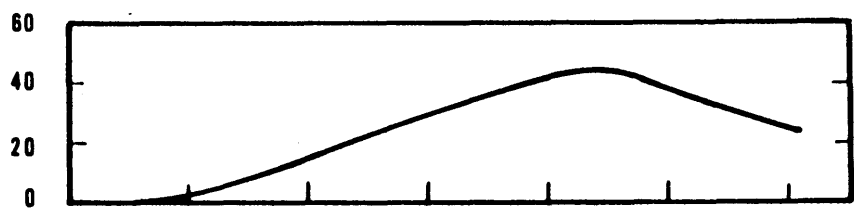
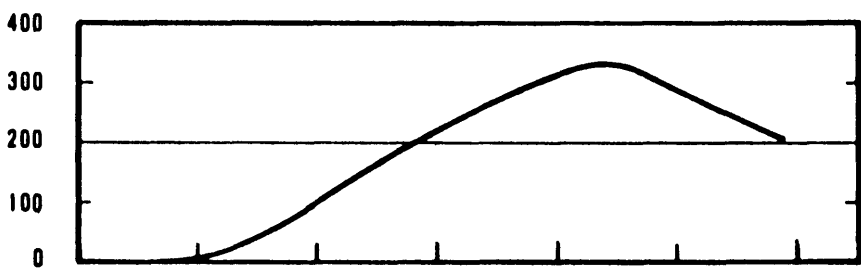


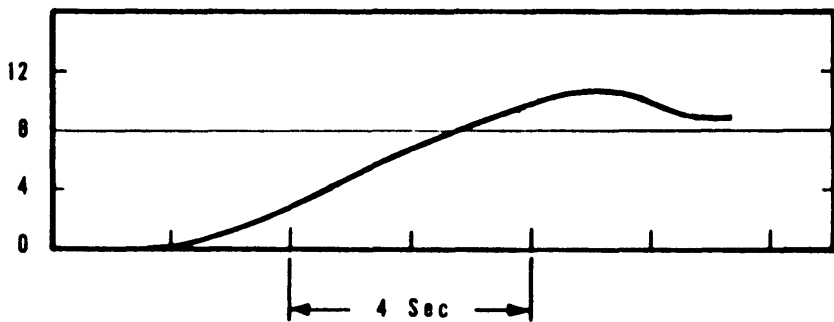
Neutron  
Power, %



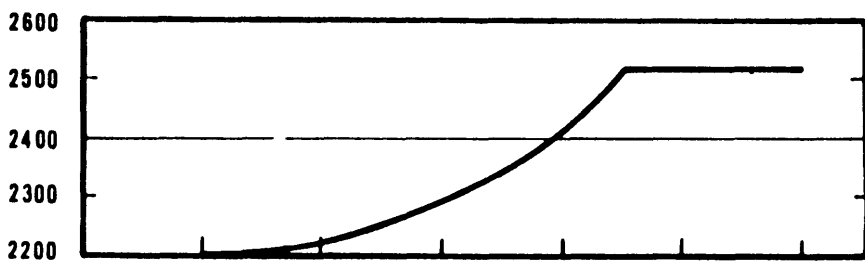
Thermal  
Power, %



Fuel  
Temperature  
Change, F



Average Core  
Moderator  
Temperature  
Change, F



Reactor  
System  
Pressure, psia

P. 14.FIG-1

**GPJ Nuclear**

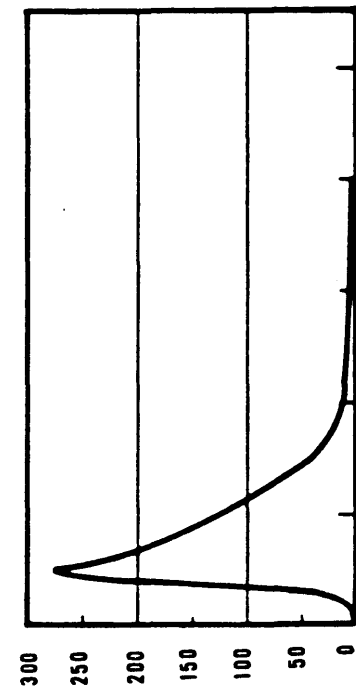
**TMI Unit-1**

**7/82**

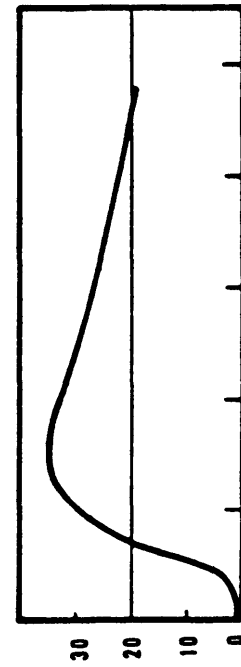
**Update - 1**

Startup Accident from  $10^{-9}$  Rated Power  
using a 1.5  $\Delta K/K$  Rod Group High Pressure  
Reactor Trip is Actuated

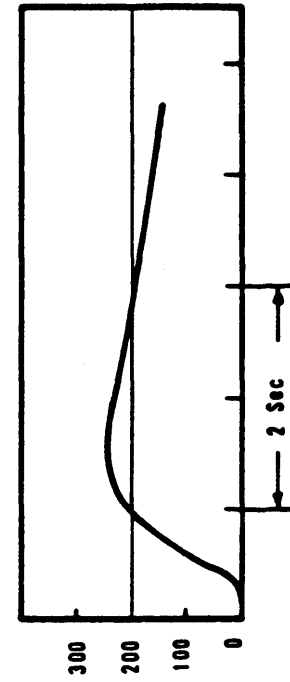
Fig. 14.1-1



Neutron  
Power, %



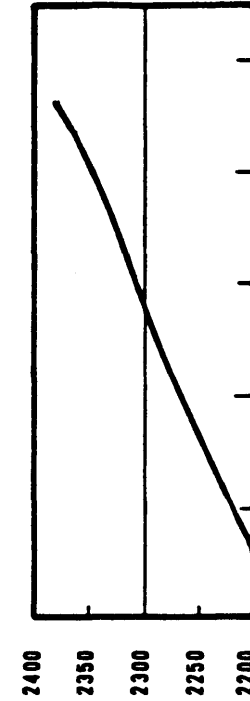
Thermal  
Power, %



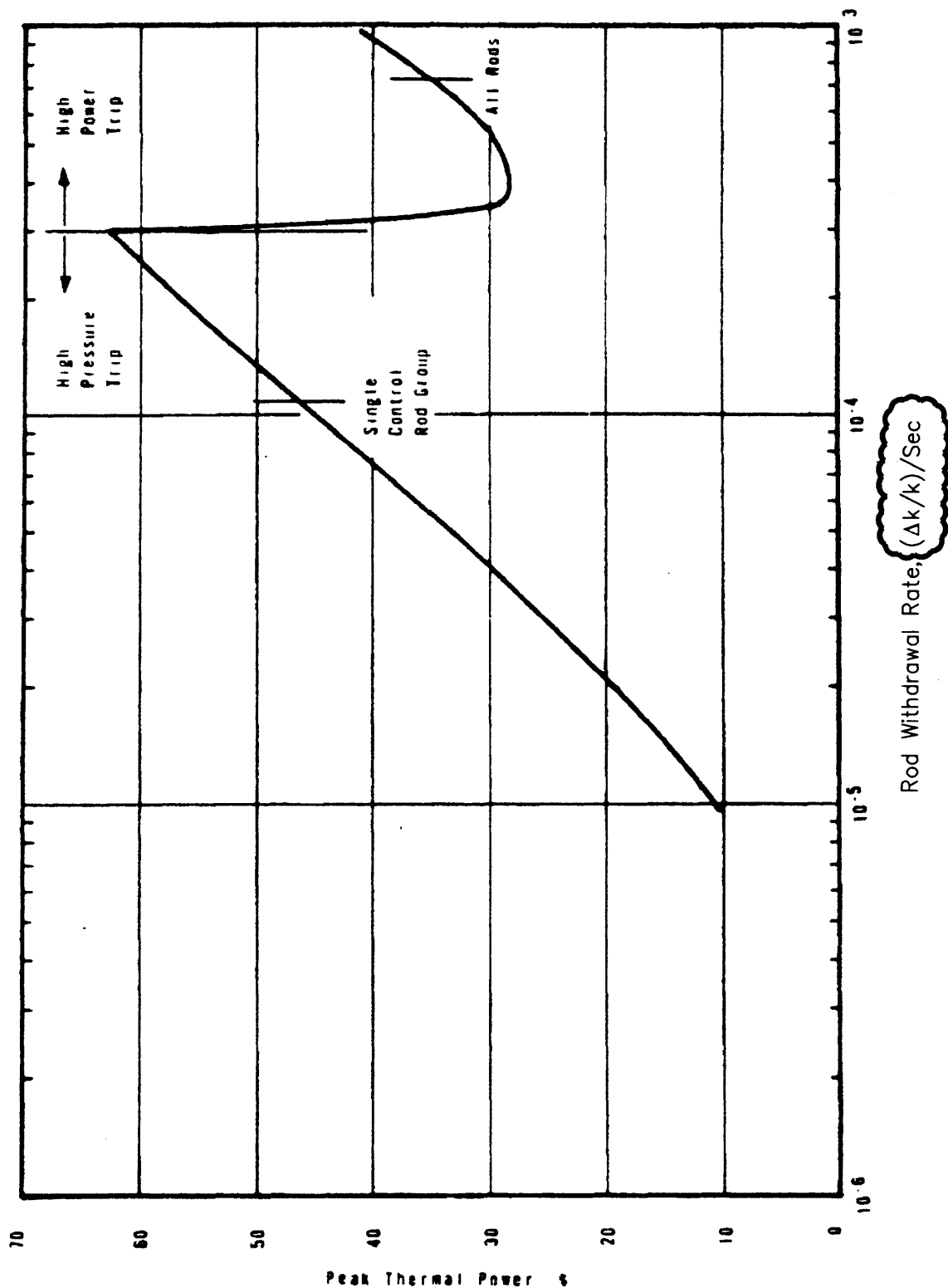
Fuel  
Temperature  
Change, °F



Average Core  
Moderator  
Temperature  
Change, °F



Reactor  
System  
Pressure, psia



p. 14.FIG-3



**GPU  
NUCLEAR**

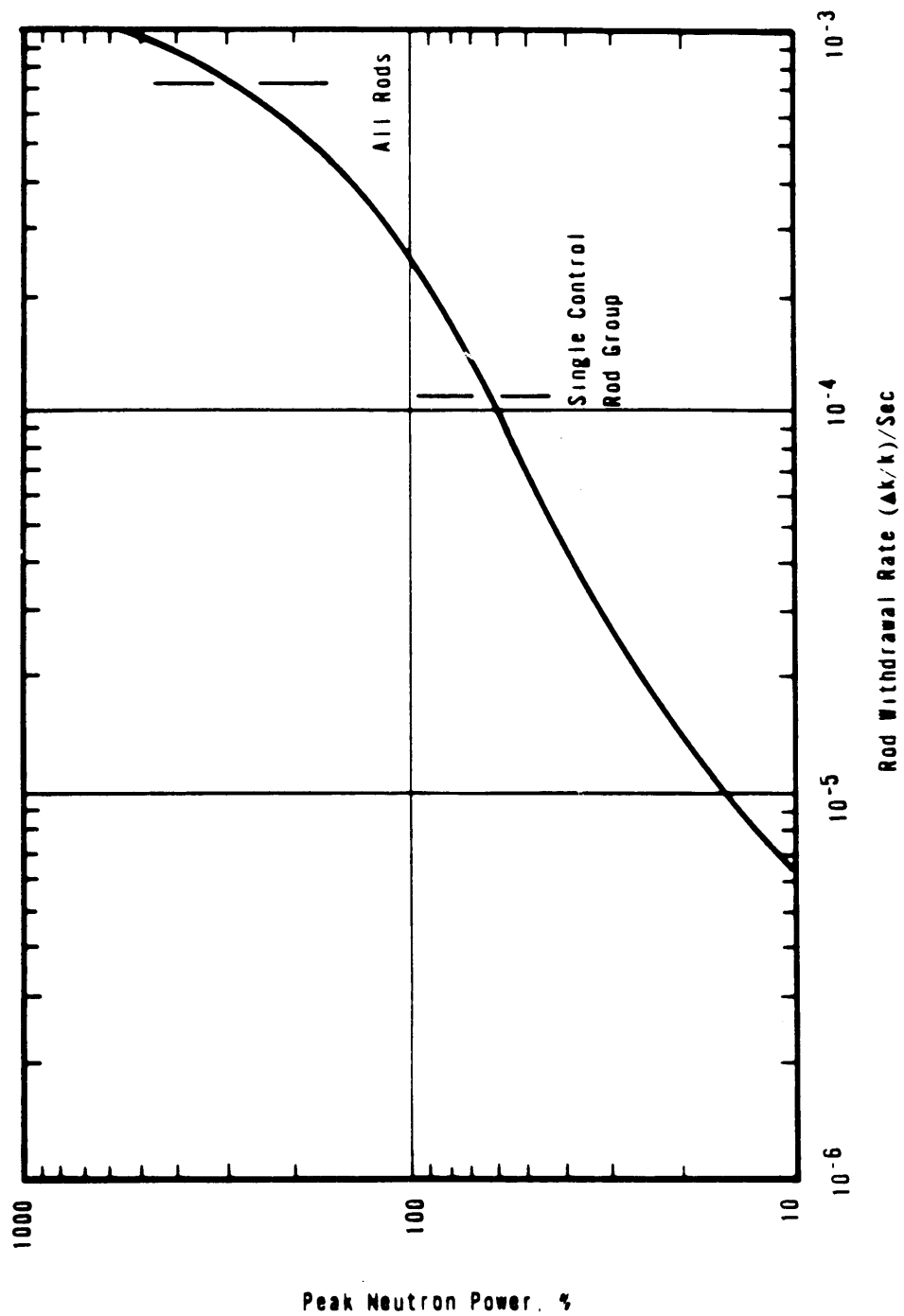
TMI - UNIT 1

UPDATE - 14  
4/98

Peak Thermal Power vs. Rod  
Withdrawal Rate for a Startup  
Accident from  $10^{-9}$  Rated Power

CAD FILE: 6555RI4.DWG

FIG 14.1-3



p. 14.FIG-4

**GPU Nuclear**

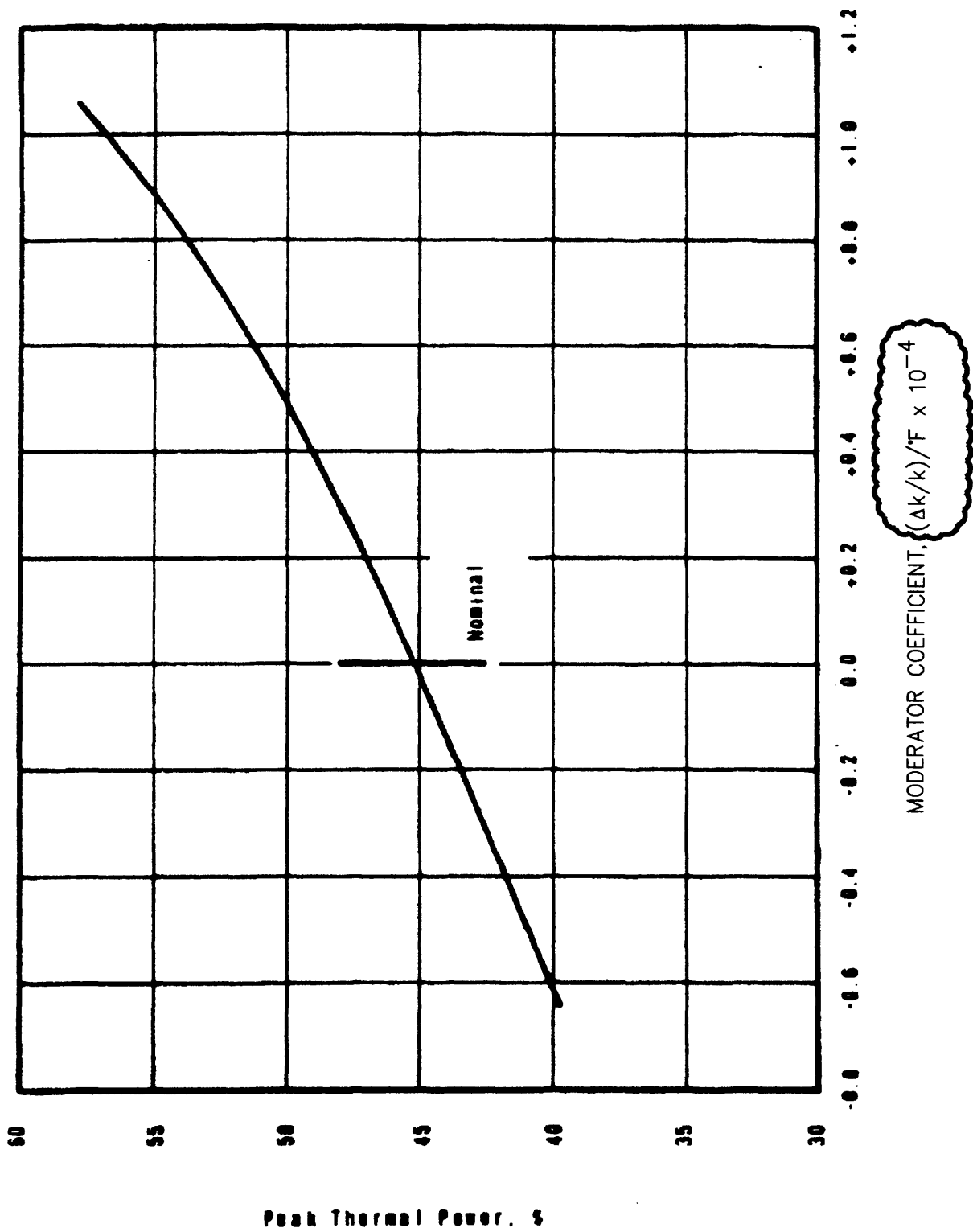
TMI Unit-1

Peak Neutron Power vs. Rod  
Withdrawal Rate for a Startup  
Accident from  $10^{-9}$  Rated Power

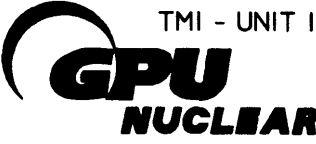
Update - 1

7/82

Fig. 14.1-4



p.14.FIG-5



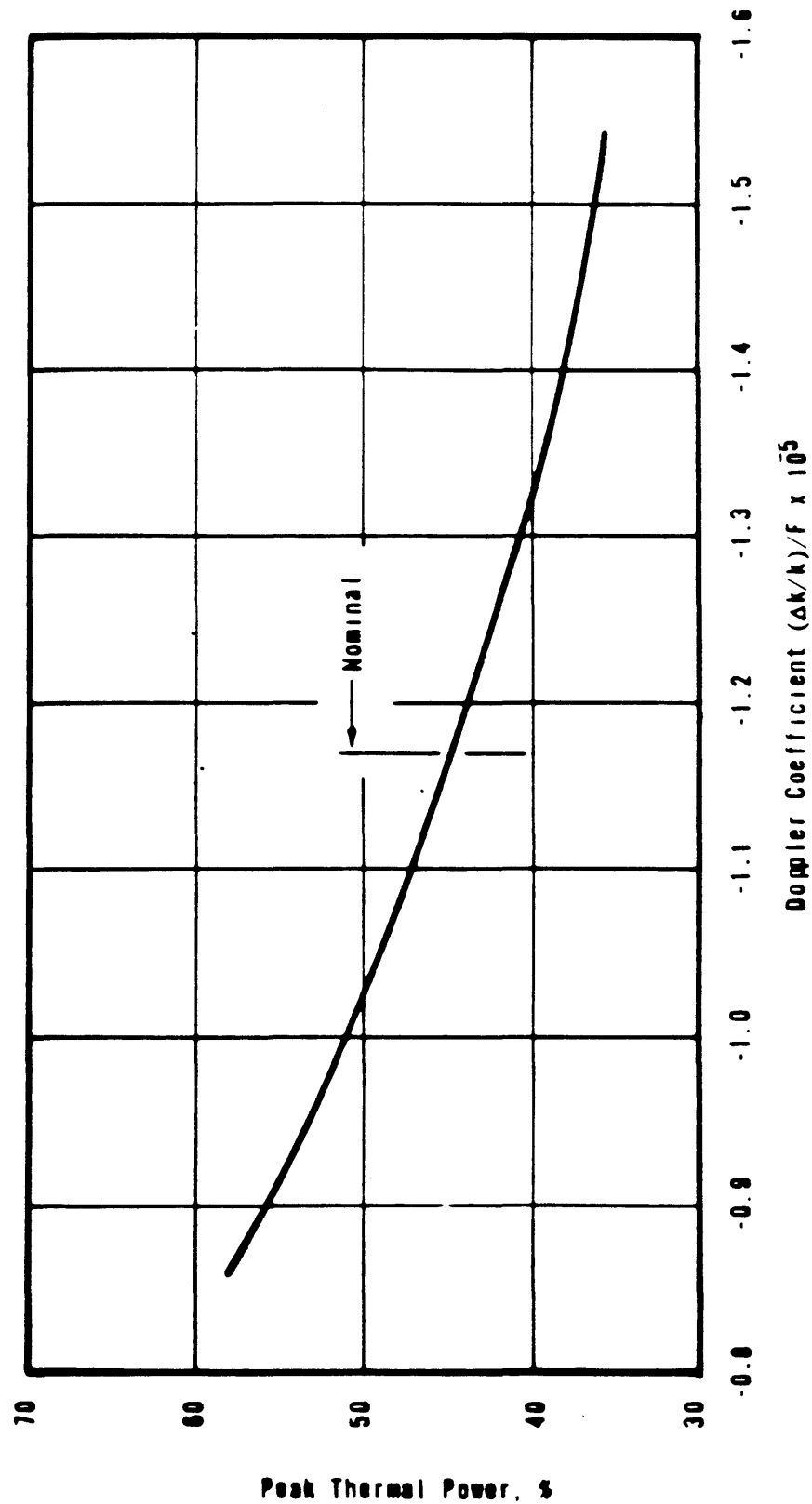
TMI - UNIT 1

UPDATE - 14  
04/98

Peak Thermal Power vs. Moderator Coefficient for a Startup Accident using a 1.5%  $\Delta k/k$  Rod Group at  $1.09 \times 10^{-4} (\Delta k/k)/^{\circ}\text{F}$  FROM  $10^{-9}$  Rated Power

CAD FILE: 6556RI4.DWG

FIG 14.1-5



p.14.FIG-6

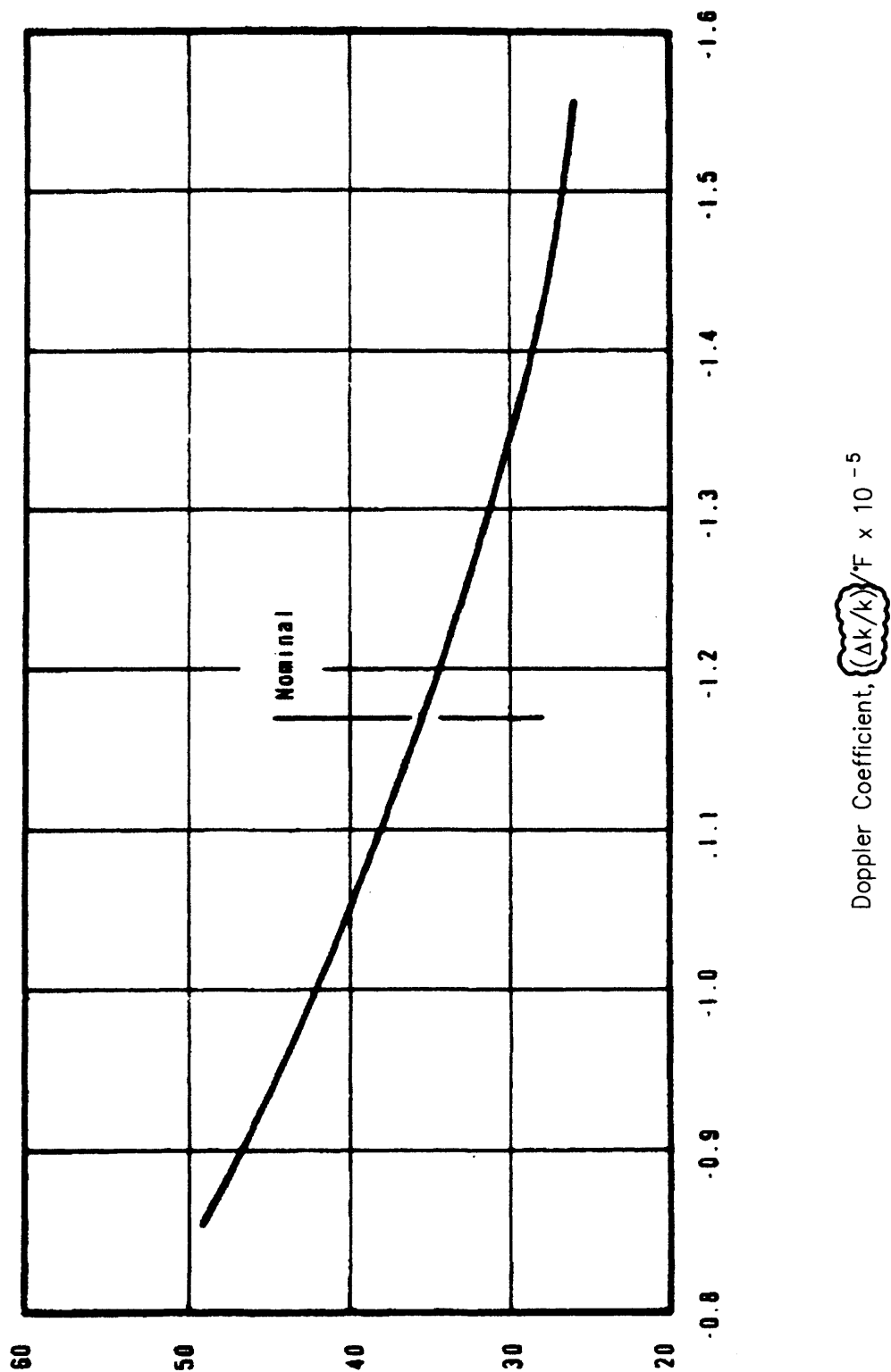
**GPU Nuclear**

Update - 8R

TMI Unit 1  
 Peak Thermal Power Versus Doppler  
 Coefficient for a Startup Accident  
 Using a 1.5%  $\Delta K/K$  Rod Group at 1.09  
 $\times 10^{-4}(\Delta K/K)/S$  From  $10^{-9}$   
 Rated Power

