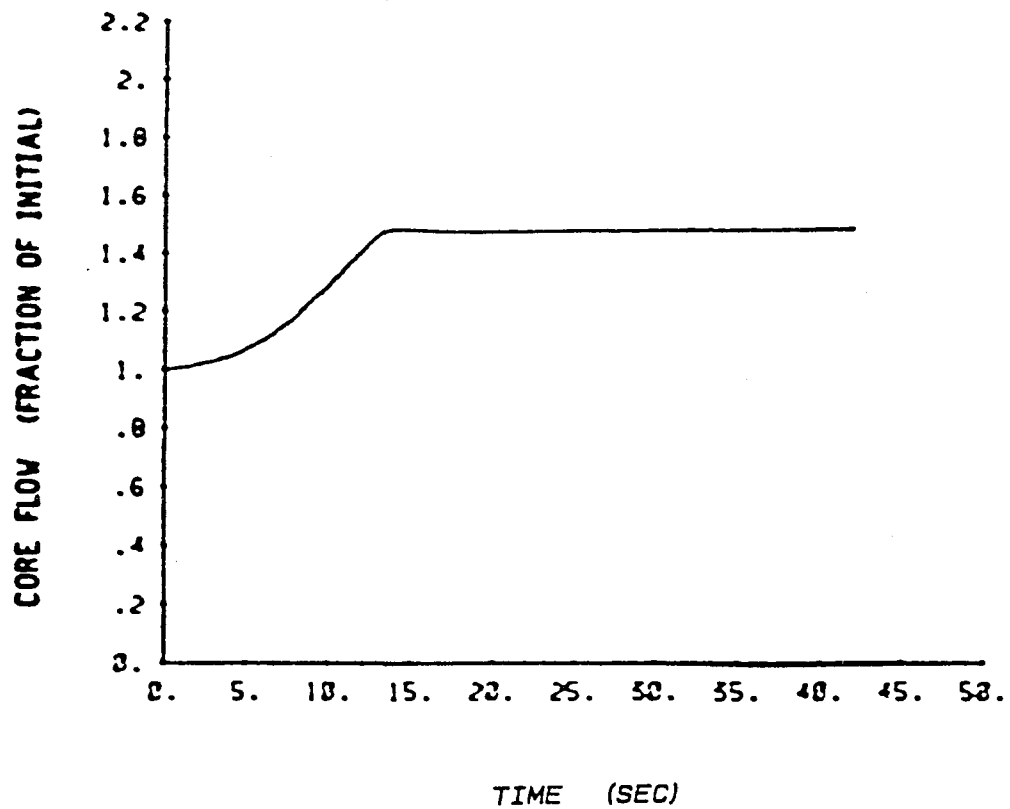


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FIGURE 15.4-14

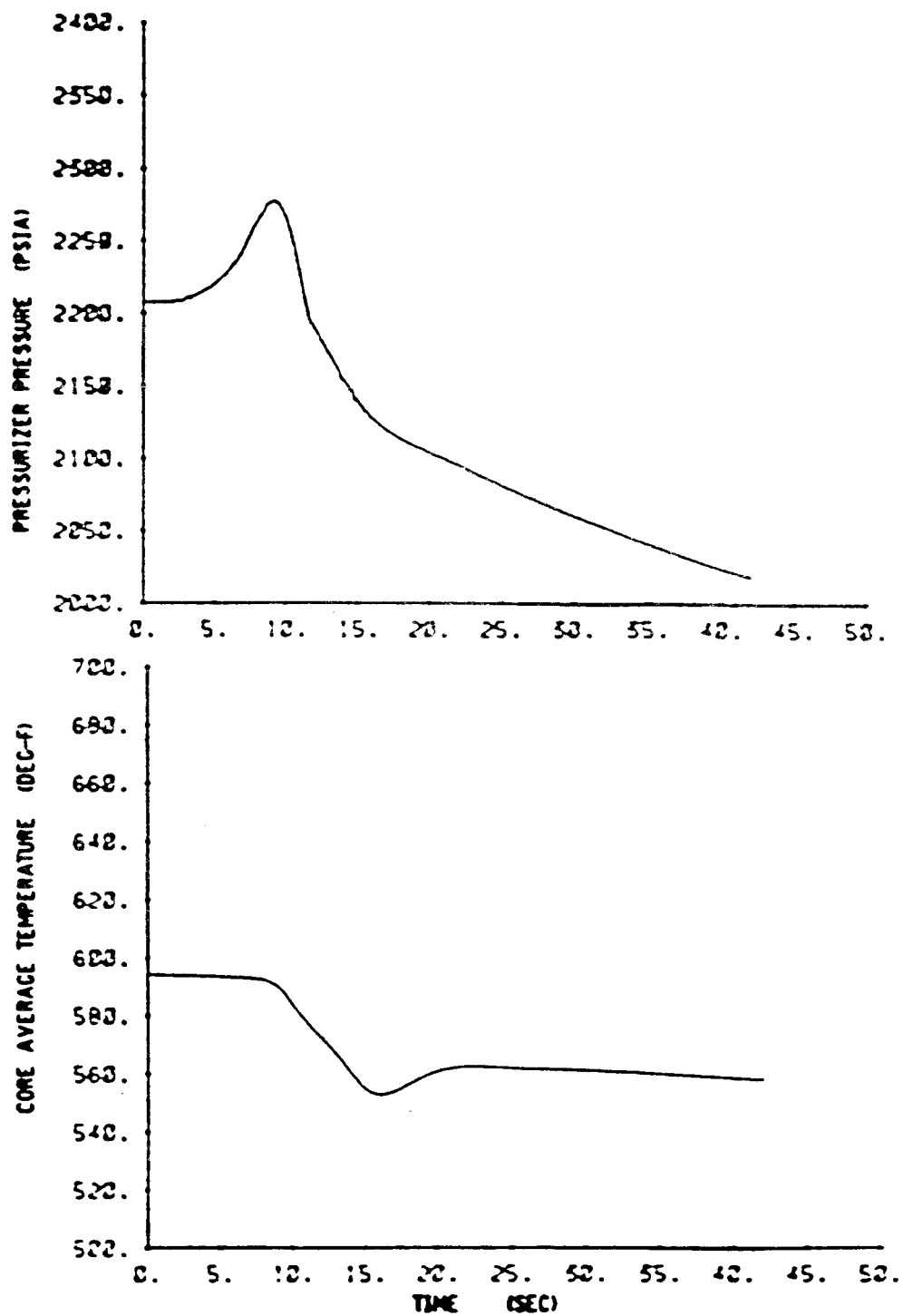
HEAT FLUX TRANSIENT
FOR STARTUP OF AN INACTIVE
REACTOR COOLANT LOOP



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FIGURE 15.4-15
CORE FLOW TRANSIENT
FOR STARTUP OF AN INACTIVE
REACTOR COOLANT LOOP

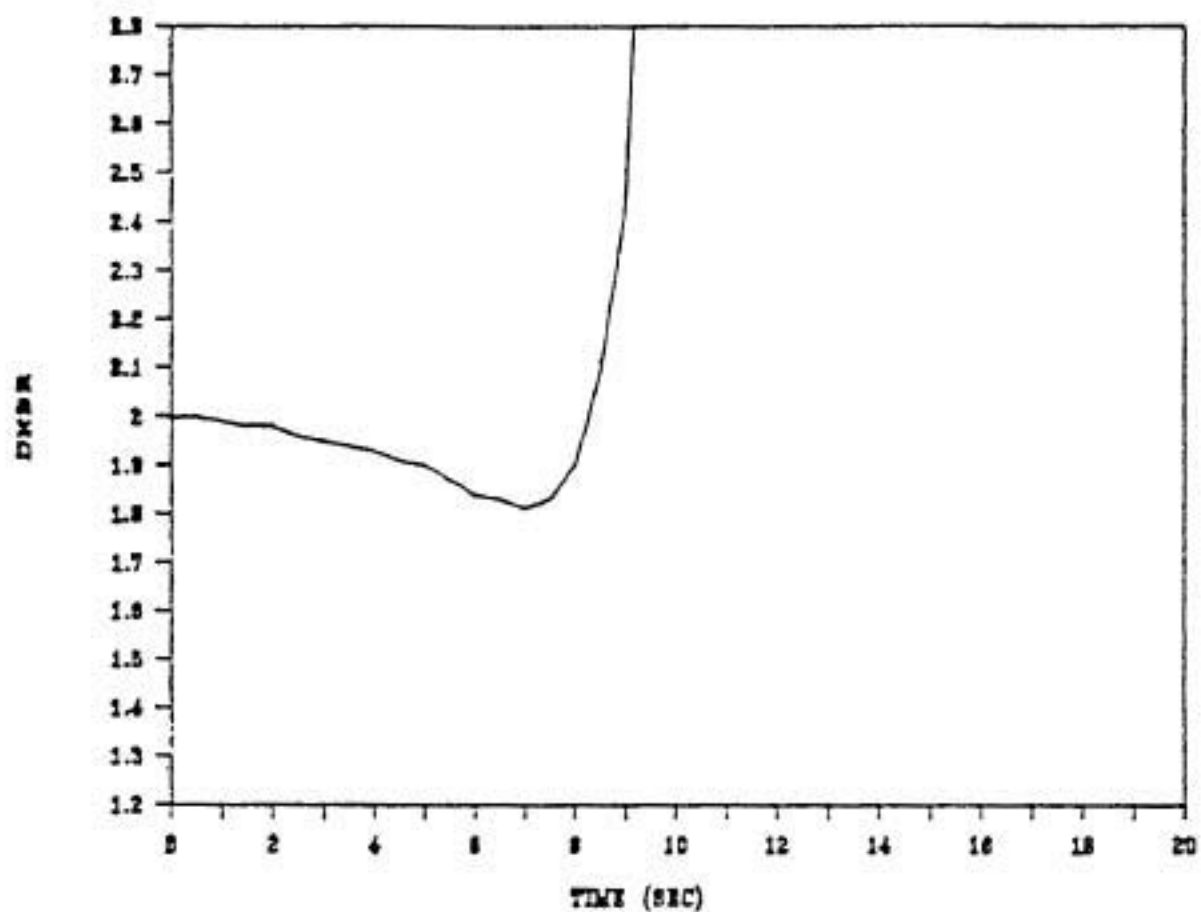


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FIGURE 15.4-16

CORE AVERAGE TEMPERATURE AND
PRESSURIZER PRESSURE TRANSIENTS
FOR STARTUP OF AN INACTIVE
REACTOR COOLANT LOOP



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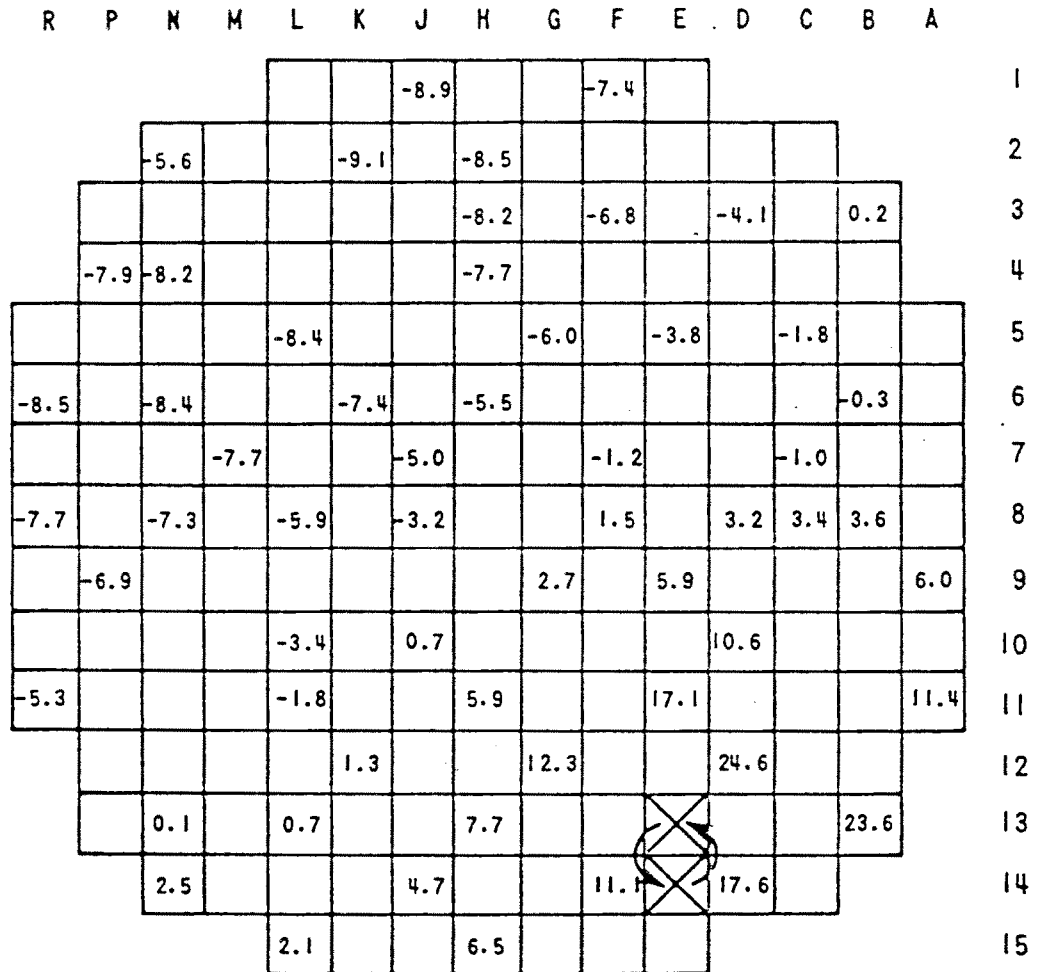
CALLAWAY PLANT

FIGURE 15.4-17

DNER TRANSIENT FOR
STARTUP OF AN INACTIVE
REACTOR COOLANT LOOP

Figure 15.4-17A Deleted

Figure 15.4-17B Deleted

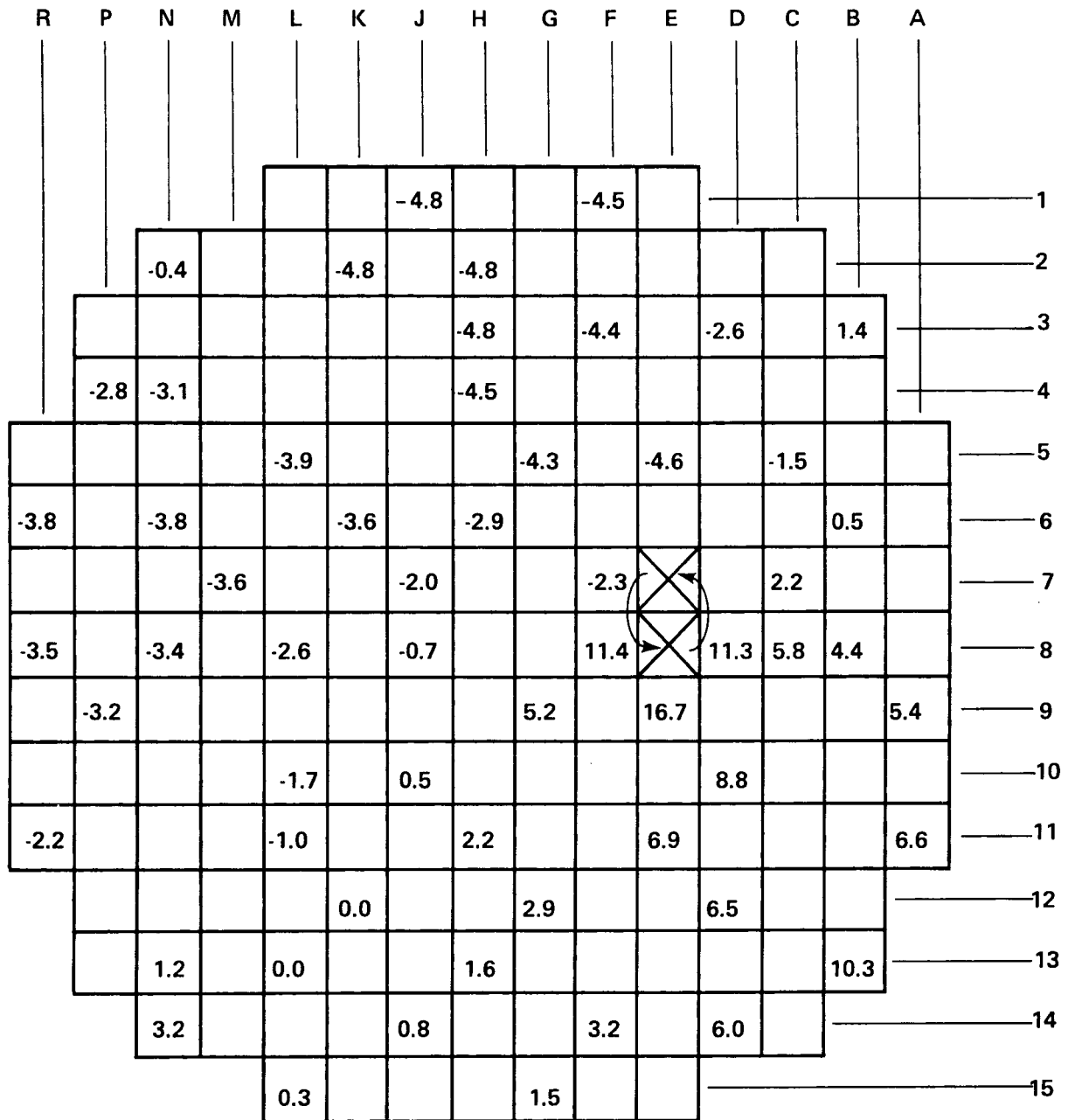


CASE A

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6/86

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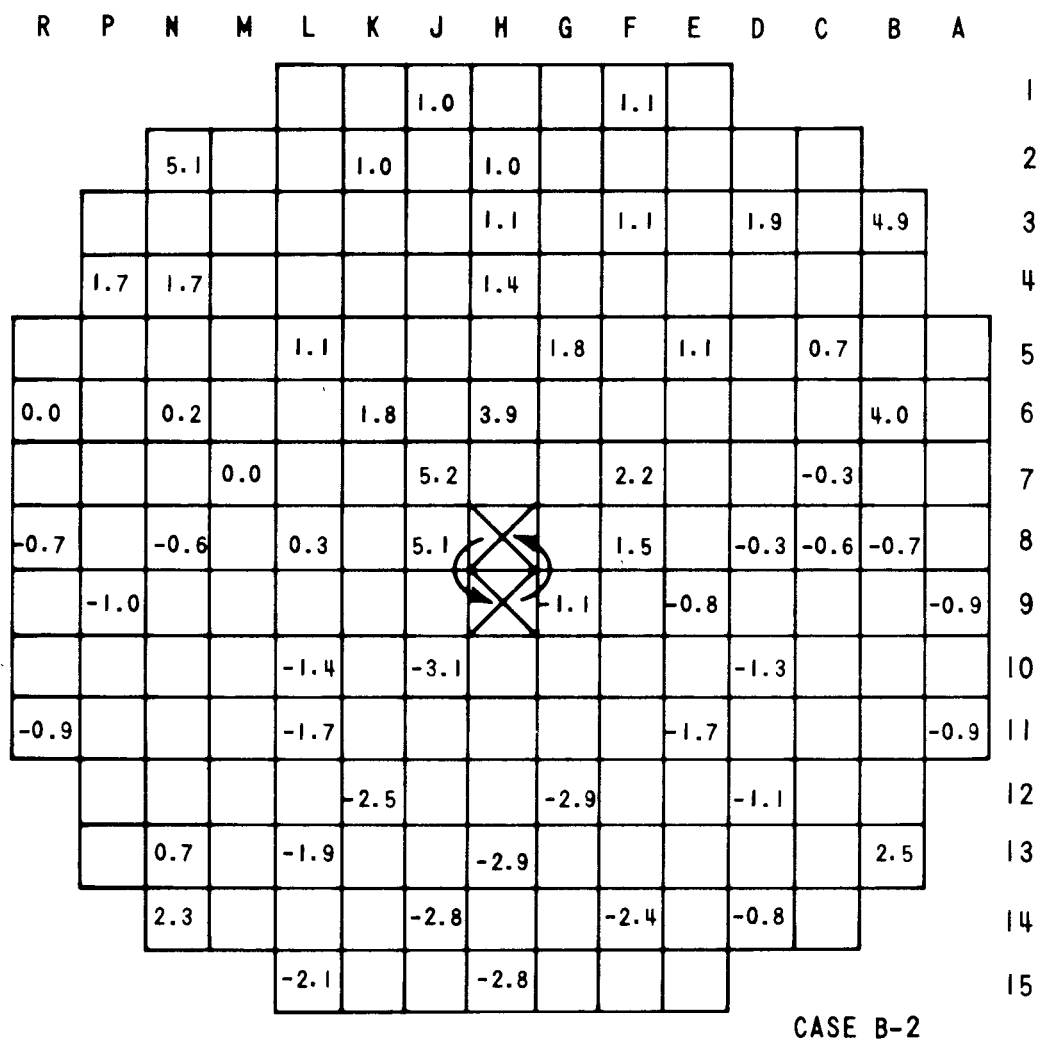
FIGURE 15.4-18
 REPRESENTATIVE PERCENT CHANGE IN
 LOCAL ASSEMBLY AVERAGE POWER FOR
 AN INTERCHANGE BETWEEN A REGION 1
 AND A REGION 3 ASSEMBLY



CASE B-1

Rev. OL-0
6/86**CALLAWAY PLANT**

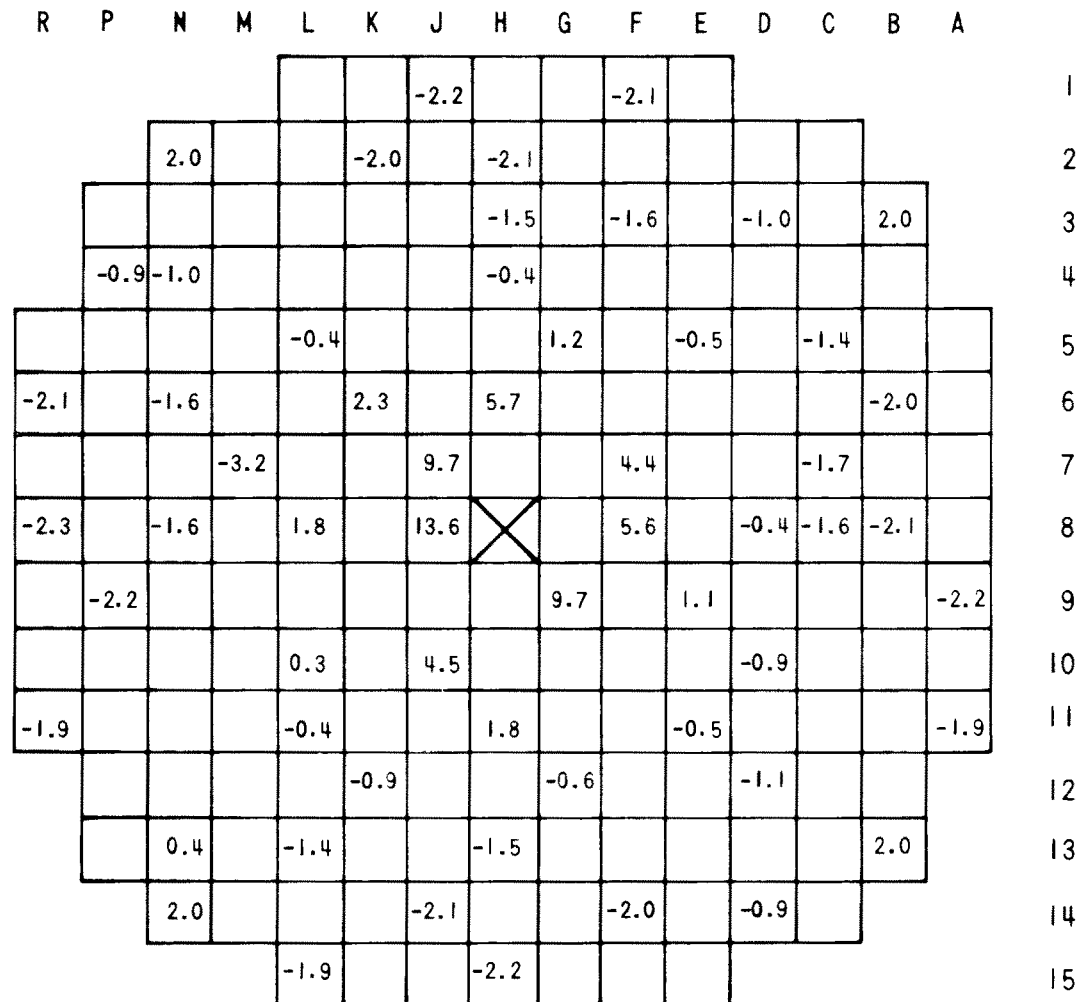
FIGURE 15.4-19
 REPRESENTATIVE PERCENT CHANGE IN
 LOCAL ASSBLY. AVG. POWER FOR AN
 INTERCHANGE BETWEEN A REGION 1
 AND A REGION 2 ASSBLY. WITH THE
 BURN. POISON RODS BEING RETAINED
 BY THE REGION 2 ASSEMBLY



CASE B-2

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6/86**CALLAWAY PLANT**

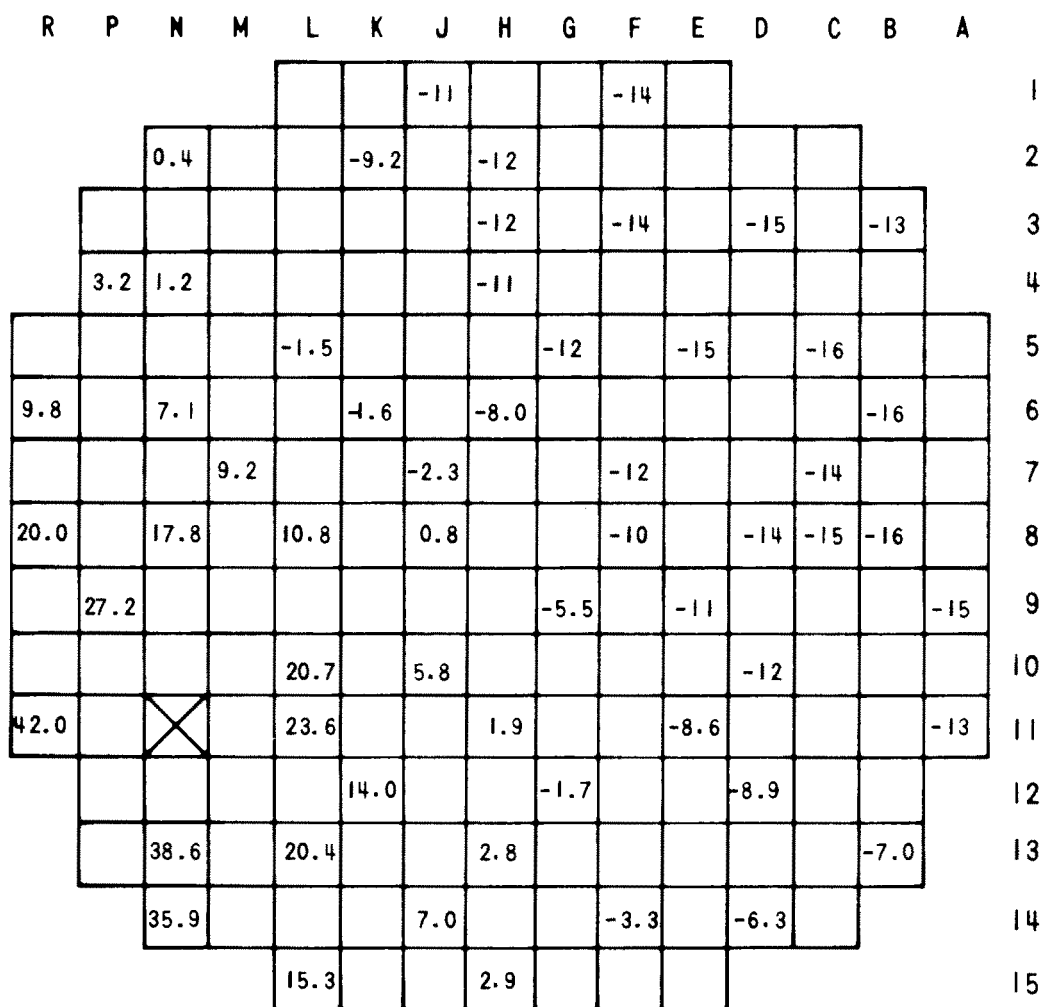
FIGURE 15.4-20
REPRESENTATIVE PERCENT CHANGE IN
LOCAL ASSBLY. AVG. POWER FOR AN
INTERCHANGE BETWEEN A REGION 1
AND A REGION 2 ASSBLY. WITH THE
BURN. POISON RODS BEING TRANSFERRED
TO THE REGION 1 ASSEMBLY.



CASE C

Rev. OL-0
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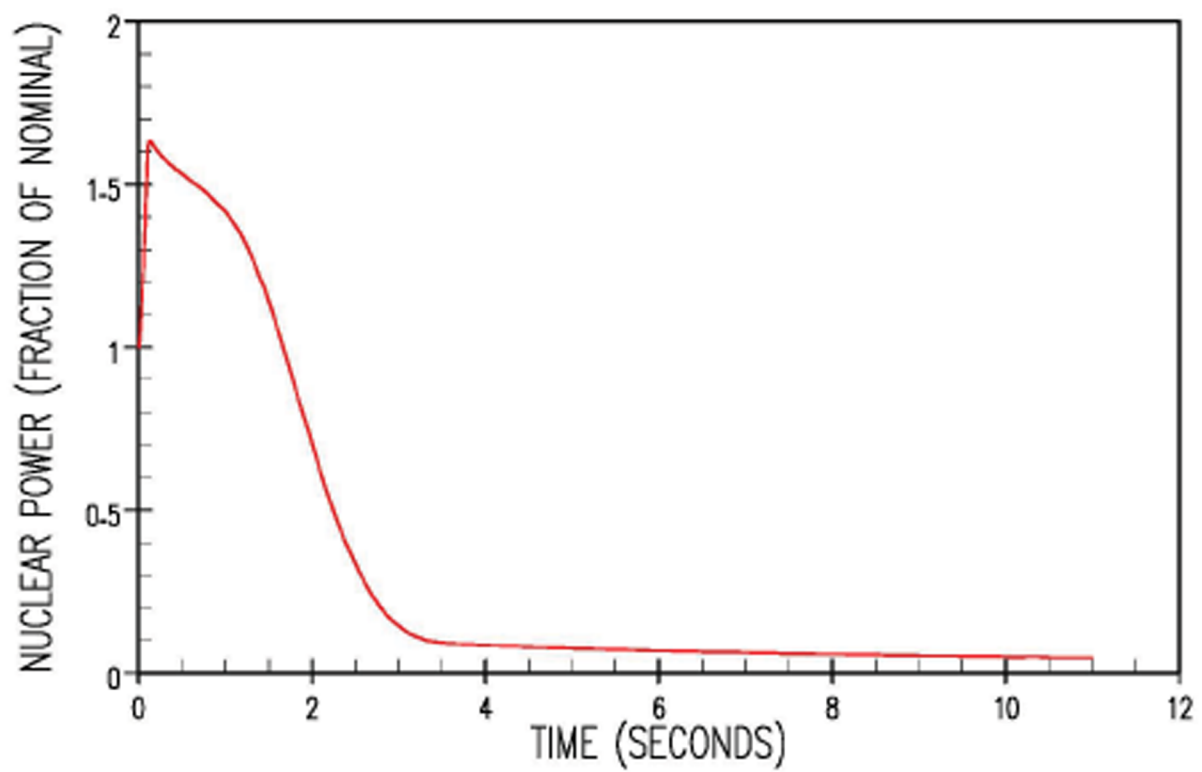
FIGURE 15.4-21
REPRESENTATIVE PERCENT CHANGE IN
LOCAL ASSEMBLY AVERAGE POWER FOR
AN ENRICHMENT ERROR (A REGION 2
ASSEMBLY LOADED INTO THE CORE
CENTRAL POSITION)



CASE D

Rev. OL-0
6/86**CALLAWAY PLANT**

FIGURE 15.4-22
REPRESENTATIVE PERCENT CHANGE IN
LOCAL ASSEMBLY AVERAGE POWER FOR
LOADING A REGION 2 ASSEMBLY
INTO A REGION 1 POSITION NEAR
THE CORE PERIPHERY

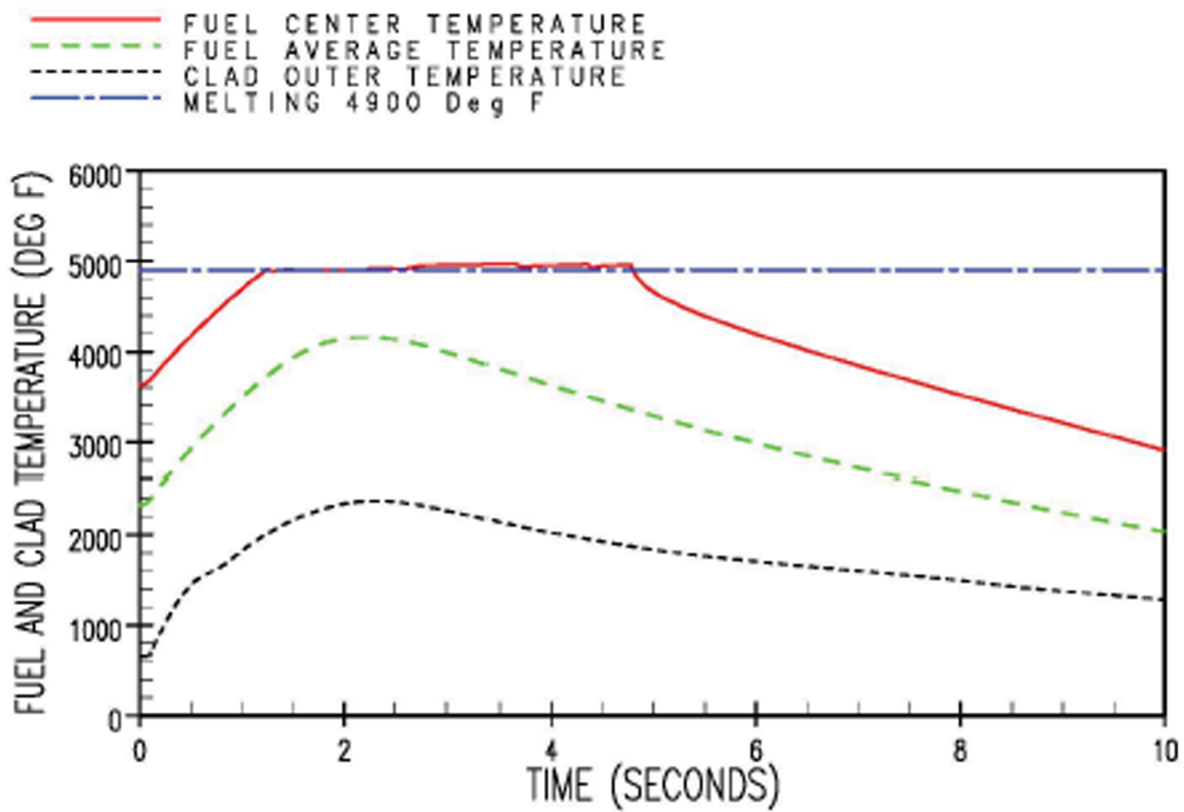


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FIGURE 15.4-23

NUCLEAR POWER TRANSIENT, BOL,
HFP, ROD EJECTION ACCIDENT

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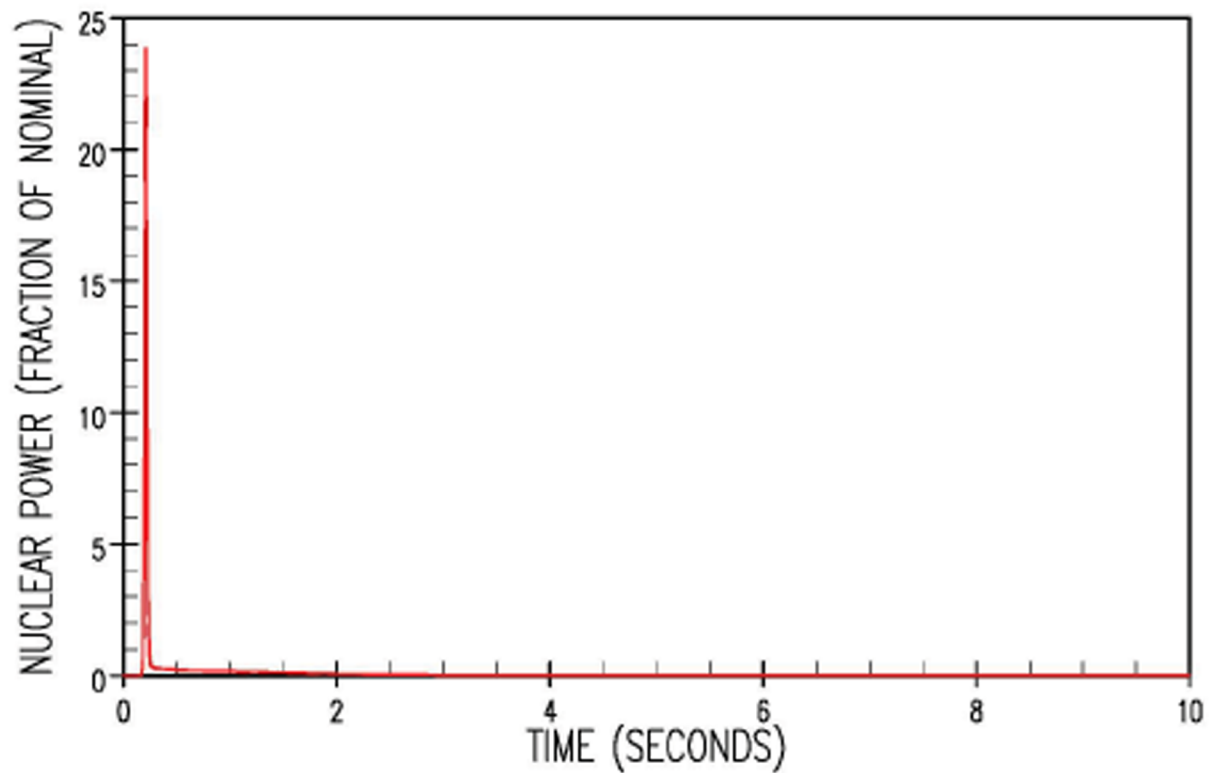


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FIGURE 15.4-24

HOT SPOT FUEL AND CLAD
TEMPERATURES VERSUS TIME, BOL,
HFP, ROD EJECTION ACCIDENT

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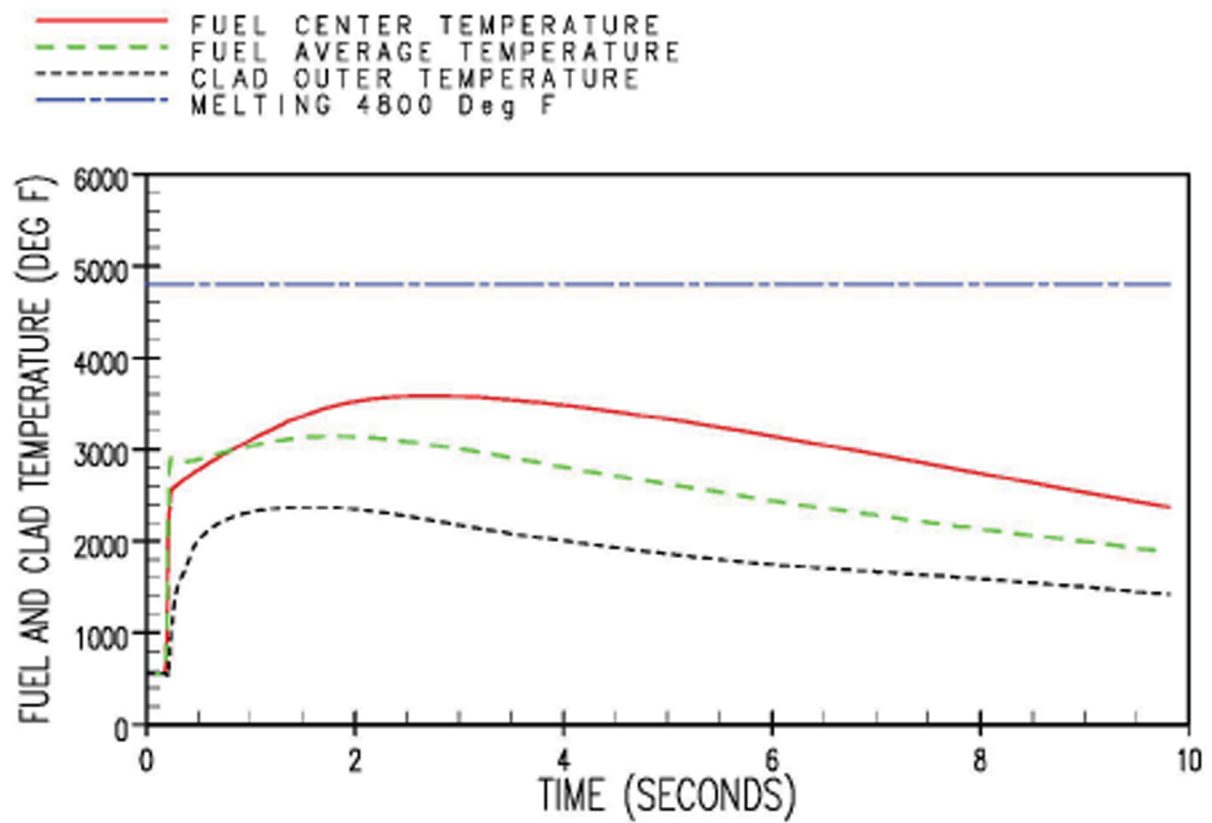


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FIGURE 15.4-25

NUCLEAR POWER TRANSIENT, EOL,
H2P, ROD EJECTION ACCIDENT

Rev. 12 11/13

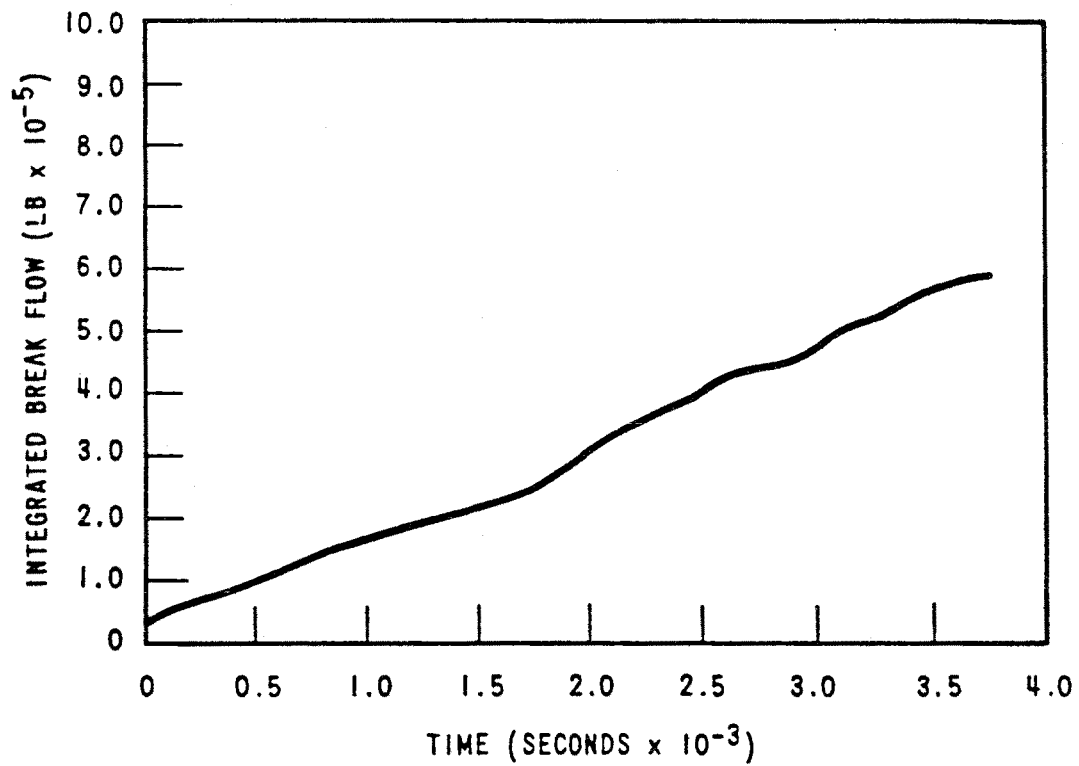


CALLAWAY PLANT

FIGURE 15.4-26

HOT SPOT FUEL AND CLAD
TEMPERATURES VERSUS TIME, EOL,
HZP, ROD EJECTION ACCIDENT

Rev. 12 11/13

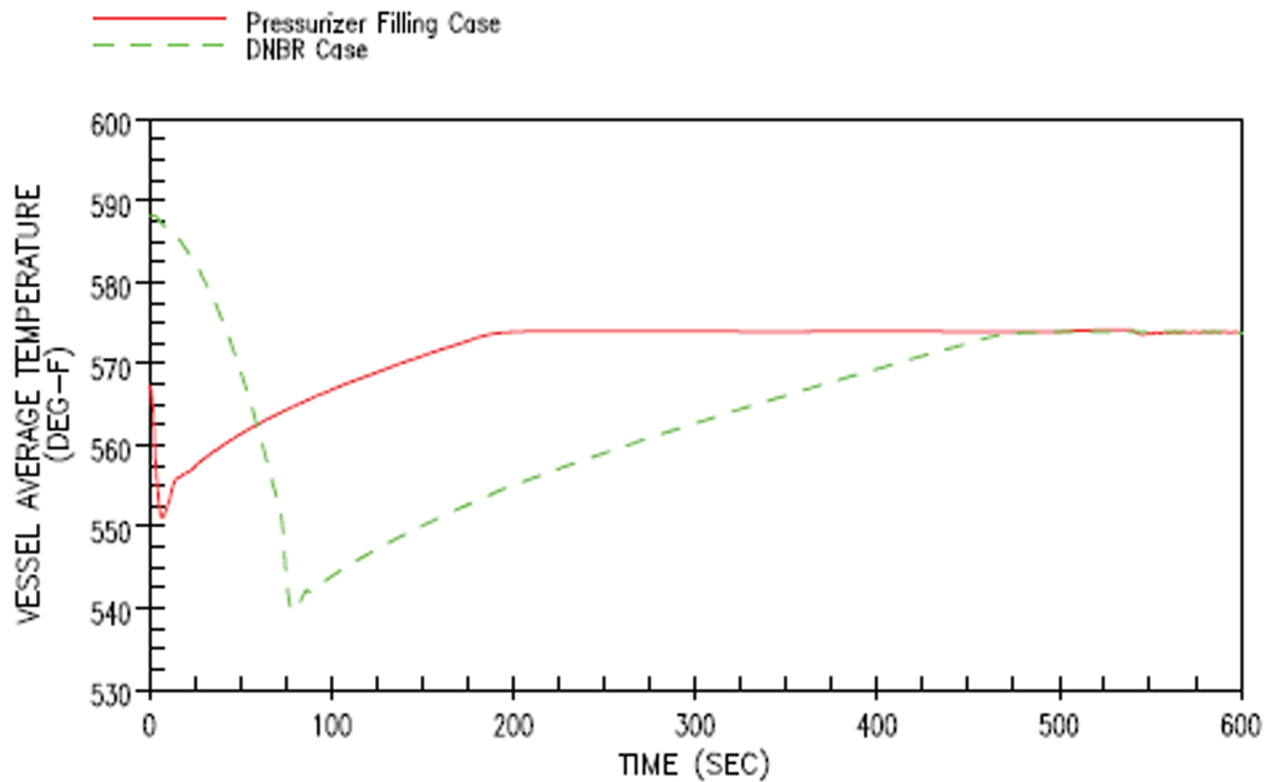
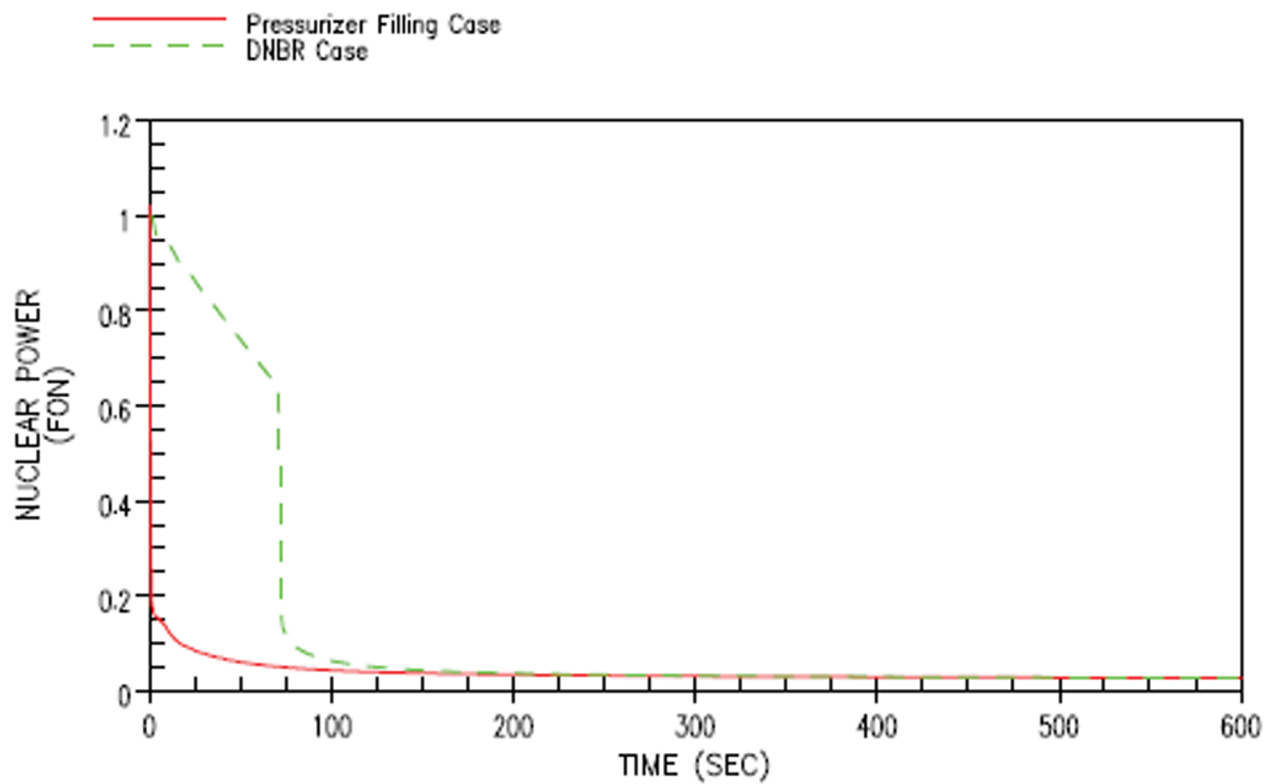


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6/88

CALLAWAY PLANT

FIGURE 15.4-27

**REACTOR COOLANT SYSTEM INTEGRATED
BREAK FLOW
ROD EJECTION ACCIDENT**

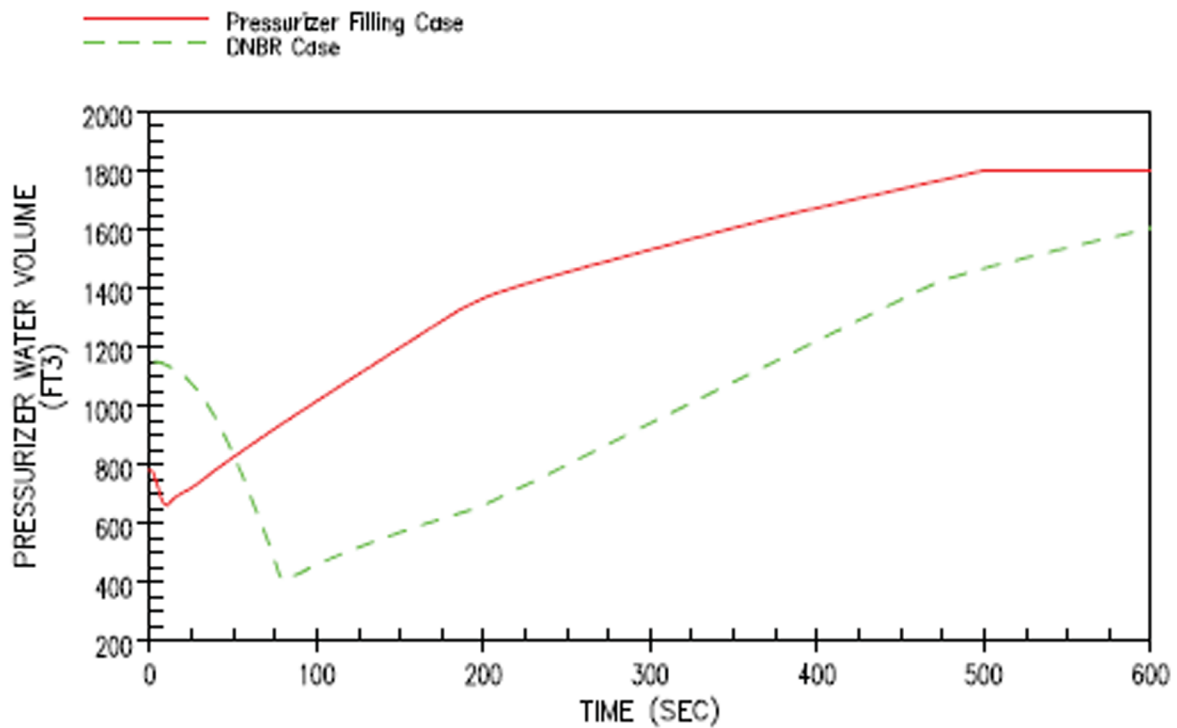
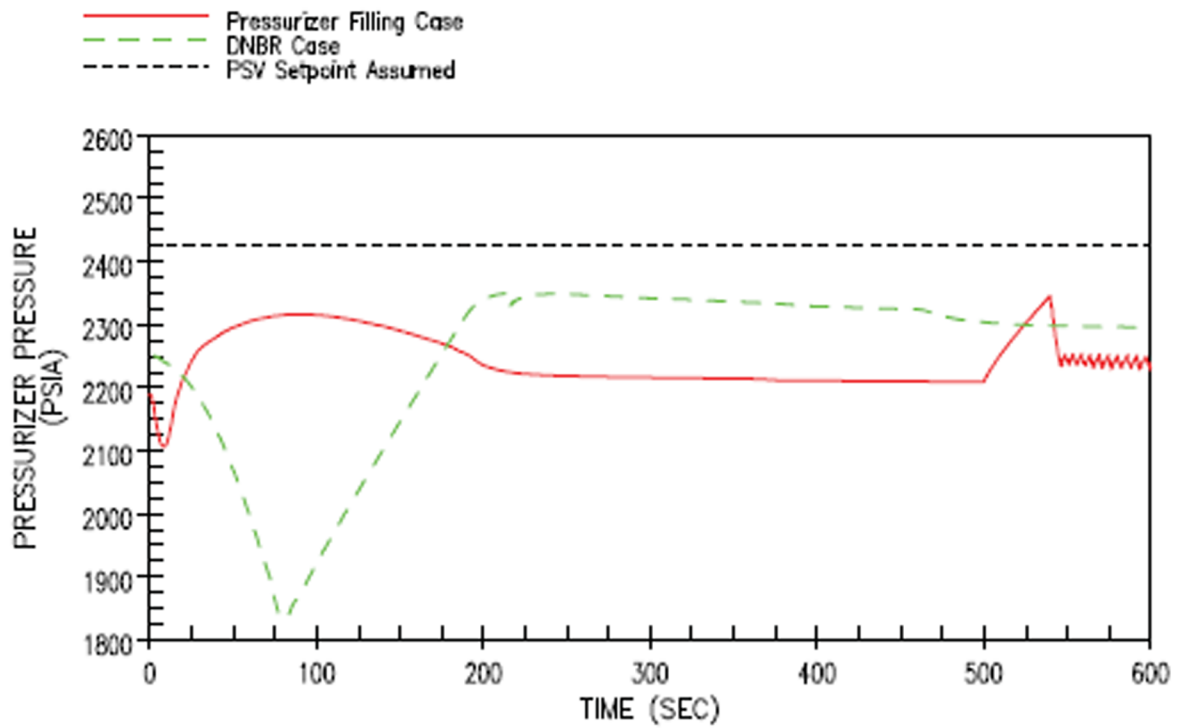


CALLAWAY PLANT

FIGURE 15.5-1

INADVERTENT OPERATION OF ECCS
DURING POWER OPERATION

Rev. 16 11/13

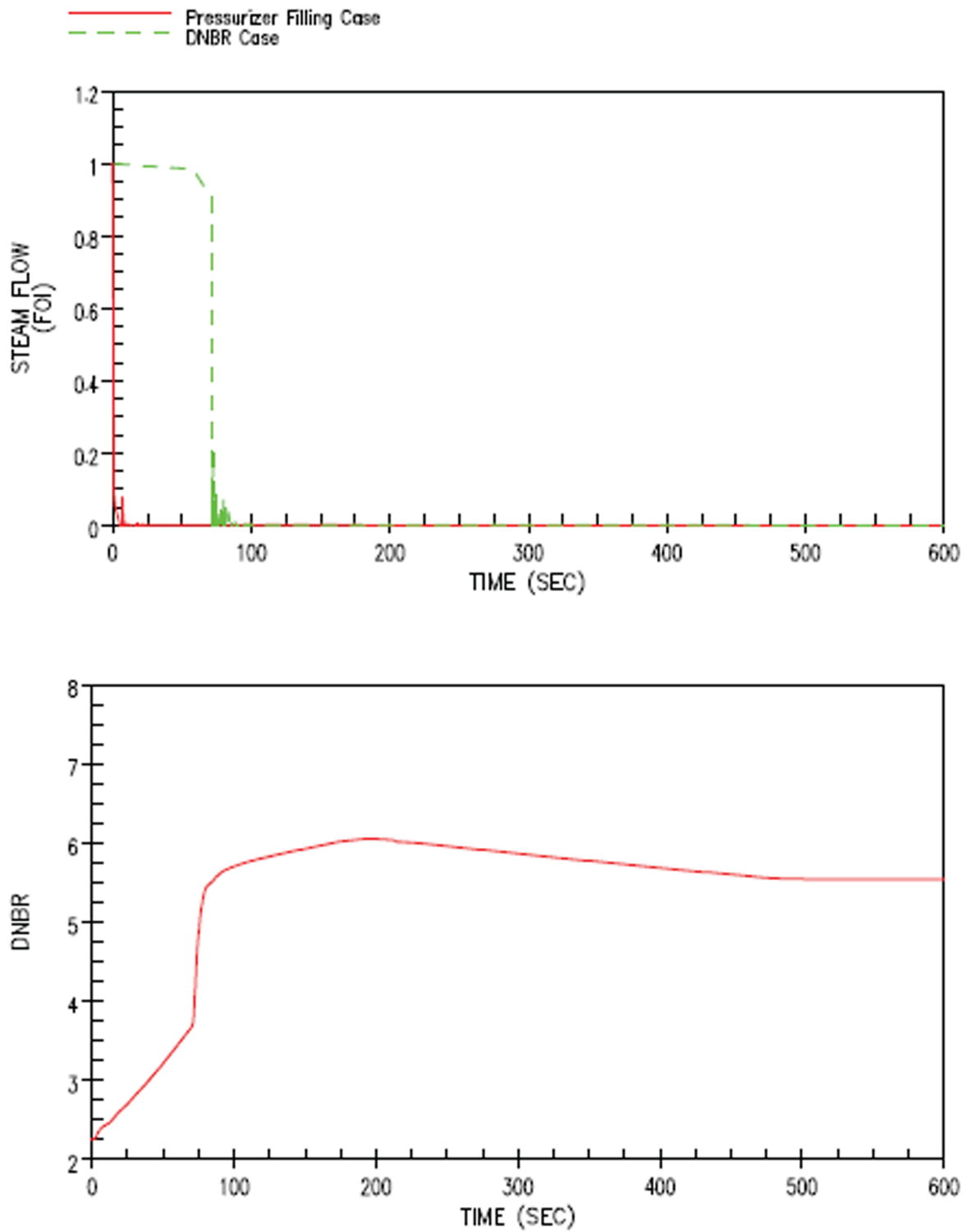


CALLAWAY PLANT

FIGURE 15.5-2

INADVERTENT OPERATION OF ECCS
DURING POWER OPERATION

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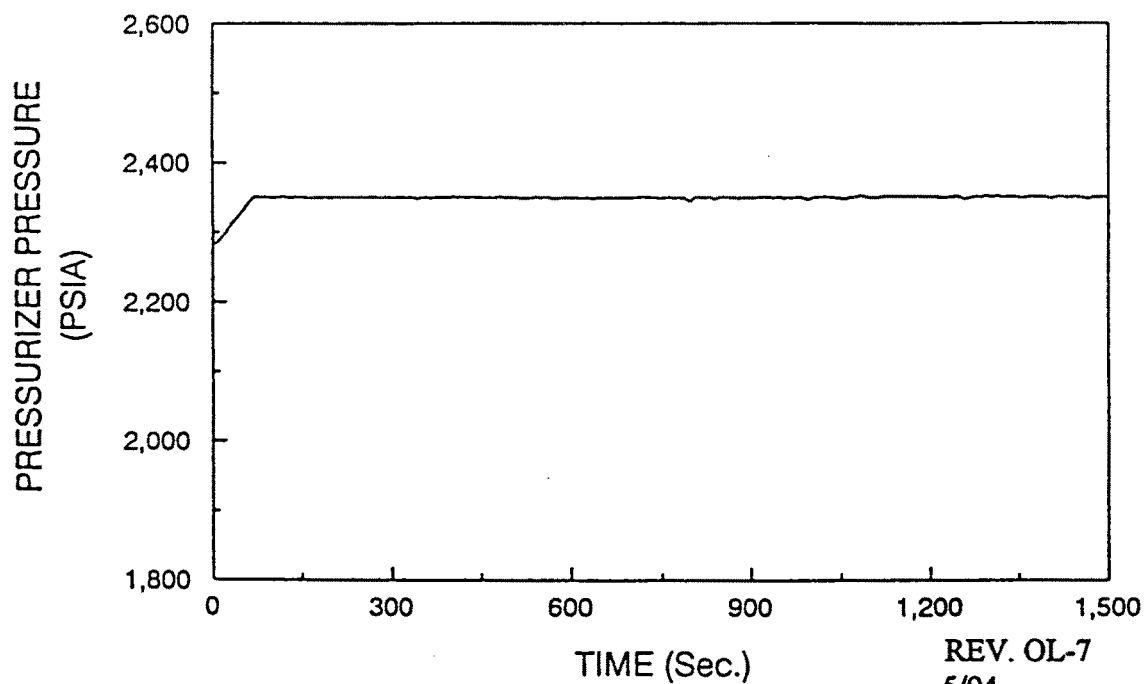
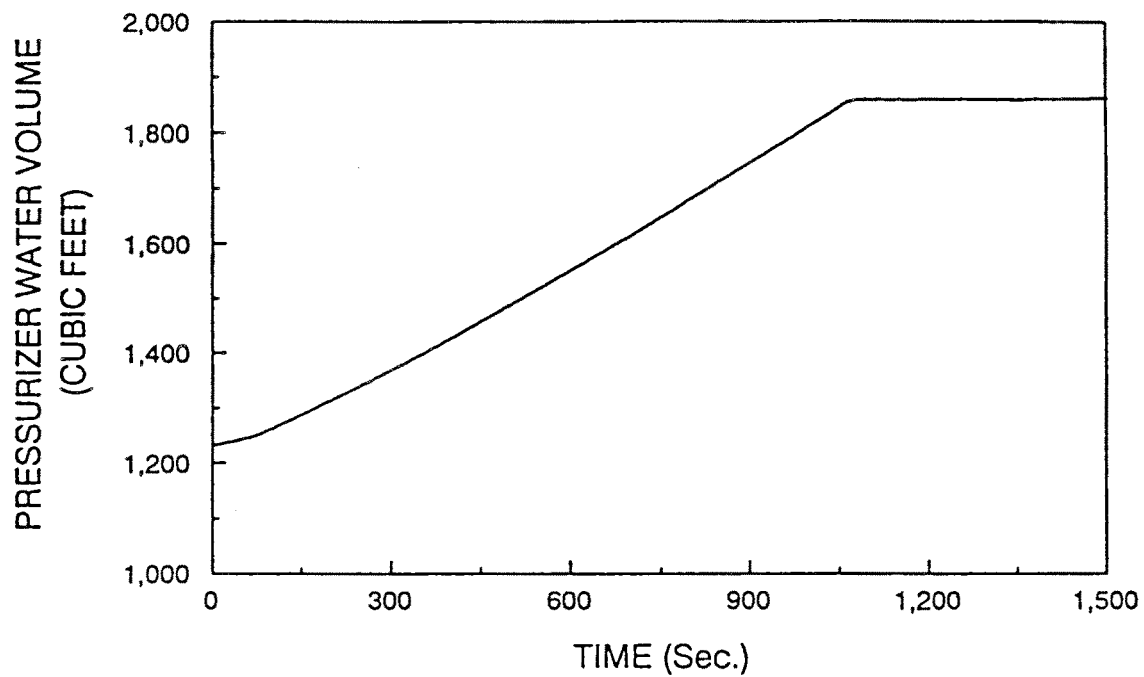


CALLAWAY PLANT

FIGURE 15.5-3

INADVERTENT OPERATION OF ECCS
DURING POWER OPERATION

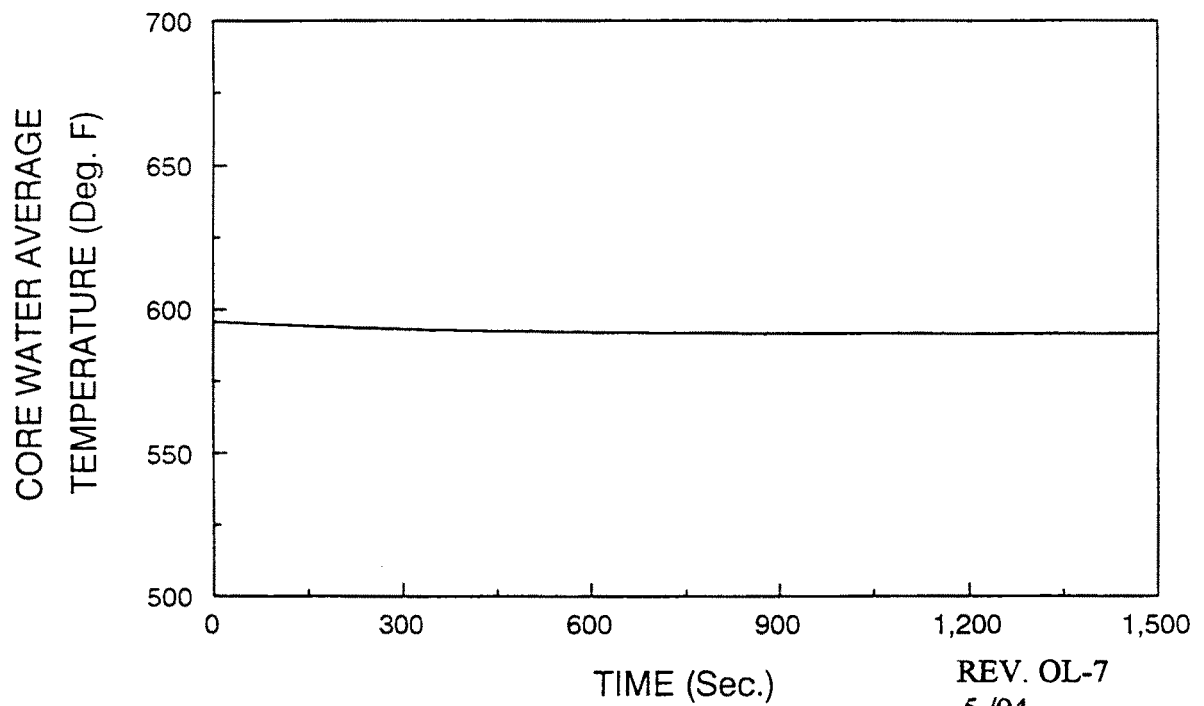
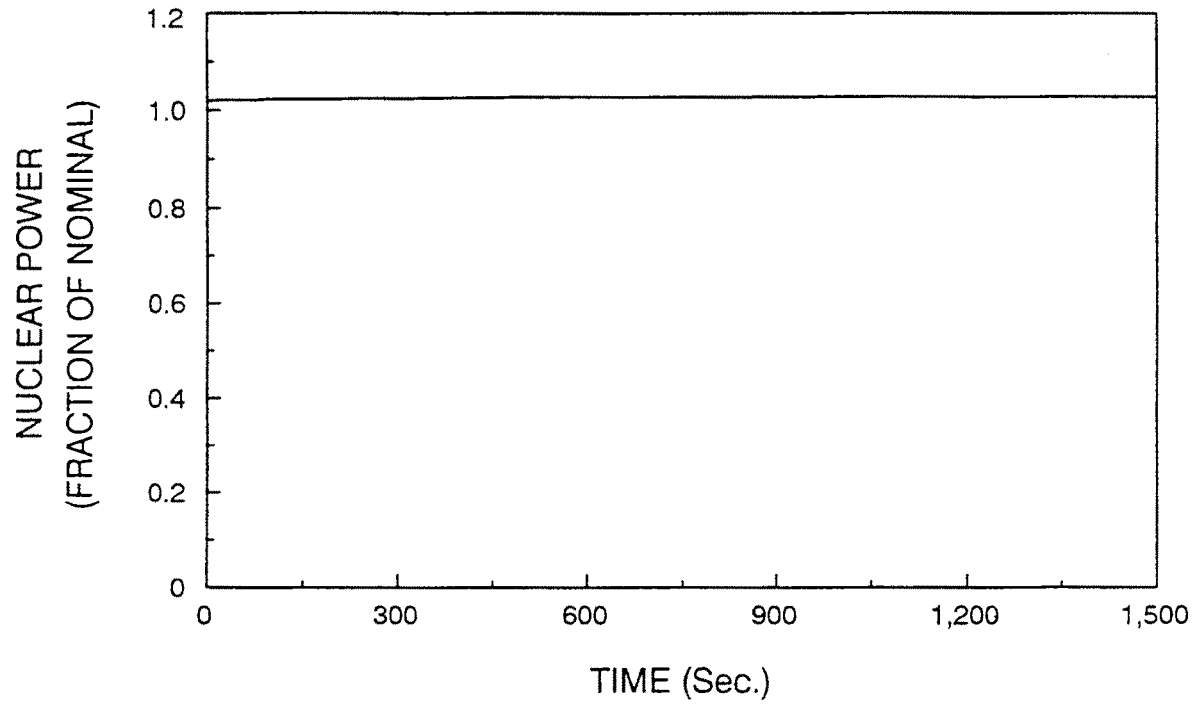
Rev 16 11/13



REV. OL-7
5/94

CALLAWAY PLANT

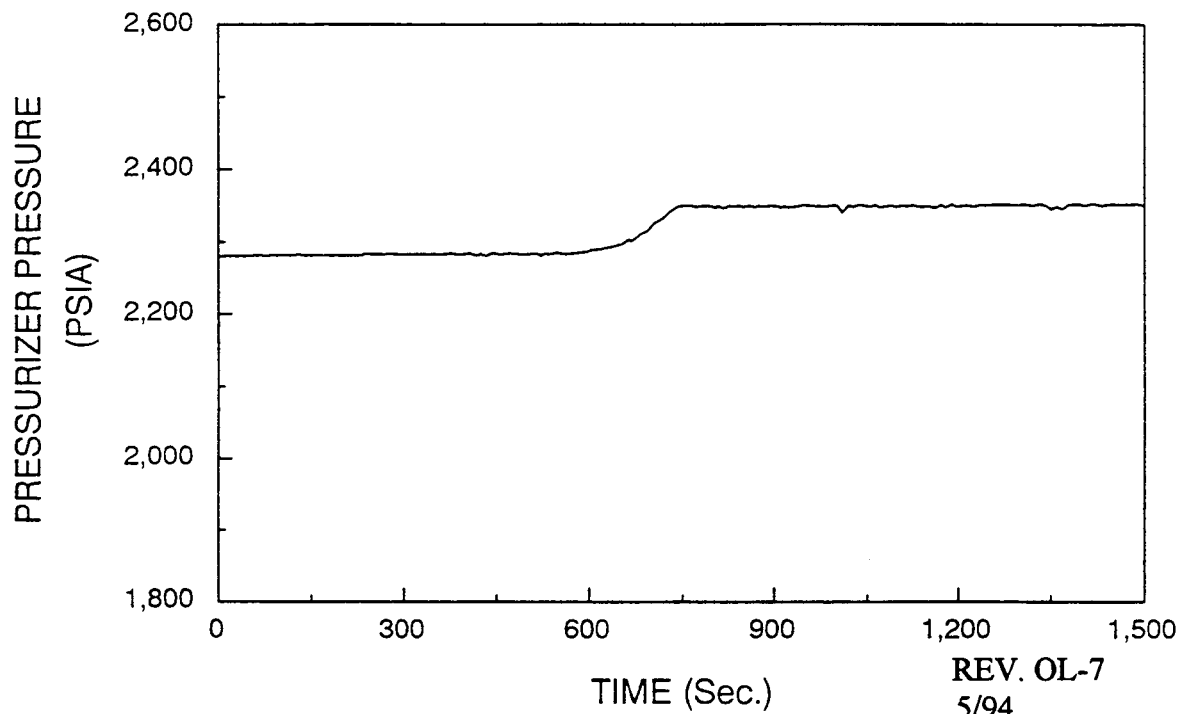
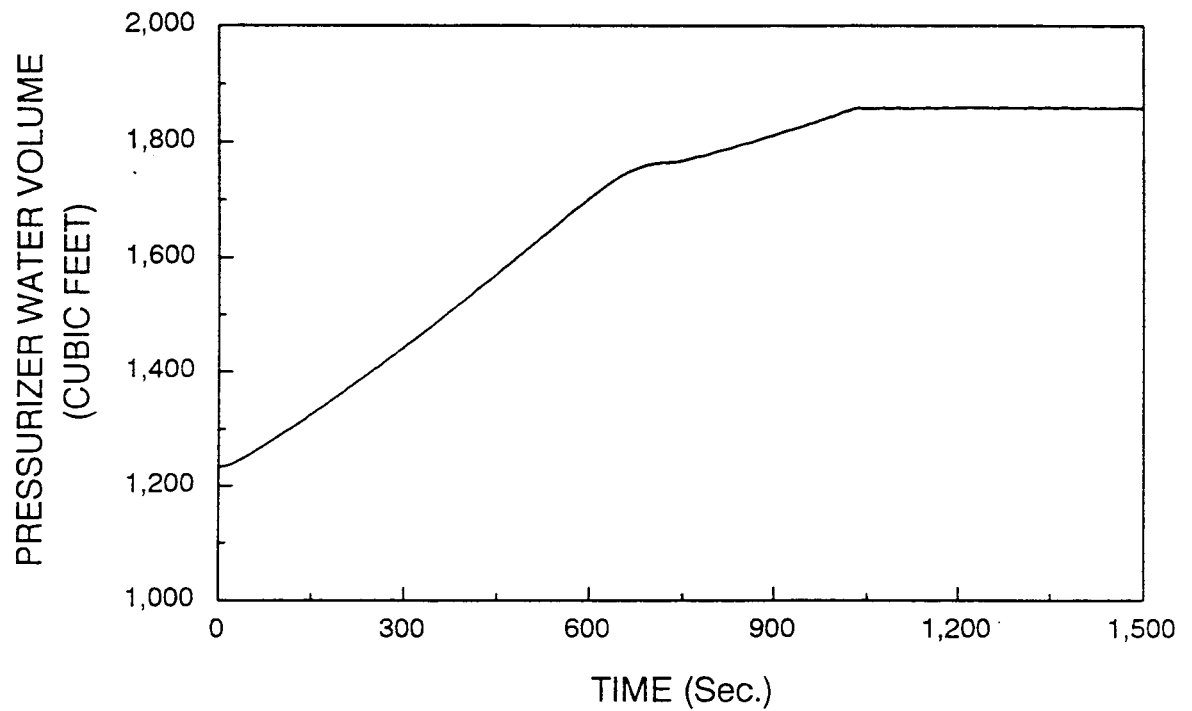
FIGURE 15.5-4
CHEMICAL AND VOLUME CONTROL
SYSTEM MALFUNCTION MINIMUM
REACTIVITY FEEDBACK, WITHOUT
PRESSURIZER SPRAY



REV. OL-7
5 /94

CALLAWAY PLANT

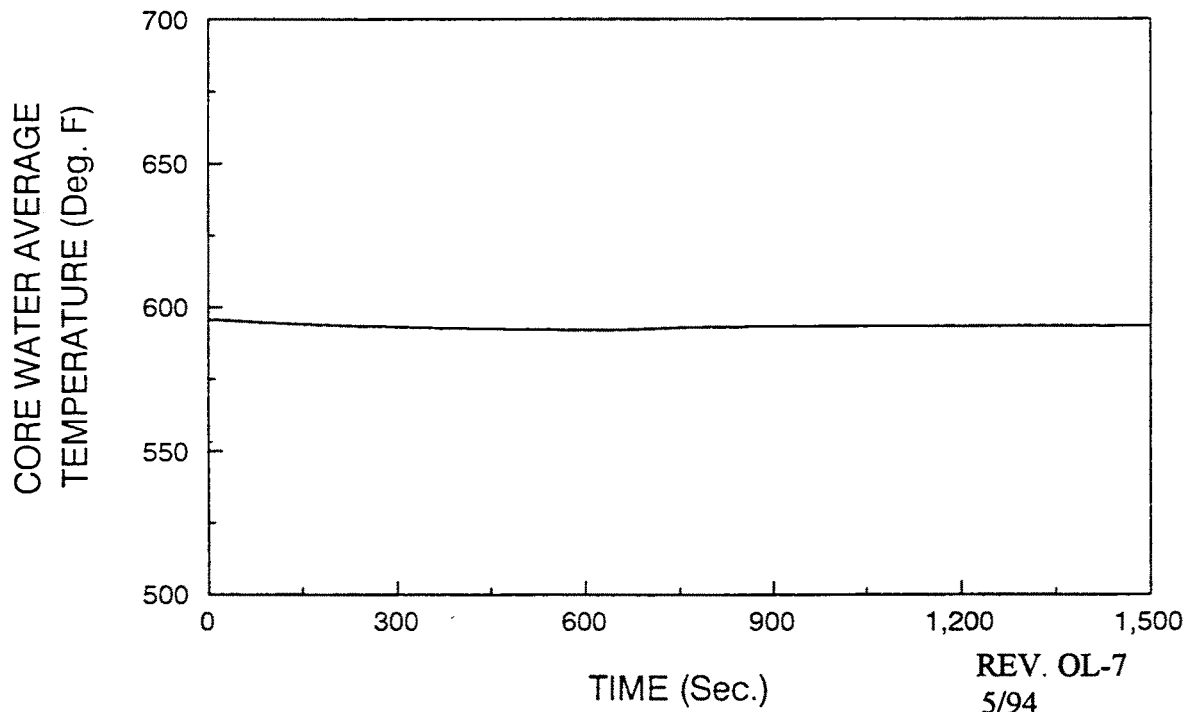
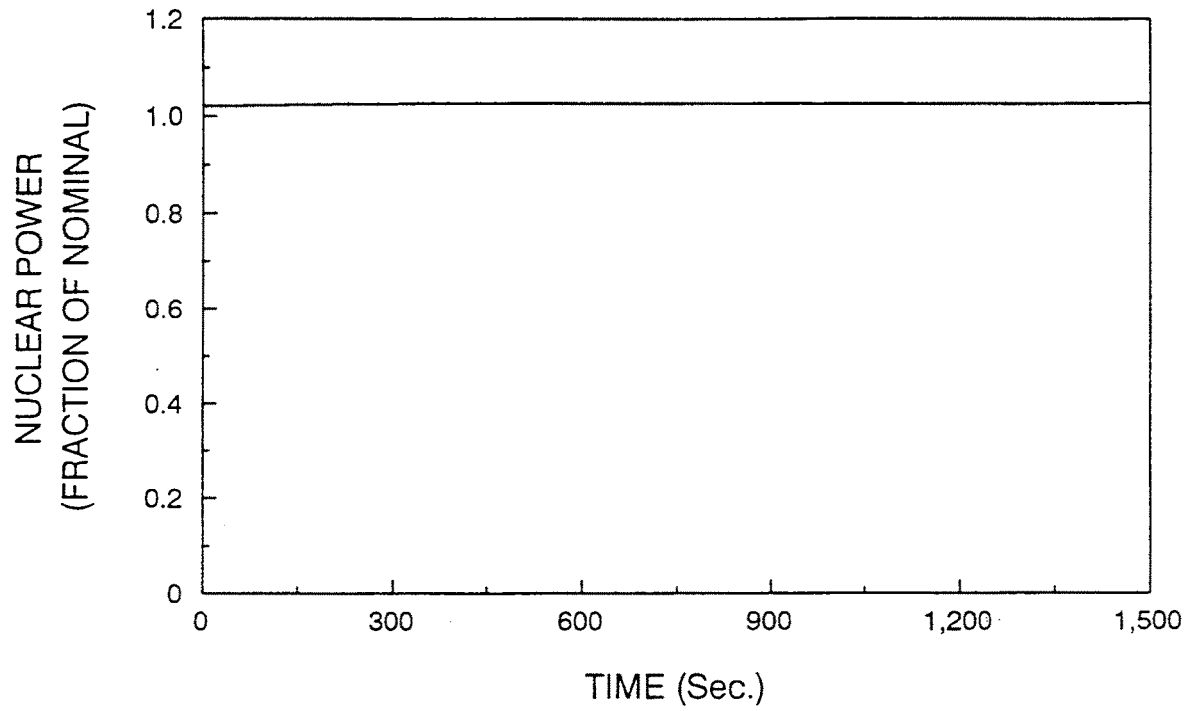
FIGURE 15.5-5
CHEMICAL AND VOLUME CONTROL
SYSTEM MALFUNCTION MINIMUM
REACTIVITY FEEDBACK, WITHOUT
PRESSURIZER SPRAY