3/90

Fig. 14.1-6



TMI - UNIT I

**GPU**

**NUCLEAR**

Peak Thermal Power vs. Doppler Coefficient for a Startup Accident Using All Rods at  $7.25 \times 10^{-4}$

$(\Delta k/k)/S$  from  $10^{-9}$  Rated Power

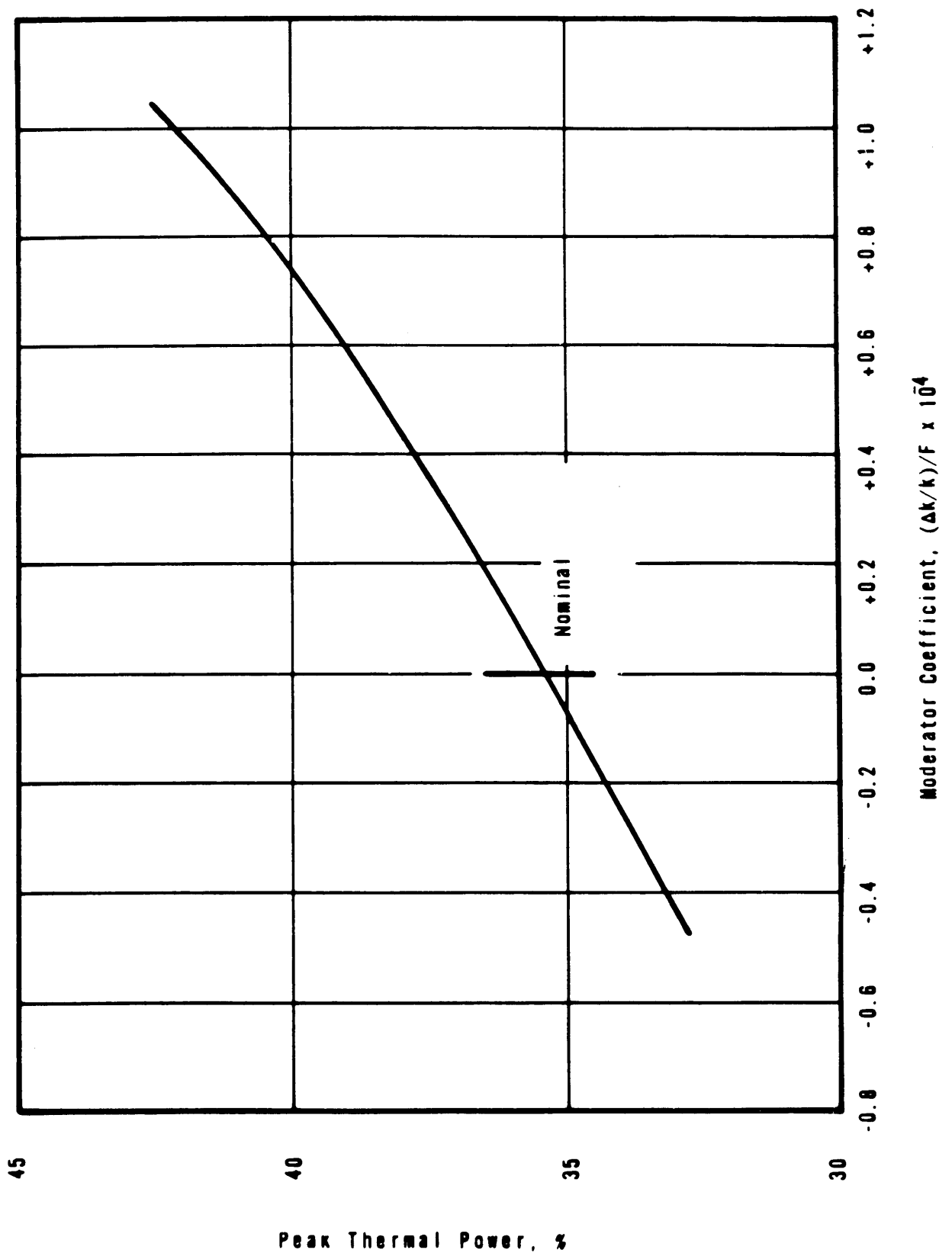
TITLE LINE 2

CAD FILE: 6557RI4.DWG

UPDATE - 14

04/98

FIG 14.1-7



Peak Thermal Power, %

**GPU Nuclear**

Update -1

**TMI Unit-1**

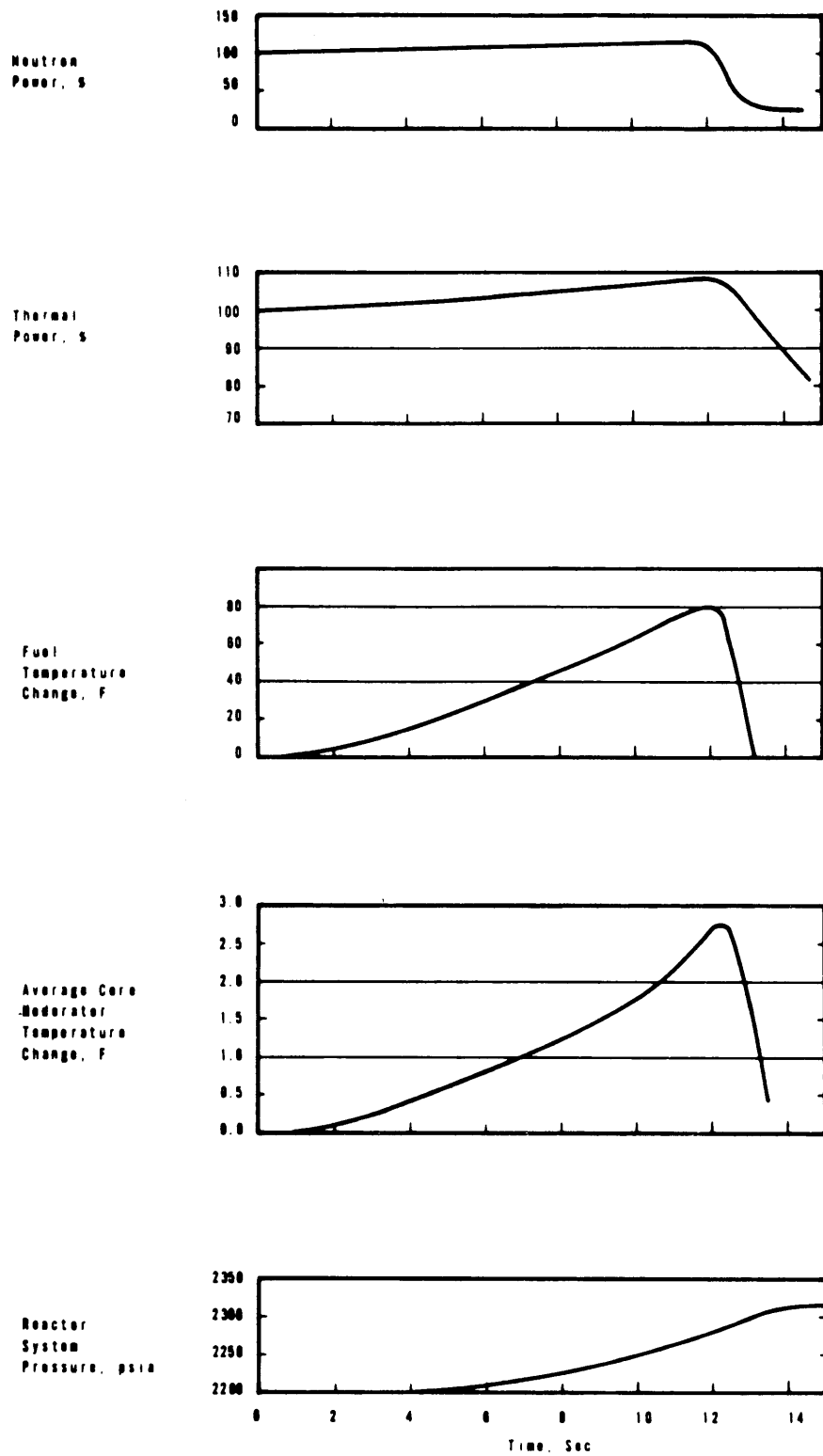
7/82

Peak Thermal Power vs. Moderator  
Coefficient for a Startup Accident  
Using all Rods at  $7.25 \times 10^{-4}$   
 $(\Delta K/K)/S$  From  $10^{-9}$  Rated Power

p. 14.FIG-8

Fig. 14.1-8





**GPU Nuclear**

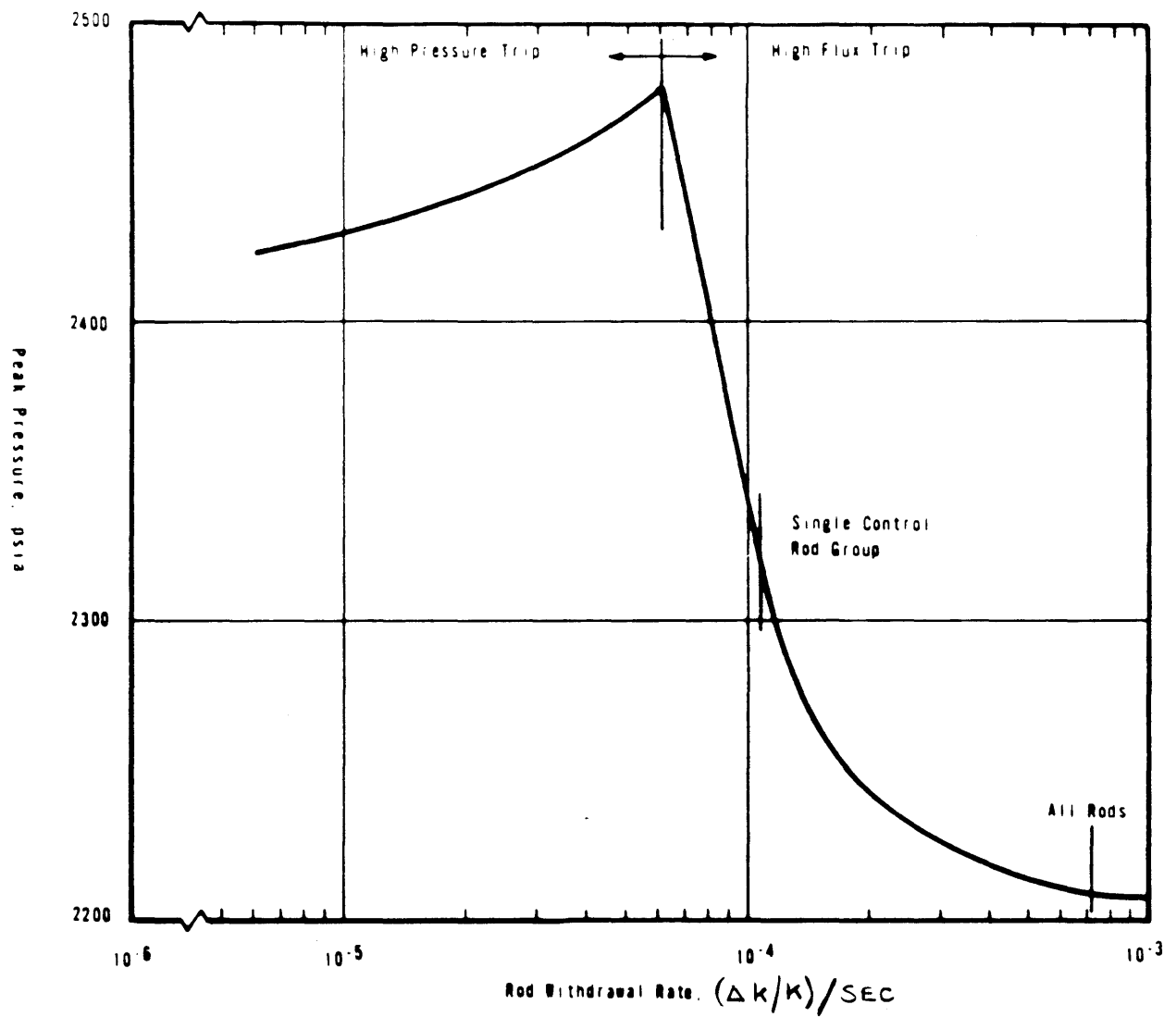
Update - 1

**TMI Unit-1**

**7/82**

Rod Withdrawal Accident from Rated Power Using a 1.5%  $\Delta K/K$  Rod Group at  $1.09 \times 10^{-4}$  ( $\Delta K/K$ )/S; High Flux Reactor Trip is Actuated

Fig. 14.1-9



**GPU Nuclear**

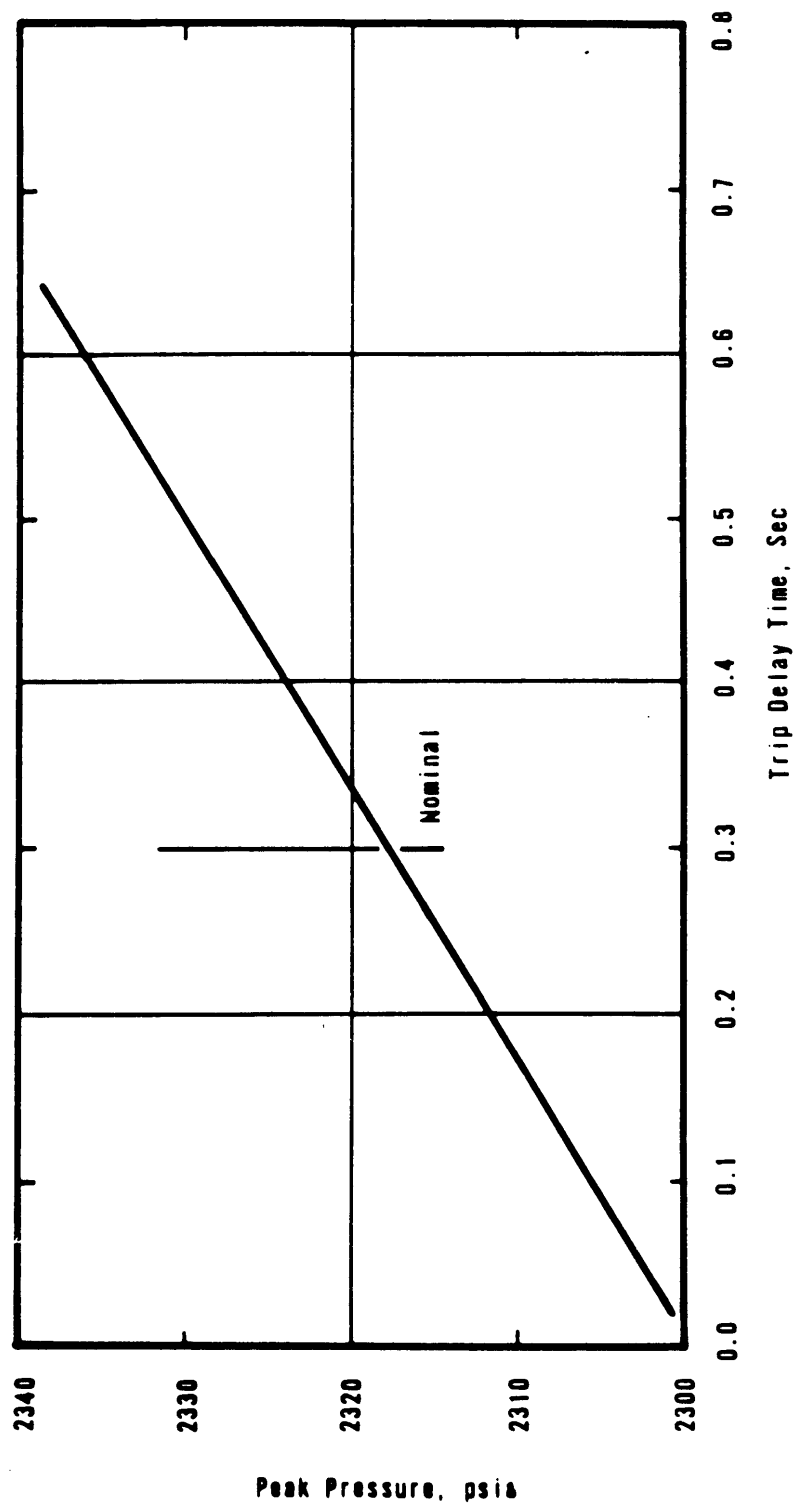
Update - 8R

TMI Unit 1

3/90

Peak Pressure vs. Rod Withdrawal  
Rate for a Rod Withdrawal Accident  
from Rated Power

Fig. 14.1-10



**GPU Nuclear**

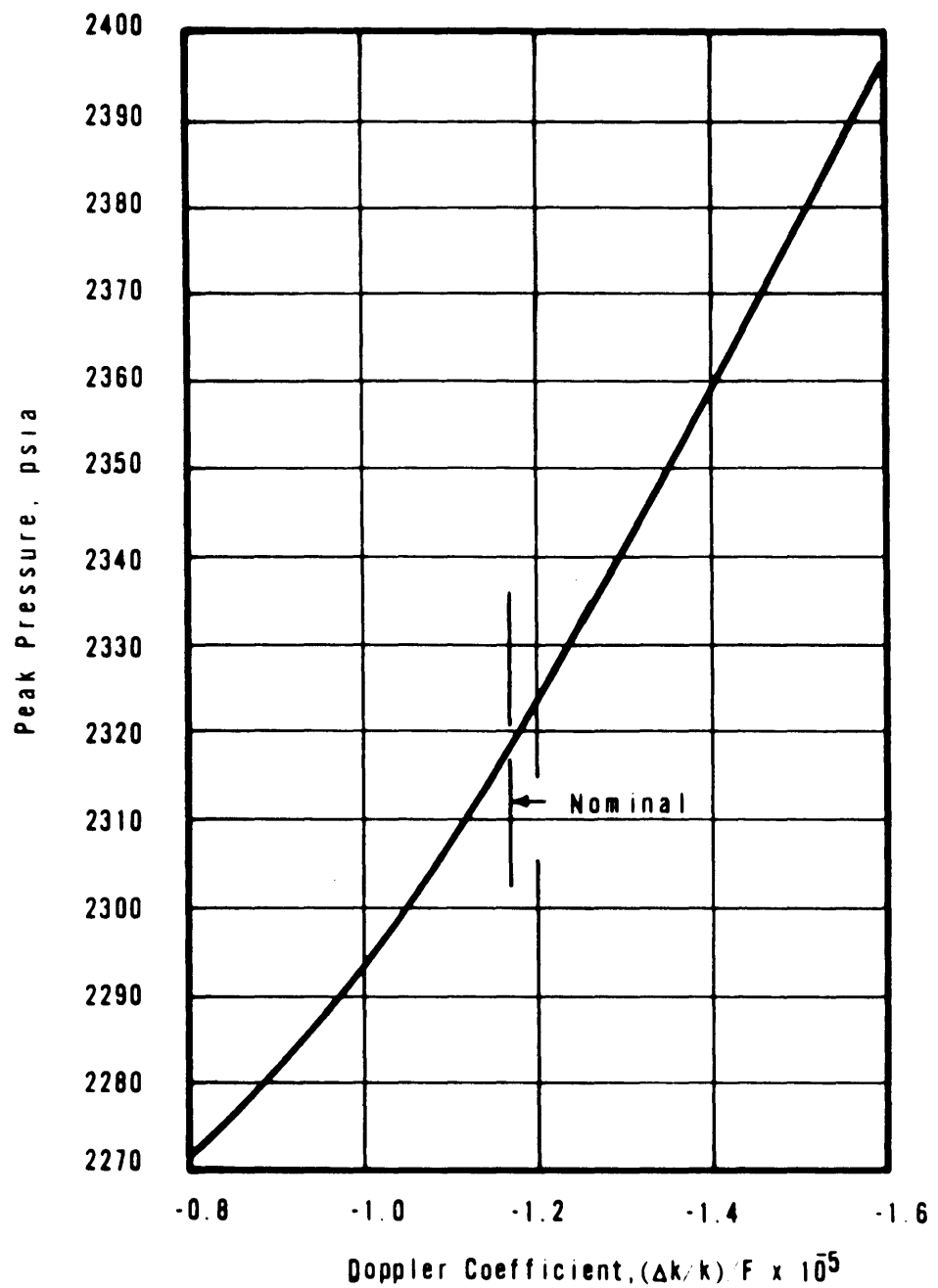
Update - 1

**TMI Unit-1**

7/82

Peak Pressure vs. Trip Delay Time  
For a Rod Withdrawal Accident from  
Rated Power Using a 1.5%  $\Delta K/K$   
Rod Group

Fig. 14.1-11



**GPU Nuclear**

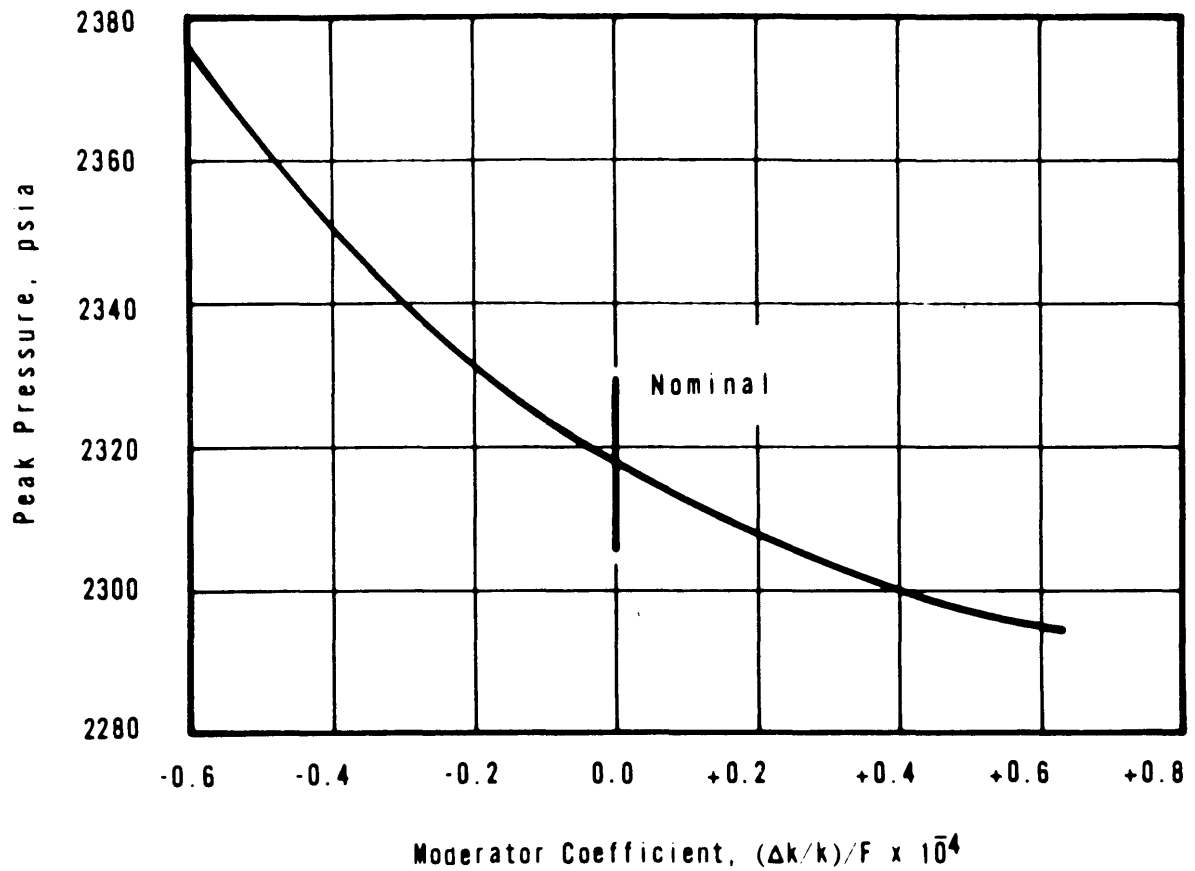
Update -1

**TMI Unit-1**

7/82

Peak Pressure vs. Doppler Coefficient  
for a Rod Withdrawal Accident from  
Rated Power Using a 1.5%  $\Delta K/K$   
Rod Group

Fig. 14.1-12



**GPU Nuclear**

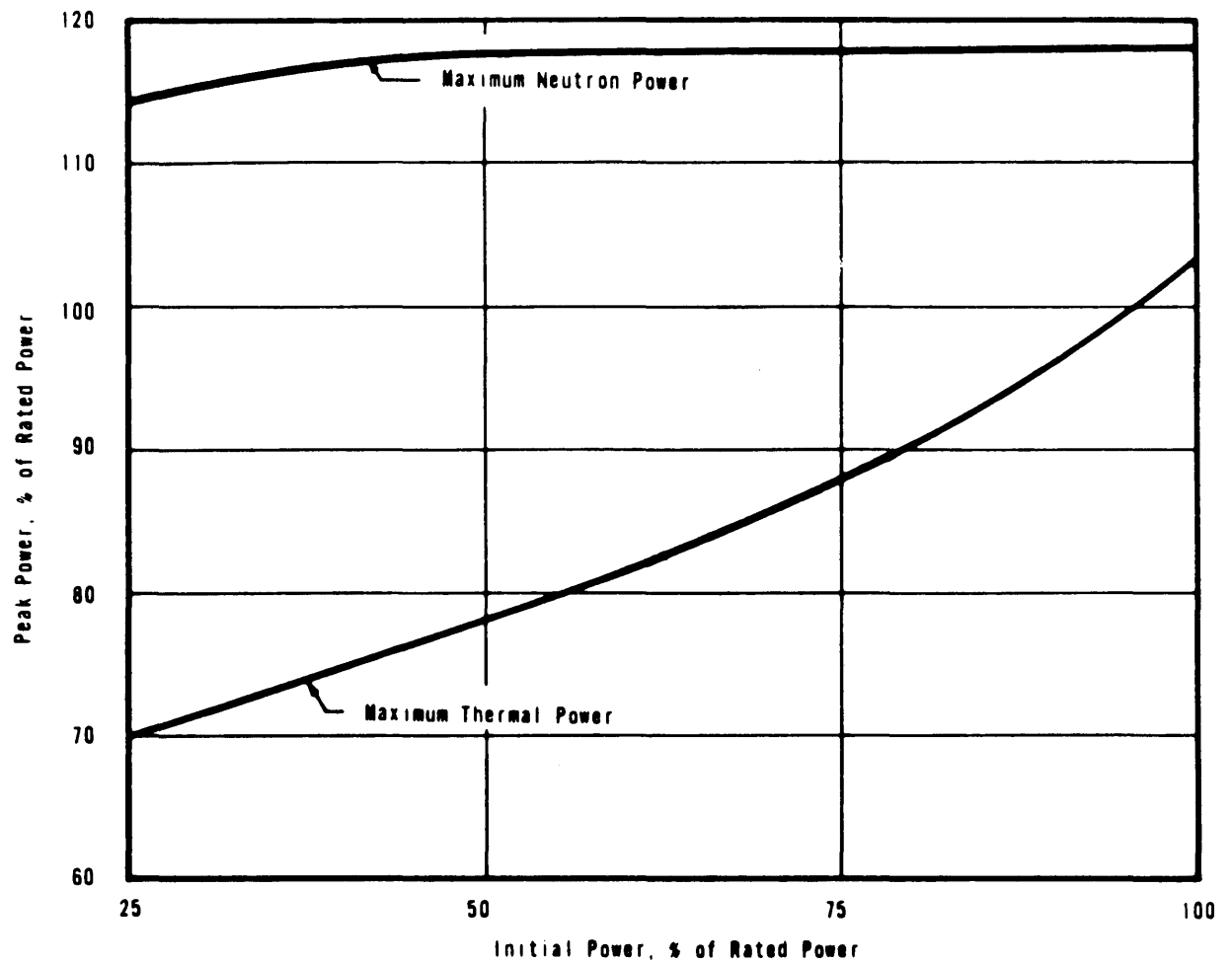
**TMI Unit-1**

Peak Pressure vs. Moderator Coefficient  
for a Rod Withdrawal Accident from  
Rated Power Using a 1.5%  $\Delta K/K$  Rod  
Group

Update - 1

7/82

Fig. 14.1-13



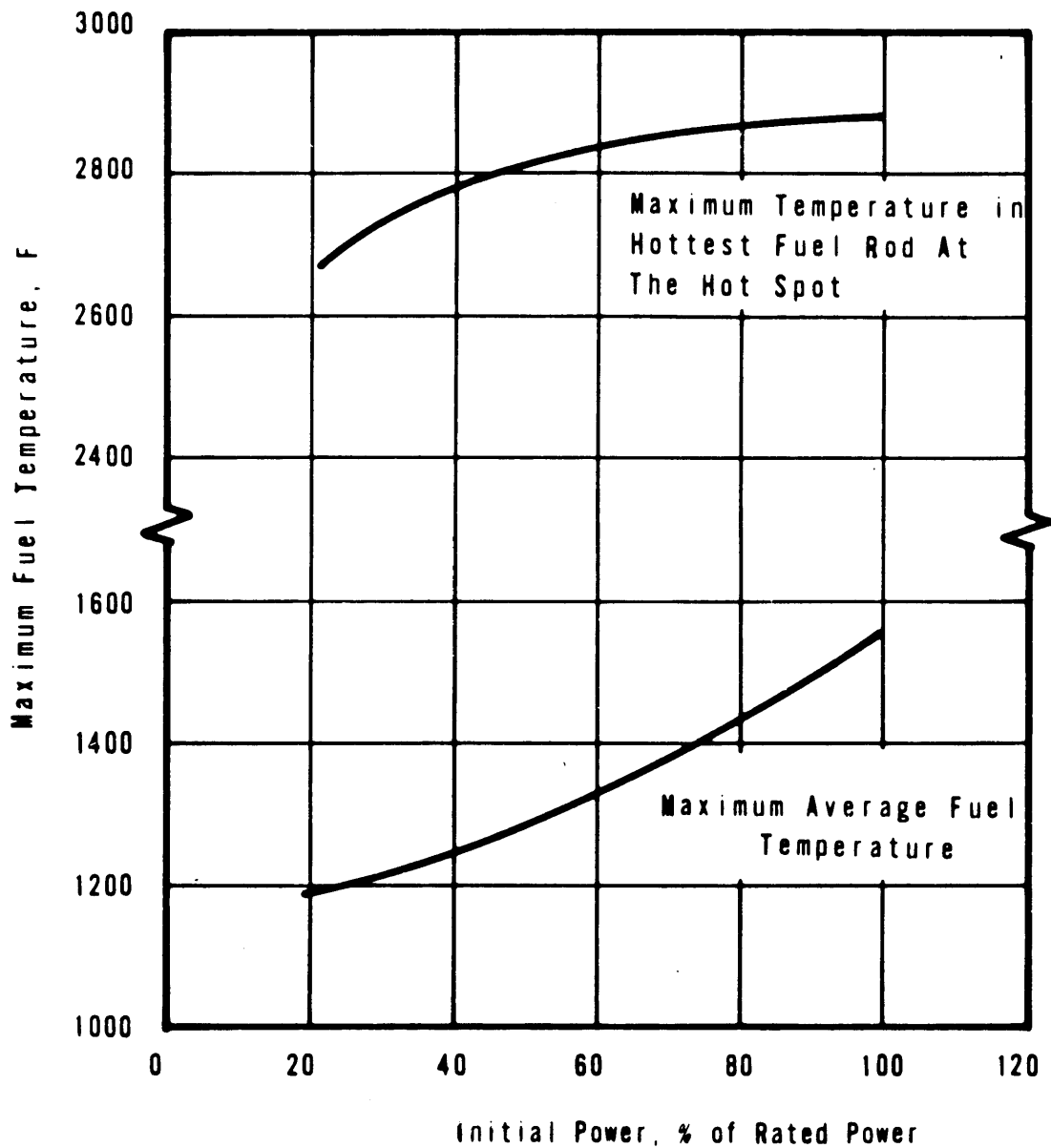
**GPU Nuclear**

Update - 1

**TMI Unit-1**

7/82

Maximum Neutron and Thermal Power  
for an All-Rod Withdrawal Accident  
from Various Initial Power Levels



**GPU Nuclear**

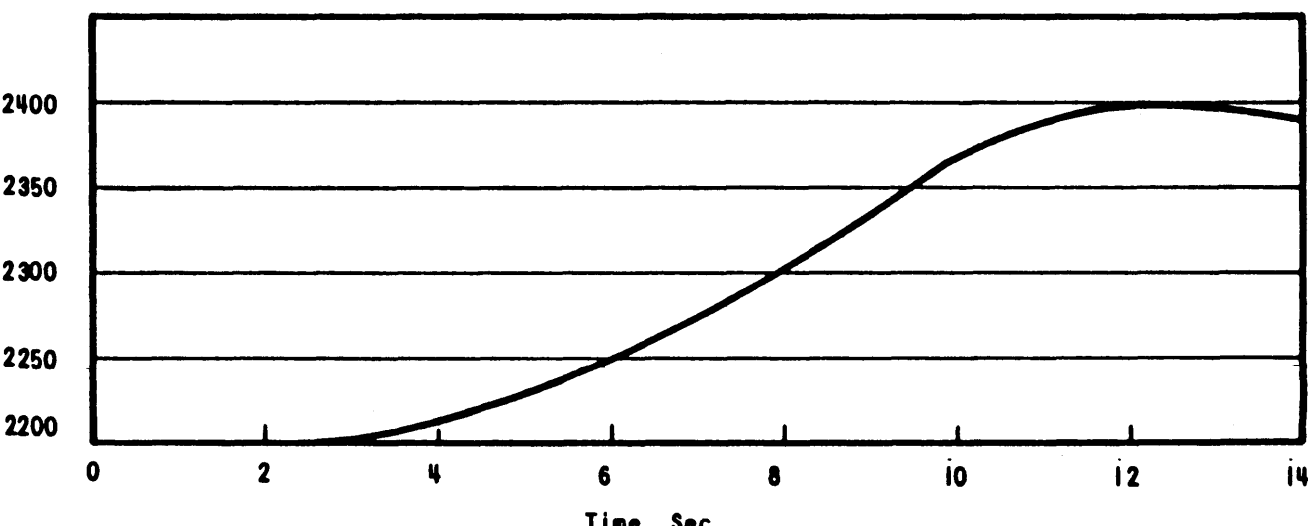
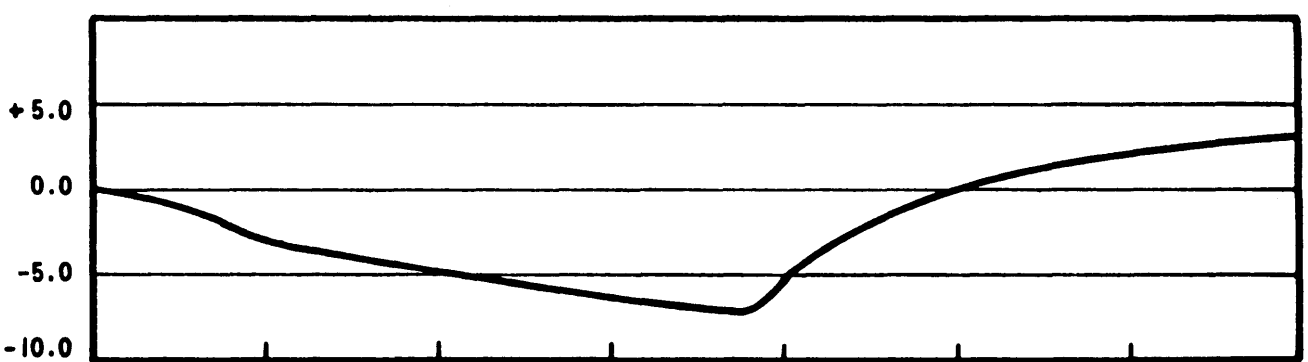
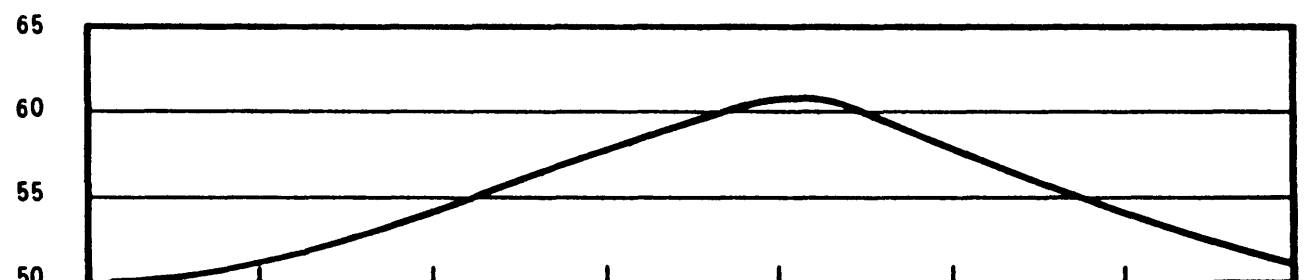
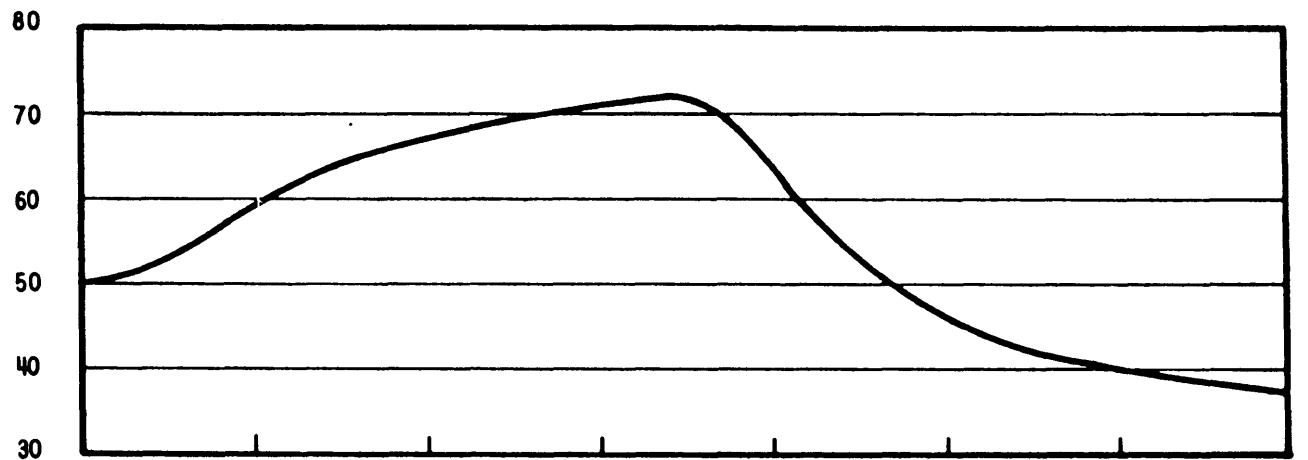
Update - 1

**TMI Unit-1**

7/82

Peak Fuel Temperature in Average  
Rod and Hot Spot for an All-Rod  
Withdrawal Accident from Various  
Initial Power Levels

Fig. 14.1-15



p. 14.FIG-16

Neutron  
Power, %

Thermal  
Power, %

Change in  
Average  
Moderator  
Temperature, F

Reactor  
Coolant  
Pressure, psia

Time, Sec



**EPRI Nuclear**

TMI Unit-1

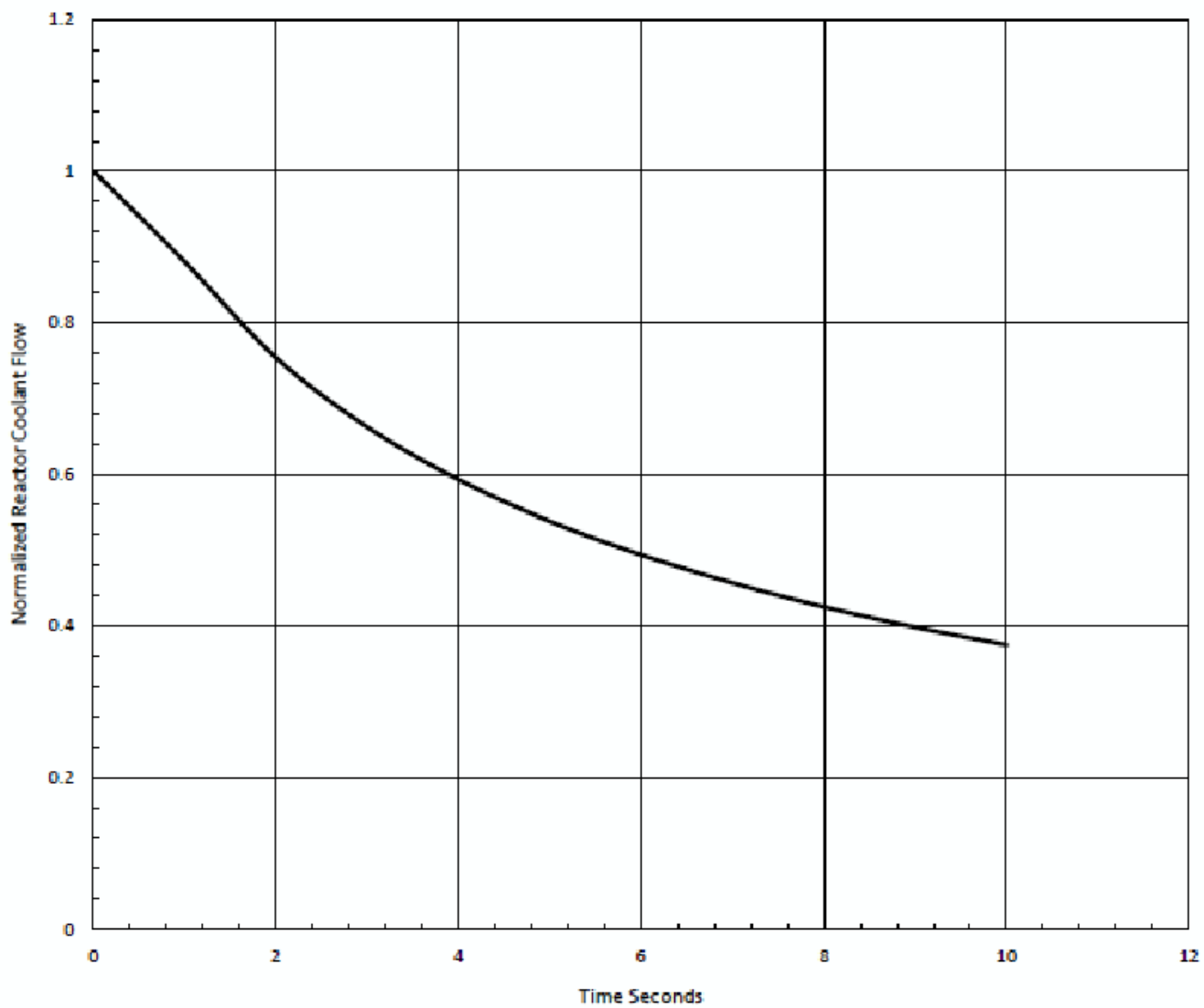
Pump Startup from 50% Power and  
50% Flow

Update -1

7/82

Fig. 14.1-16



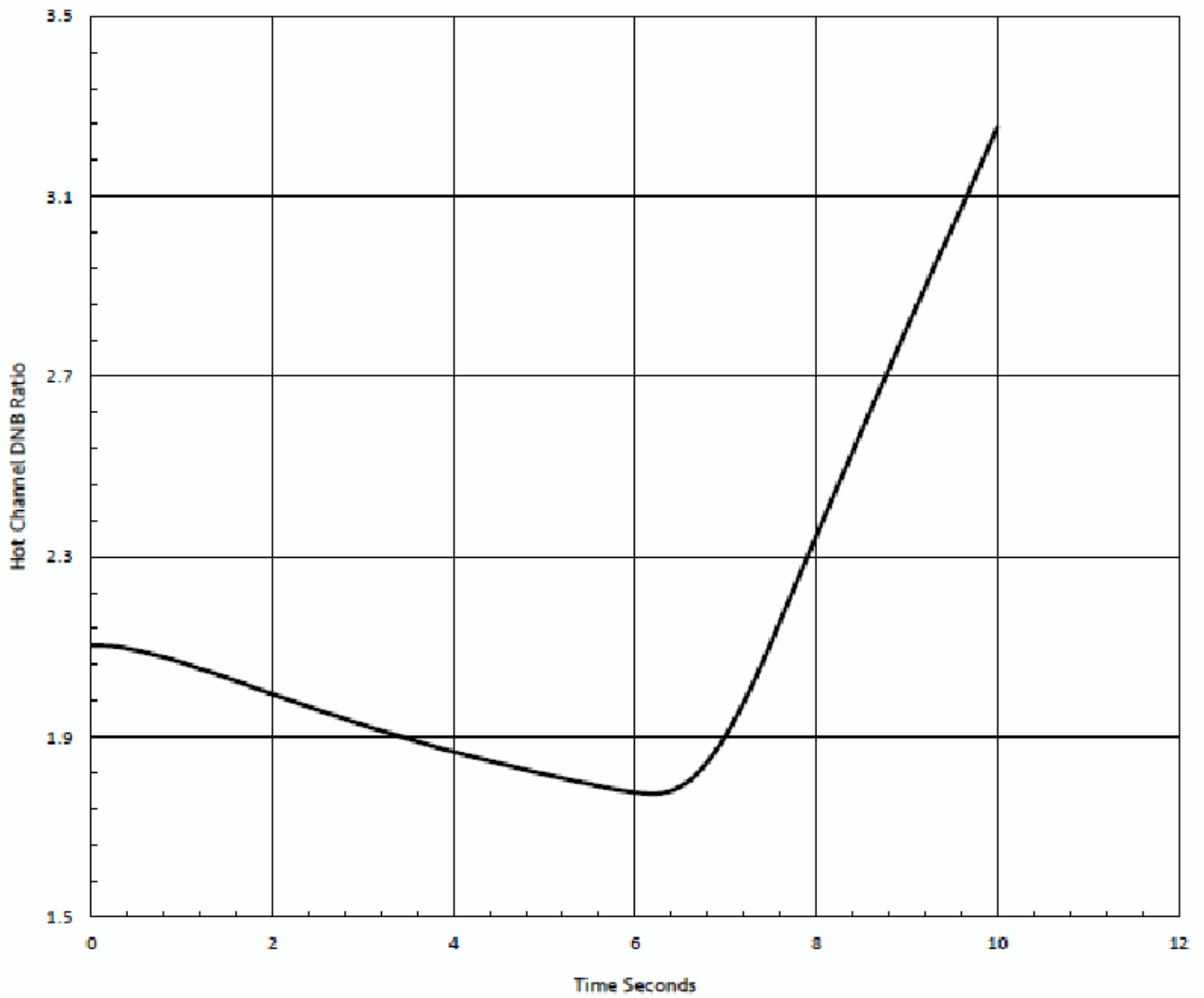


**GPU Nuclear**

**TMI Unit-1**

Percent Reactor Coolant Flow as a  
Function of Time After Loss of Pump  
Power

Rev. 24 04/18



p. 14.FIG-18

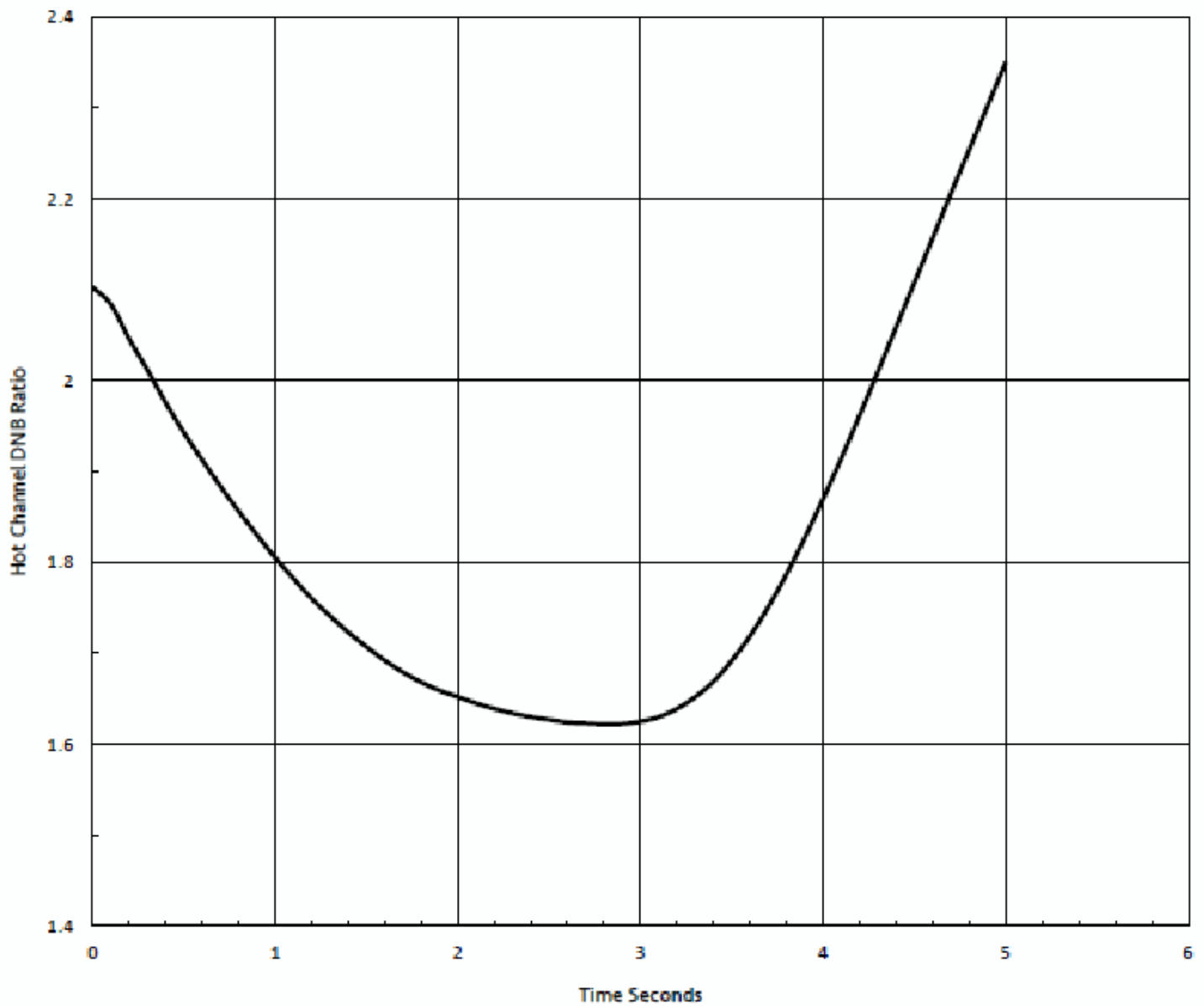
**GPU Nuclear**

**TMI Unit-1**

**DNB Ratio Versus Time for a 4 Pump Coastdown  
Accident from 102% of Rated Power**

**Rev. 24 04/18**

**Fig. 14.1-18**



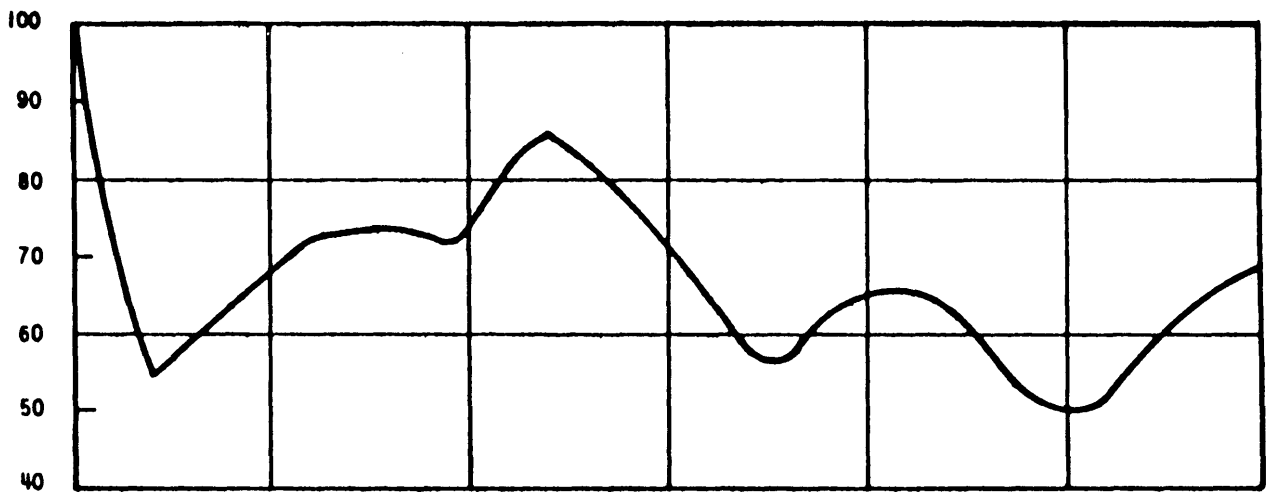
**GPU Nuclear**

**TMI Unit-1**

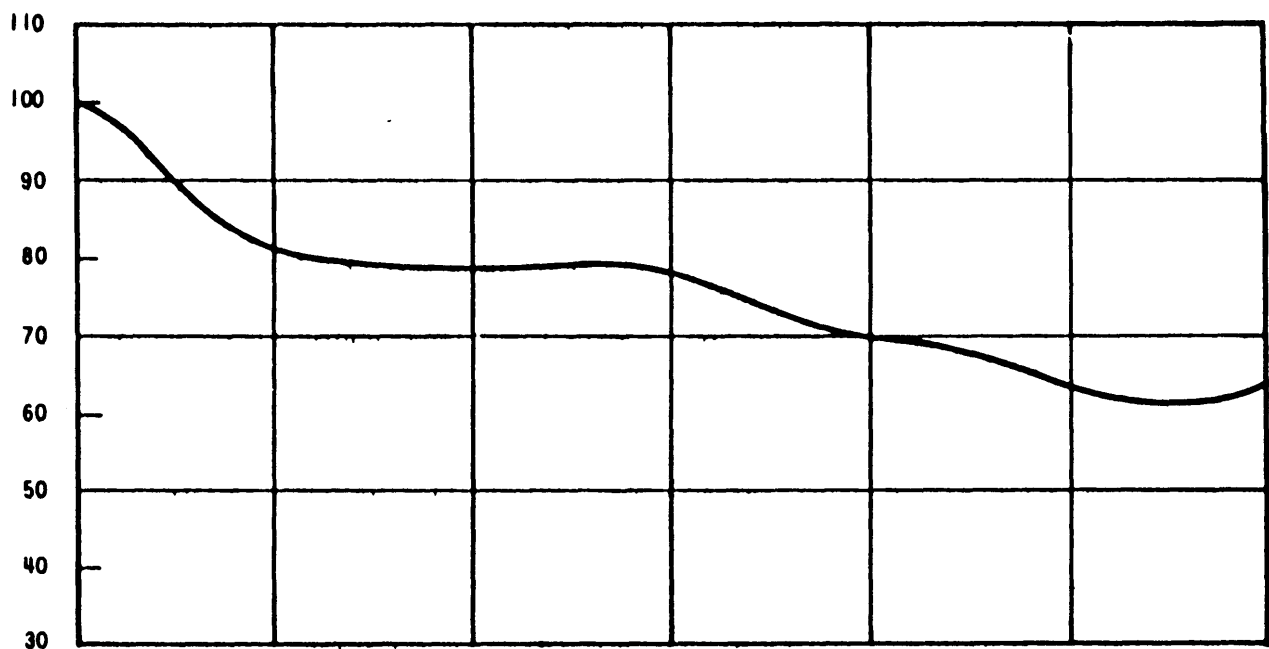
**DNB Ratio Versus Time for a Locked  
Rotor Accident from 102% of Rated Power**