REV. OL-7
5/94

CALLAWAY PLANT

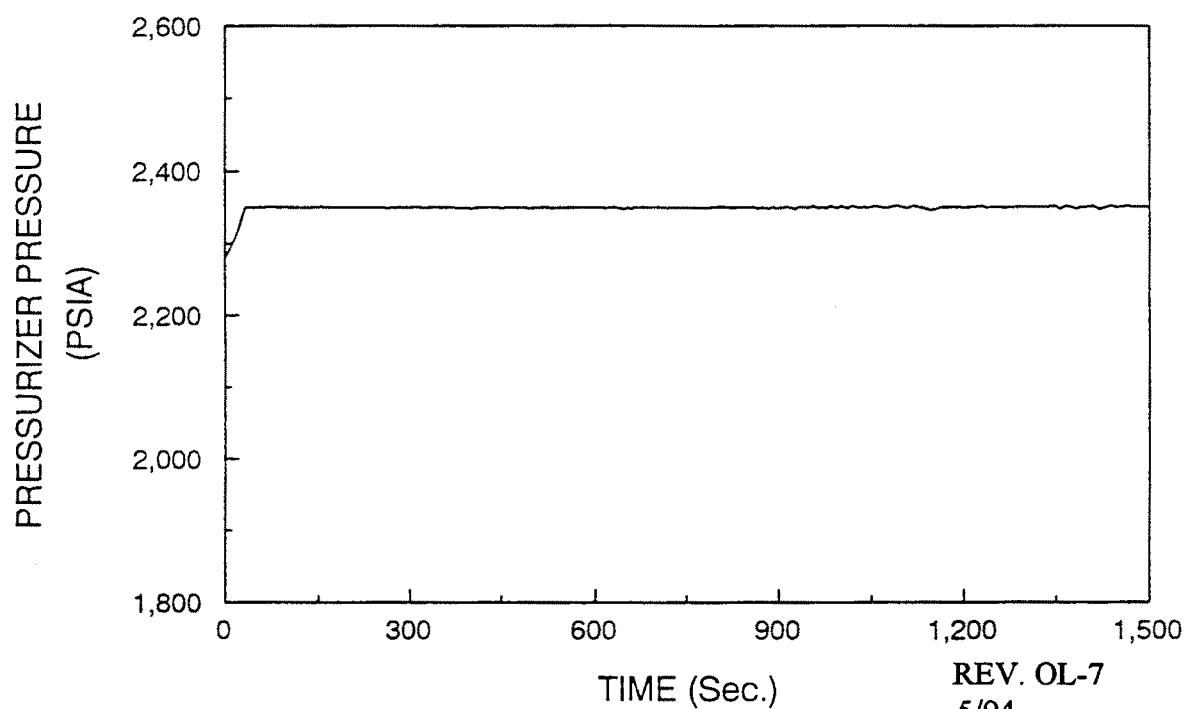
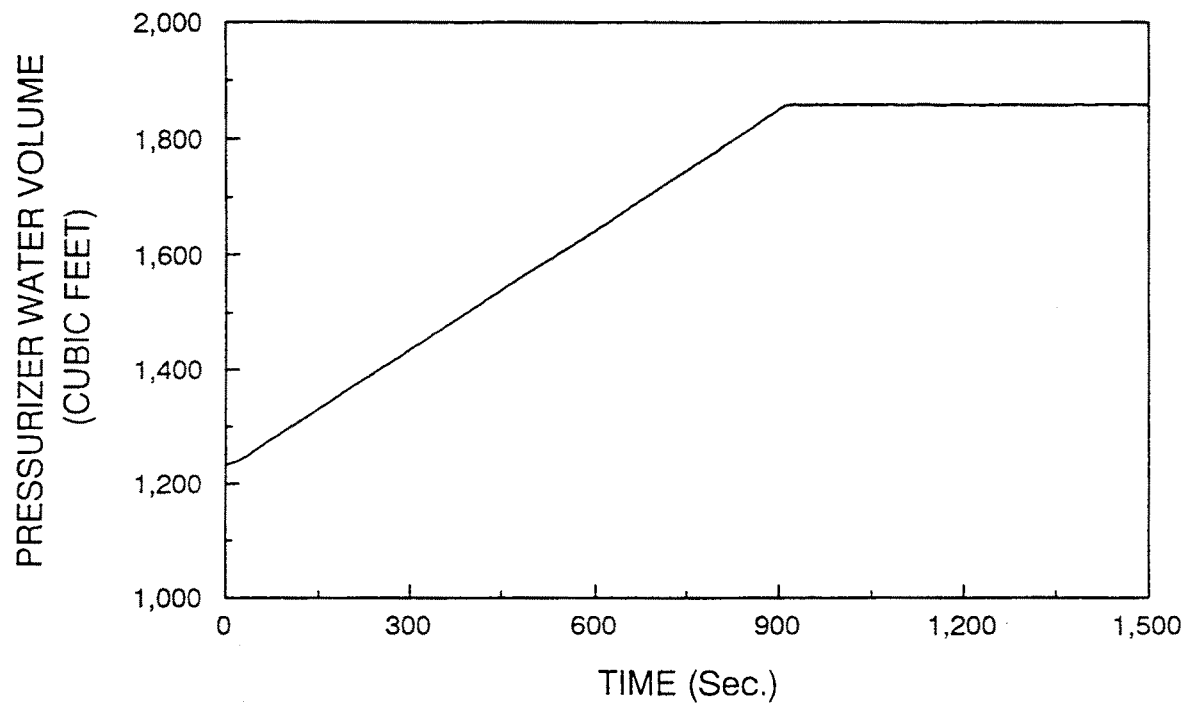
FIGURE 15.5-6
CHEMICAL AND VOLUME CONTROL
SYSTEM MALFUNCTION MINIMUM
REACTIVITY FEEDBACK, WITH
PRESSURIZER SPRAY



REV. OL-7
5/94

CALLAWAY PLANT

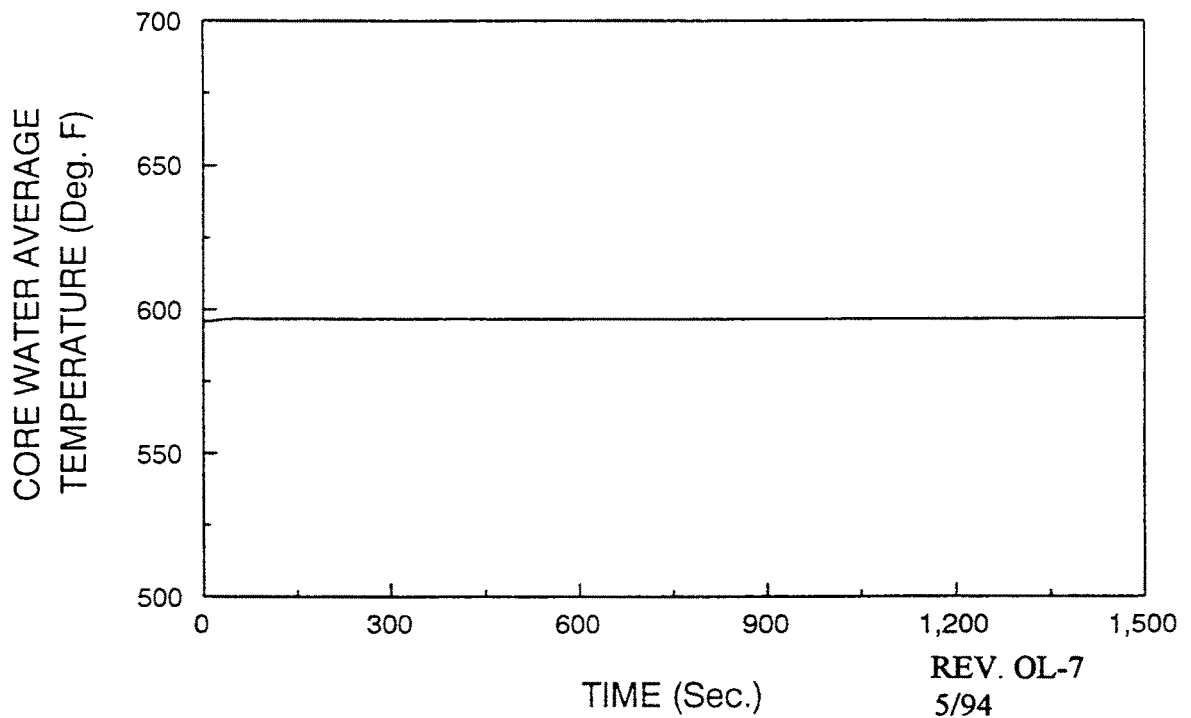
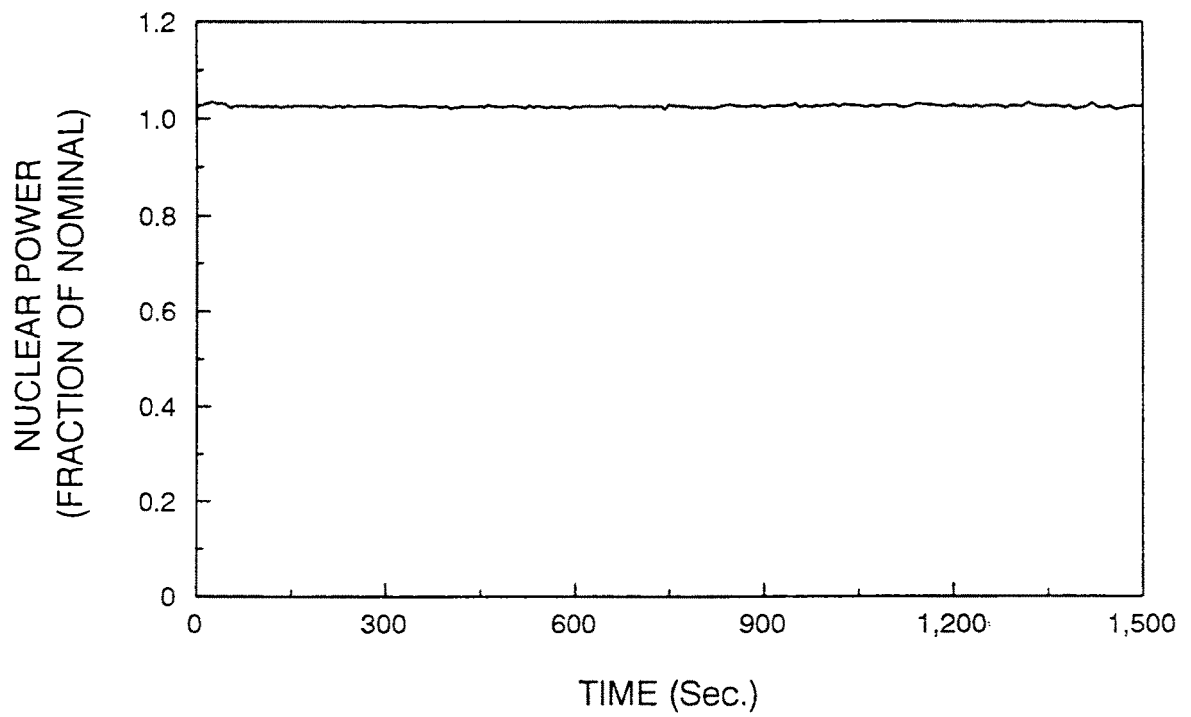
FIGURE 15.5-7
CHEMICAL AND VOLUME CONTROL
SYSTEM MALFUNCTION MINIMUM
REACTIVITY FEEDBACK, WITH
PRESSURIZER SPRAY



REV. OL-7
5/94

CALLAWAY PLANT

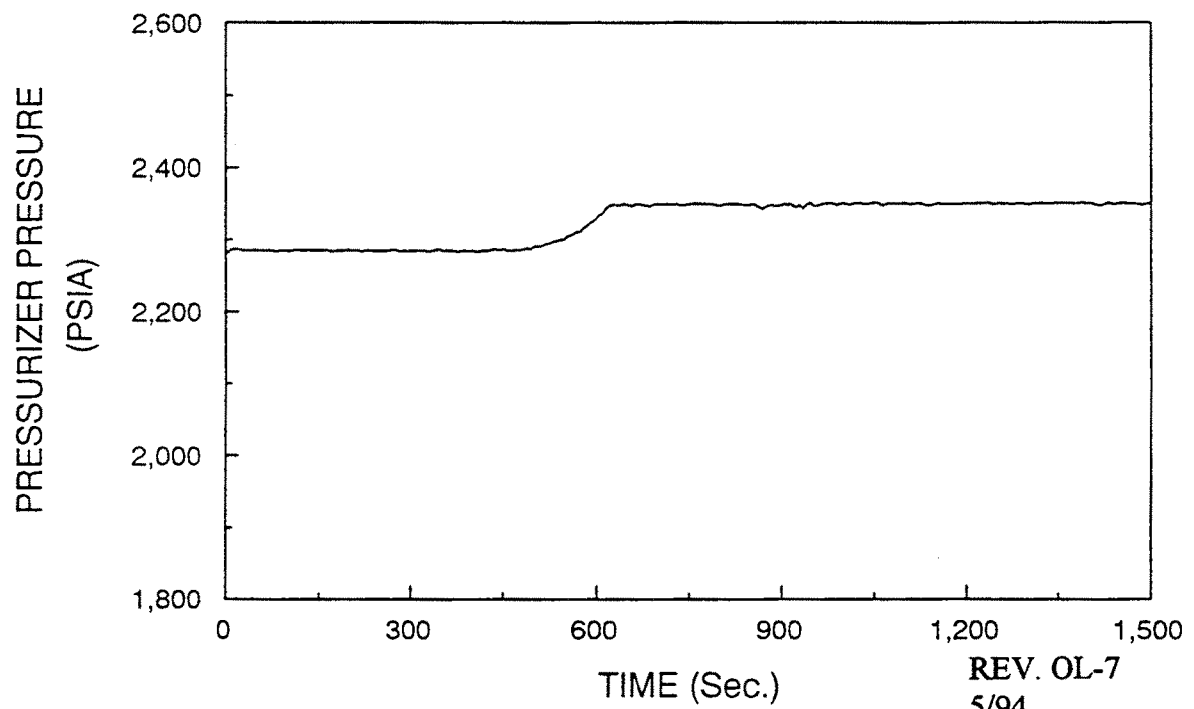
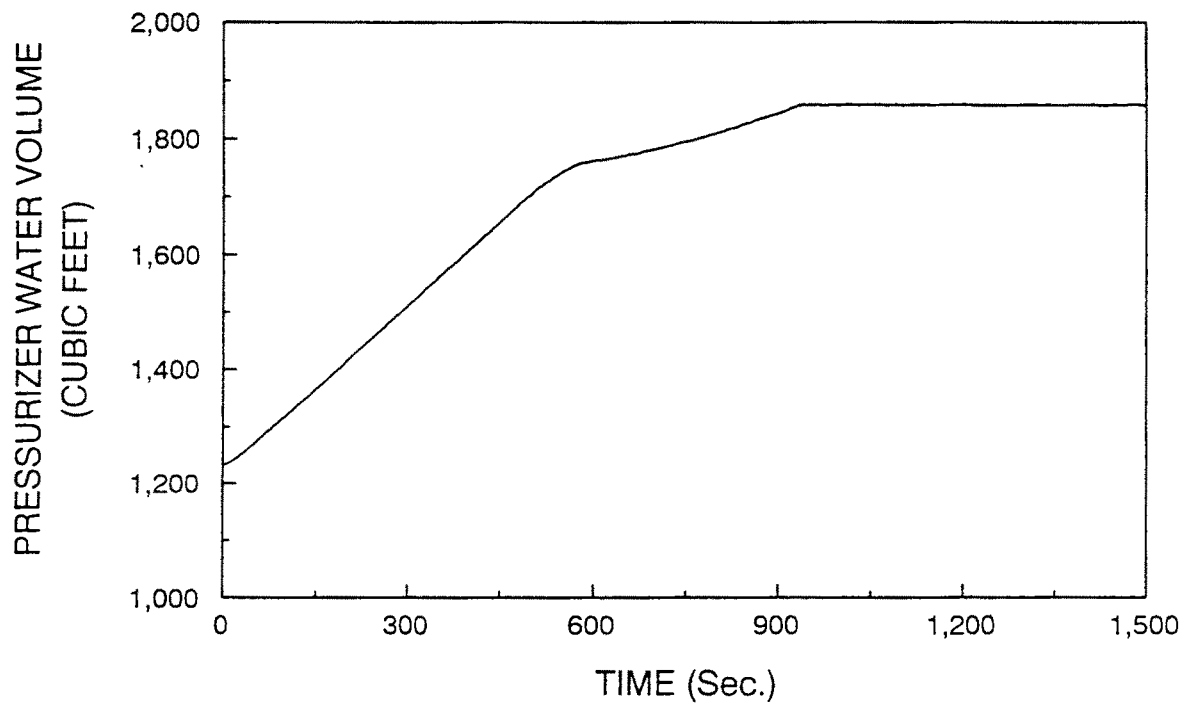
FIGURE 15.5-8
CHEMICAL AND VOLUME CONTROL
SYSTEM MALFUNCTION MAXIMUM
REACTIVITY FEEDBACK, WITHOUT
PRESSURIZER SPRAY



REV. OL-7
5/94

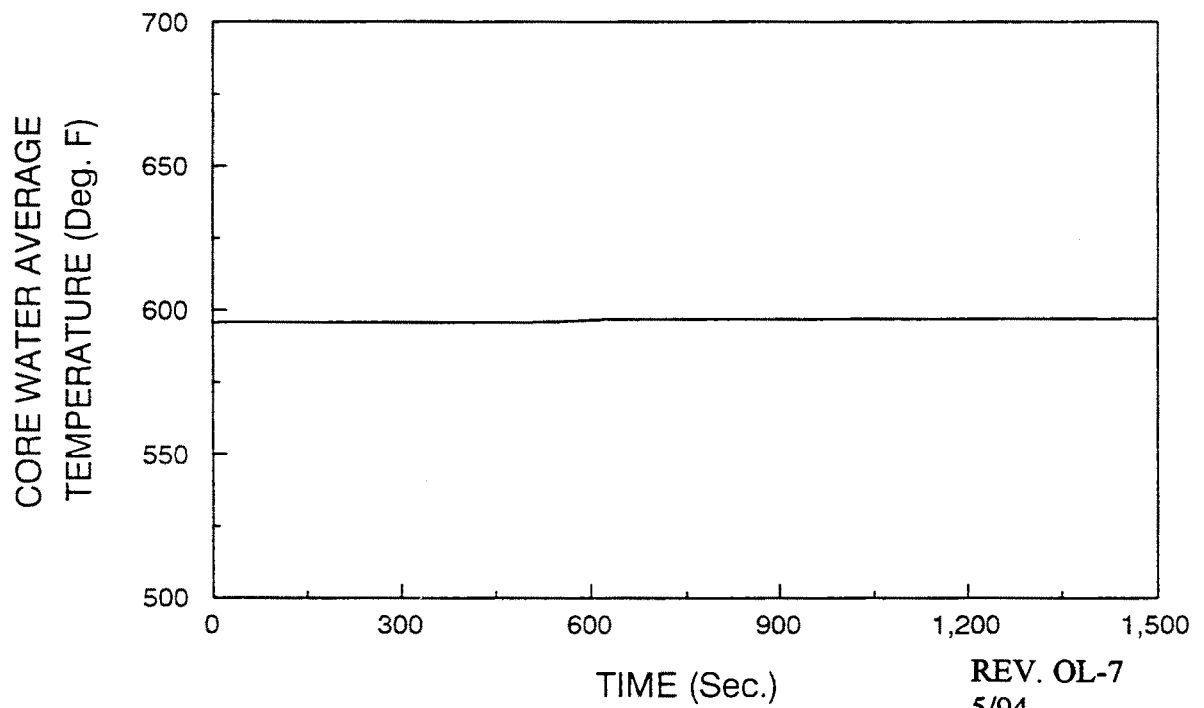
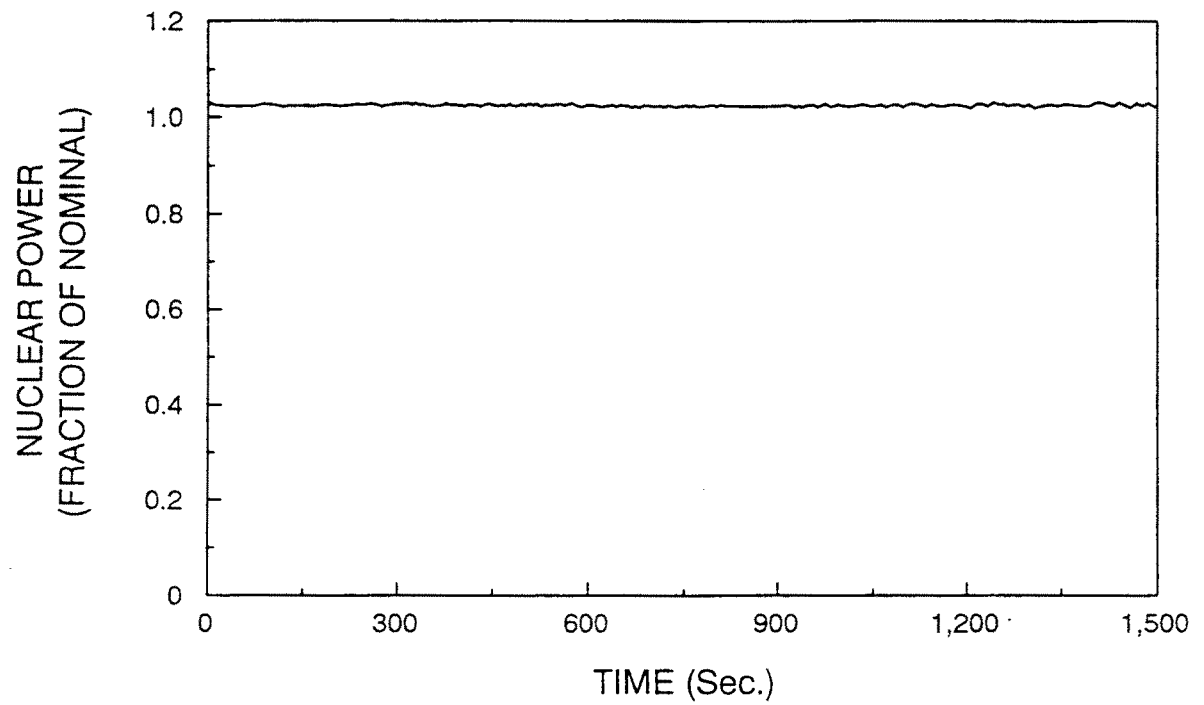
CALLAWAY PLANT

FIGURE 15.5-9
CHEMICAL AND VOLUME CONTROL
SYSTEM MALFUNCTION MAXIMUM
REACTIVITY FEEDBACK, WITHOUT
PRESSURIZER SPRAY



CALLAWAY PLANT

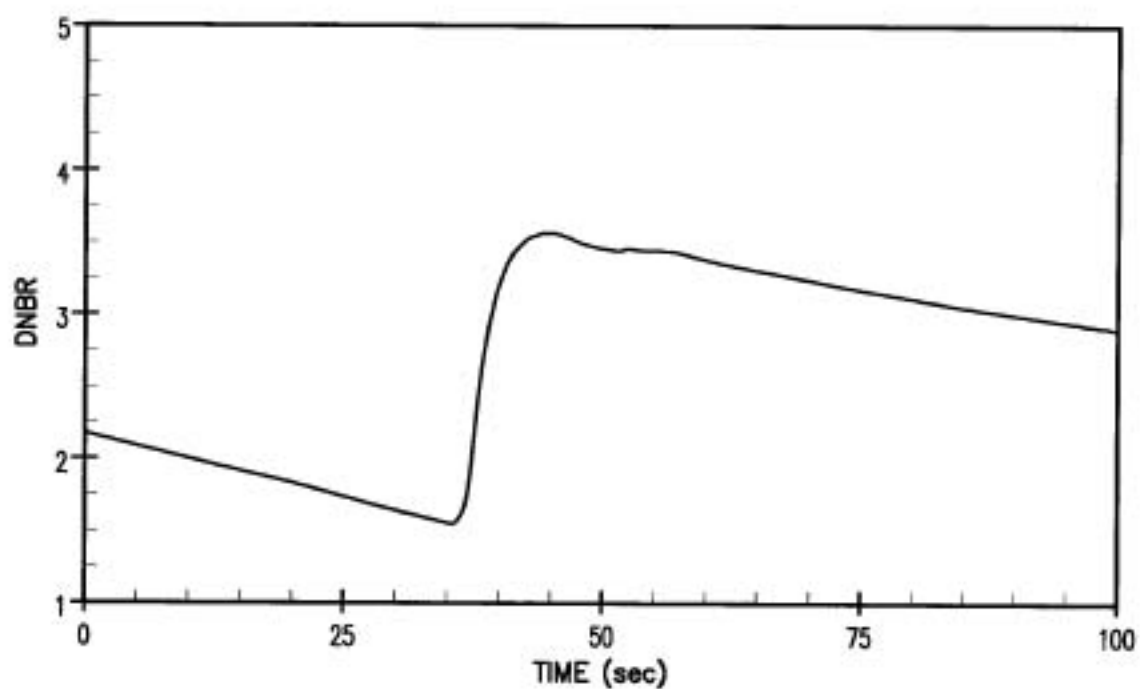
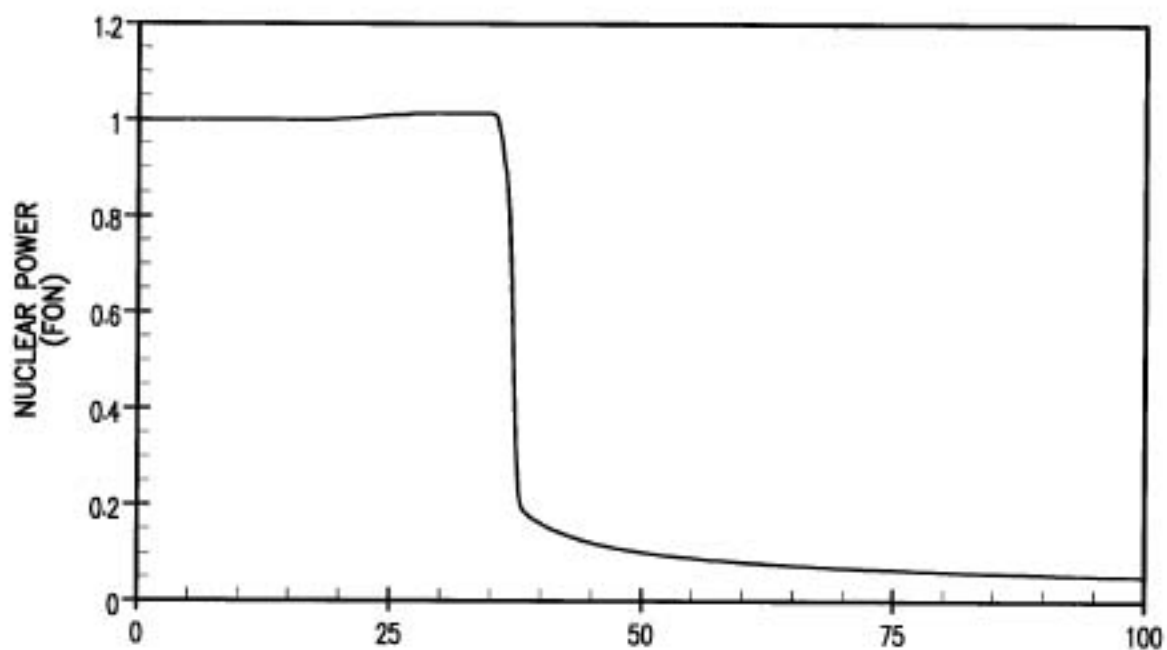
FIGURE 15.5-10
CHEMICAL AND VOLUME CONTROL
SYSTEM MALFUNCTION MAXIMUM
REACTIVITY FEEDBACK, WITH
PRESSURIZER SPRAY



REV. OL-7
5/94

CALLAWAY PLANT

FIGURE 15.5-11
CHEMICAL AND VOLUME CONTROL
SYSTEM MALFUNCTION MAXIMUM
REACTIVITY FEEDBACK, WITH
PRESSURIZER SPRAY

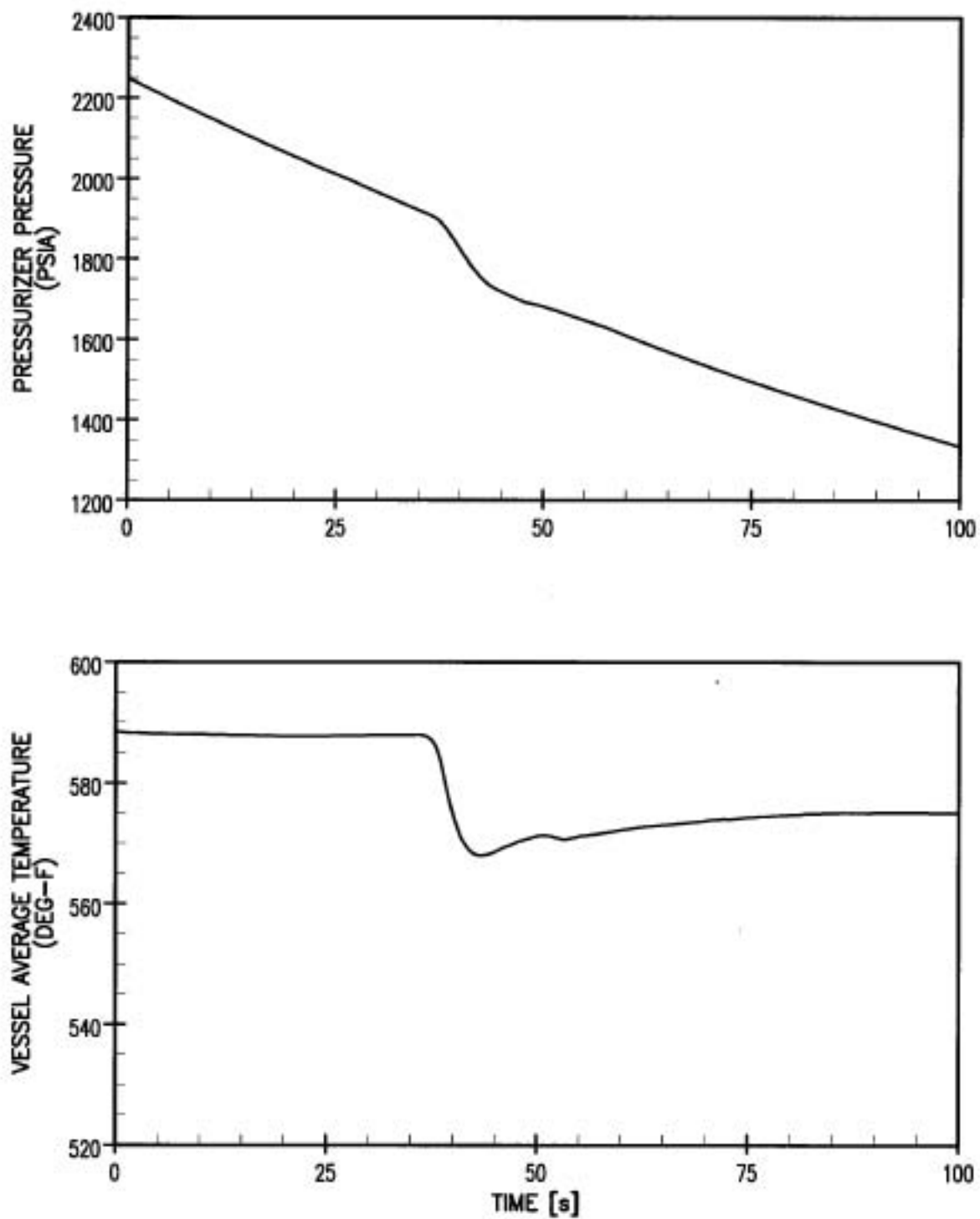


CALLAWAY PLANT

FIGURE 16.6-1

NUCLEAR POWER AND DNBR
TRANSIENTS FOR INADVERTENT OPENING
OF A PRESSURIZER SAFETY VALVE

REV. 10 1/10

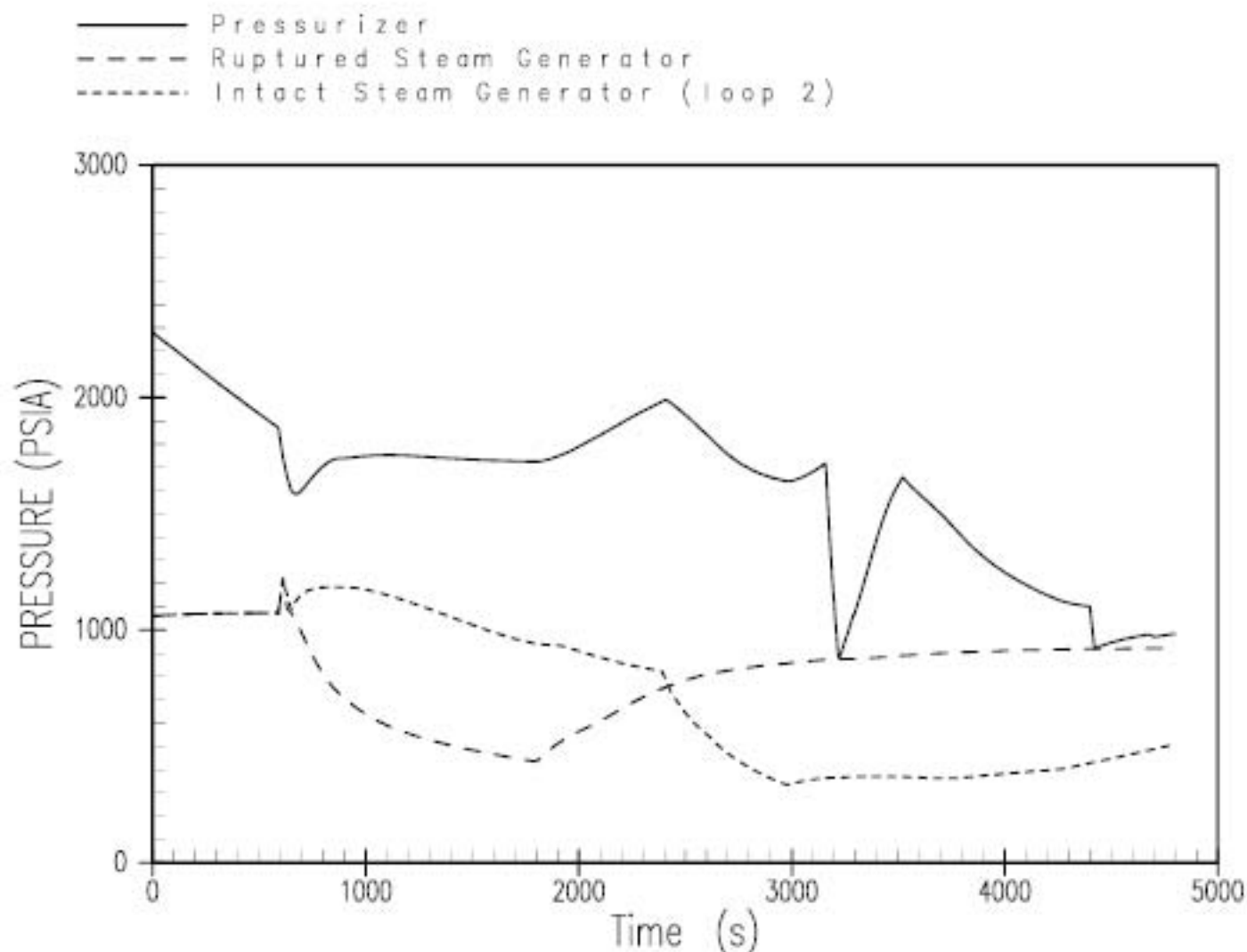


CALLAWAY PLANT

FIGURE 16.8-2

PRESSURIZER PRESSURE AND VESSEL AVERAGE
TEMPERATURE TRANSIENTS FOR INADVERTENT
OPENING OF A PRESSURIZER SAFETY VALVE

REV. 10 1/10



Note:

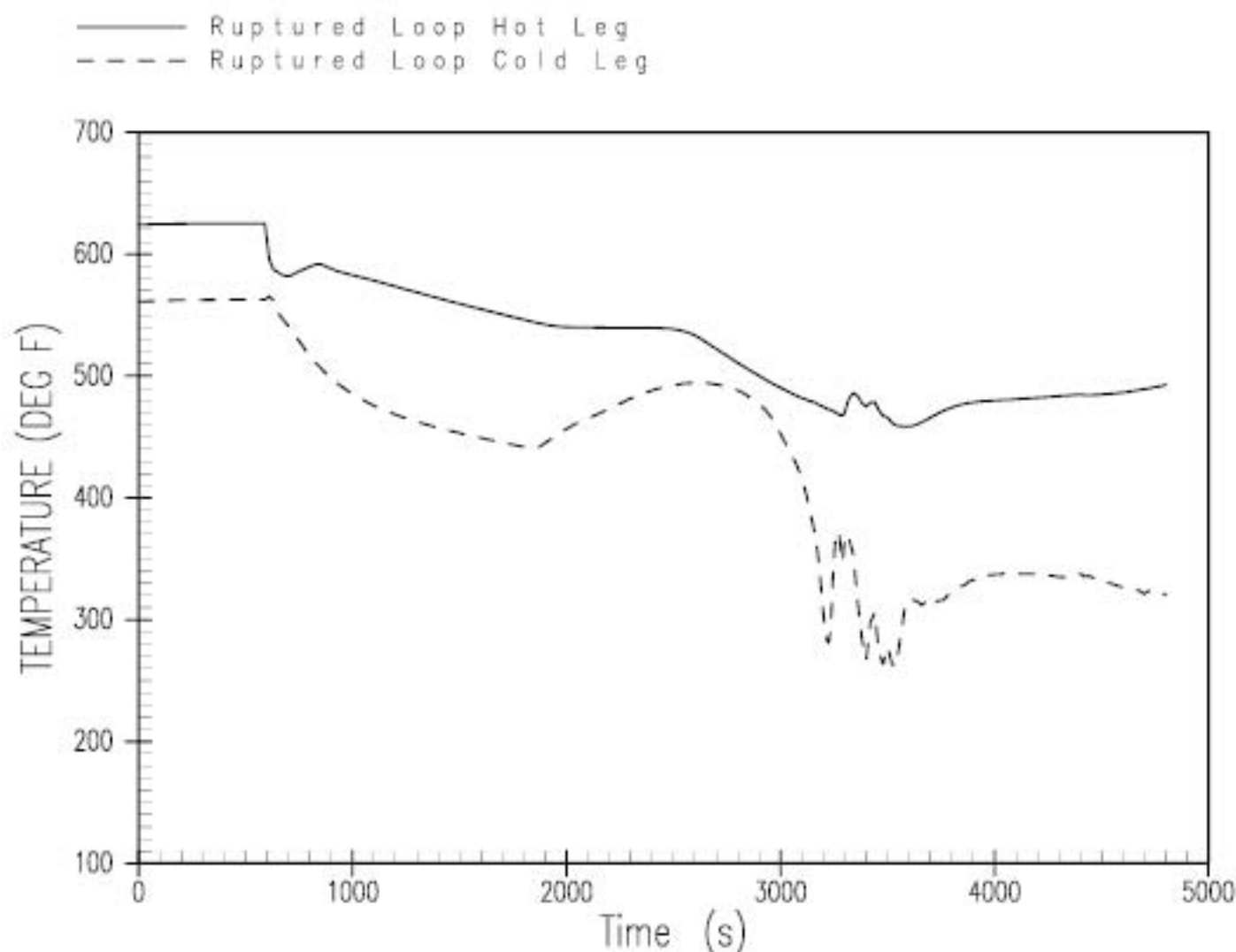
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

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FIGURE 15.5-3A

**PRESSURIZER AND STEAM GENERATOR (RUPTURED AND INTACT GENERATORS) PRESSURE TRANSIENTS FOR STEAM GENERATOR TUBE RUPTURE EVENT
REV. 10 6/11**



Note:

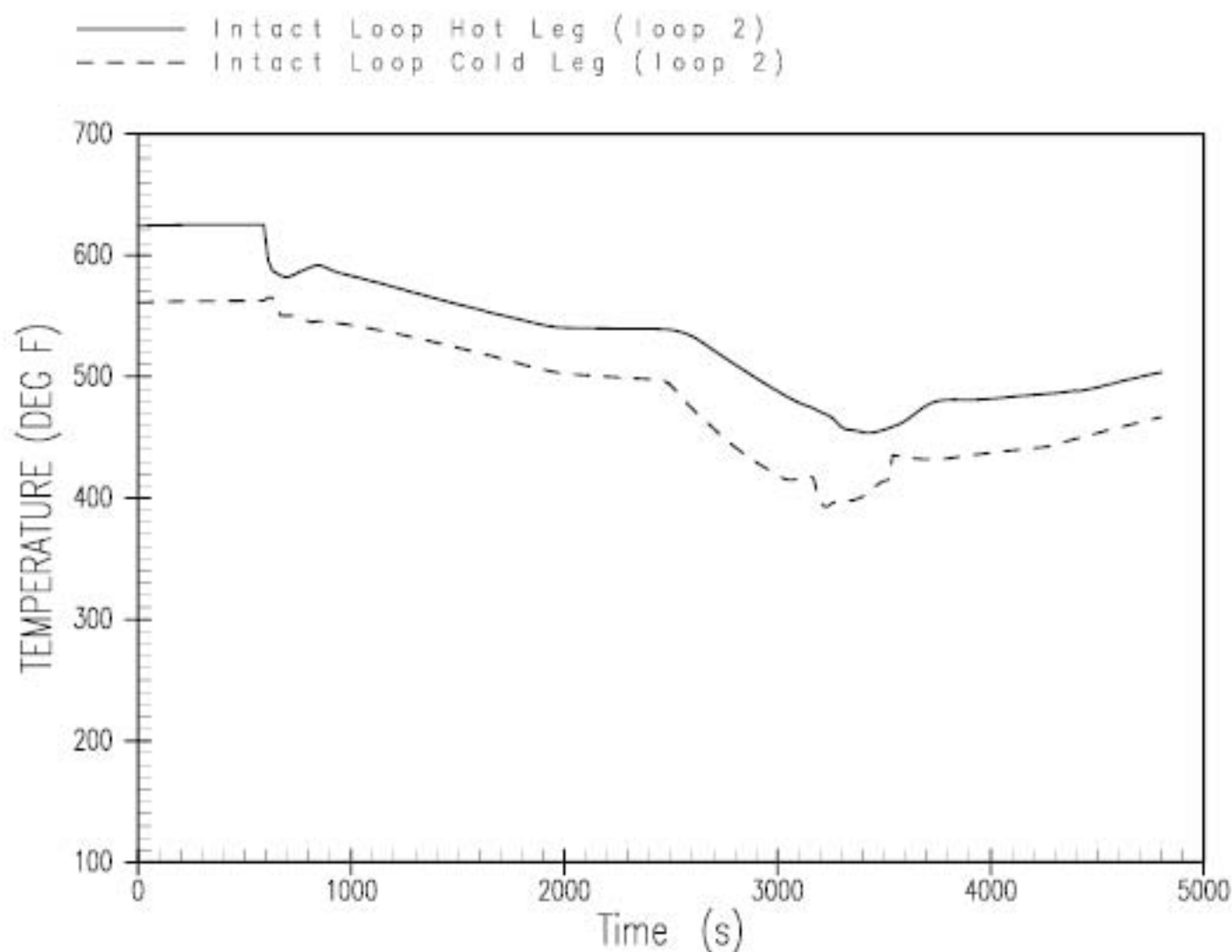
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.8-3B

REACTOR COOLANT SYSTEM TEMPERATURE
(RUPTURED LOOP) TRANSIENT FOR STEAM
GENERATOR TUBE RUPTURE EVENT
REV. 10 6/11



Note:

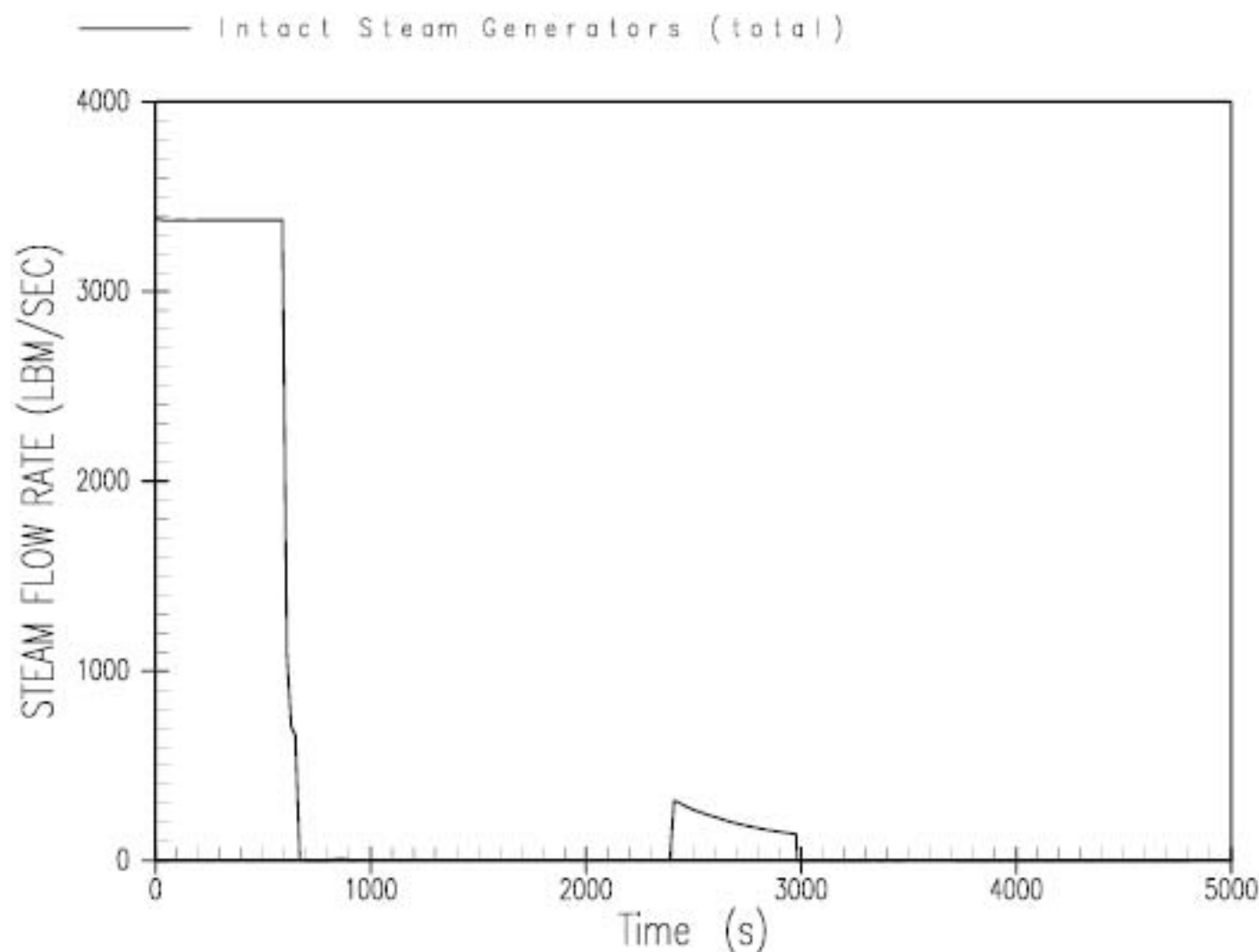
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.5-3C

REACTOR COOLANT SYSTEM TEMPERATURE
(INTACT LOOPS) TRANSIENT FOR STEAM
GENERATOR TUBE RUPTURE EVENT
REV. 10 6/11



Note:

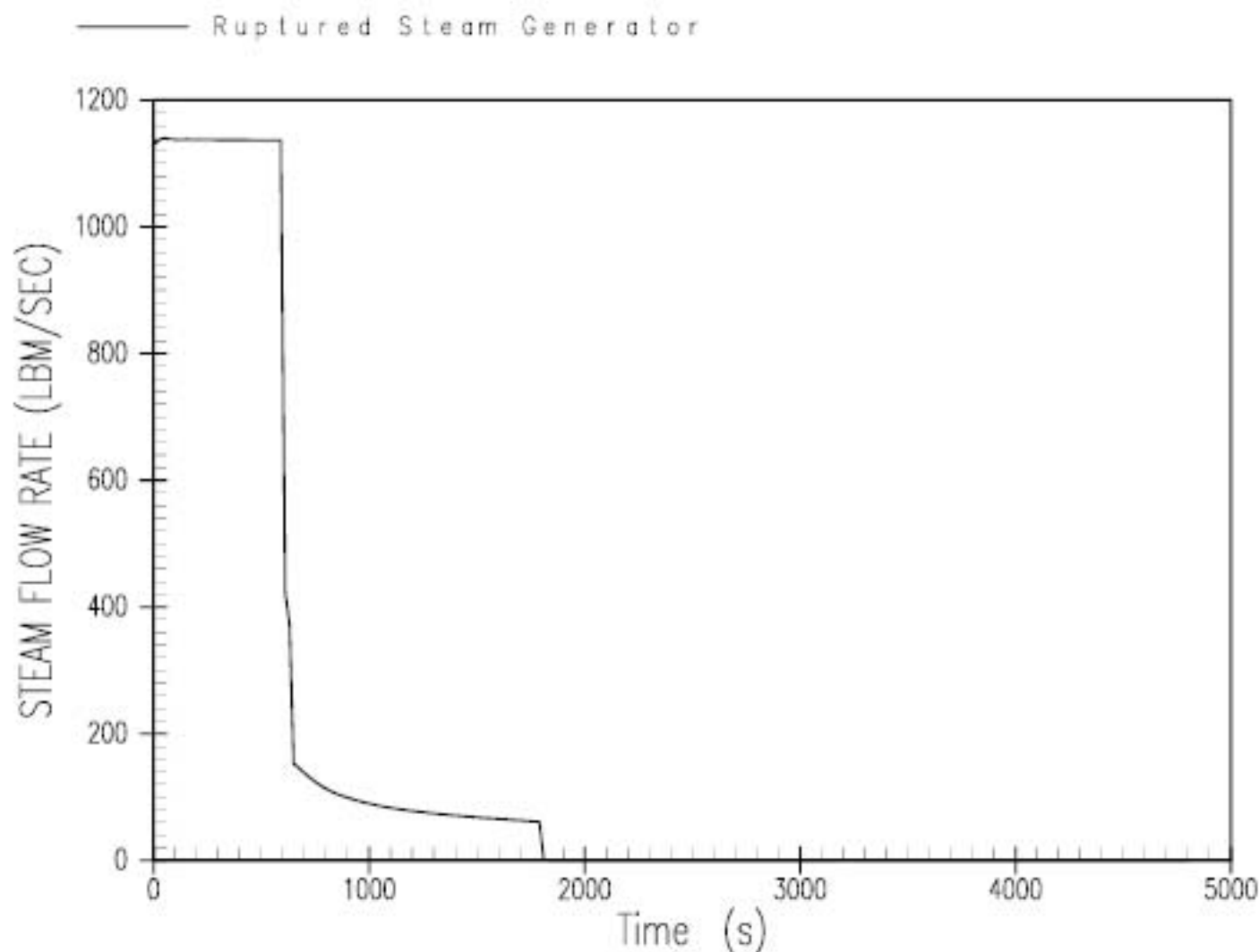
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.8-3D

**STEAM FLOW RATE (INTACT GENERATORS)
TRANSIENT FOR STEAM GENERATOR
TUBE RUPTURE EVENT
REV. 10 6/11**



Note:

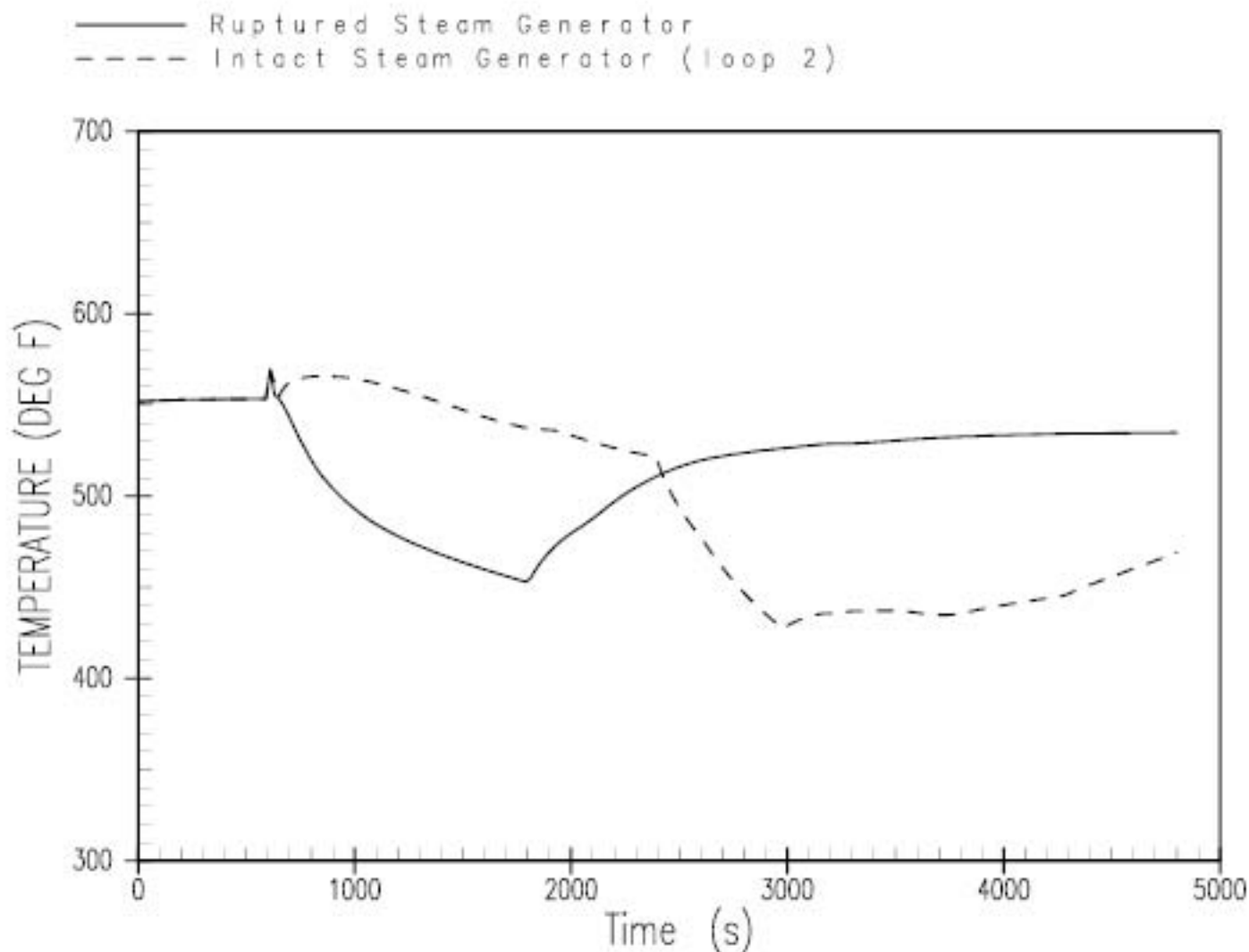
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.8-3E

**STEAM FLOW RATE (RUPTURED GENERATOR)
TRANSIENT FOR STEAM GENERATOR
TUBE RUPTURE EVENT
REV. 10 6/11**



Note:

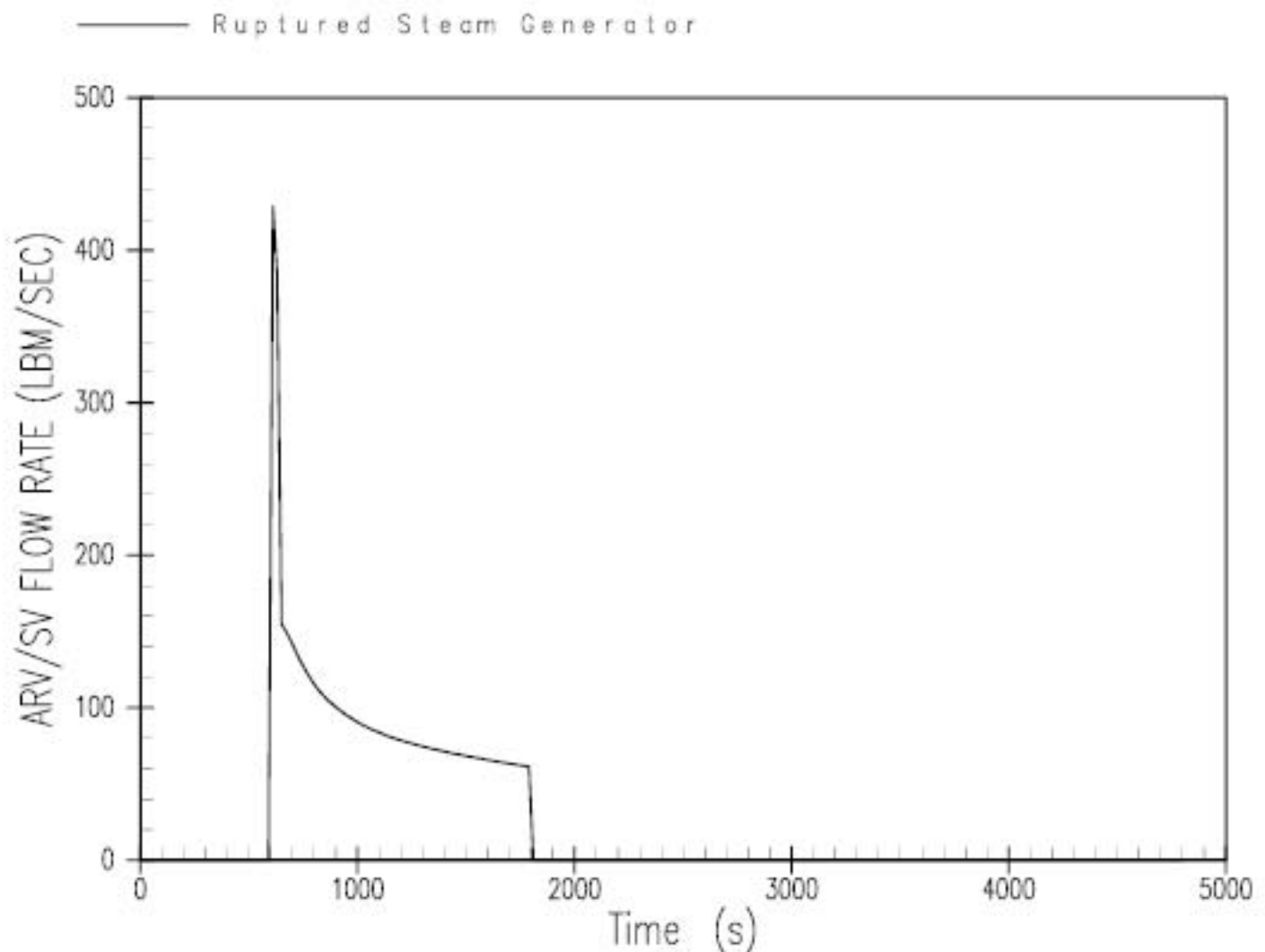
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.8-3F

**STEAM GENERATOR TEMPERATURE (RUPTURED
AND INTACT GENERATORS) TRANSIENTS FOR
STEAM GENERATOR TUBE RUPTURE EVENT
REV. 10 6/11**



Note:

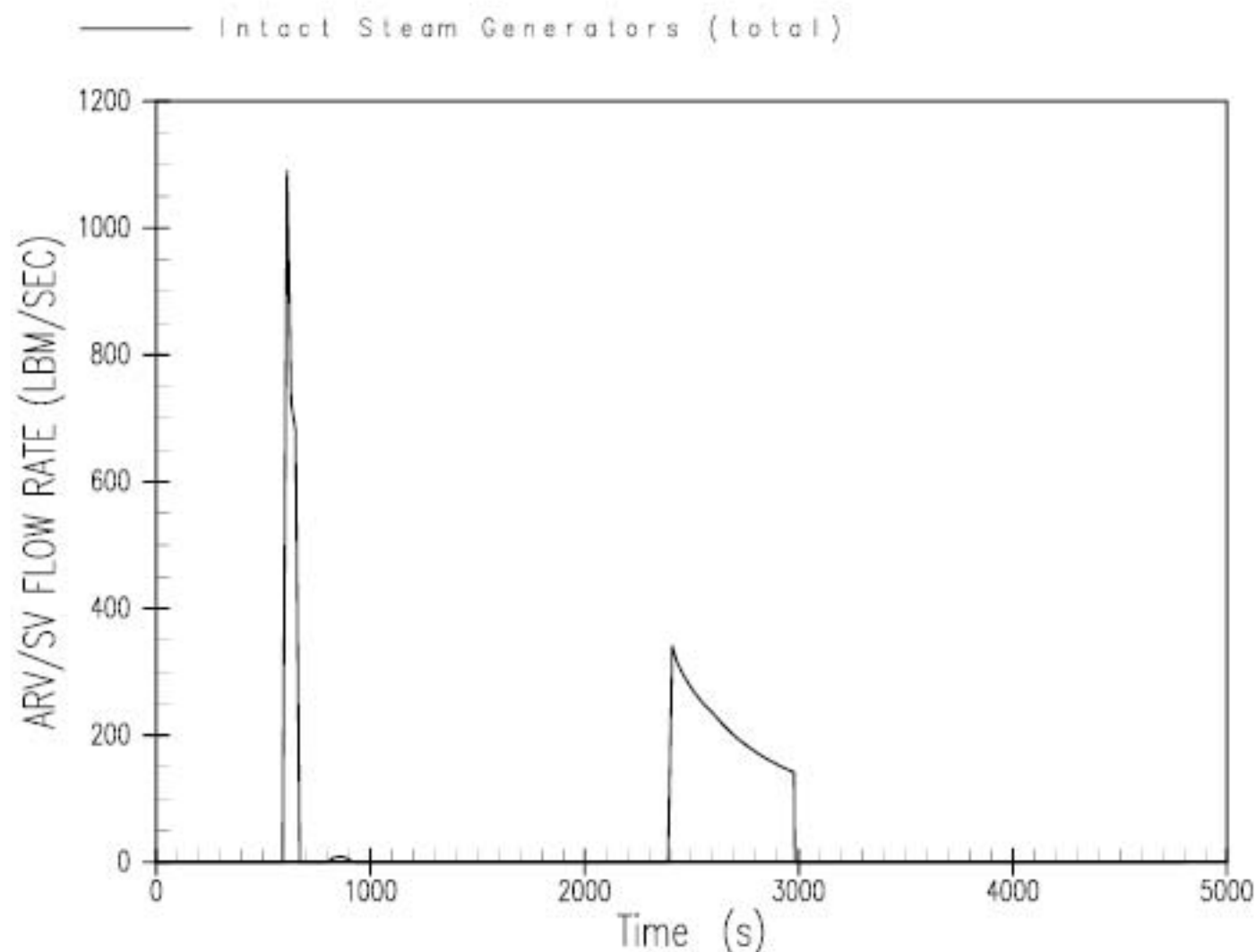
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

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FIGURE 15.8-36

**STEAM GENERATOR ATMOSPHERIC RELIEF
VALVE FLOW RATE (RUPTURED GENERATOR)
TRANSIENT FOR STEAM GENERATOR
TUBE RUPTURE EVENT
REV. 16 6/11**



Note:

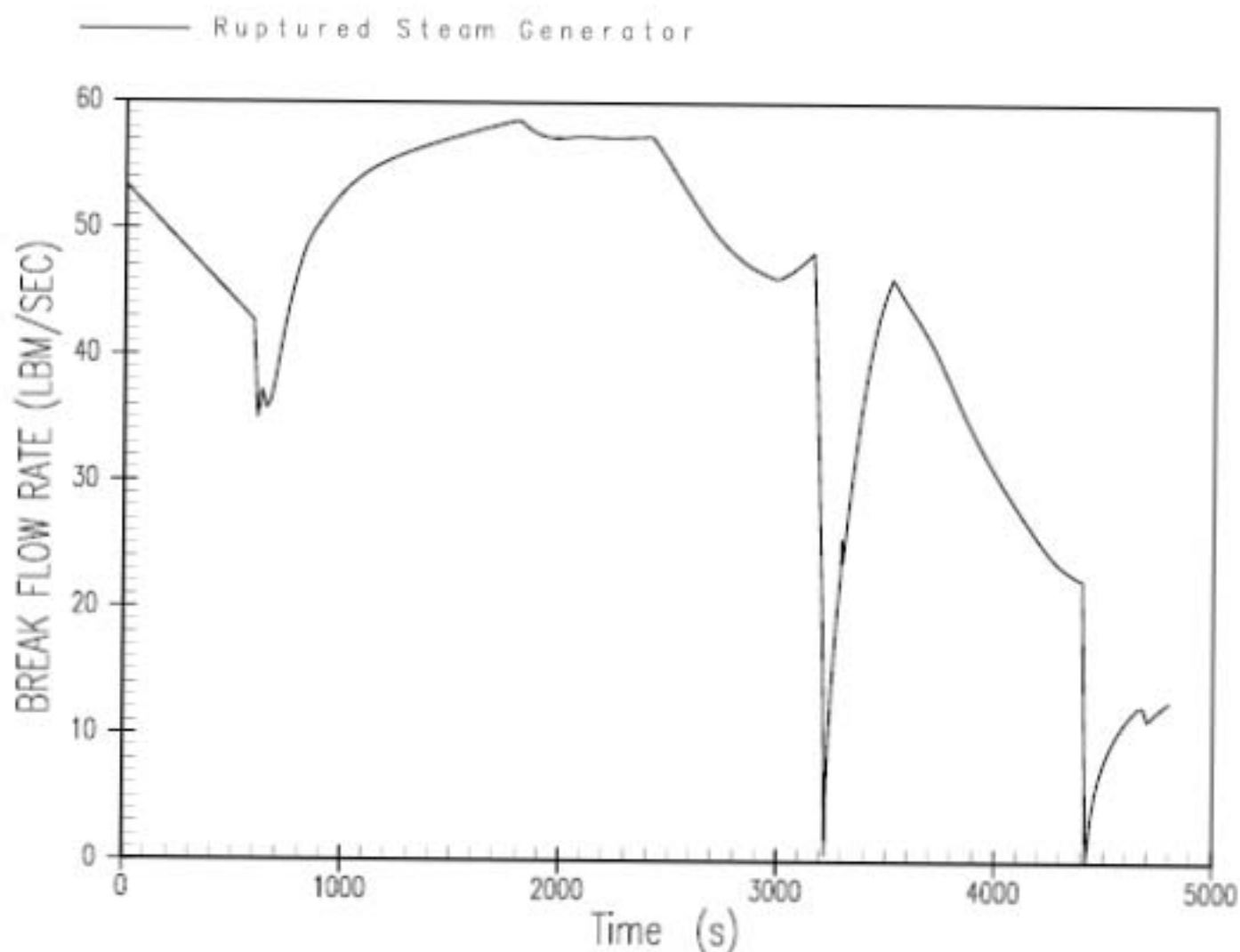
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 16.6-3H

**STEAM GENERATOR ATMOSPHERIC RELIEF
VALVE FLOW RATE (INTACT GENERATOR)
TRANSIENT FOR STEAM GENERATOR
TUBE RUPTURE EVENT
REV. 10-5/11**



Note:

The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

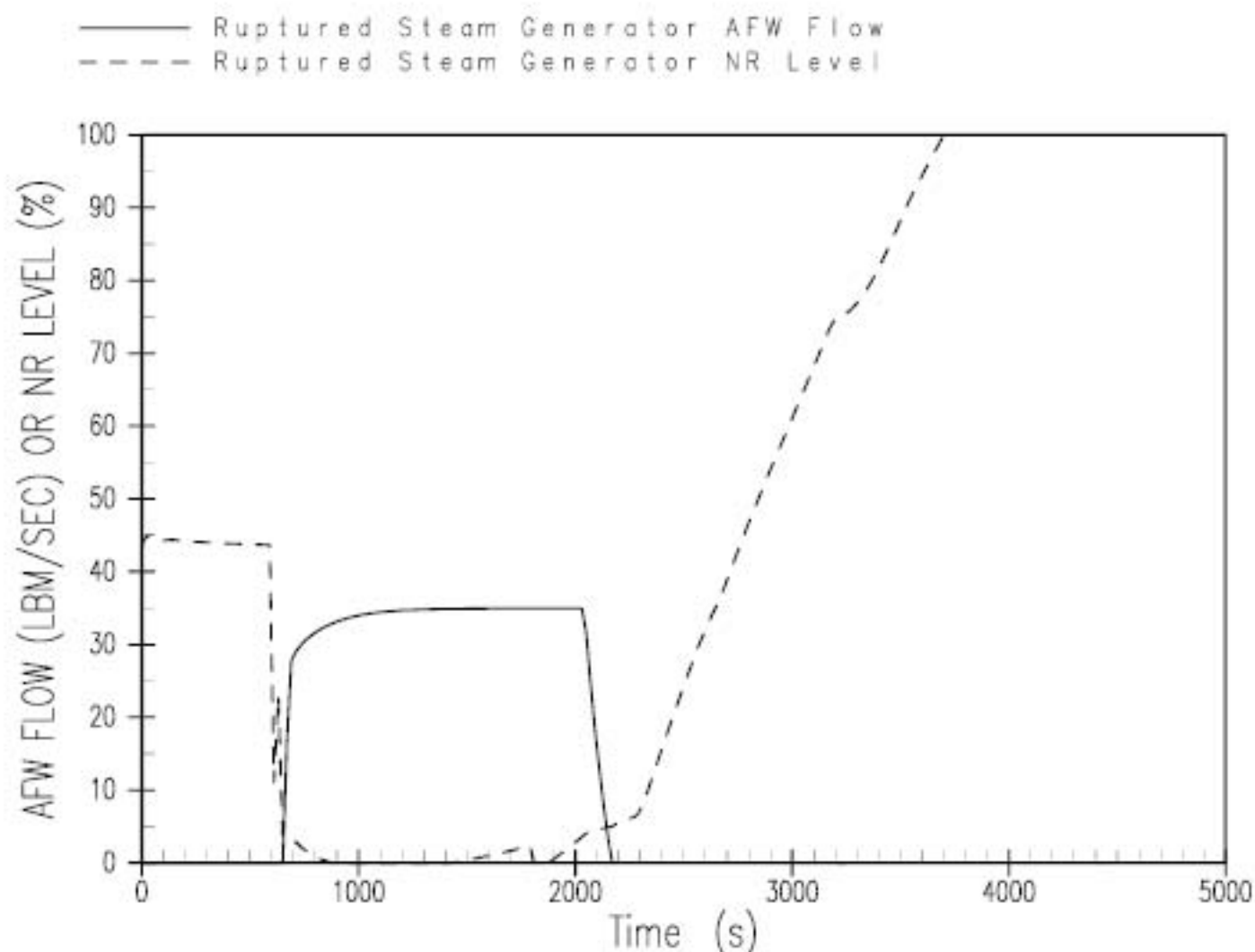
Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

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FIGURE 15.8-31

**RUPTURED STEAM GENERATOR BREAK
FLOW TRANSIENT FOR STEAM GENERATOR
TUBE RUPTURE EVENT**

REV. 16 5/11



Note:

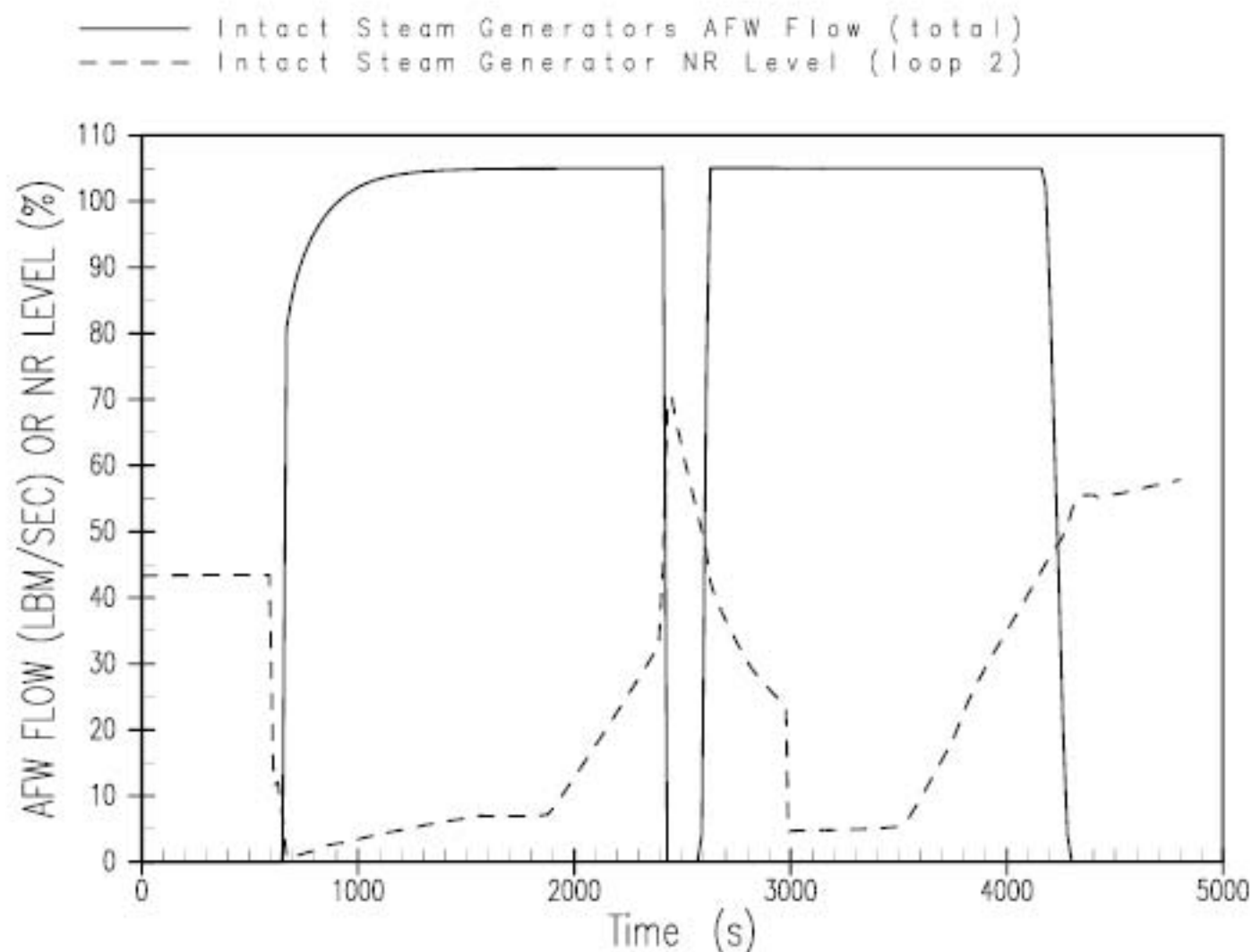
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

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FIGURE 15.8-3J

AUXILIARY FEEDWATER FLOW RATE
AND NARROW RANGE LEVEL (RUPTURED
GENERATOR) TRANSIENTS FOR STEAM
GENERATOR TUBE RUPTURE EVENT
REV. 16 5/11



Note:

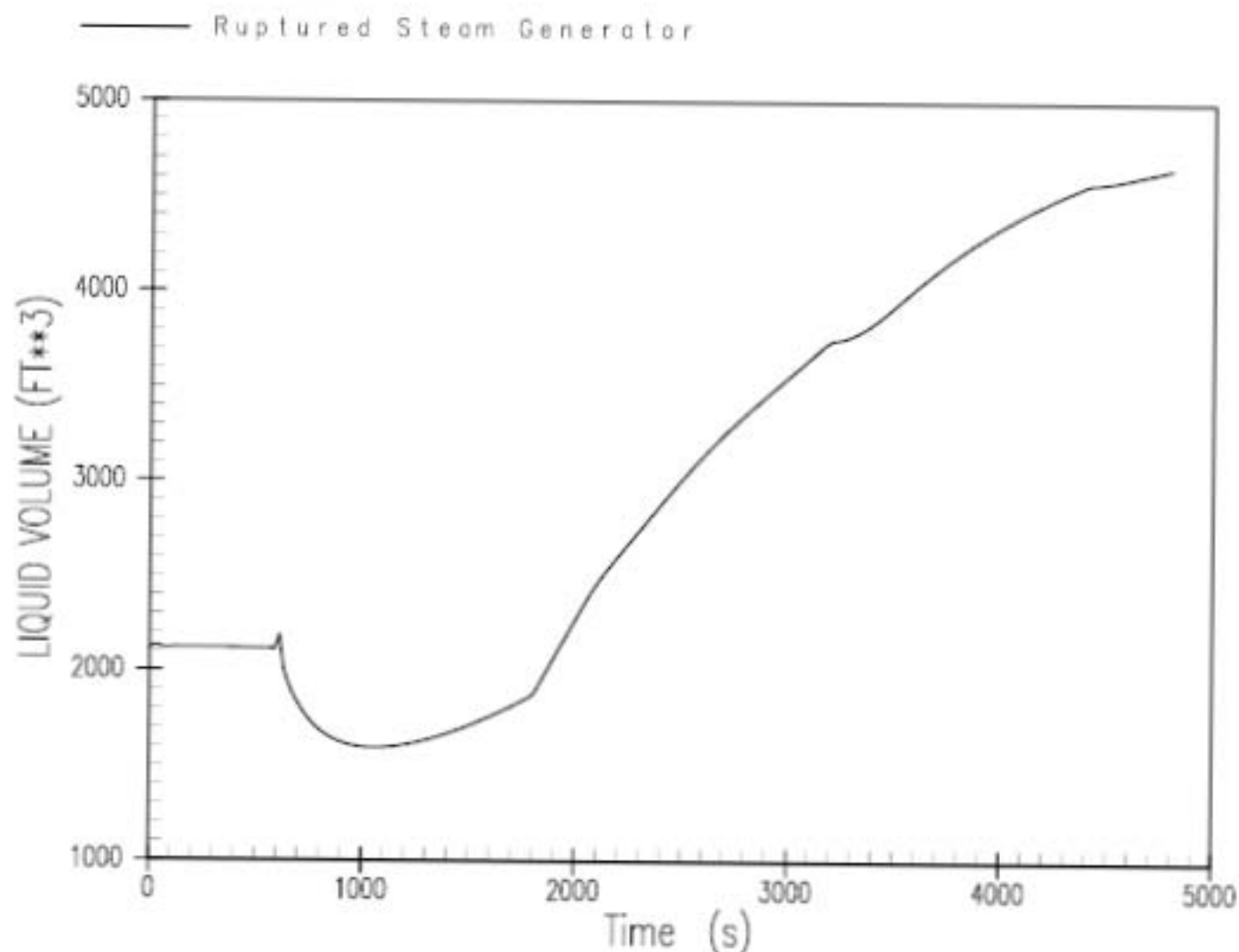
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.8-3K

AUXILIARY FEEDWATER FLOW RATE AND
 NARROW RANGE LEVEL (INTACT GENERATOR)
 TRANSIENTS FOR STEAM GENERATOR
 TUBE RUPTURE EVENT
 REV. 18 5/11



Note:

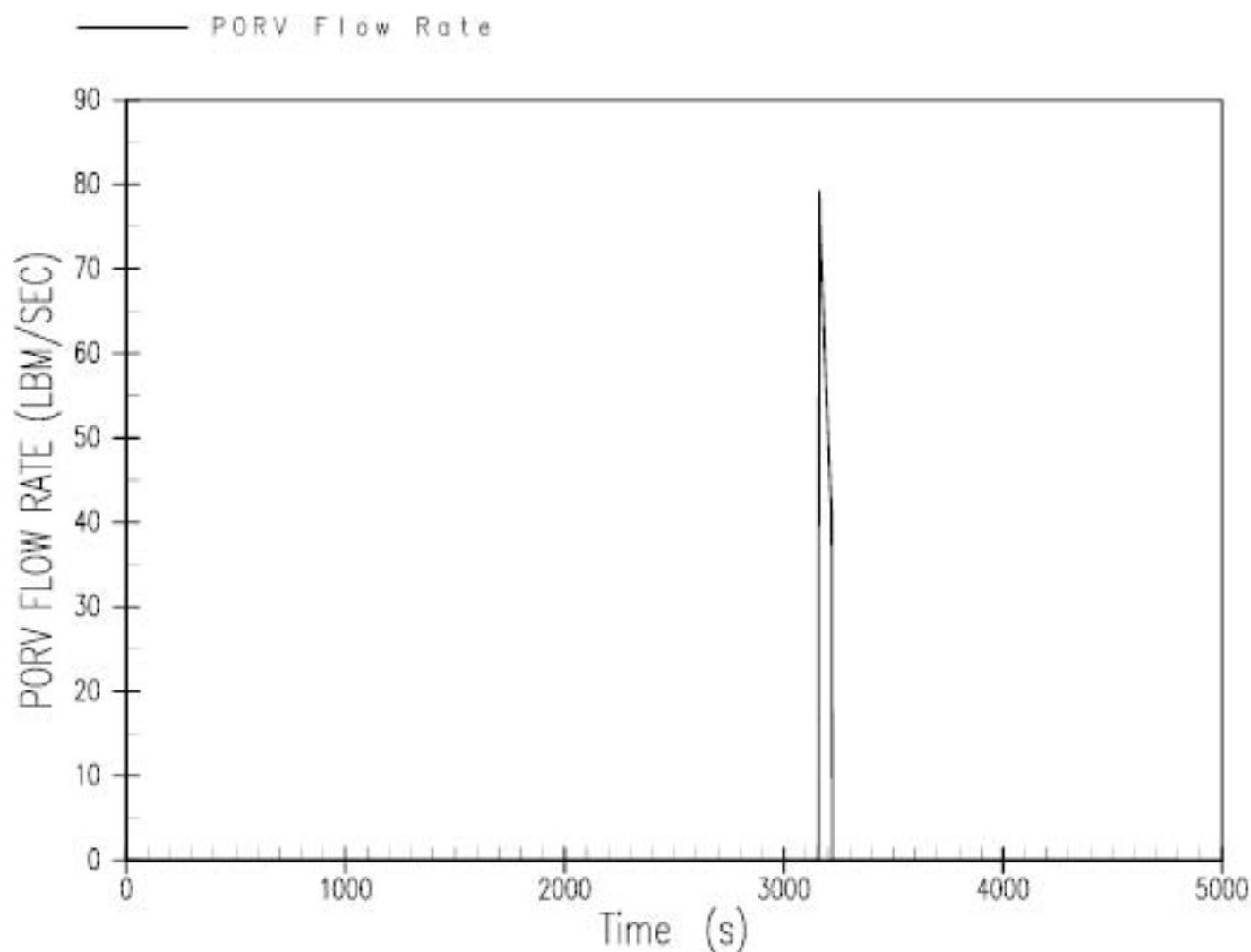
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 16.6-3L