**Rev. 24 04/18**

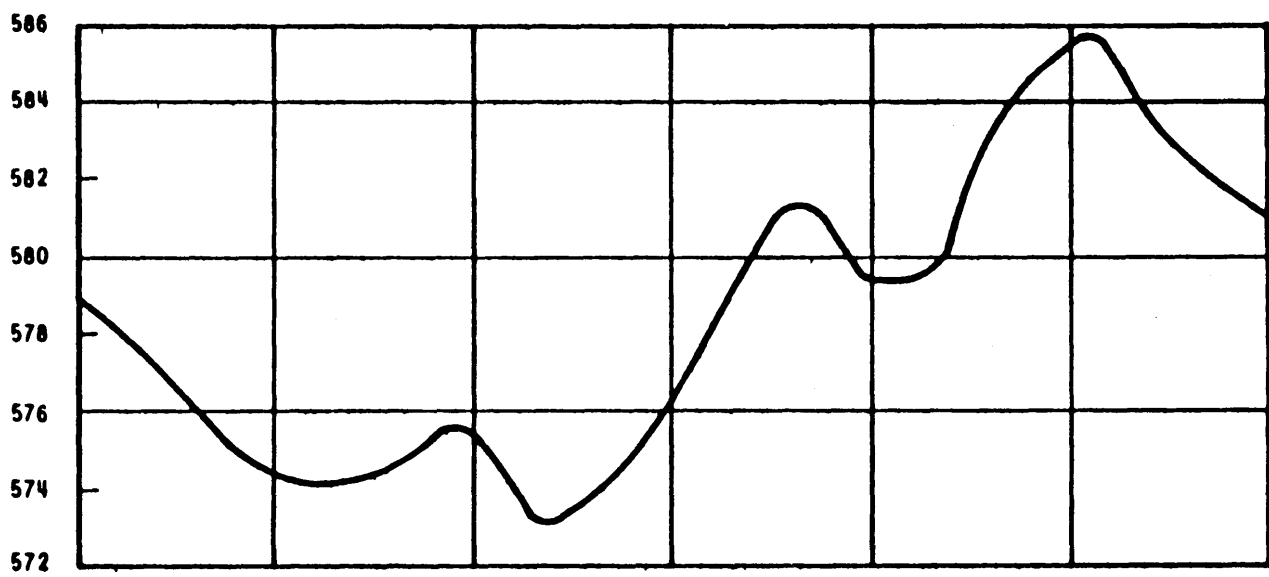
**Fig. 14.1-19**



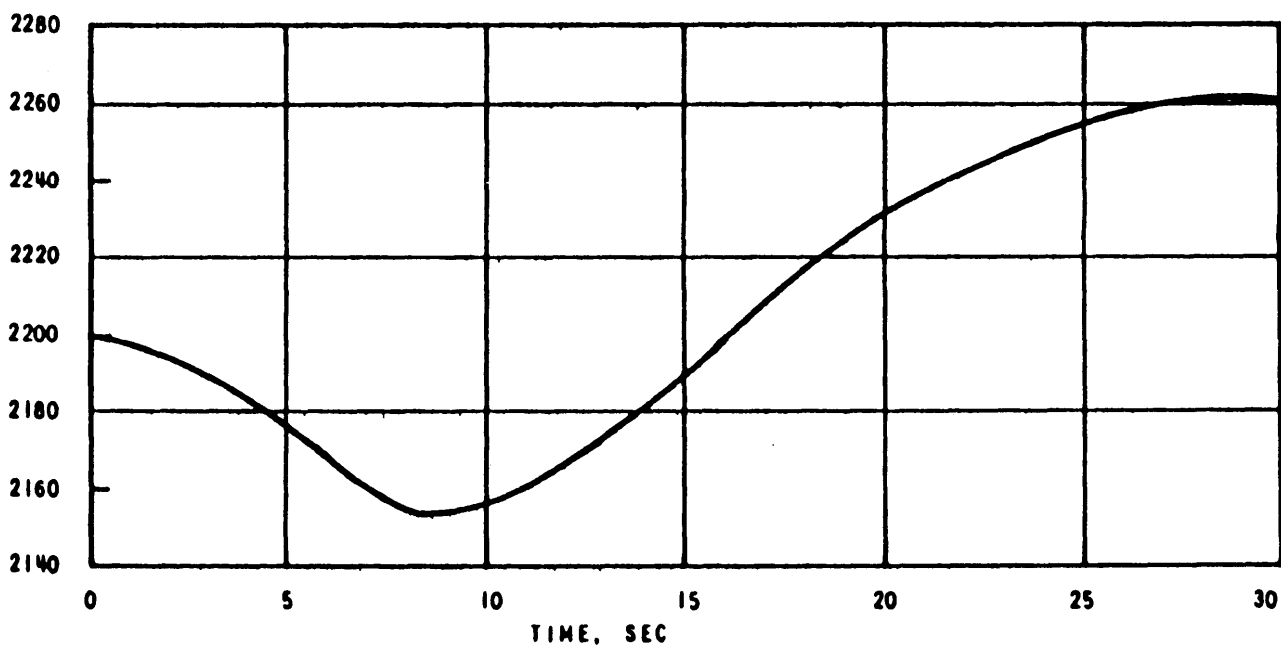
NEUTRON  
POWER  
%



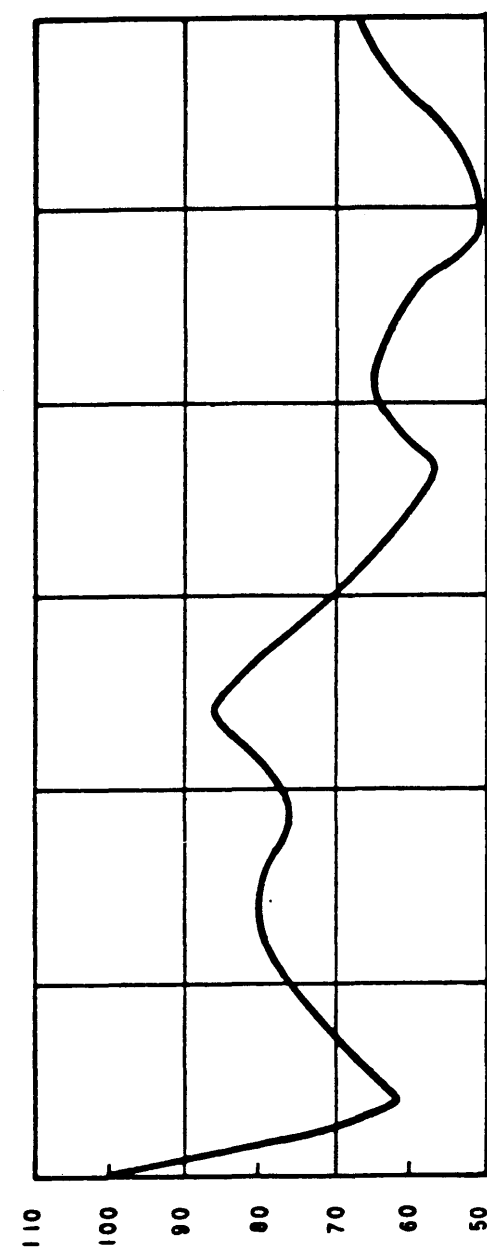
THERMAL  
POWER  
%



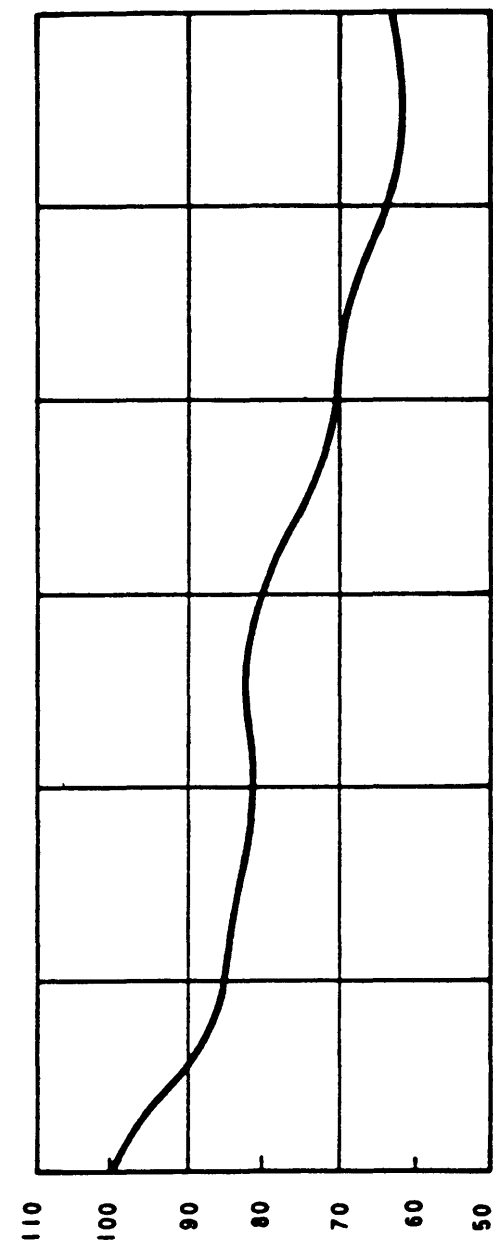
AVERAGE CORE  
MODERATOR  
TEMPERATURE, F



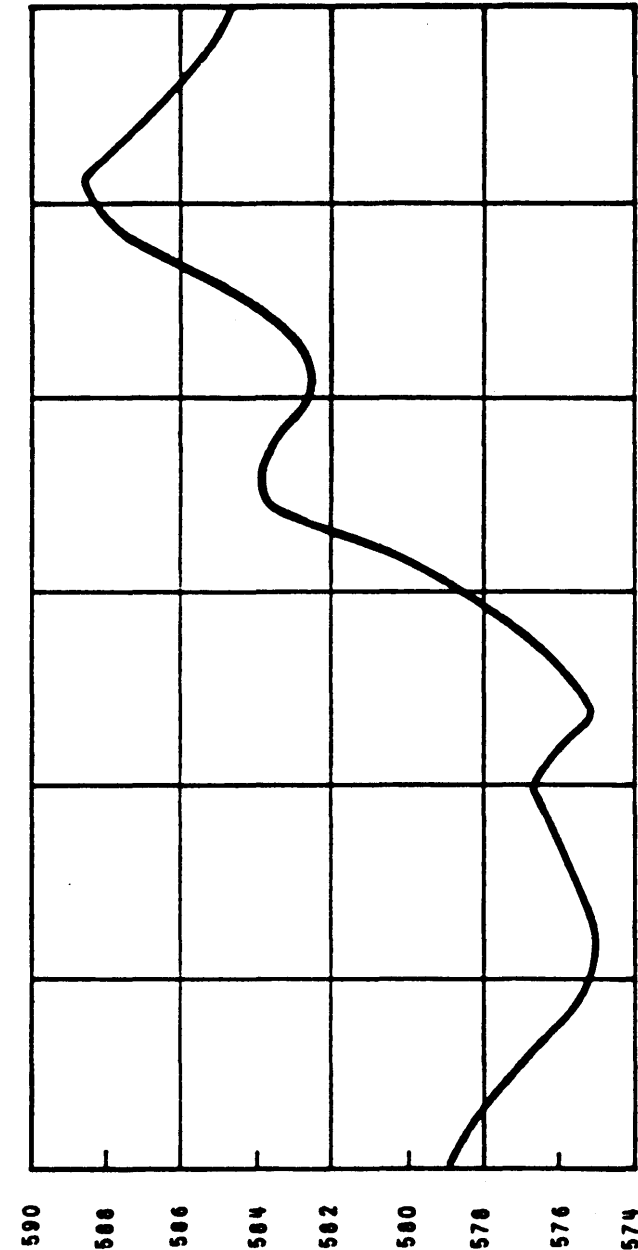
REACTOR  
SYSTEM  
PRESSURE  
psia



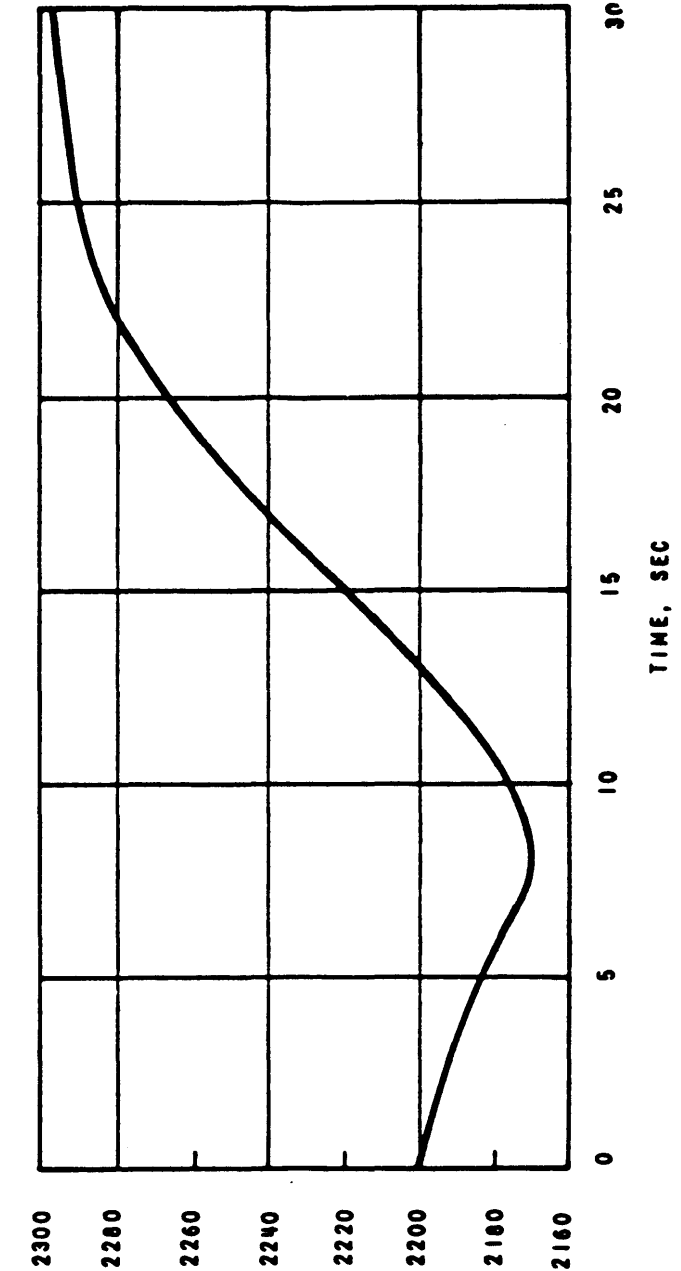
NEUTRON  
POWER  
%



THERMAL  
POWER  
%



AVERAGE CORE  
MODERATOR  
TEMPERATURE, F



REACTOR  
SYSTEM  
PRESSURE  
psia

Update - 1

7/82

TMI Unit-1

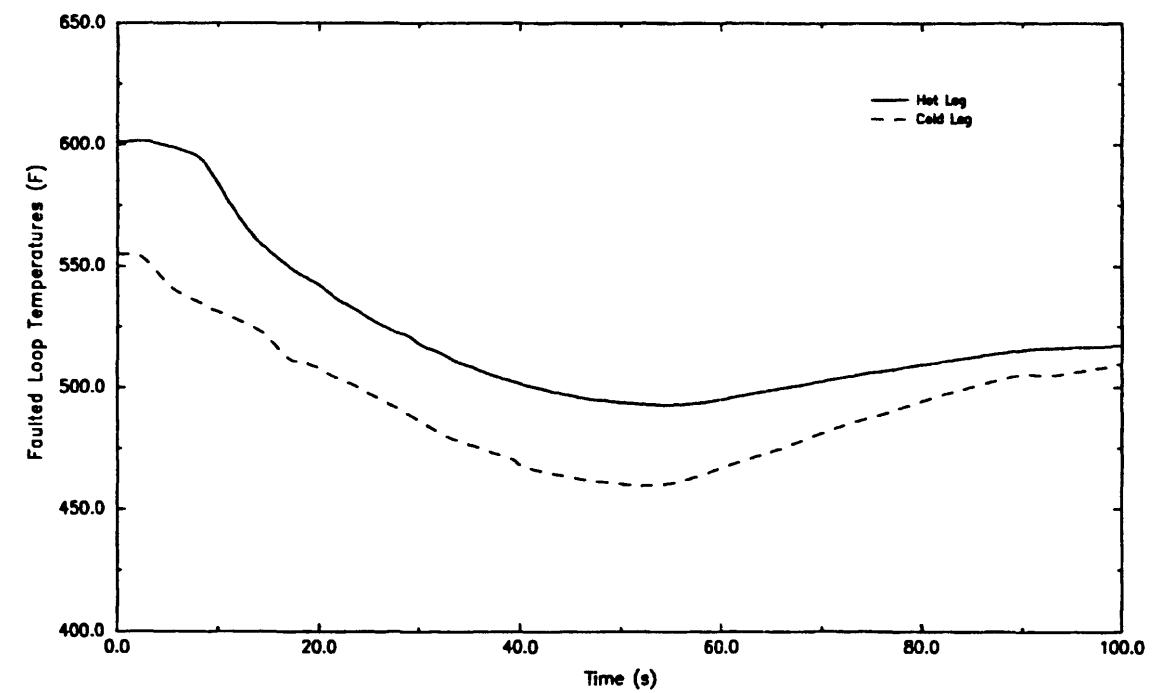
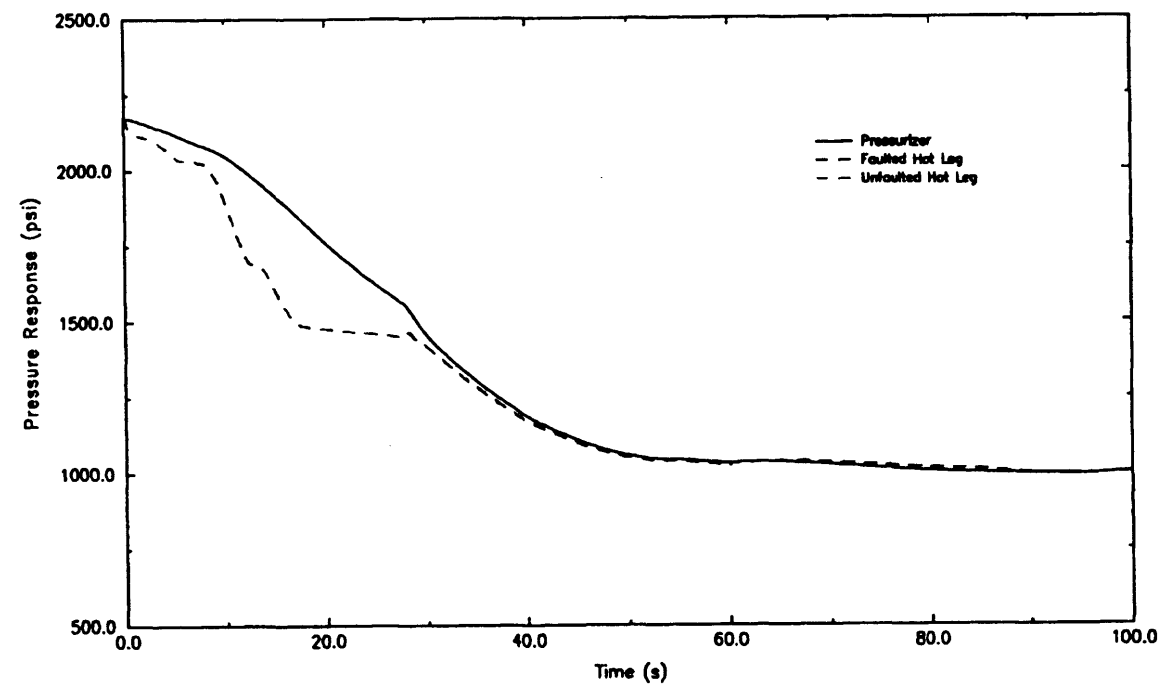
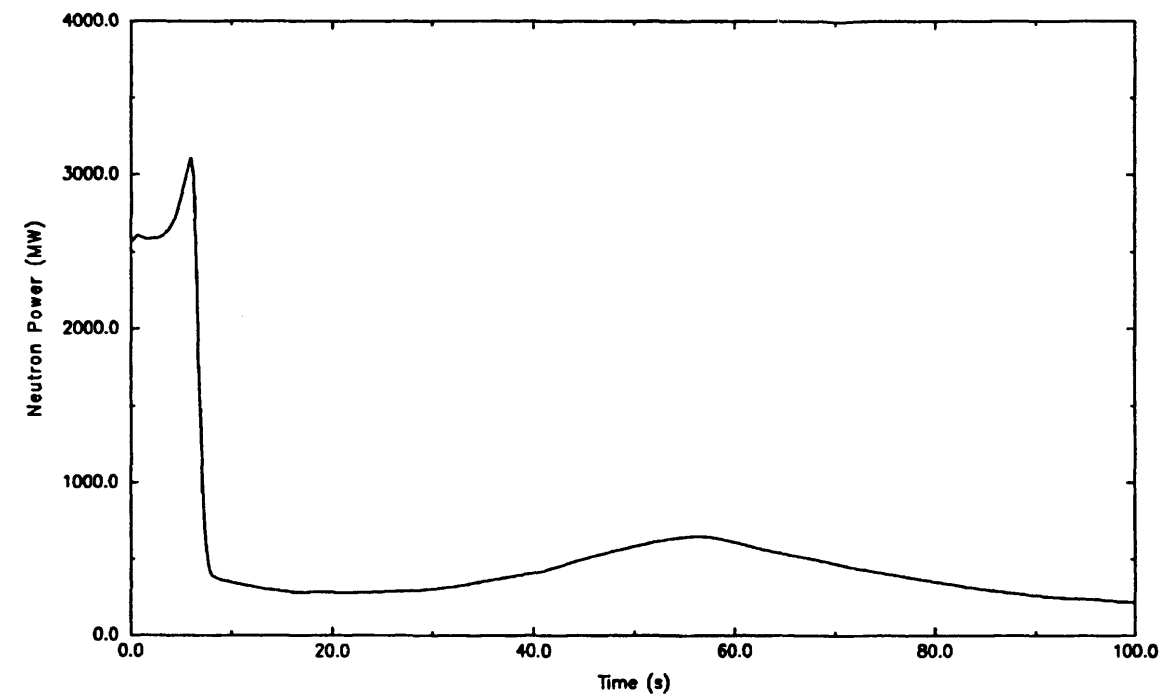
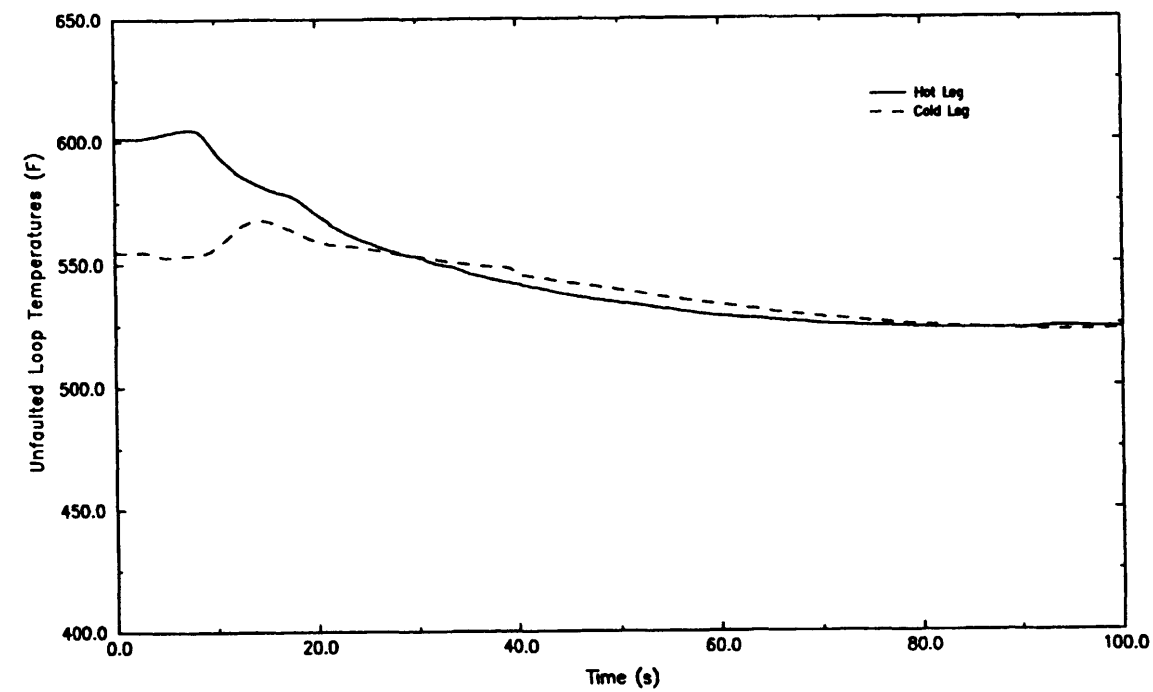
0.36%  $\Delta K/K$  Rod Drop from Rated