**STEAM GENERATOR LIQUID VOLUME
(RUPTURED GENERATOR) TRANSIENT FOR
STEAM GENERATOR TUBE RUPTURE EVENT
REV. 10 6/11**



Note:

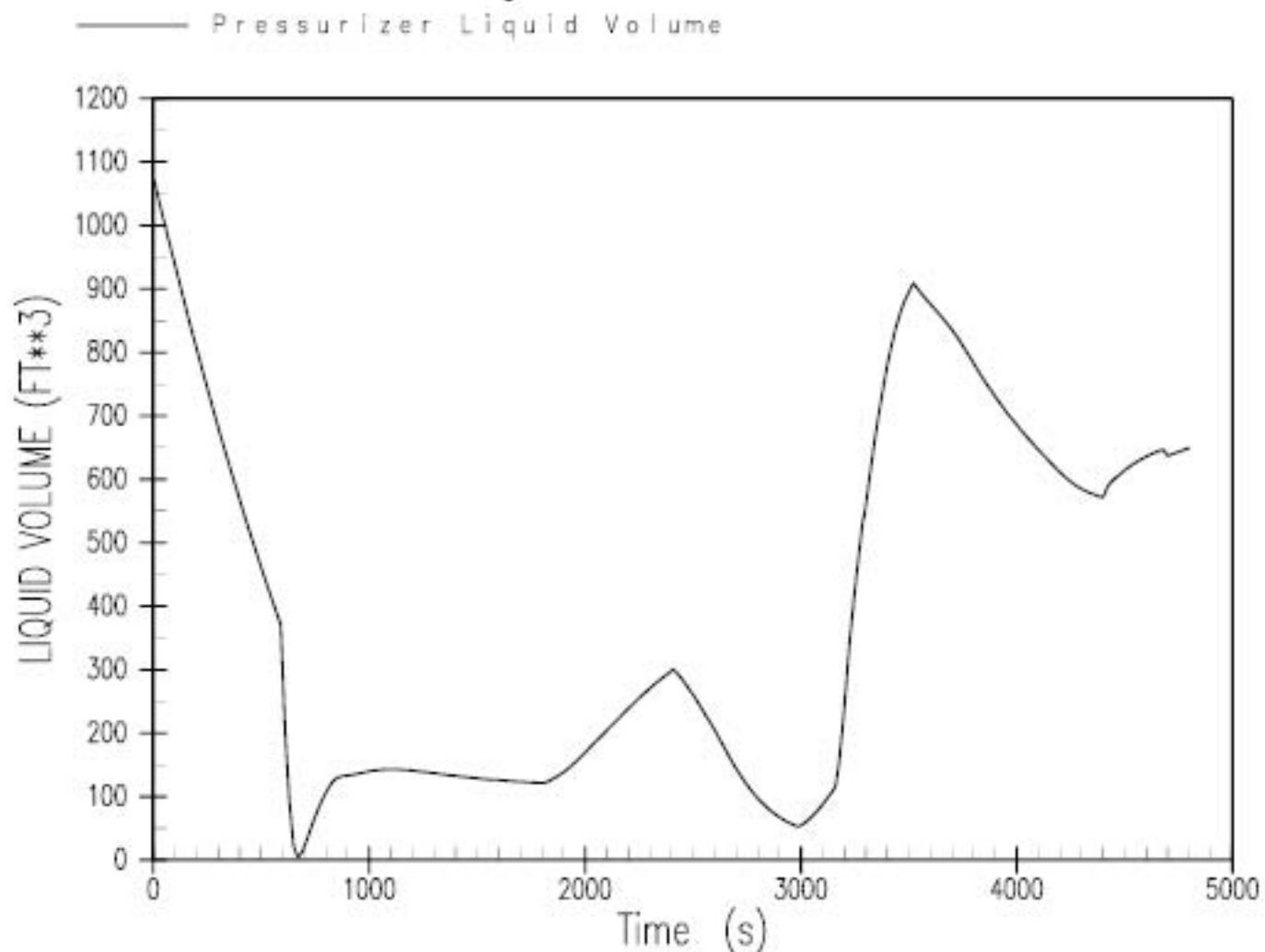
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.8-3M

PRESSURIZER PORV FLOW RATE
TRANSIENT FOR STEAM GENERATOR
TUBE RUPTURE EVENT
REV. 10 6/11



Note:

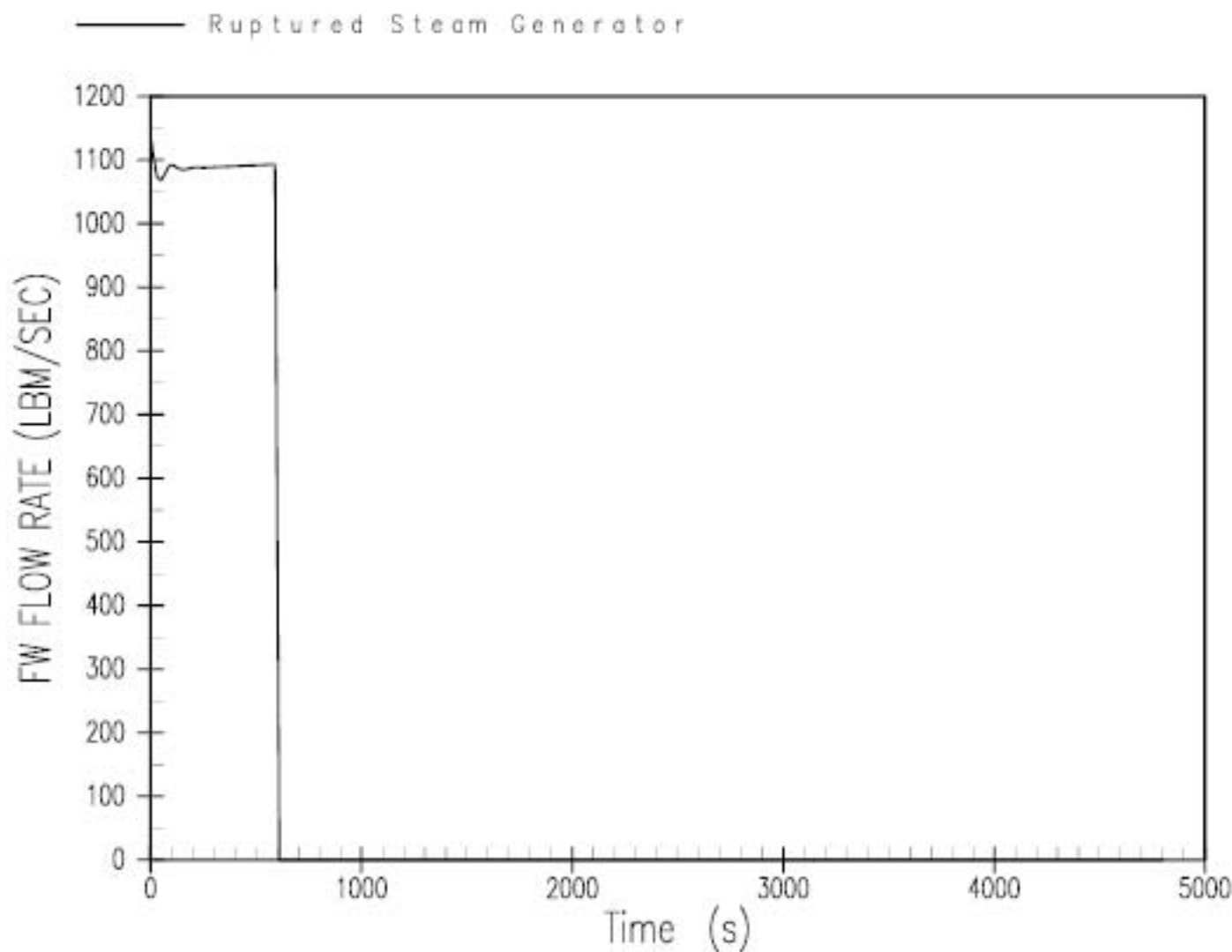
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.6-3N

**PRESSURIZER LIQUID VOLUME
TRANSIENT FOR STEAM GENERATOR
TUBE RUPTURE EVENT
REV. 10 5/11**



Note:

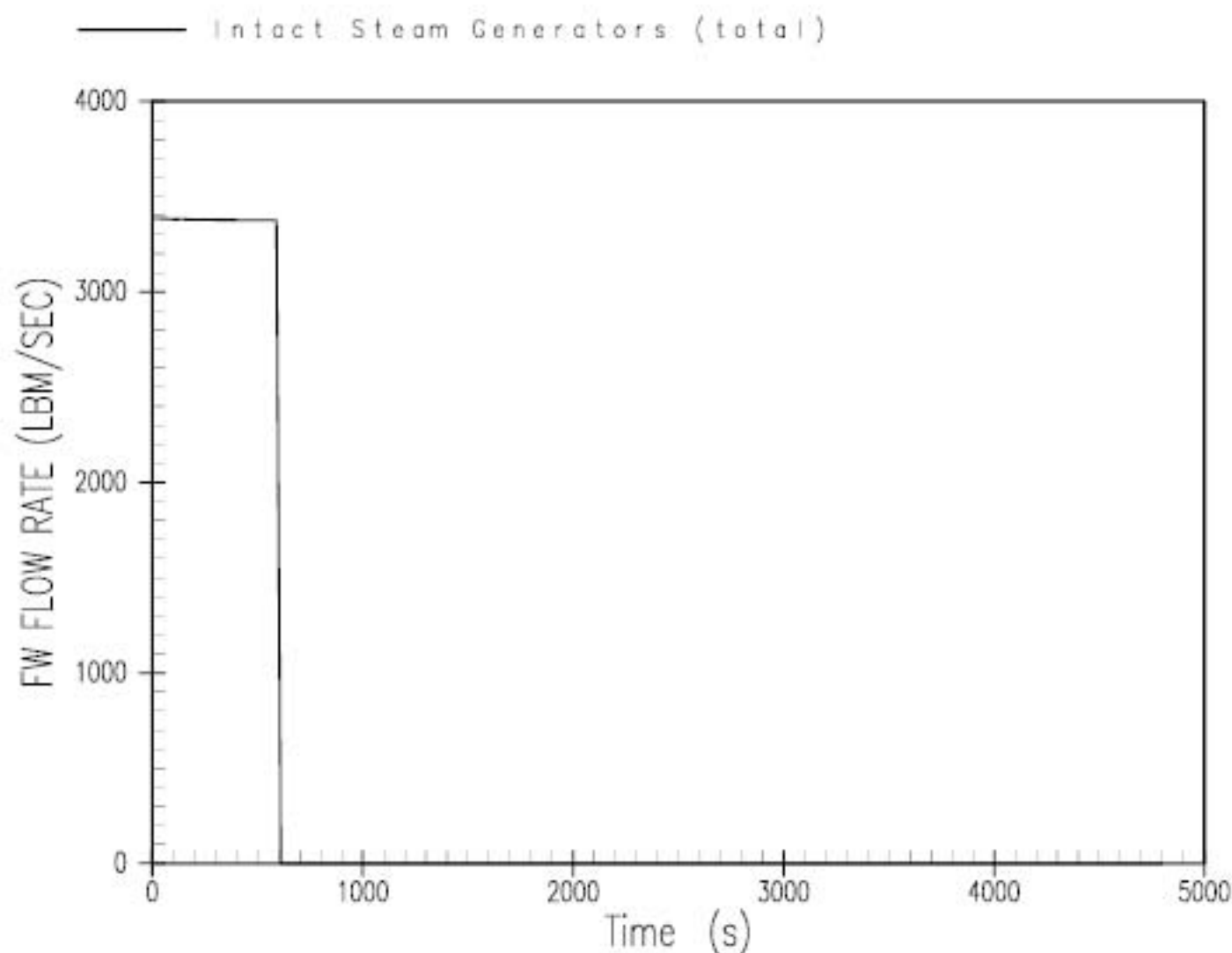
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 16.6-30

**FEEDWATER FLOW RATE (RUPTURED
GENERATOR) TRANSIENT FOR STEAM
GENERATOR TUBE RUPTURE EVENT
REV. 16 5/11**



Note:

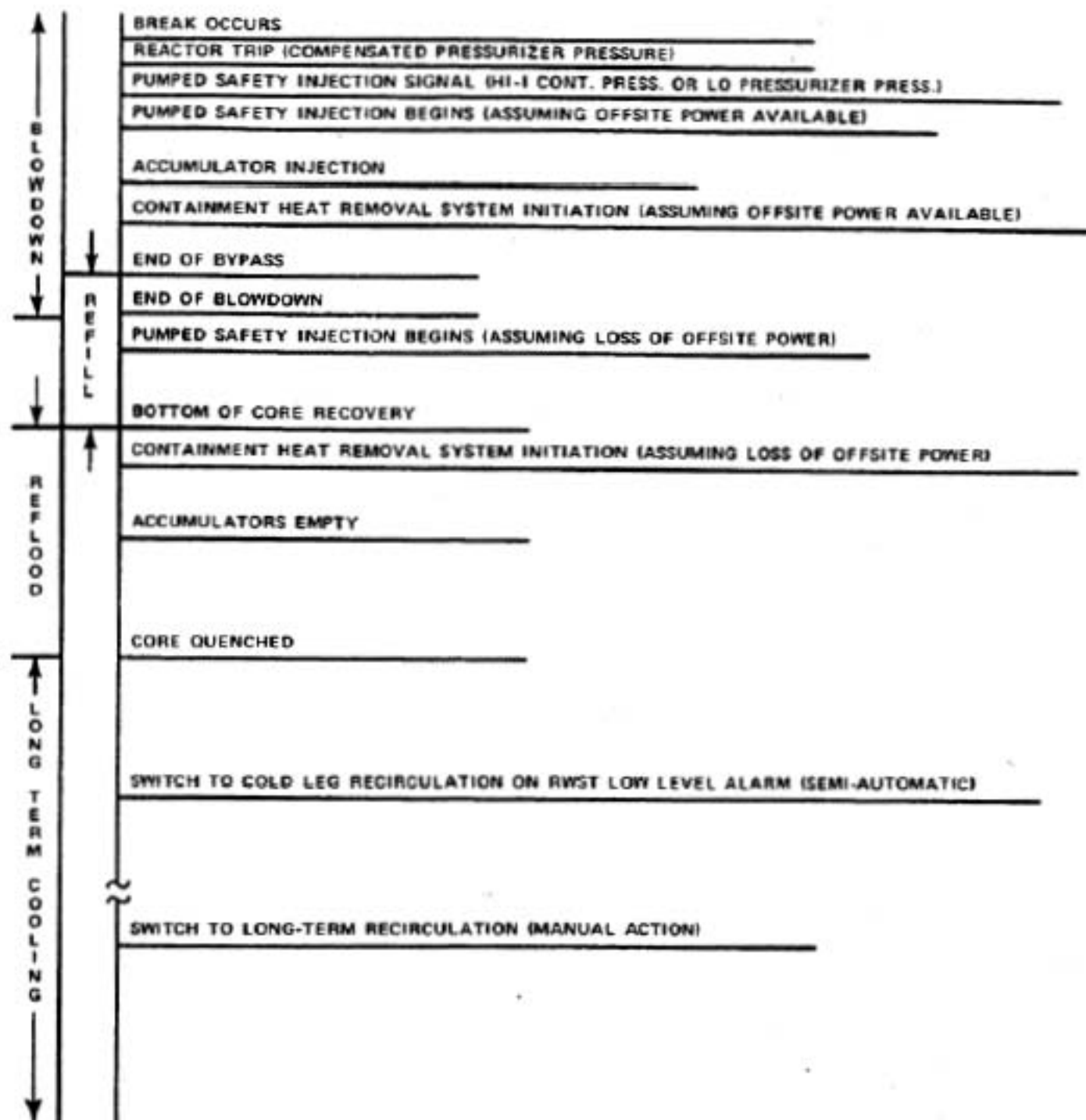
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

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FIGURE 15.6-3P

**FEEDWATER FLOW RATE (INTACT
GENERATORS) TRANSIENT FOR STEAM
GENERATOR TUBE RUPTURE EVENT
REV. 10 5/11**



REV. OL-16
5/80

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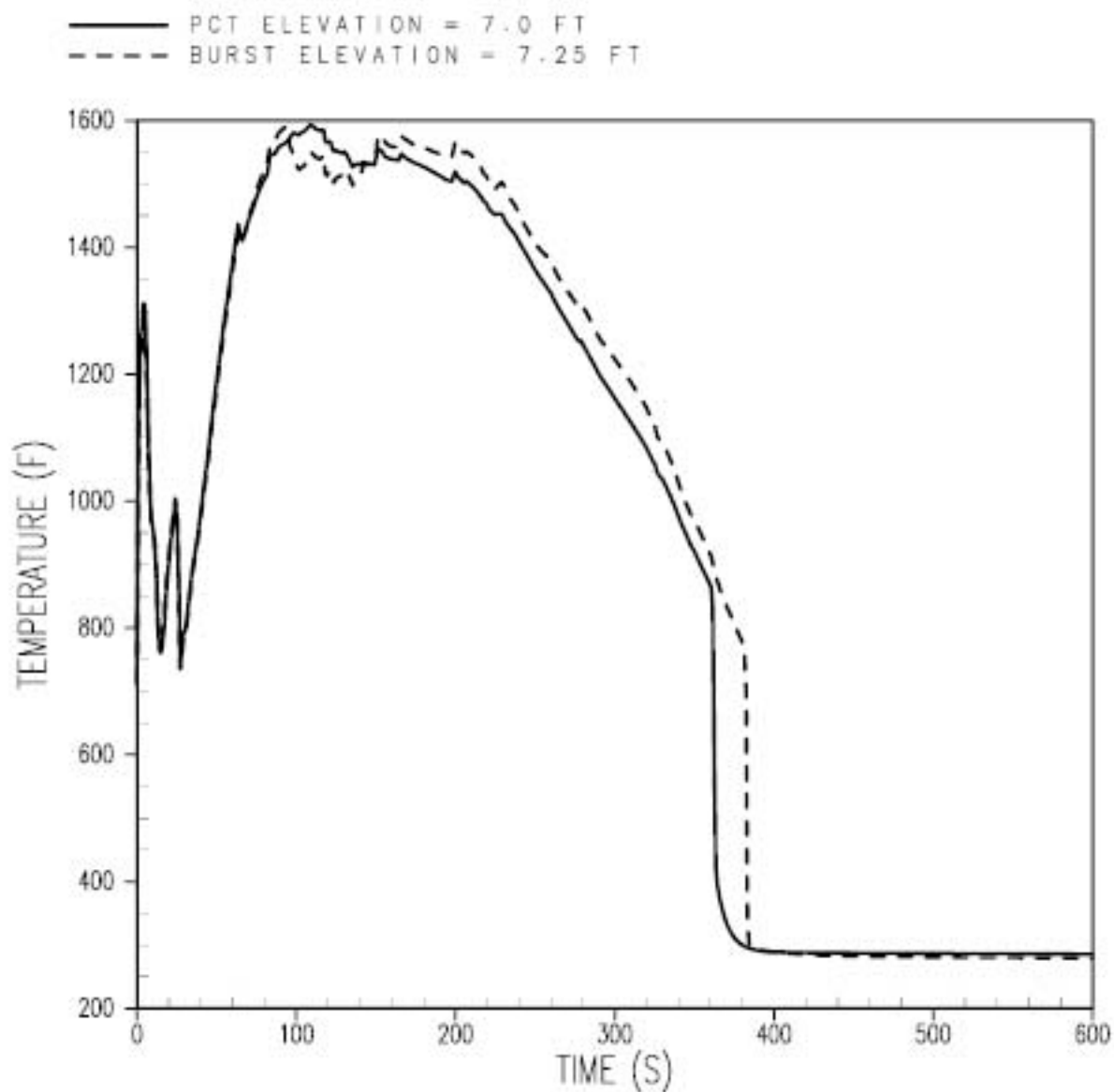
FIGURE 16.6-4

SEQUENCE OF EVENTS FOR
LARGE BREAK LOCA ANALYSIS

Figure 15.6-4A Deleted

Figure 15.6-4B Deleted

Figure 15.6-5 Deleted

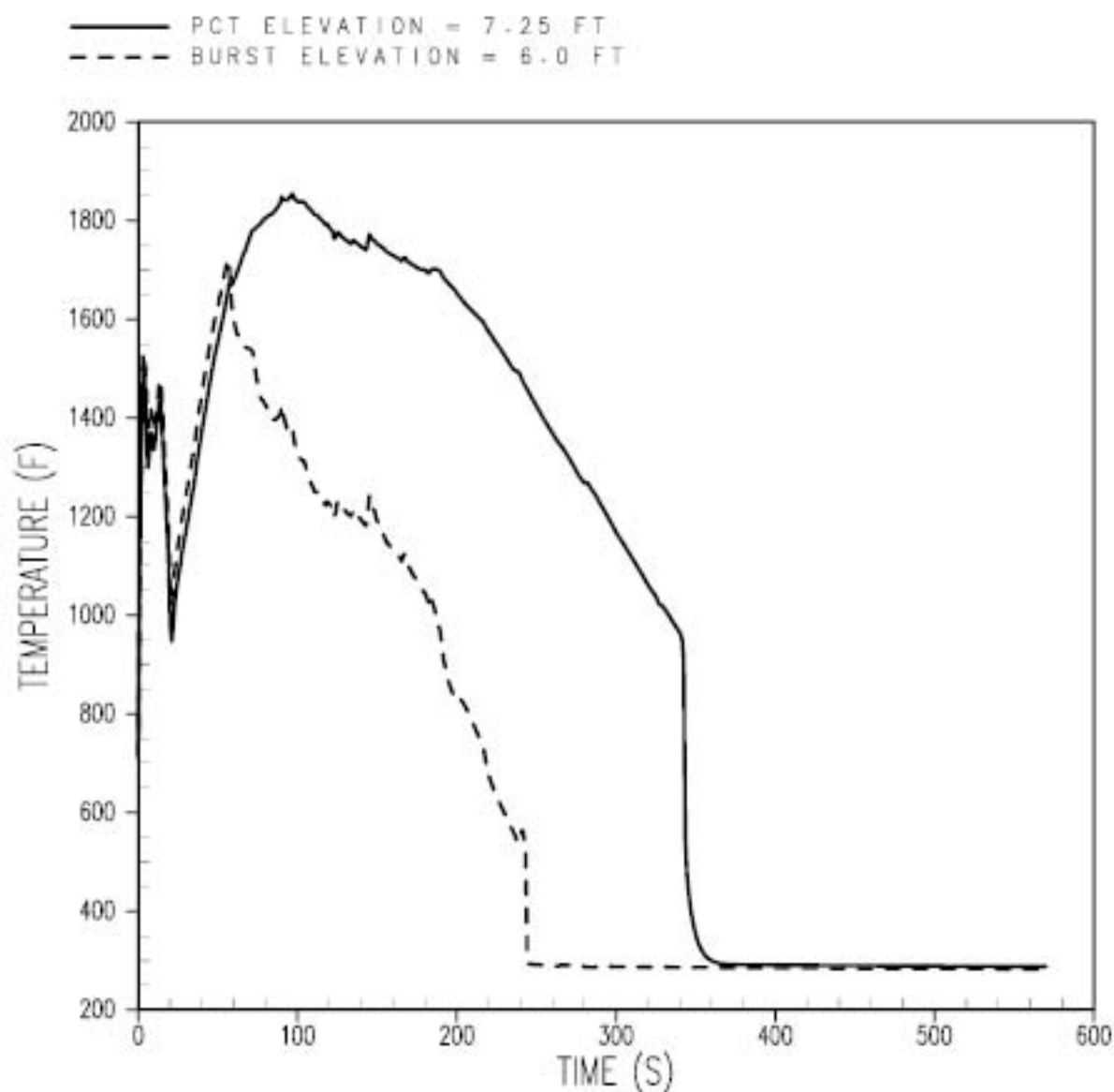


REV. OL-16
 5/88

CALLAWAY PLANT

FIGURE 15.5-5A

CLADDING TEMPERATURE AT PCT AND
 BURST ELEVATIONS ($C_p=0.4$, LOW T
 MIN SI, COSINE POWER SHAPE, NON-PEA

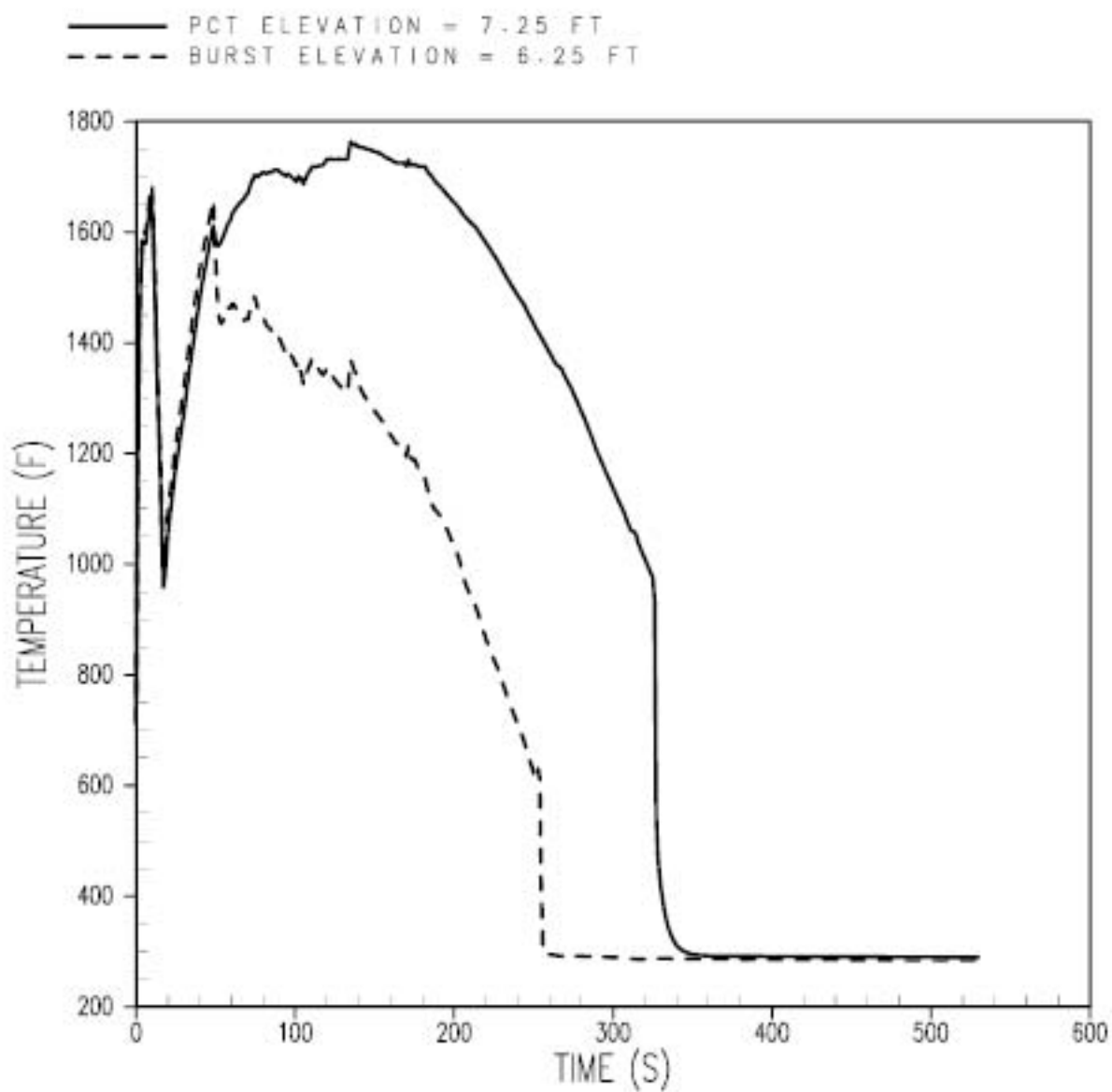


REV. OL-16
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CALLAWAY PLANT

FIGURE 16.6-6B

CLADDING TEMPERATURE AT PCT AND
BURST ELEVATIONS ($C_p=0.8$, LOW T
MIN SI, COSINE POWER SHAPE, NON-IFEA

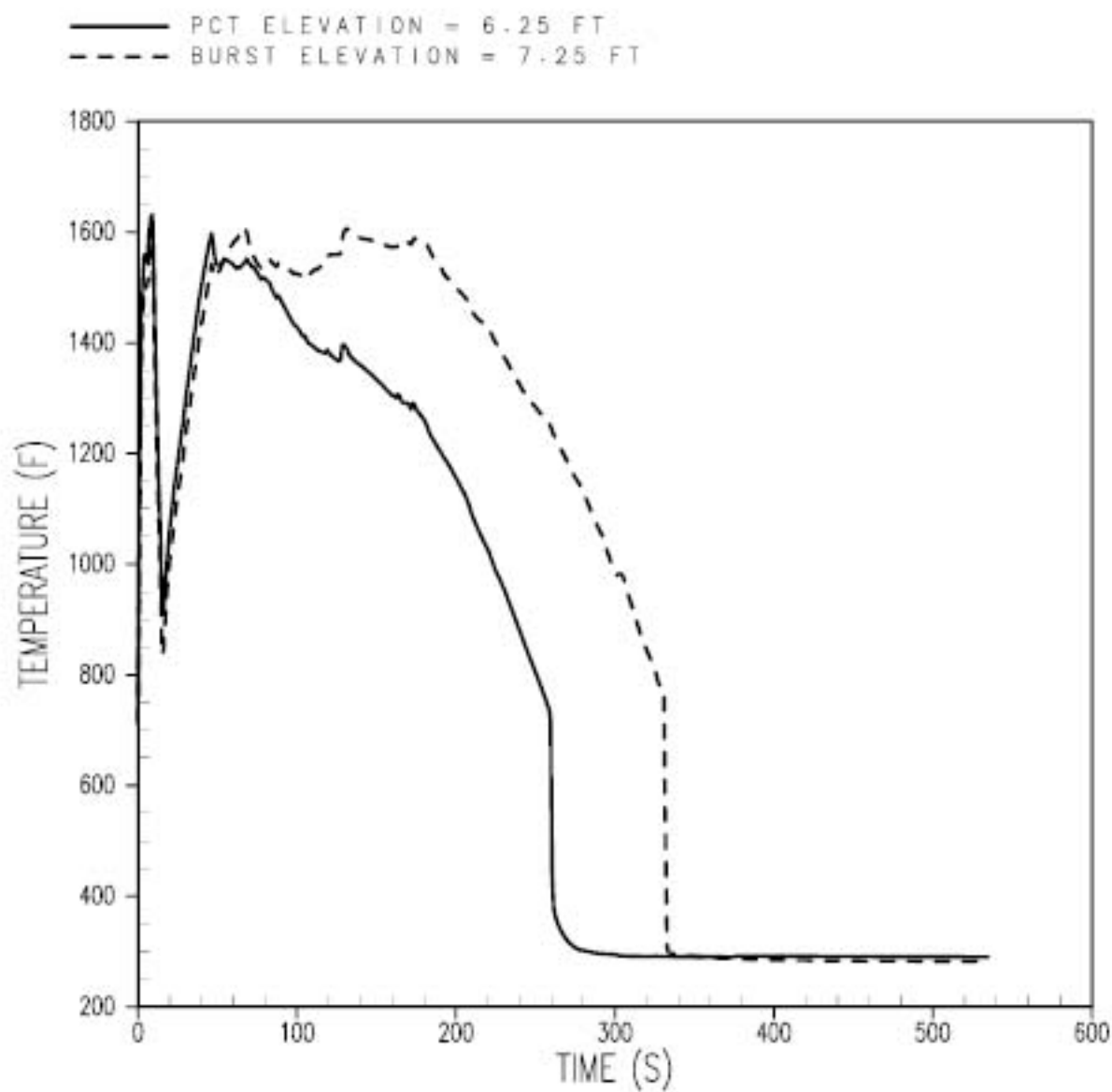


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 5/88

CALLAWAY PLANT

FIGURE 15.5-5C

CLADDING TEMPERATURE AT PCT AND
 BURST ELEVATIONS ($C_0=0.8$, LOW T
 MIN SI, COSINE POWER SHAPE, NON-IFEA)

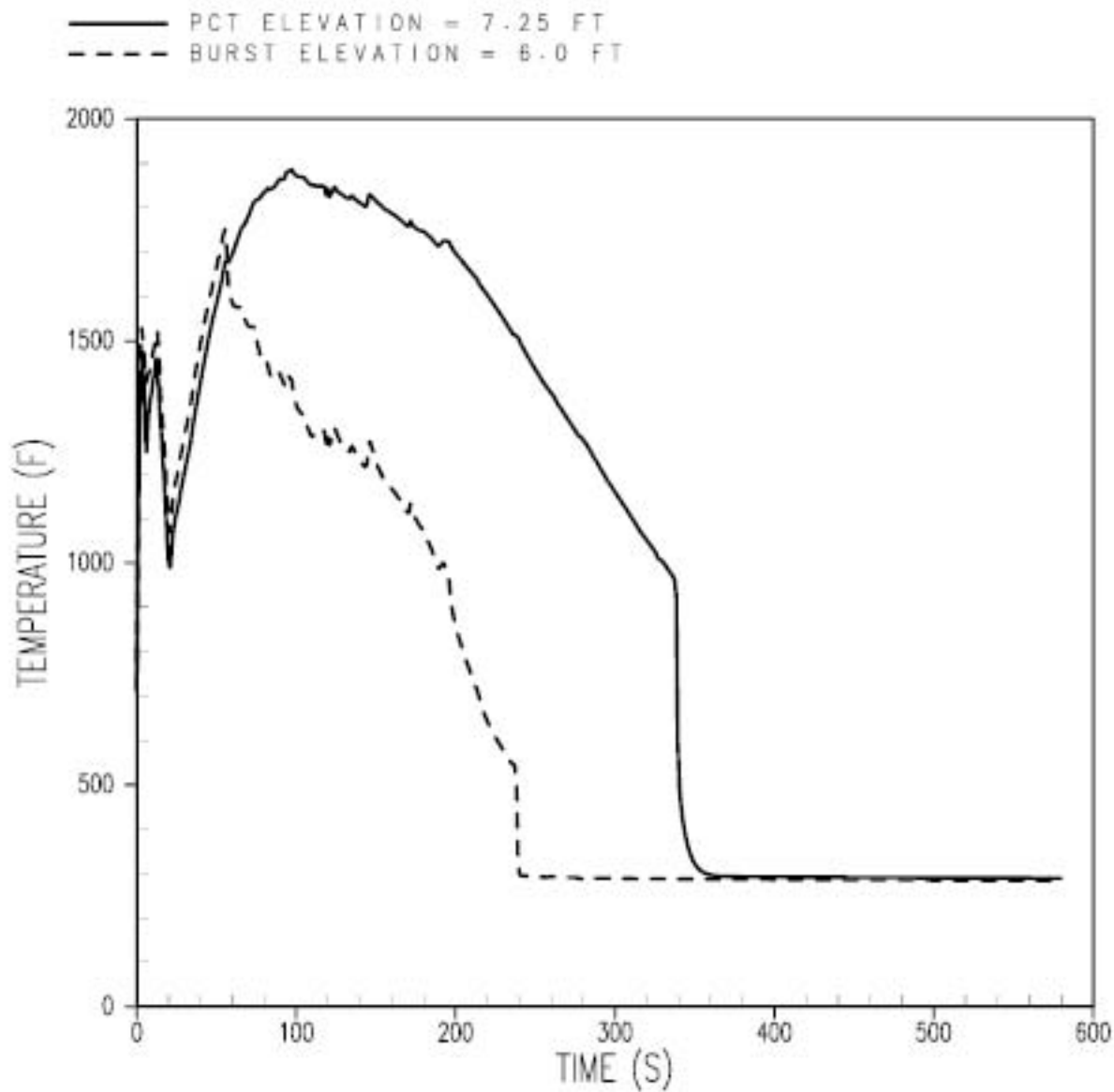


REV. OL-16
 5/88

CALLAWAY PLANT

FIGURE 16.8-6D

CLADDING TEMPERATURE AT PCT AND
 BURST ELEVATIONS ($C_D=1.0$, LOW T
 MIN SI, COSINE POWER SHAPE, NON-IFEA)

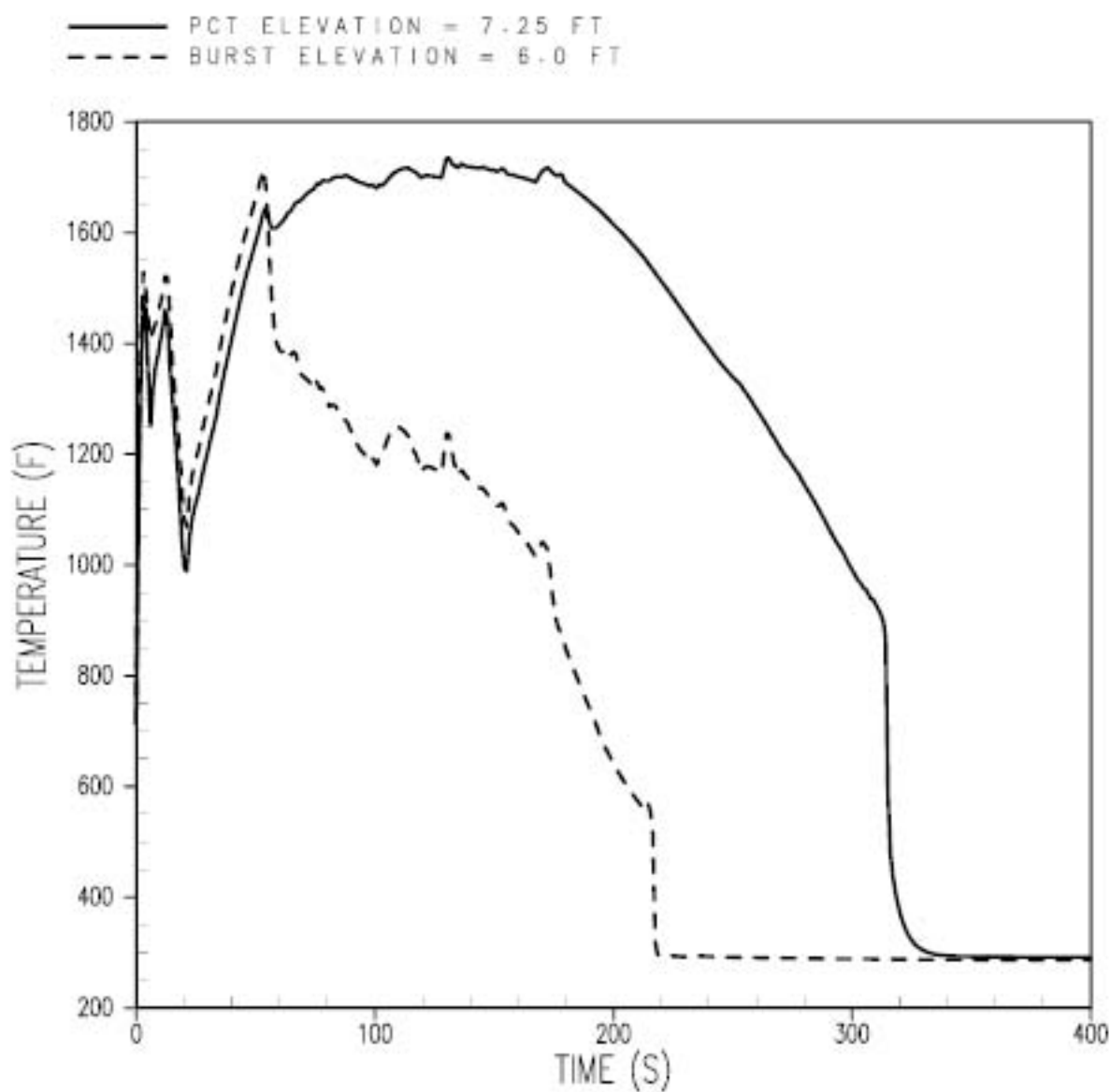


REV. OL-16
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CALLAWAY PLANT

FIGURE 15.8-5E

CLADDING TEMPERATURE AT PCT AND
 BURST ELEVATIONS ($C_p=0.8$, HIGH T
 MAX SL, COSINE POWER SHAPE, NON-FFA)

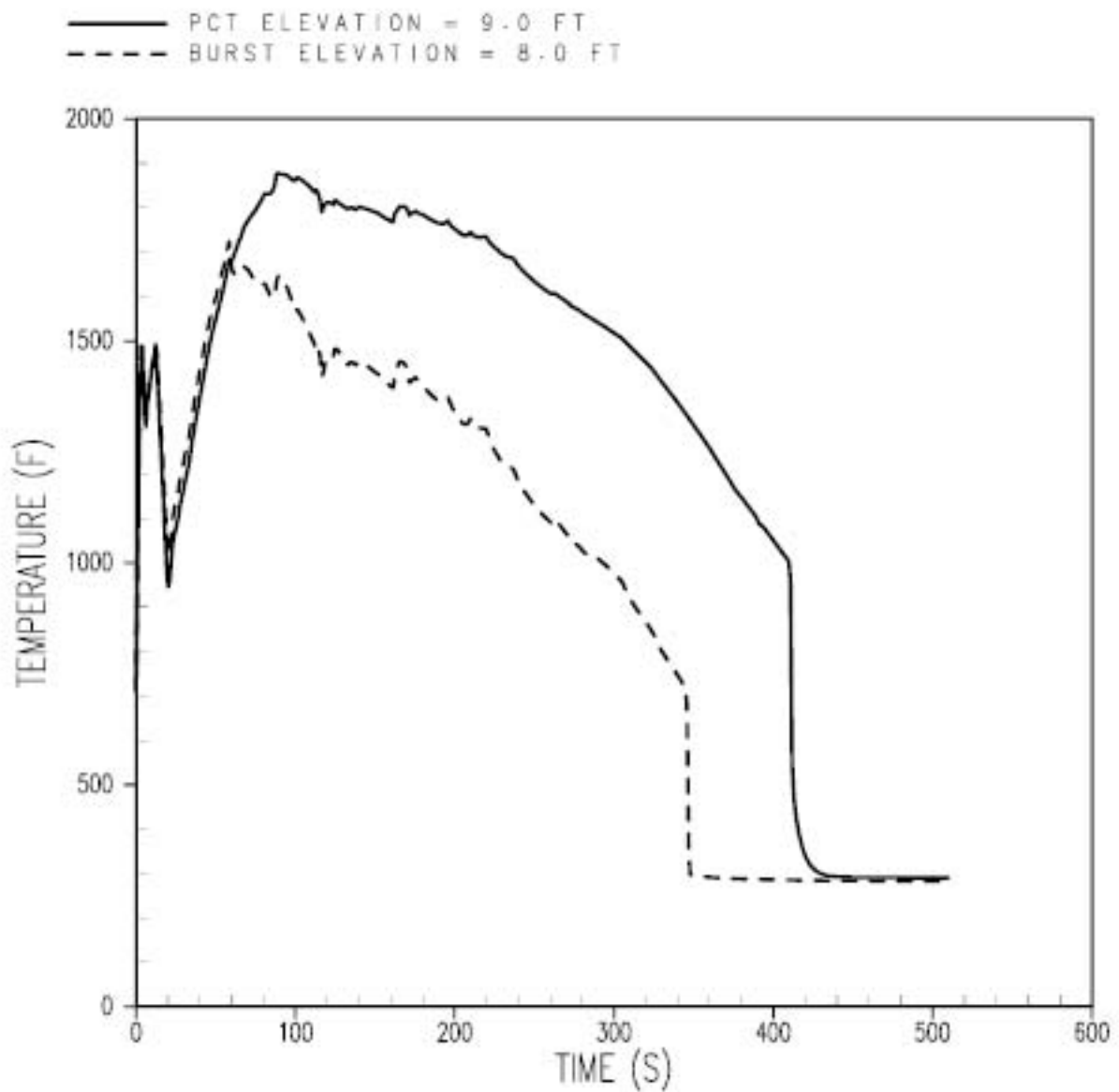


REV. OL-16
 5/88

CALLAWAY PLANT

FIGURE 15.8-5F

CLADDING TEMPERATURE AT PCT AND
 BURST ELEVATION ($C_D=0.6$, HIGH T
 MAX SI, COSINE POWER SHAPE, NON-FBA)

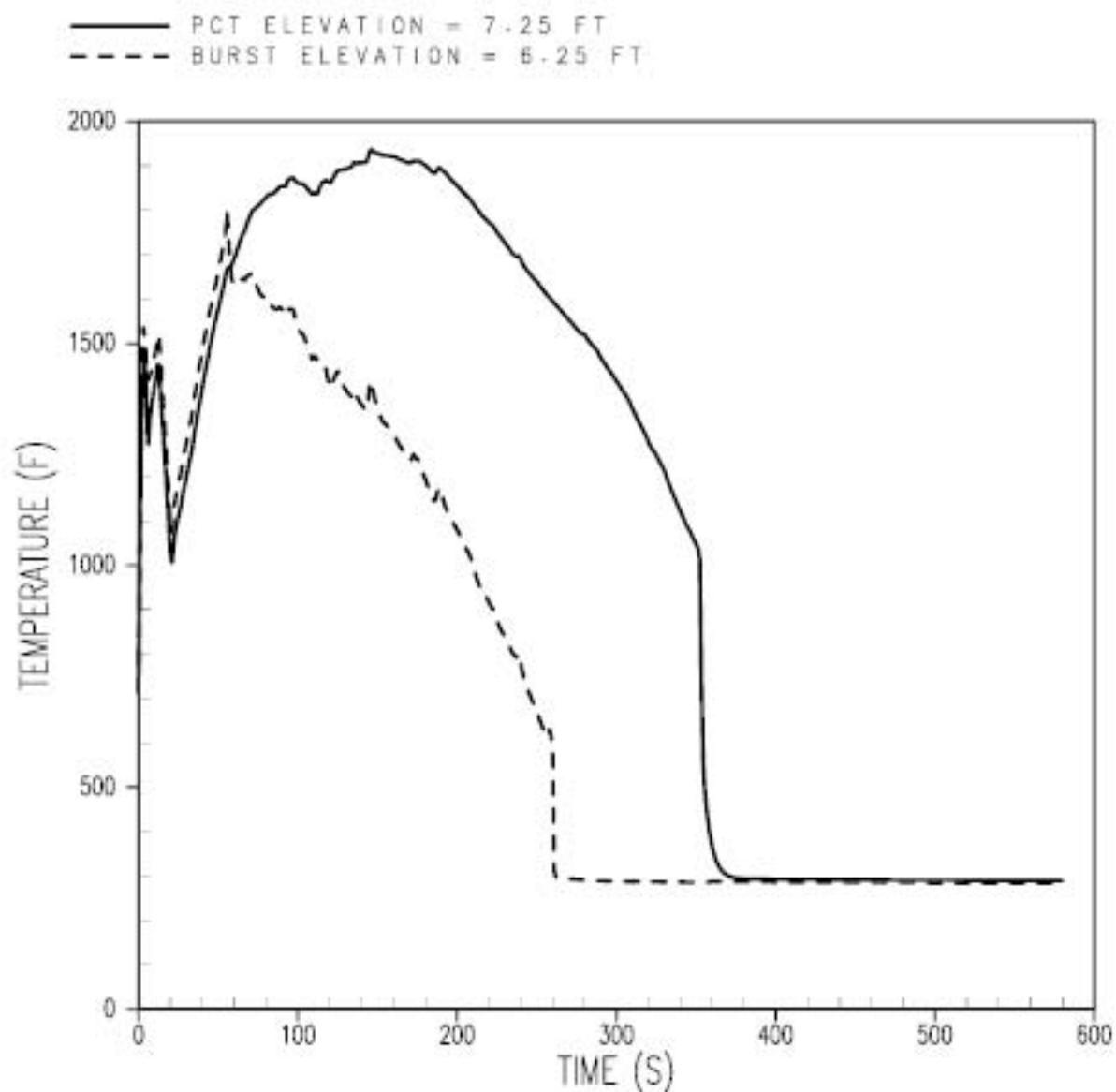


REV. OL-16
 5/88

CALLAWAY PLANT

FIGURE 16.6-60

CLADDING TEMPERATURE AT PCT AND
 BURST ELEVATIONS (C₀ = 0.6, HIGH T₀
 MIN SH, 8.5' POWER SHAPE, NON-IFBA)



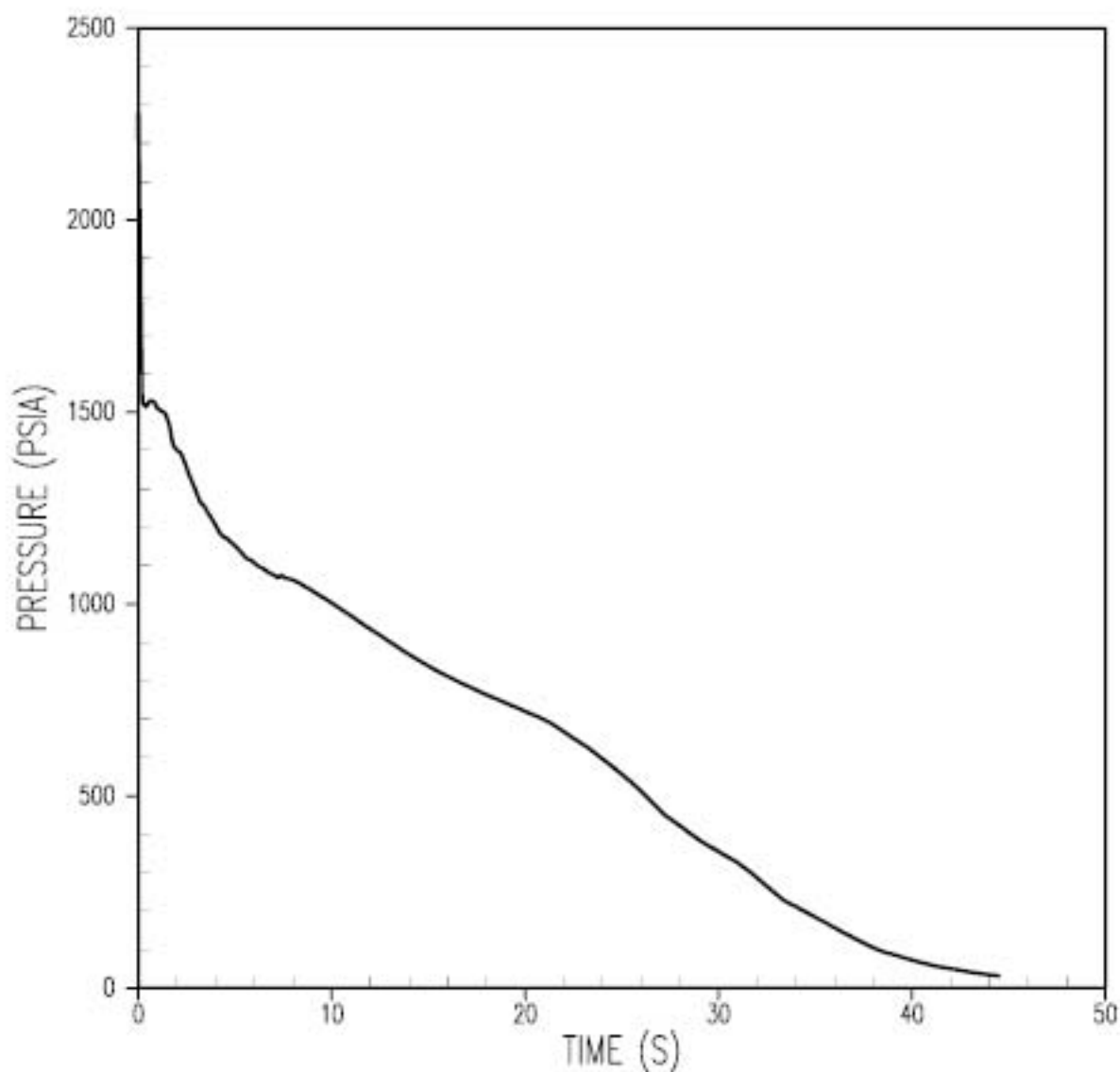
REV. OL-16
 5/88

CALLAWAY PLANT

FIGURE 16.8-6H

CLADDING TEMPERATURE AT PCT AND
 BURST ELEVATIONS ($C_p=0.8$, HIGH T
 MIN SI, COSINE POWER SHAPE, IFBA)

Figure 15.6-6 Deleted

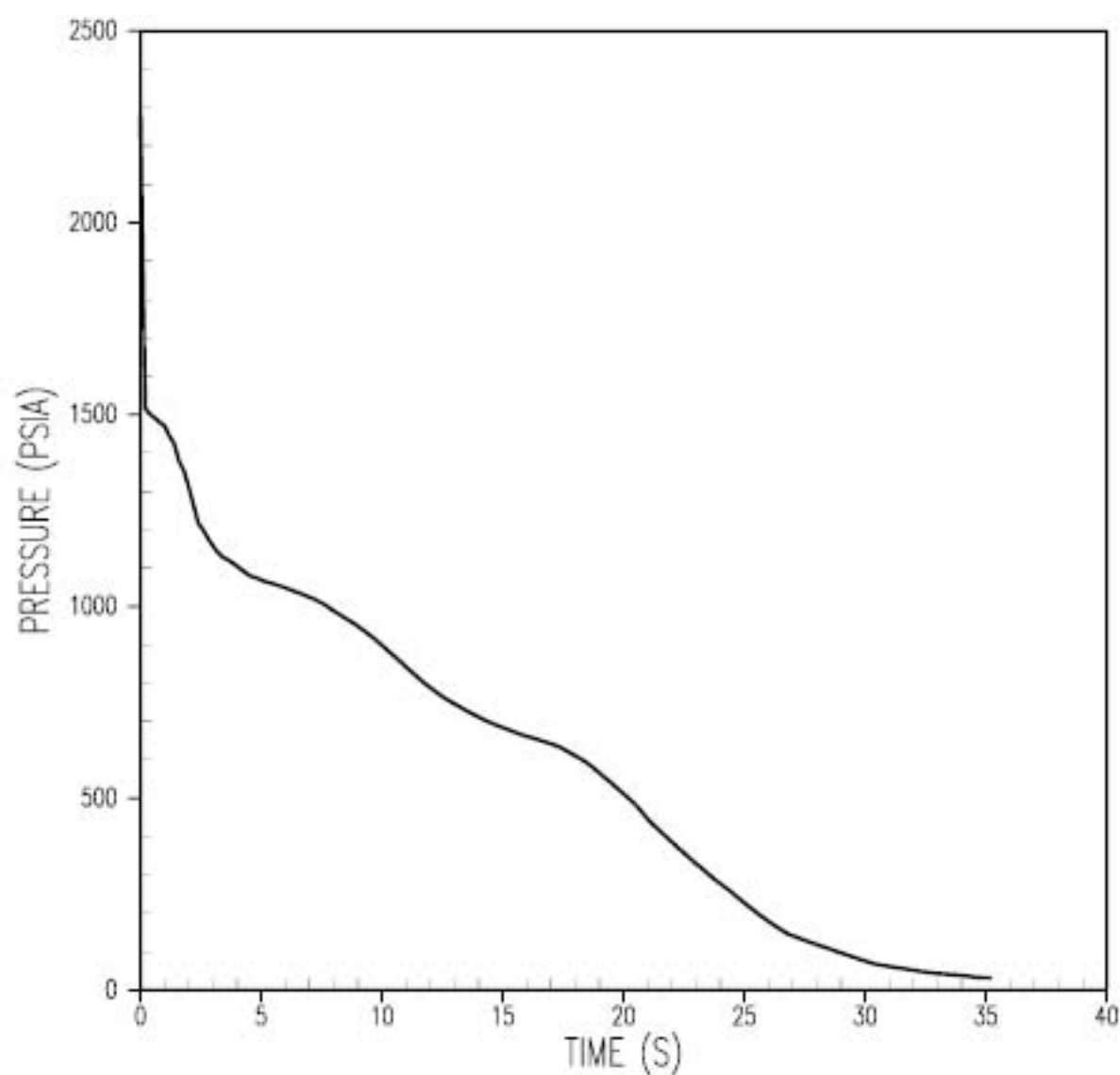


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CALLAWAY PLANT

FIGURE 16.8-6A

CORE PRESSURE DURING BLOWDOWN
($C_D=0.4$, LOW T_{in} , MIN SI, COSINE
POWER SHAPE, NON-IFBA)

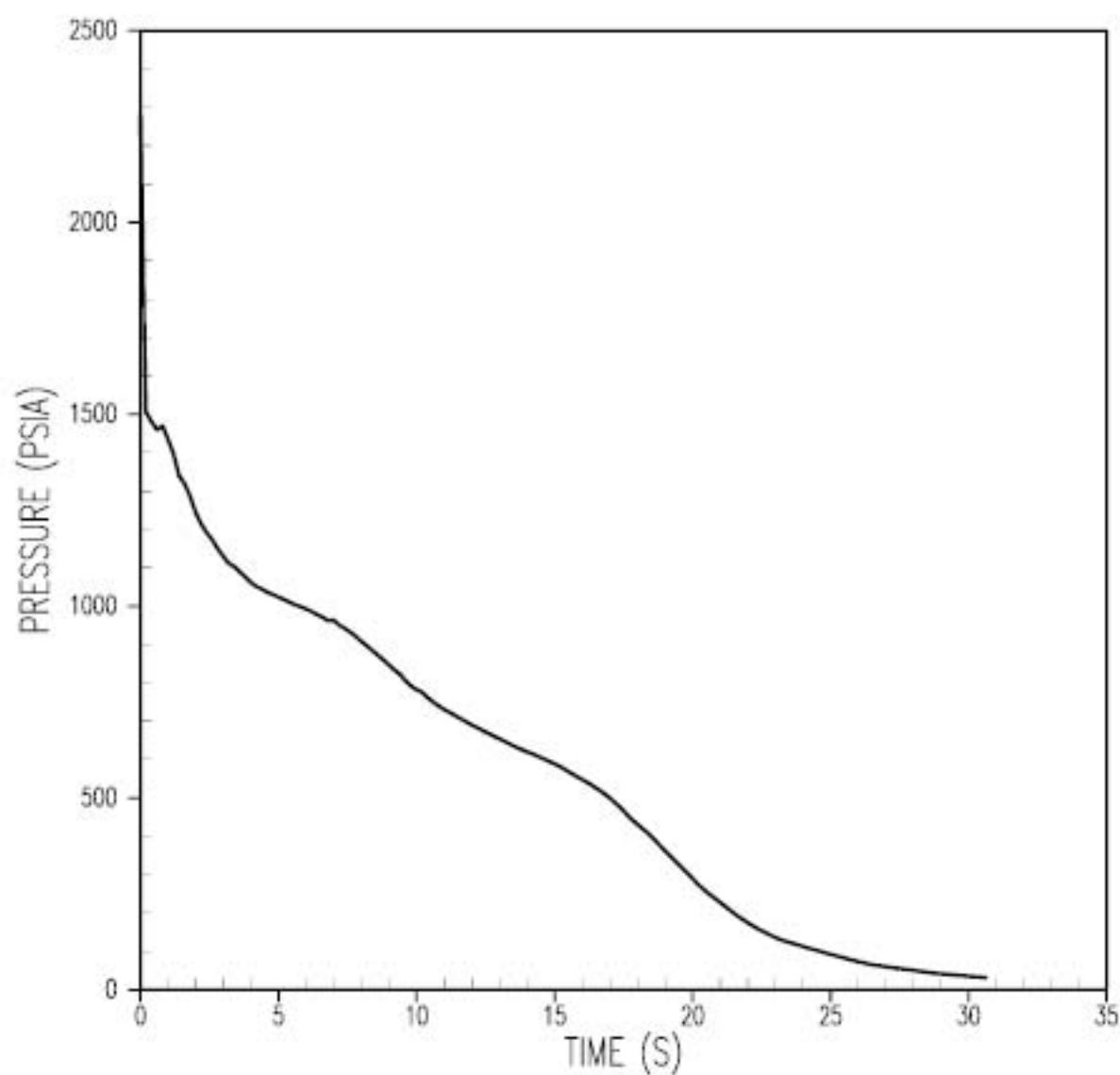


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FIGURE 16.6-8B

CORE PRESSURE DURING BLOWDOWN
($C_D = 0.6$, LOW T_{in} , MIN SI, COSINE
POWER SHAPE, NON-IFBA)

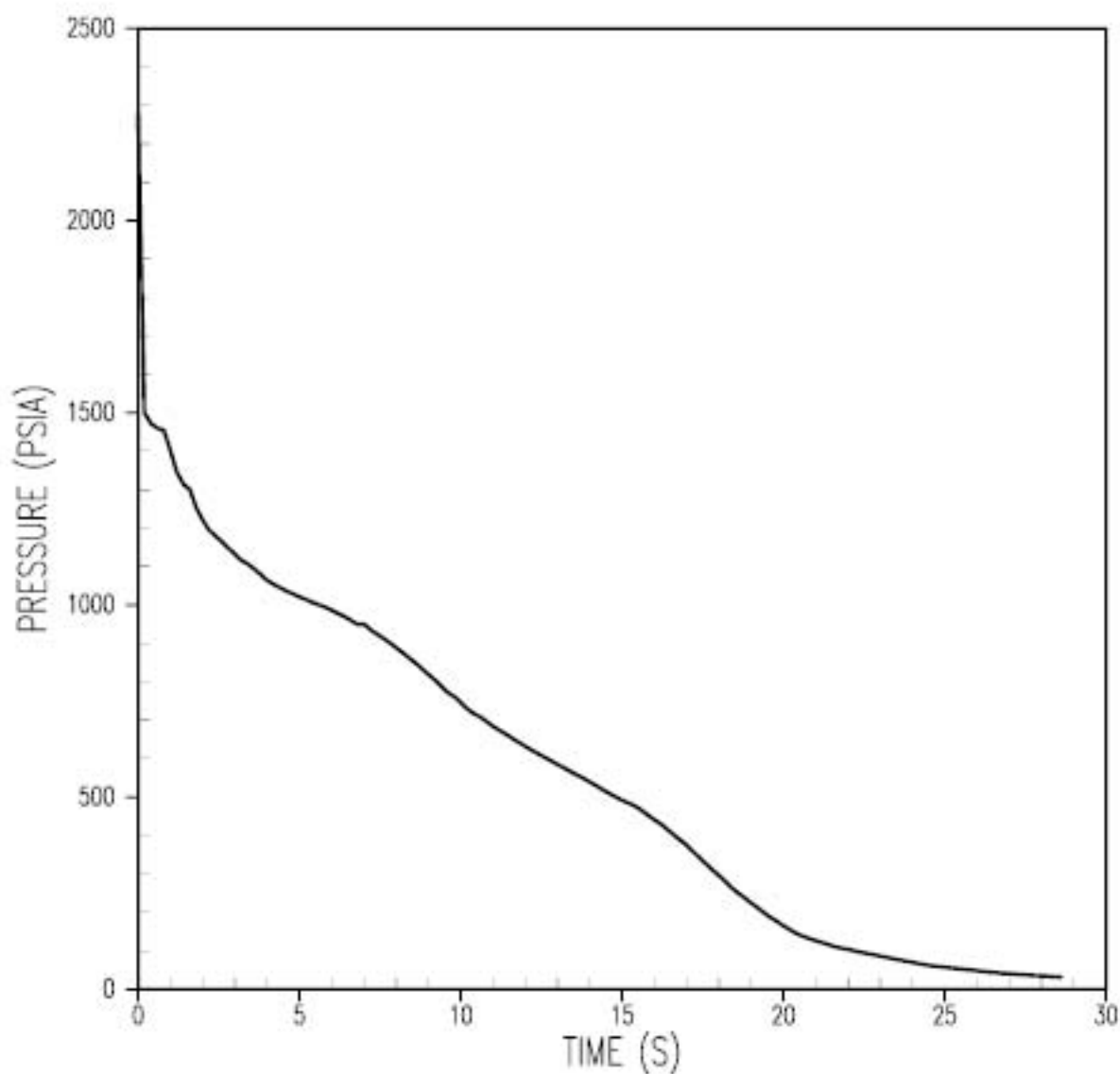


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FIGURE 15.8-8C

CORE PRESSURE DURING BLOWDOWN
($C_D=0.8$, LOW T_{in} , MIN SI, COSINE
POWER SHAPE, NON-IFBA)

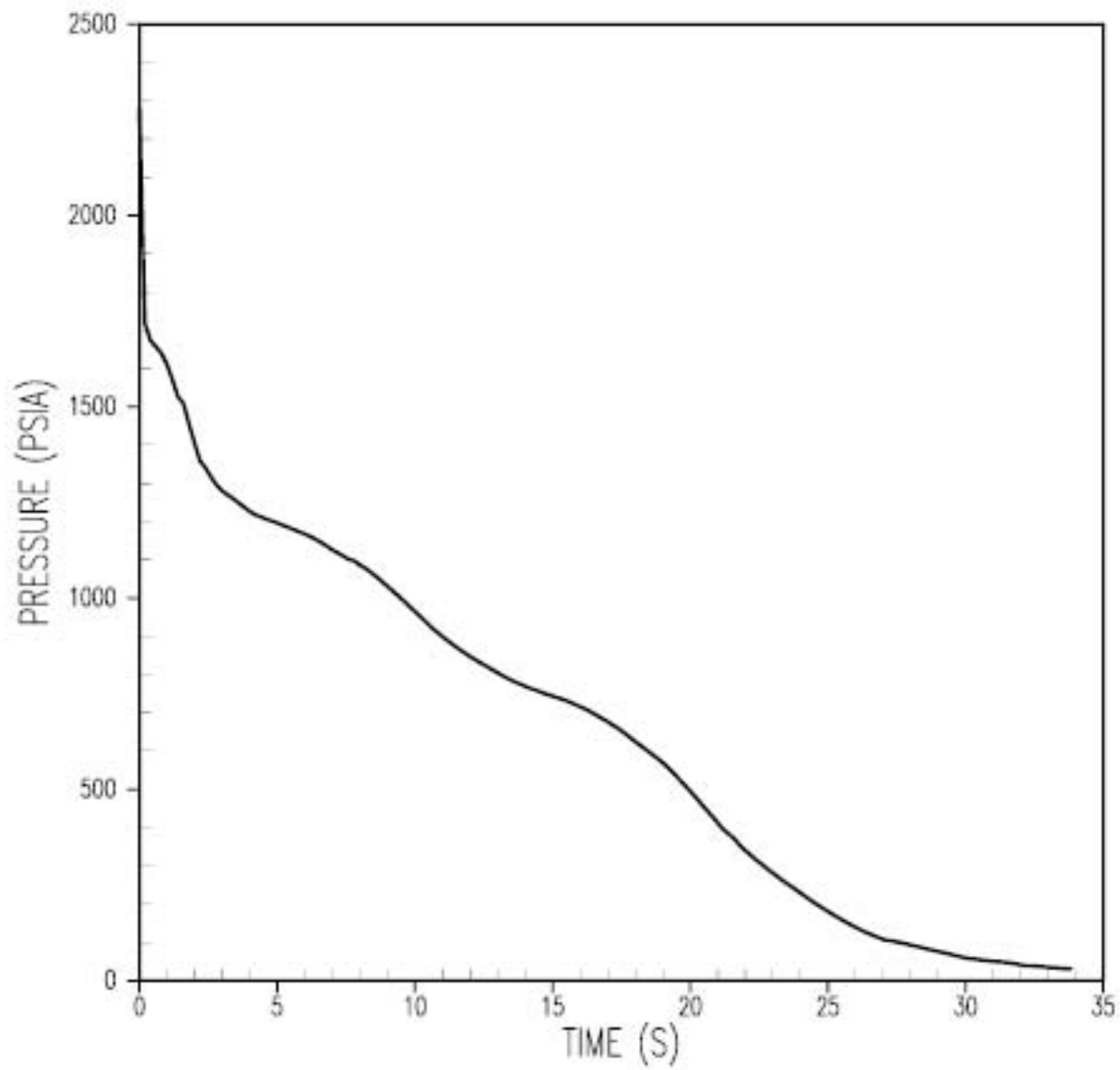


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FIGURE 16.6-8D

CORE PRESSURE DURING BLOWDOWN
($C_D=1.8$, LOW T_{in} , MIN 81, COSINE
POWER SHAPE, NON-IFBA)

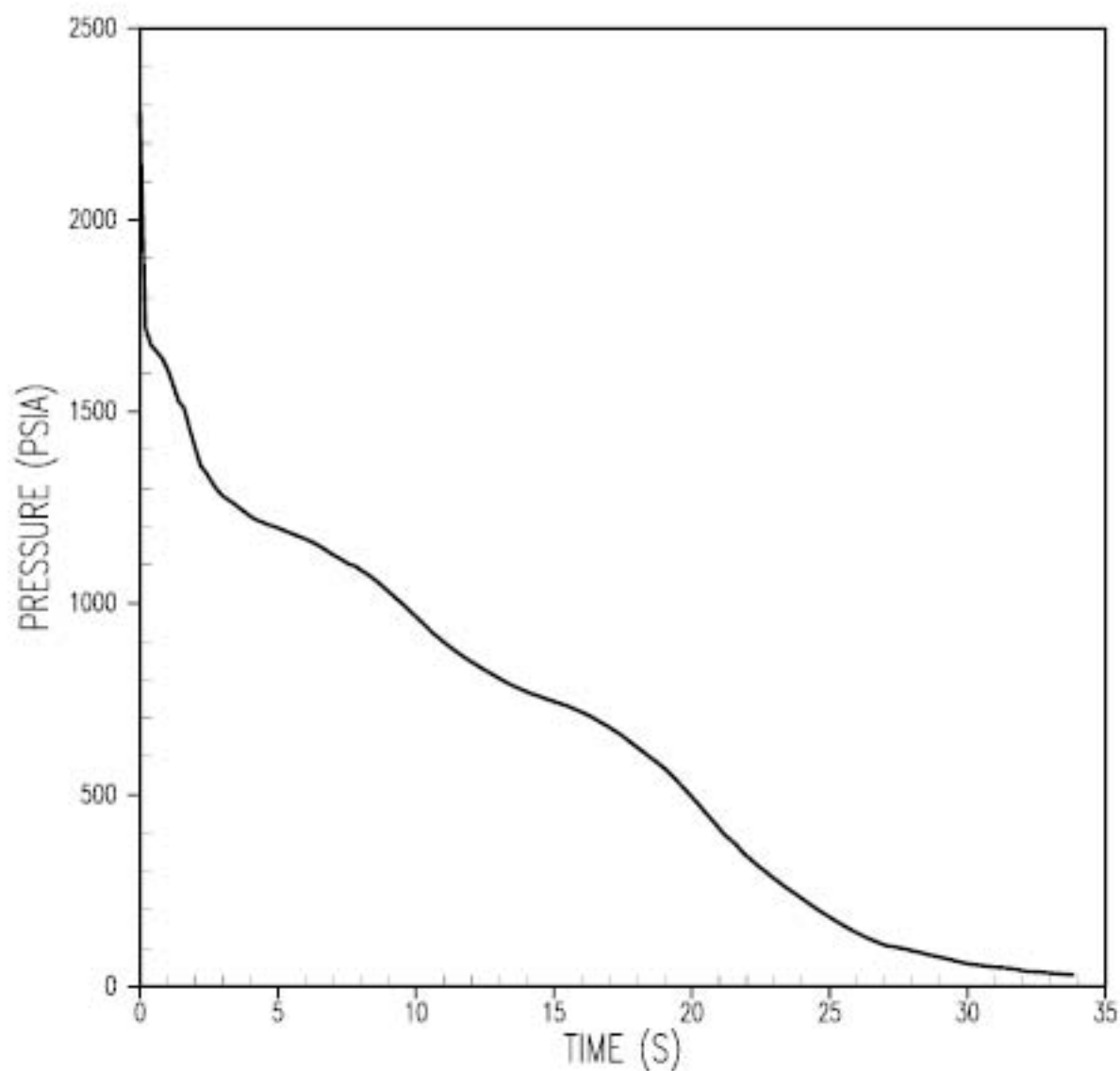


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FIGURE 15.5-8E

CORE PRESSURE DURING BLOWDOWN
($C_D = 0.6$, HIGH T_{in} , MIN 81, COBBE
POWER SHAPE, NON-IFBA)

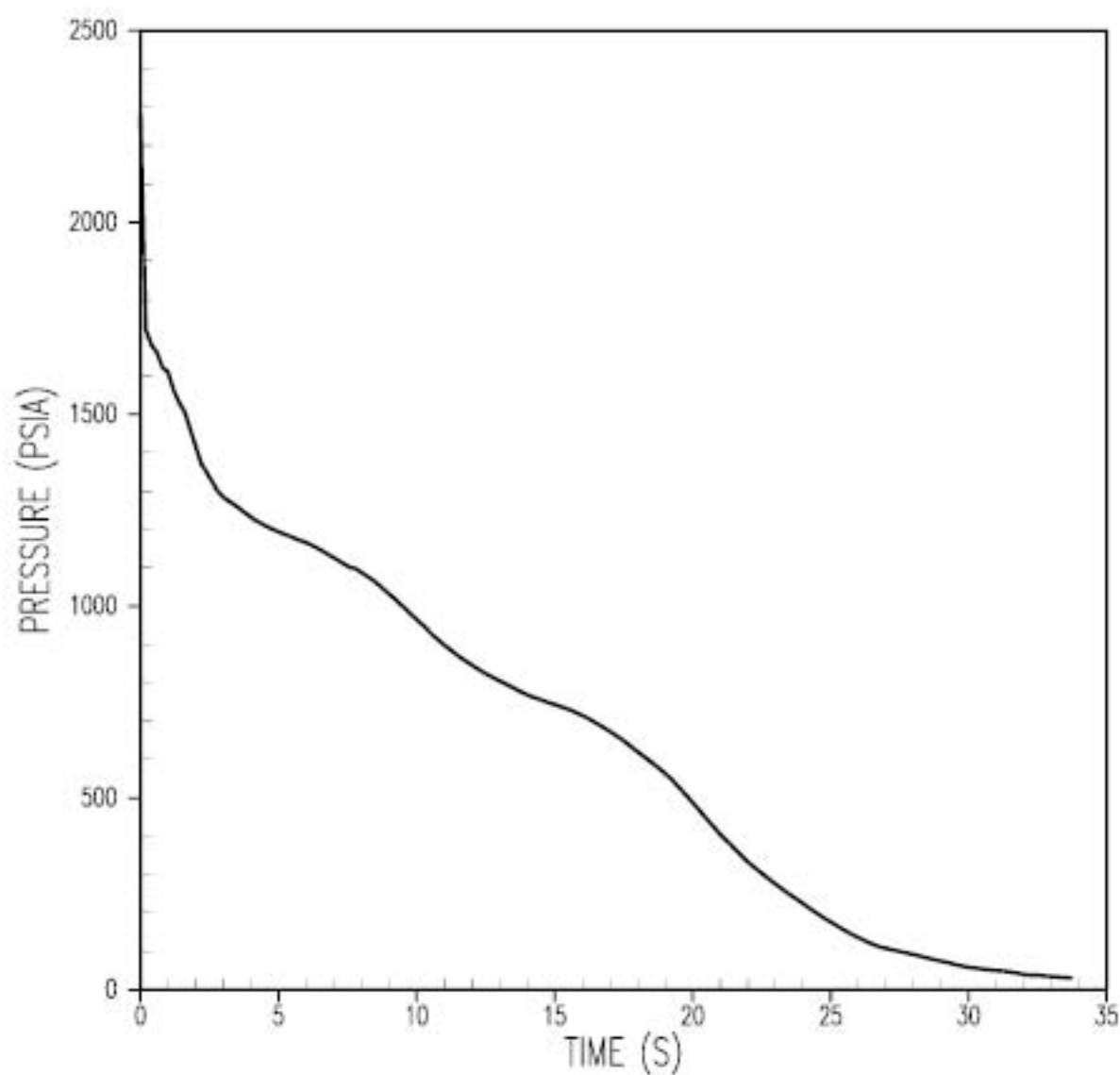


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CALLAWAY PLANT

FIGURE 15.5-8F

CORE PRESSURE DURING BLOWDOWN
($C_D=0.8$, HIGH T_{avg} , MAX BI, COSINE
POWER SHAPE, NON-IFBA)

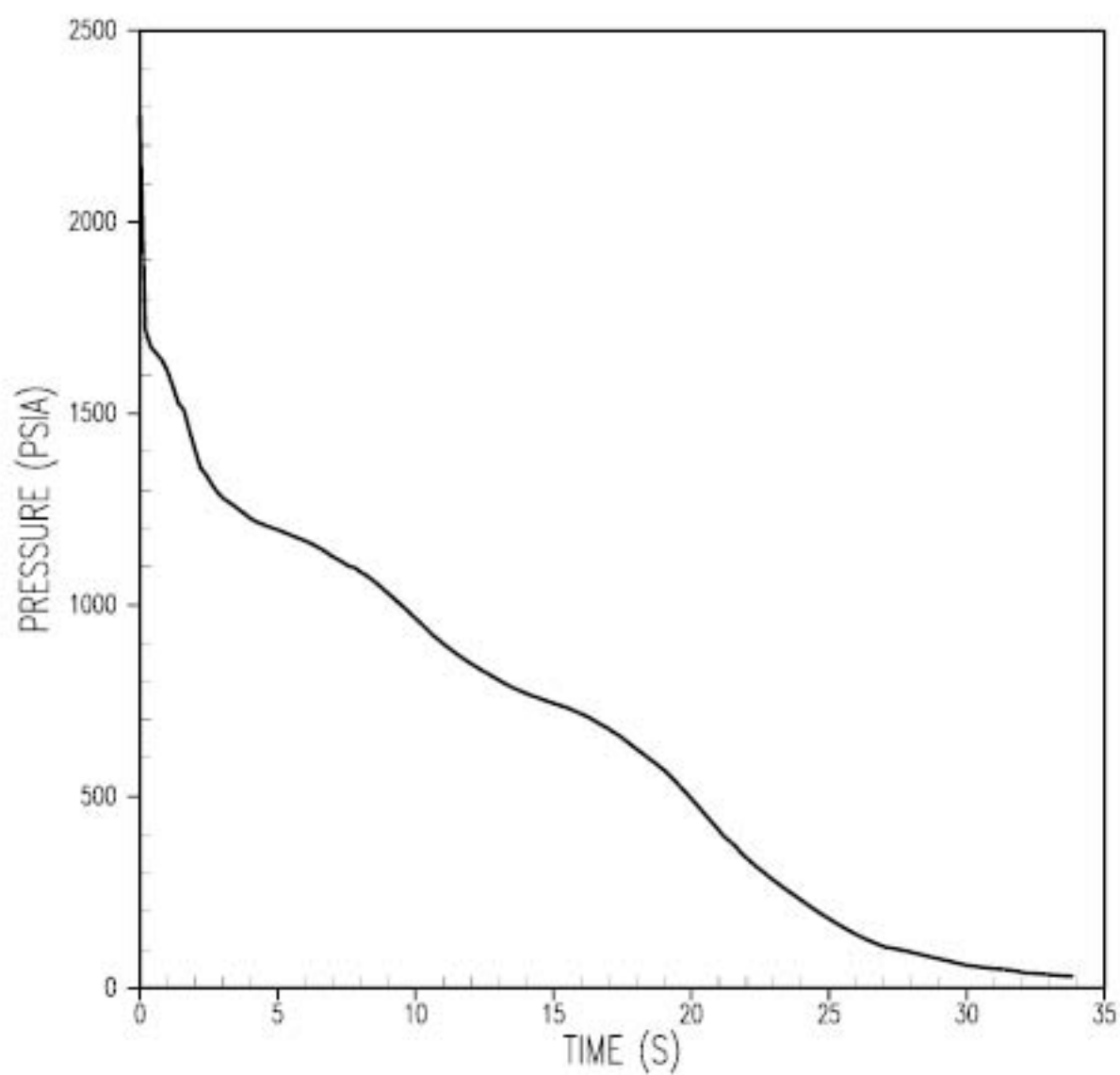


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FIGURE 15.5-5G

CORE PRESSURE DURING BLOWDOWN
($C_D=0.6$, HIGH T_{in} , MIN SI, 8.5" POWER
SHAPE, NON-IFBA)



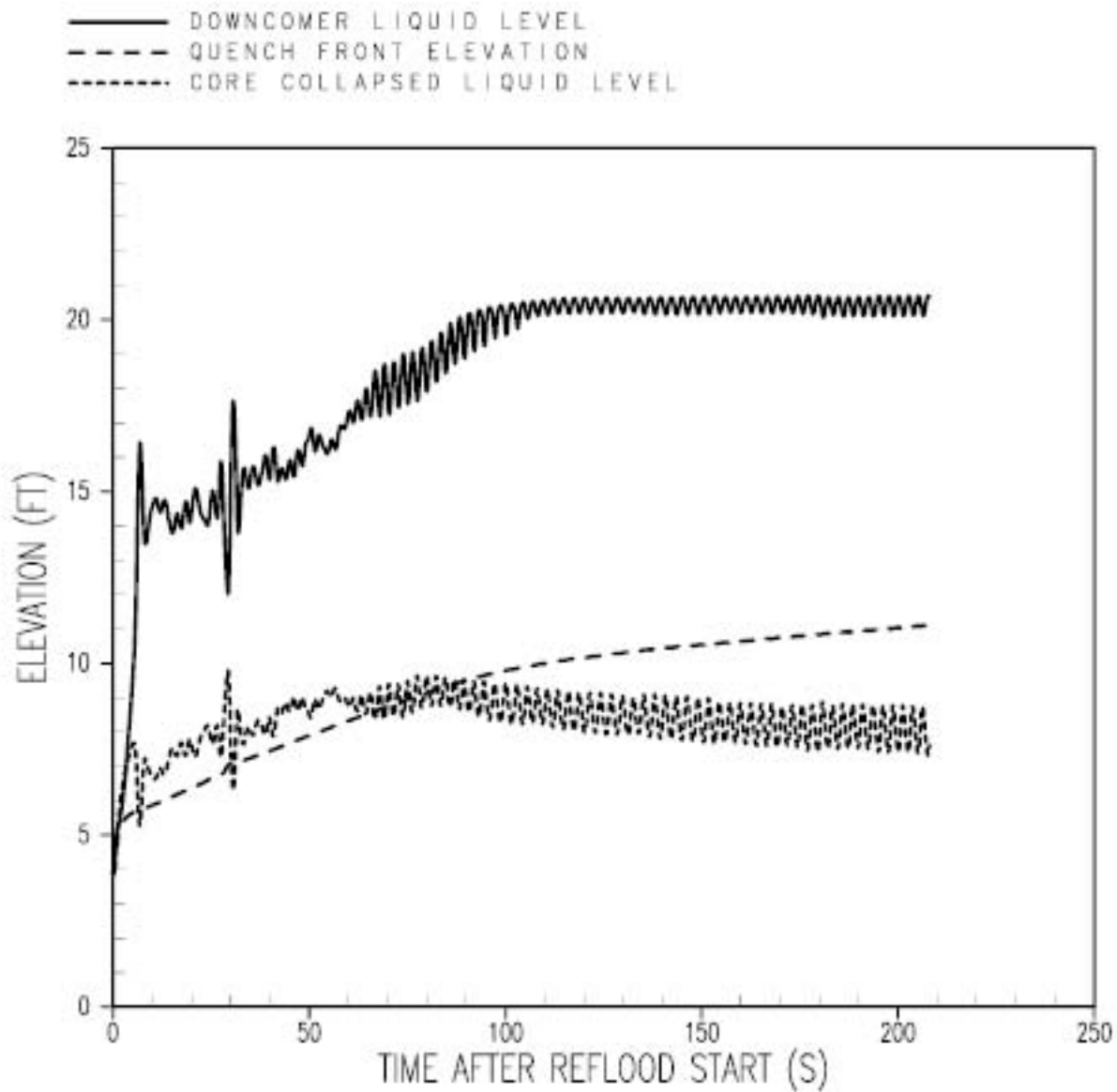
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FIGURE 16.8-6H

CORE PRESSURE DURING BLOWDOWN
($C_D = 0.6$, HIGH T_{in} , MIN SI, COSINE
POWER SHAPE, IFBA)

Figure 15.6-7 Deleted

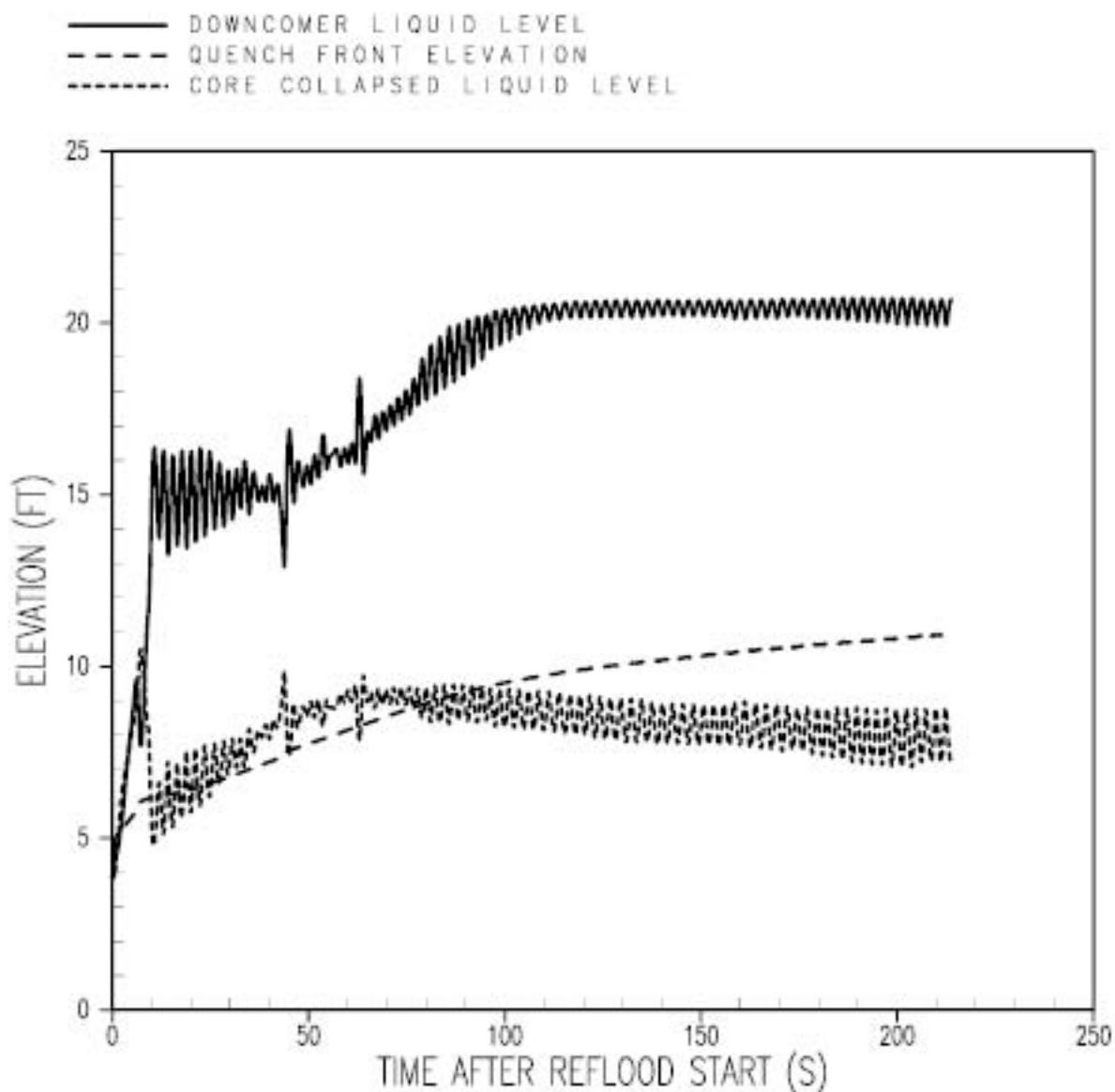


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FIGURE 16.6-7A

VESSEL LIQUID LEVELS DURING REFLOOD
 ($C_D=0.4$, LOW T_{AVG} , MIN SI, COSINE
 POWER SHAPE, NON-IFBA)

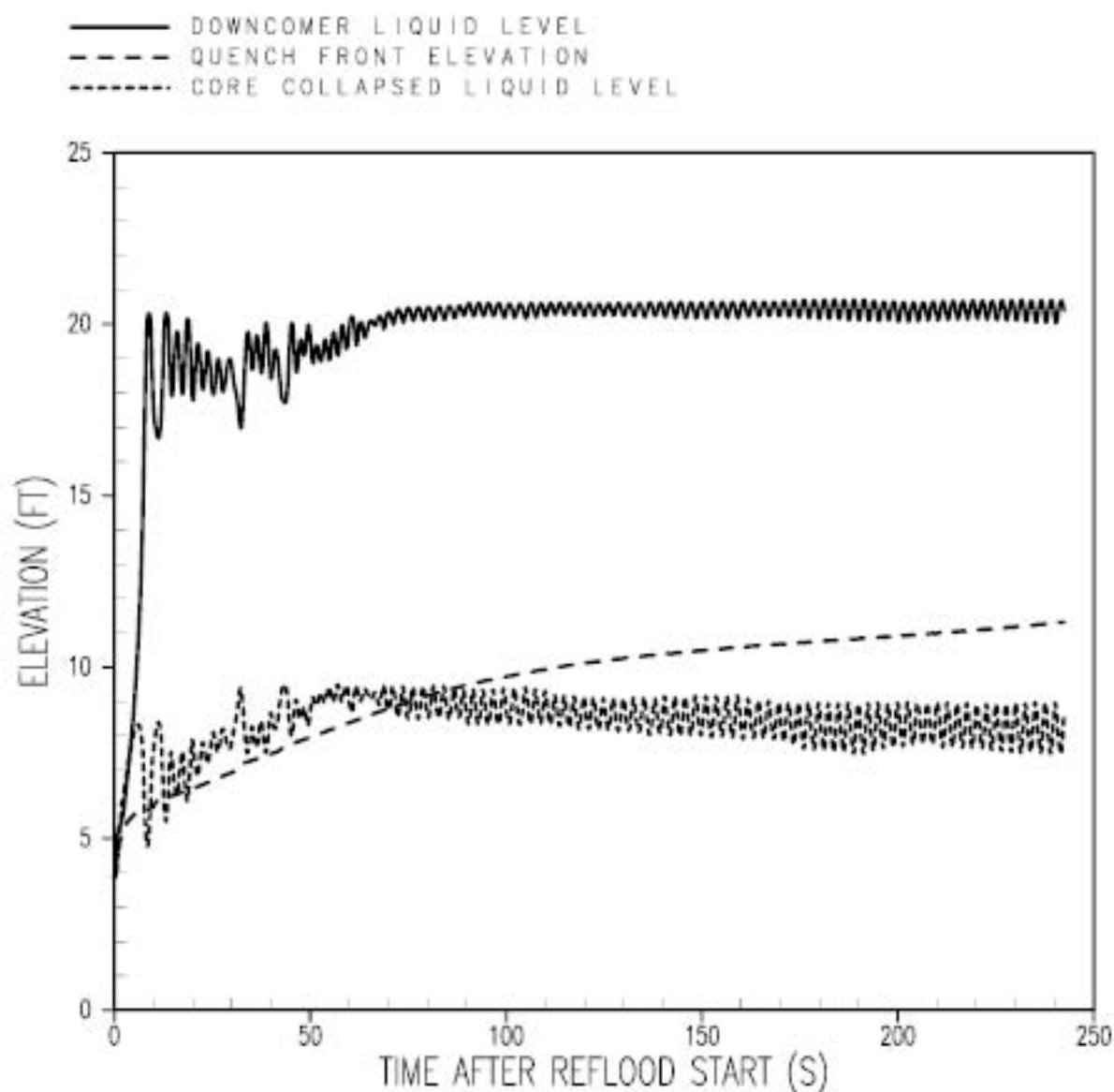


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FIGURE 16.8-7B

VESSEL LIQUID LEVELS DURING REFLOOD
 ($C_D = 0.6$, LOW T_{REF} , MIN SI, COSINE
 POWER SHAPE, ONO-IFBA)

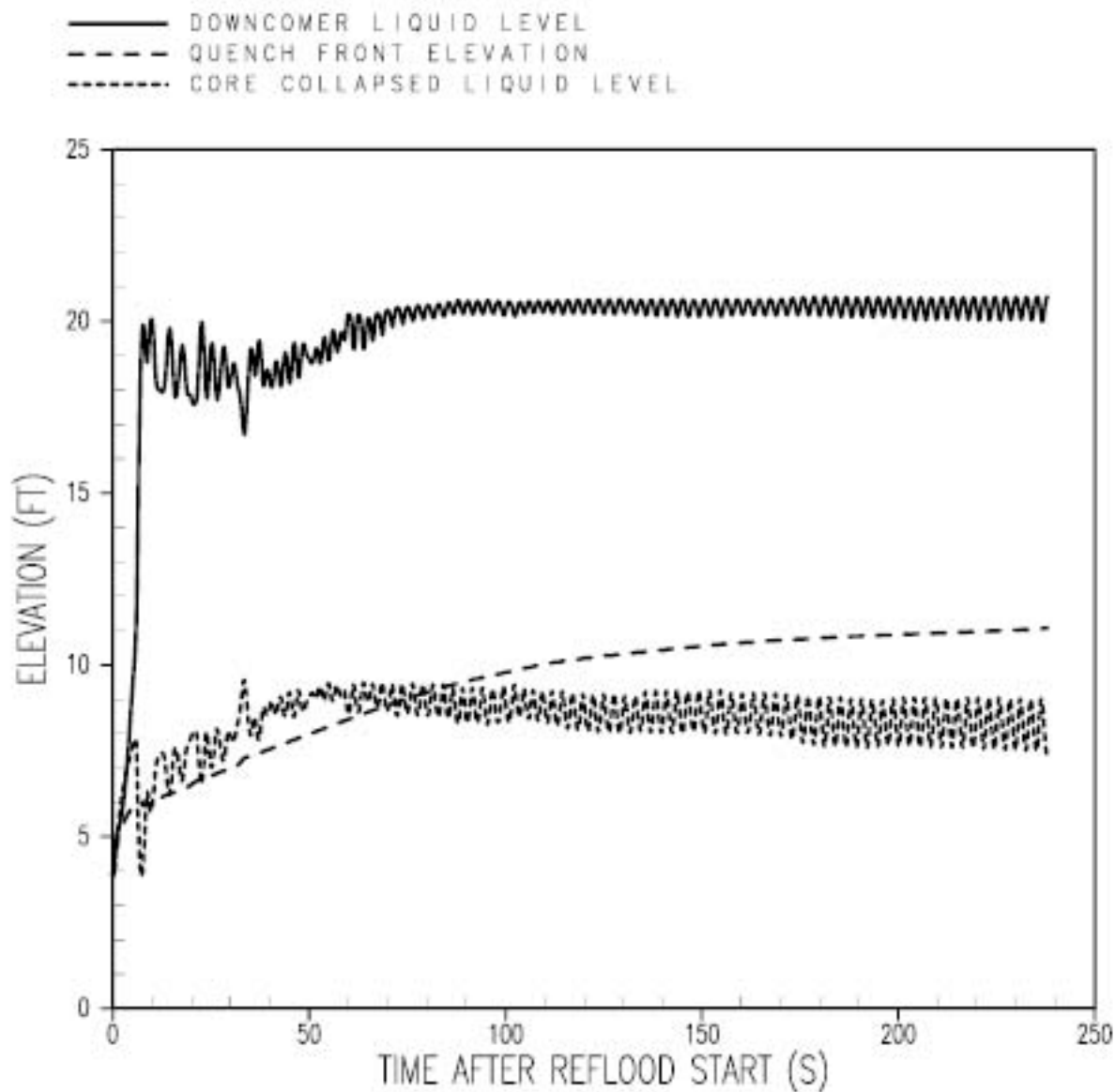


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FIGURE 16.8-7C

VESSEL LIQUID LEVELS DURING REFLOOD
 ($C_D=0.8$, LOW T_{avg} , MIN SI, COSINE
 POWER SHAPE, NON-IFBA)

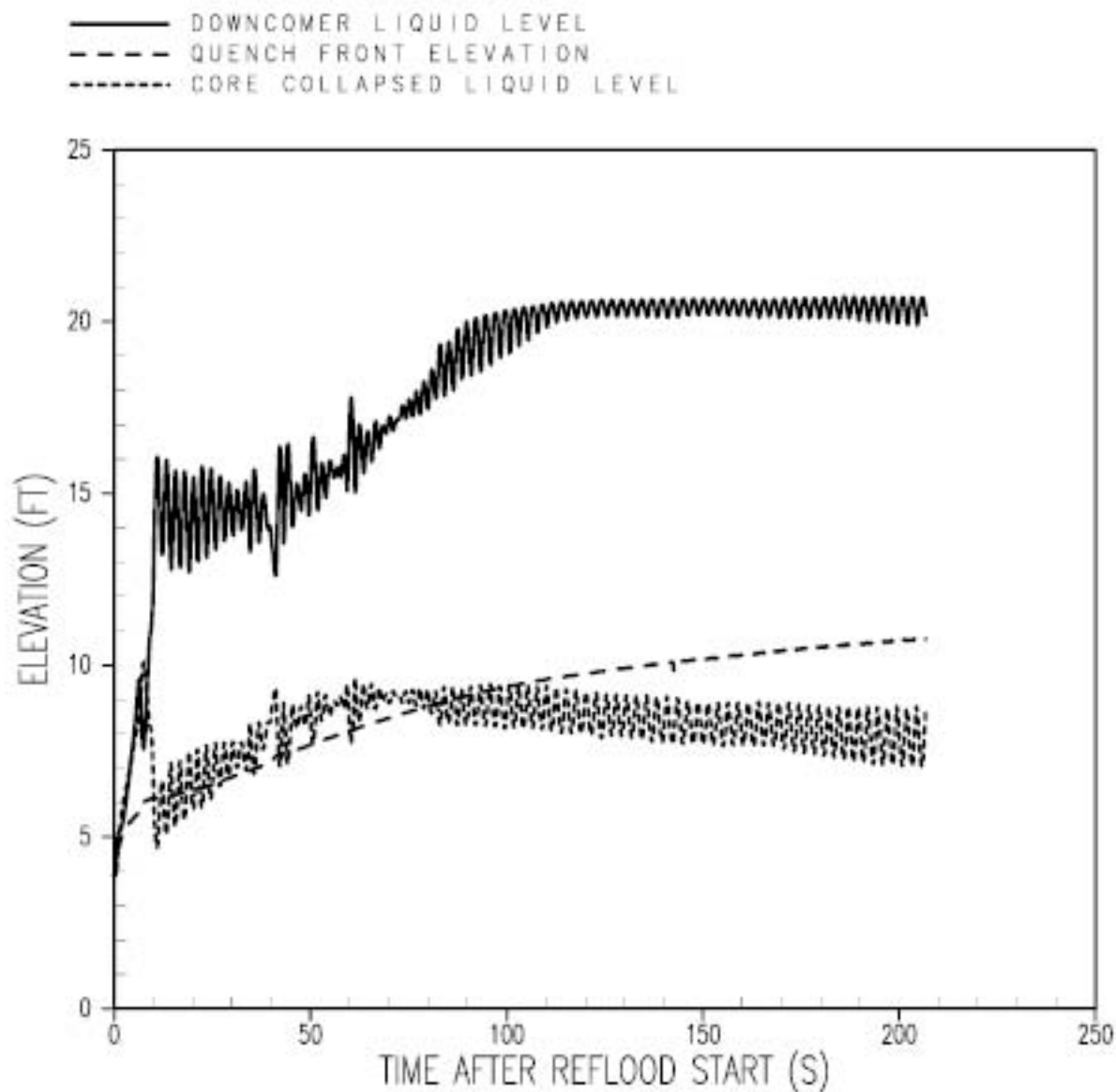


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FIGURE 15.8-7D

VESSEL LIQUID LEVELS DURING REFLOOD
 ($C_D=1.0$, LOW T_{AVG} MIN SI, COSINE
 POWER SHAPE, NON-IFBA)

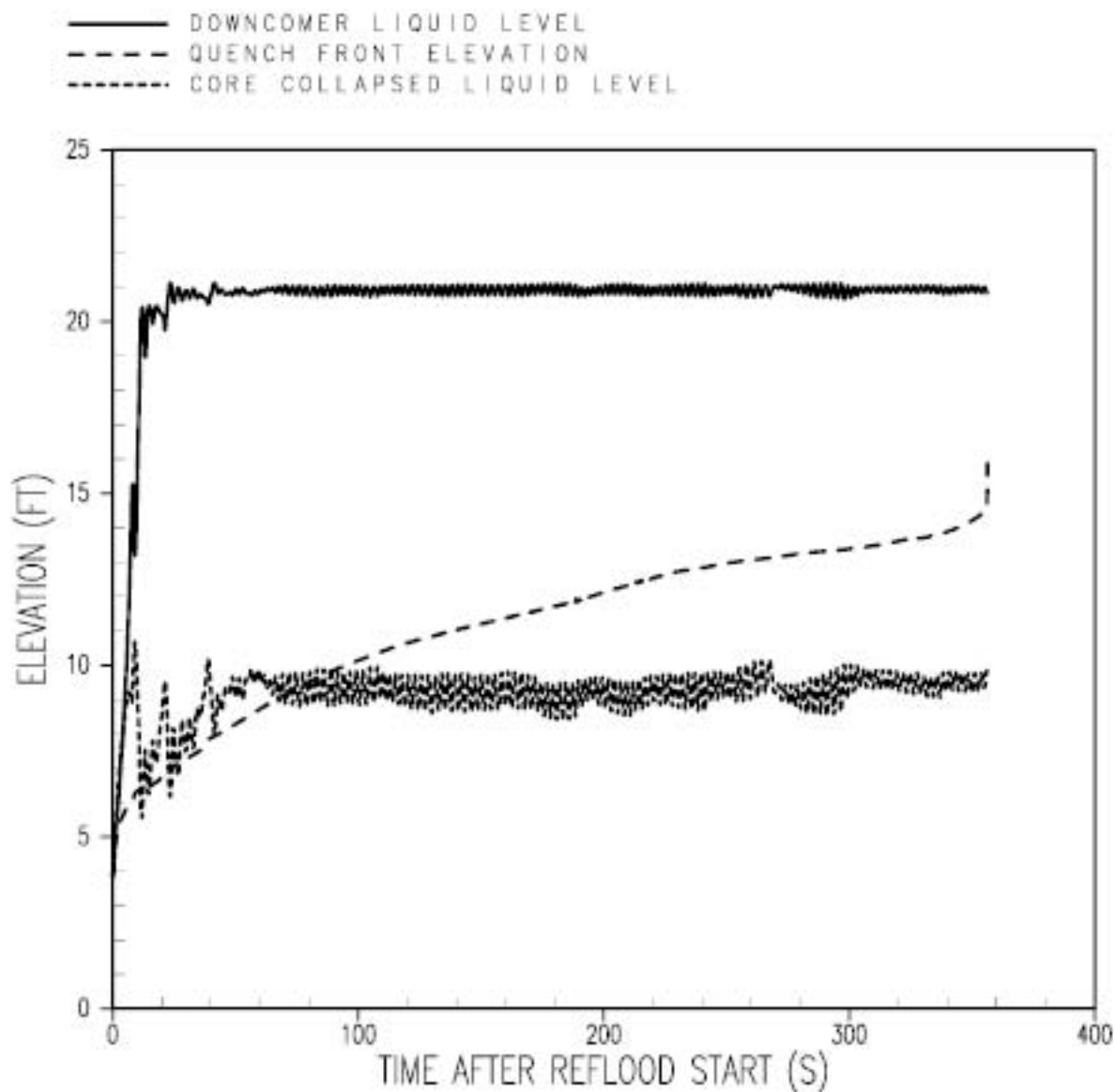


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FIGURE 16.8-7E

VESSEL LIQUID LEVELS DURING REFLOOD
 $(C_D = 0.8, \text{HIGH } T_{\text{AVG}}, \text{MIN SI, COSINE}$
 POWER SHAPE, NON-IFBA)

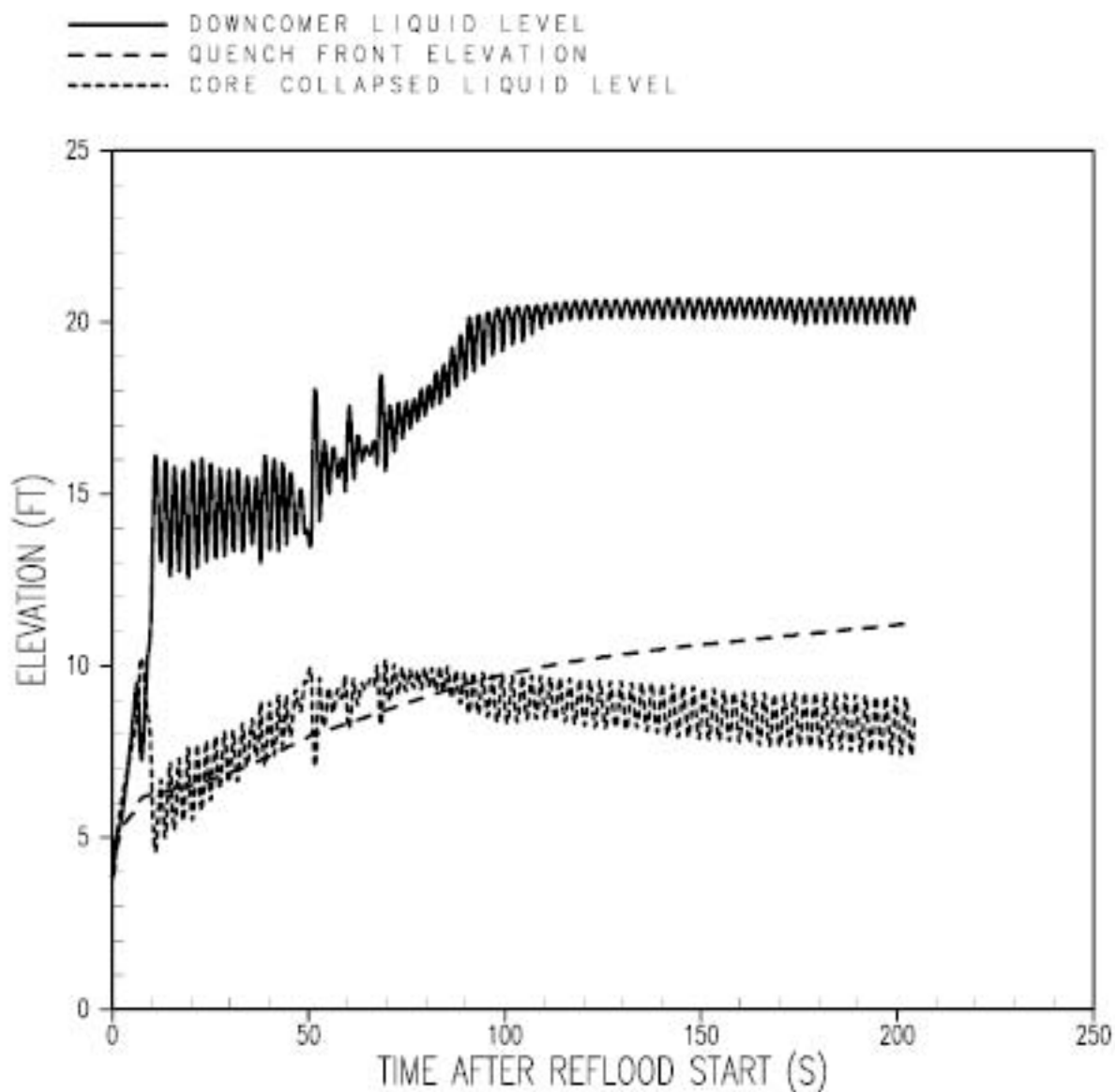


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FIGURE 15.5-7F

VESSEL LIQUID LEVELS DURING REFLOOD
 ($C_D=0.8$, $H_{HT,MAX}$ 81, COSINE
 POWER SHAPE, NON-IFBA)

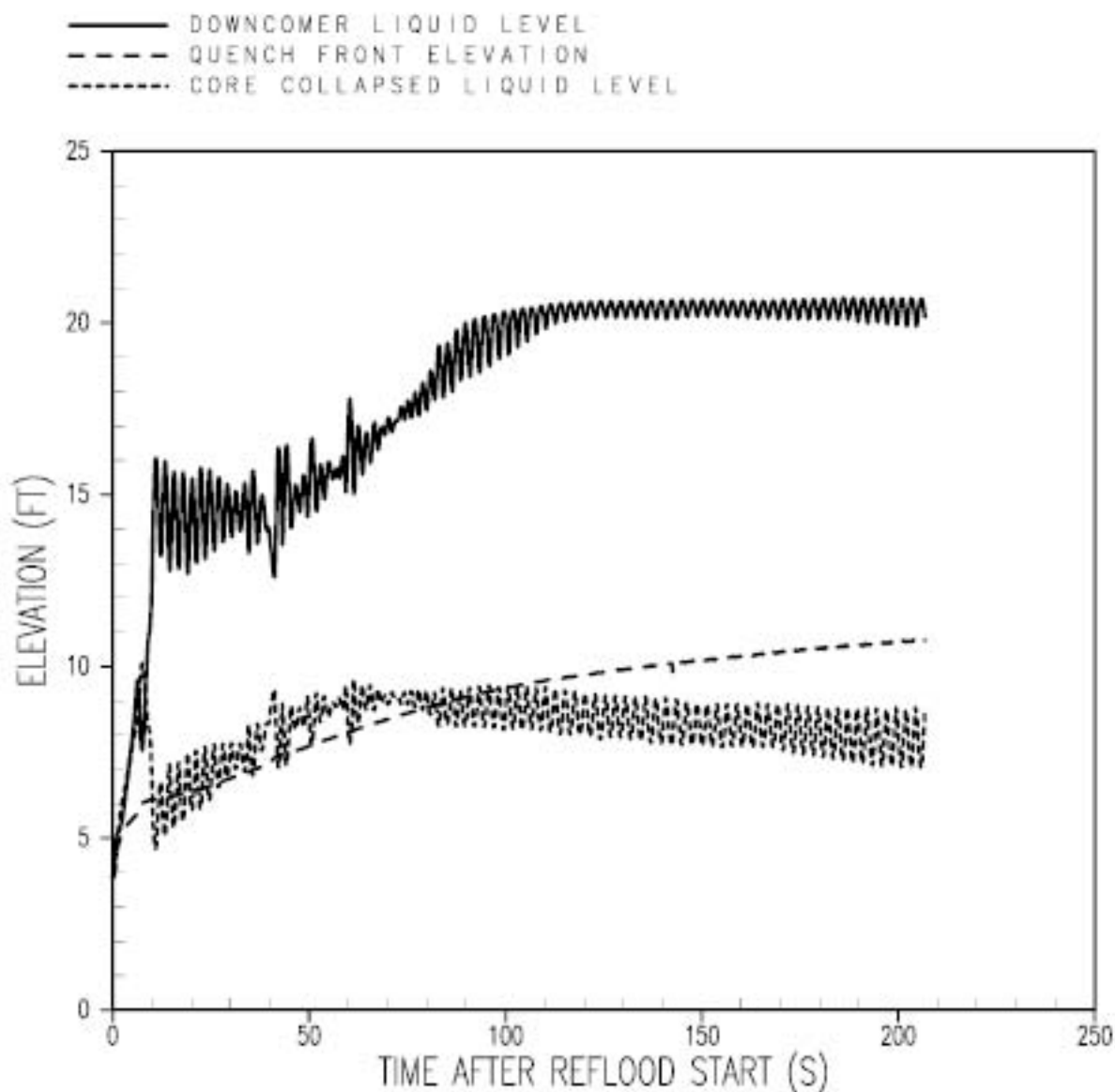


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FIGURE 16.6-70

VESSEL LIQUID LEVELS DURING REFLOOD
 ($C_p = 0.6$, HIGH T_{avg} , MIN SL, 0.5"
 POWER SHAPE, NON-IFBA)



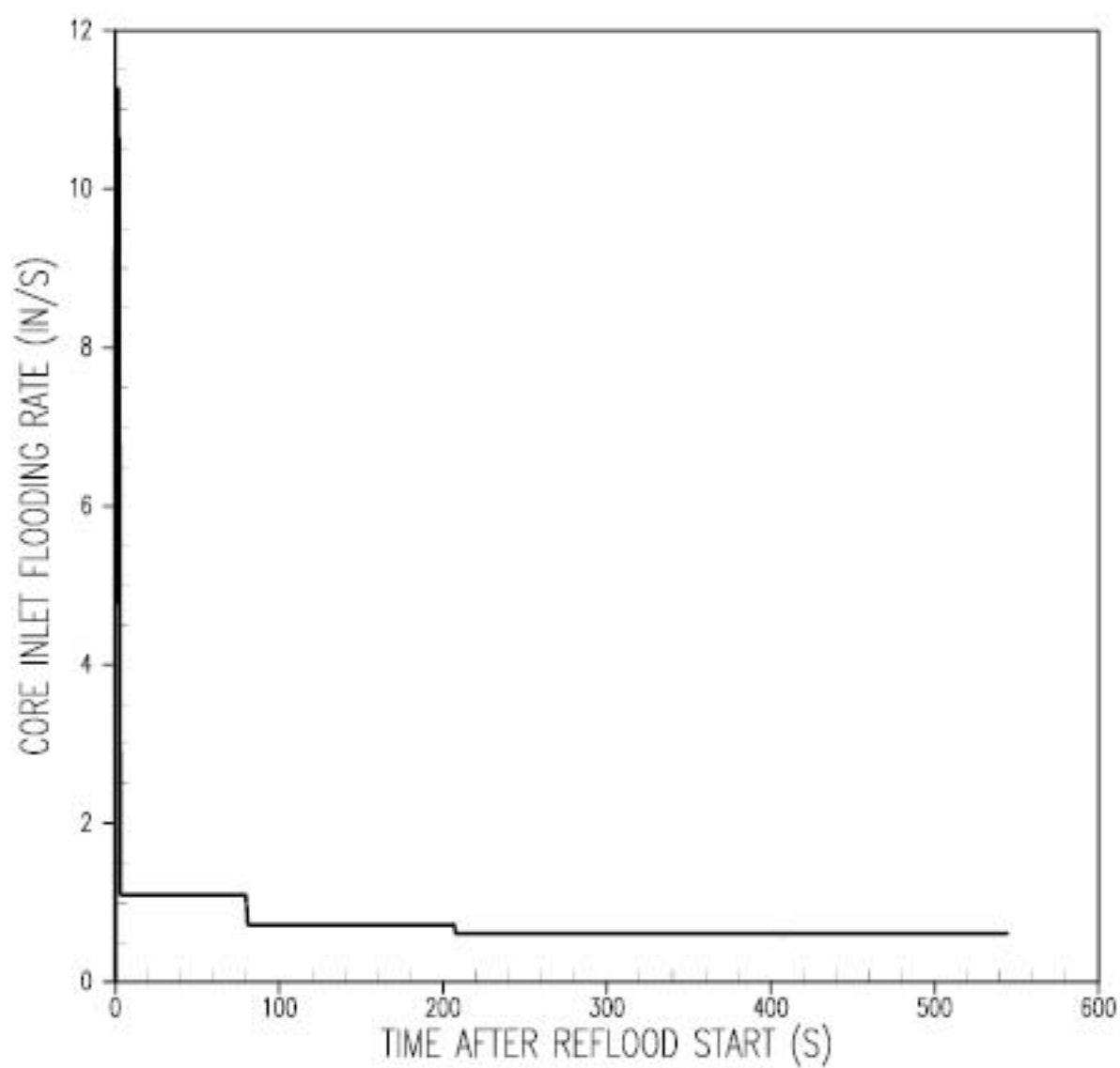
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FIGURE 15.5-7H

VESSEL LIQUID LEVELS DURING REFLOOD
 ($C_D=0.6$, HIGH T_{avg} , MIN SI, COSINE
 POWER SHAPE, IFBA)

Figure 15.6-8 Deleted

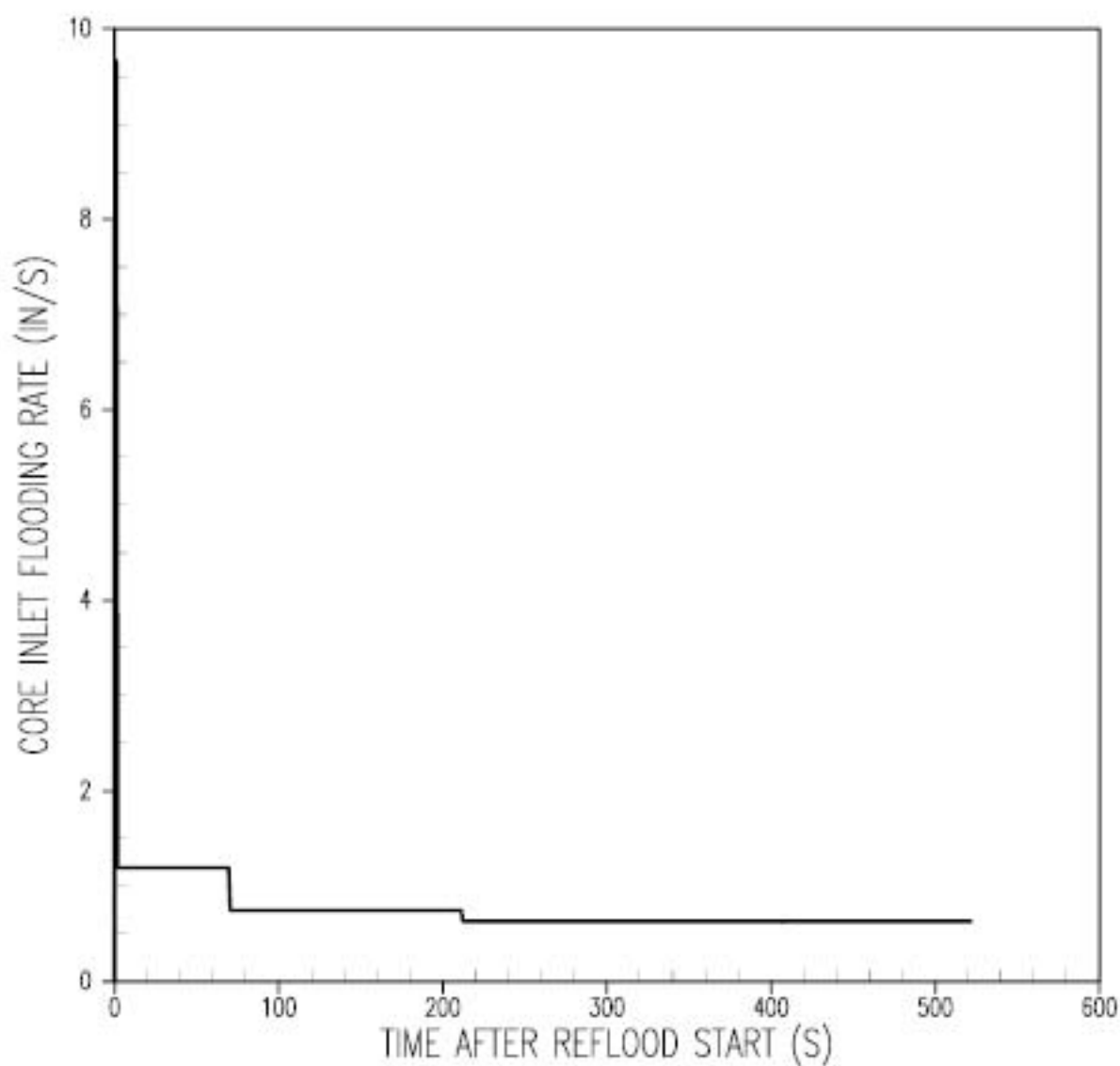


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FIGURE 15.8-8A

CORE INLET FLOODING RATE DURING
REFLOOD ($C_D=0.4$, LOW T_{avg} MIN 31,
COSINE POWER SHAPE, NON-IFBA)

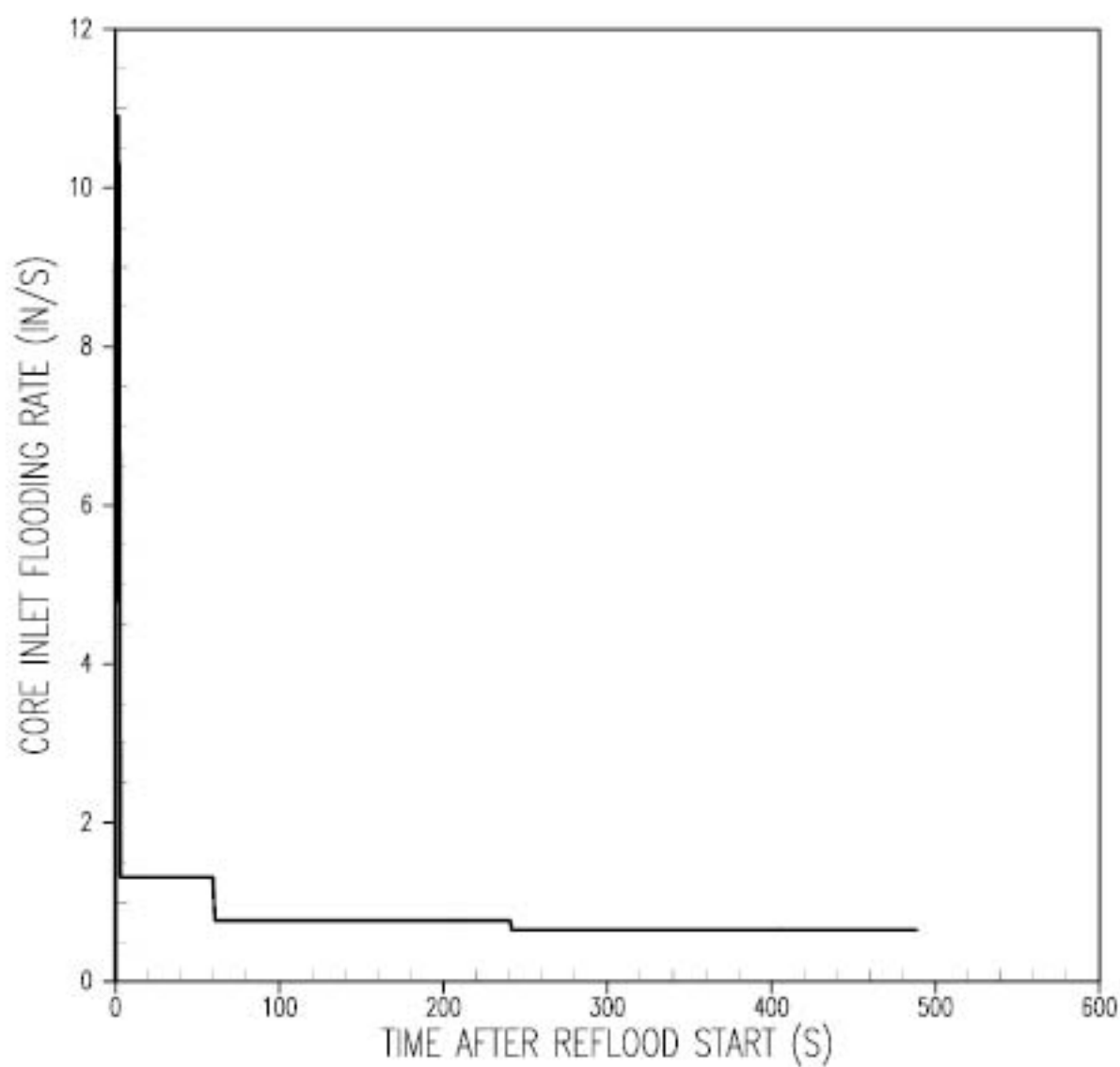


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FIGURE 15.8-8B

CORE INLET FLOODING RATE DURING
REFLOOD ($C_D=0.8$, LOW T_{avg} MIN SI,
COSINE POWER SHAPE, NON-IFBA

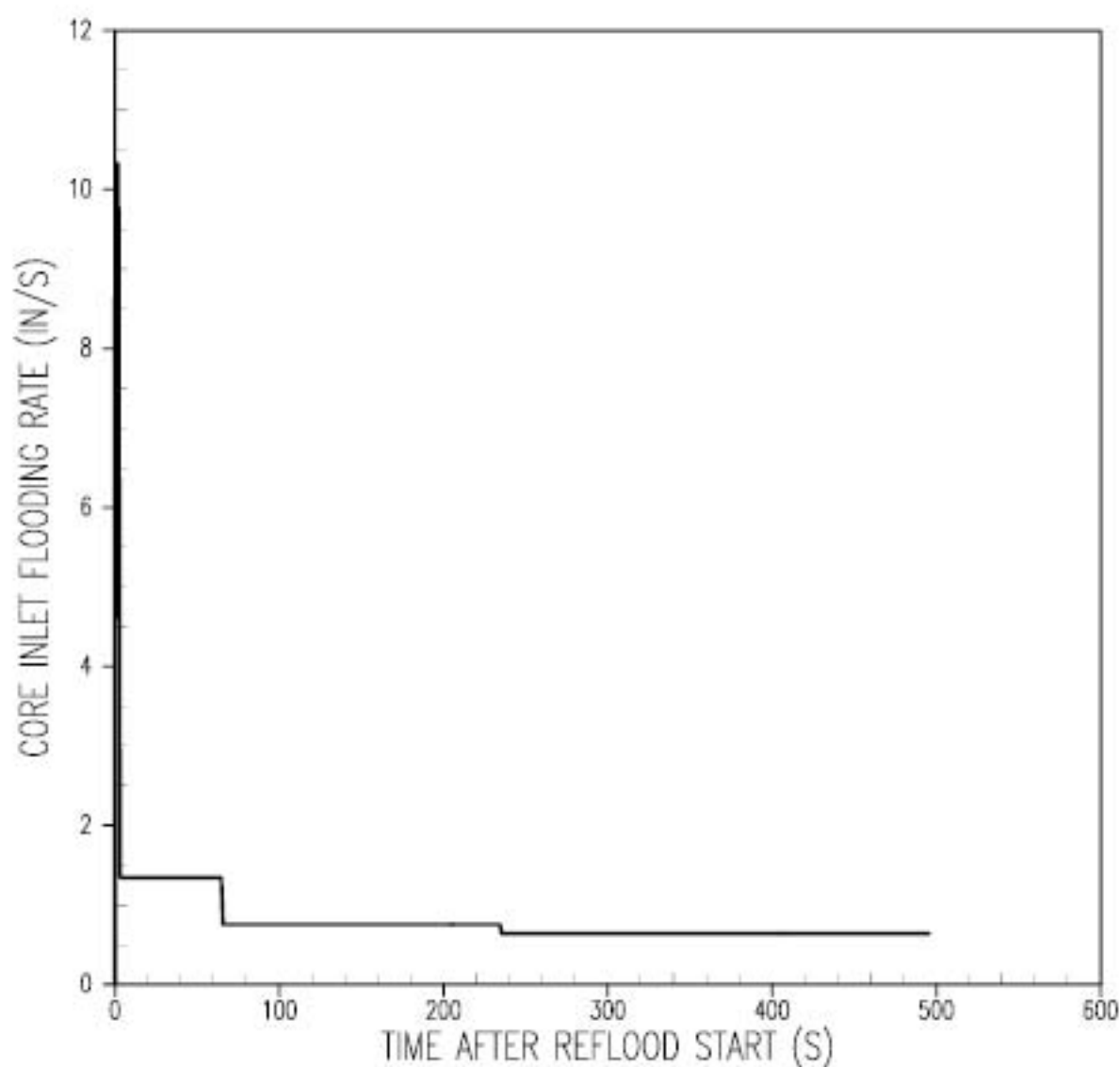


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FIGURE 15.8-8C

CORE INLET FLOODING RATE DURING
REFLOOD ($C_D=0.8$, LOW T_{avg} MIN 31,
COSINE POWER SHAPE, NON-IFBA)

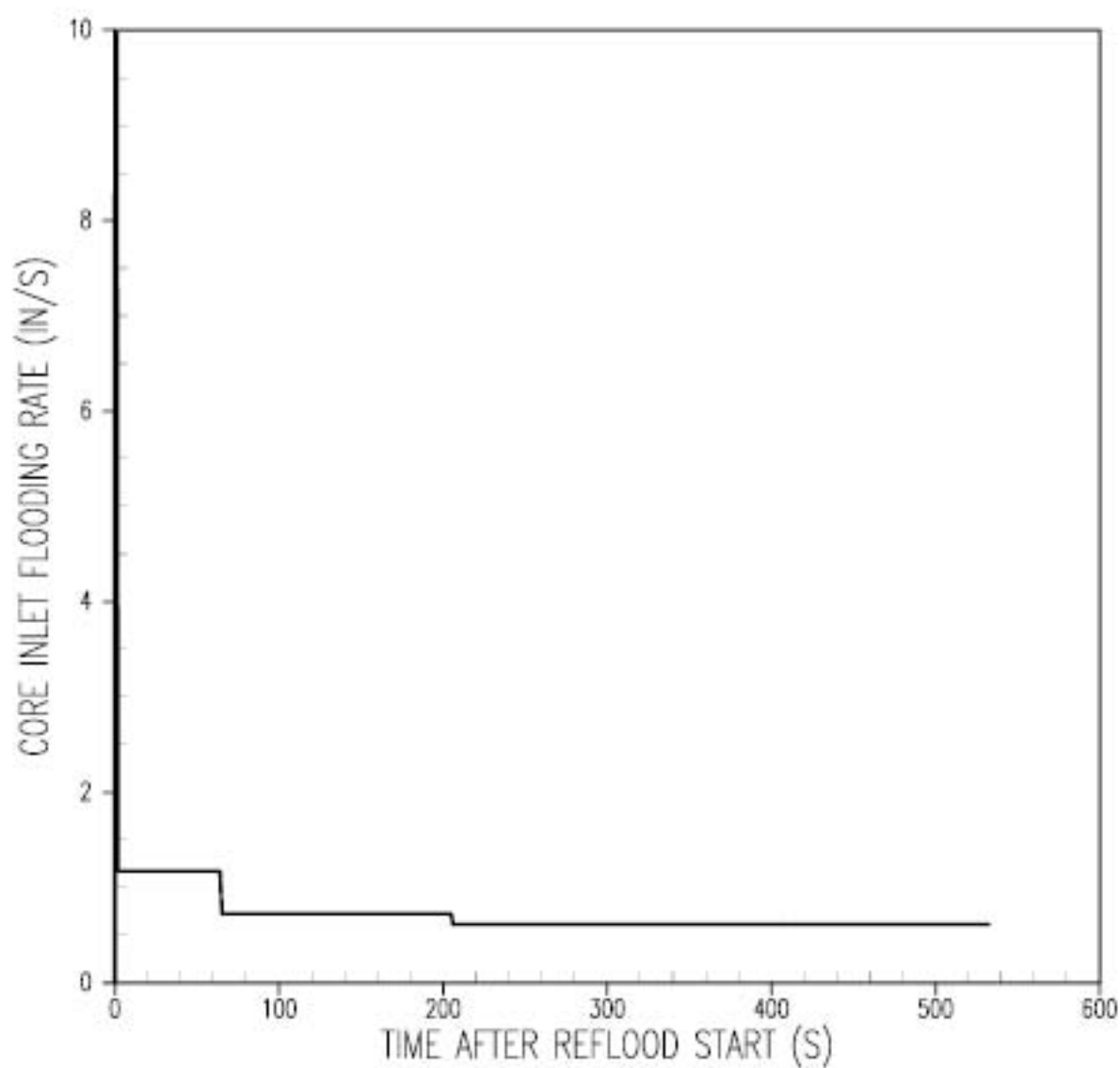


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FIGURE 15.8-8D

CORE INLET FLOODING RATE DURING
REFLOOD ($C_D=1.8$, LOW T_{AVG} MIN SI,
COSINE POWER SHAPE, NON-FBA)

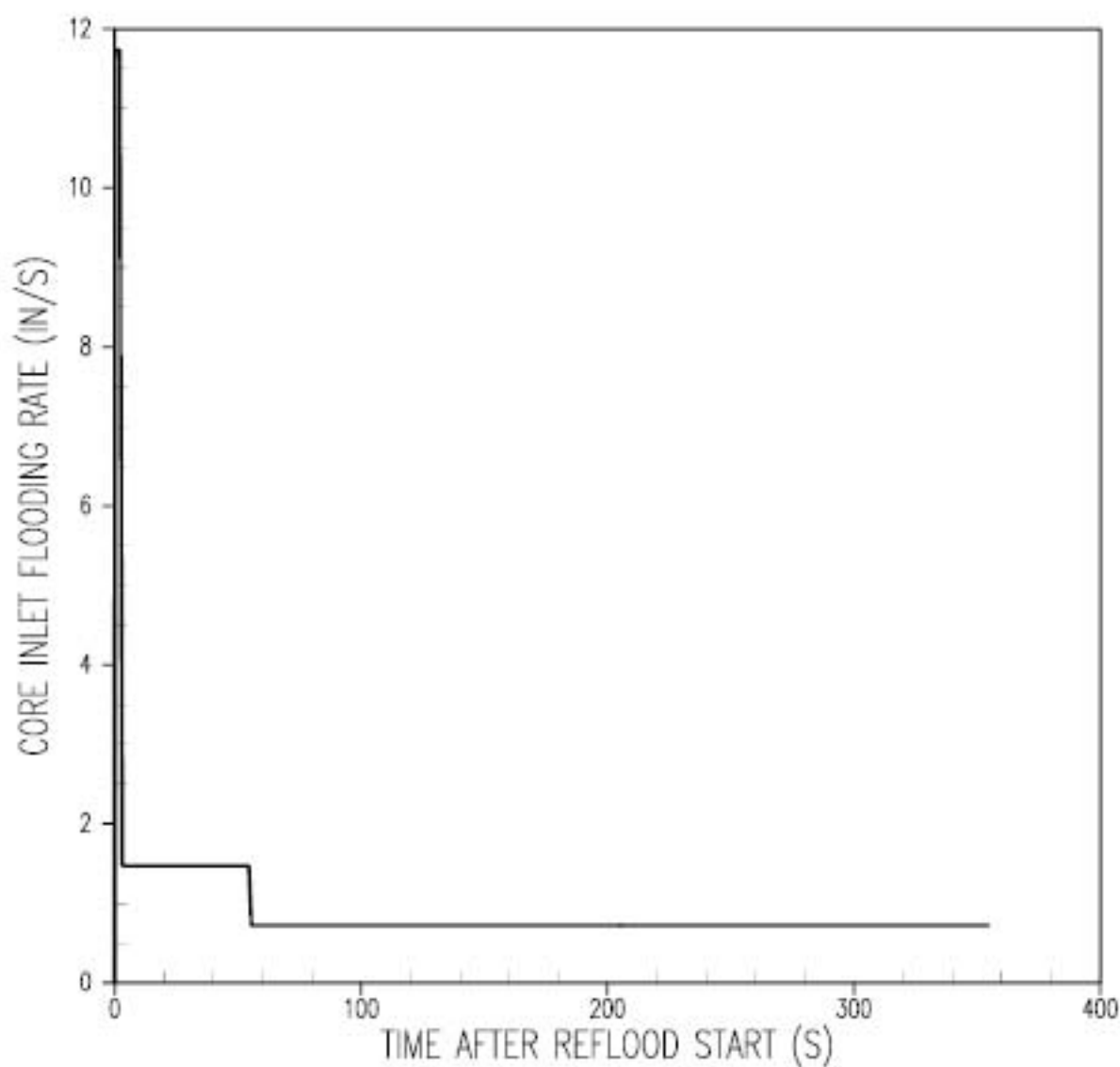


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FIGURE 15.8-8E

CORE INLET FLOODING RATE DURING
REFLOOD ($C_D=0.6$, HIGH T_{avg} MIN 81,
COSINE POWER SHAPE, NON-IFBA)

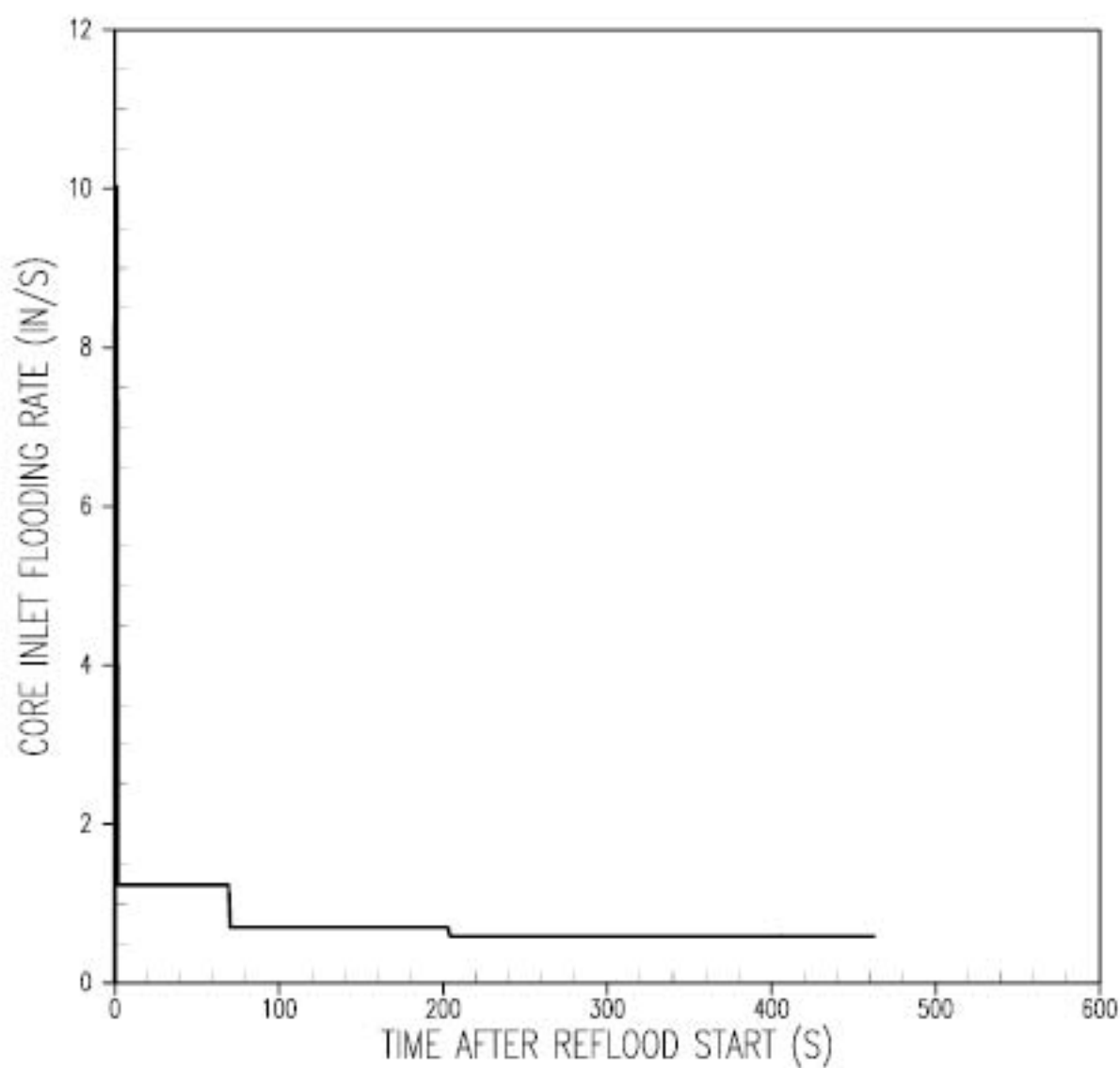


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FIGURE 15.8-8F

CORE INLET FLOODING RATE DURING
REFLOOD ($C_D=0.8$, $H_{T_{avg}}$, MAX BI,
COSINE POWER SHAPE, NON-FBA)

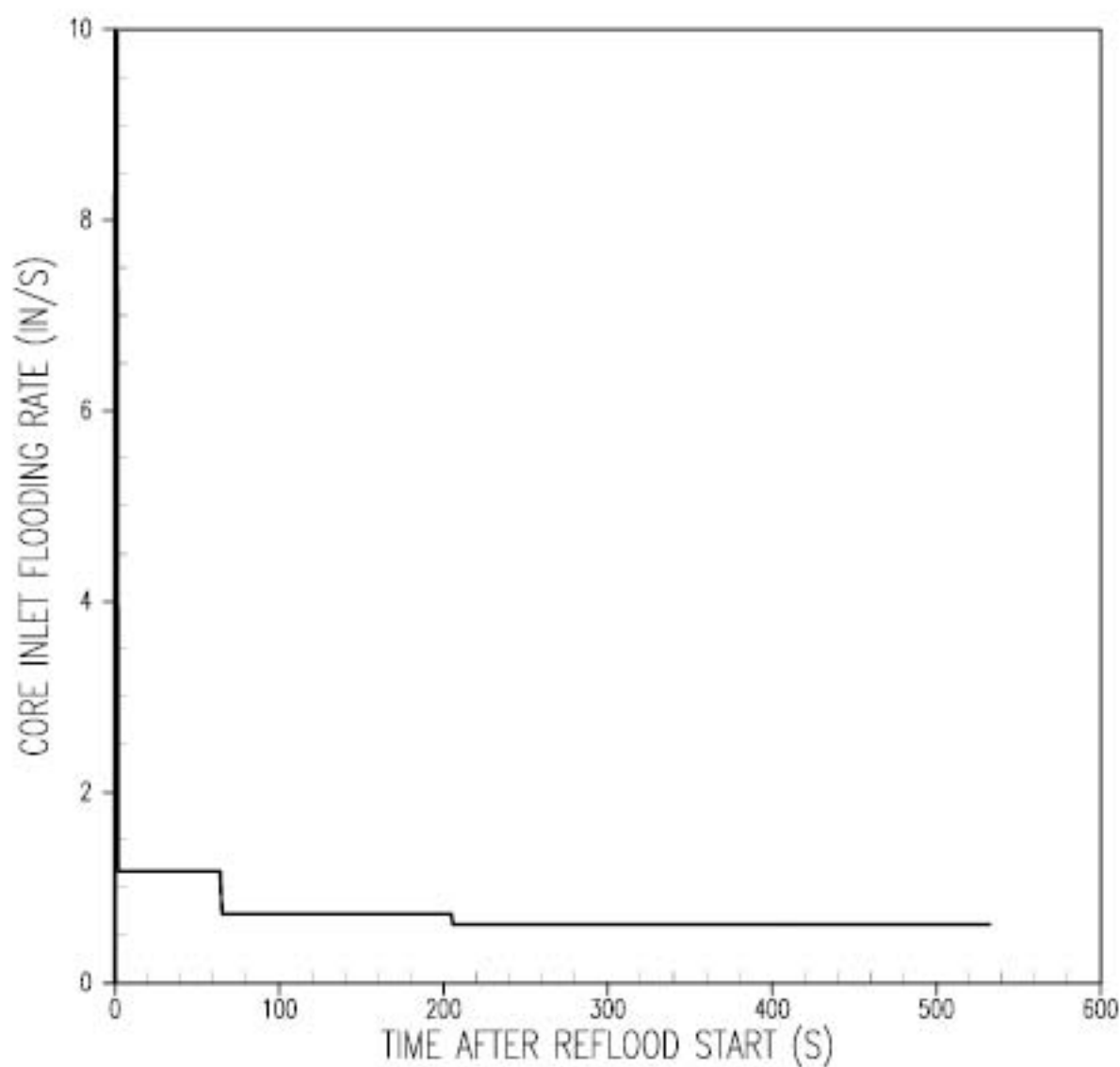


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FIGURE 15.5-8Q

CORE INLET FLOODING RATE DURING
REFLOOD ($C_D=0.6$, HIGH T_{avg} MIN 31,
8.5' POWER SHAPE, NON-IFBA)



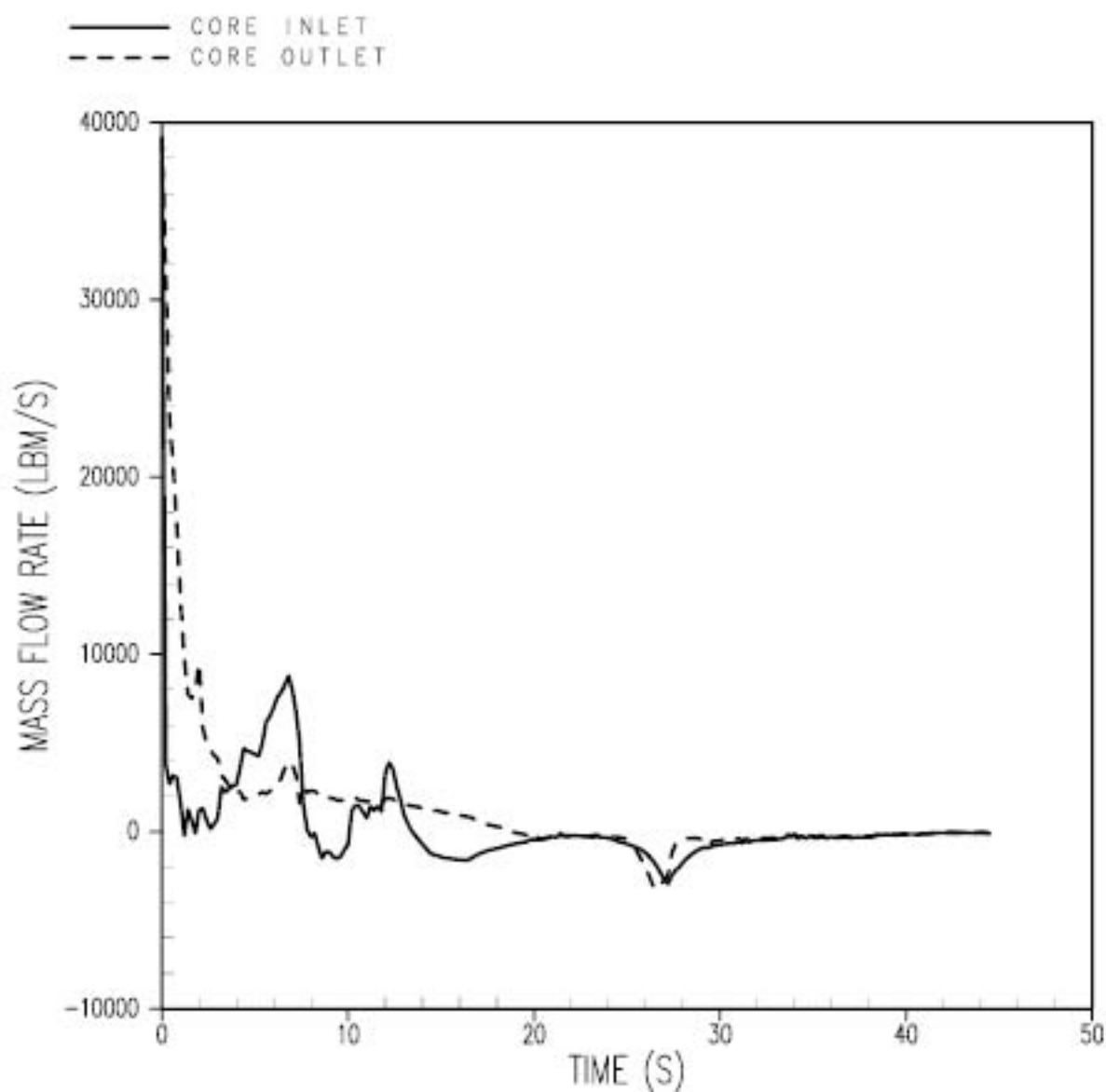
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FIGURE 15.6-01H

CORE INLET FLOODING RATE DURING
REFLOOD ($C_D=0.6$, HIGH T_{AVG} MIN SL,
COSINE POWER SHAPE, IFBA)

Figure 15.6-9 Deleted

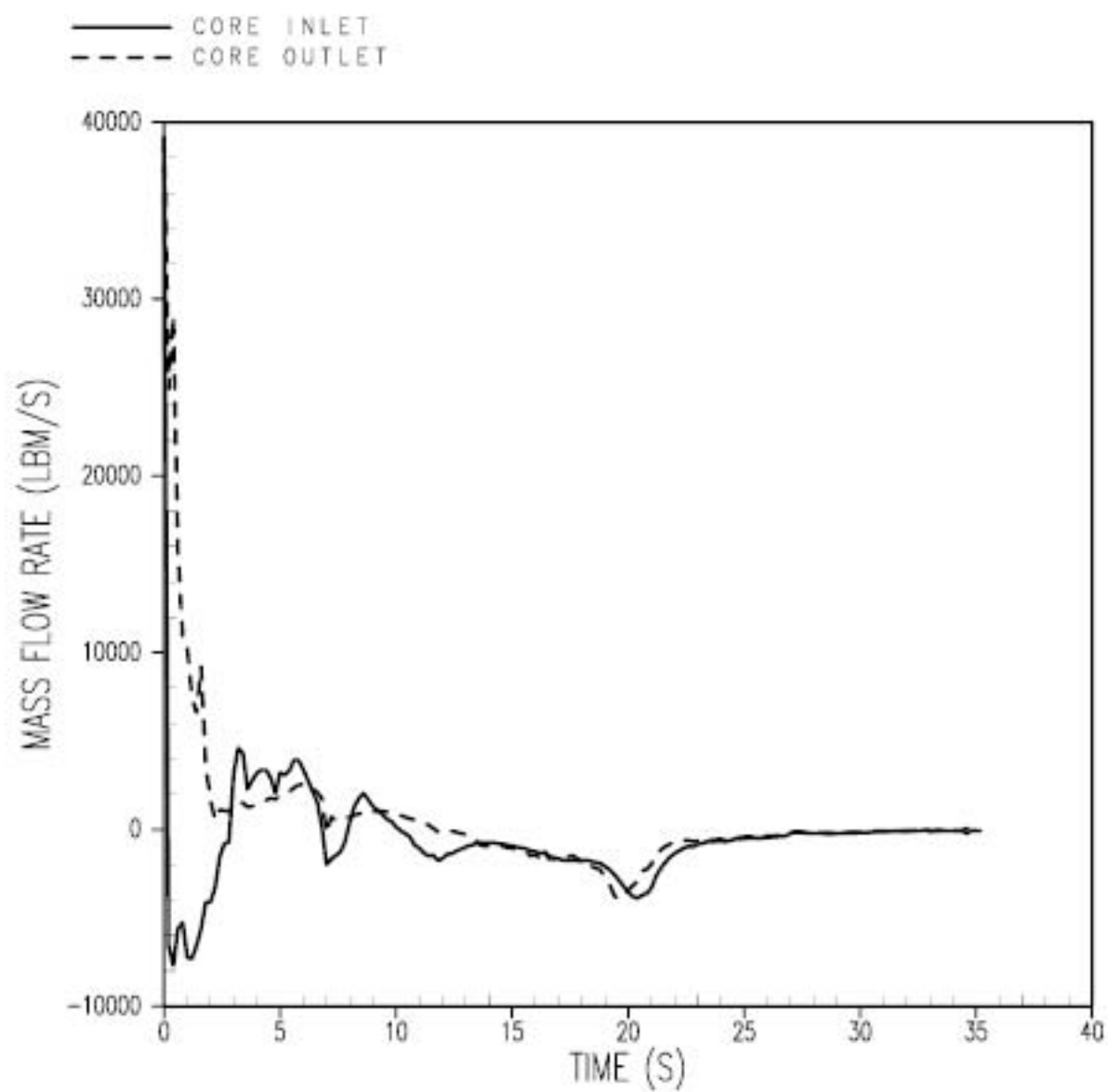


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FIGURE 15.5-9A

CORE INLET AND OUTLET MASS FLOW
RATE DURING BLOWDOWN ($C_D=0.4$, LOW T_{avg}
IN SI, COSINE POWER SHAPE, NON-IFBA)

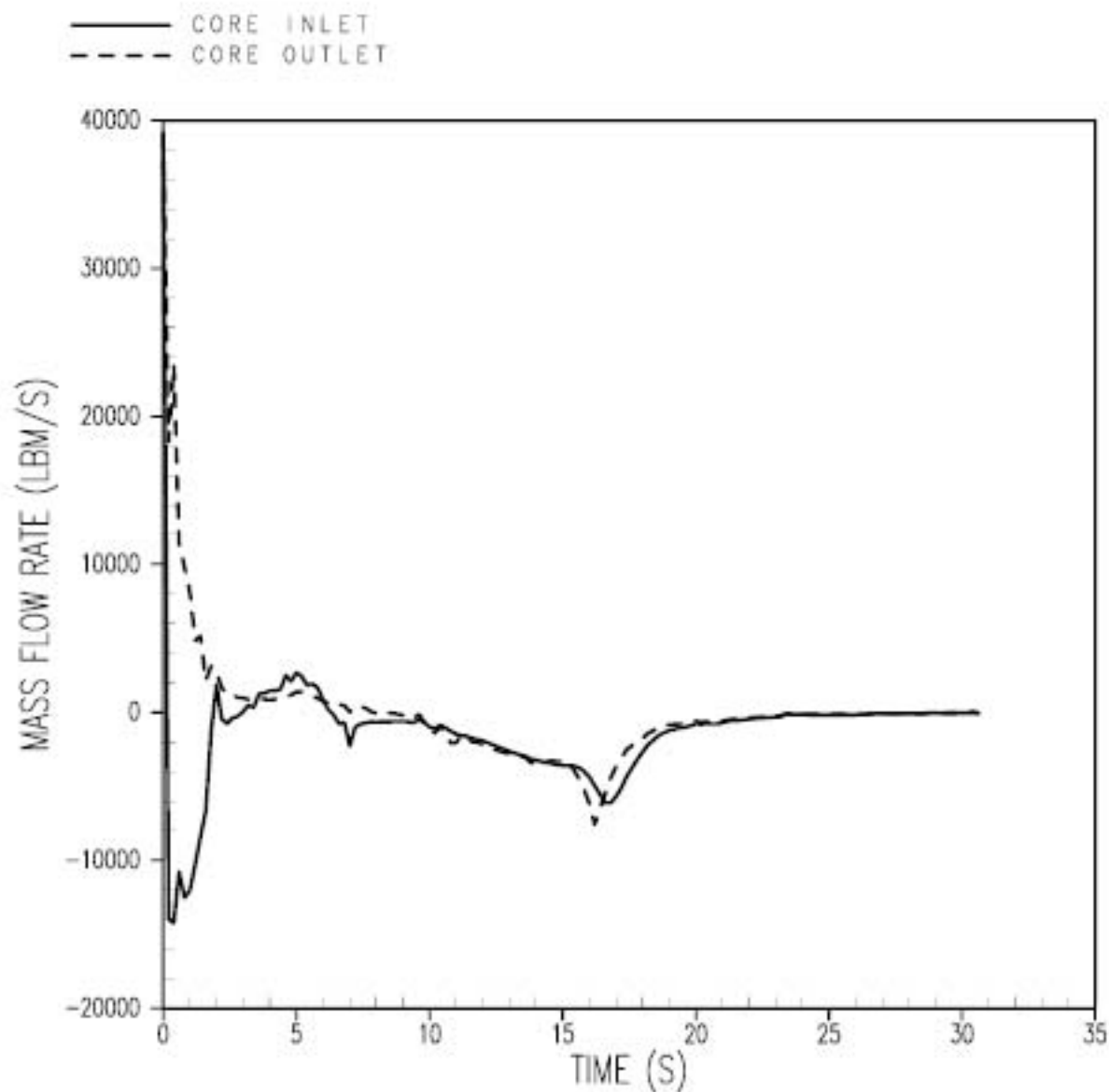


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FIGURE 16.8-9B

CORE INLET AND OUTLET MASS FLOW
RATE DURING BLOWDOWN ($C_D=0.6$, LOW T_{avg}
MIN SI, COSINE POWER SHAPE, NON-IFBA)

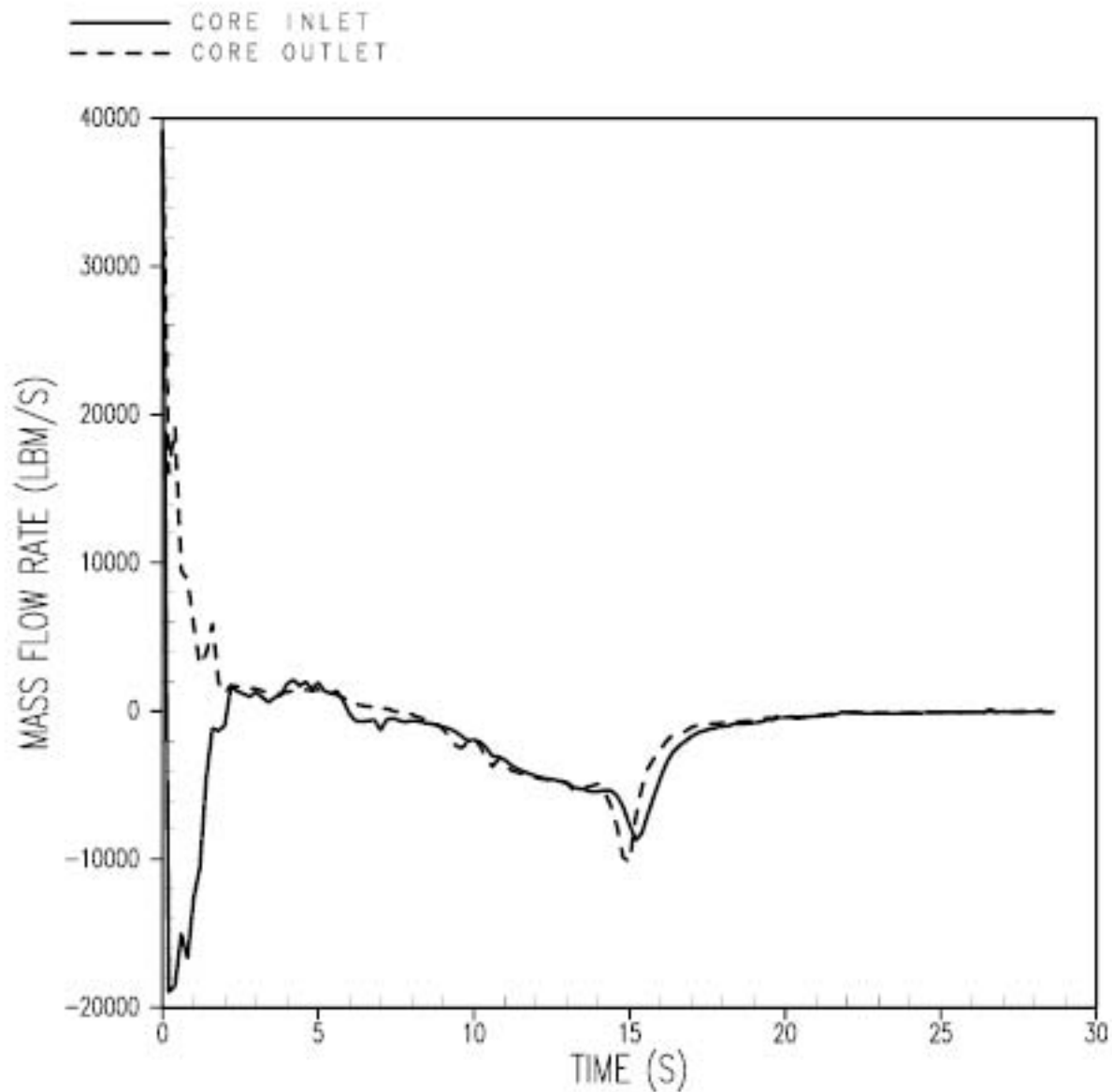


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FIGURE 15.5-9C

CORE INLET AND OUTLET MASS FLOW RATE
 DURING BLOWDOWN ($C_D = 0.8$, LOW T_{AVG}
 IN SI, COSINE POWER SHAPE, NON-IFBA)

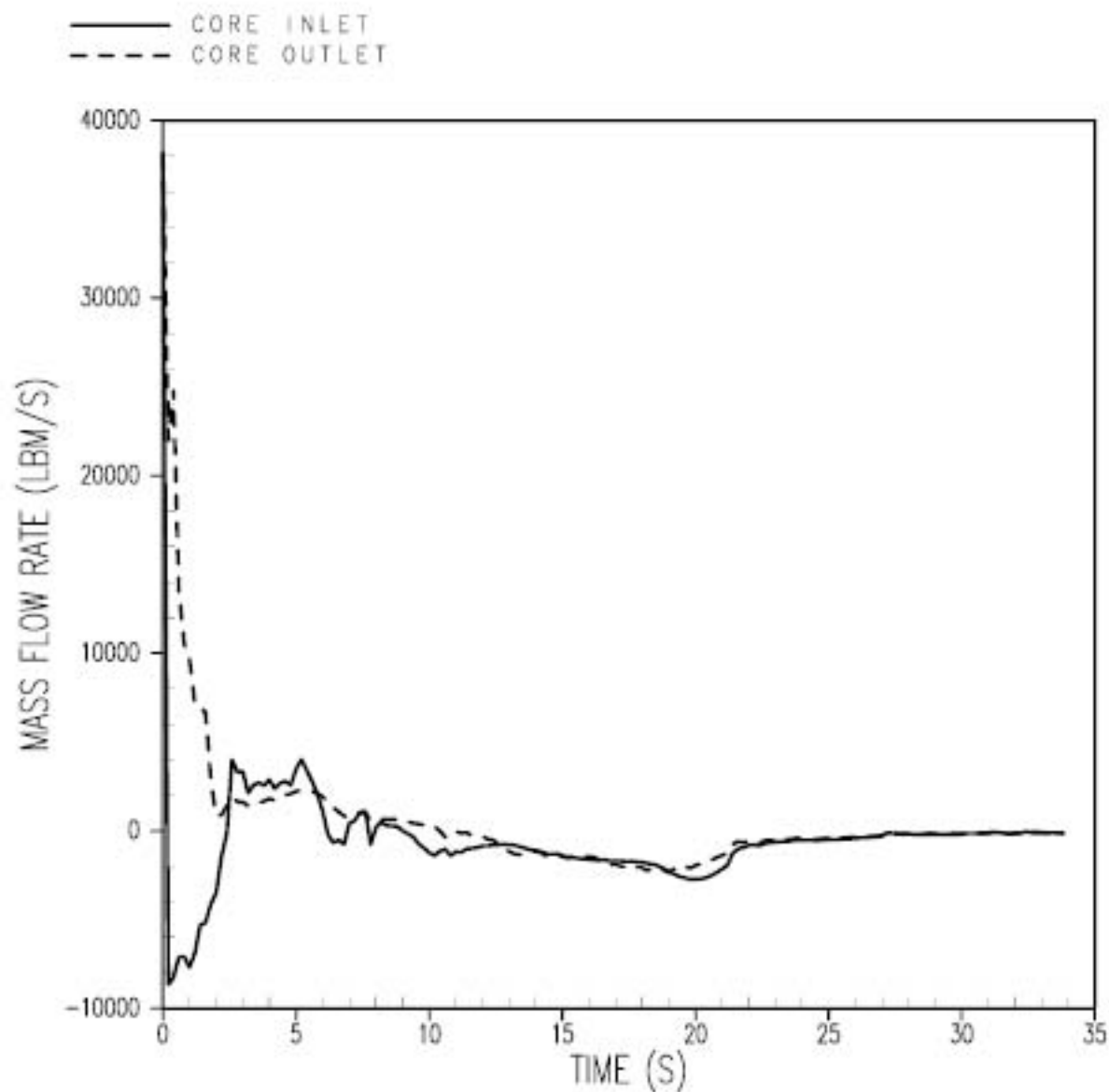


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FIGURE 16.8-9D

CORE INLET AND OUTLET MASS FLOW RATE
DURING BLOWDOWN ($C_D=1.8$, LOW T_{AVG}
IN SI, COSINE POWER SHAPE, NON-IFBA)