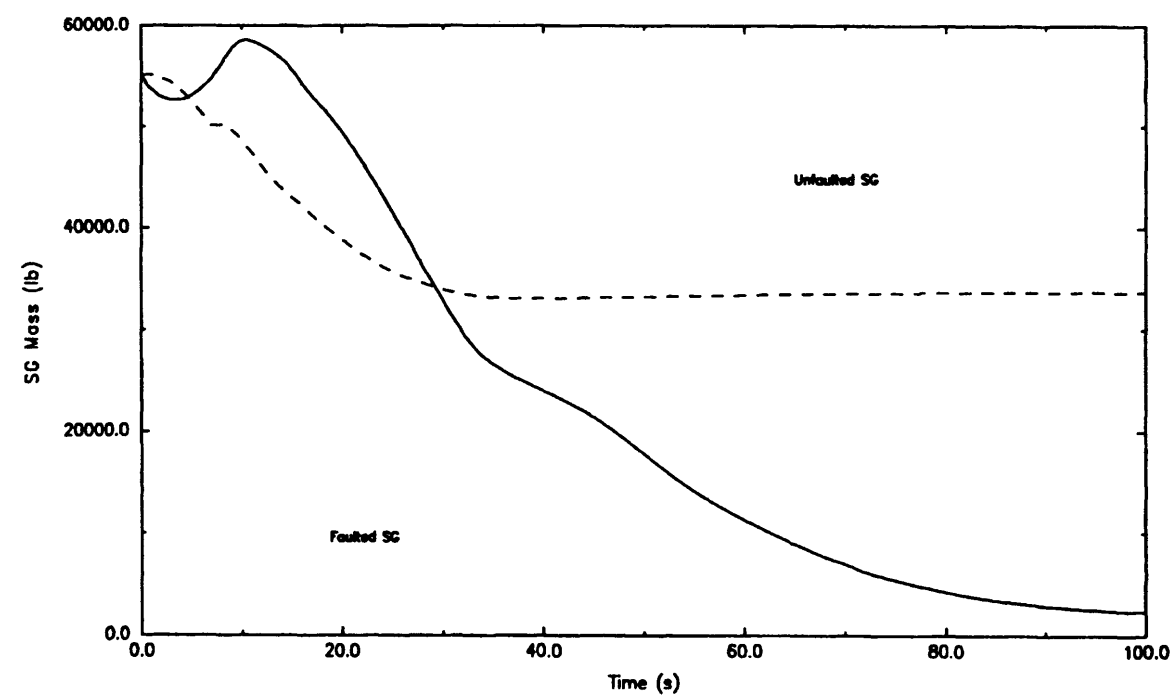
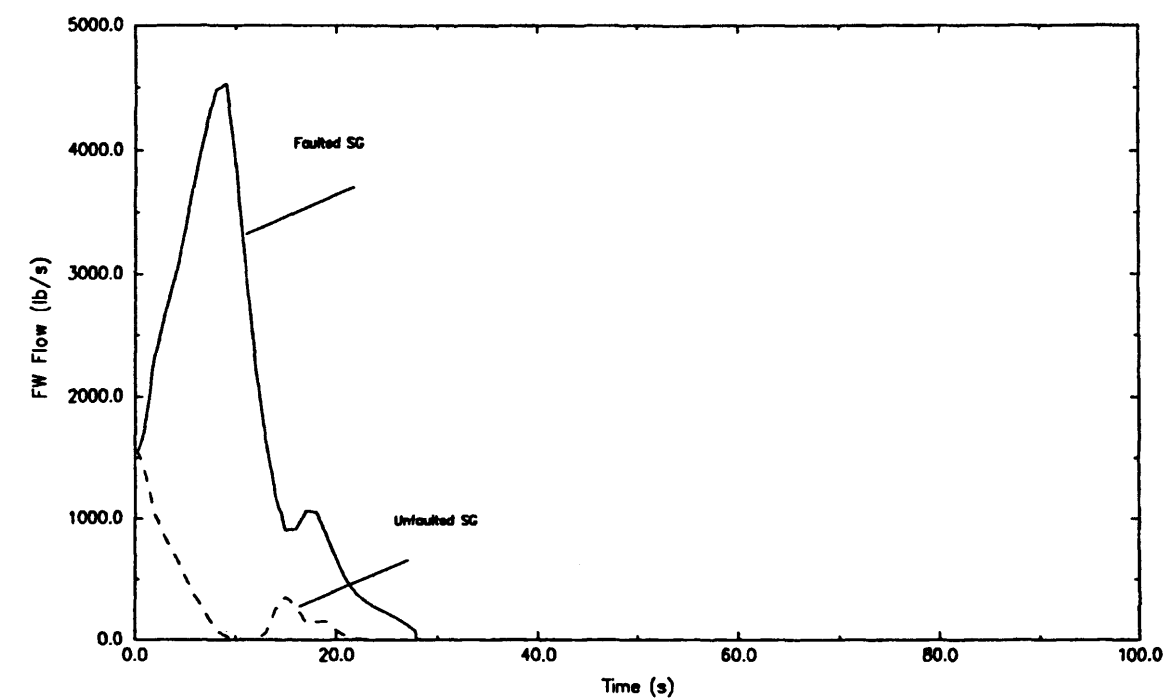
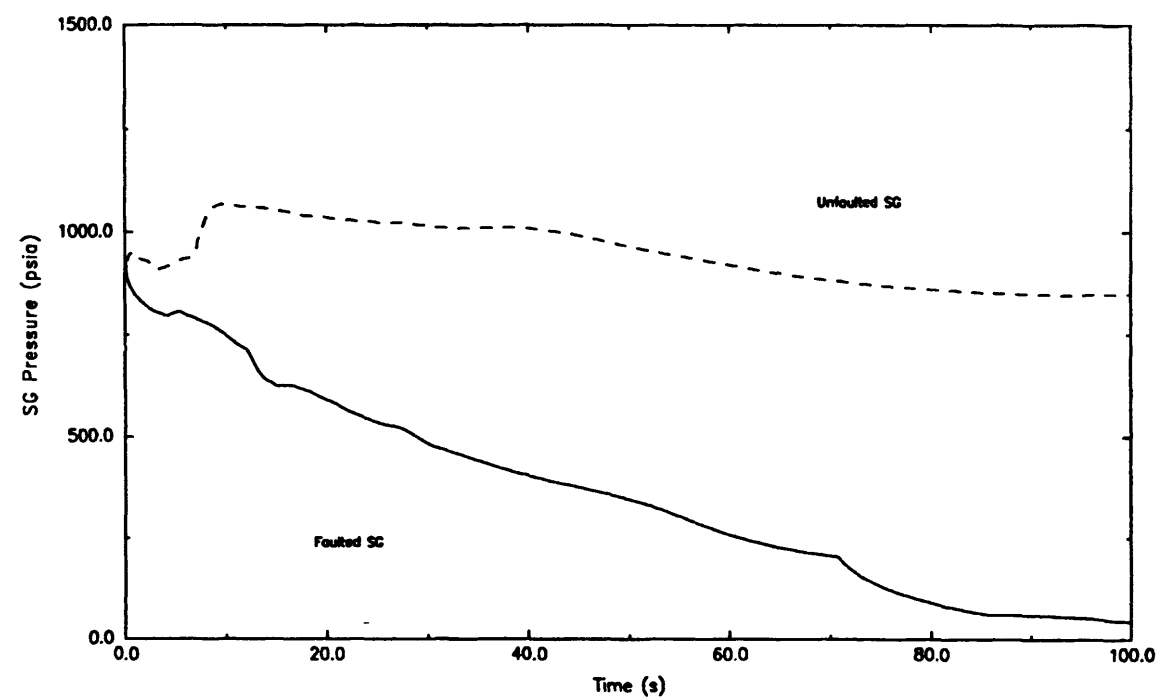
Power with Automatic Runback to 60%

Demand in 12s

Fig. 14.1-21

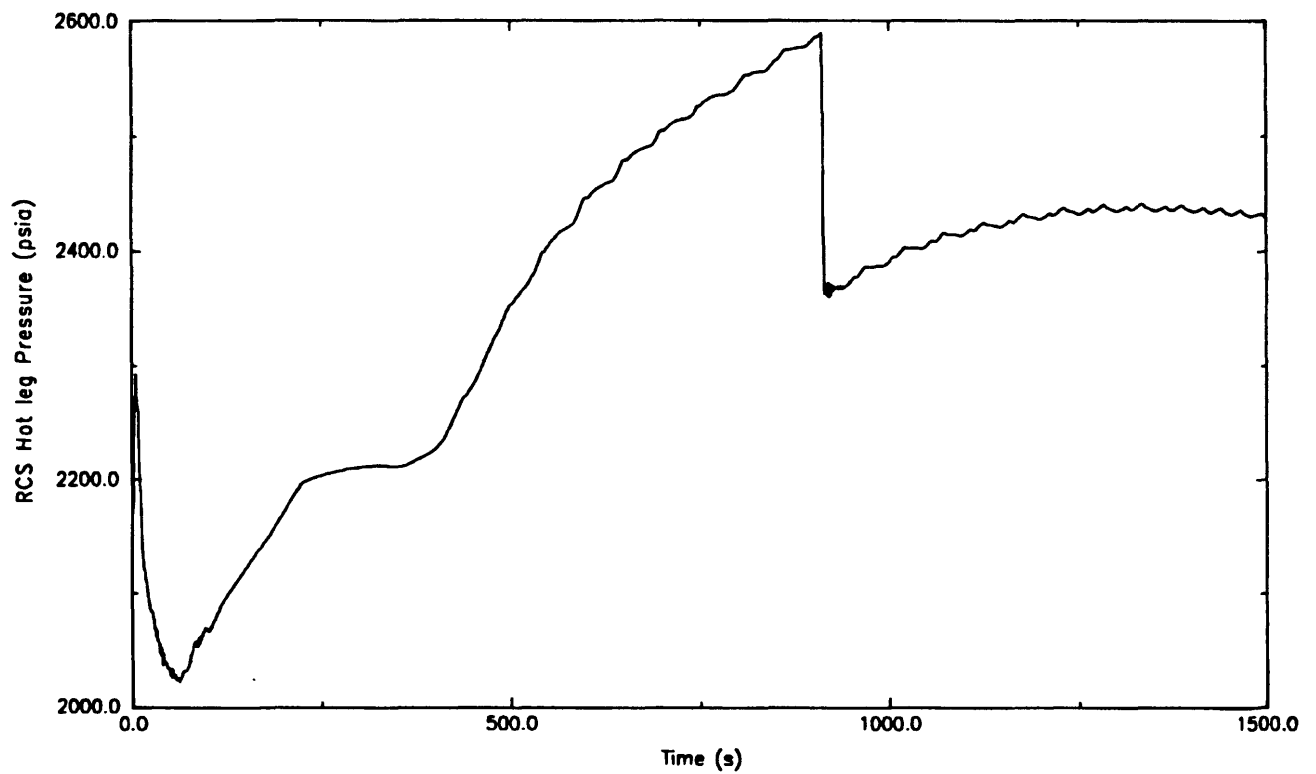
p. 14.FIG-21





p. 14.FIG-22B

|                                                                                                                    |               |
|--------------------------------------------------------------------------------------------------------------------|---------------|
| <b>AmerGen</b>                                                                                                     | UPDATE - 15   |
|                                                                                                                    | 4/00          |
| TMI - UNIT 1                                                                                                       |               |
| DOUBLE-ENDED RUPTURE OF 24 IN. STEAM LINE BETWEEN STEAM GENERATOR AND STEAM STOP VALVE (WITH FEED WATER ISOLATION) |               |
| CAD FILE: 6713R15.DWG                                                                                              | Fig. 14.1-22B |



**AmerGen**

TMI - UNIT 1

UPDATE - 15

4/00

RCS HOT LEG PRESSURE (psia) RESPONSE  
FOR LOSS OF ALL AC POWER (STATION  
BLACKOUT)

CAD FILE: 6705R15.DWG

Fig. 14.1-23



# TMI UFSAR

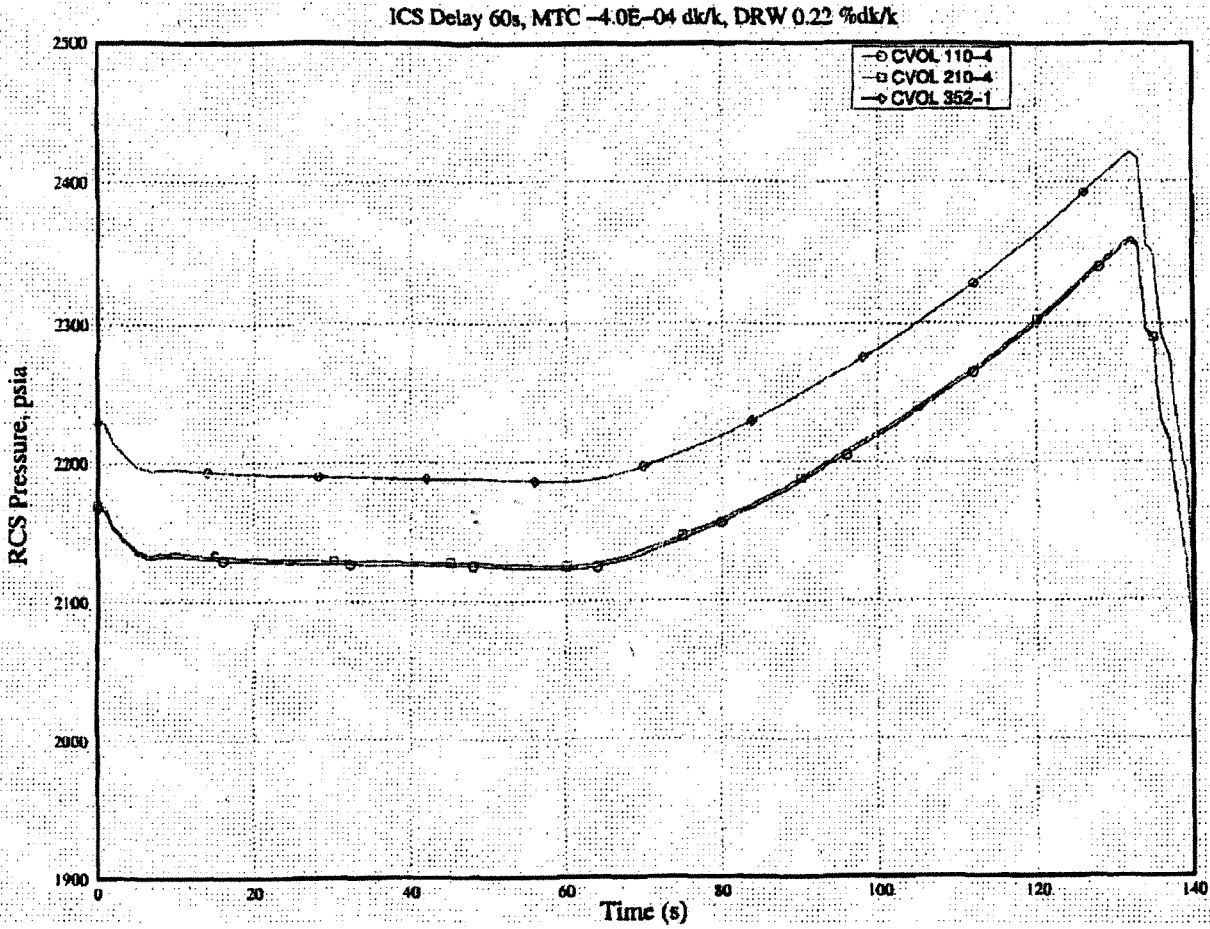


Figure 14.1-24 Dropped Rod w/ Bayonet Failure – RCS Pressure Response (NOTE 1)