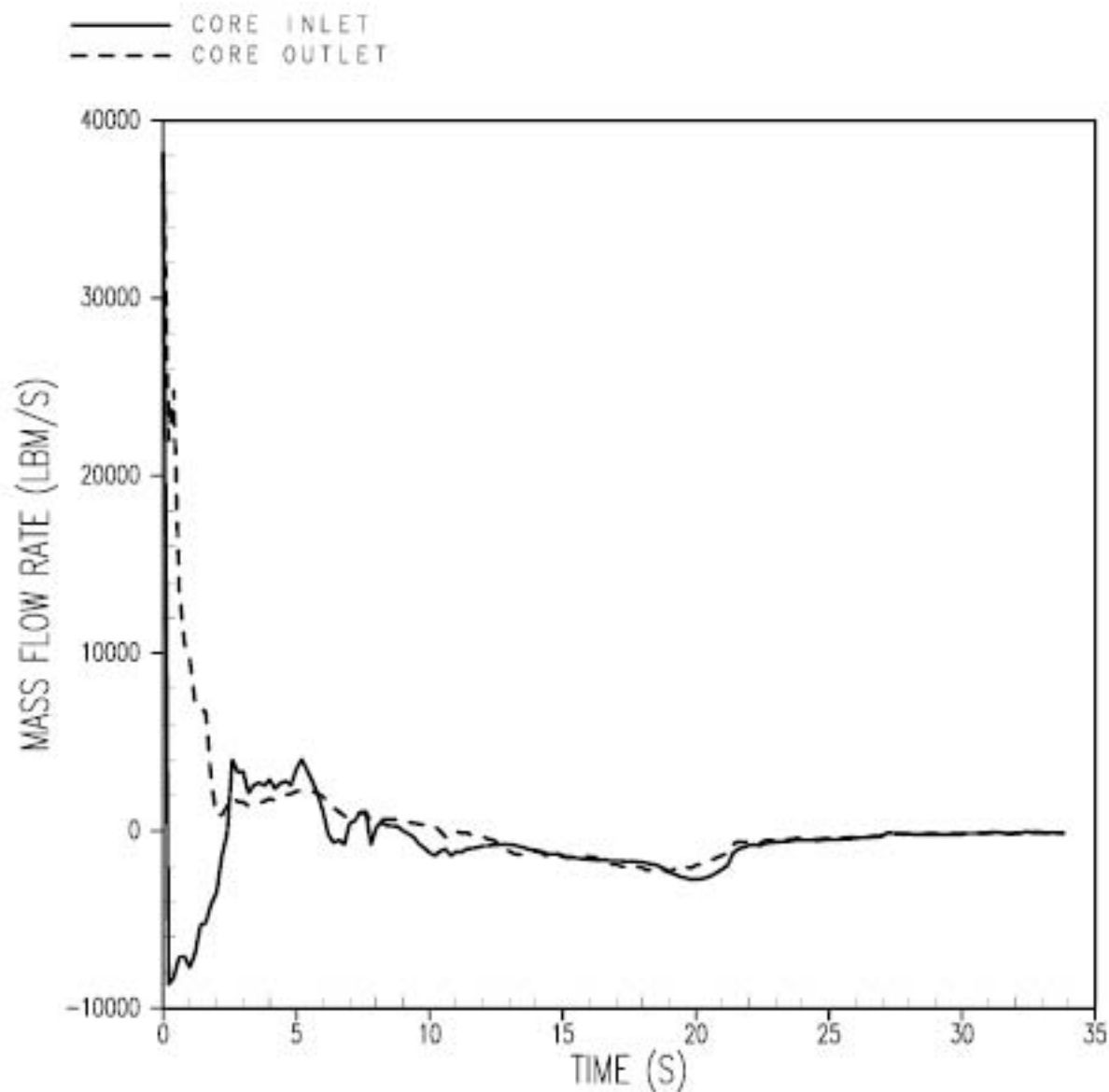


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FIGURE 15.8-9E

CORE INLET AND OUTLET MASS FLOW RATE
DURING BLOWDOWN ($C_D = 0.6$, HIGH T_{AVG}
MIN SI, COSINE POWER SHAPE, NON-IFBA)

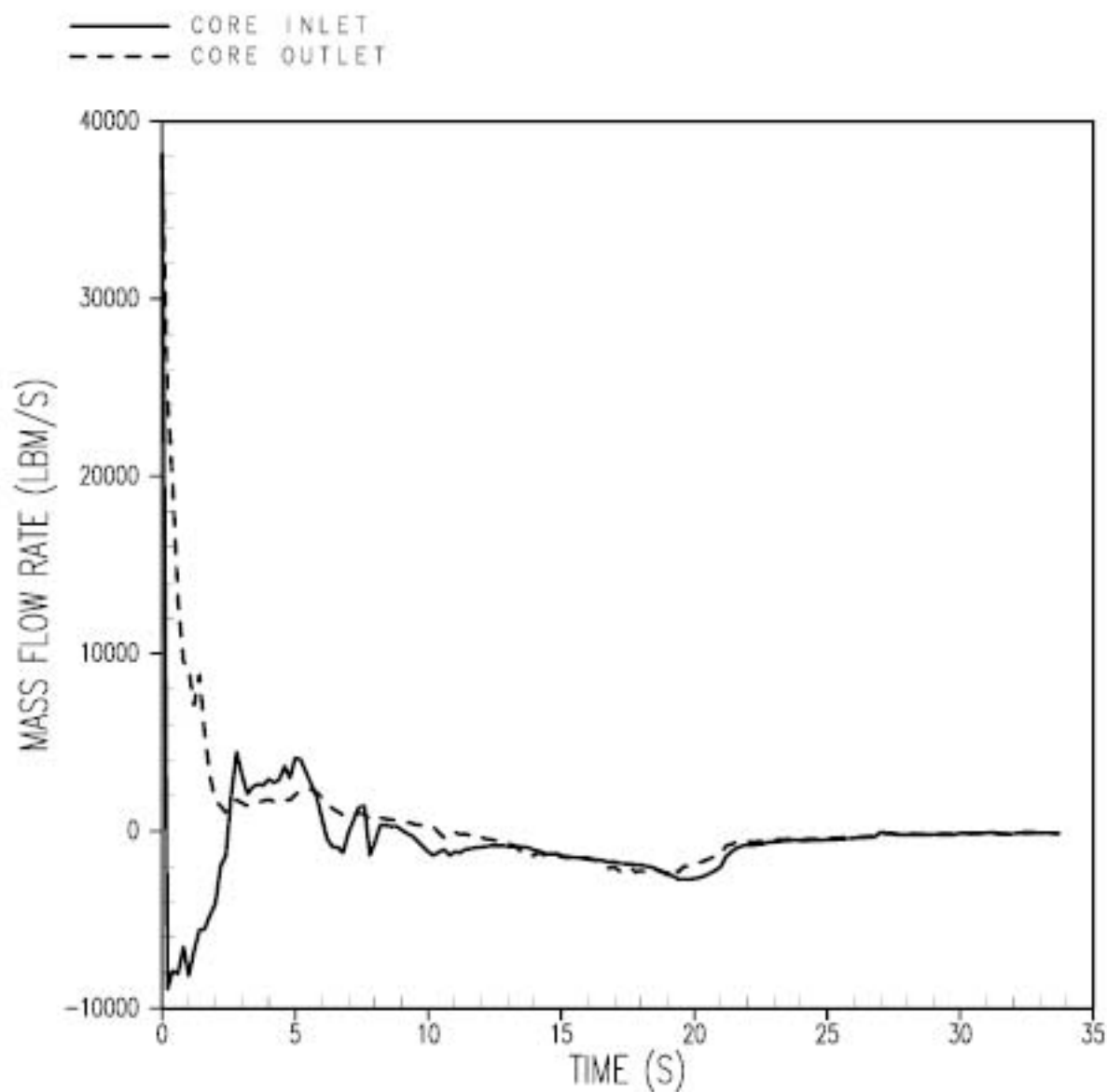


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FIGURE 15.8-9F

CORE INLET AND OUTLET MASS FLOW RATE
DURING BLOWDOWN ($C_p = 0.6$, HIGH T
MAX SI, COSINE POWER SHAPE, NON-IFEA)

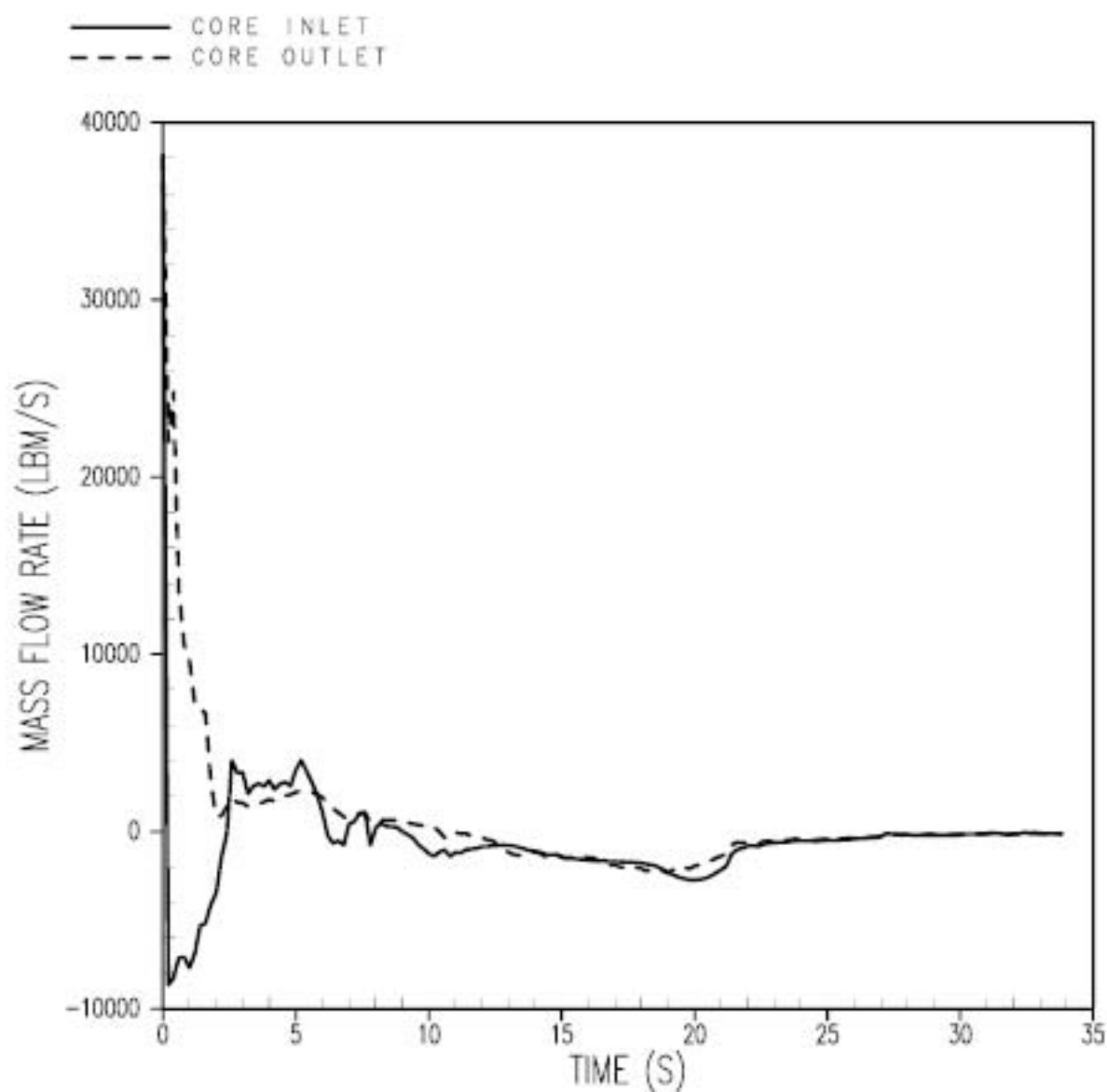


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FIGURE 16.8-90

CORE INLET AND OUTLET MASS FLOW RATE
DURING BLOWDOWN ($C_D = 0.8$, HIGH T_{AVG}
MIN SI, 8.5' POWER SHAPE, NON-IFBA)



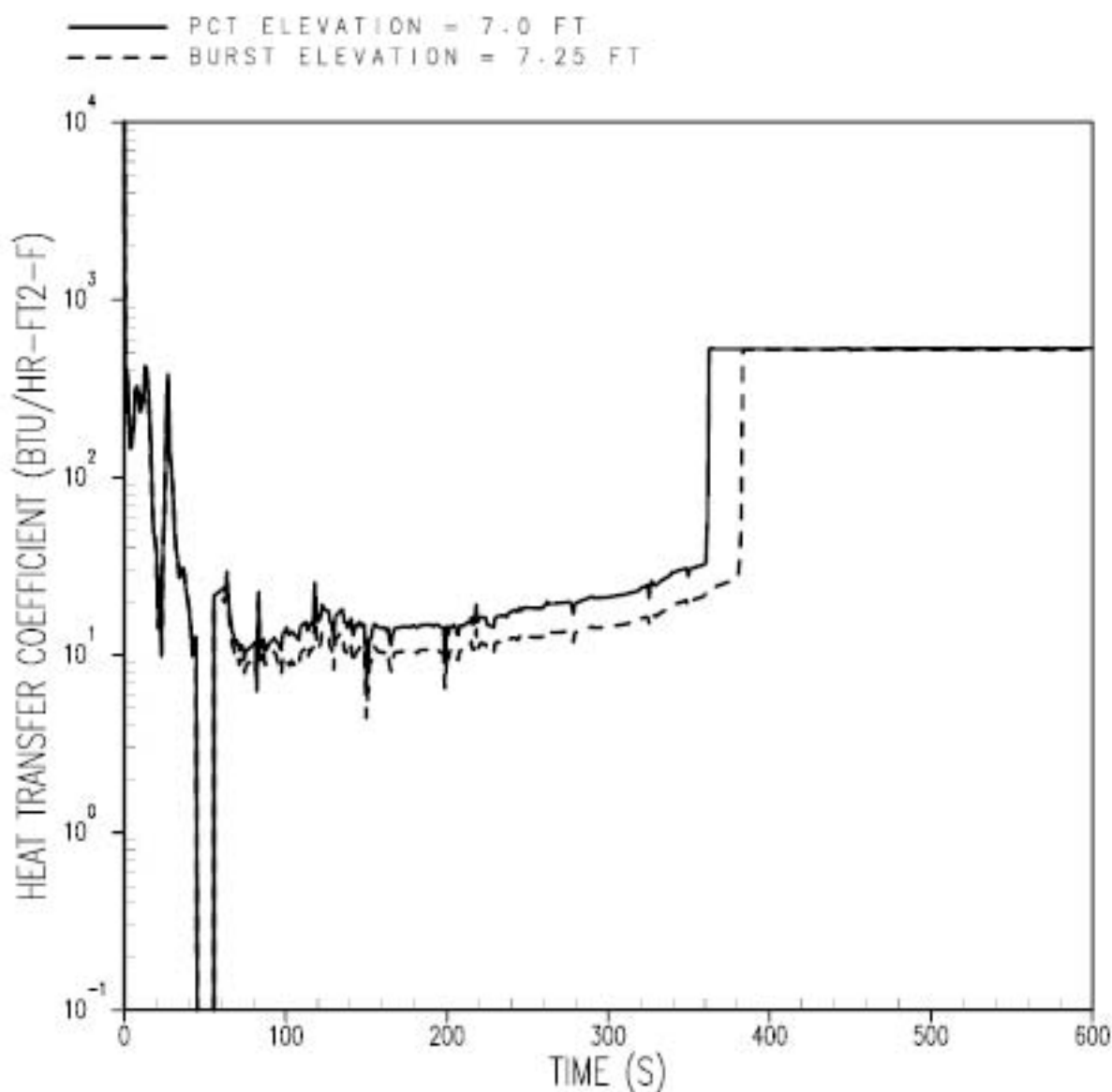
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FIGURE 15.5-9H

CORE INLET AND OUTLET MASS FLOW RATE
DURING BLOWDOWN ($C_D=0.8$, HIGH T_{AVG}
MIN SI, COSINE POWER SHAPE, IFBA)

Figure 15.6-10 Deleted

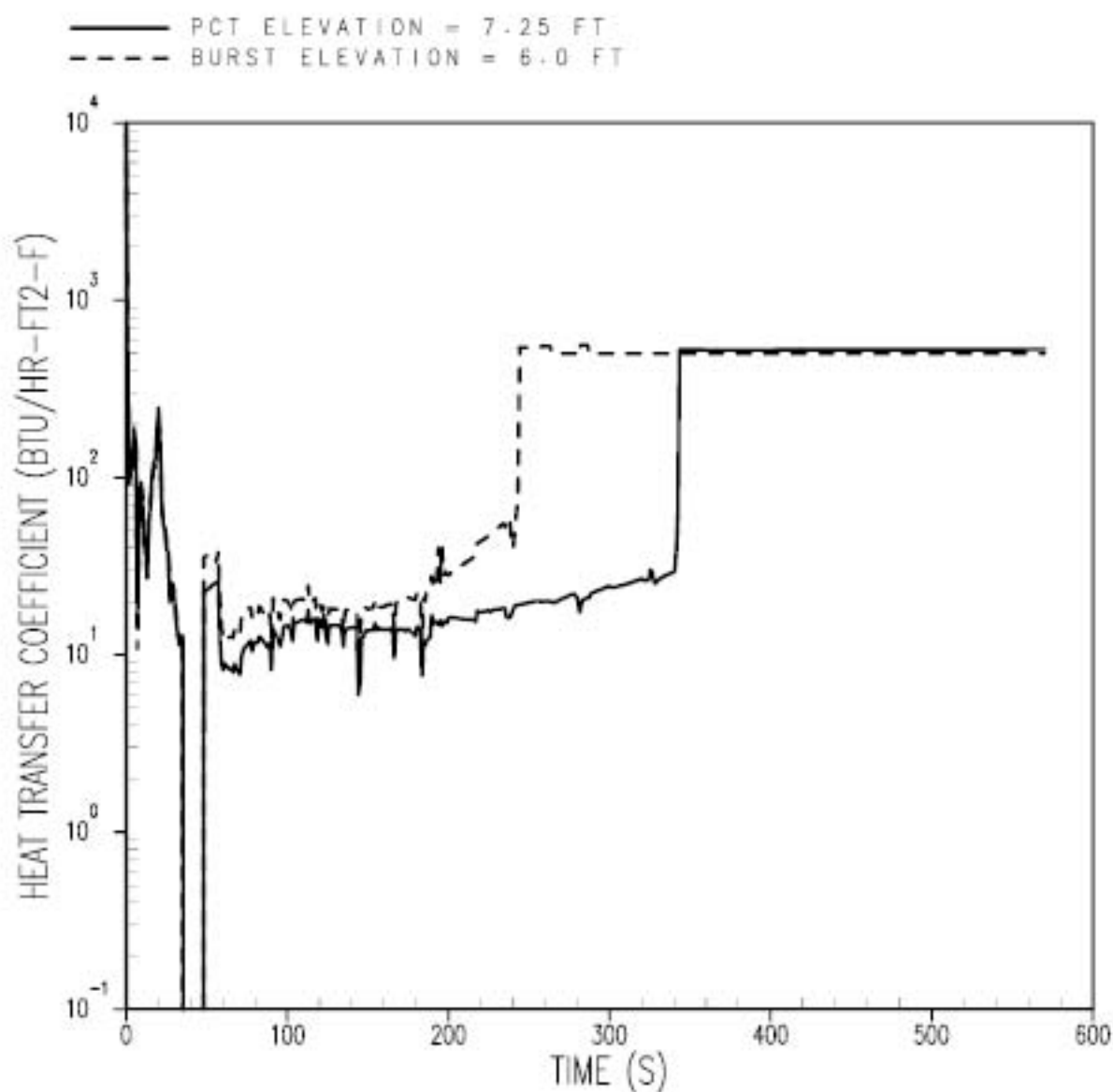


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FIGURE 16.6-10A

CLADDING SURFACE HEAT TRANSFER
COEFFICIENT AT PCT AND BURST
ELEVATIONS ($C_D=0.4$, LOW T_{avg} MIN SL,
COGNE POWER SHAPE, NON-IFBA)

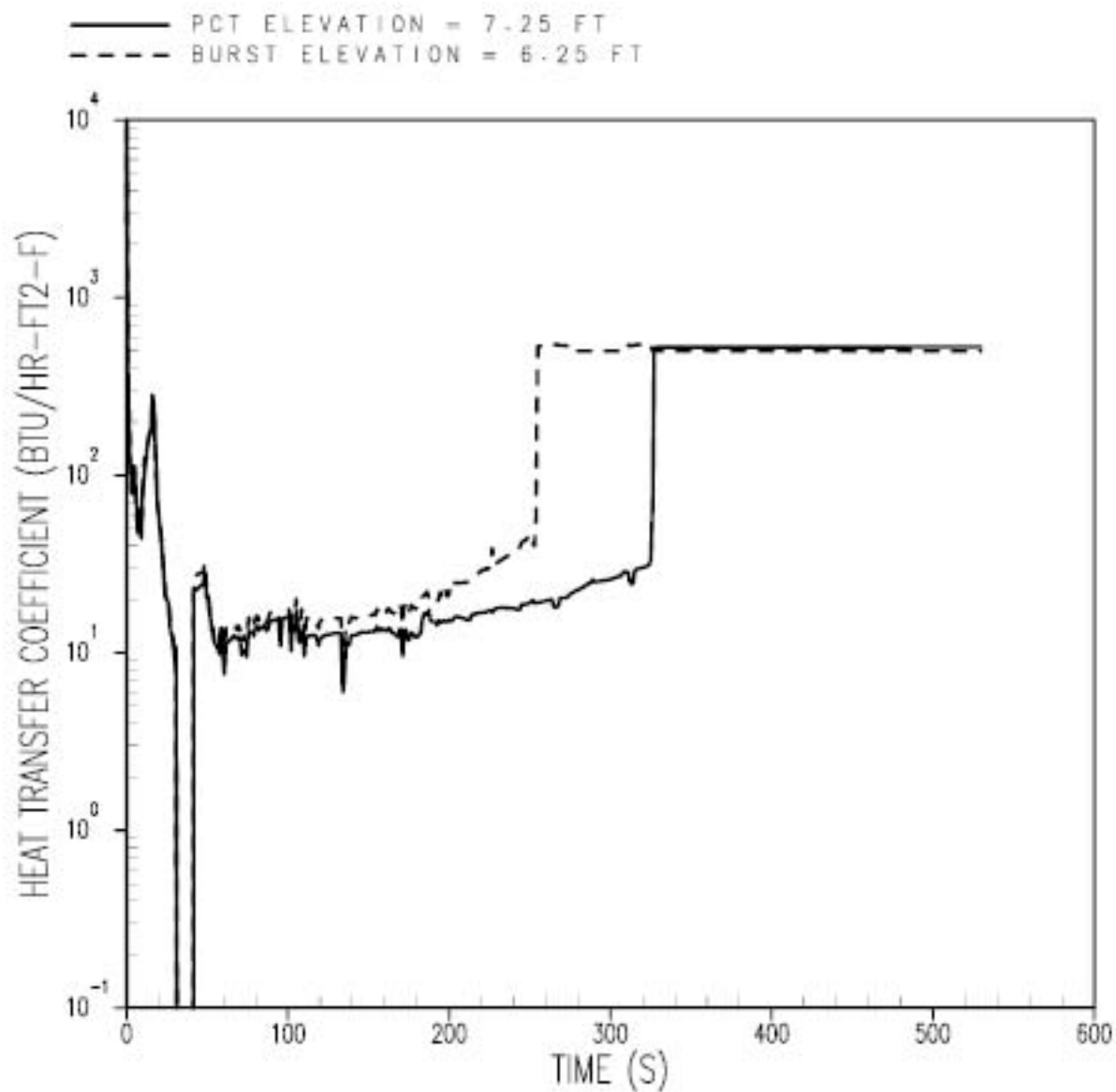


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FIGURE 16.6-10B

CLADDING SURFACE HEAT TRANSFER
 COEFFICIENT AT PCT AND BURST
 ELEVATIONS ($C_D=0.8$, LOW T_{OVR} MIN SL,
 COSINE POWER SHAPE, NON-IFBA)

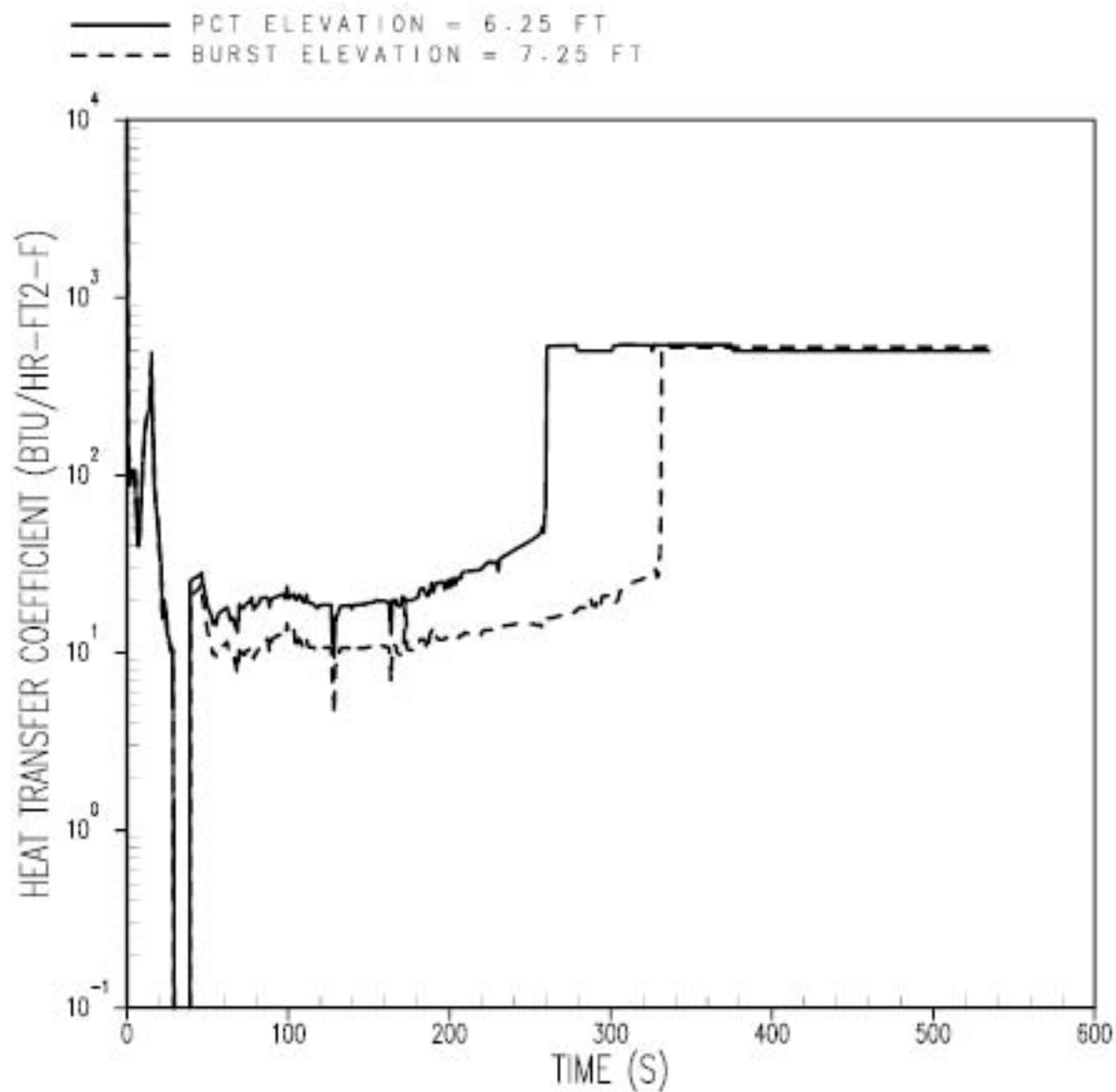


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FIGURE 15.8-10C

CLADDING SURFACE HEAT TRANSFER
COEFFICIENT AT PCT AND BURST
ELEVATIONS ($C_D=0.8$, LOW T_{surf} MIN SL,
COSINE POWER SHAPE, NON-IFBA)

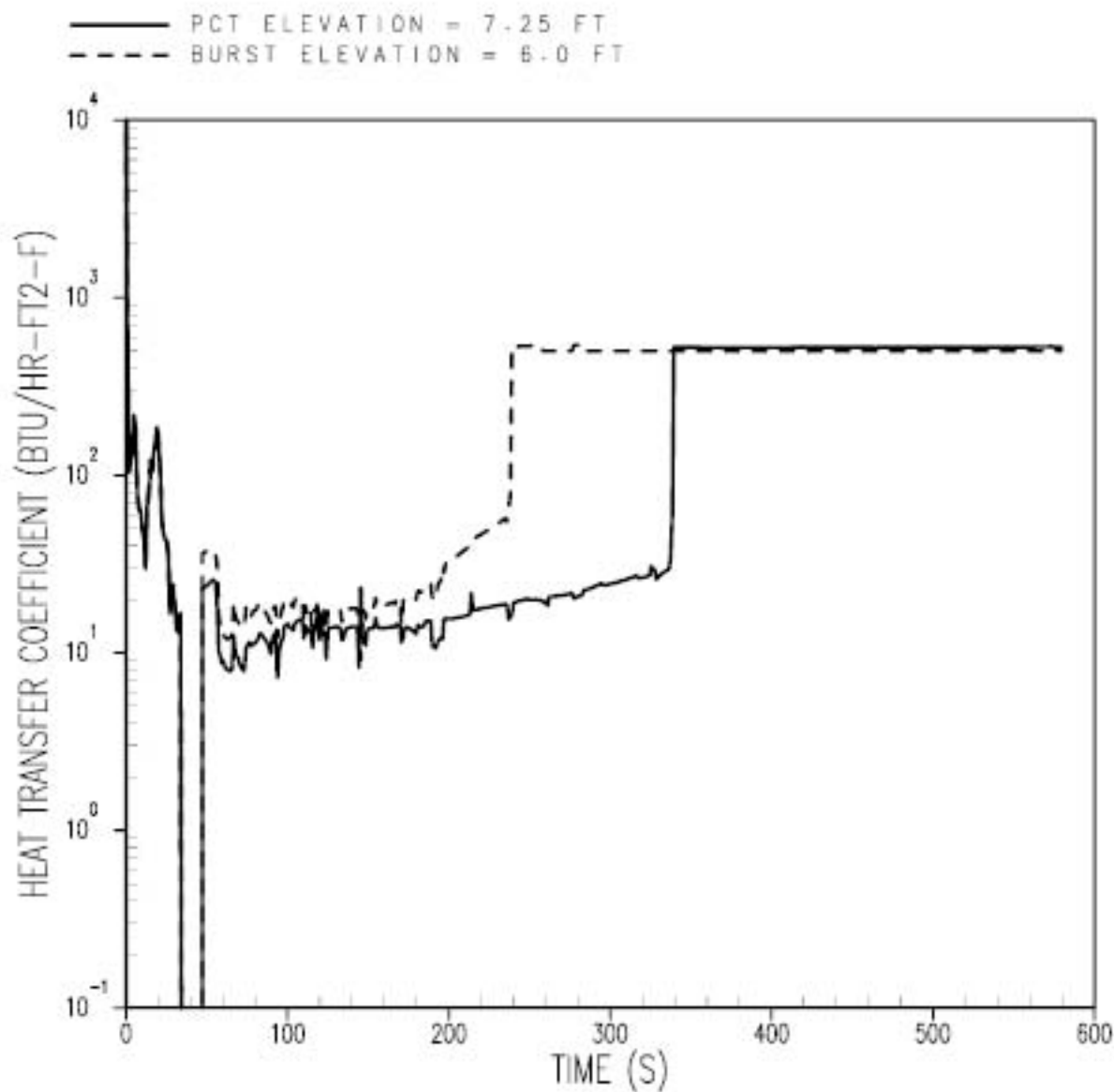


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FIGURE 15.8-10D

CLADDING SURFACE HEAT TRANSFER
COEFFICIENT AT PCT AND BURST
ELEVATIONS ($C_D=1.0$, LOW T_{avg} MIN SL
COGNE POWER SHAPE, NON-FBA)

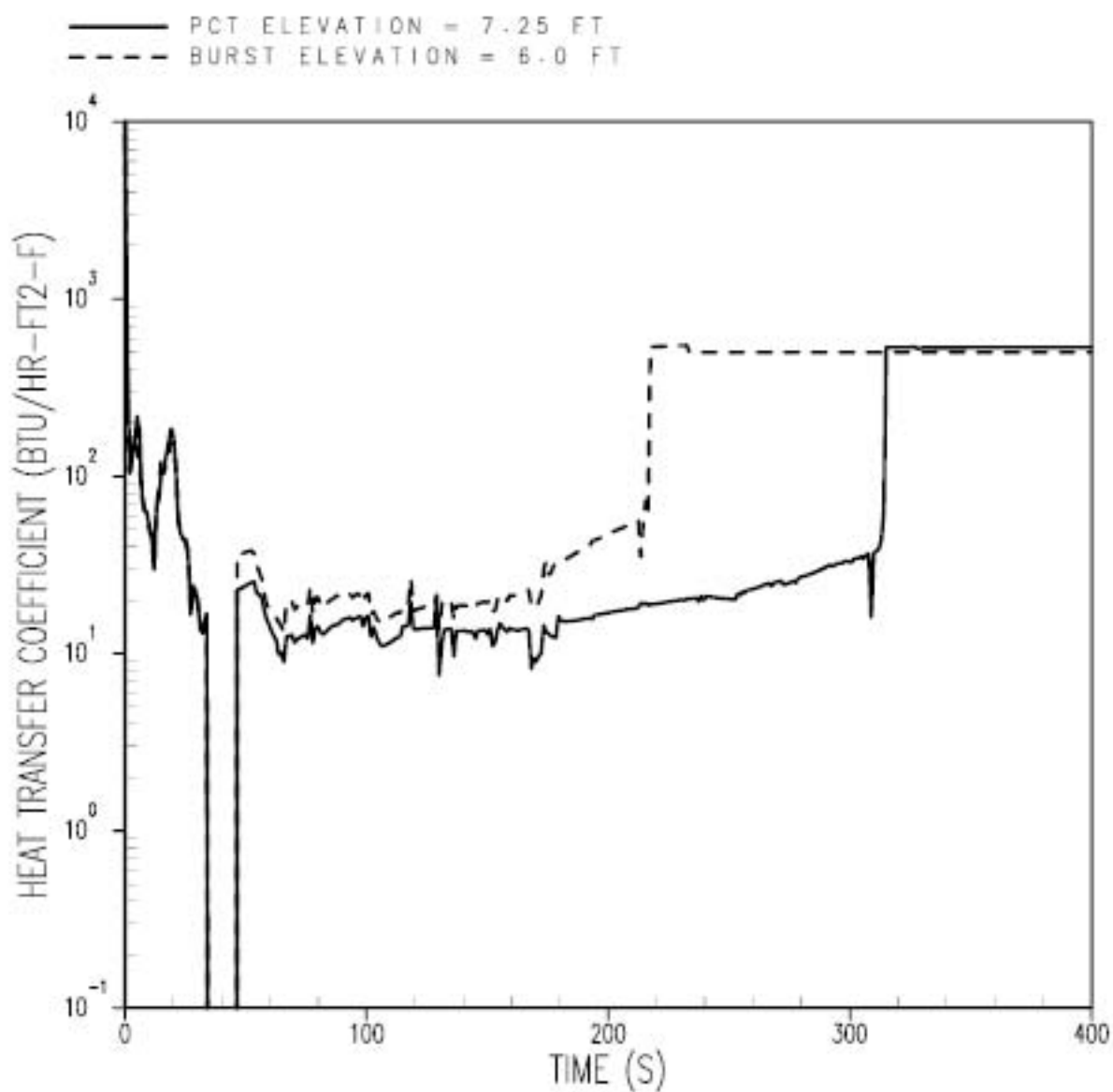


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FIGURE 15.8-10E

CLADDING SURFACE HEAT TRANSFER
COEFFICIENT AT PCT AND BURST
ELEVATIONS ($C_D = 0.8$, HIGH T_{OVR} MIN SL,
COSINE POWER SHAPE, NON-IFBA)

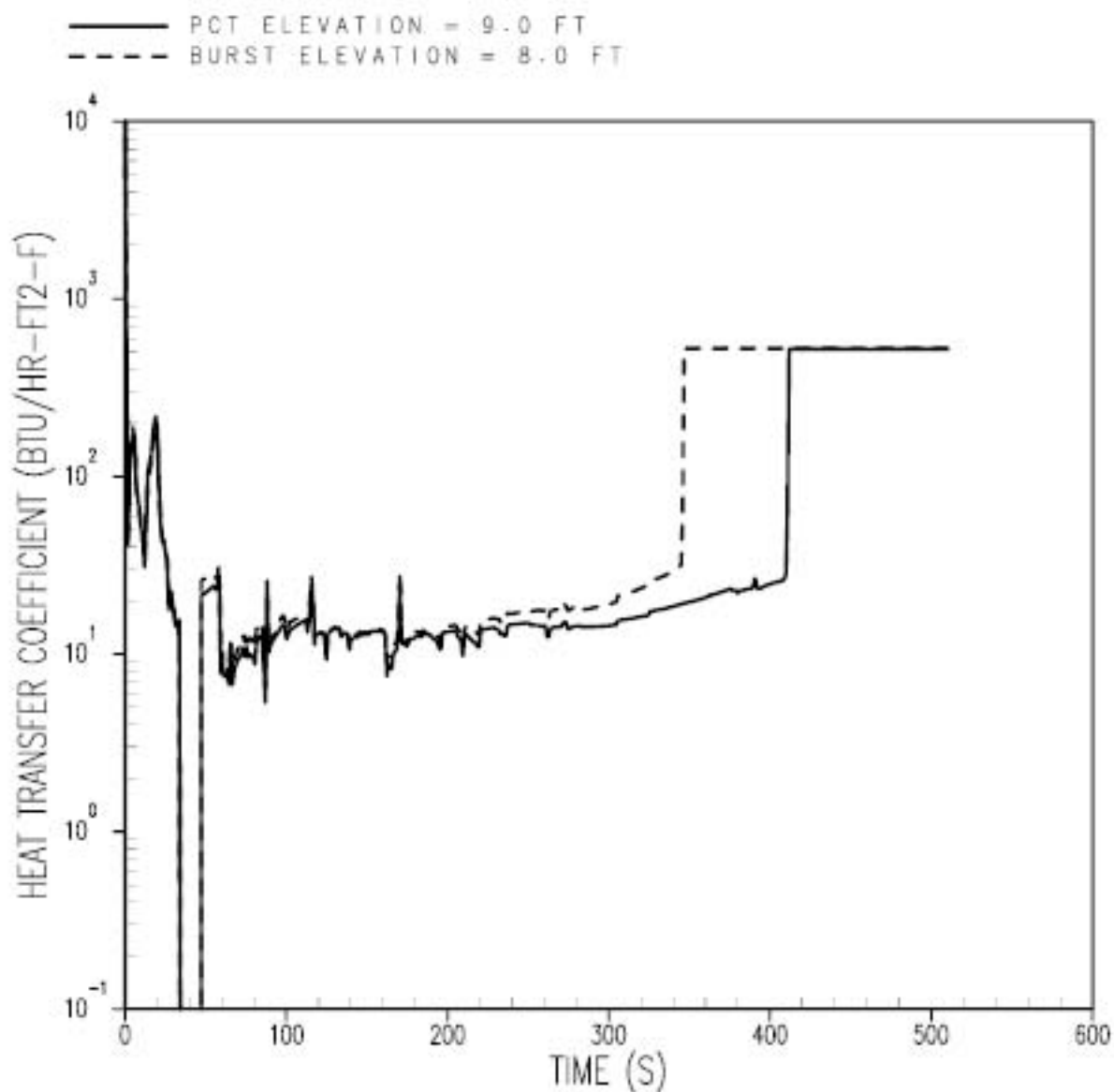


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FIGURE 15.8-10F

CLADDING SURFACE HEAT TRANSFER
COEFFICIENT AT PCT AND BURST
ELEVATIONS ($C_D=0.8$, HIGH T_{AVG} , MAX SH,
COSINE POWER SHAPE, NON-IFBA)

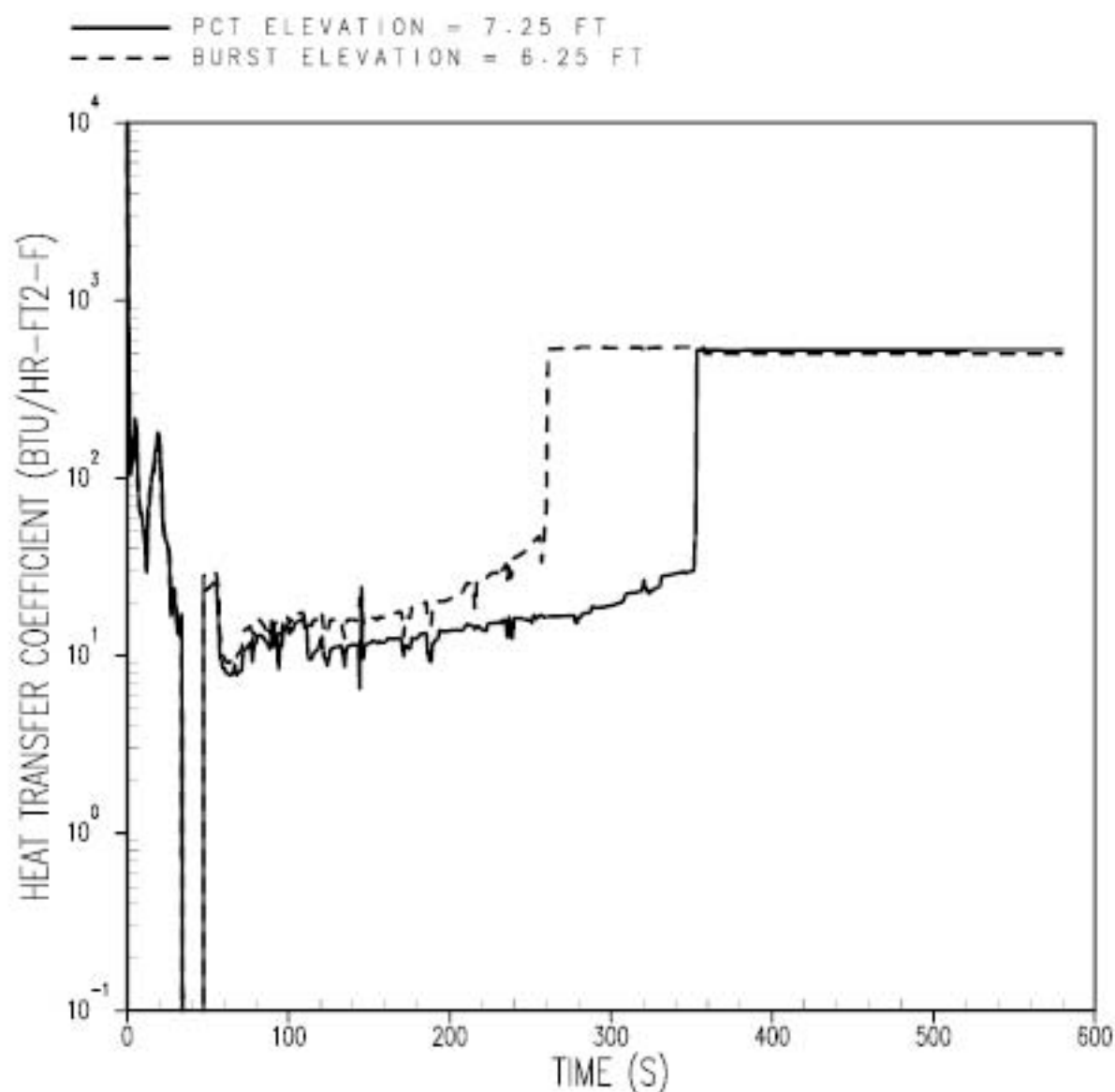


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FIGURE 16.6-100

CLADDING SURFACE HEAT TRANSFER
 COEFFICIENT AT PCT AND BURST
 ELEVATIONS ($C_D=0.8$, HIGH T_{avg}
 MIN 61.8.5' POWER SHAPE NON-FBA)



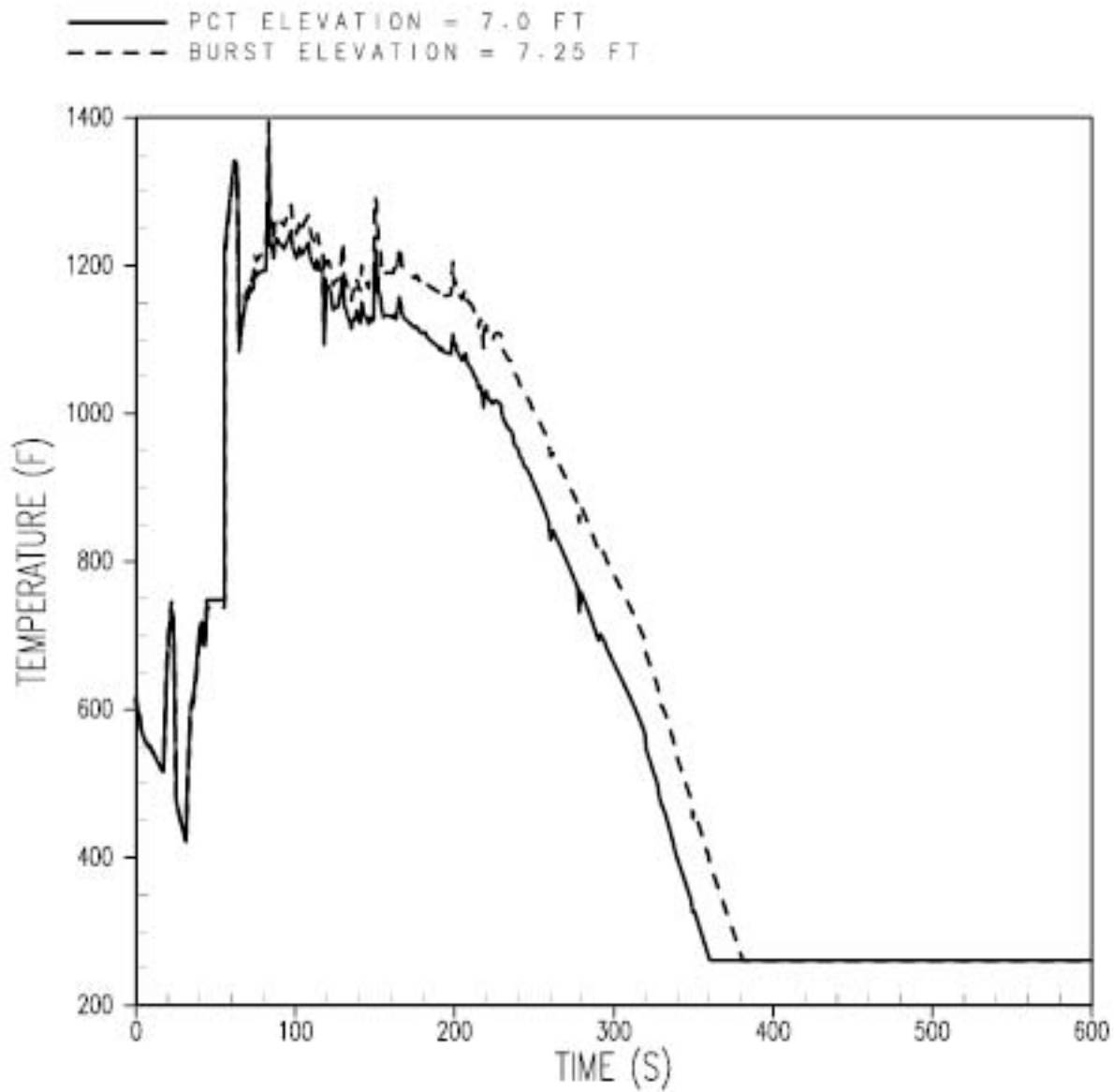
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FIGURE 16.6-10H

CLADDING SURFACE HEAT TRANSFER
 COEFFICIENT AT PCT AND BURST
 ELEVATIONS ($C_D=0.6$, HIGH T_{AVG}
 MIN 6I, COGNE POWER SHAPE, IPBA)

Figure 15.6-11 Deleted

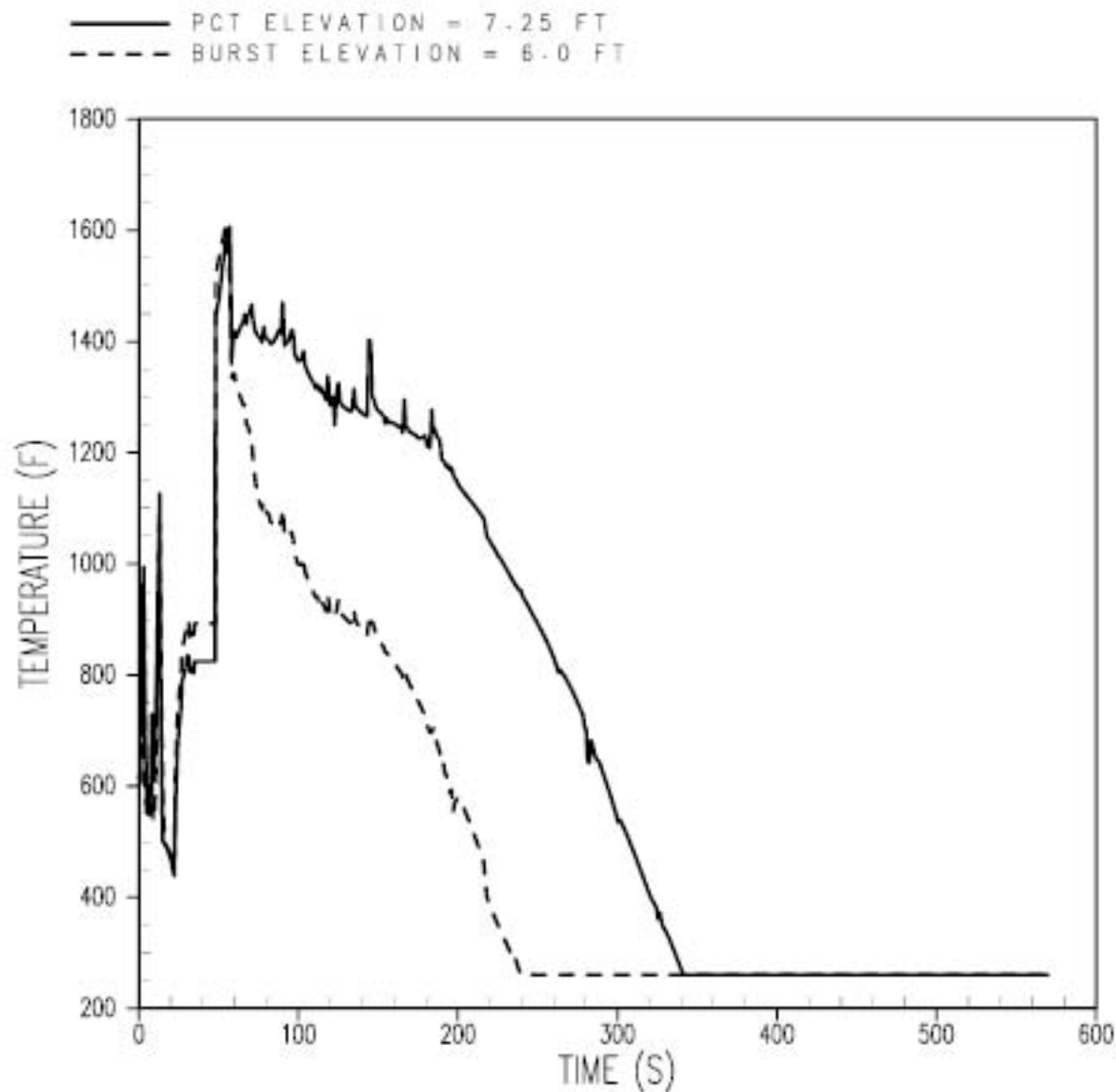


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FIGURE 15.8-11A

VAPOR TEMPERATURE AT PCT AND BURST
 ELEVATIONS ($C_p = 0.4$, LOW T_{sat} MIN 81,
 COSINE POWER SHAPE, NON-IFBA

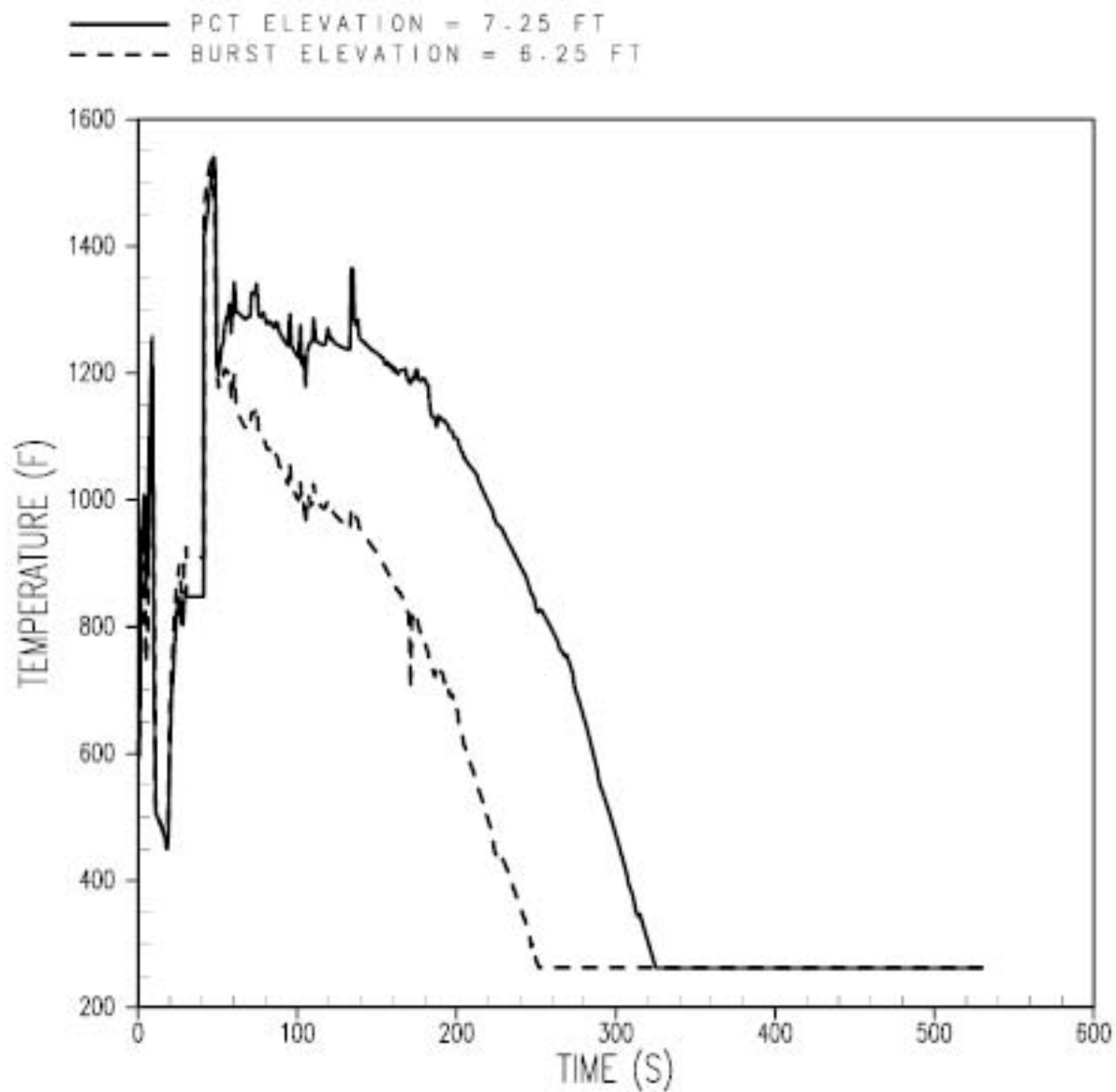


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FIGURE 15.8-11B

VAPOR TEMPERATURE AT PCT AND BURST
 ELEVATIONS ($C_p = 0.6$, LOW T_{env} , MIN SI,
 COSINE POWER SHAPE, NON-IFBA

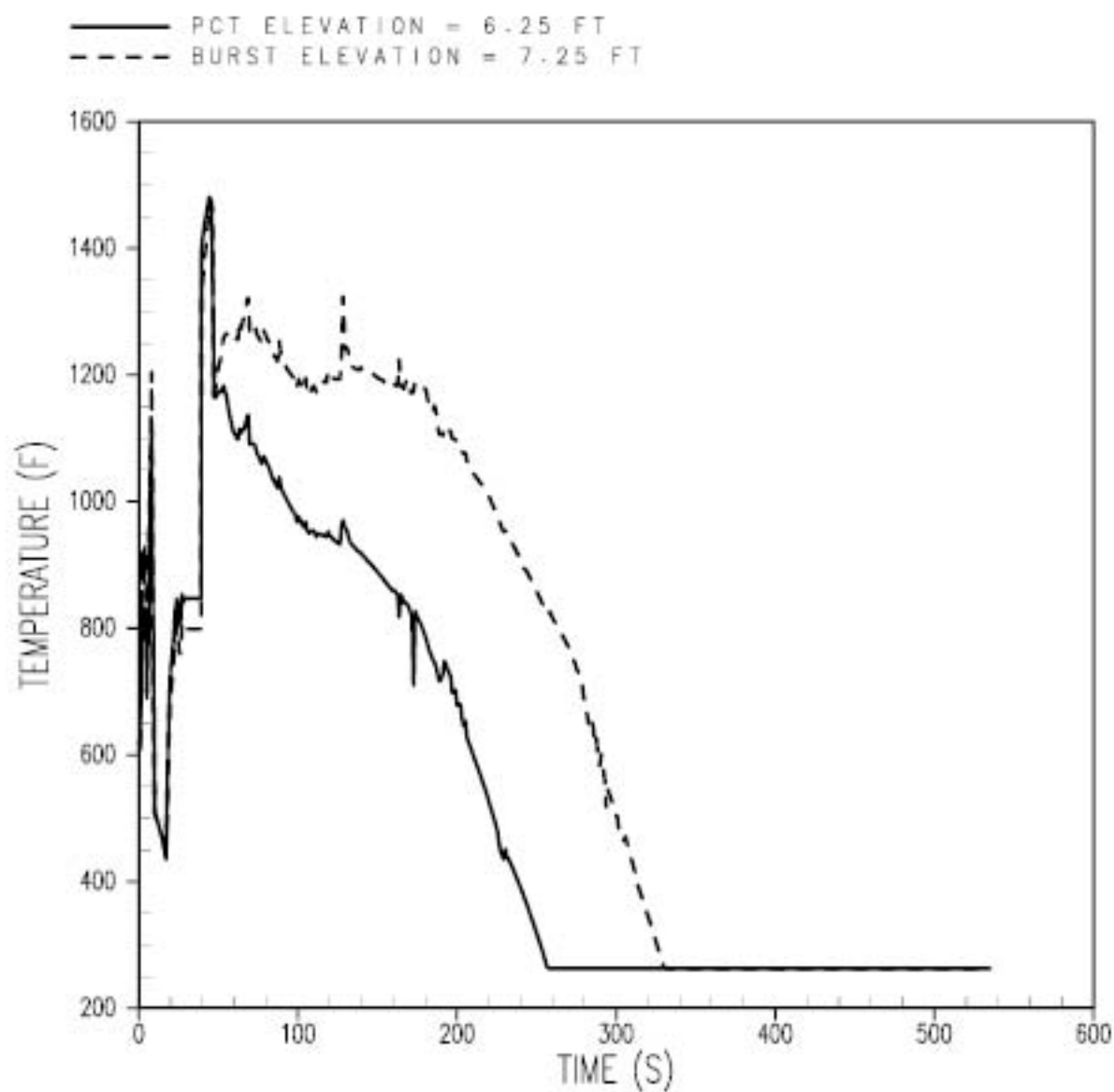


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FIGURE 15.8-11C

VAPOR TEMPERATURE AT PCT AND BURST
ELEVATIONS ($C_p = 0.8$, LOW T_{dry} MIN 81,
COSINE POWER SHAPE, NON-IFBA

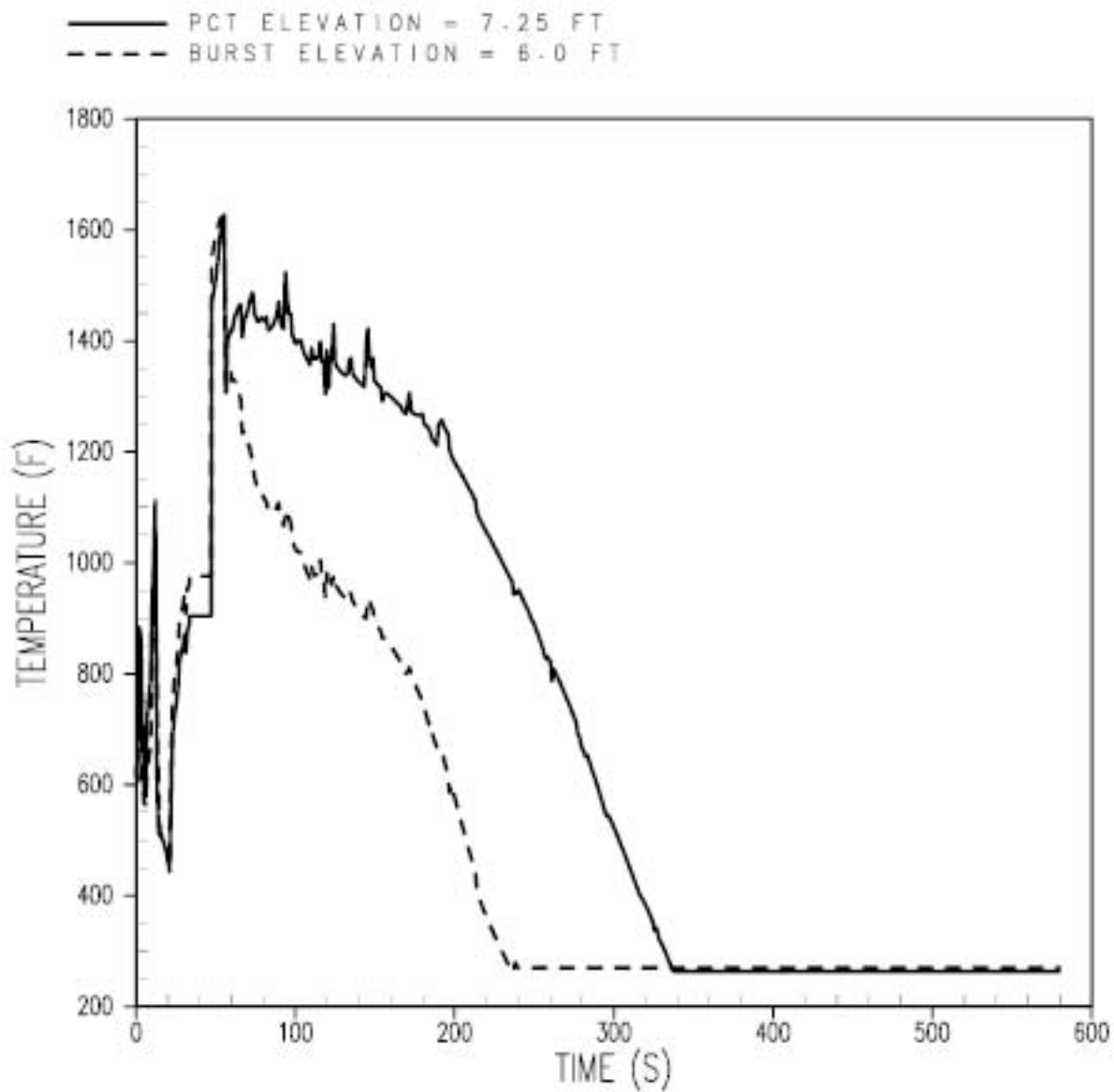


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FIGURE 15.8-11D

VAPOR TEMPERATURE AT PCT AND BURST
ELEVATIONS ($C_p=1.0$, LOW T_{avg} MIN SI,
COSINE POWER SHAPE, NON-IFBA)

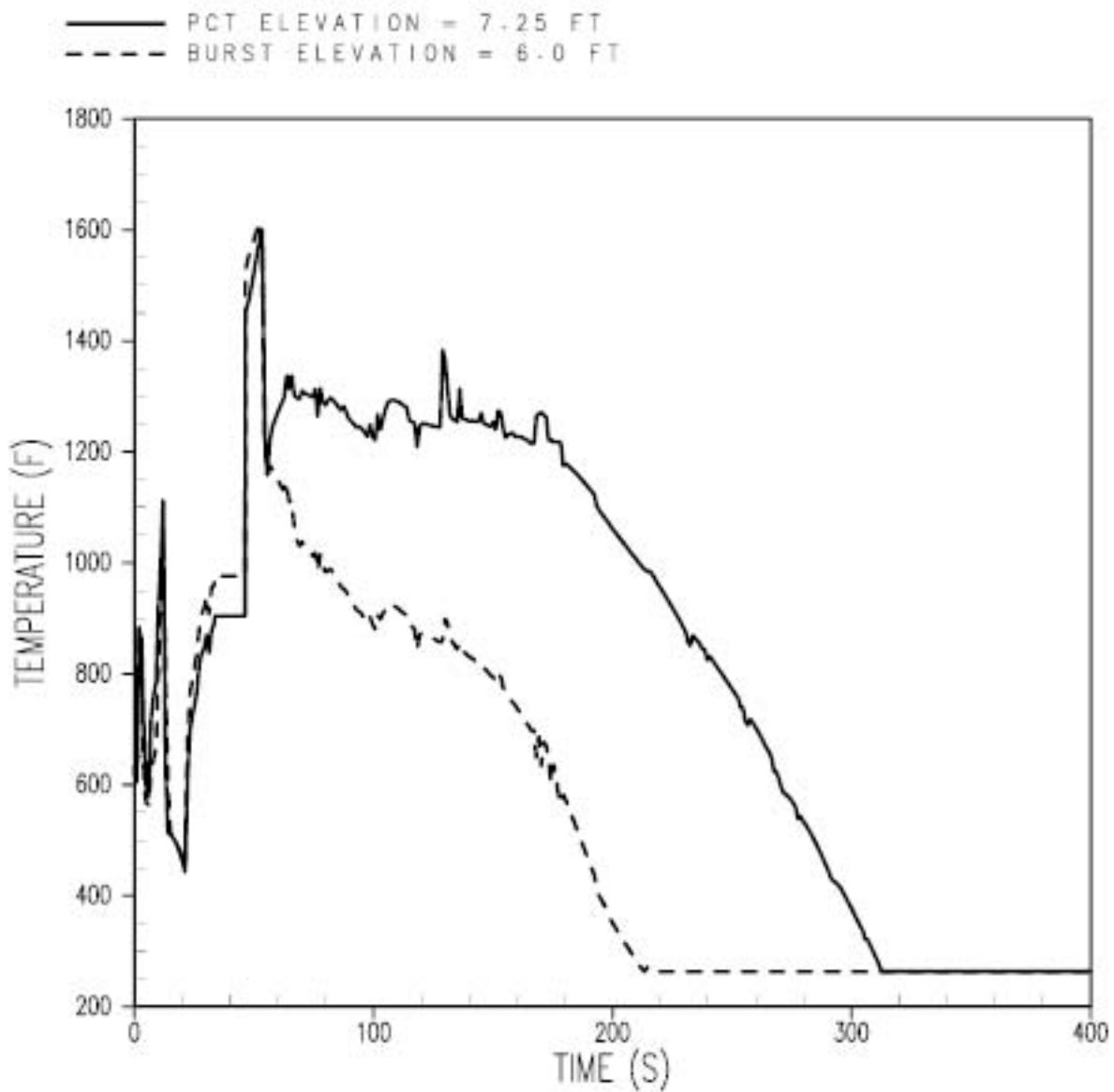


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FIGURE 15.8-11E

VAPOR TEMPERATURE AT PCT AND BURST
 ELEVATIONS ($G_D = 0.6$, HIGH T_{avg} MIN 81,
 COSINE POWER SHAPE, NON-IFBA)

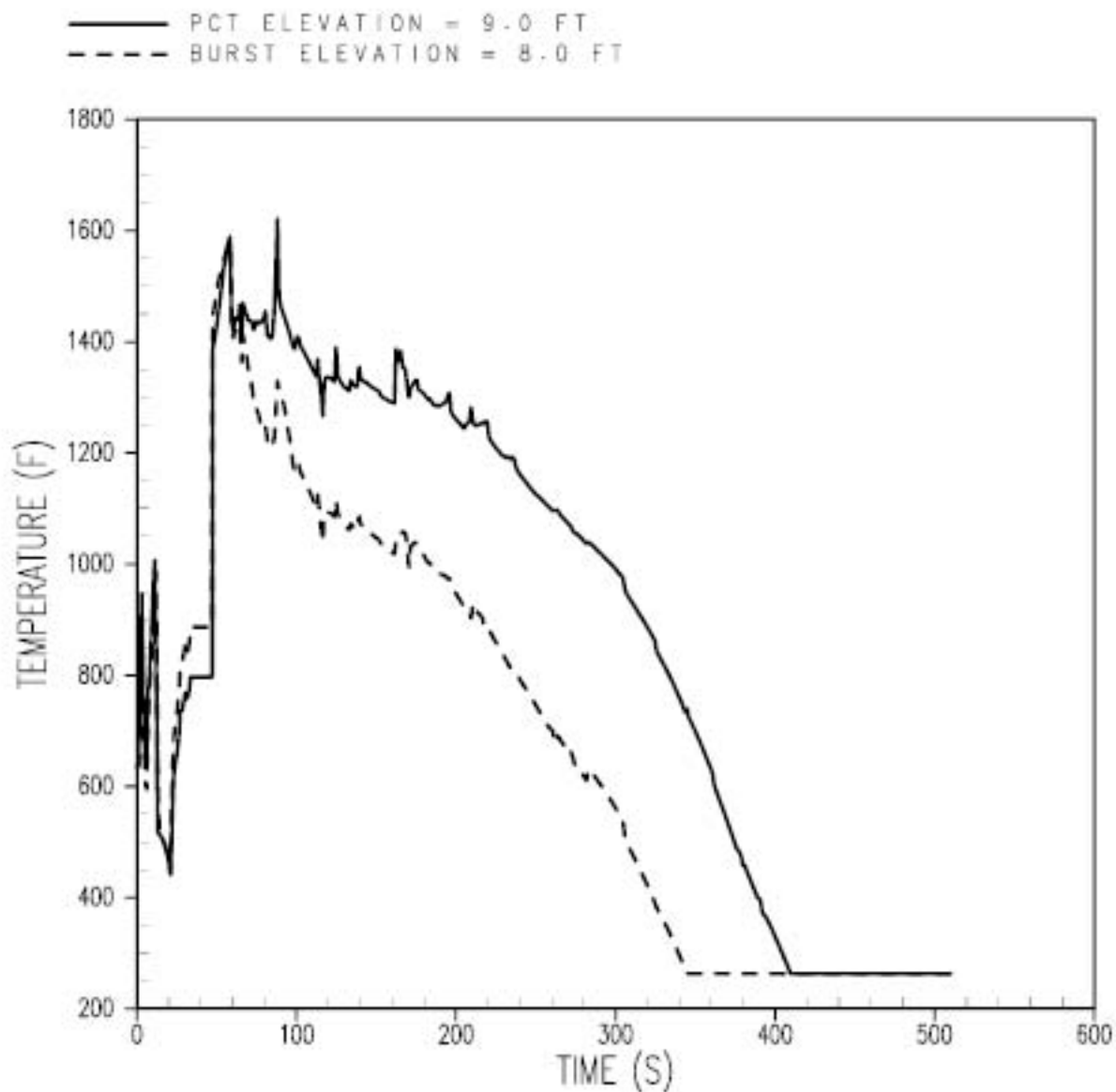


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FIGURE 15.8-11F

VAPOR TEMPERATURE AT PCT AND BURST
 ELEVATIONS ($C_p = 0.8$, HIGH T_{avg} MAX SI,
 COSINE POWER SHAPE, NON-IFBA)

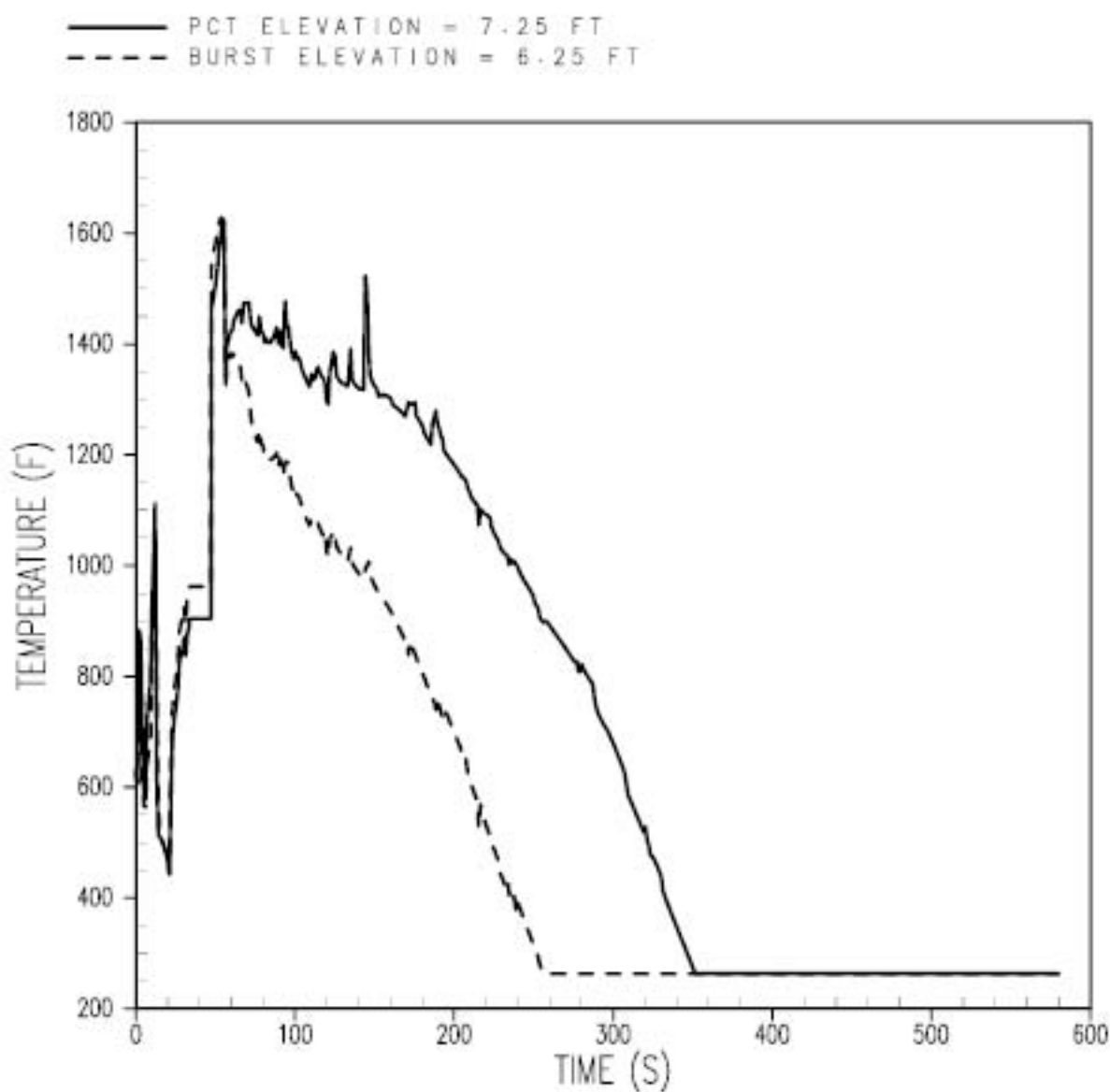


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FIGURE 16.8-110

VAPOR TEMPERATURE AT PCT AND BURST
 ELEVATIONS ($C_D=0.6$, HIGH T_{avg} MIN SI,
 & 6' POWER SHAPE, NON-IFBA)



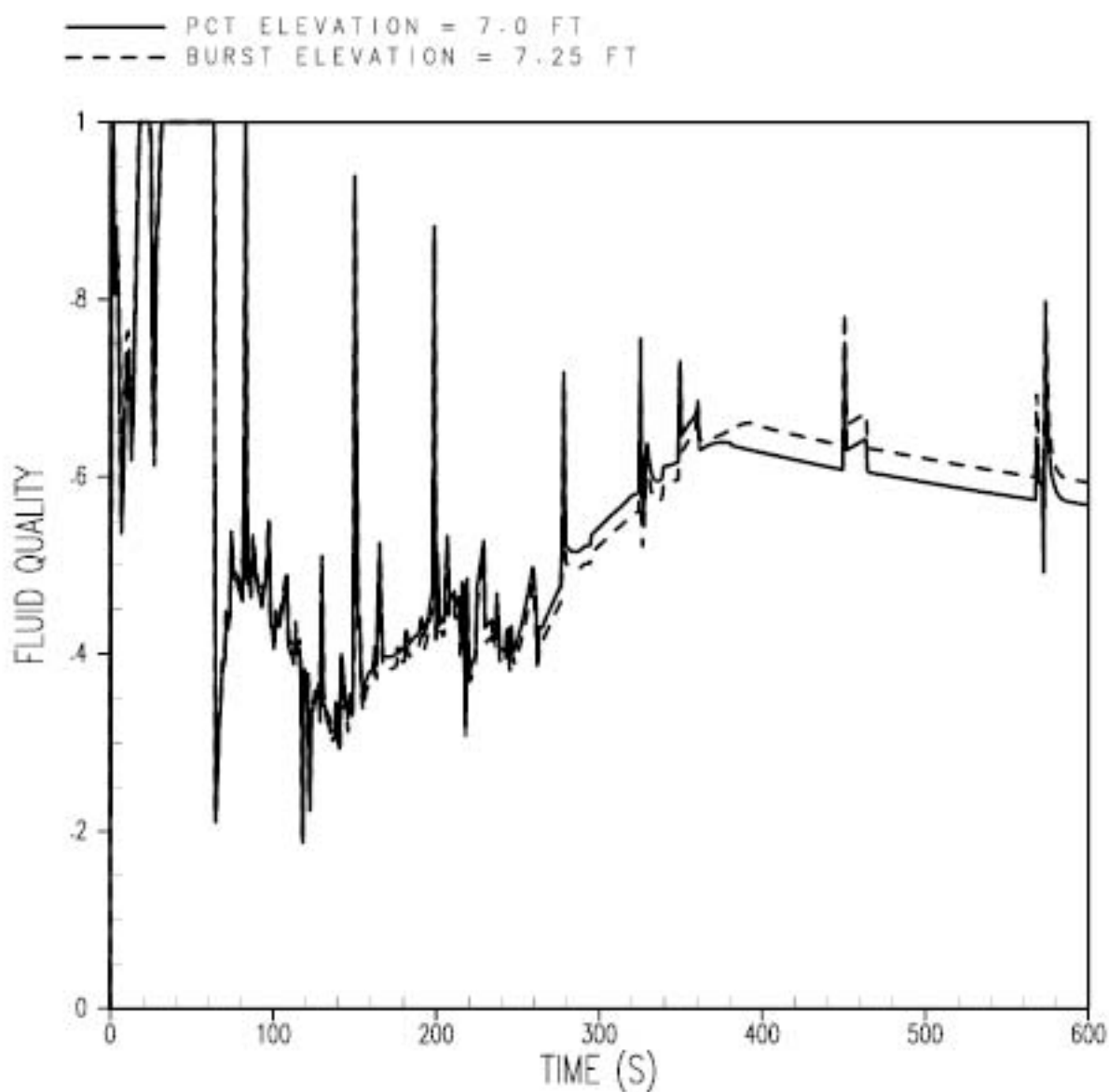
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FIGURE 16.8-11H

VAPOR TEMPERATURE AT PCT AND BURST
 ELEVATIONS ($G_D = 0.6$, HIGH T_{avg} MIN 2L,
 COSINE POWER SHAPE, IFBA)

Figure 15.6-12 Deleted

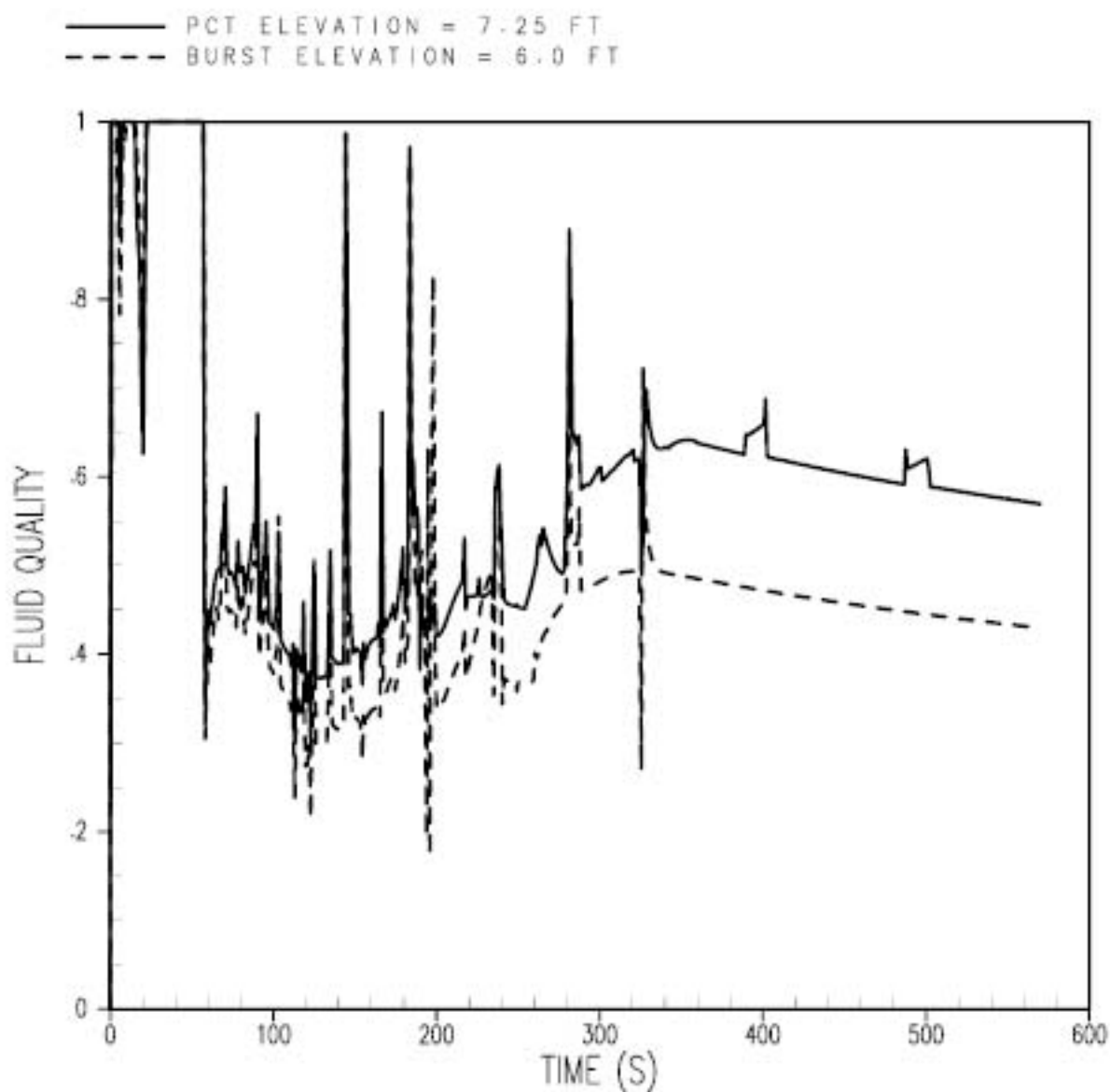


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FIGURE 15.8-12A

FLUID QUALITY AT PCT AND BURST
 ELEVATIONS ($G_D = 0.4$, LOW T_{avg} MIN 81,
 COSINE POWER SHAPE, NON-FBA)

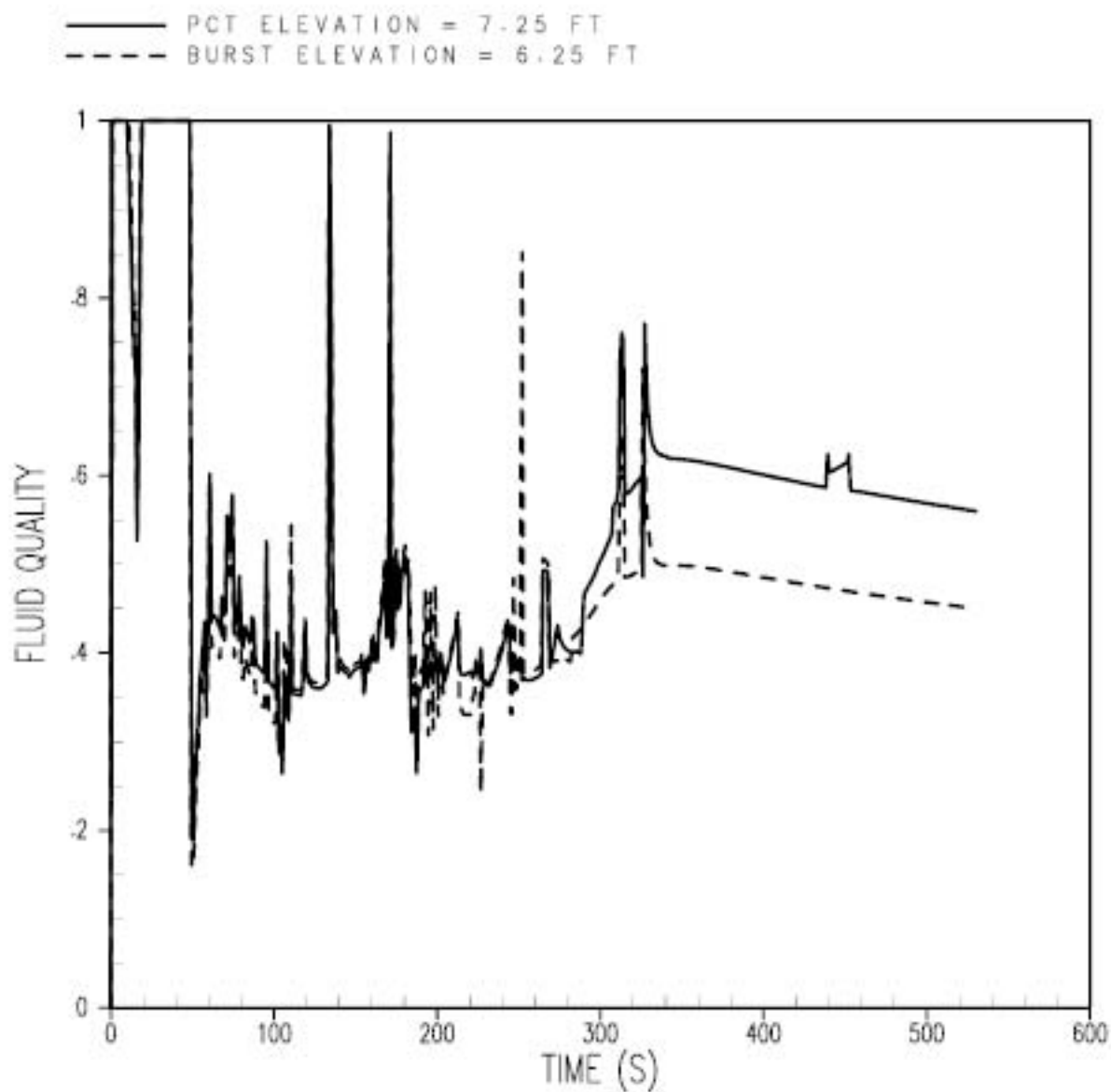


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FIGURE 16.8-12B

FLUID QUALITY AT PCT AND BURST
 ELEVATIONS ($G_D = 0.6$, LOW T_{avg} MIN 81,
 COSINE POWER SHAPE, NON-IFBA)

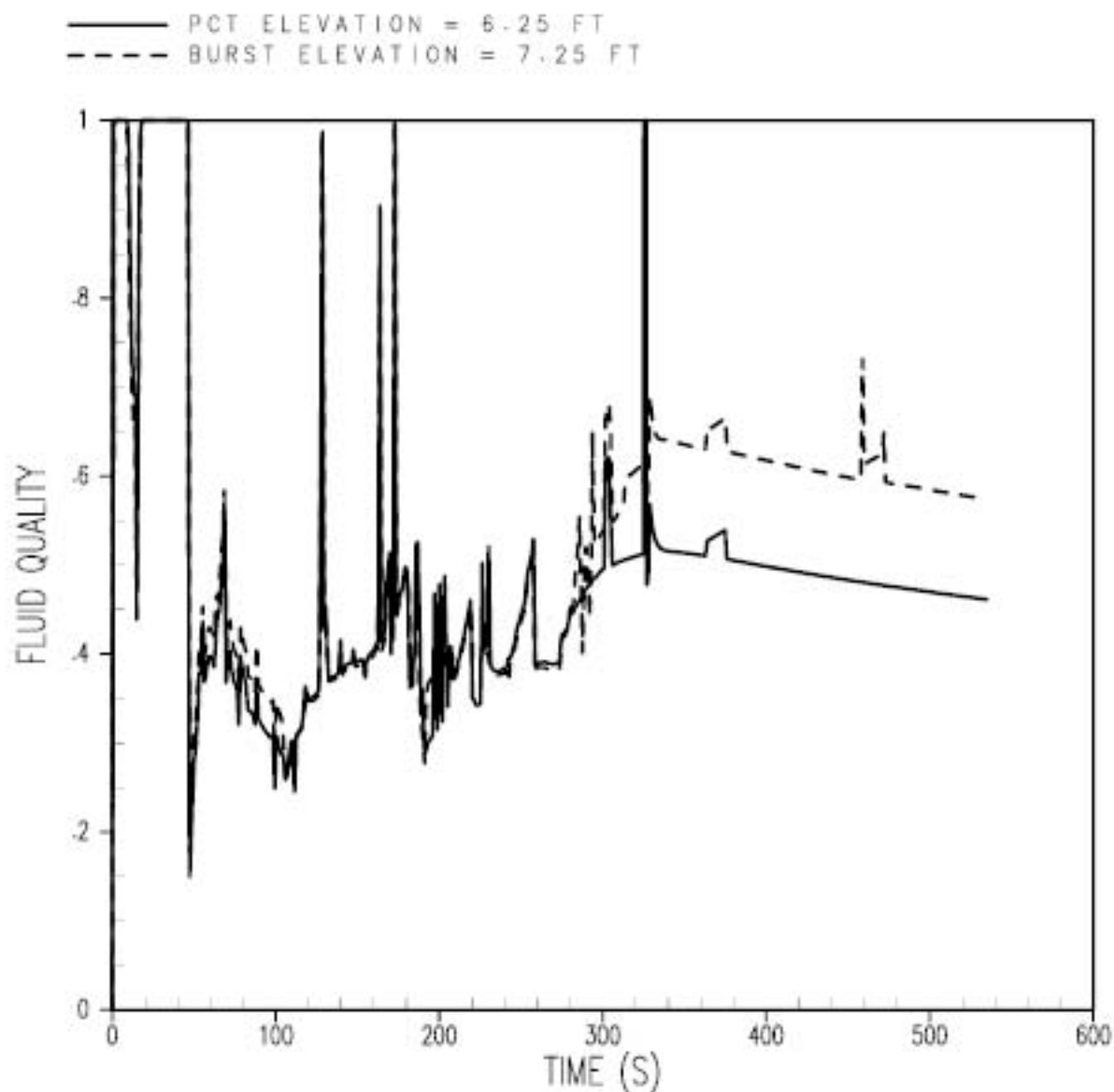


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FIGURE 16.6-12C

FLUID QUALITY AT PCT AND BURST
 ELEVATIONS ($C_p=0.8$, LOW T_{avg} MIN SI,
 COSINE POWER SHAPE, NON-IFBA)

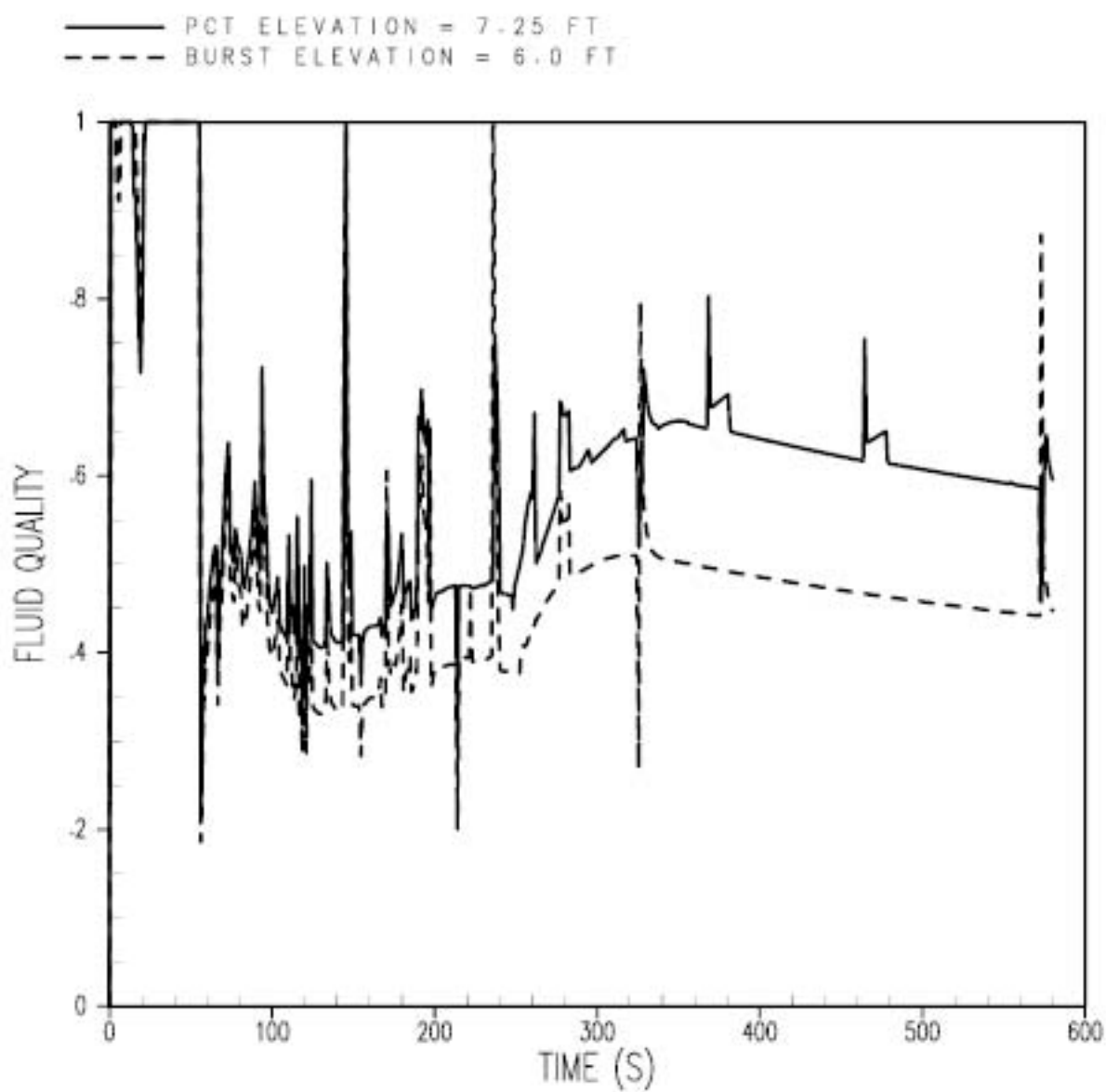


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FIGURE 16.8-12D

FLUID QUALITY AT PCT AND BURST
 ELEVATIONS ($G_D = 1.8$, LOW T_{avg} MIN 81,
 COSINE POWER SHAPE, NON-IFBA)

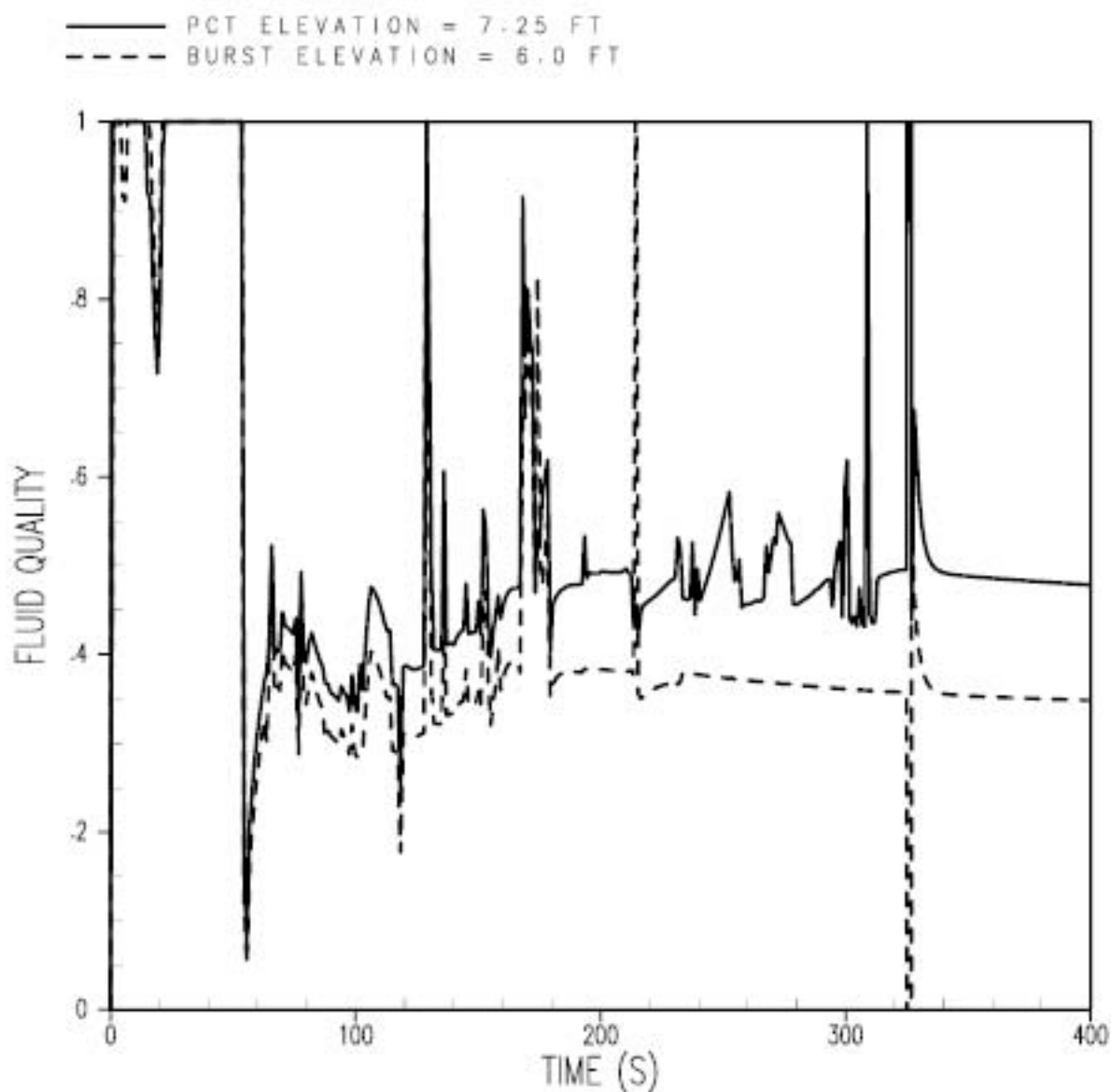


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FIGURE 16.8-12E

FLUID QUALITY AT PCT AND BURST
 ELEVATIONS ($C_p = 0.6$, HIGH T_{avg} MIN SI,
 COSINE POWER SHAPE, NON-IFBA)

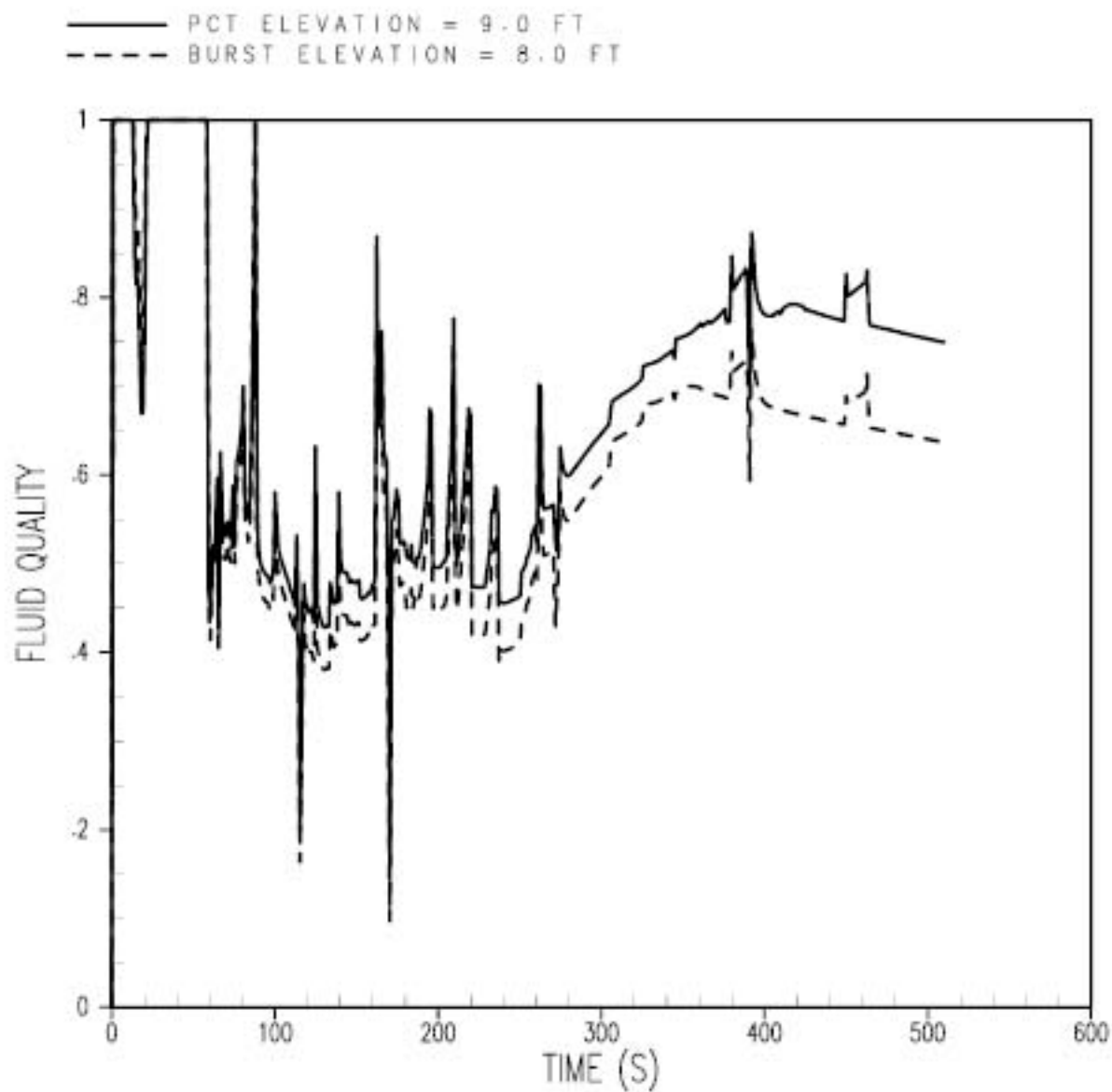


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FIGURE 15.8-12F

FLUID QUALITY AT PCT AND BURST
ELEVATIONS ($C_D=0.8$, HIGH T_{MAX} , MAX SI,
COSINE POWER SHAPE, NON-IFBA)

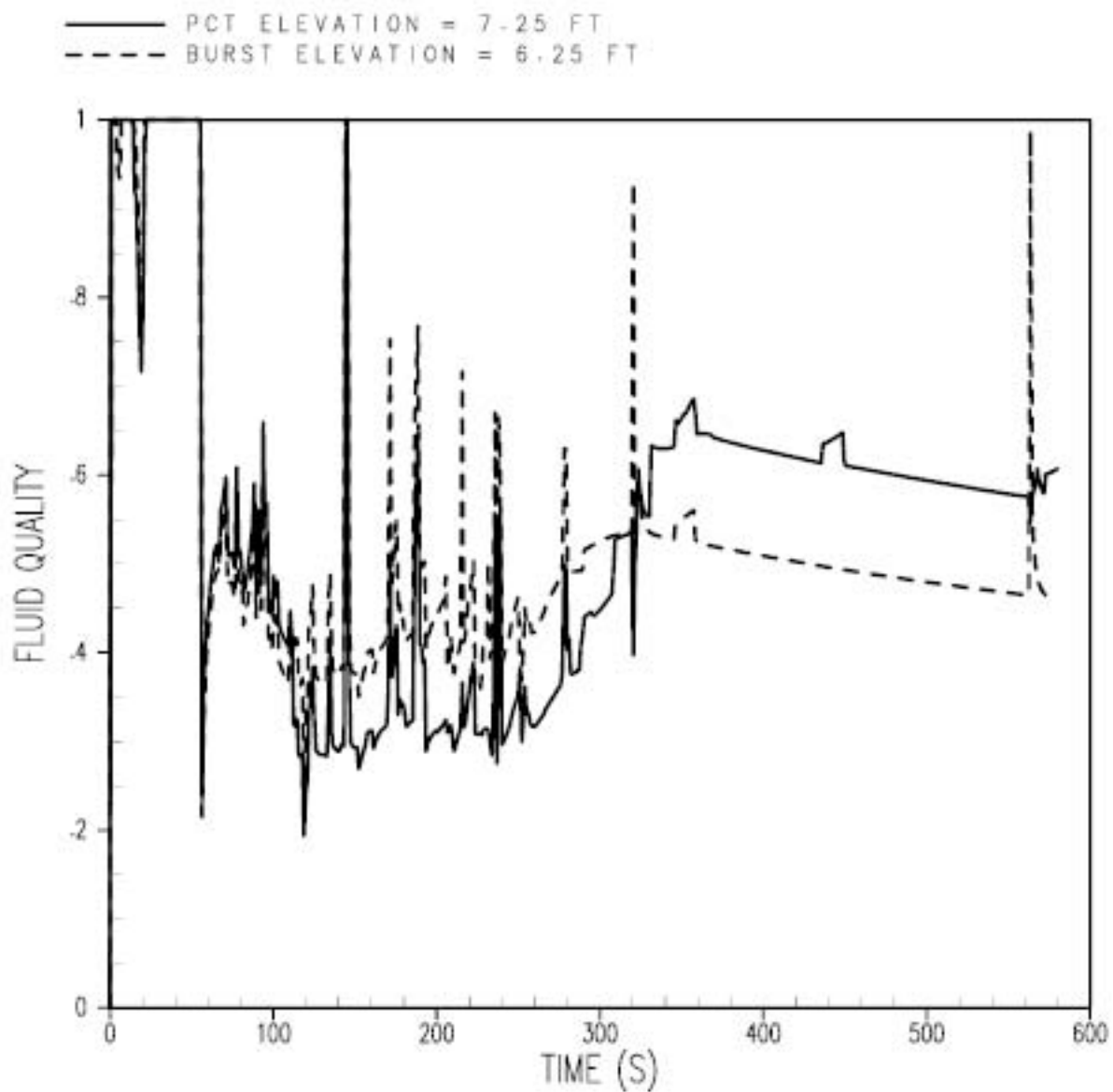


REV. OL-16
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FIGURE 15.8-12G

FLUID QUALITY AT PCT AND BURST
 ELEVATIONS ($G_D=0.6$, HIGH T_{avg} MIN 81,
 8.5' POWER SHAPE, NON-FBA)



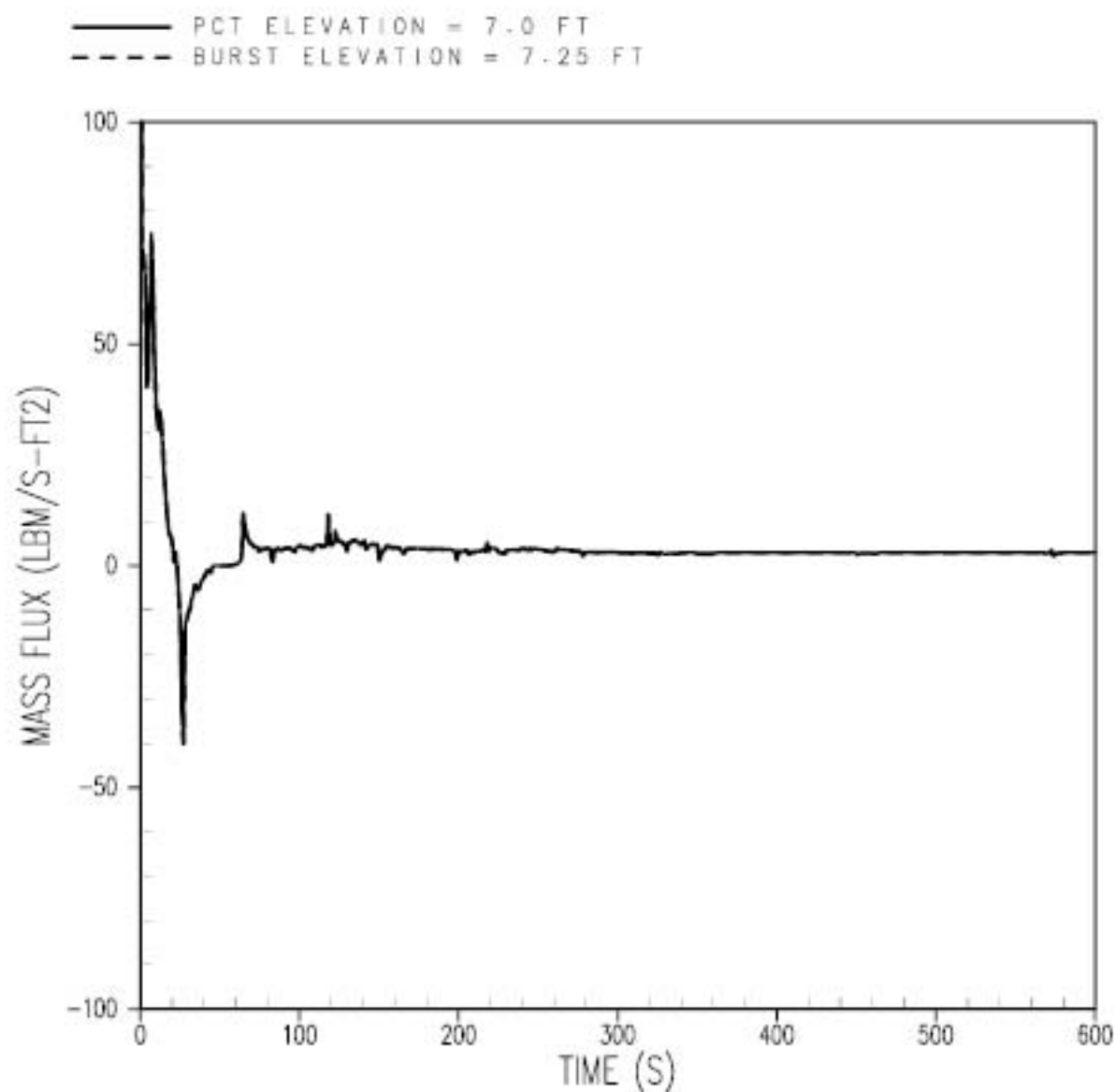
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FIGURE 16.8-12H

FLUID QUALITY AT PCT AND BURST
 ELEVATIONS ($G_D=0.6$, HIGH T_{avg} MIN 81,
 COSINE POWER SHAPE, IFBA)

Figure 15.6-13 Deleted

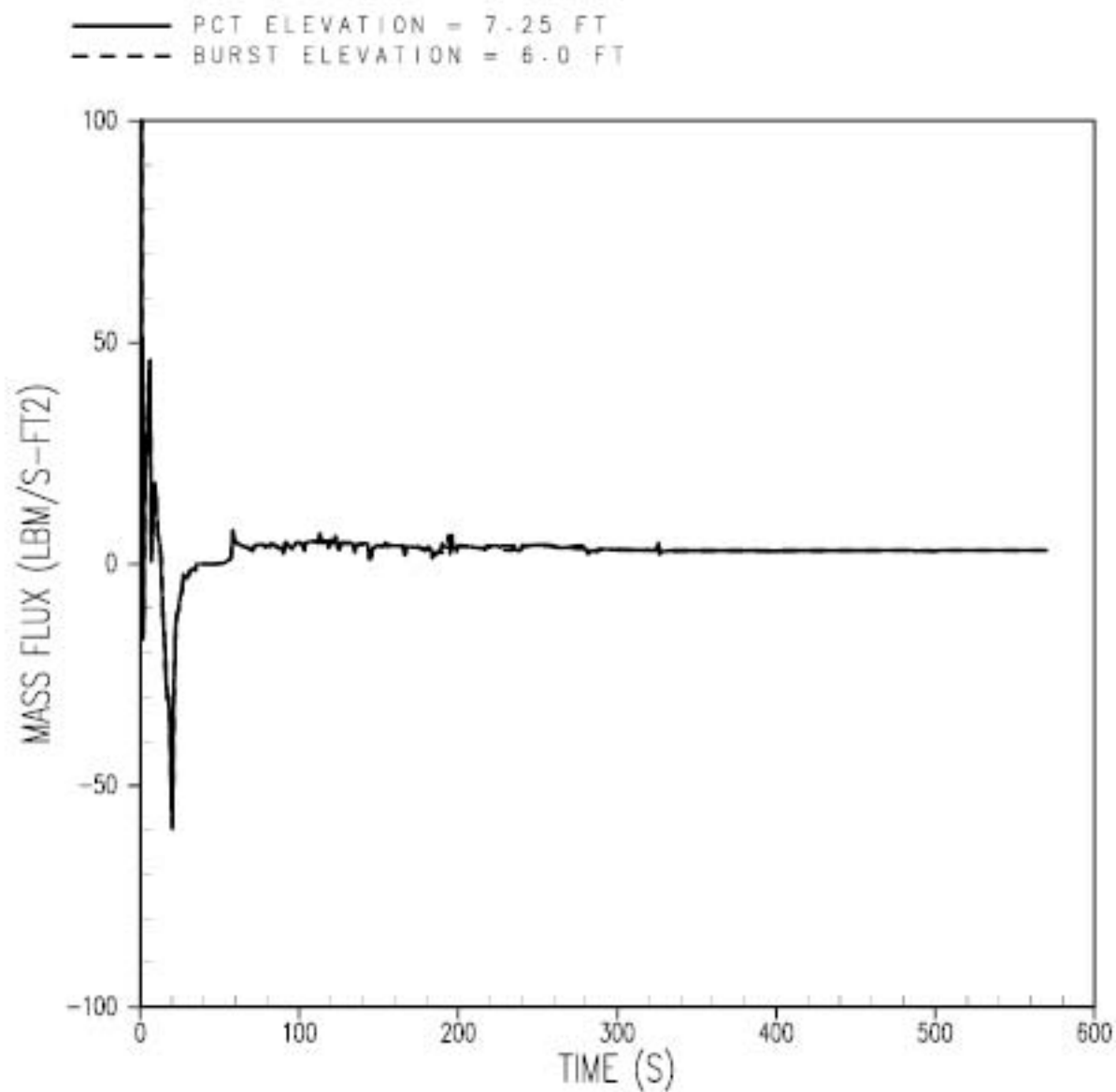


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FIGURE 15.8-13A

FLUID MASS VELOCITY AT PCT AND BURST
ELEVATIONS ($G_D = 0.4$, LOW T_{avg} MIN 81,
COSINE POWER SHAPE, NON-FBA)

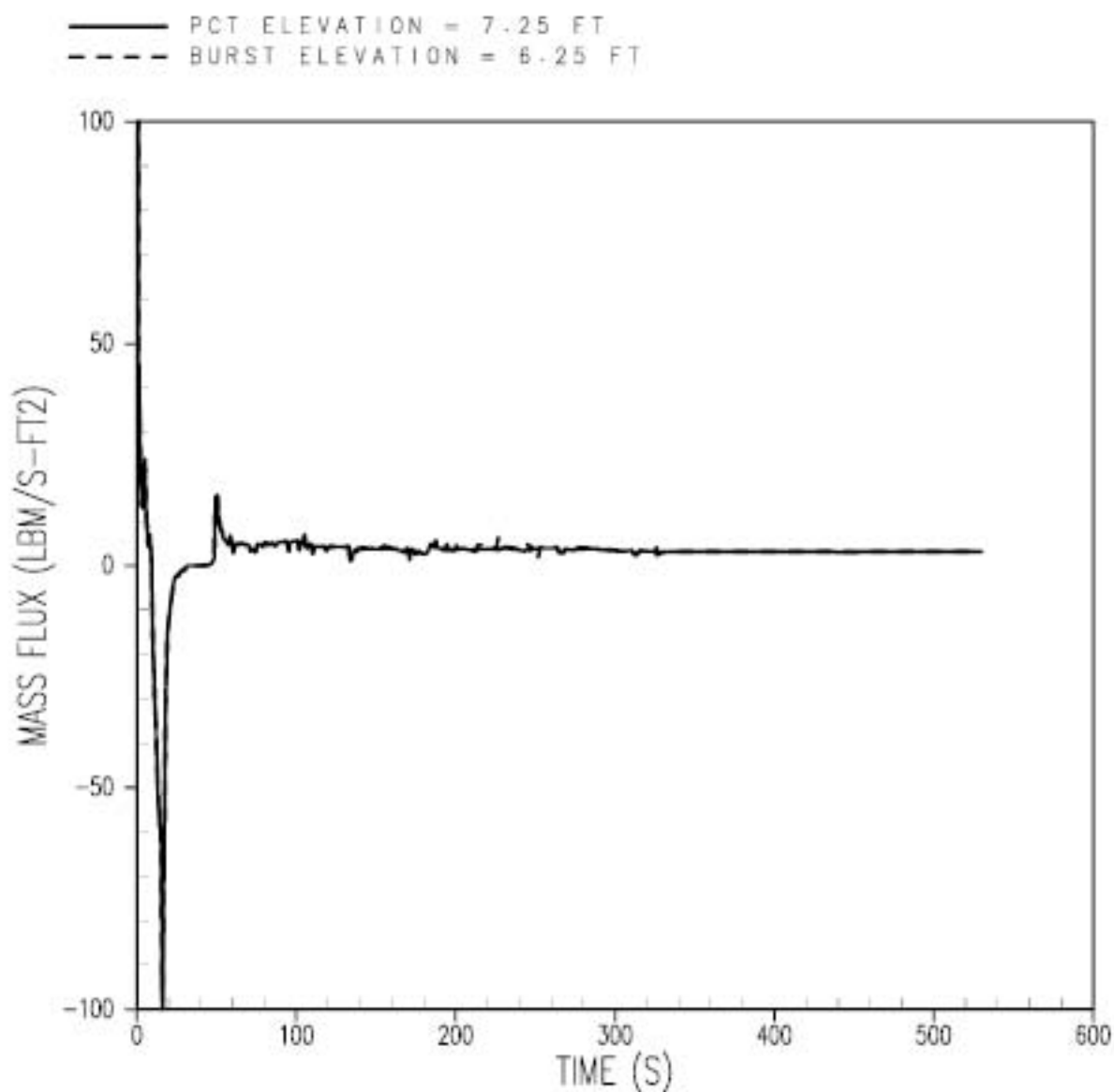


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FIGURE 15.5-13B

FLUID MASS VELOCITY AT PCT AND BURST
ELEVATIONS ($C_p=0.6$, LOW T_{avg} MIN SI,
COSINE POWER SHAPE, NON-IFBA)

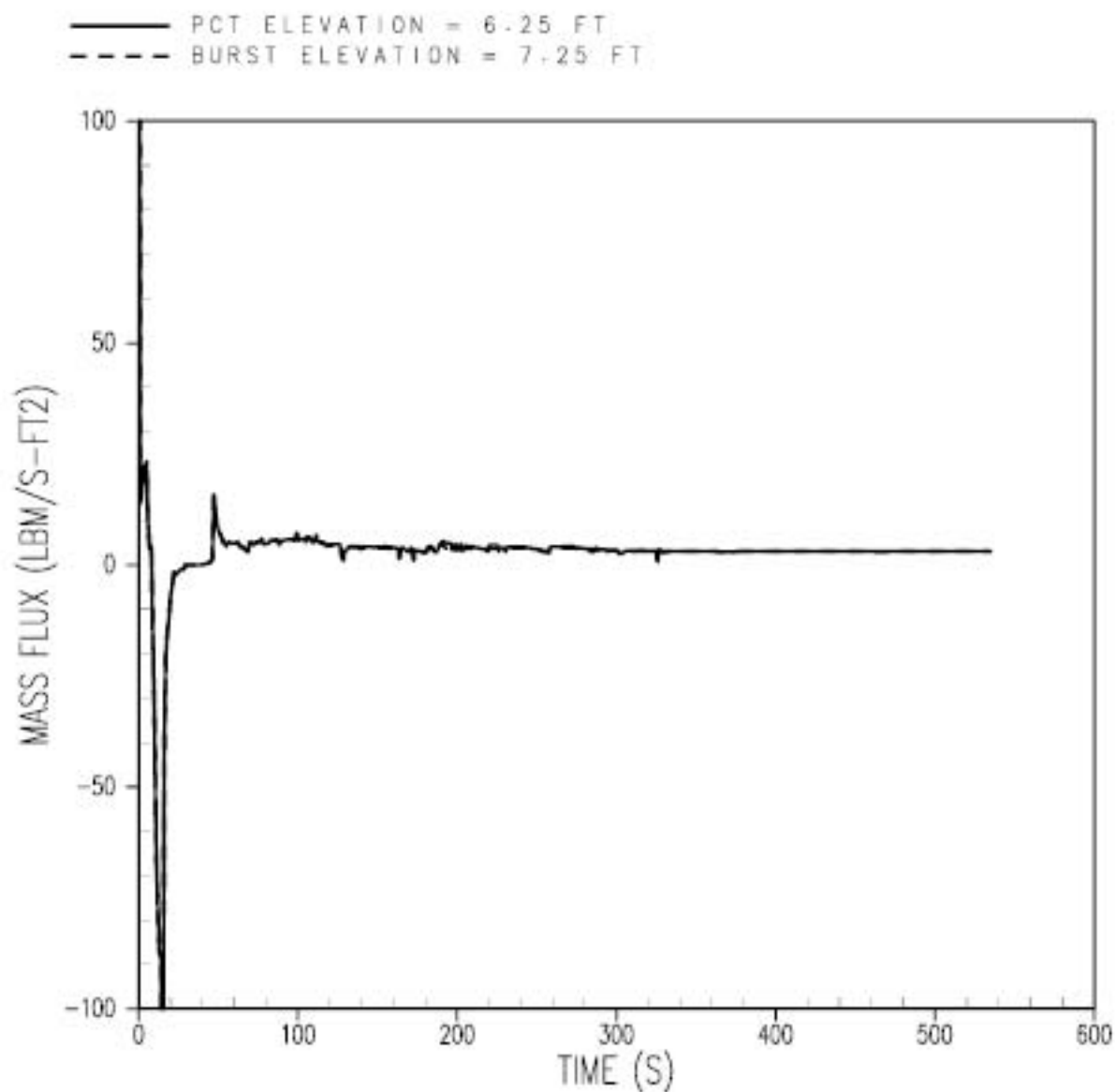


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FIGURE 15.8-13C

FLUID MASS VELOCITY AT PCT AND BURST
 ELEVATIONS ($C_p = 0.8$, LOW T_{avg} MIN 81,
 COSINE POWER SHAPE, NON-FBA)

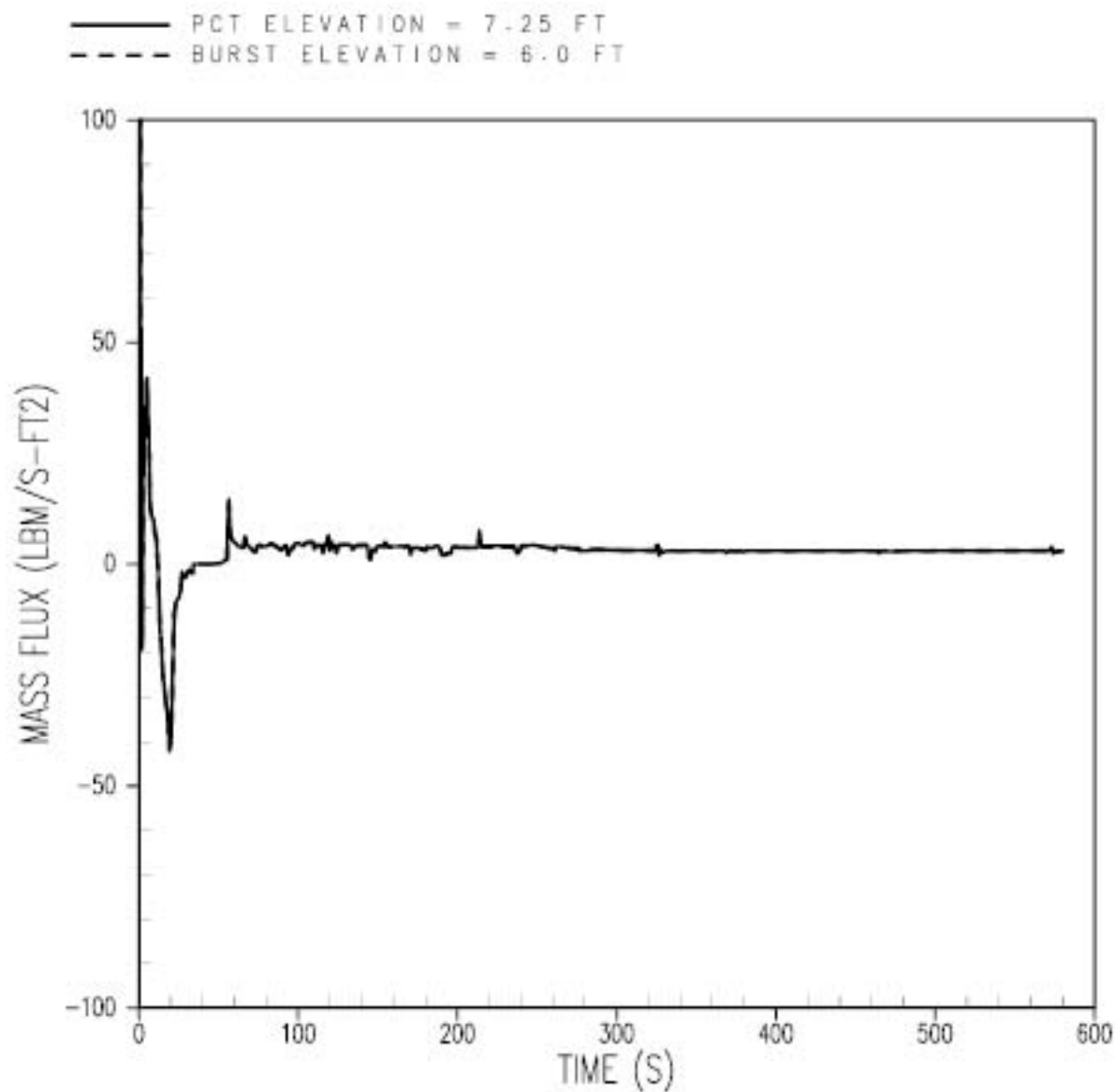


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FIGURE 16.8-13D

FLUID MASS VELOCITY AT PCT AND BURST
ELEVATIONS ($G_D=1.8$, LOW T_{avg} MIN 81,
COSINE POWER SHAPE, NON-FBA)

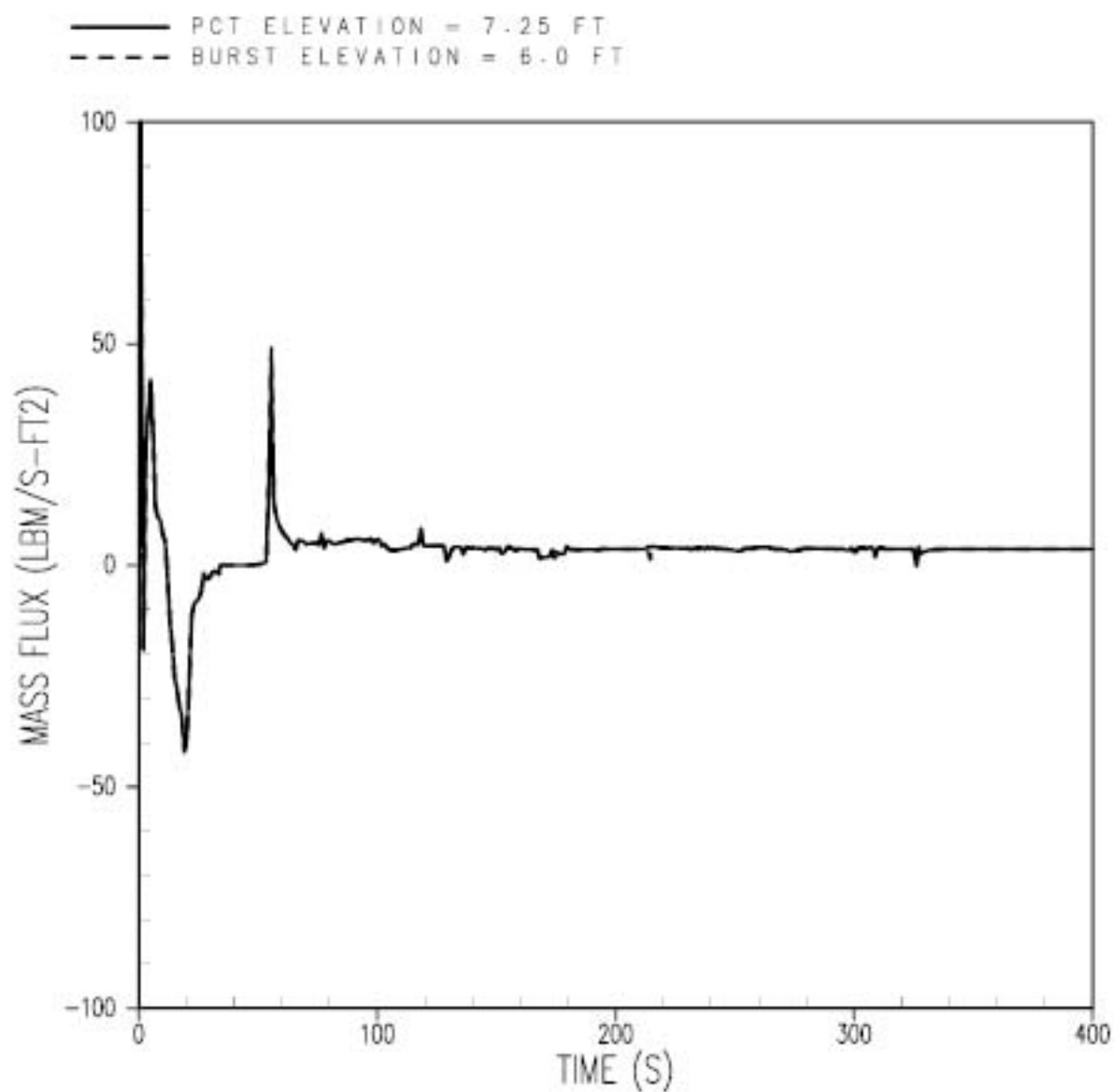


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FIGURE 15.8-13E

FLUID MASS VELOCITY AT PCT AND BURST
ELEVATIONS ($G_D = 0.6$, HIGH T_{avg} MIN 21,
COSINE POWER SHAPE, NON-FBA)

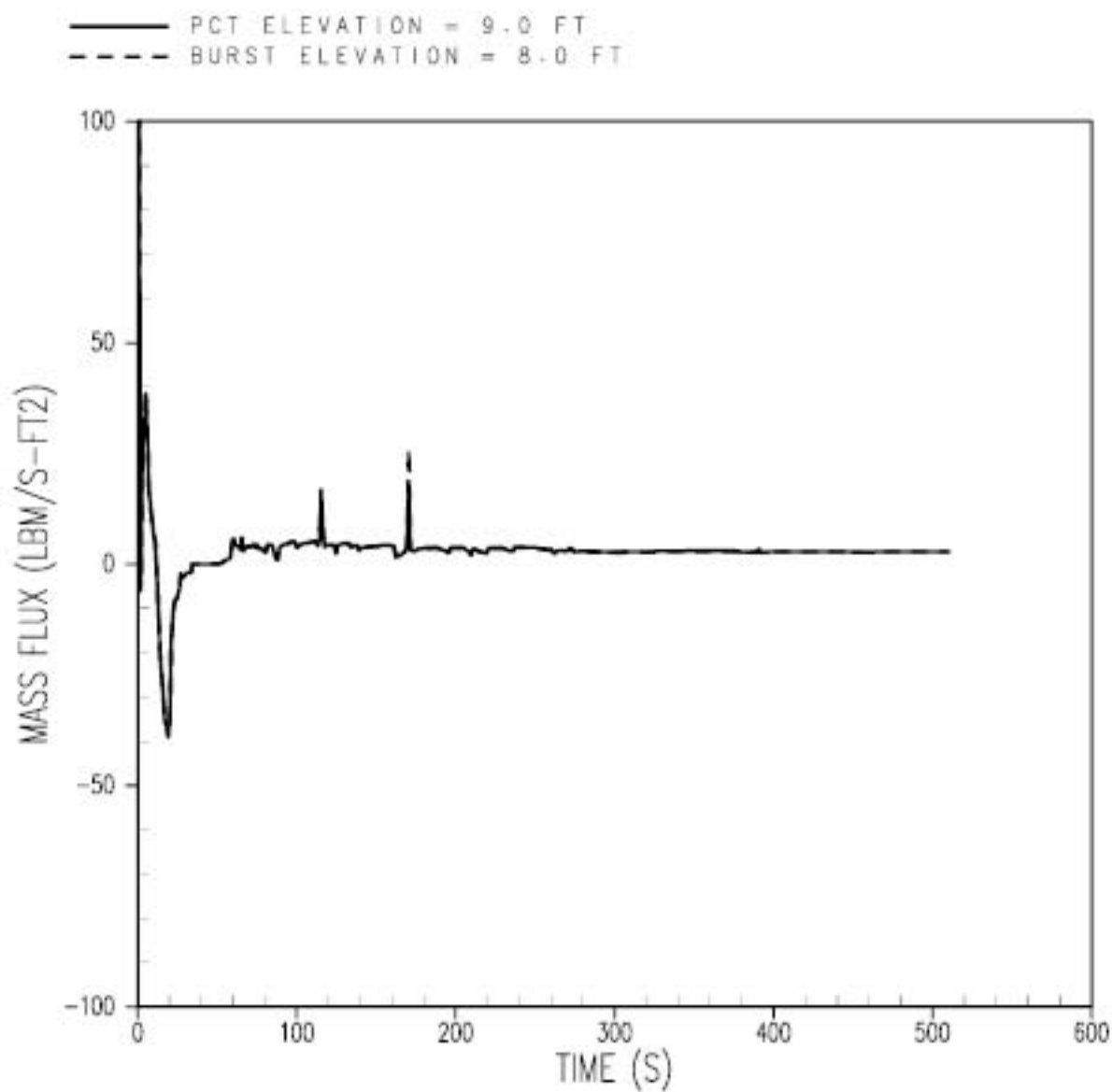


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FIGURE 15.8-13F

FLUID MASS VELOCITY AT PCT AND BURST
ELEVATIONS ($C_p=0.8$, HIGH T_{avg} MAX SI,
COSINE POWER SHAPE, NON-FBA)

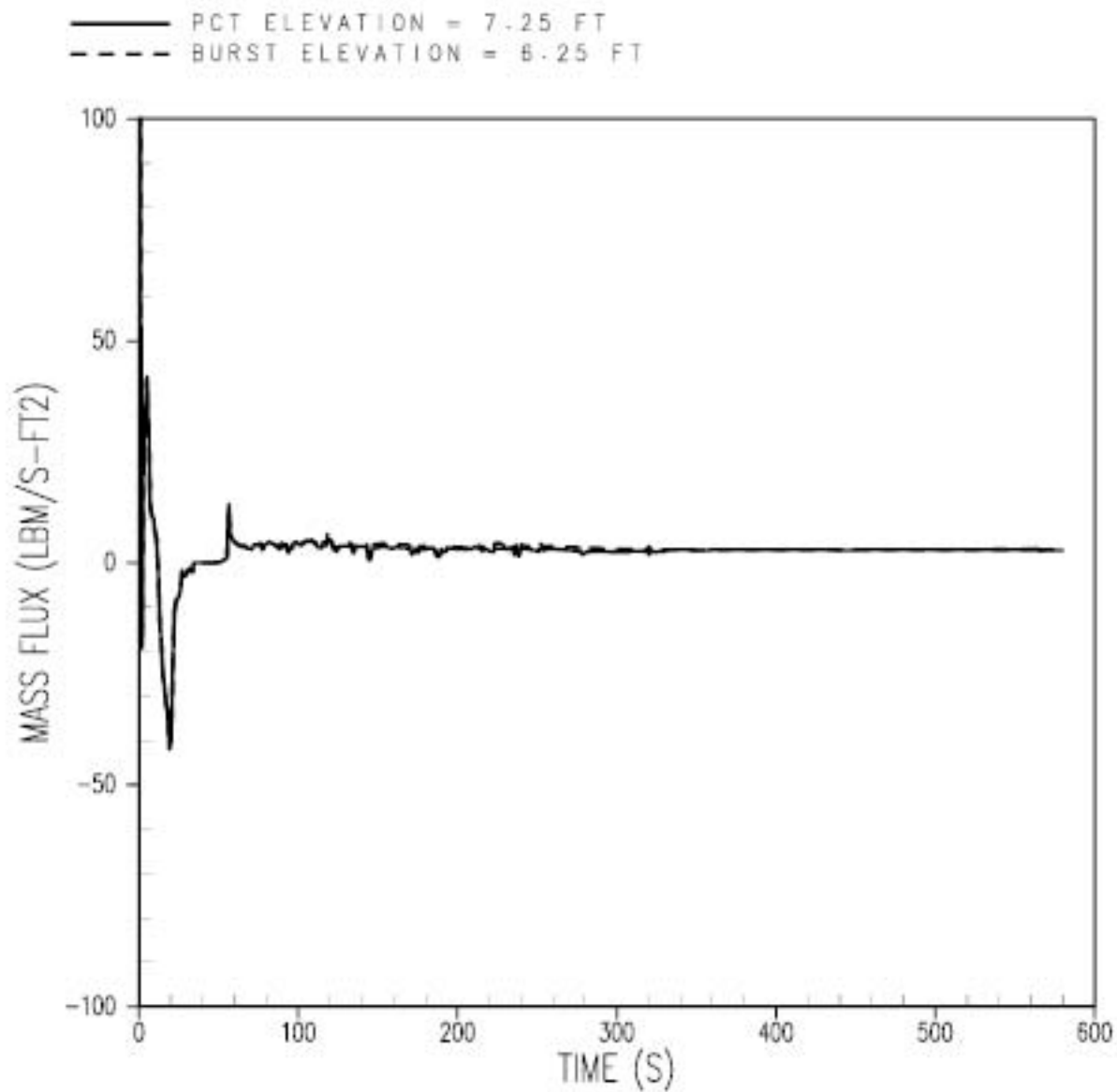


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FIGURE 15.8-13G

FLUID MASS VELOCITY AT PCT AND BURST
ELEVATIONS ($G_D=0.6$, HIGH T_{avg} MIN 81,
8.5' POWER SHAPE, NON-FBA)



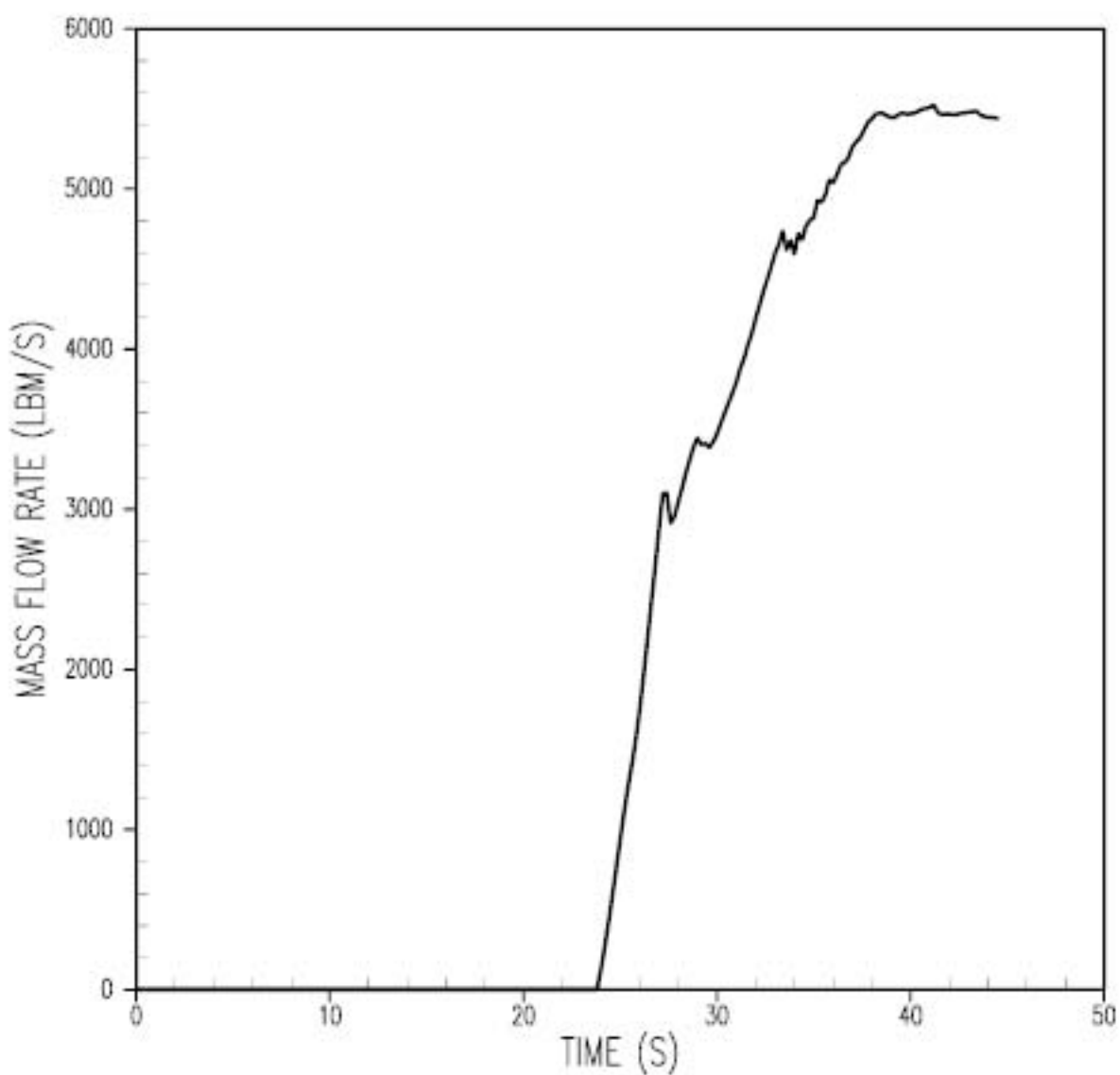
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FIGURE 15.8-13H

FLUID MASS VELOCITY AT PCT AND BURST
ELEVATIONS ($C_p=0.6$, HIGH T_{avg} MIN SI,
COSINE POWER SHAPE, 1FBA)

Figure 15.6-14 Deleted

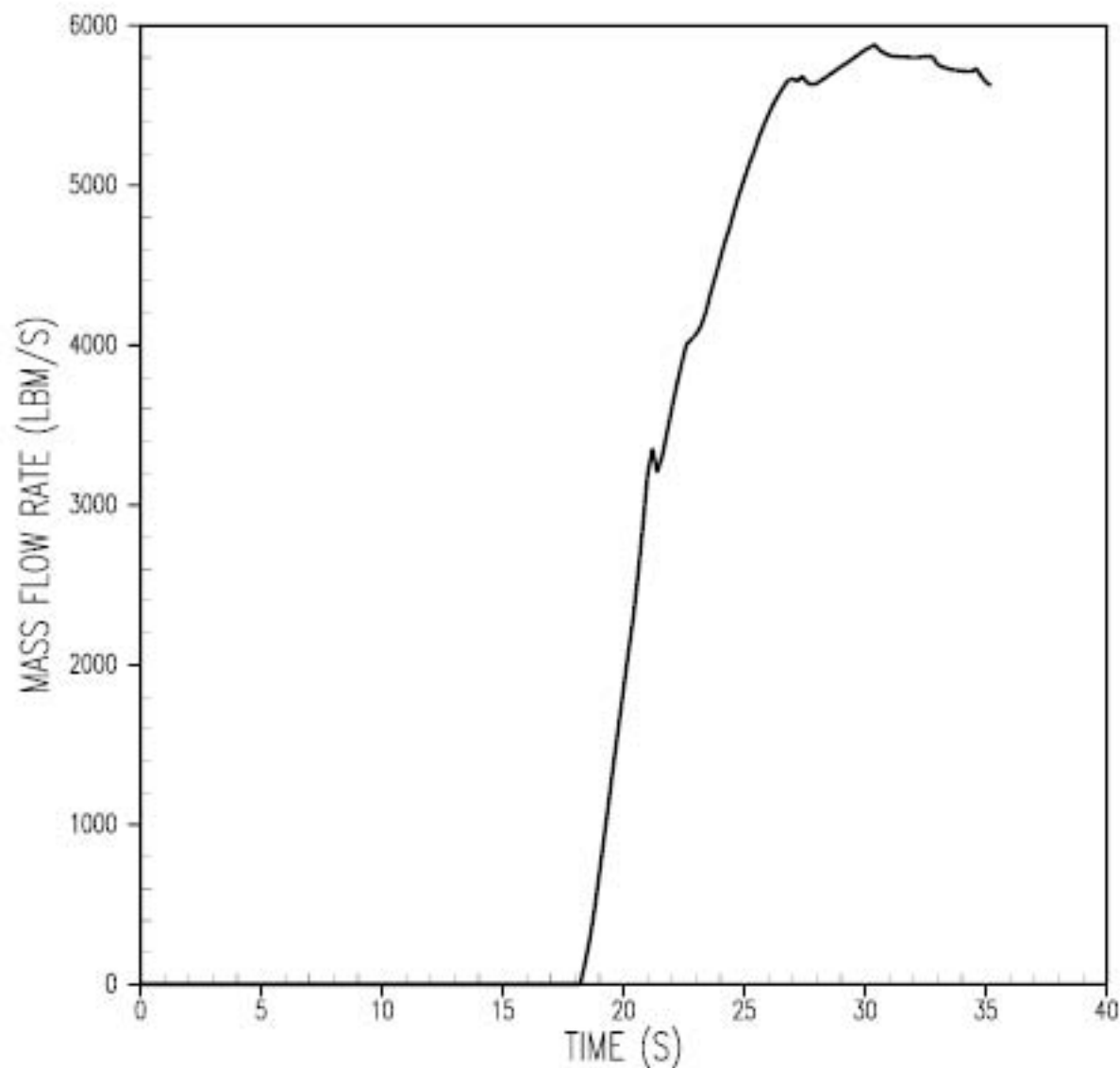


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FIGURE 15.8-14A

INTACT LOOP ACCUMULATOR MASS FLOW RATE
DURING BLOWDOWN ($C_p = 0.4$, LOW T_{acc} MIN SI,
COSINE POWER SHAPE, NON-IPSA)

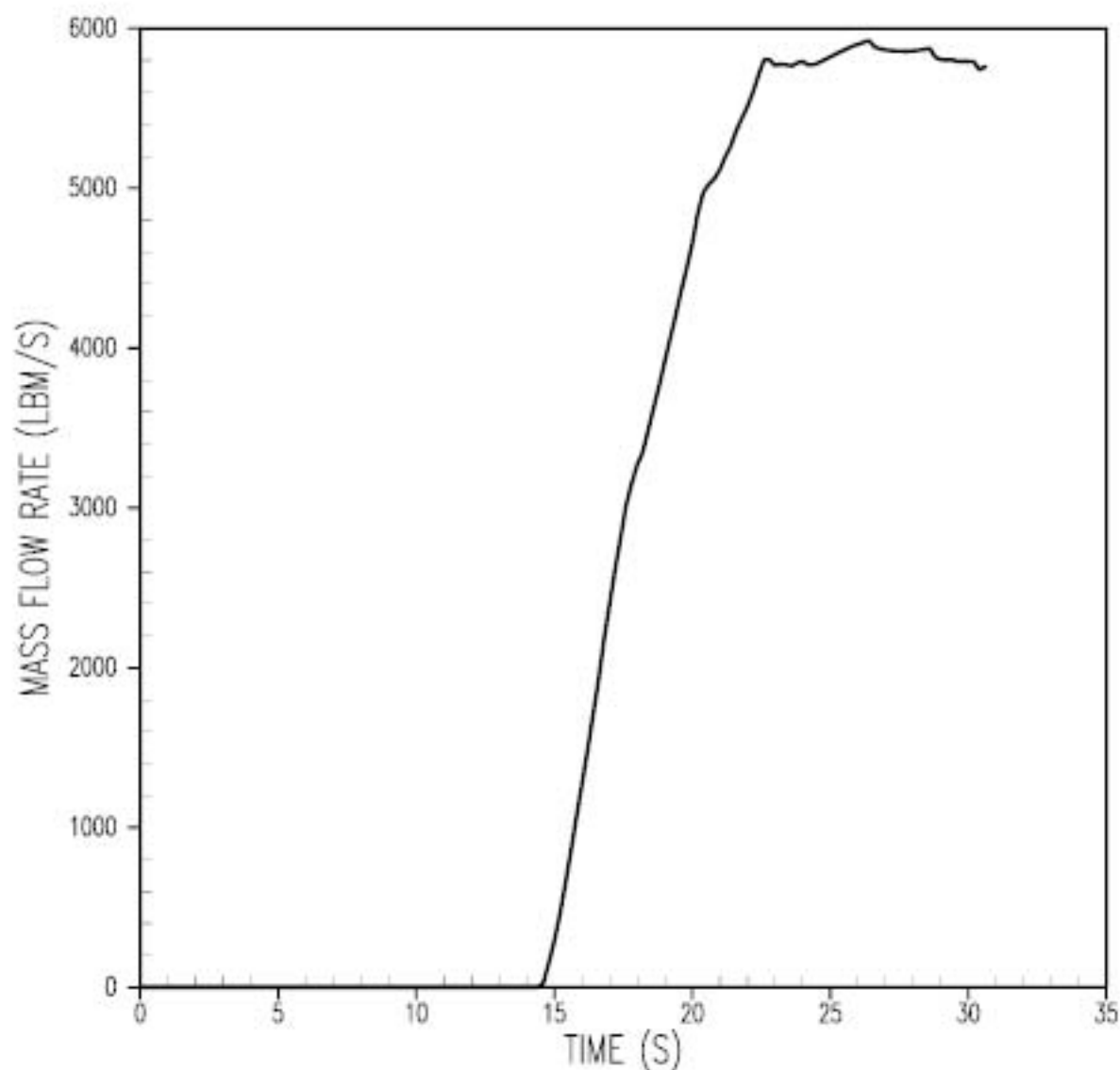


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FIGURE 16.8-14B

INTACT LOOP ACCUMULATOR MASS FLOW RATE
DURING BLOWDOWN ($C_D = 0.8$, LOW T_{acc} MIN SI,
COSINE POWER SHAPE, NON-IPSA)

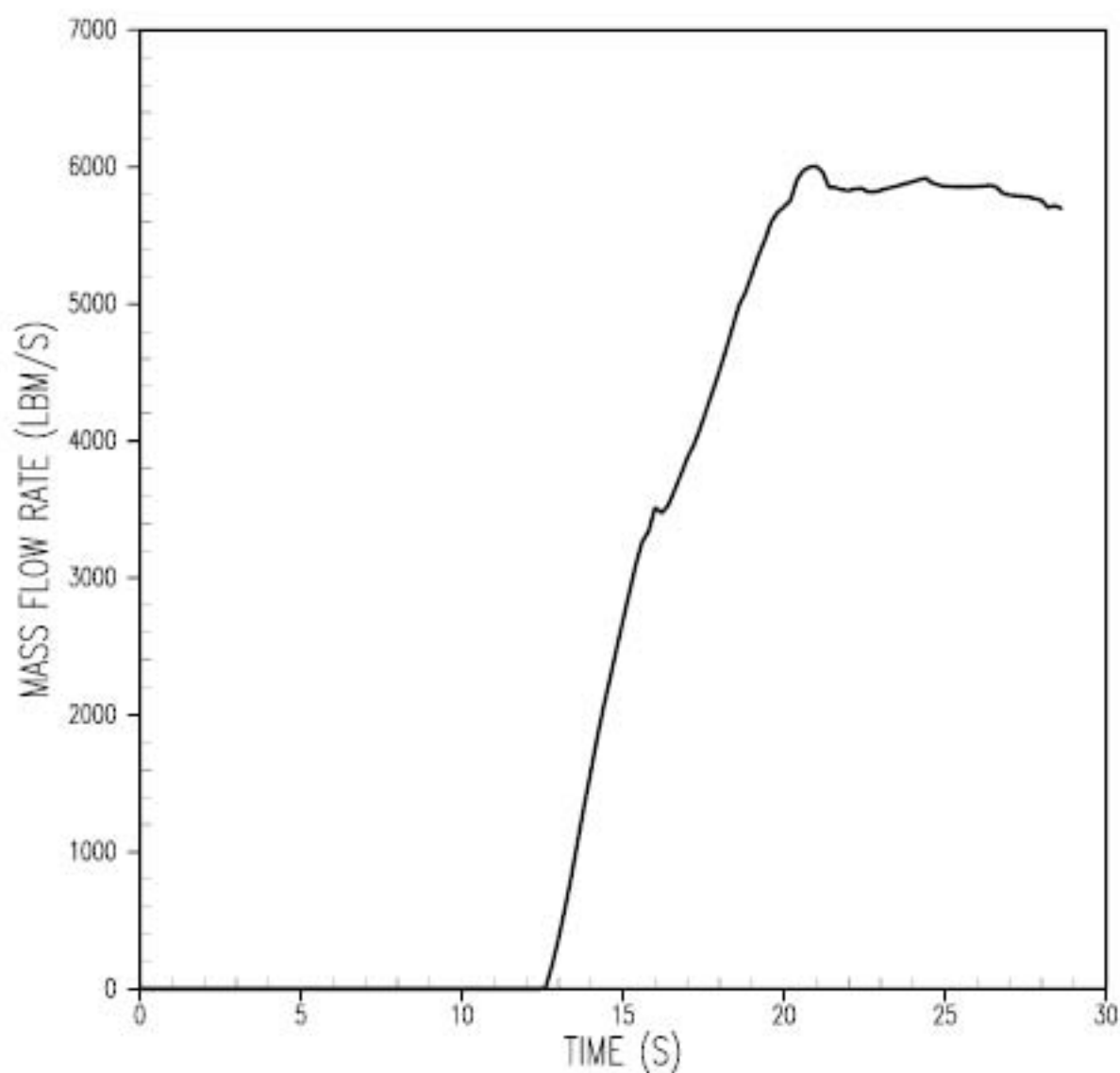


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CALLAWAY PLANT

FIGURE 16.8-14C

INTACT LOOP ACCUMULATOR MASS FLOW RATE
DURING BLOWDOWN ($C_D = 0.8$, LOW T_{avg} MIN 81,
COSINE POWER SHAPE, NON-IFBA)

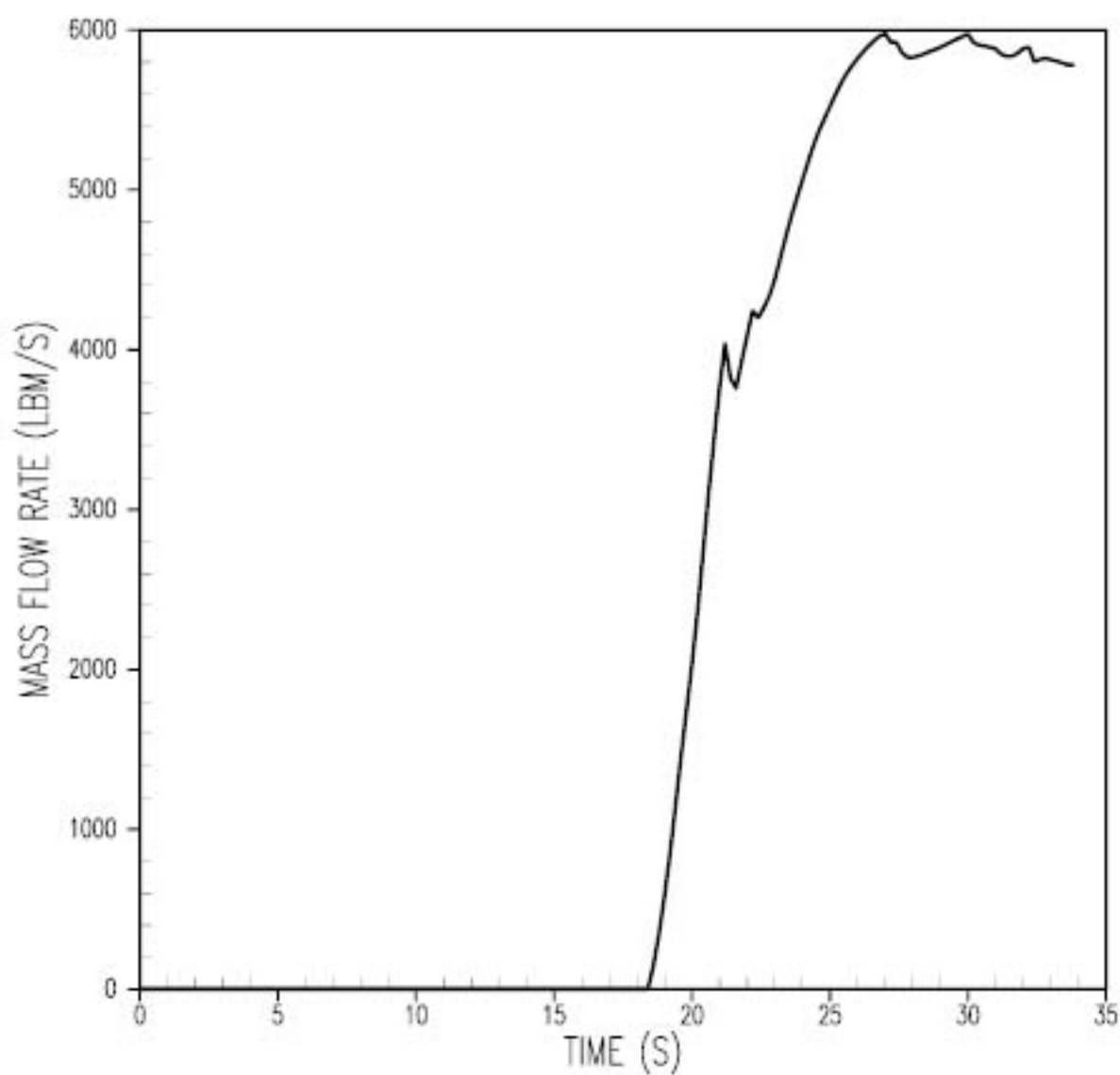


REV. OL-16
5/88

CALLAWAY PLANT

FIGURE 16.8-14D

INTACT LOOP ACCUMULATOR MASS FLOW RATE
DURING BLOWDOWN ($C_D=1.0$, LOW T_{acc} MIN SI,
COSINE POWER SHAPE, NON-IPSA)