## NOTES:

1. CVOL 110-4 and 210-4 represent hot leg pressures.  
CVOL 352-1 represents the core exit pressure.

p.14.FIG-23A

TMI - UNIT 1

REV. 19, APRIL 2008

Dropped Rod w/ Bayonet Failure  
RCS Pressure Response

FIGURE. 14.1-24

# TMI UFSAR

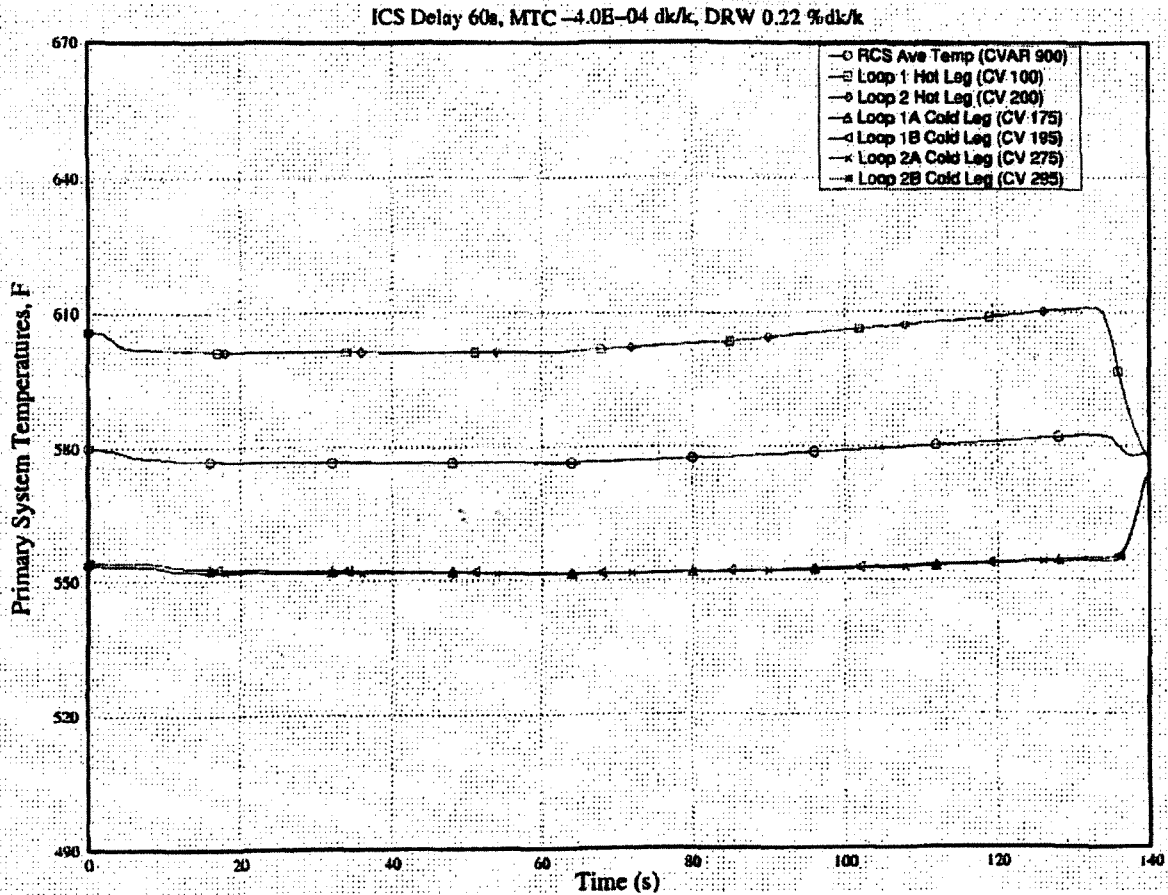


Figure 14.1-25 Dropped Rod w/ Bayonet Failure – Reactor Power Response

p.14.FIG-23B

TMI - UNIT 1

REV. 19, APRIL 2008

Dropped Rod w/ Bayonet Failure  
Reactor Power Response

FIGURE. 14.1-25

# TMI UFSAR

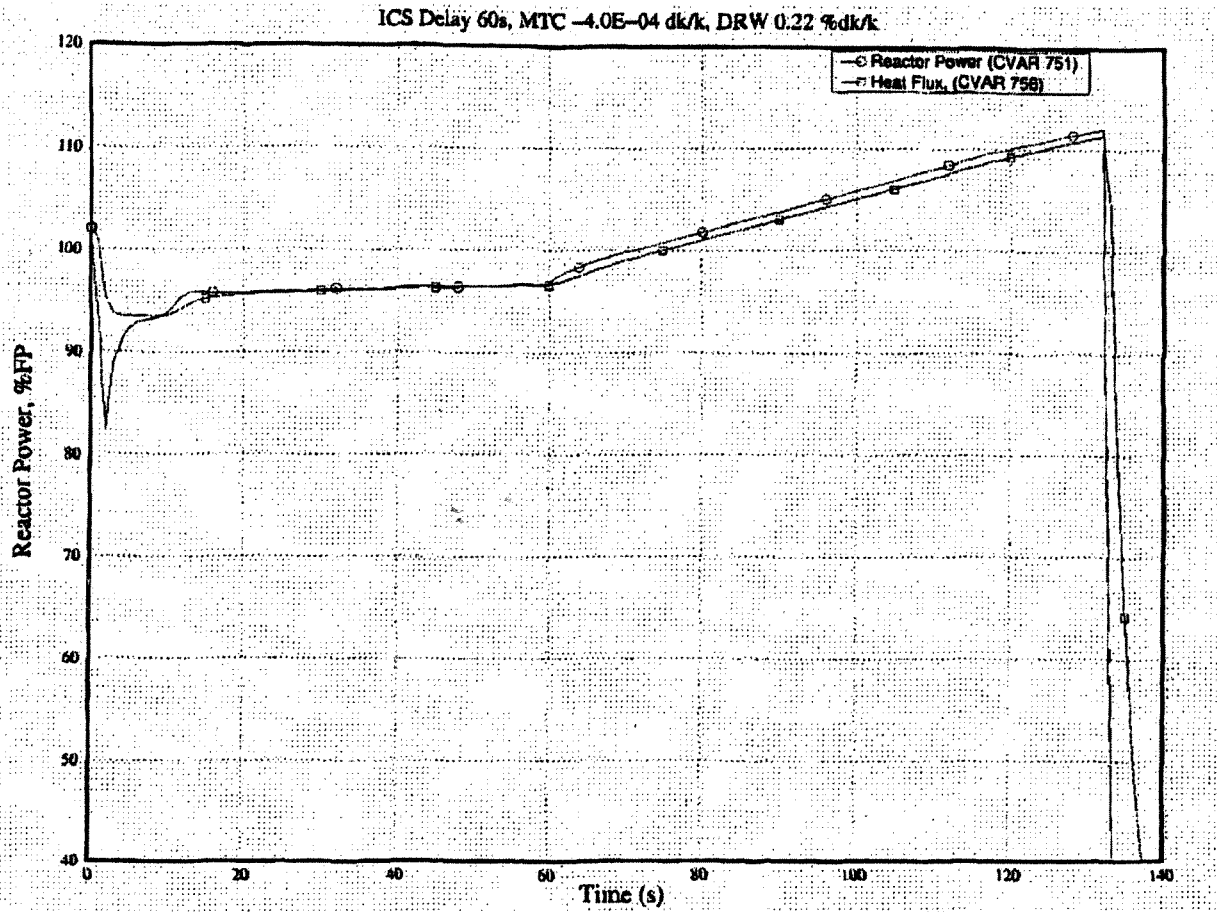


Figure 14.1-26 Dropped Rod w/ Bayonet Failure – Primary Temperature Response

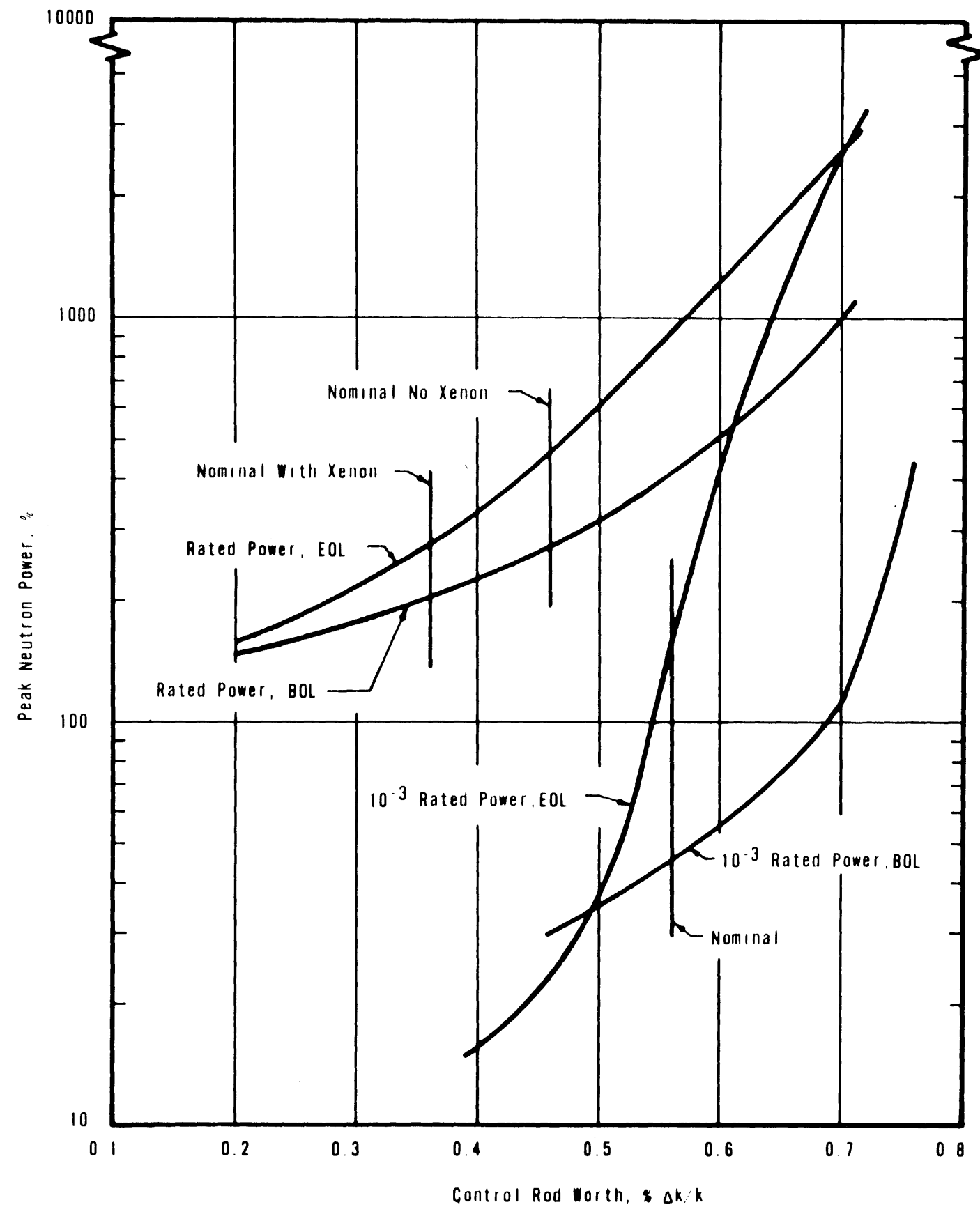
p.14.FIG-23C

TMI - UNIT 1

REV. 19, APRIL 2008

Dropped Rod w/ Bayonet Failure  
Primary Temperature Response

FIGURE. 14.1-26



**GPU Nuclear**

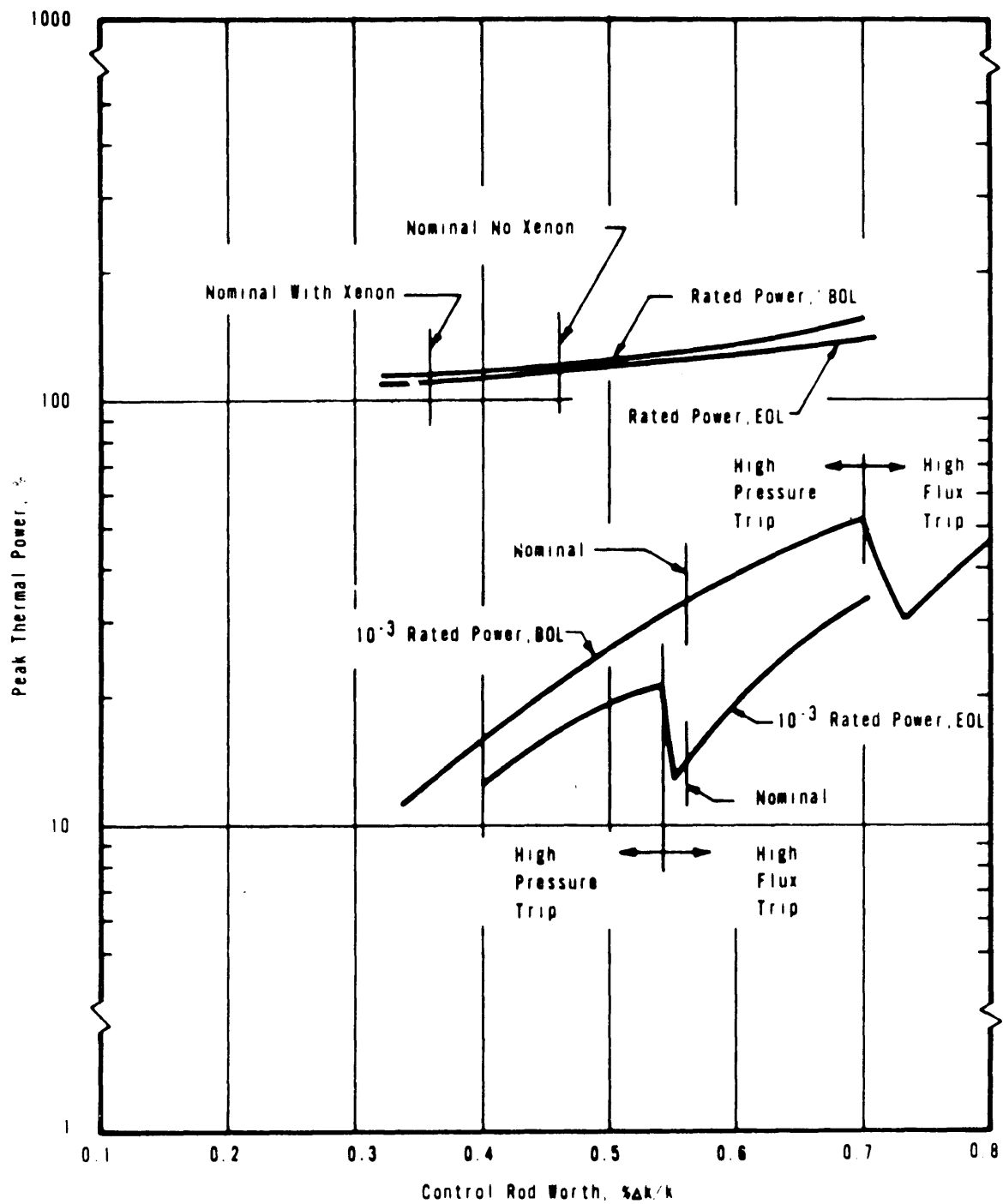
**TMI Unit-1**

Peak Neutron Power Variation With  
Ejected Control Rod Worth

Update -1

7/82

Fig. 14.2-1



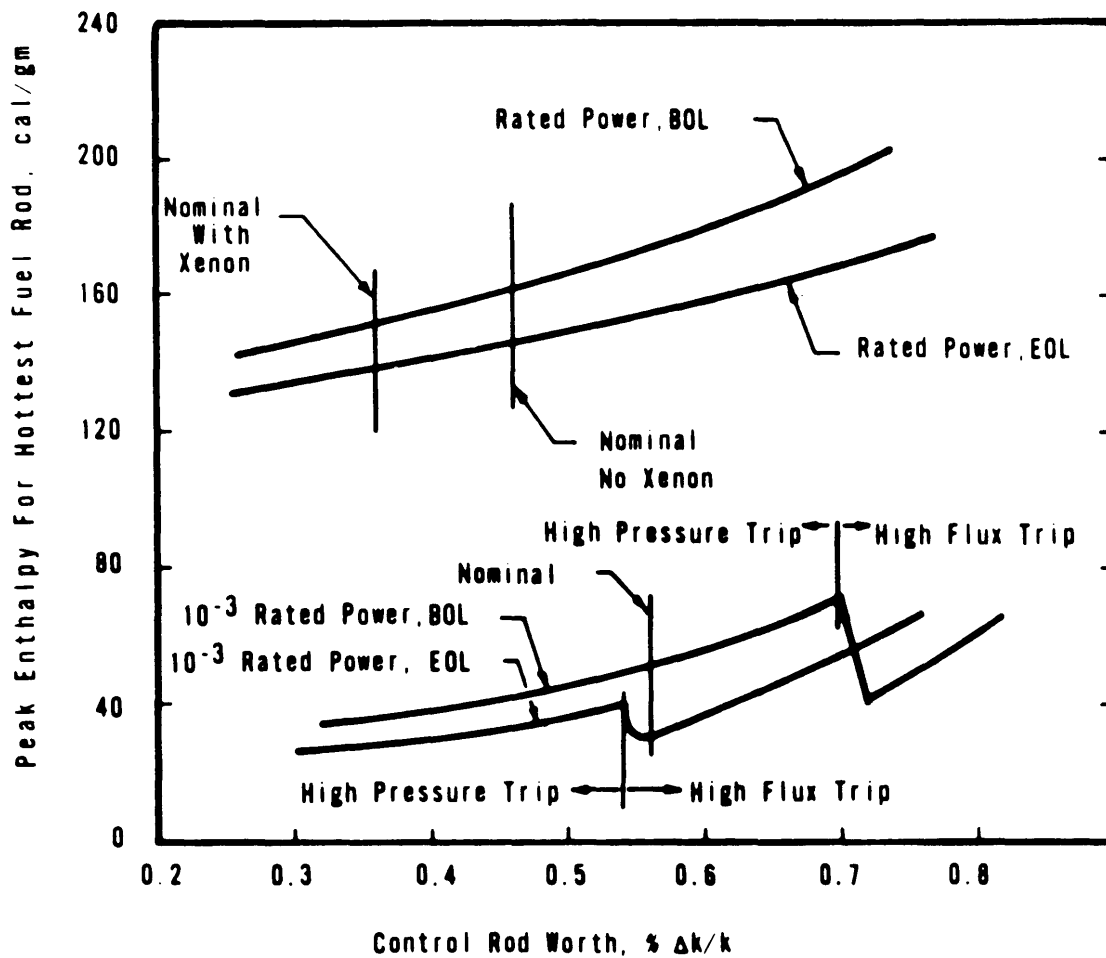
**GPU Nuclear**

Update - 1

TMI Unit-1

7/82

Peak Thermal Power as a Function  
of Ejected Control Rod Worth



**GPU Nuclear**

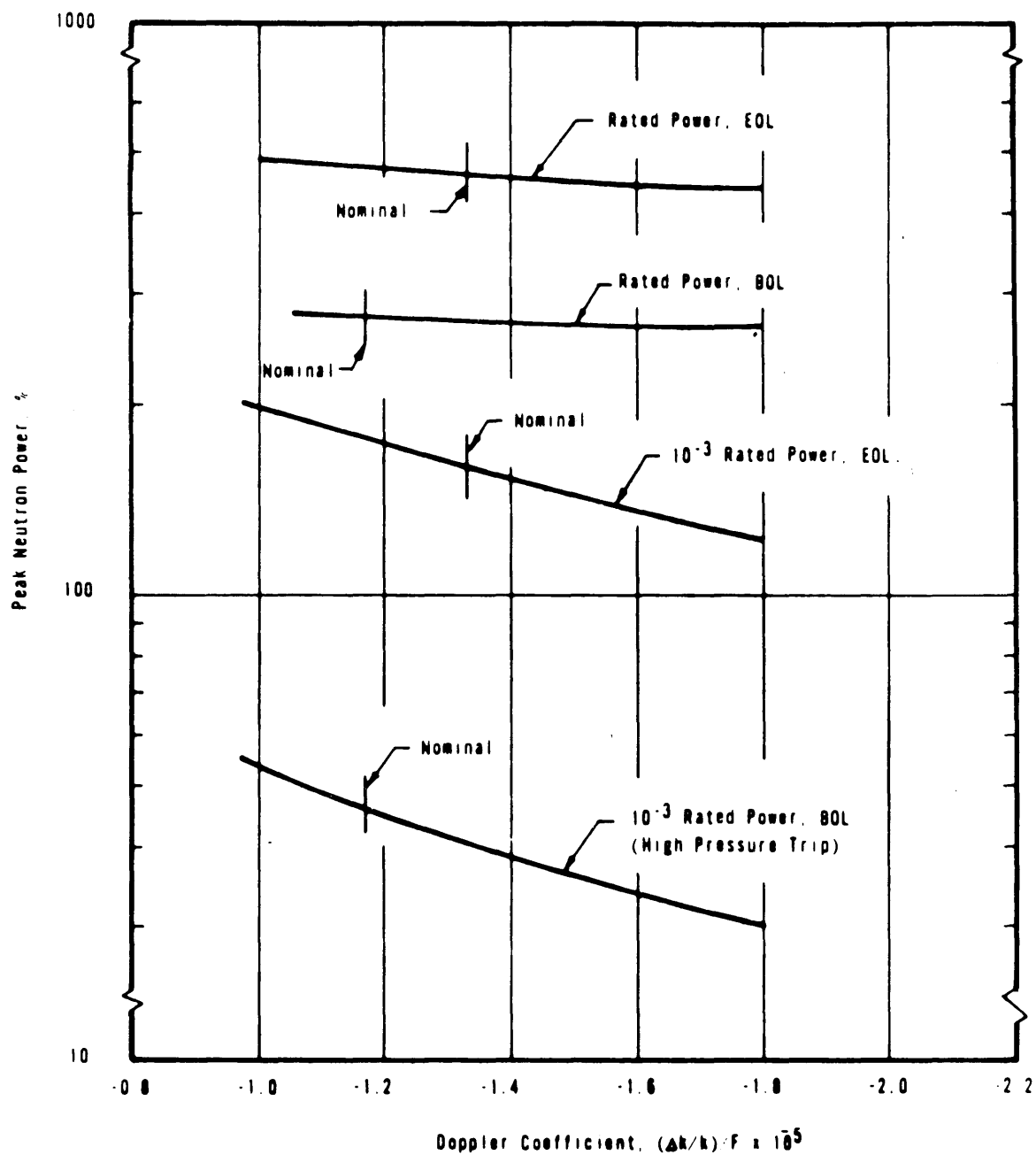
**TMI Unit-1**

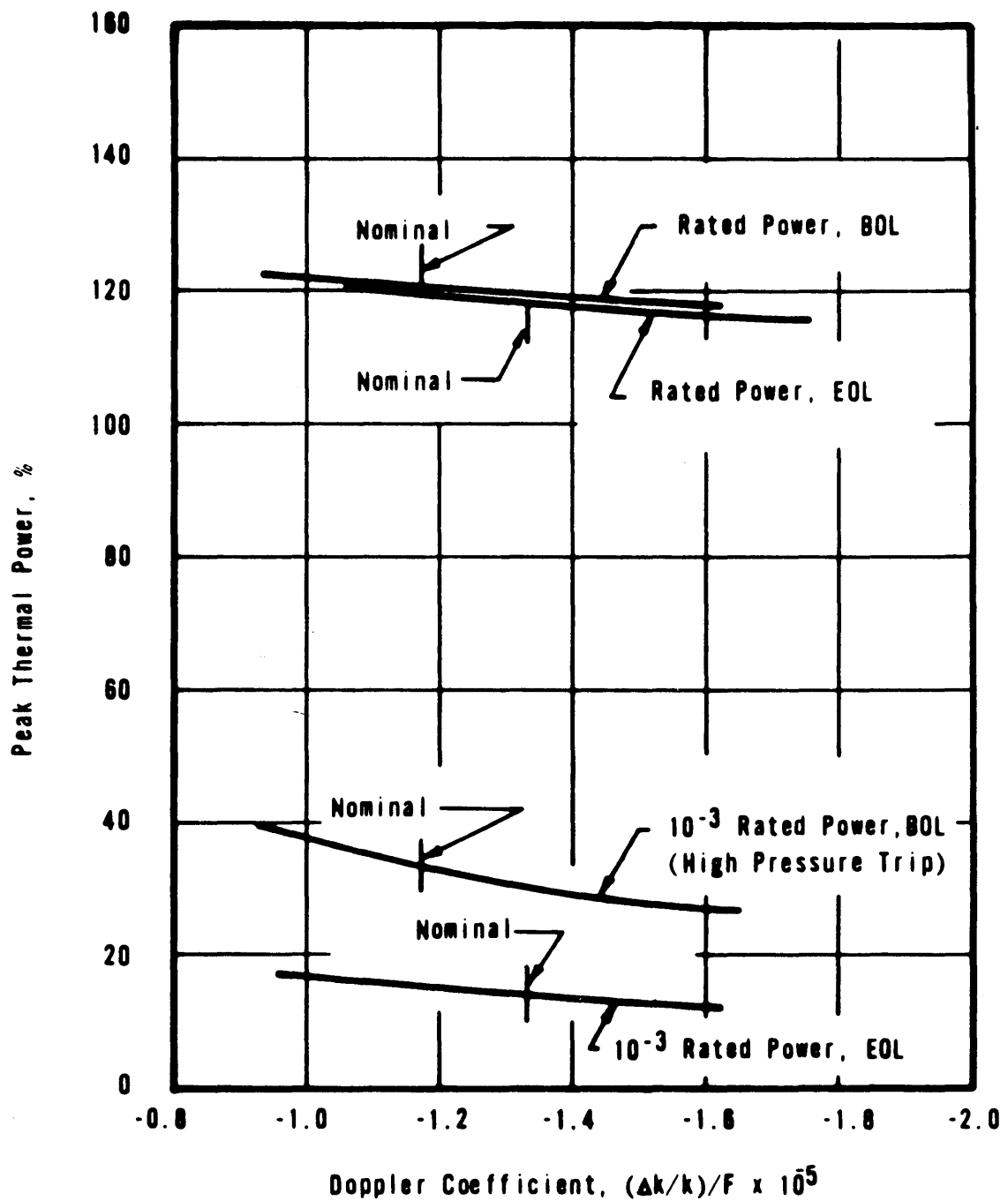
Peak Enthalpy of Hottest Fuel Rod  
Versus Ejected Control Rod Worth

Update -1

7/82

Fig. 14.2-3





**GPU Nuclear**

Update - 1

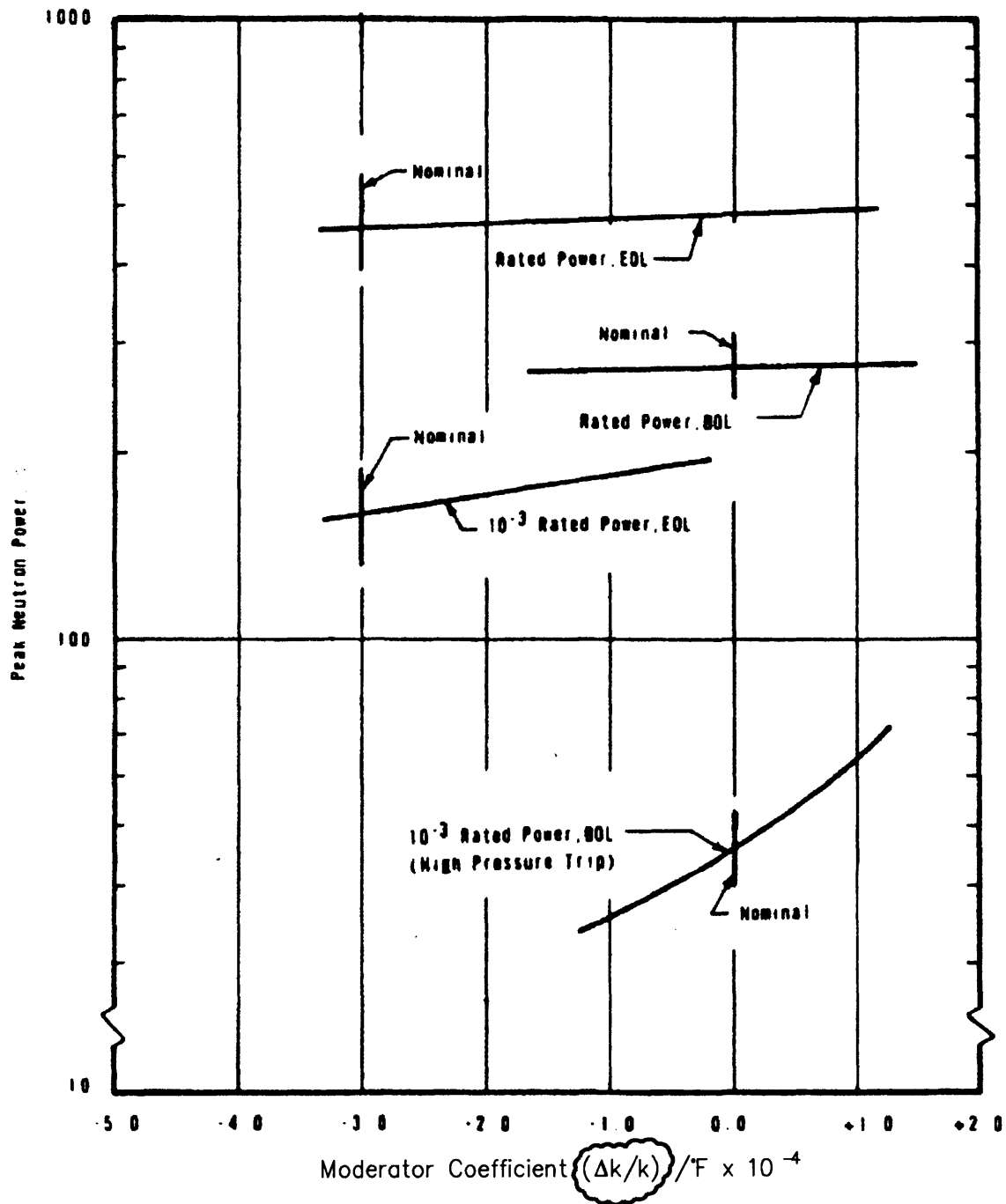
**TMI Unit-1**

7/82

Effect on Peak Thermal Power of Varying  
the Doppler Coefficient for an Ejected  
Rod Worth of 0.56%  $\Delta K/K$  at 10<sup>-3</sup> Rated  
Power and 0.46%  $\Delta K/K$  at Rated Power

Fig. 14.2-5





p. 14.FIG-28

TMI - UNIT I

**GPU**

**NUCLEAR**

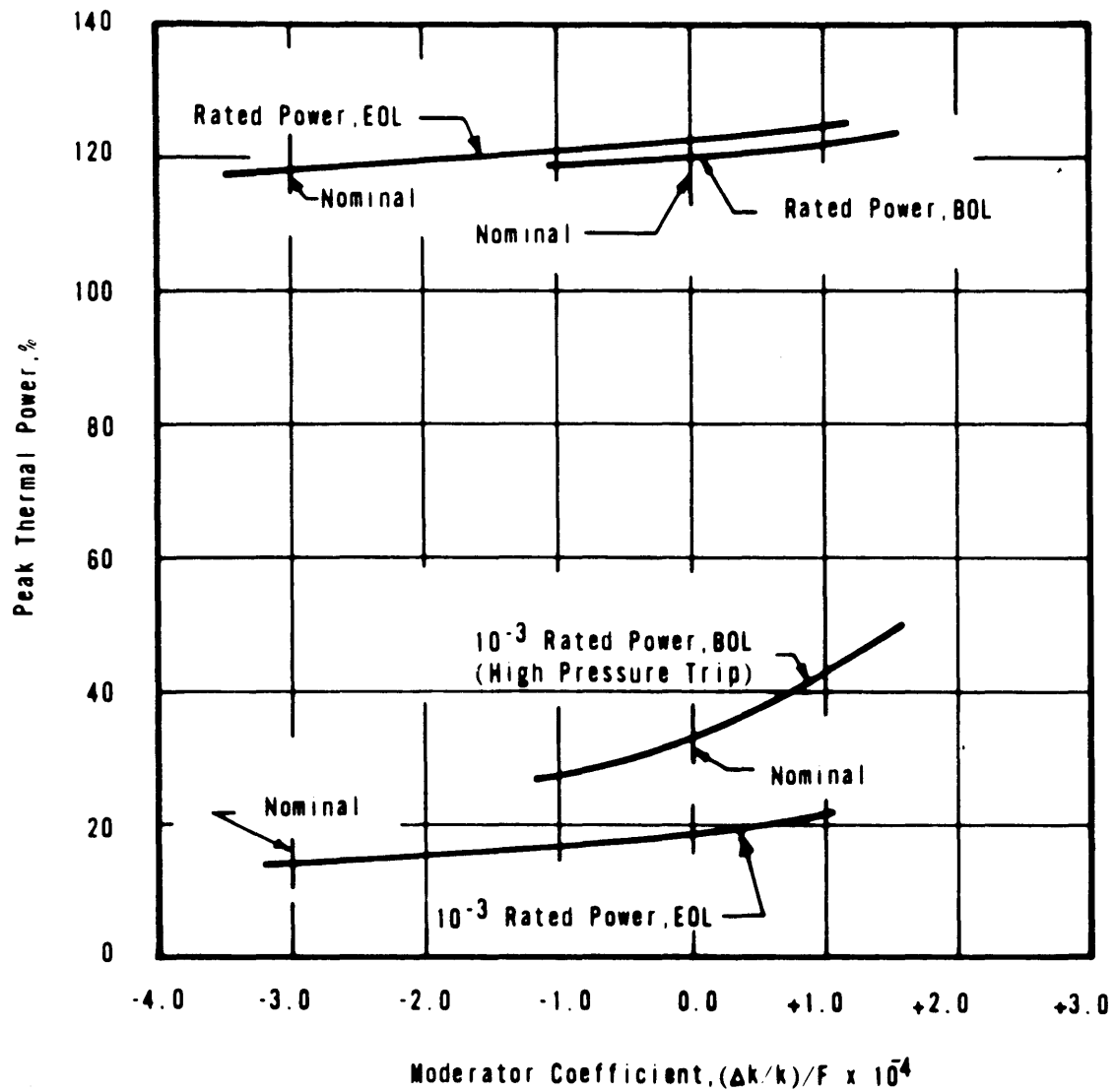
UPDATE - 14

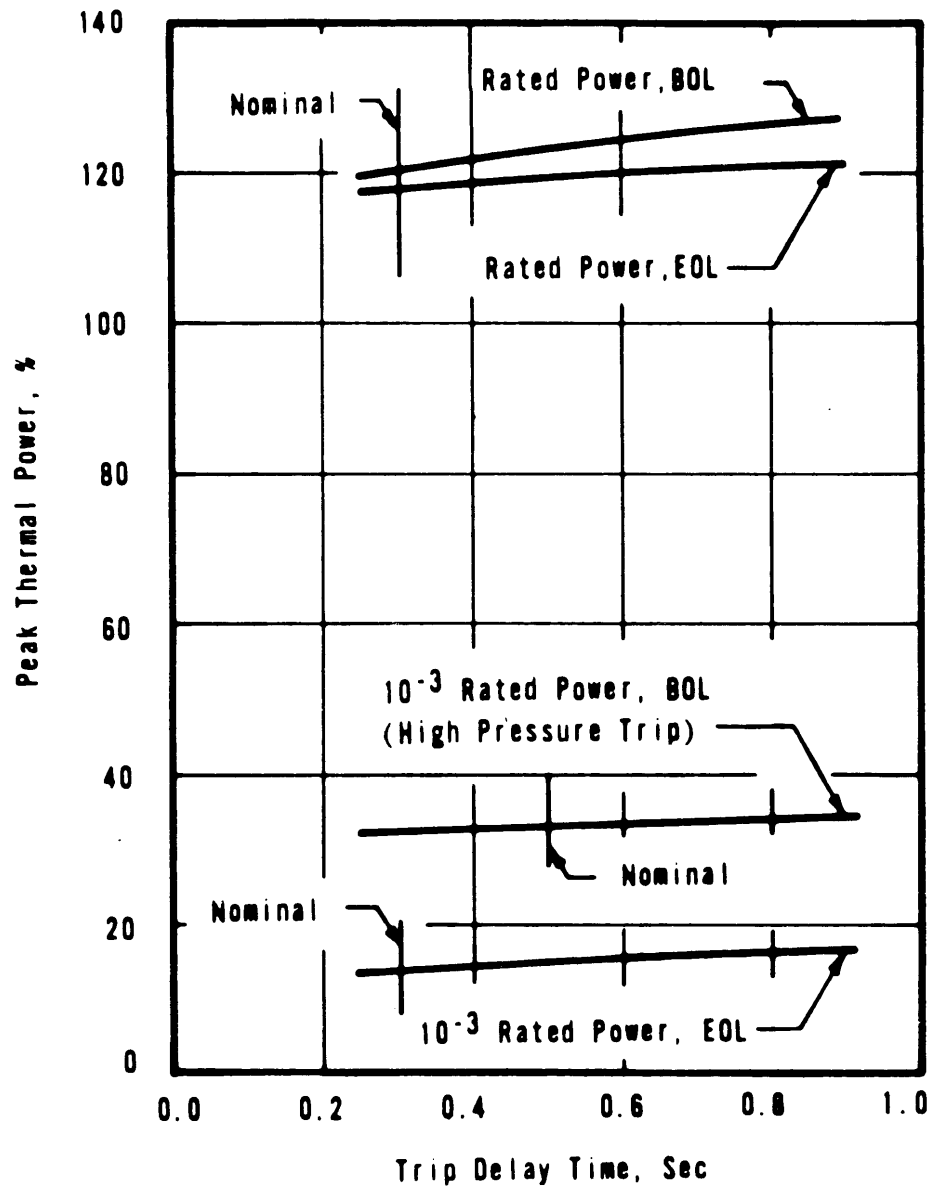
04/98

Effect on Peak Neutron Power of Varying the Moderator Coefficient for an Ejected Rod Worth of 0.56%  $\Delta k/k$  at  $10^{-3}$  Rated Power and 0.46%  $\Delta k/k$  at Rated Power