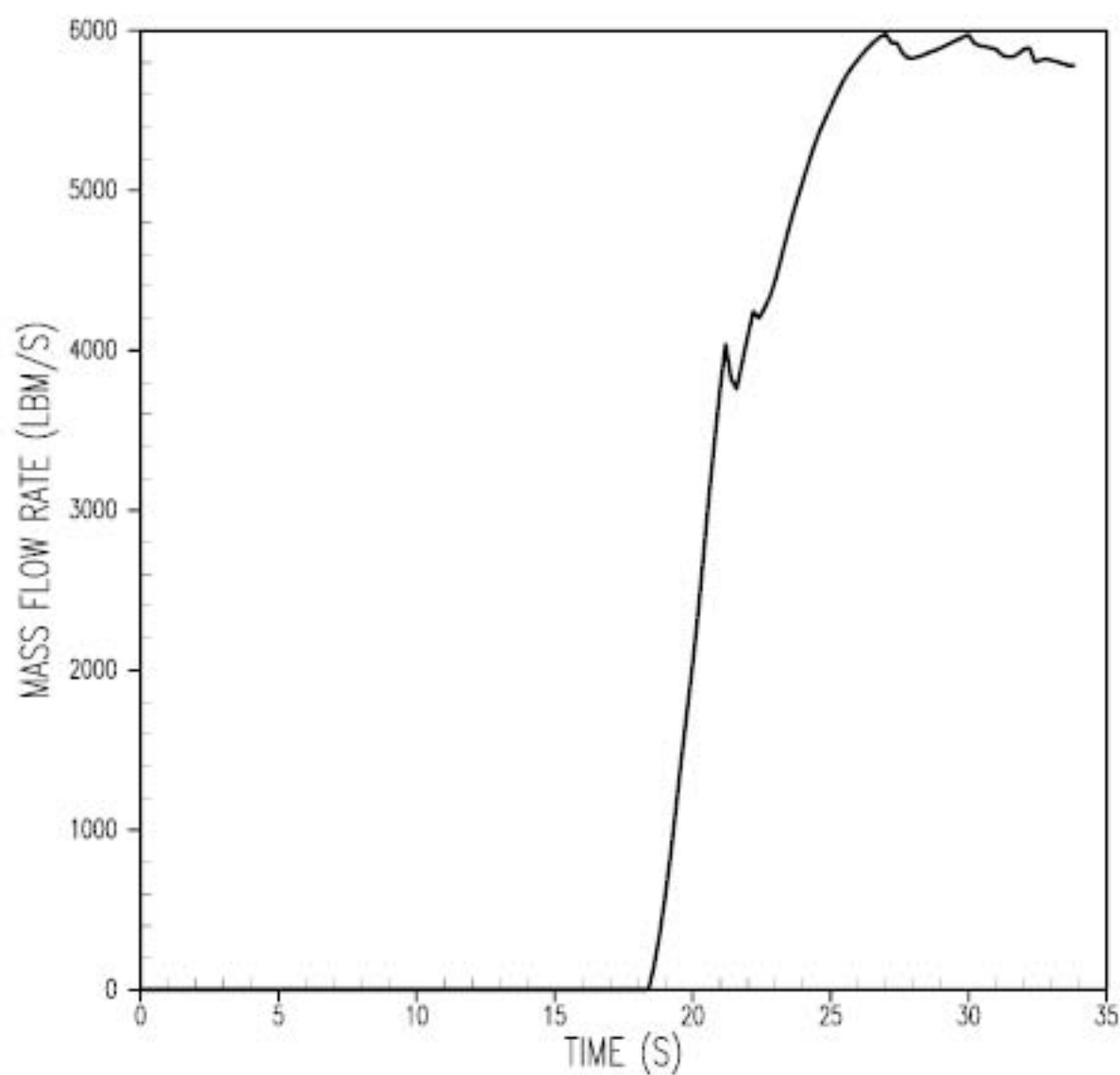


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FIGURE 16.8-14E

INTACT LOOP ACCUMULATOR MASS FLOW RATE
DURING BLOWDOWN ($C_D = 0.6$, HIGH T_{avg} MIN 81,
COSINE POWER SHAPE, NON-IFBA)

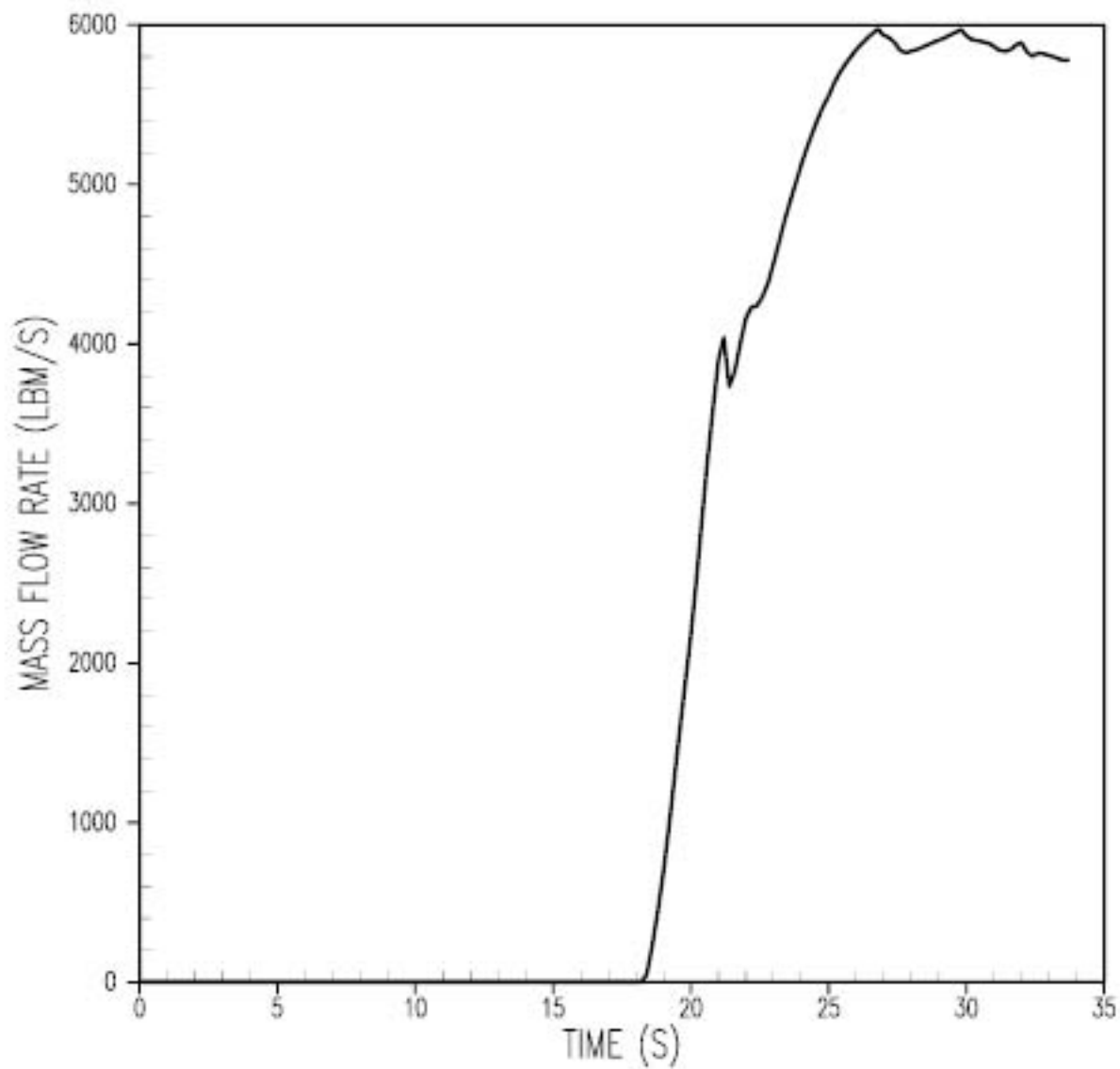


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FIGURE 15.8-14F

INTACT LOOP ACCUMULATOR MASS FLOW RATE
DURING BLOWDOWN ($C_p = 0.6$, HIGH T_{avg} , MAX 81,
COSINE POWER SHAPE, NON-IPSA)

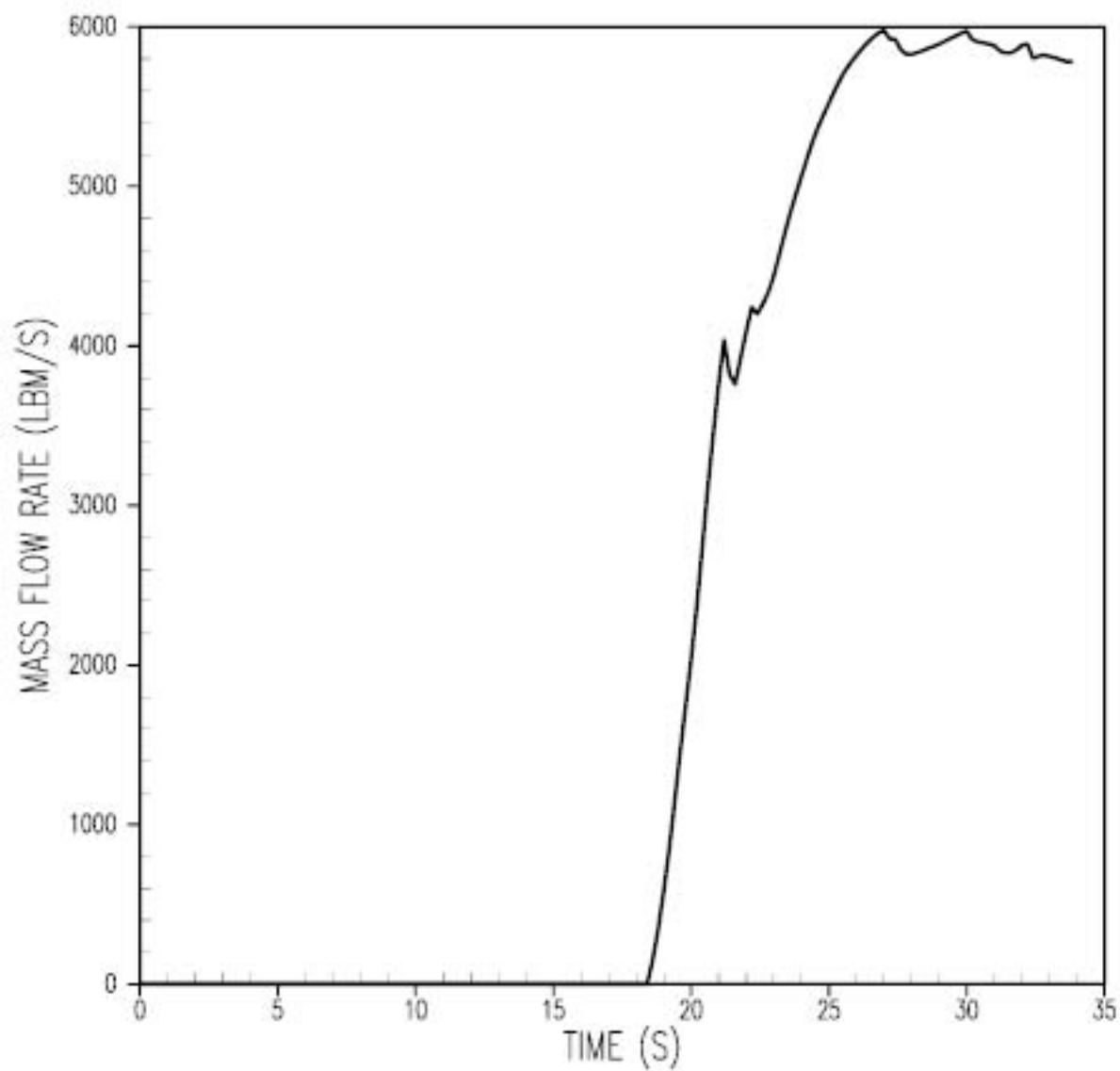


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FIGURE 15.8-149

INTACT LOOP ACCUMULATOR MASS FLOW RATE
DURING BLOWDOWN ($C_D=0.6$, HIGH T_{acc} MIN SI,
2.6' POWER SHAPE, NON-IFBA)



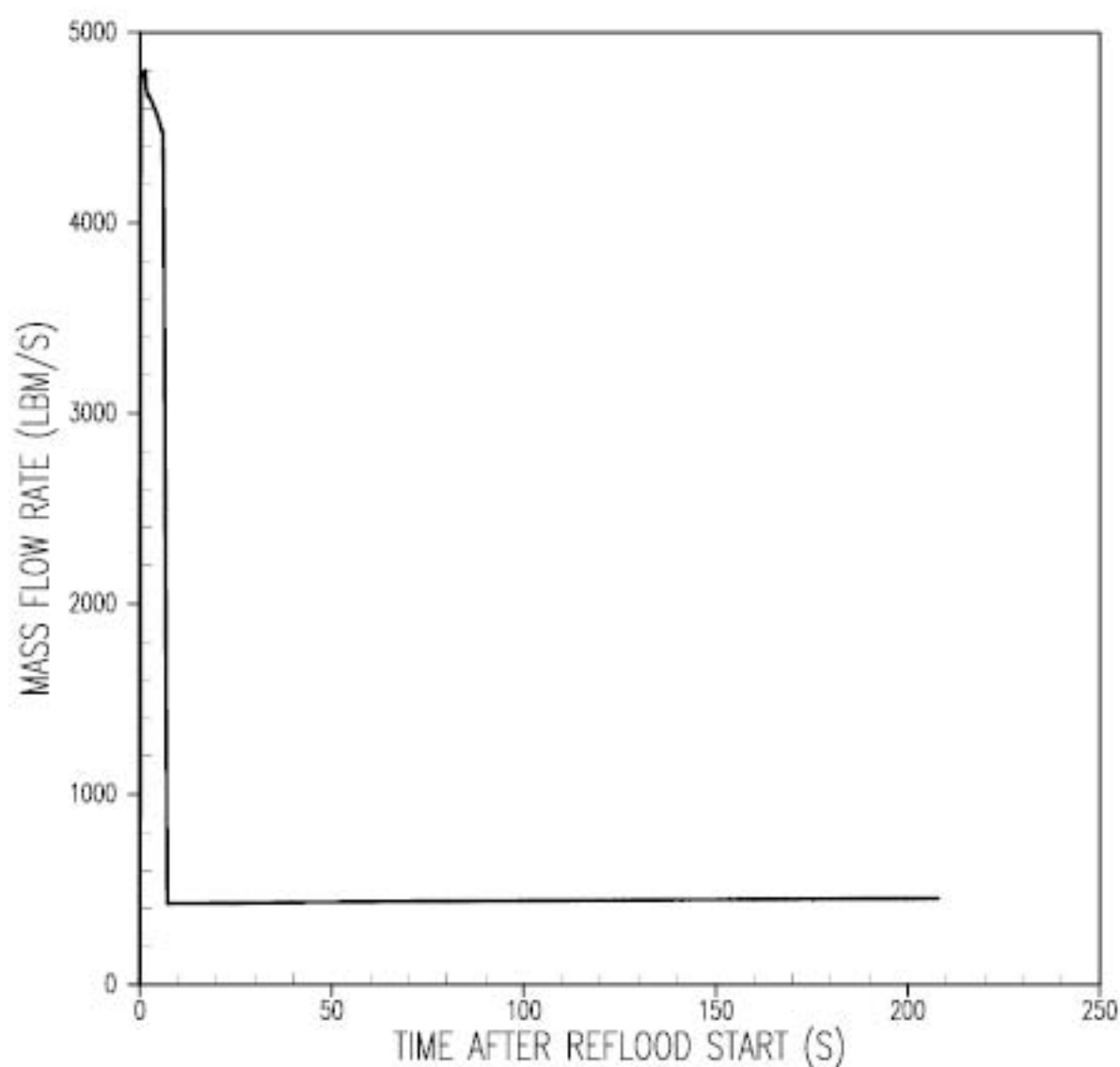
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CALLAWAY PLANT

FIGURE 16.8-14H

INTACT LOOP ACCUMULATOR MASS FLOW RATE
DURING BLOWDOWN ($C_D = 0.6$, HIGH T_{acc} MIN SI,
COSINE POWER SHAPE, IFBA)

Figure 15.6-15 Deleted

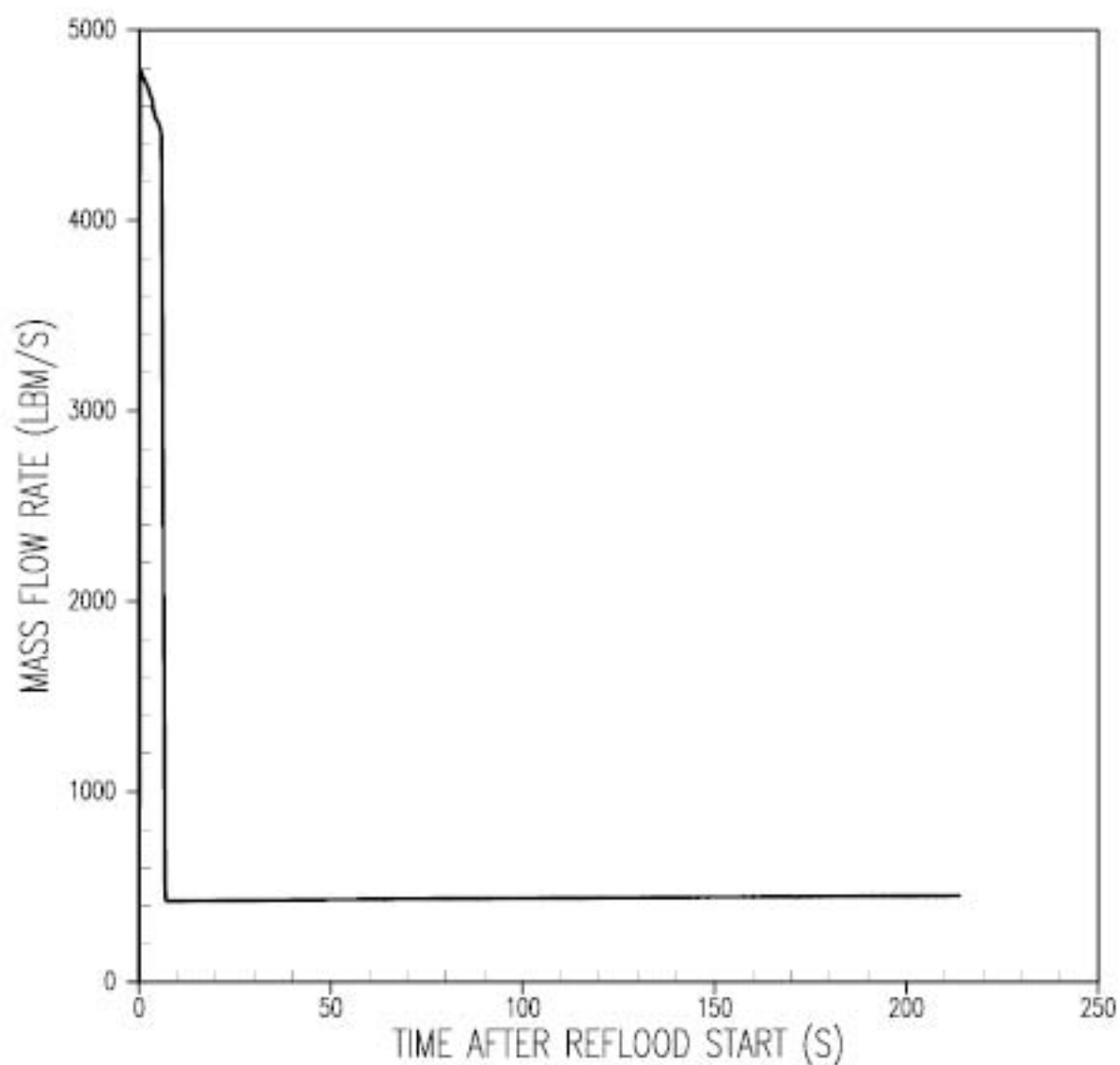


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FIGURE 15.8-15A

INTACT LEG ACCUMULATOR AND SI MASS FLOW
RATE DURING REFLOOD ($G_p = 0.4$, LOW T
MIN SI, COSINE POWER SHAPE, NON-IFSA)^{AVE}

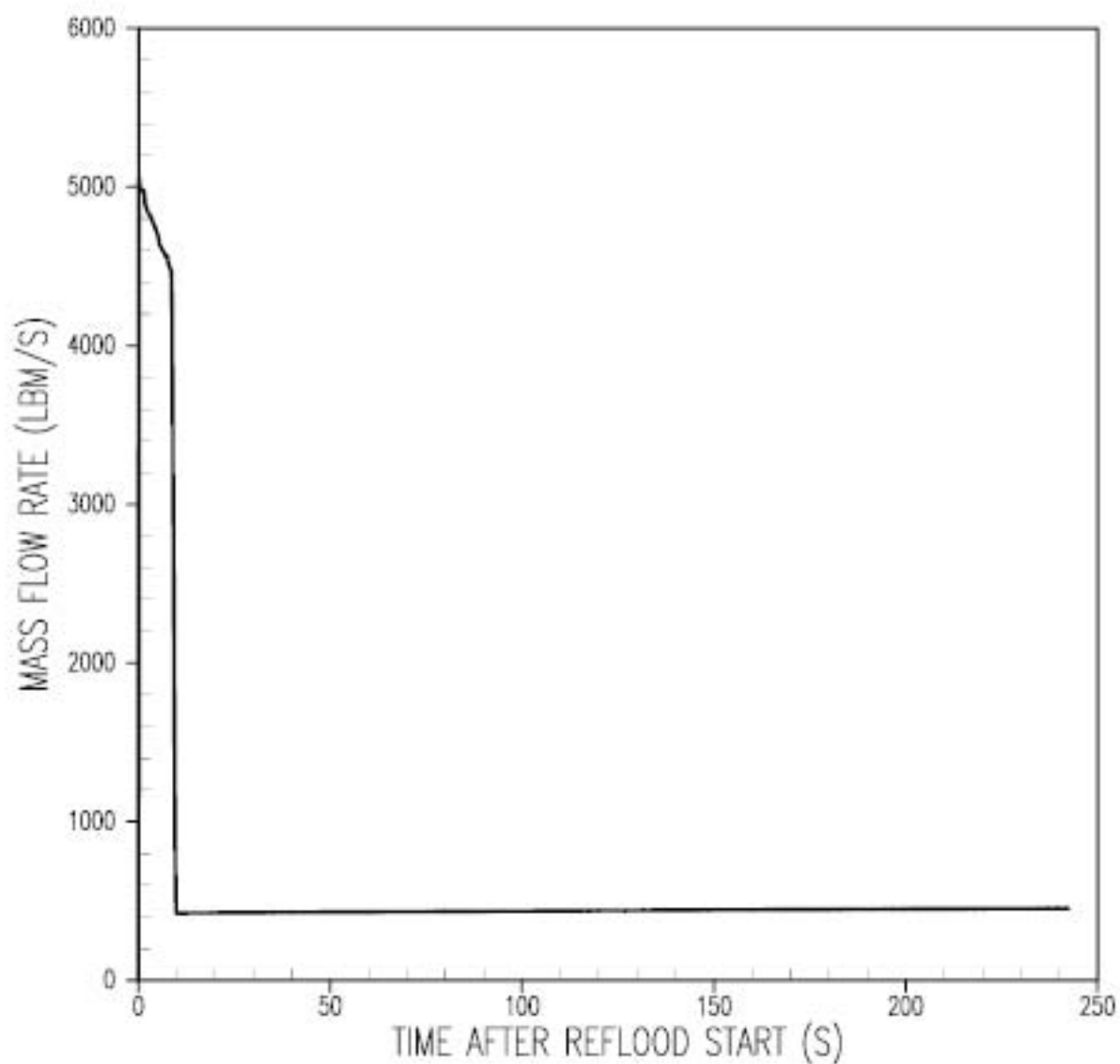


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FIGURE 16.8-16B

INTACT LEG ACCUMULATOR AND SI MASS FLOW
RATE DURING REFLOOD ($G_p = 0.6$, LOW T_{avg}
MIN SI, COSINE POWER SHAPE, NON-IFSA)

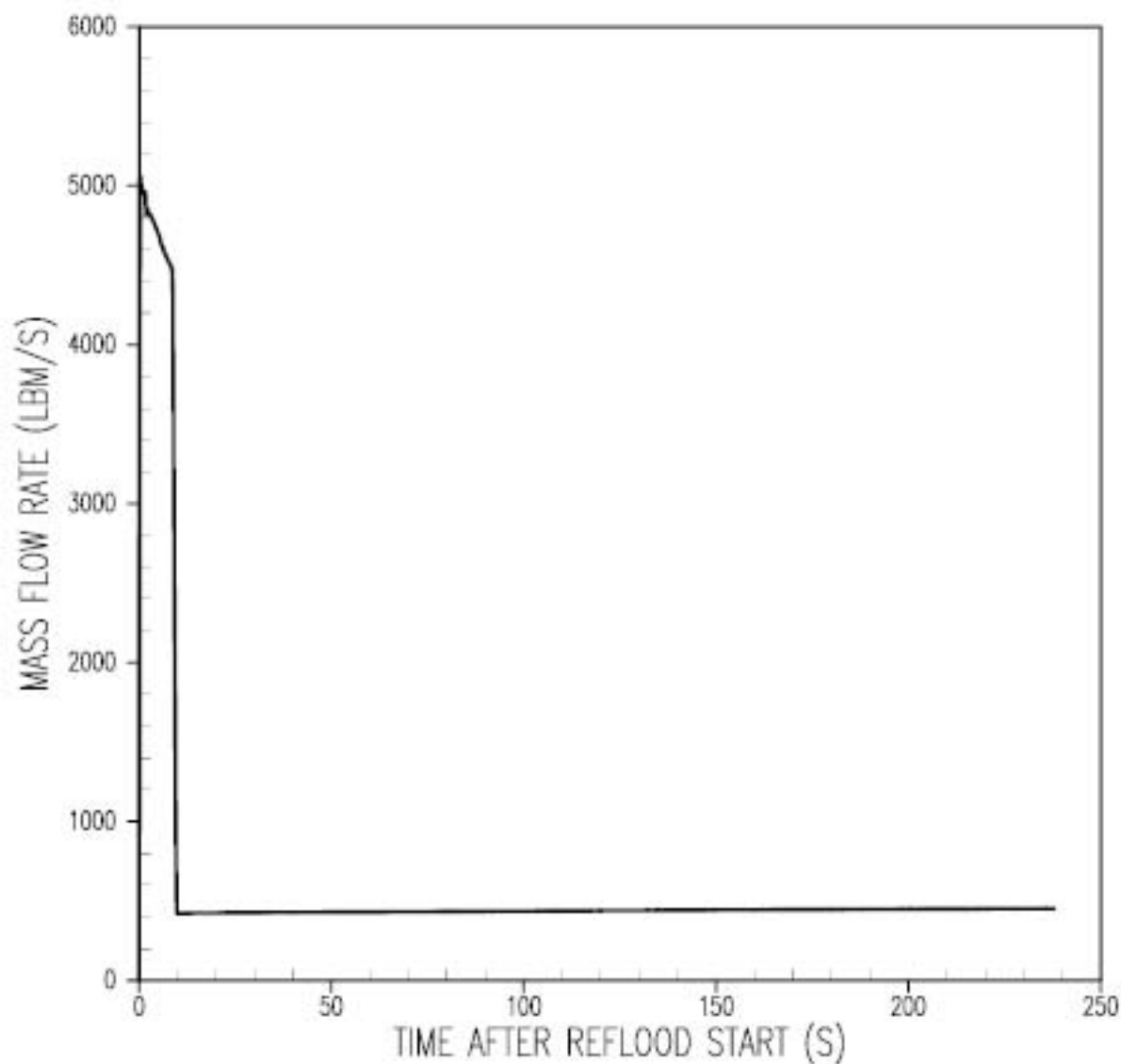


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CALLAWAY PLANT

FIGURE 15.8-15C

INTACT LEG ACCUMULATOR AND SI MASS FLOW
RATE DURING REFLOOD ($G_p = 0.8$, LOW T_{avg}
MIN SI, COSINE POWER SHAPE, NON-IFSA)

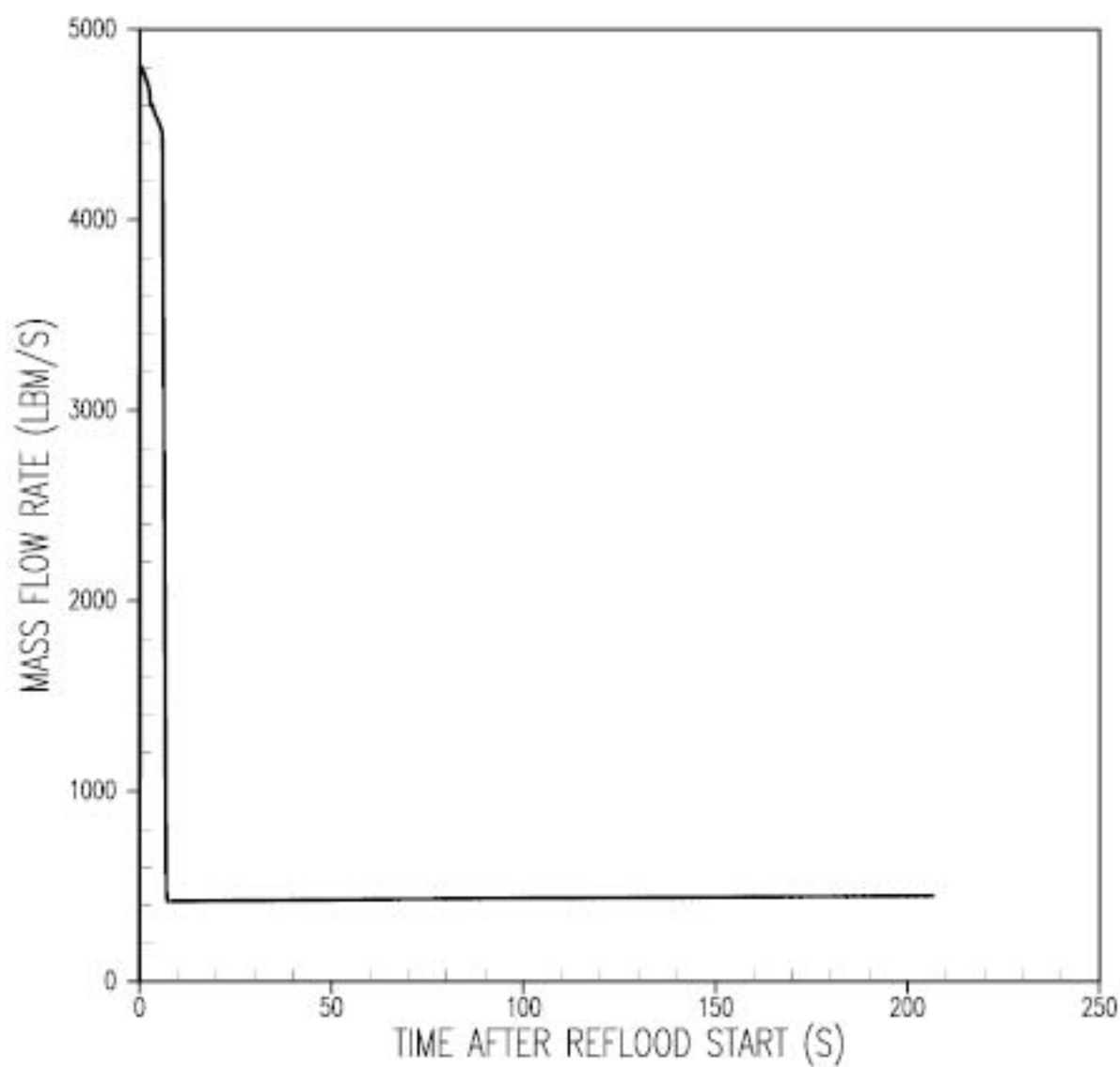


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FIGURE 16.8-16D

INTACT LEG ACCUMULATOR AND SI MASS FLOW
RATE DURING REFLOOD ($G_p = 1.8$, LOW T_{avg}
MIN SI, COSINE POWER SHAPE, NON-IFSA)

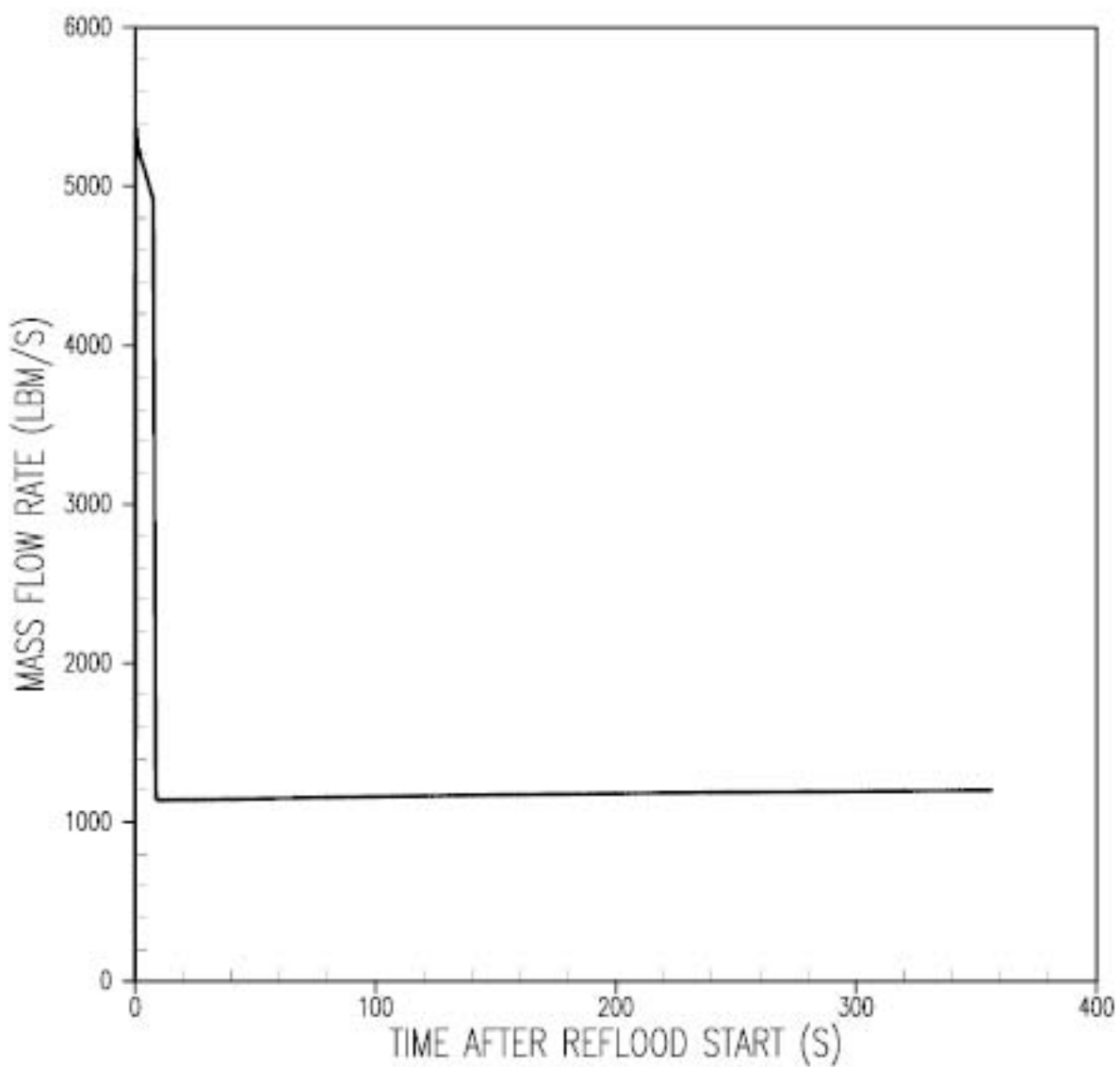


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FIGURE 15.8-15E

INTACT LEG ACCUMULATOR AND SI MASS FLOW
RATE DURING REFLOOD ($C_p = 0.6$, HIGH T
MIN SI, COSINE POWER SHAPE, NON-IFSA)^{AVE}

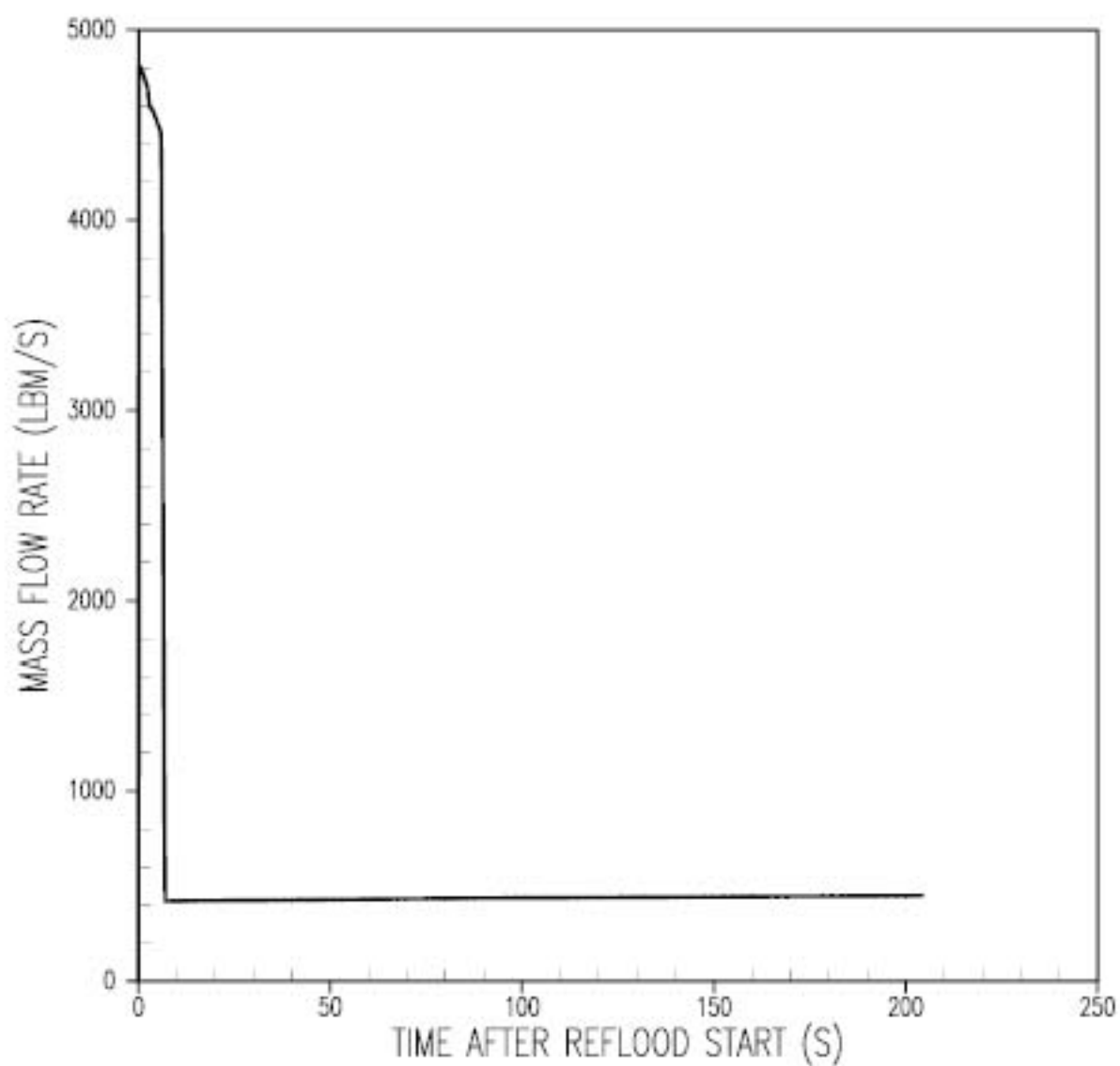


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FIGURE 15.8-15F

INTACT LEG ACCUMULATOR AND SI MASS FLOW
RATE DURING REFLOOD ($C_D = 0.6$, HIGH T_{Ave}
MAX SI, COSINE POWER SHAPE, NON-IFBA)

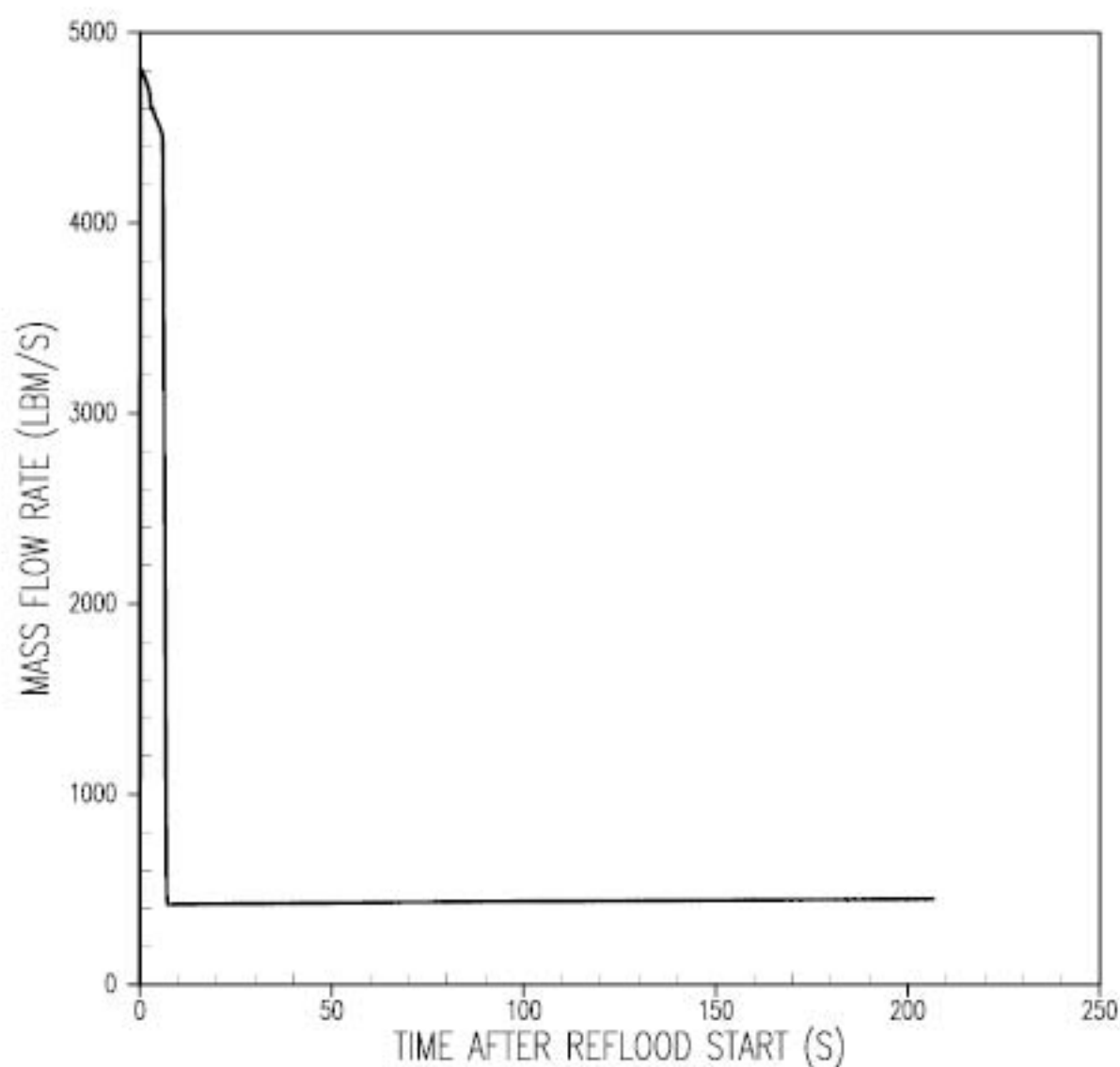


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FIGURE 15.8-15G

INTACT LEG ACCUMULATOR AND SI MASS FLOW
RATE DURING REFLOOD ($C_p = 0.6$, HIGH T_{ave}
MIN SI, 2.6' POWER SHAPE, NON-IFBA)

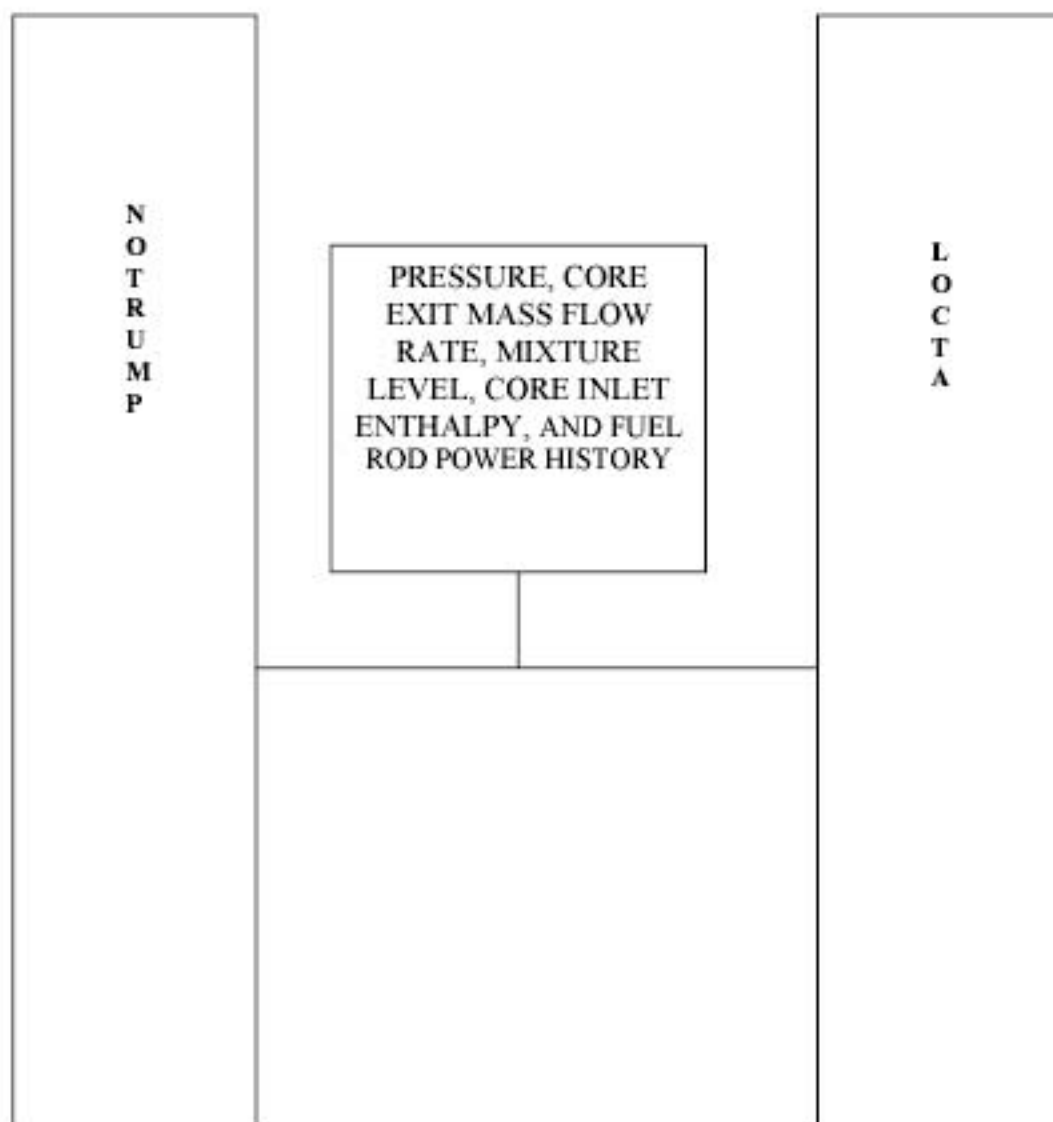


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FIGURE 16.8-16H

INTACT LEG ACCUMULATOR AND SI MASS FLOW
RATE DURING REFLOOD ($C_D = 0.6$, HIGH T_{Ave} ,
MIN SI, COSINE POWER SHAPE, IFBA)