CAD FILE: 6558RI4.DWG

FIG 14.2-6





**GPU Nuclear**

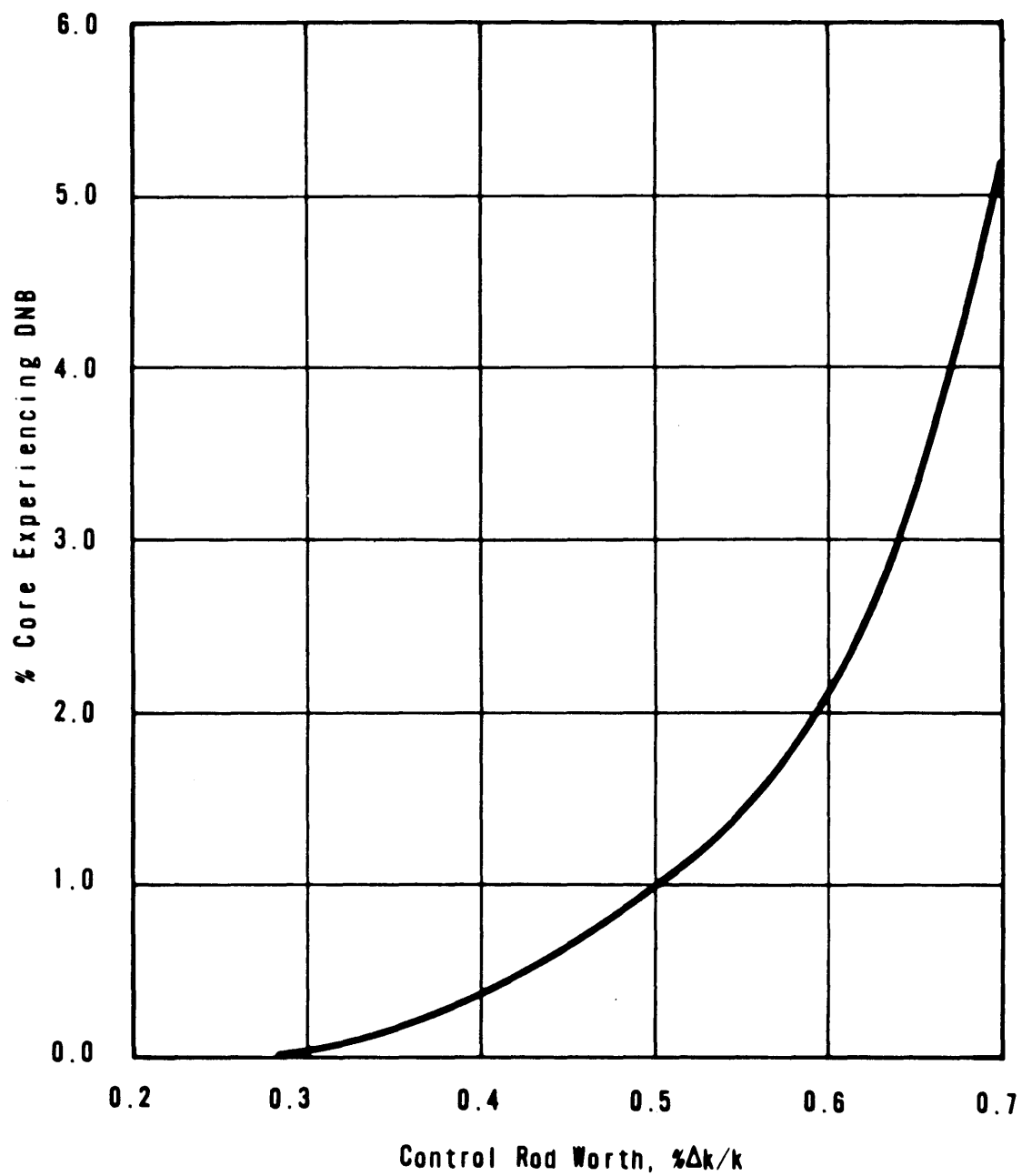
Update -1

TMI Unit-1

7/82

Effect on Peak Thermal Power of Varying the Trip Delay Time for an Ejected Rod Worth of 0.56%  $\Delta K/K$  at 10<sup>-3</sup> Rated Power and 0.46%  $\Delta K/K$  at Rated Power

Fig. 14.2-8



**GPU Nuclear**

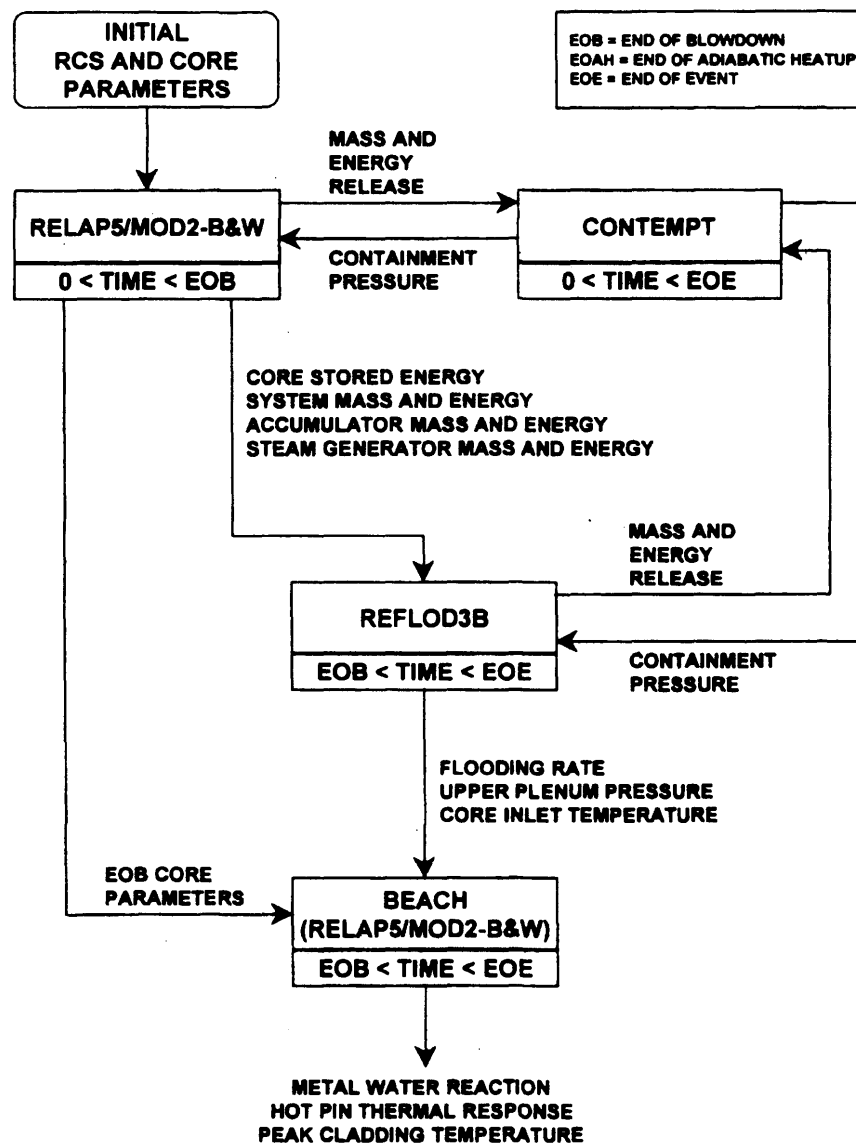
Update - 1

**TMI Unit-1**

7/82

Percent Core Experiencing DNB as a  
Function of Ejected Control Rod  
Worth at Rated Power, BOL

Fig. 14.2-9



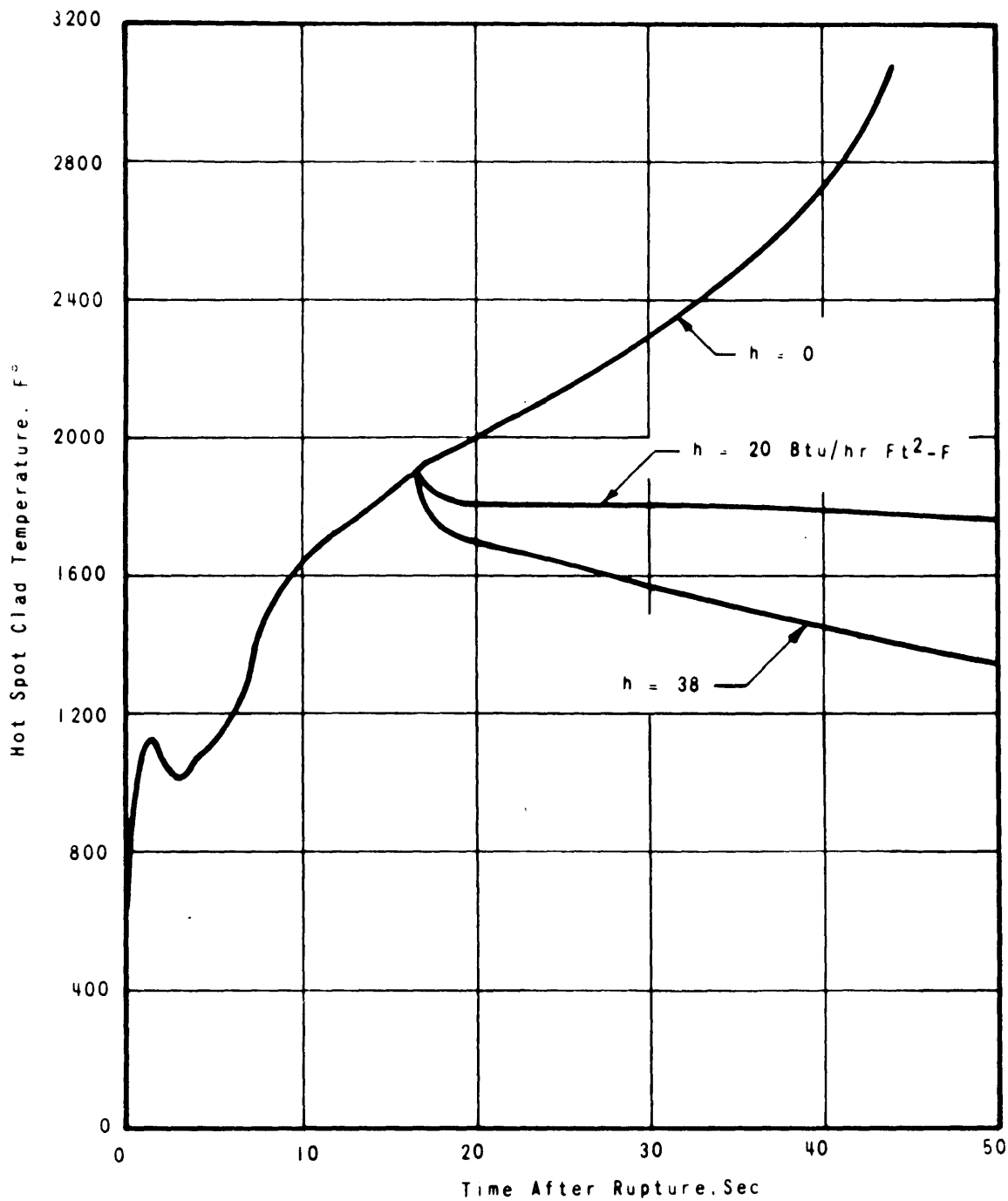
TMI - UNIT I
UPDATE - 14

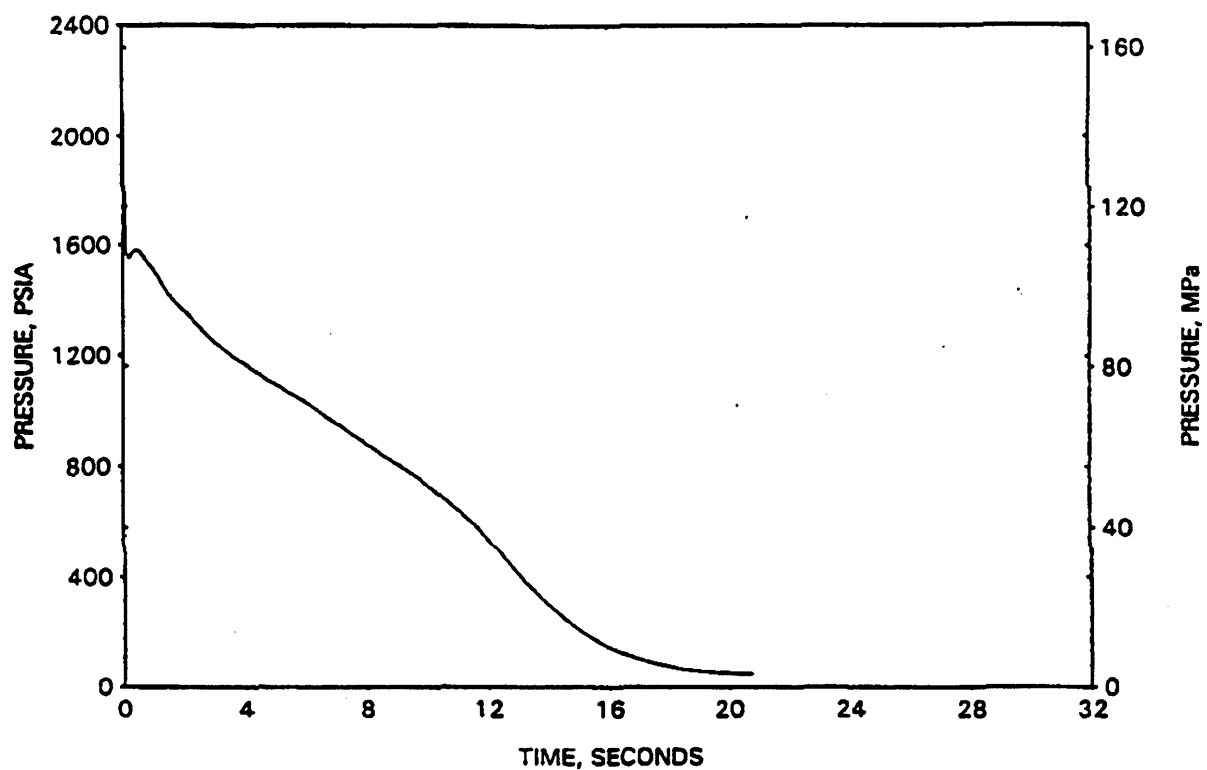


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LARGE BREAK ANALYSIS CODE INTERFACES