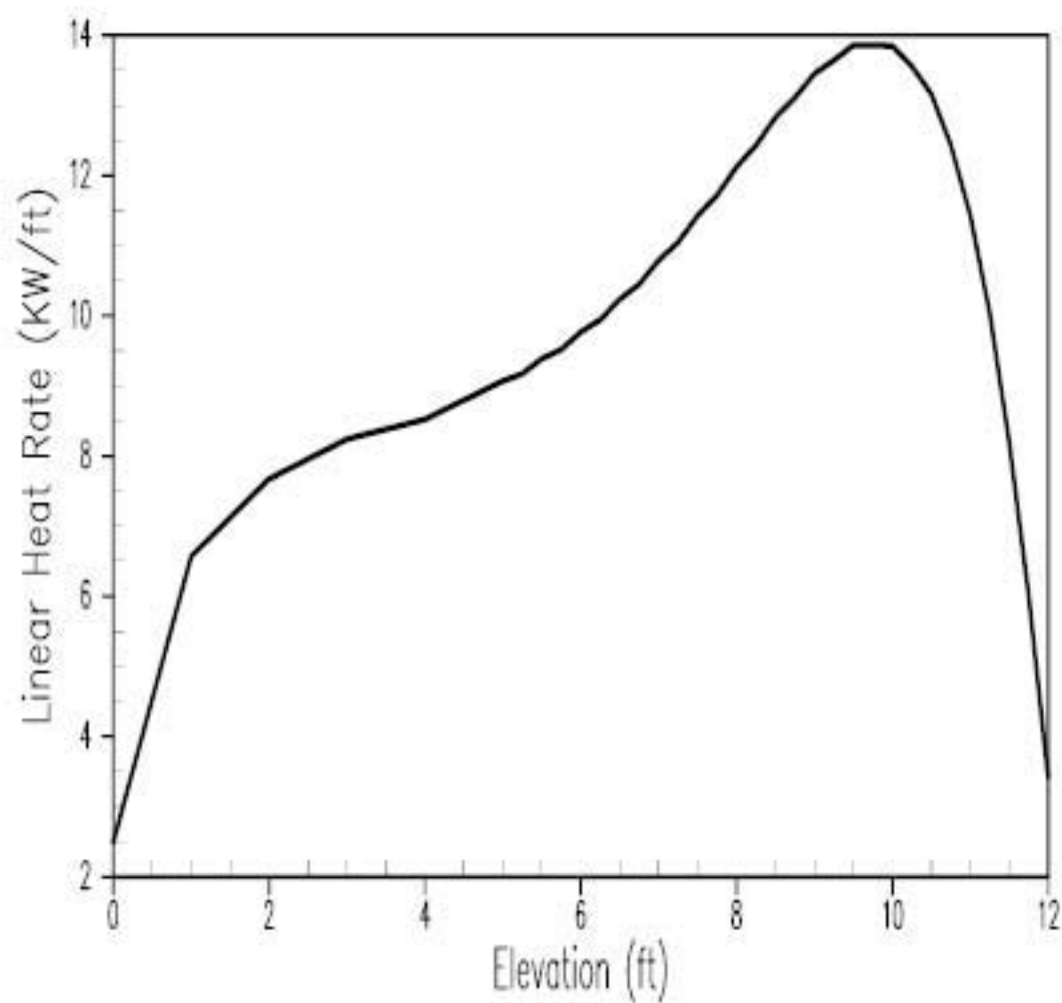


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FIGURE 15.8-18

CODE INTERFACE DESCRIPTION
FOR SMALL BREAK MODEL

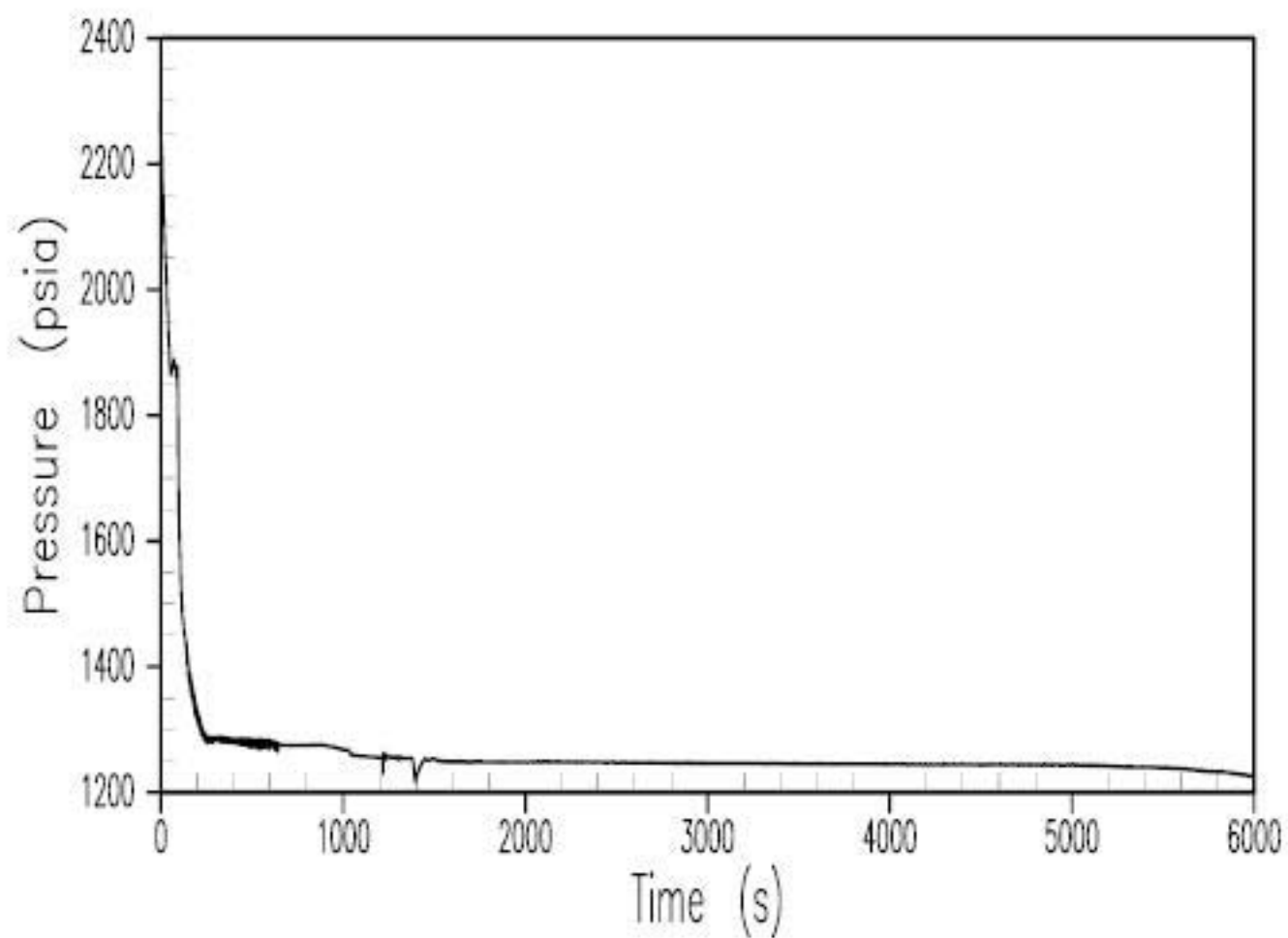


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FIGURE 15.8-17

SMALL BREAK POWER SHAPE

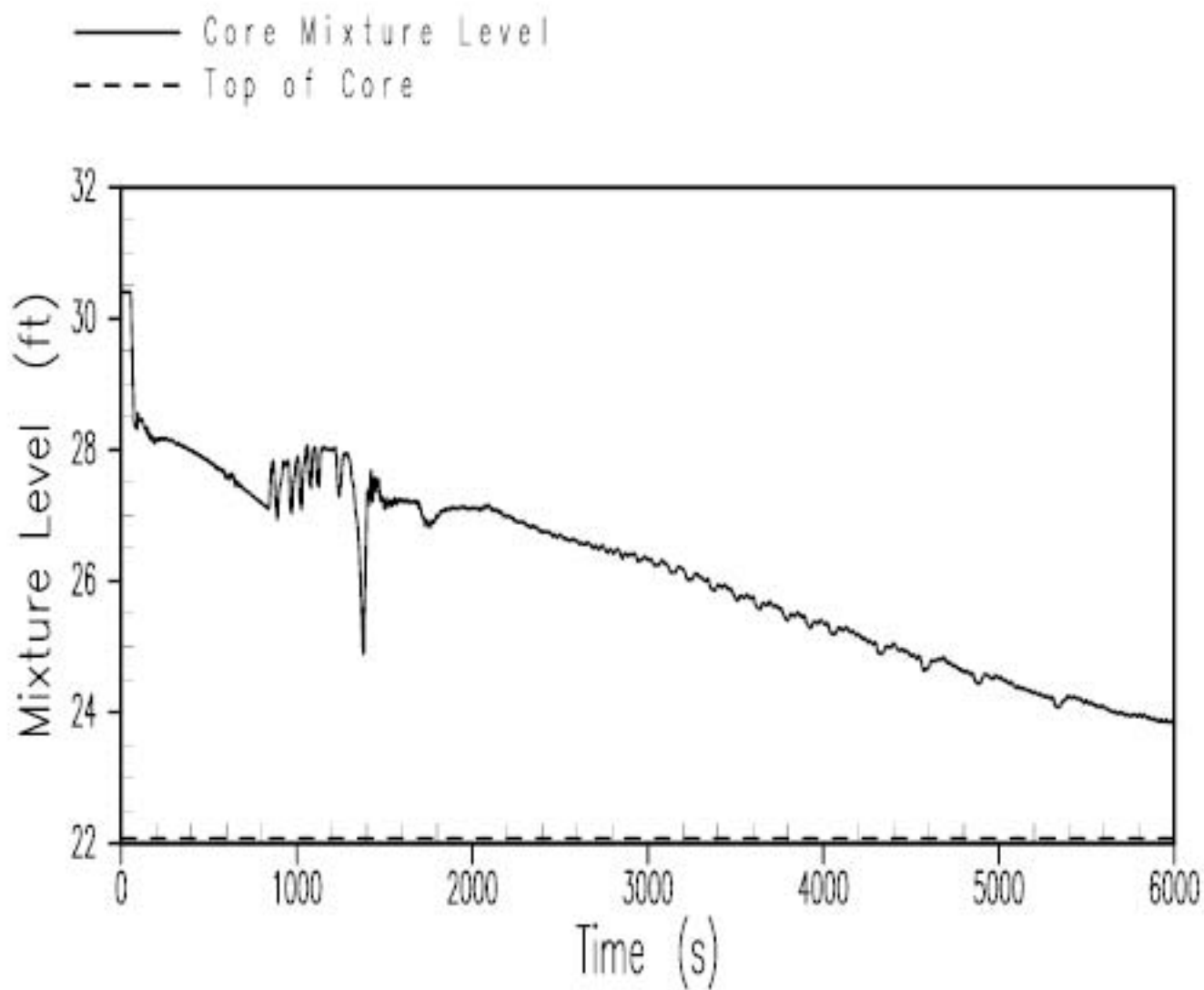


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FIGURE 16.6-10

2 INCH COLD LEG BREAK
RCS PRESSURE VS. TIME

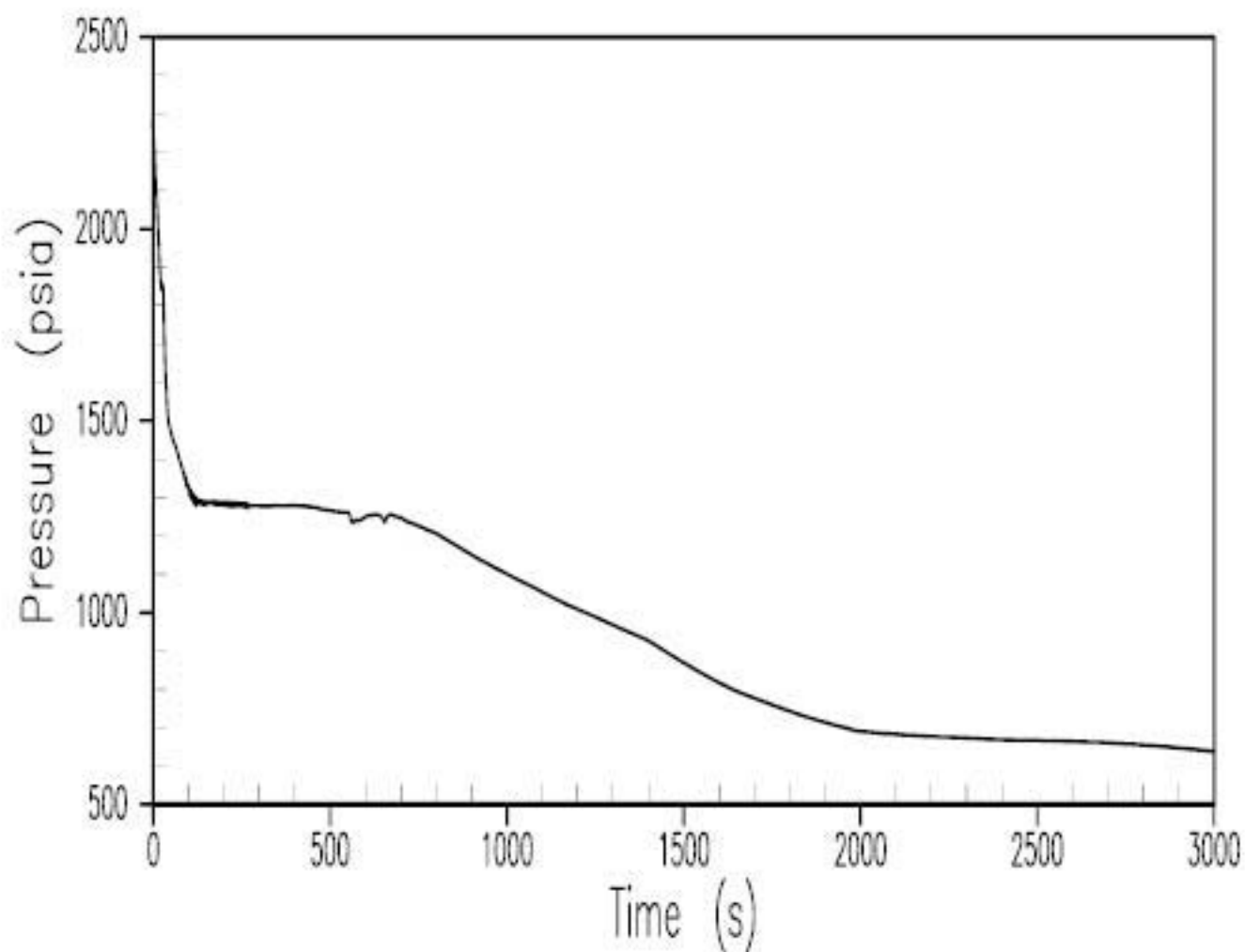


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FIGURE 16.8-19

2 INCH COLD LEG BREAK
CORE MIXTURE LEVEL VS. TIME
(Top of Core = 22.8778 ft)

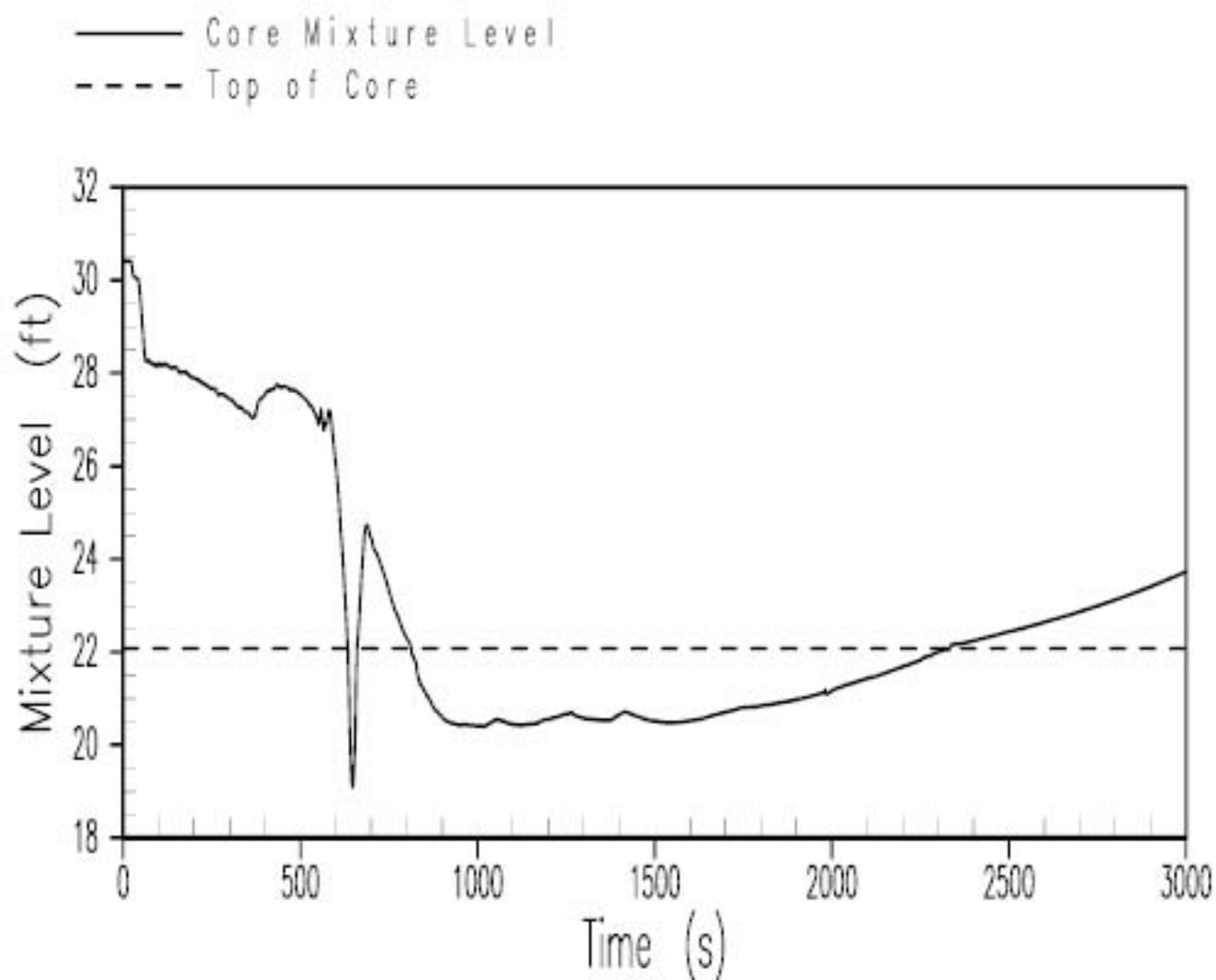


REV. OL-16
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FIGURE 15.8-20

3 INCH COLD LEG BREAK
RCS PRESSURE VS. TIME

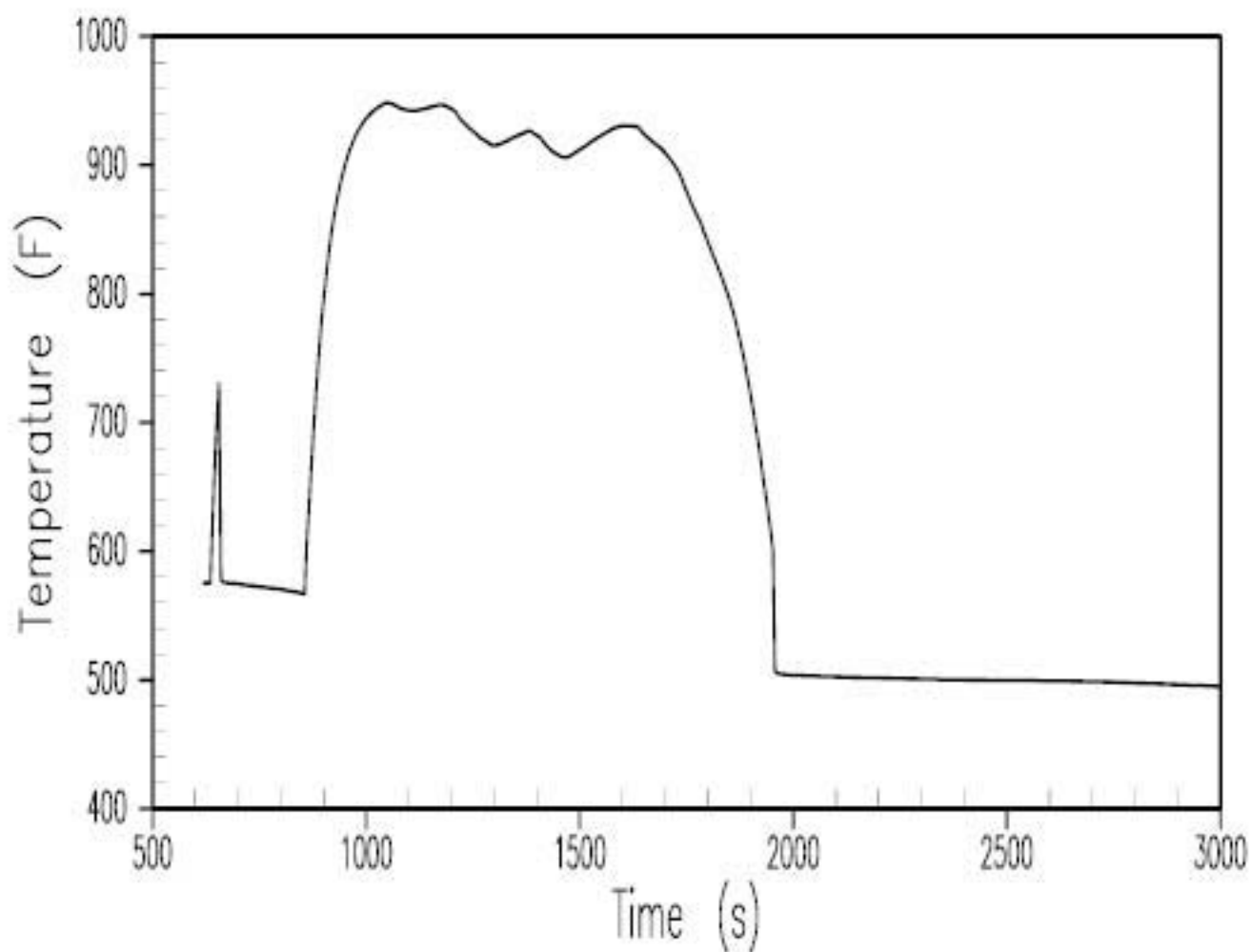


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FIGURE 16.6-21

3 INCH COLD LEG BREAK
CORE MIXTURE LEVEL VS. TIME
(Top of Core = 22.0778 ft)

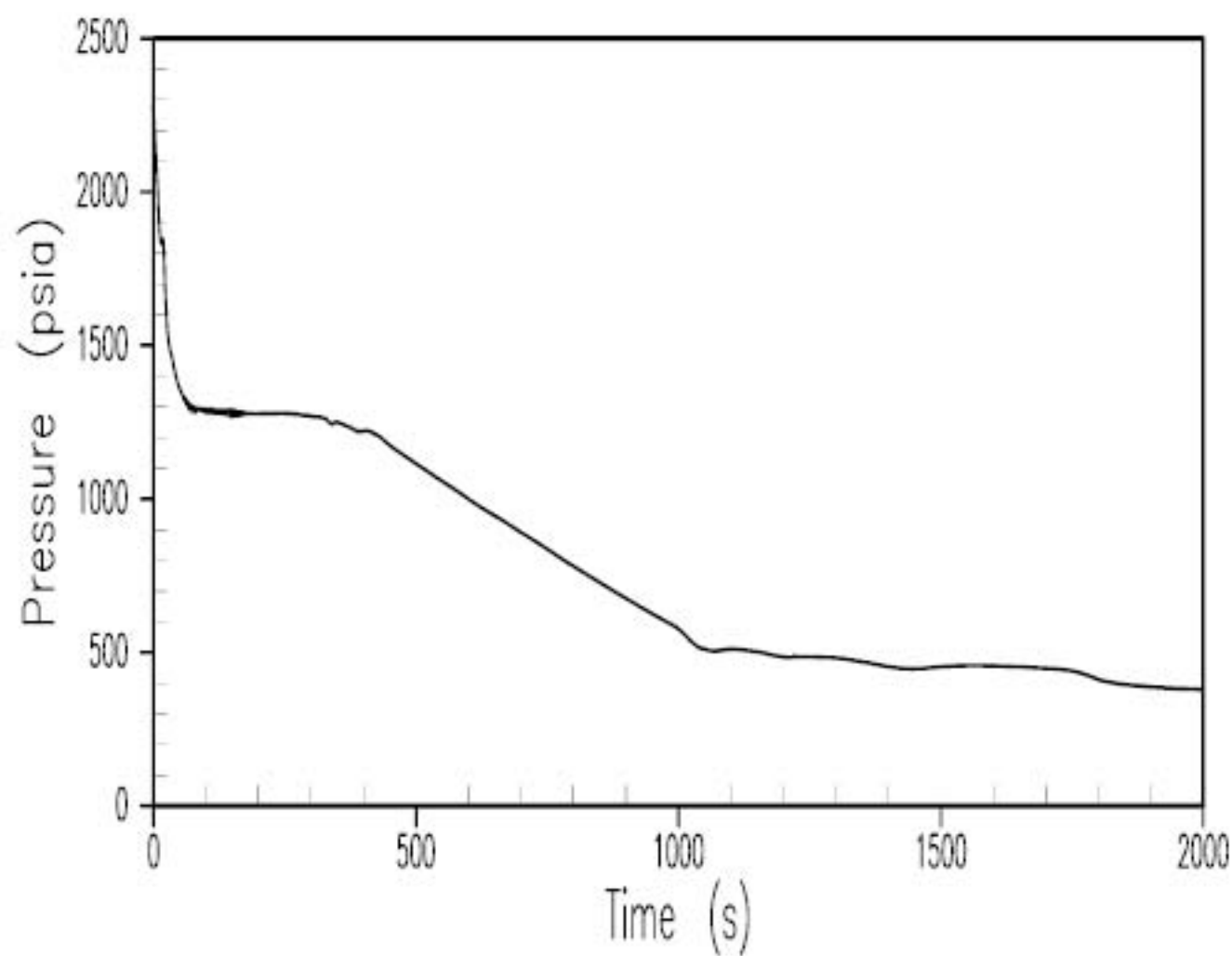


REV. OL-16
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FIGURE 15.8-22

3 INCH COLD LEG BREAK
HOT SPOT CLAD TEMPERATURE V.S. TIME

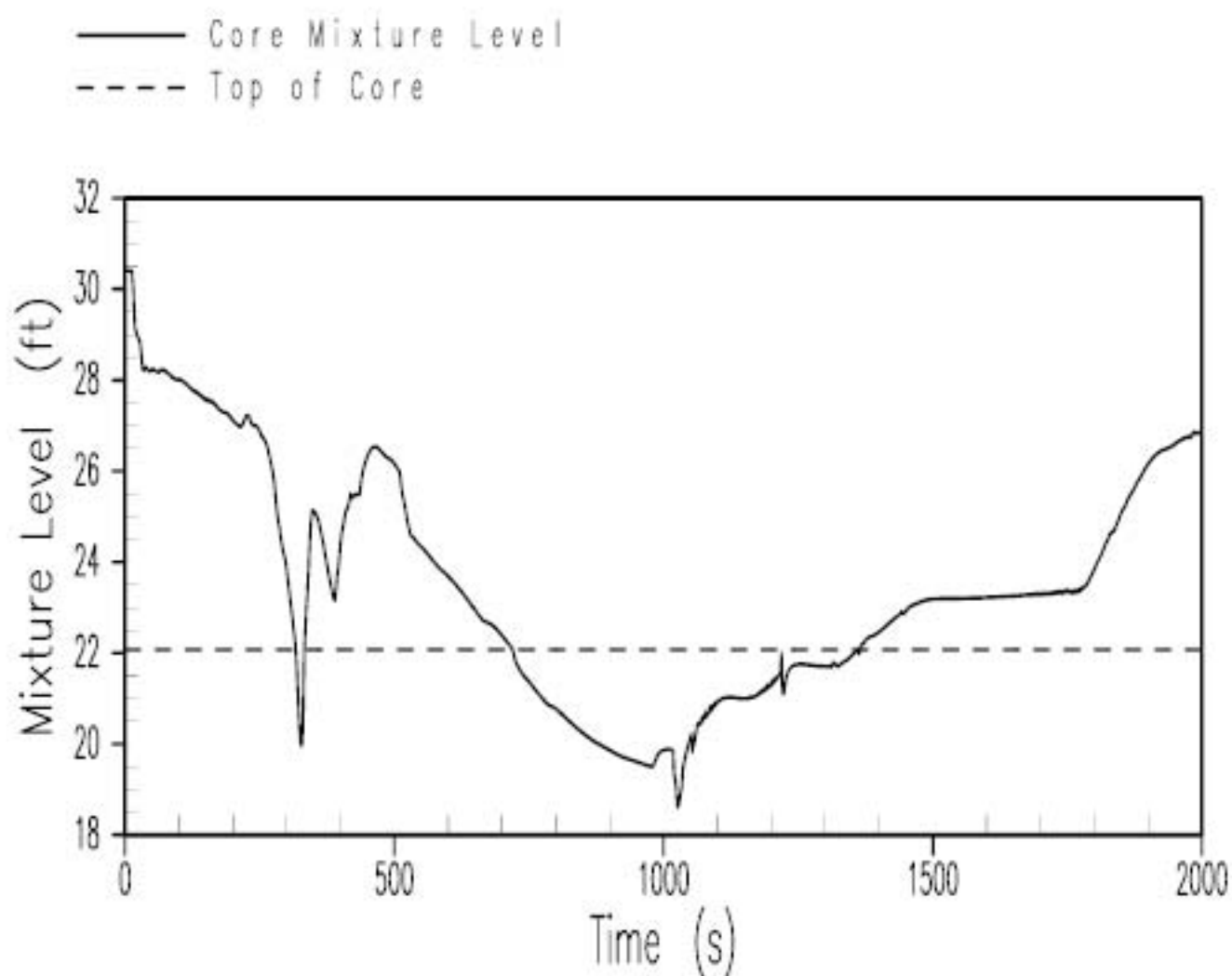


REV. OL-16
5/88

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FIGURE 15.8-23

4 INCH COLD LEG BREAK
RCS PRESSURE VS. TIME

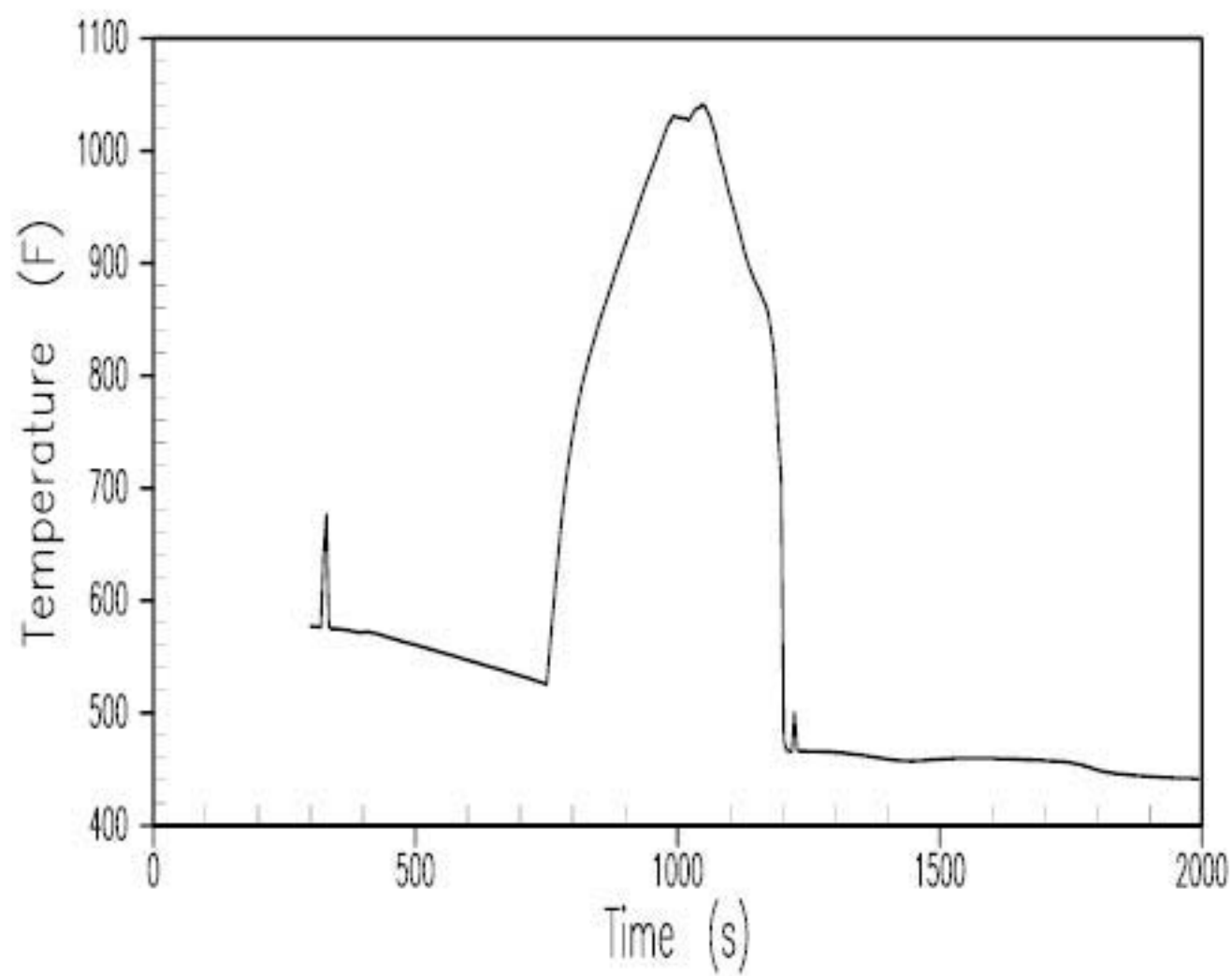


REV. OL-16
5/88

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FIGURE 15.8-24

4 INCH COLD LEG BREAK
CORE MIXTURE LEVEL VS. TIME
(Top of Core = 22.0778 ft)

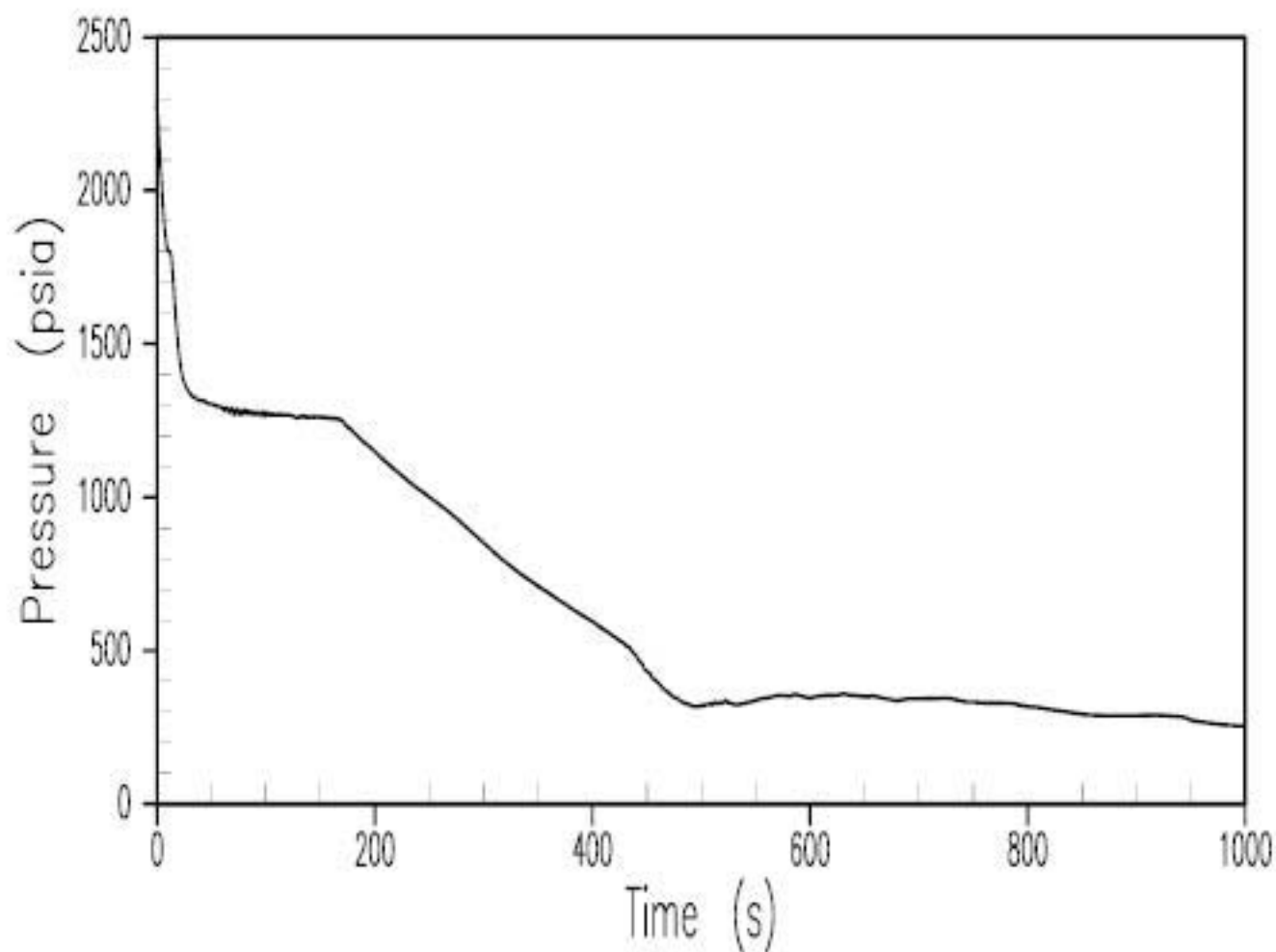


REV. OL-16
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FIGURE 15.8-25

4 INCH COLD LEG BREAK
HOT SPOT CLAD TEMPERATURE V.S. TIME

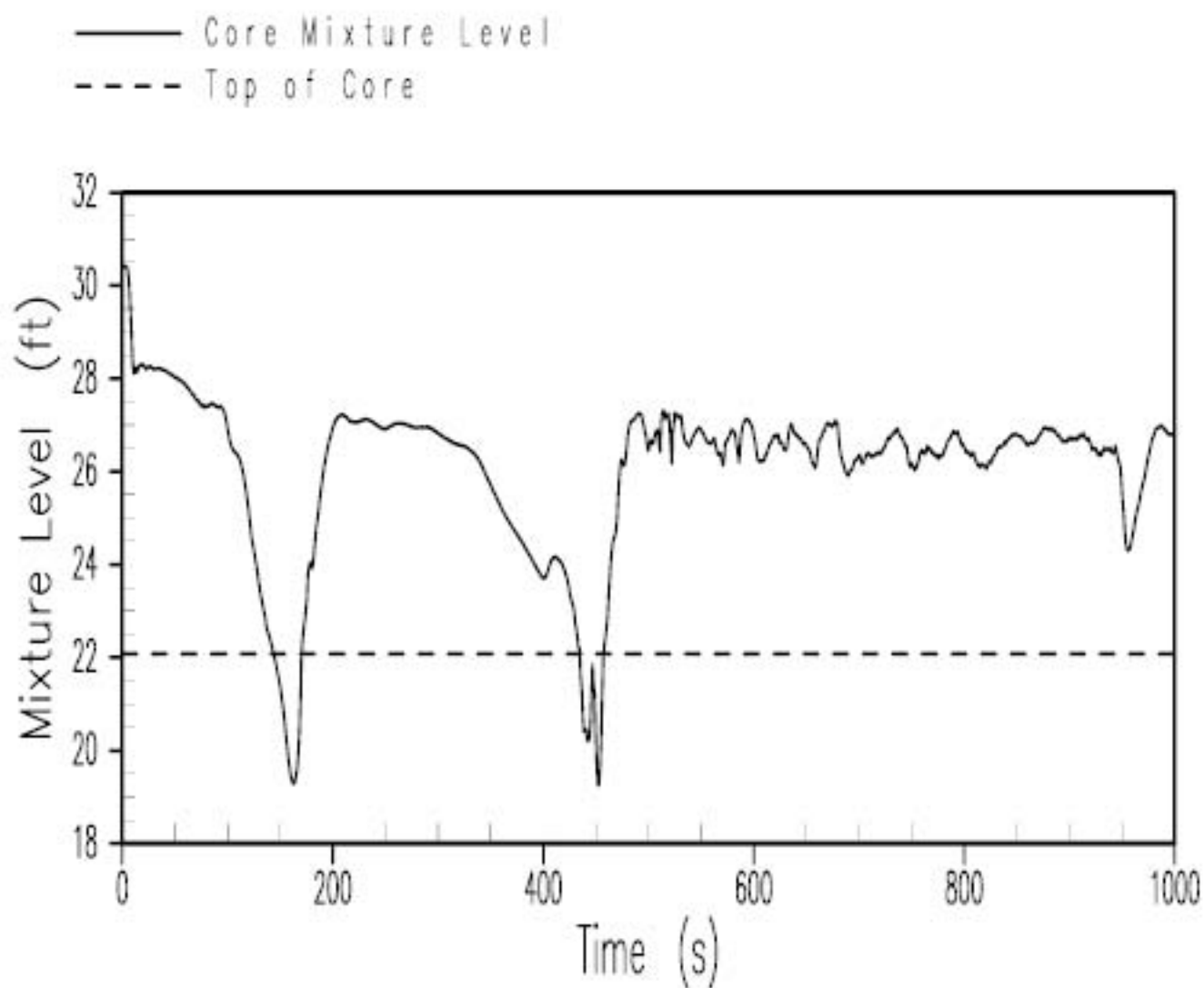


REV. OL-16
5/98

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FIGURE 16.6-26

6 INCH COLD LEG BREAK
RCS PRESSURE VS. TIME

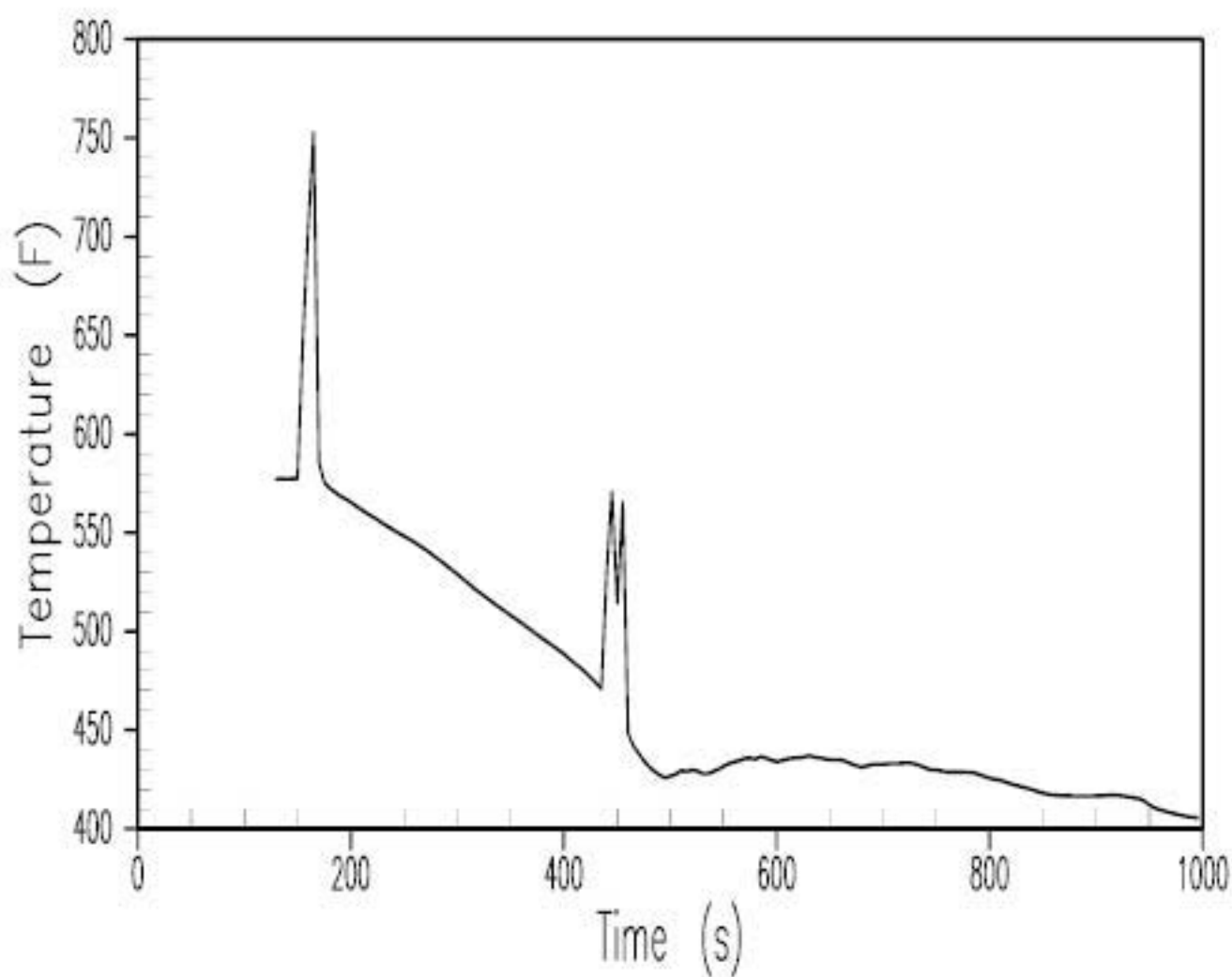


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FIGURE 15.8-27

6 INCH COLD LEG BREAK
CORE MIXTURE LEVEL VS. TIME
(Top of Core = 22.0778 ft)

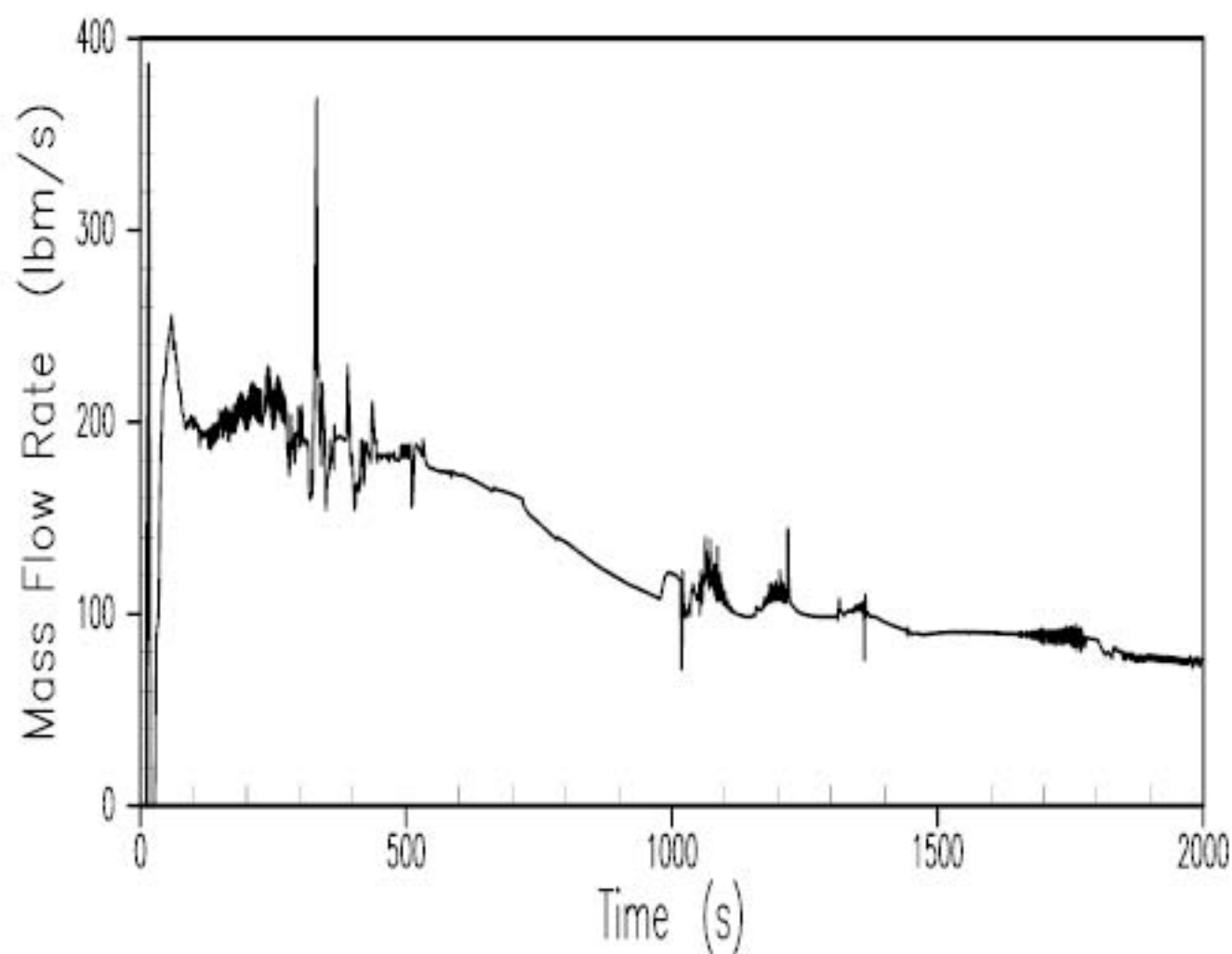


REV. OL-16
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FIGURE 16.6-20

8 INCH COLD LEG BREAK
HOT SPOT CLAD TEMPERATURE V.S. TIME

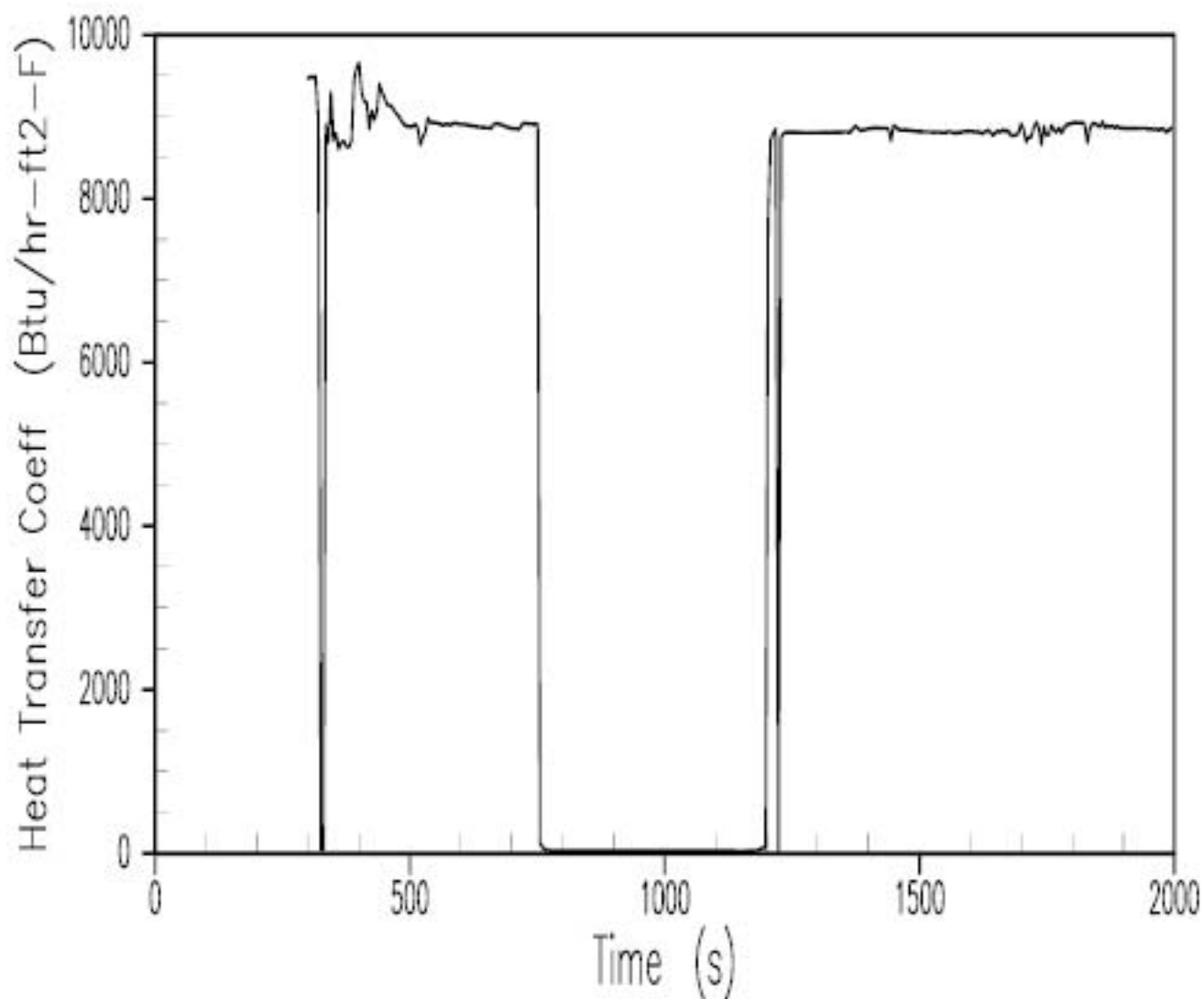


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FIGURE 15.8-29

4 INCH COLD LEG BREAK
CORE EXIT STEAM FLOW VS. TIME

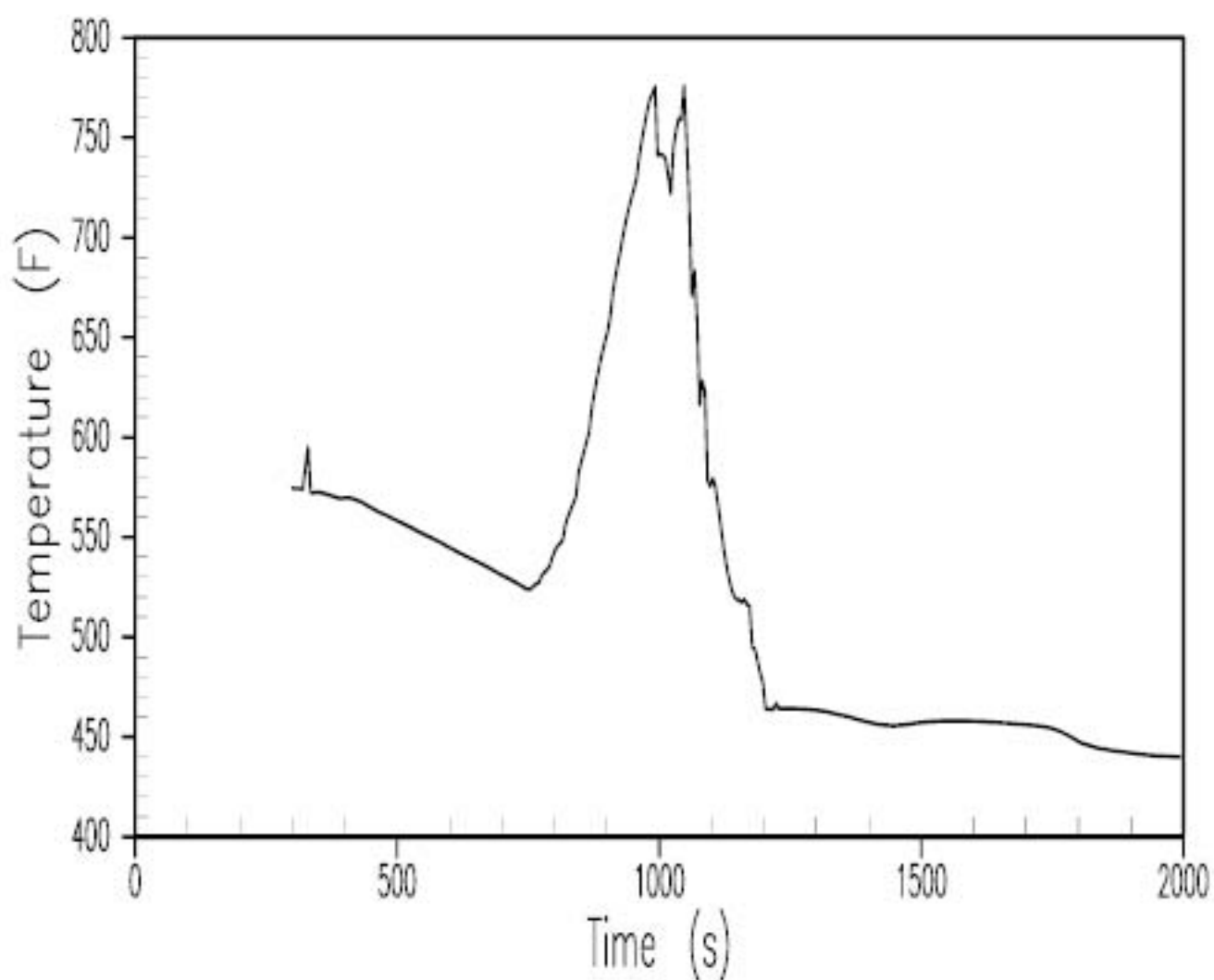


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FIGURE 15.8-30

4 INCH COLD LEG BREAK
CORE HEAT TRANSFER COEFFICIENT V.S. TIME

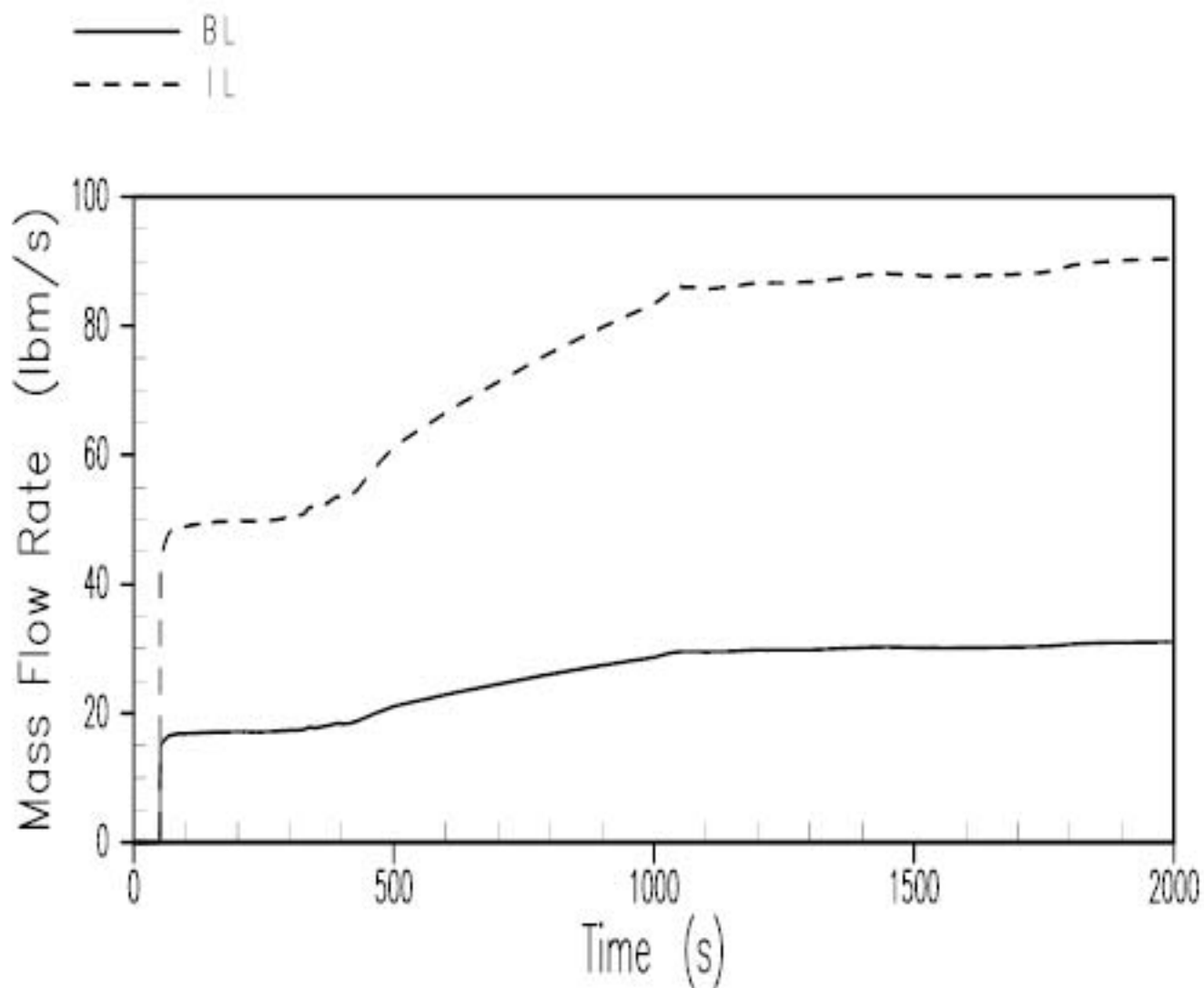


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FIGURE 16.6-31

4 INCH COLD LEG BREAK
HOT SPOT FLUID TEMPERATURE V.S. TIME



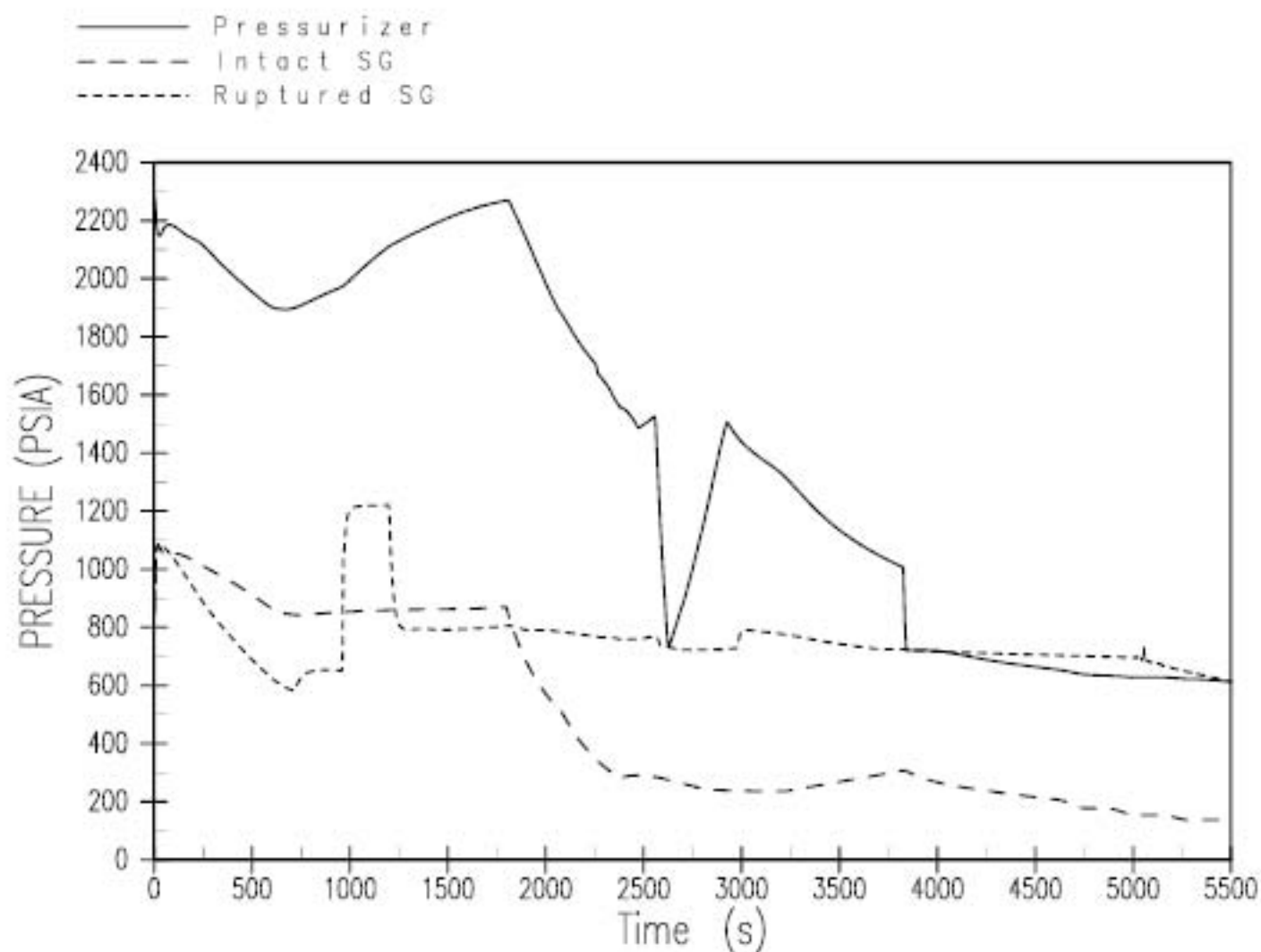
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5/98

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FIGURE 16.6-32

4 INCH BL & IL PUMPED
81 FLOW RATE VS. TIME

Figure 15.6-33 Deleted



Note:

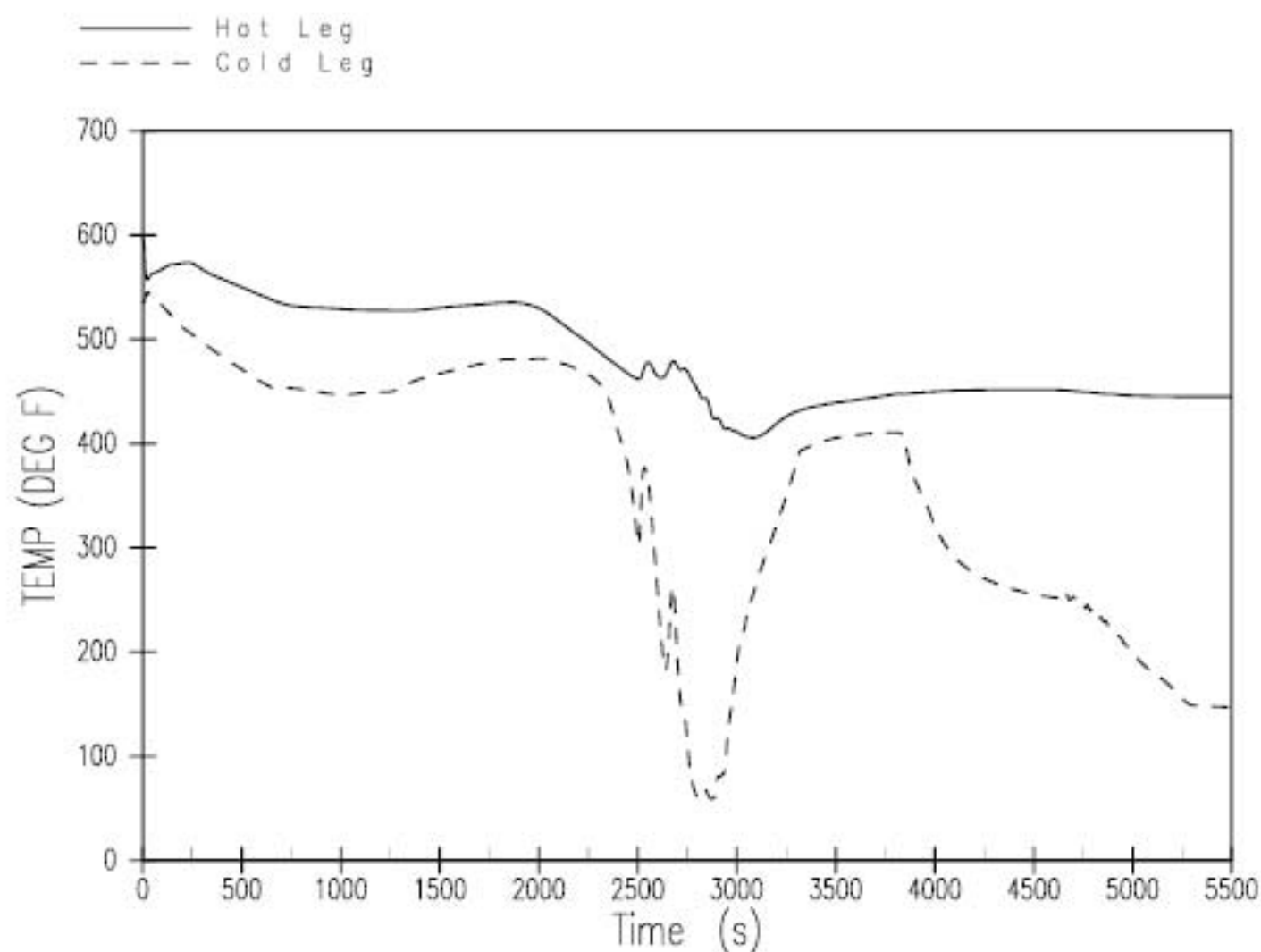
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

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FIGURE 15.6-33A

**PRESSURIZER AND STEAM GENERATOR (RUPTURED
AND INTACT GENERATORS) PRESSURE
TRANSIENTS FOR SGTR EVENT WITH OVERFILL
REV. 10 6/11**



Note:

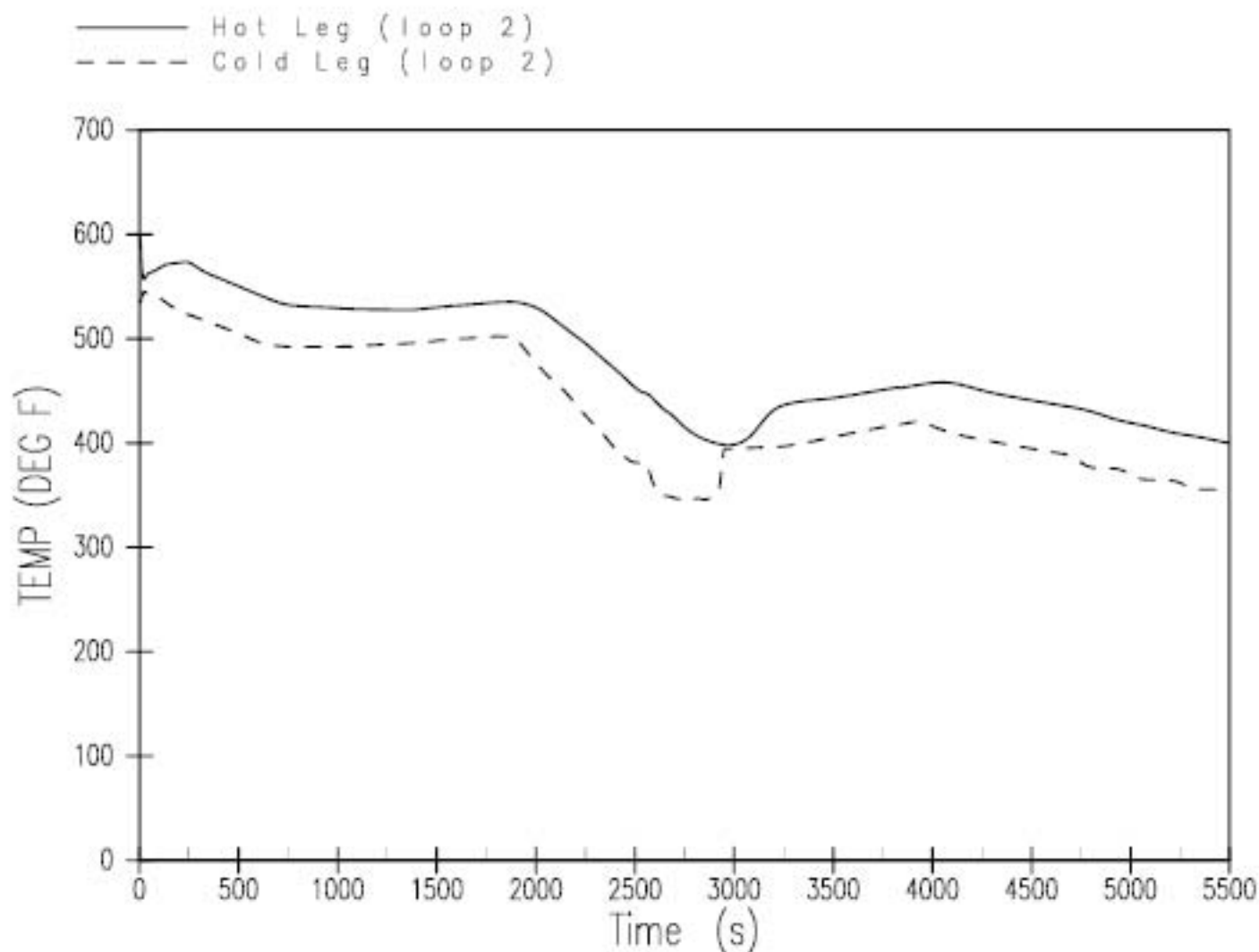
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

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FIGURE 16.6-33B

**REACTOR COOLANT SYSTEM TEMPERATURE
(RUPTURED LOOP) TRANSIENT FOR
SGTR EVENT WITH OVERFILL
REV. 10 6/11**



Note:

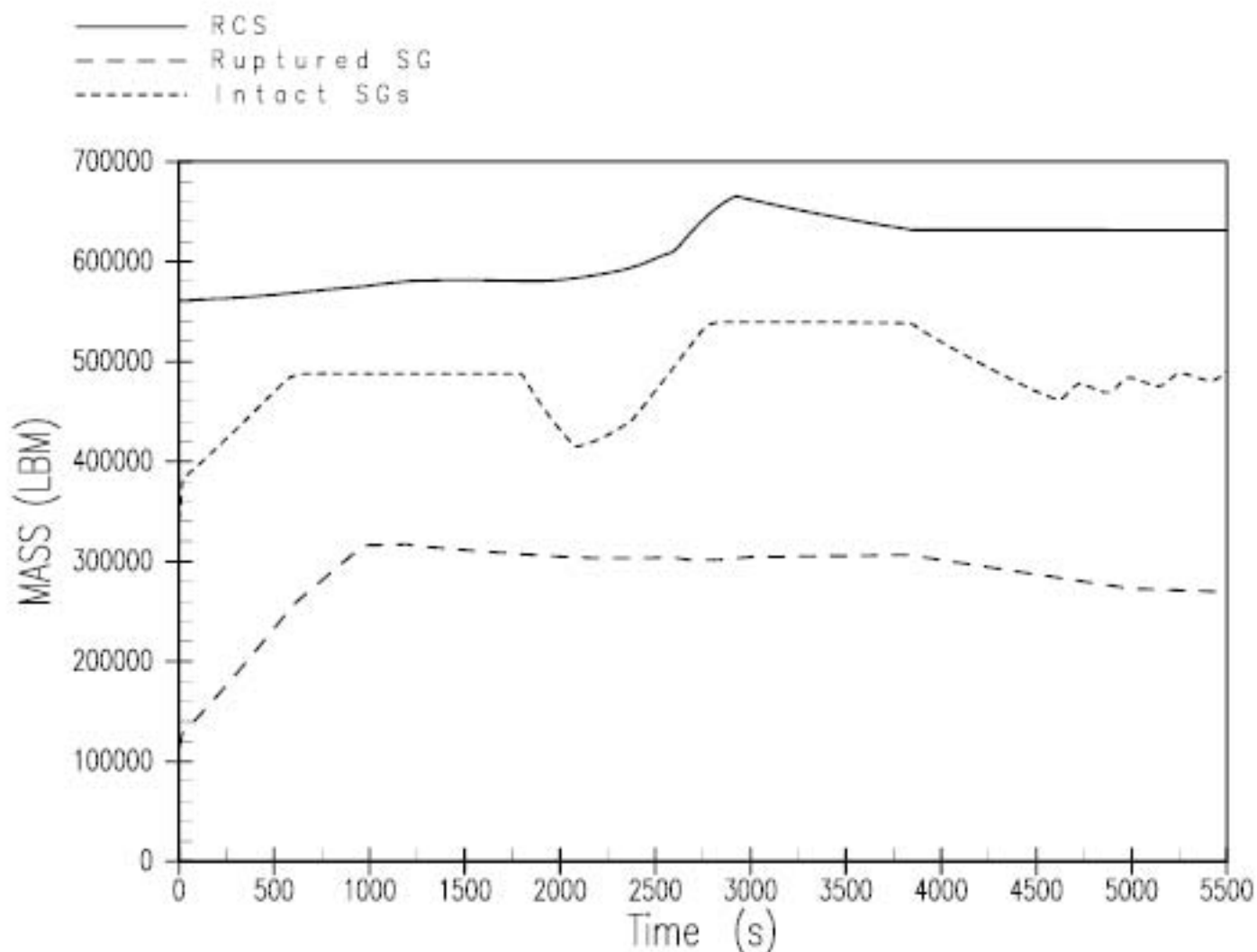
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.8-33C

**REACTOR COOLANT SYSTEM TEMPERATURE
(INTACT LOOPS) TRANSIENT FOR
SGTR EVENT WITH OVERFILL
REV. 10 6/11**



Note:

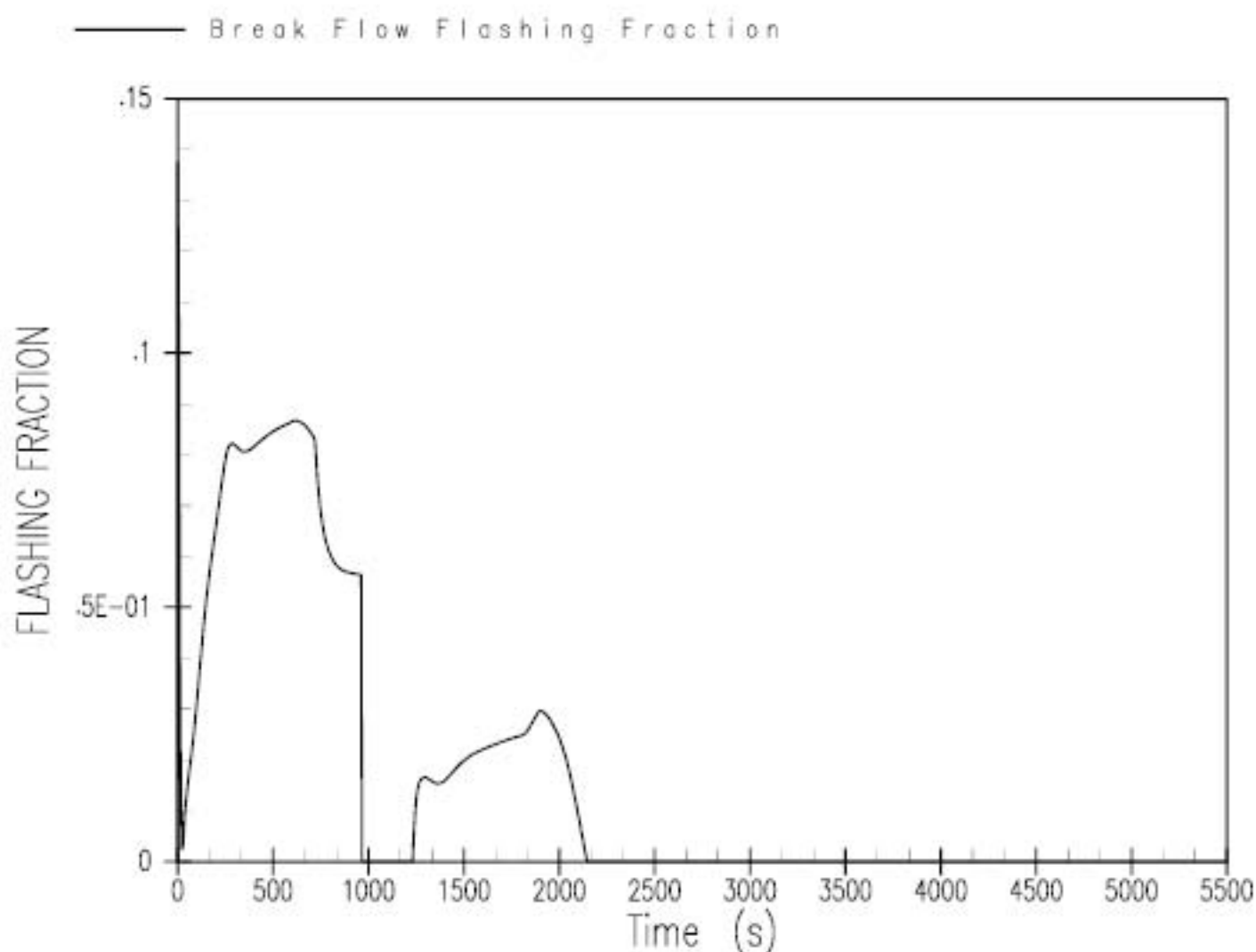
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.6-33D

REACTOR COOLANT SYSTEM AND STEAM
GENERATOR (RUPTURED AND INTACT
GENERATORS) WATER MASS TRANSIENT FOR
SGTR EVENT WITH OVERFILL
REV. 16 5/11



Note:

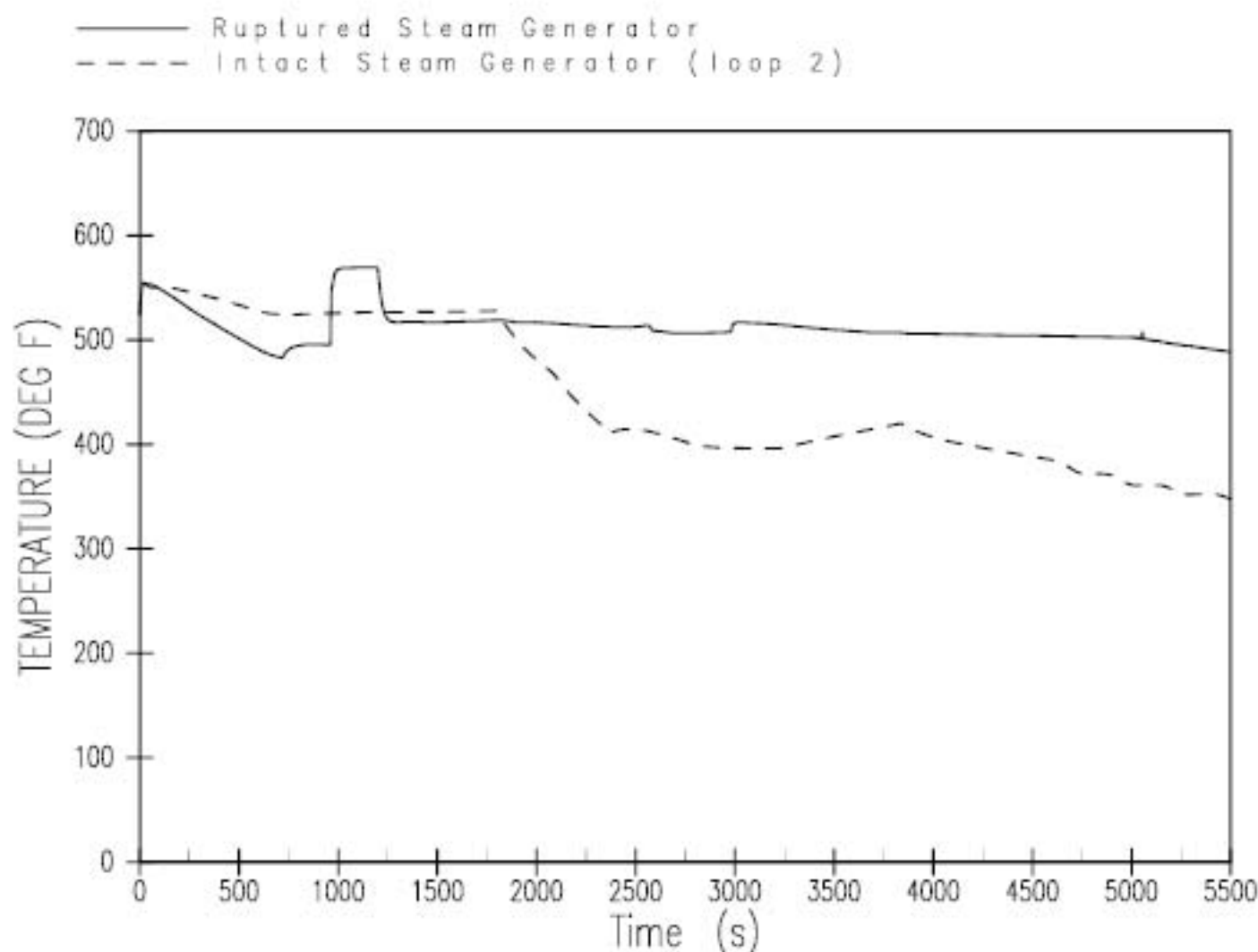
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.6-33E

**RUPTURED STEAM GENERATOR BREAK
FLOW FLASHING FRACTION TRANSIENT
FOR SGTR EVENT WITH OVERFILL
REV. 10 6/11**



Note:

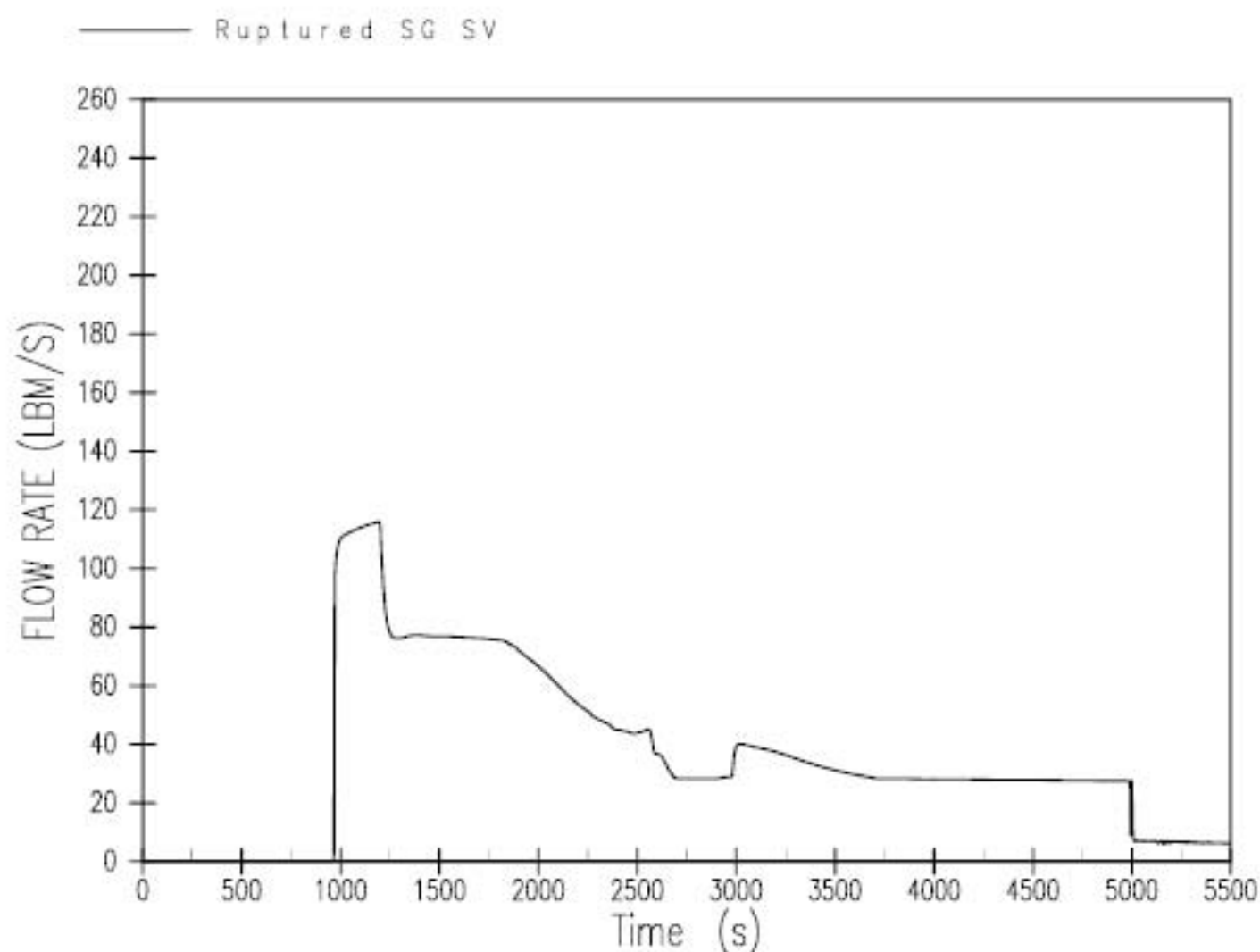
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.8-33F

STEAM GENERATOR TEMPERATURE
(RUPTURED AND INTACT GENERATORS)
TRANSIENT FOR SGTR EVENT WITH OVERFILL
REV. 10 6/11



Notes:

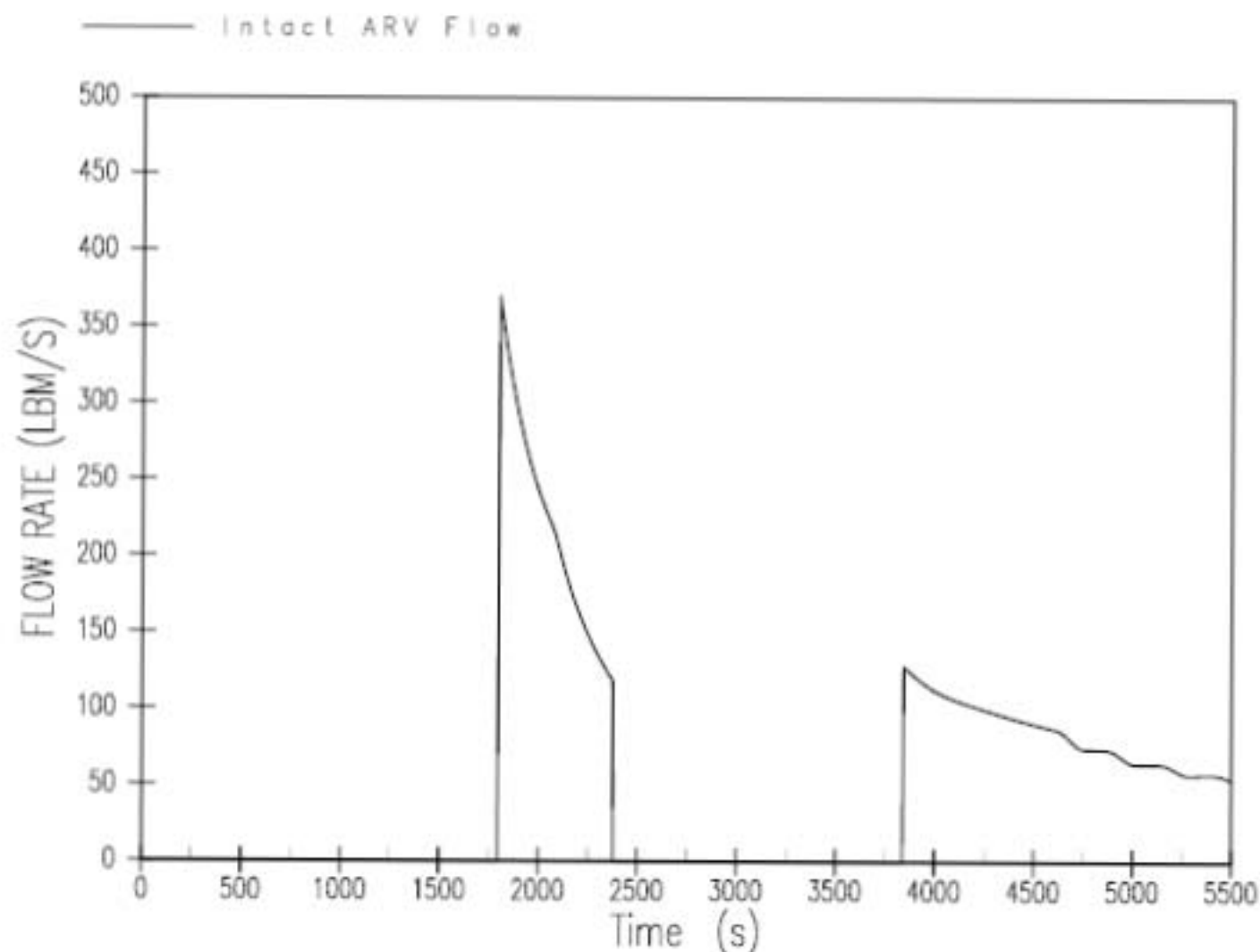
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.6-33G

STEAM GENERATOR ATMOSPHERIC RELEASE
FLOW RATE (RUPTURED GENERATOR) TRANSIENT
FOR SGTR EVENT WITH OVERFILL
REV. 10 6/11



Note:

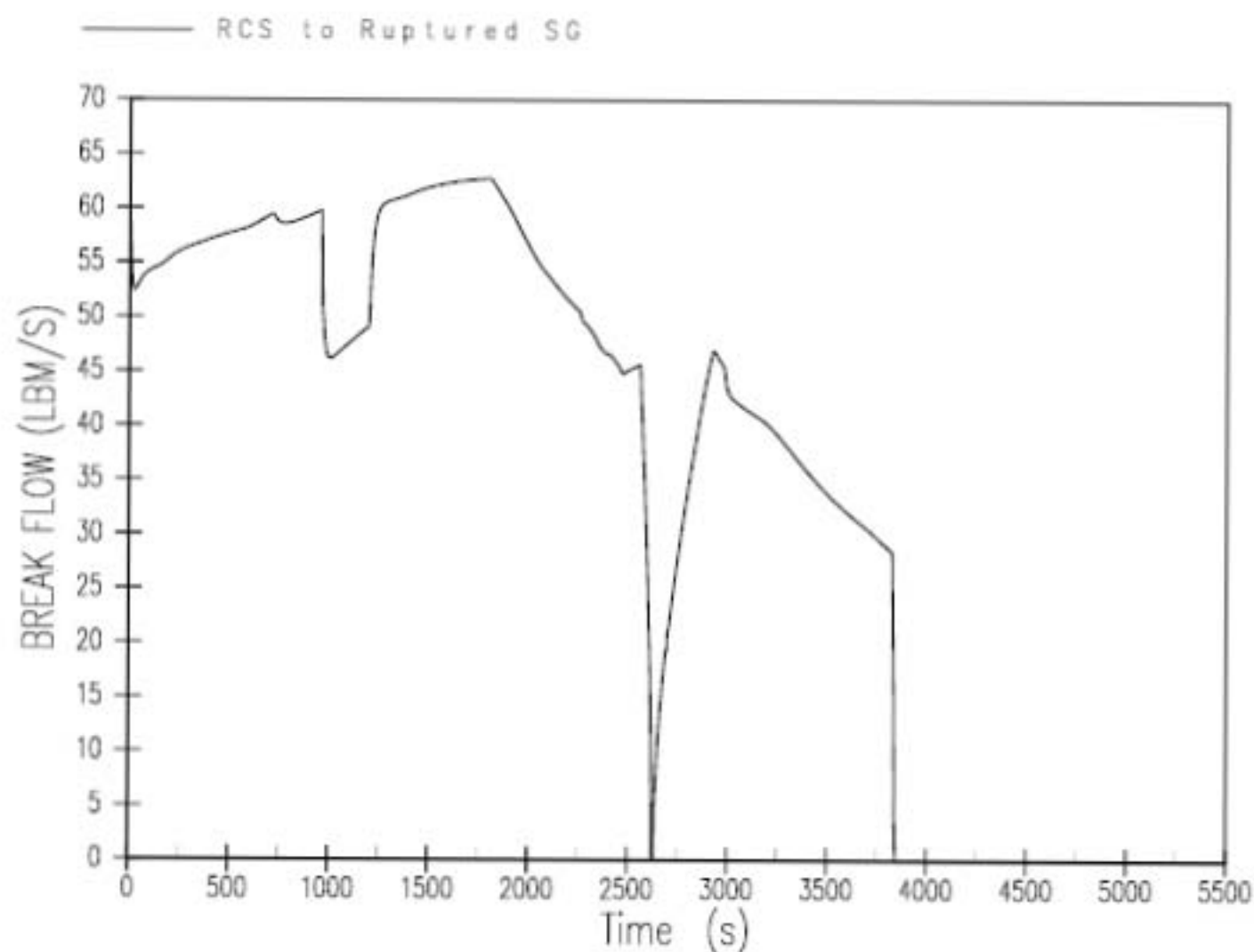
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 16.6-33H

STEAM GENERATOR ATMOSPHERIC RELEASE
FLOW RATE (INTACT GENERATORS) TRANSIENT
FOR SGTR EVENT WITH OVERFILL
REV. 16 6/11



Note:

The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

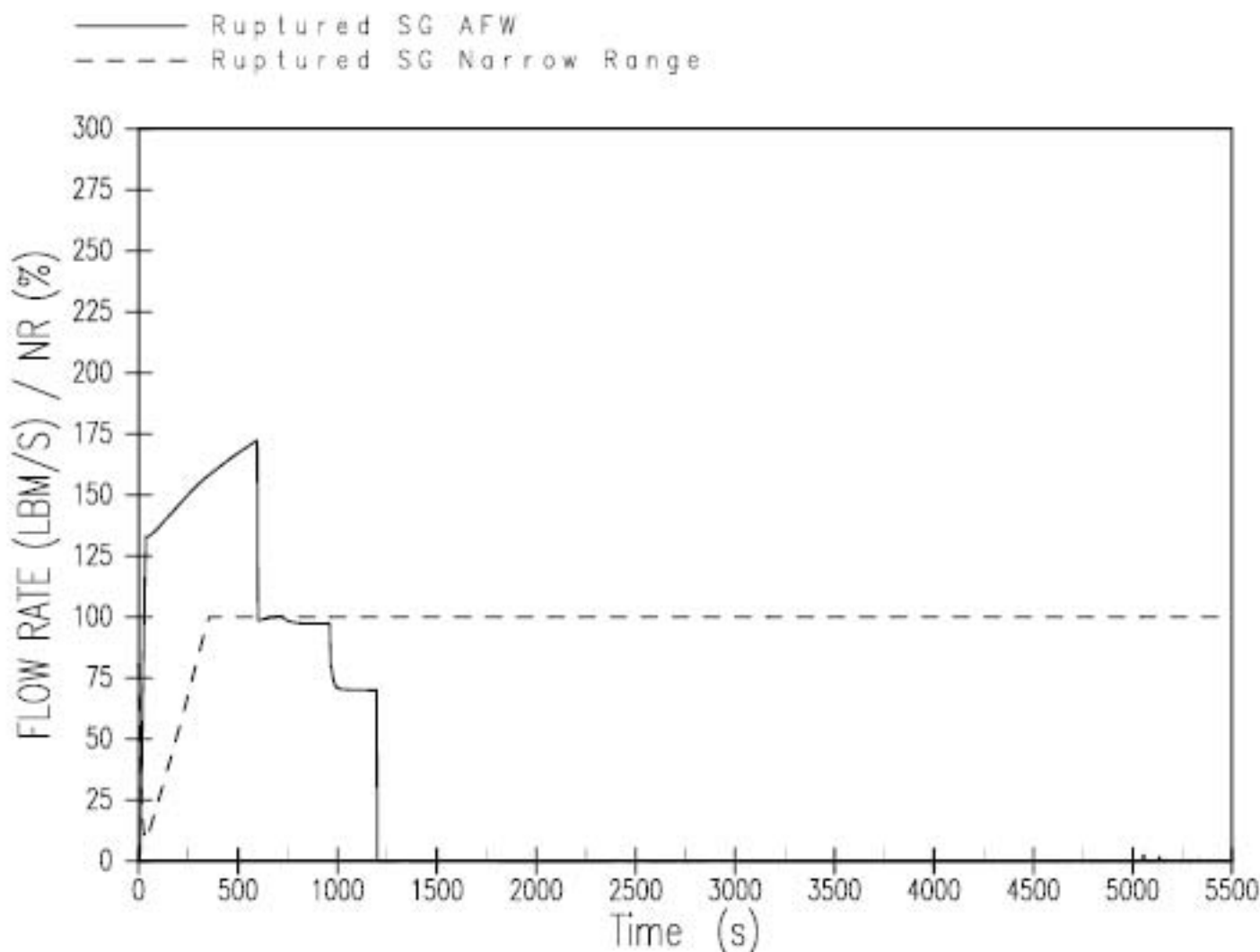
Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.8-531

**RUPTURED STEAM GENERATOR BREAK
FLOW RATE TRANSIENT FOR SGTR
EVENT WITH OVERFILL**

REV. 16 5/11



Note:

The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

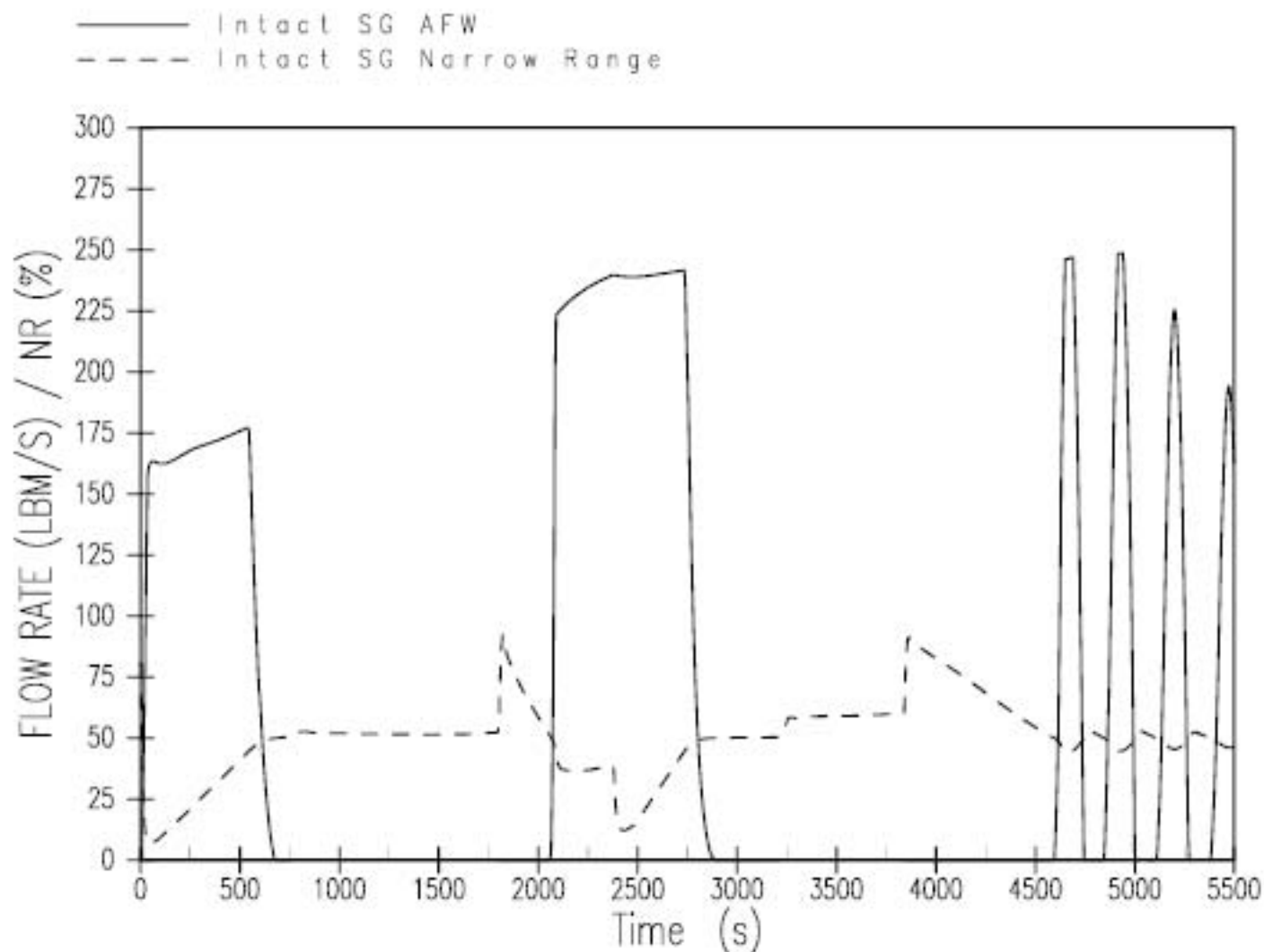
Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 16.6-33J

AUXILIARY FEEDWATER FLOW RATE AND NARROW
RANGE LEVEL (RUPTURED GENERATOR) TRANSIENTS
FOR SGTR EVENT WITH OVERFILL

REV. 15 5/11



Notes:

The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

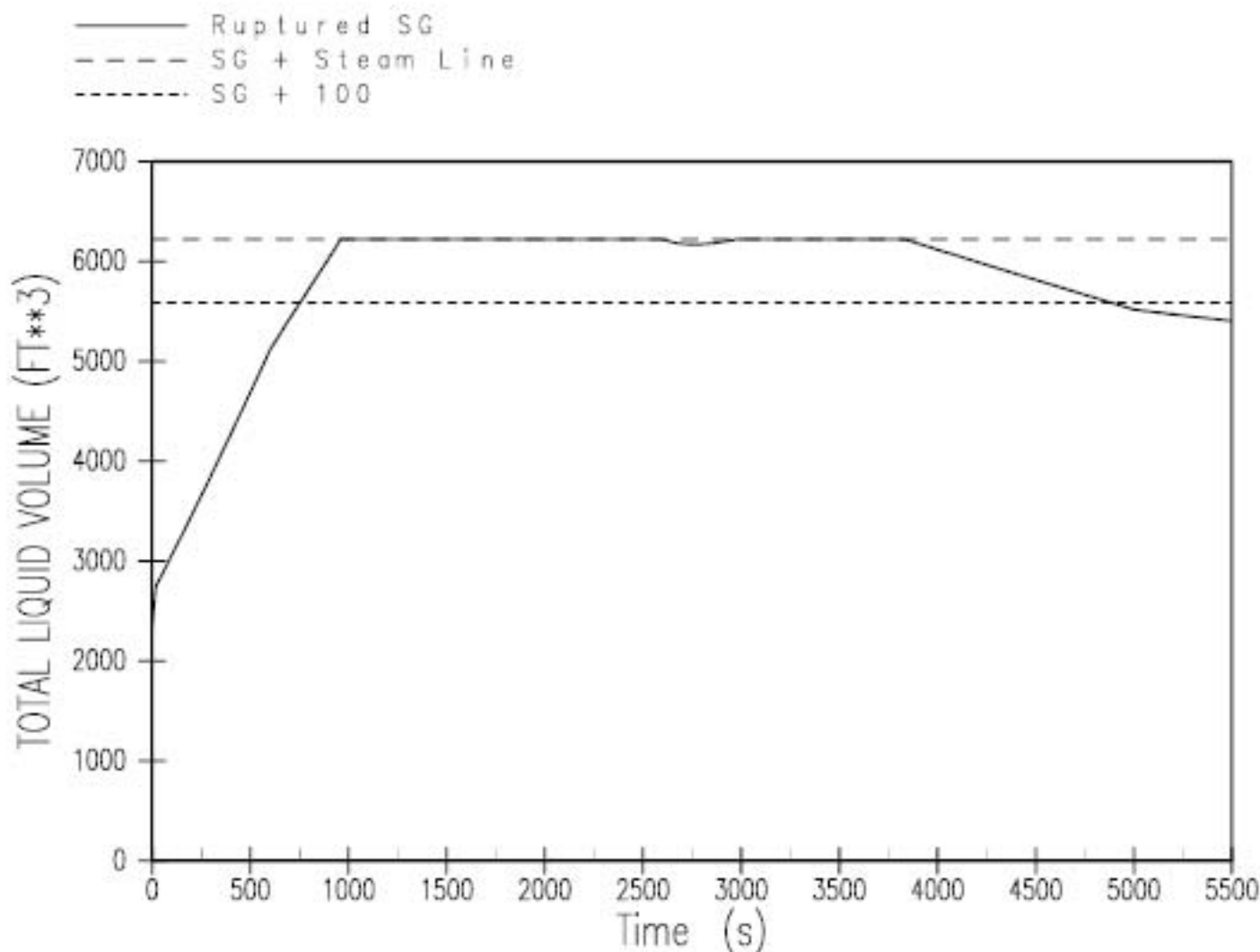
Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.8-33K

AUXILIARY FEEDWATER FLOW RATE AND NARROW
RANGE LEVEL (INTACT GENERATORS) TRANSIENTS
FOR SGTR EVENT WITH OVERFILL

REV. 15 5/11



Note:

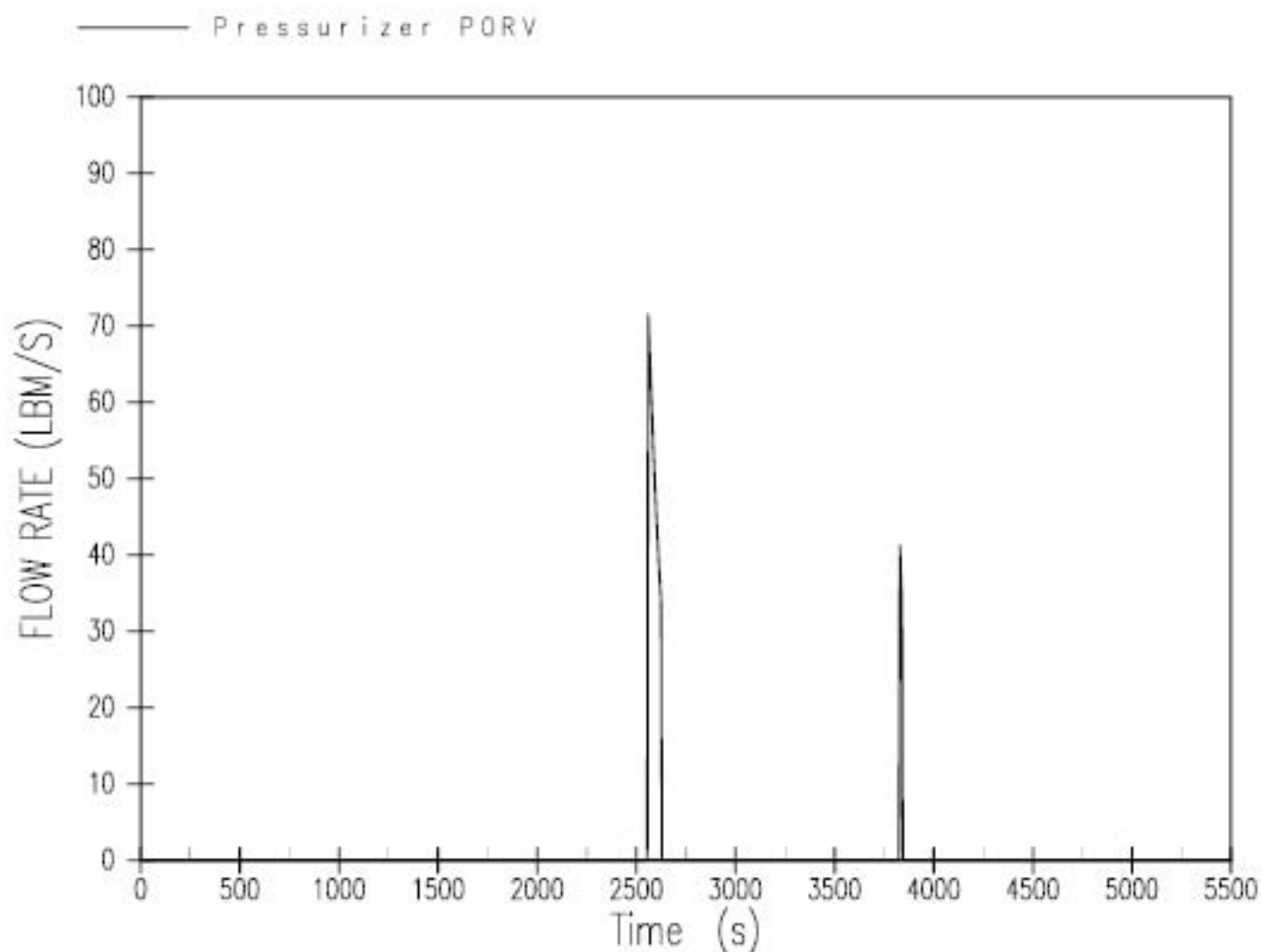
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 16.6-33L

**RUPTURED STEAM GENERATOR
LIQUID VOLUME TRANSIENT
FOR SGTR EVENT WITH OVERFILL
REV. 10 6/11**



Note:

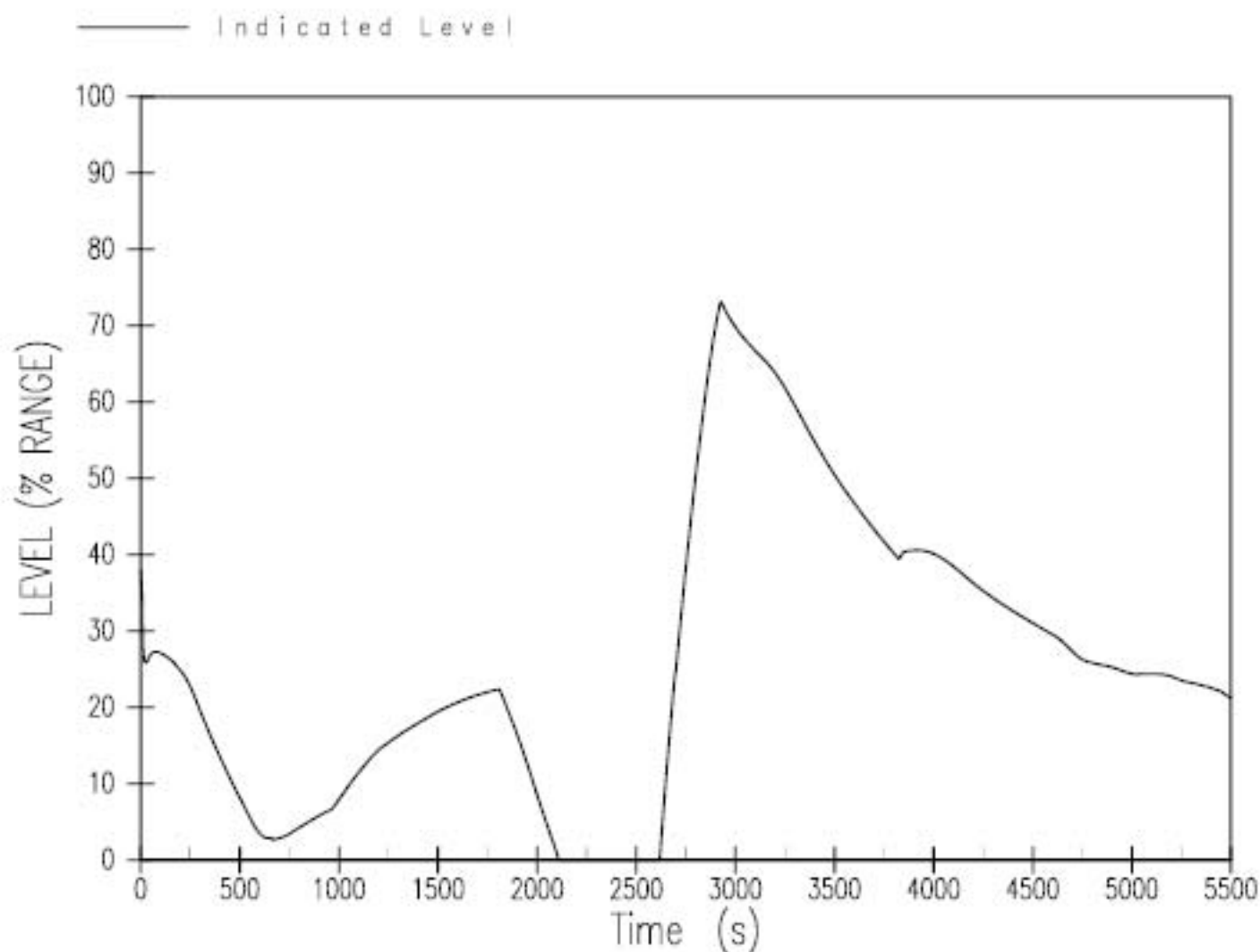
The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 15.8-33M

**PRESSURIZER PORV FLOW RATE
TRANSIENT FOR SGTR EVENT
WITH OVERFILL
REV. 10 6/11**



Note:

The thermal-hydraulic model presented in this figure is based on an analysis that credits all three ASDs on the intact steam generators to be available to support the RCS rapid cooldown. This is conservative with respect to the thermal-hydraulic analysis of the SGTR and the potential effects of the associated transient.

Additional calculations have been performed that conservatively reduce the number of credited ASDs available for the rapid cooldown from three to two. This results in a longer rapid cooldown duration than is shown on this figure. The analyses that use the reduced ASD availability were performed to quantify radiological consequences of the prolonged cooldown. Conservative flowrates and durations were used in the radiological consequence analyses.

CALLAWAY PLANT

FIGURE 16.8-33N

**PRESSURIZER LIQUID VOLUME
TRANSIENT FOR SGTR EVENT
WITH OVERFILL
REV. 10 6/11**

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Figure 15.6-61I Deleted

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Figure 15.6-61n Deleted