CAD FILE: 6573RI4.DWG
FIG 14.2-10





**AmerGen**

TMI - UNIT 1

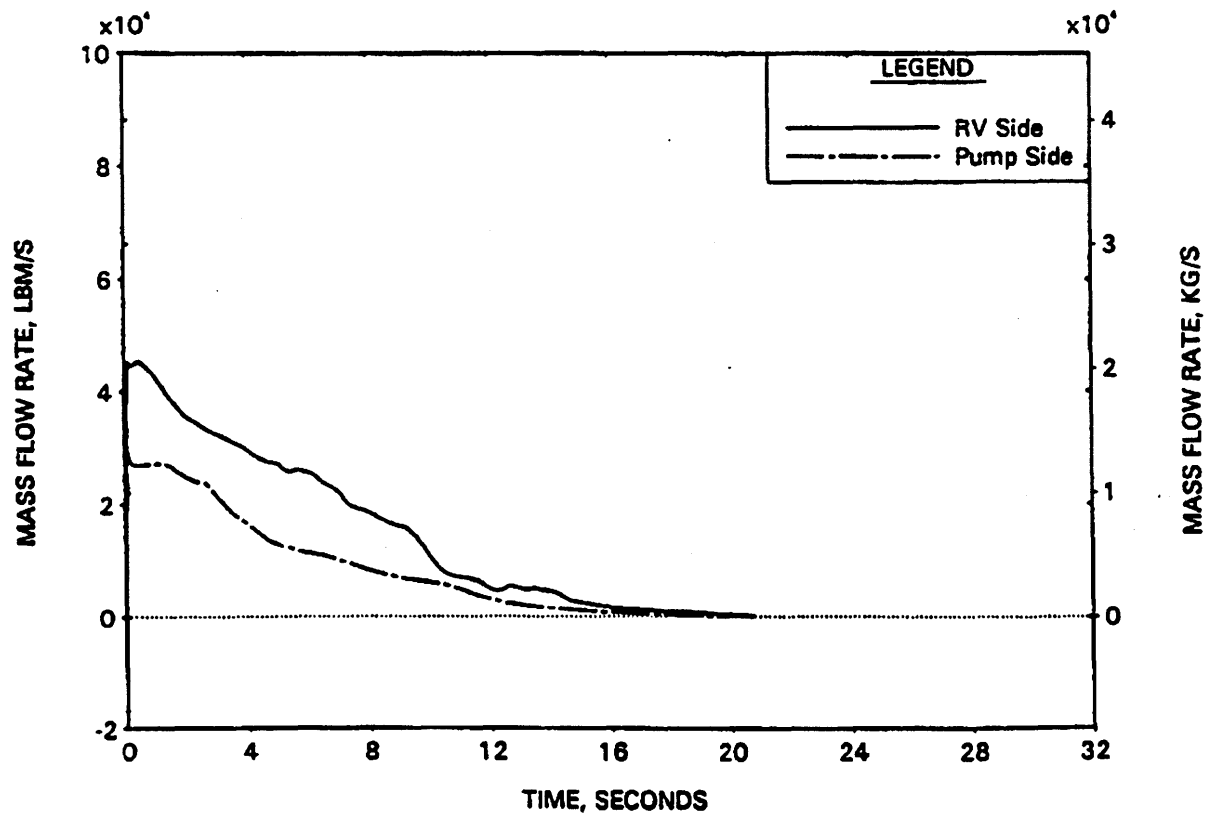
UPDATE - 15

4/00

LBLOCA LIMIT CASE (BOL) - REACTOR  
VESSEL UPPER PLENUM PRESSURE

CAD FILE: 6574R15.DWG

FIG 14.2-12



**AmerGen**

TMI - UNIT 1

UPDATE - 15

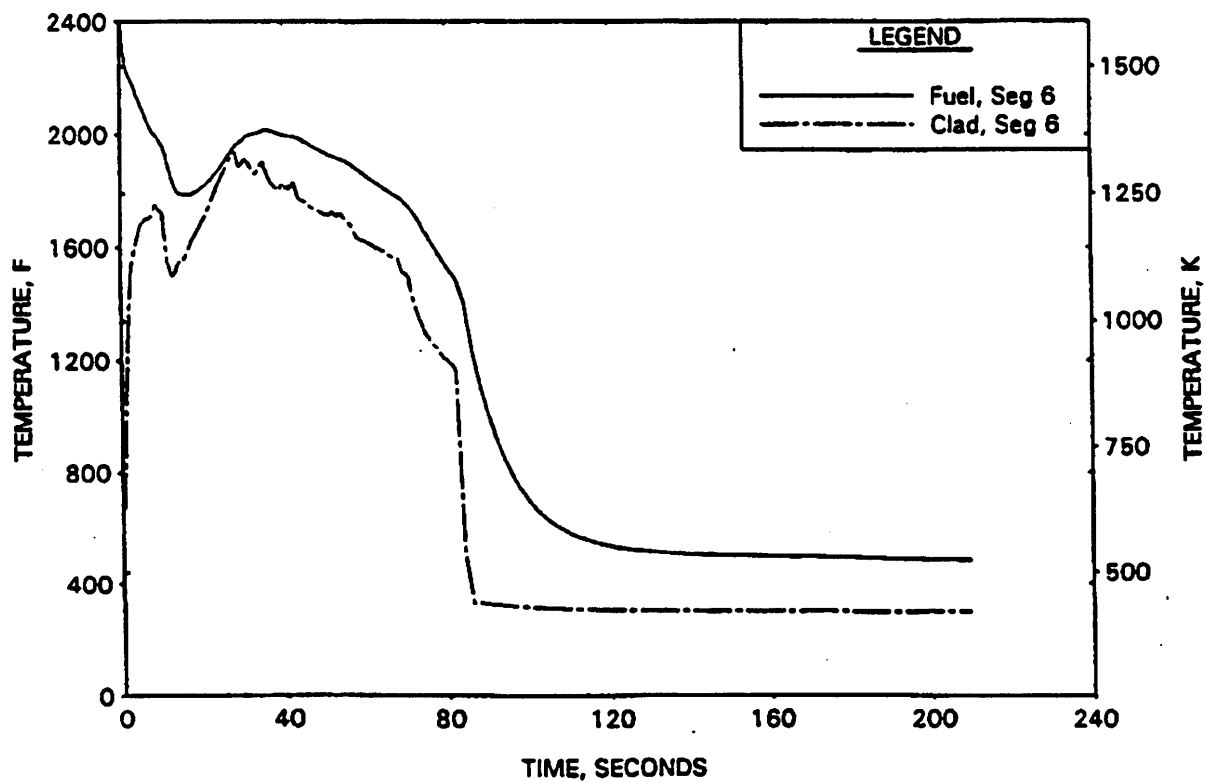
4/00

LBLOCA LIMIT CASE (BOL) - BREAK MASS FLOW RATE

CAD FILE: 6575R15.DWG

FIG 14.2-13





**AmerGen**

TMI - UNIT 1

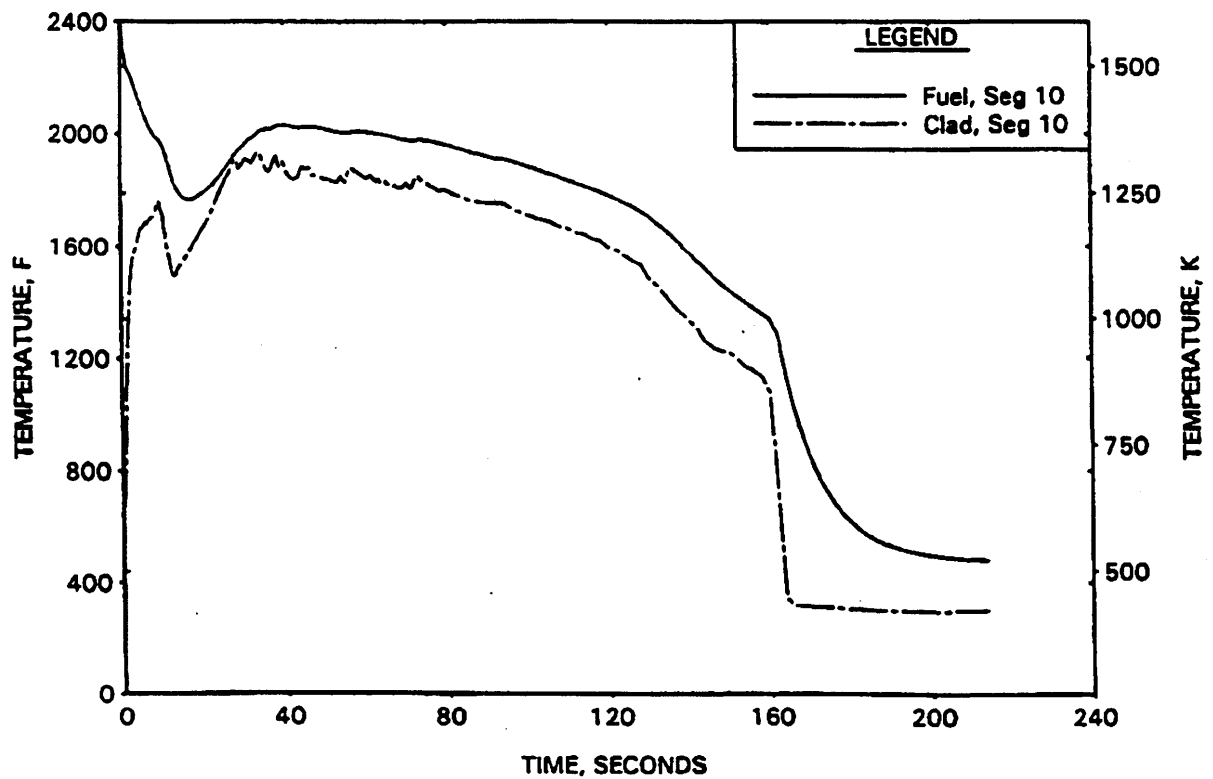
UPDATE - 15

4/00

LBLOCA LIMIT CASE (BOL - 2.506-FT) -  
HOT CHANNEL FUEL AND CLAD  
TEMPERATURE AT PEAK UNRUPTURED  
LOCATION

CAD FILE: 6576R15.DWG

FIG 14.2-14



**AmerGen**

TMI - UNIT 1

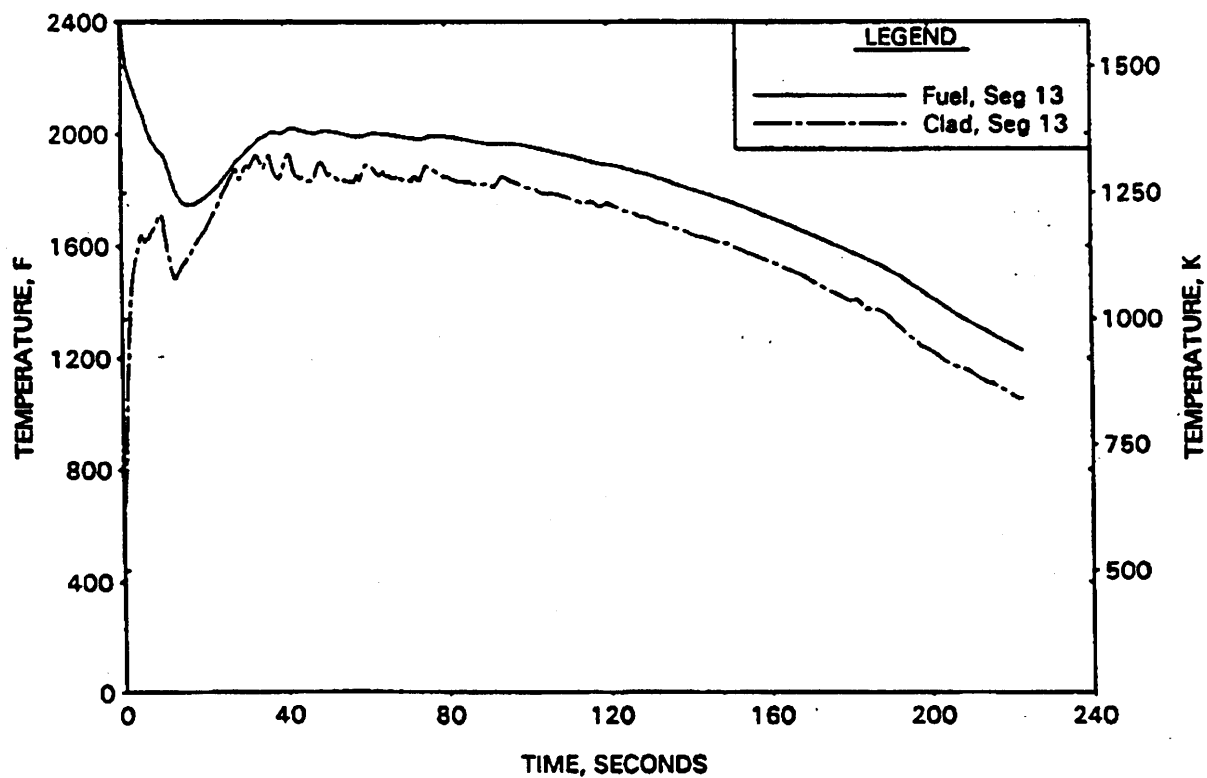
UPDATE - 15

4/00

LBLOCA LIMIT CASE (BOL - 4.264-FT) -  
HOT CHANNEL FUEL AND CLAD  
TEMPERATURE AT PEAK UNRUPTURED  
LOCATION

CAD FILE: 6577R15.DWG

FIG 14.2-15



**AmerGen**

TMI - UNIT 1

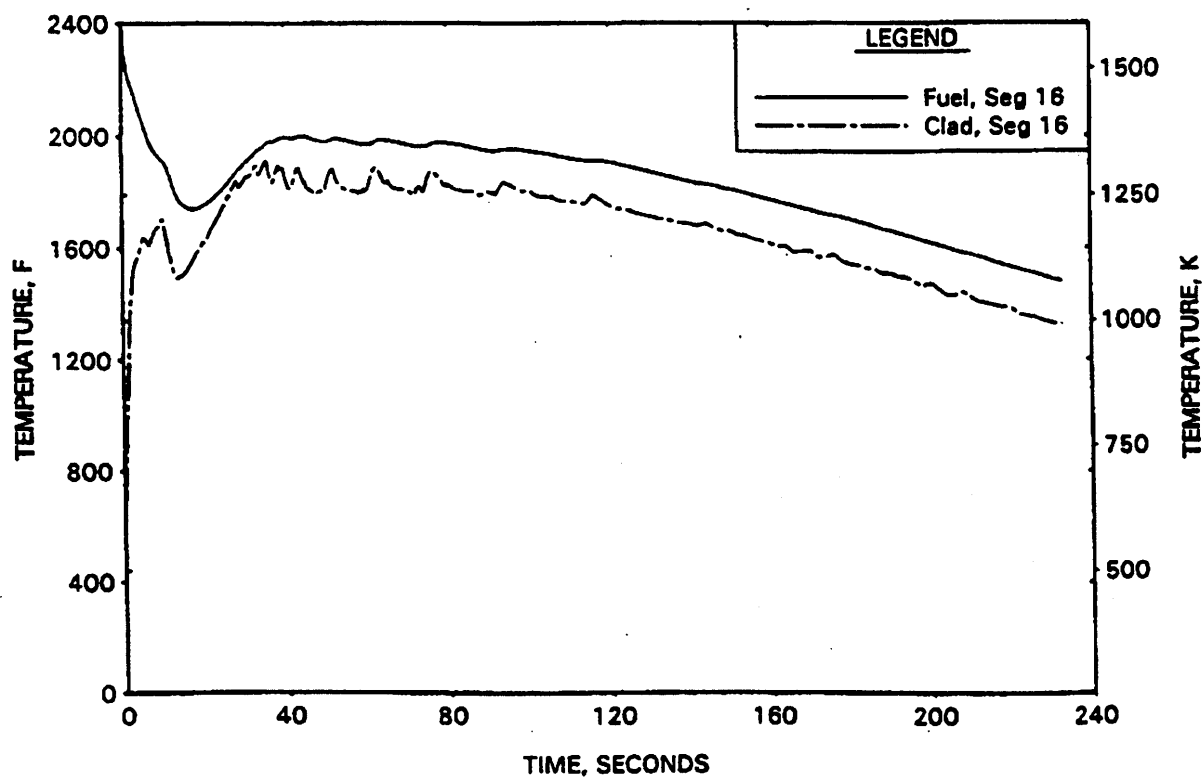
UPDATE - 15

4/00

LBLOCA LIMIT CASE (BOL - 6.021-FT) -  
HOT CHANNEL FUEL AND CLAD  
TEMPERATURE AT PEAK UNRUPTURED  
LOCATION

CAD FILE: 6578R15.DWG

FIG 14.2-16



**AmerGen**

TMI - UNIT 1

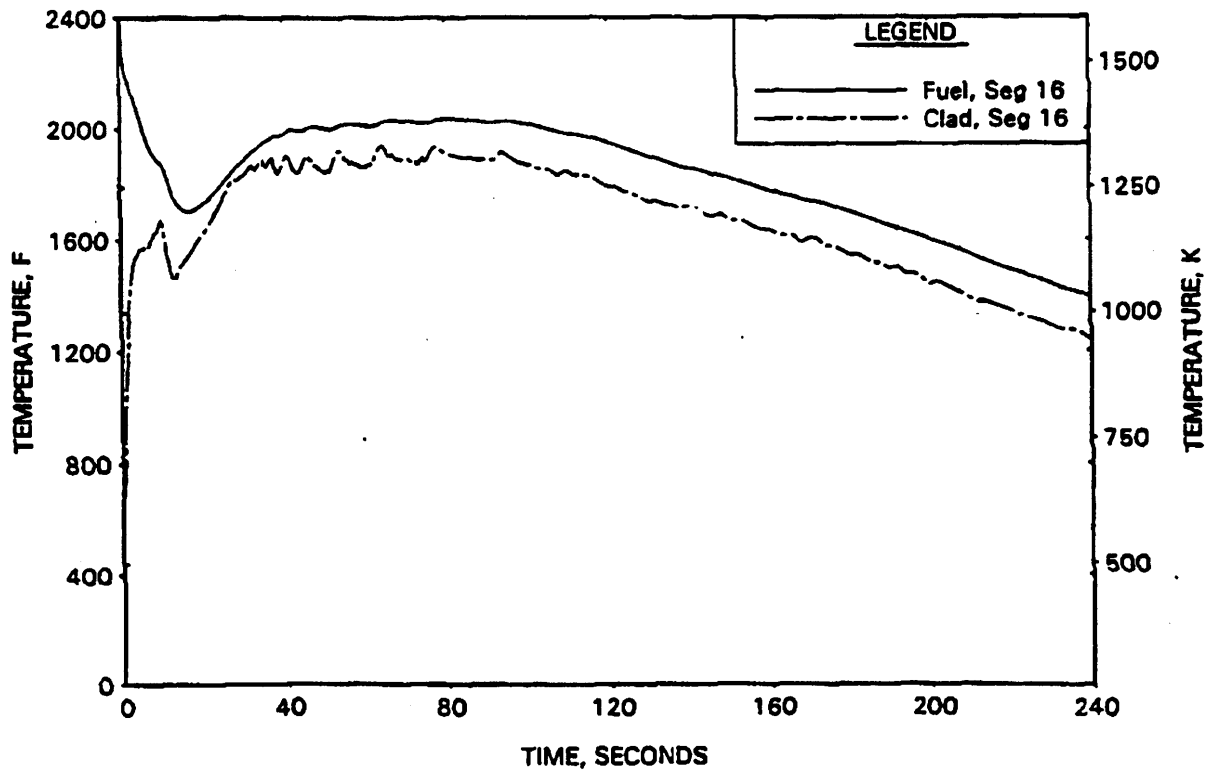
UPDATE - 15

4/00

LBLOCA LIMIT CASE (BOL - 7.779-FT) -  
HOT CHANNEL FUEL AND CLAD  
TEMPERATURE AT PEAK UNRUPTURED  
LOCATION

CAD FILE: 6579R15.DWG

FIG 14.2-17



**AmerGen**

TMI - UNIT 1

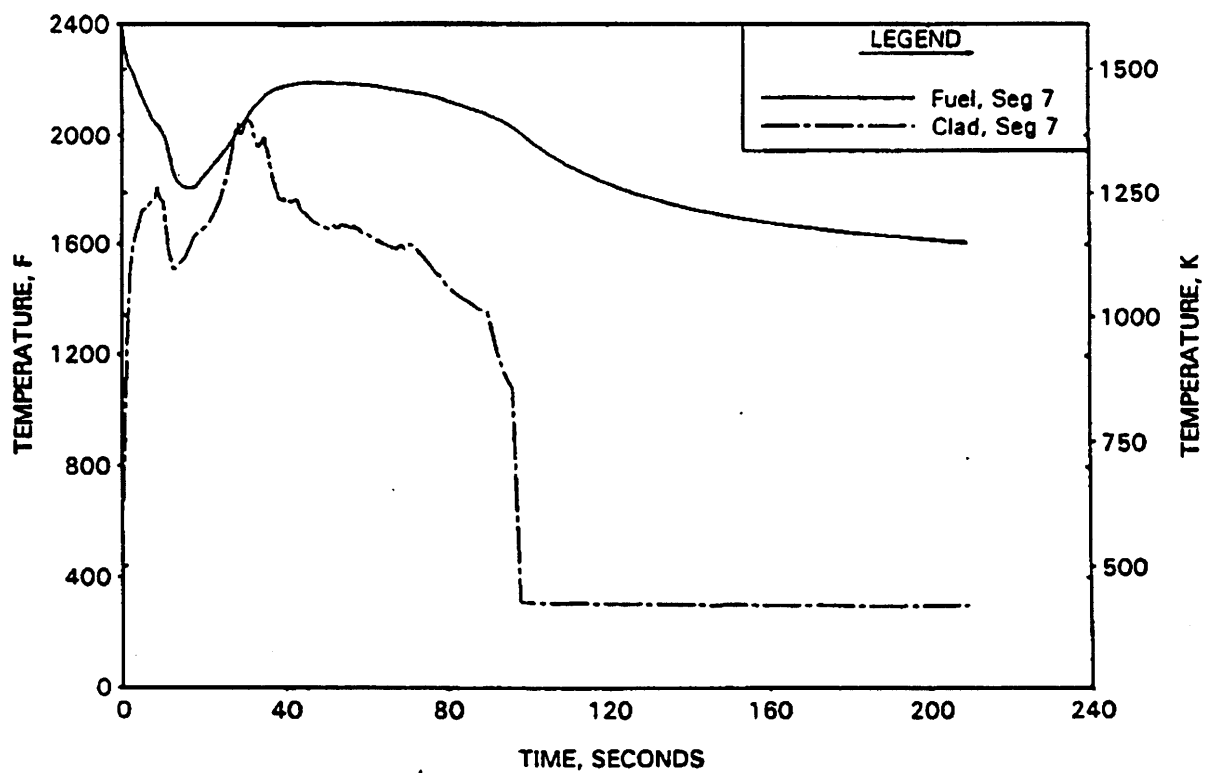
UPDATE - 15

4/00

LBLOCA LIMIT CASE (BOL - 9.536-FT) -  
HOT CHANNEL FUEL AND CLAD  
TEMPERATURE AT PEAK UNRUPTURED  
LOCATION

CAD FILE: 6580R15.DWG

FIG 14.2-18



**AmerGen**

TMI - UNIT 1

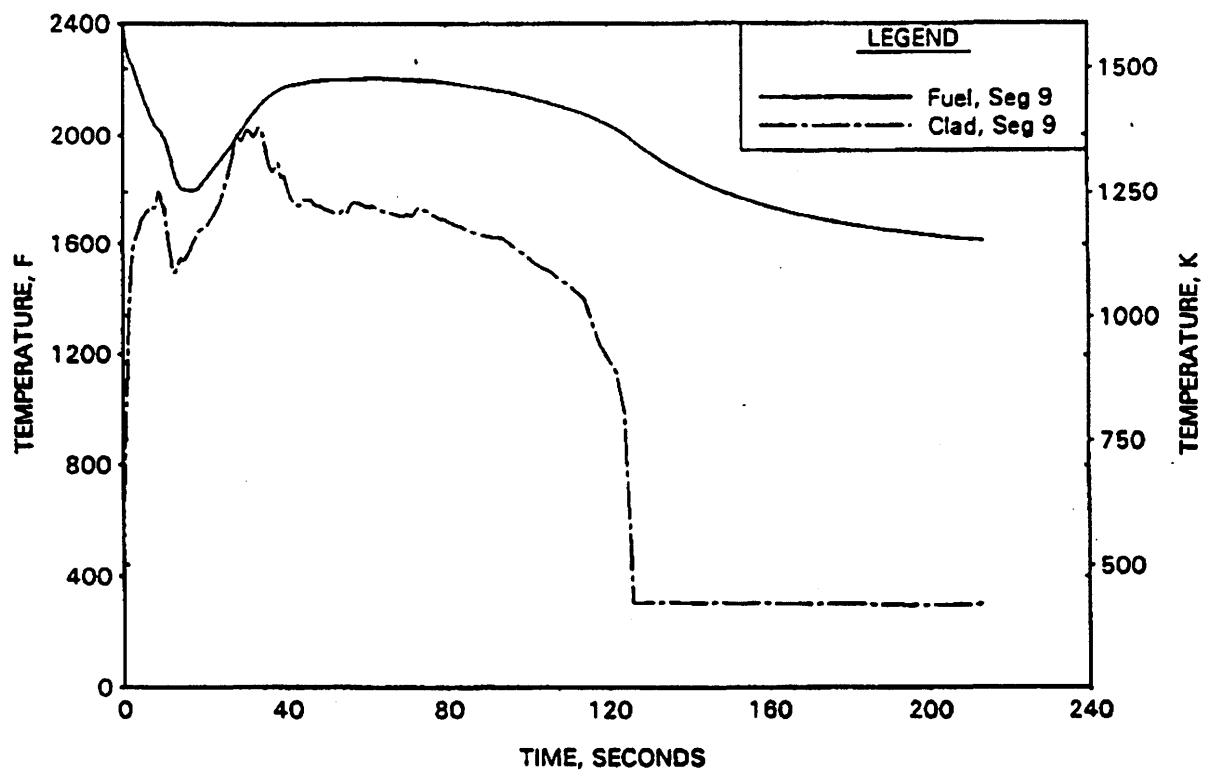
UPDATE - 15

4/00

LBLOCA LIMIT CASE (BOL - 2.506-FT) -  
HOT CHANNEL FUEL AND CLAD  
TEMPERATURE AT PEAK UNRUPTURED  
LOCATION

CAD FILE: 6581R15.DWG

FIG 14.2-19



**AmerGen**

TMI - UNIT 1

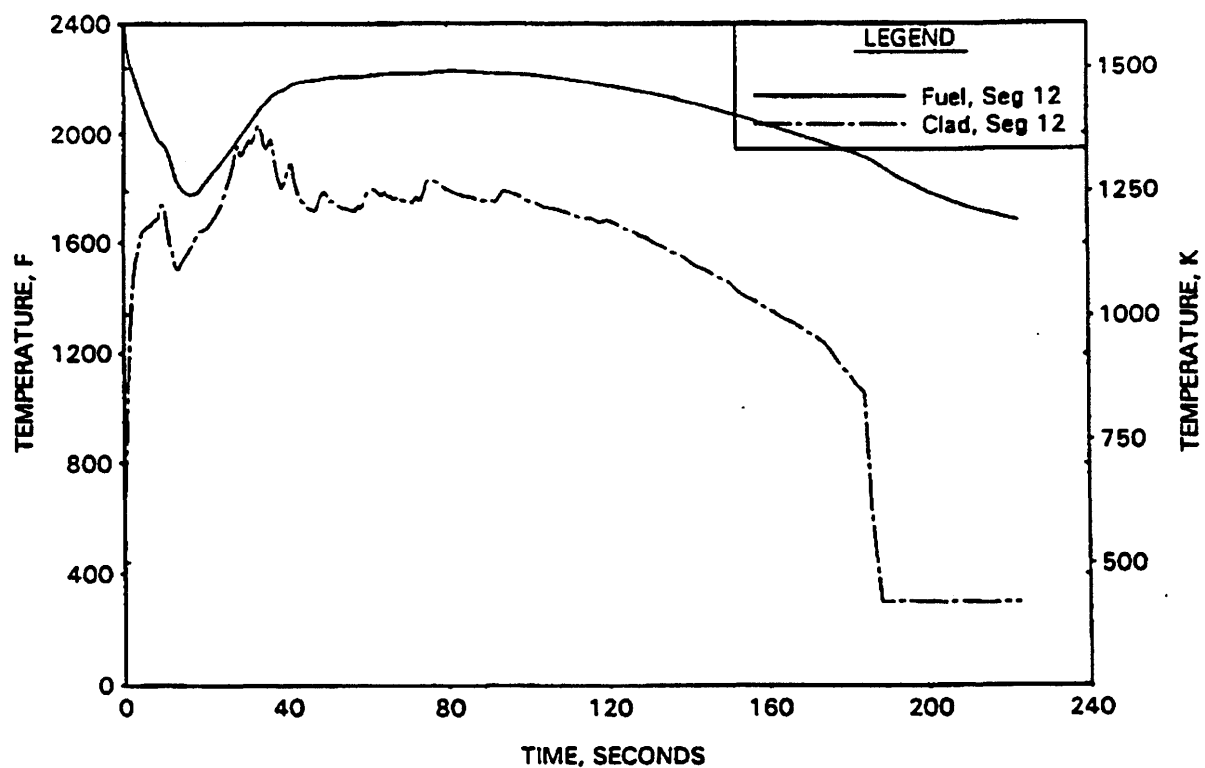
UPDATE - 15

4/00

LBLOCA LIMIT CASE (BOL - 4.264-FT) -  
HOT CHANNEL FUEL AND CLAD  
TEMPERATURE AT PEAK RUPTURED  
LOCATION

CAD FILE: 6582R15.DWG

FIG 14.2-20



**AmerGen**

TMI - UNIT 1

UPDATE - 15

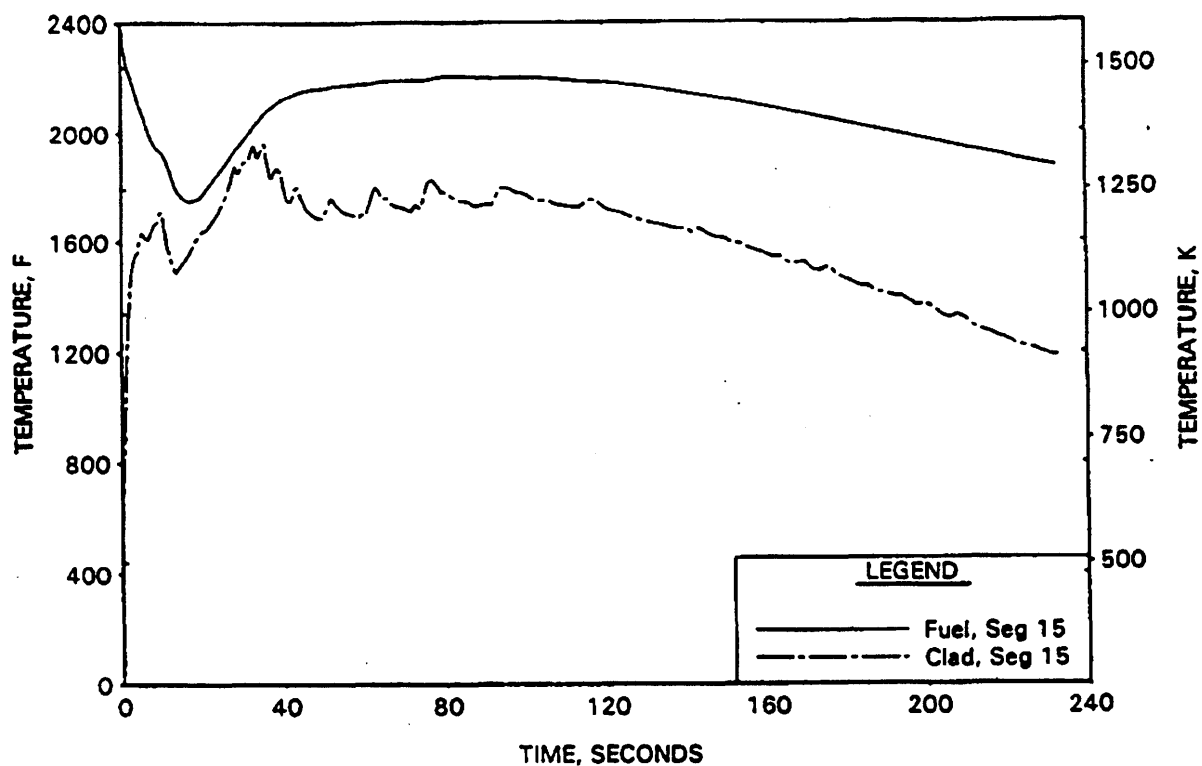
4/00

LBLOCA LIMIT CASE (BOL - 6.021-FT) -  
HOT CHANNEL FUEL AND CLAD  
TEMPERATURE AT PEAK RUPTURED  
LOCATION

CAD FILE: 6583R15.DWG

FIG 14.2-21





**AmerGen**

TMI - UNIT 1

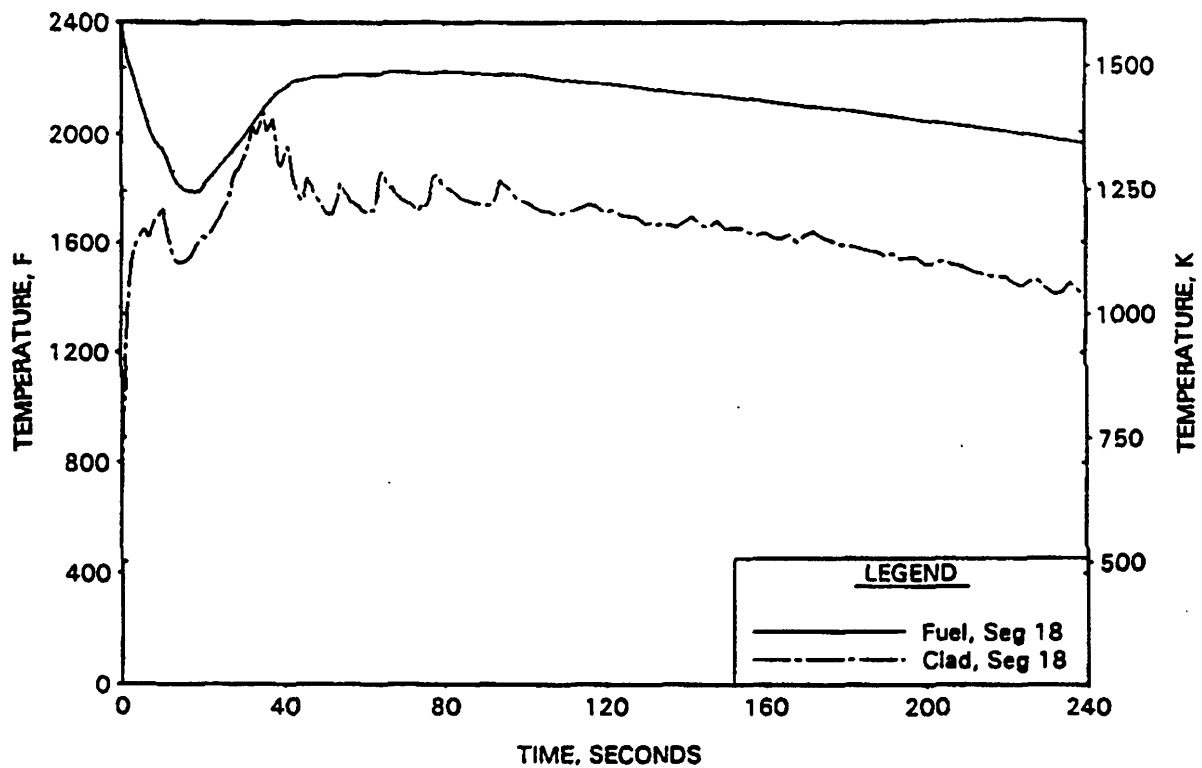
UPDATE - 15

4/00

LBLOCA LIMIT CASE (BOL - 7.779-FT) -  
HOT CHANNEL FUEL AND CLAD  
TEMPERATURE AT PEAK RUPTURED  
LOCATION

CAD FILE: 6584R15.DWG

FIG 14.2-22



**AmerGen**

TMI - UNIT 1

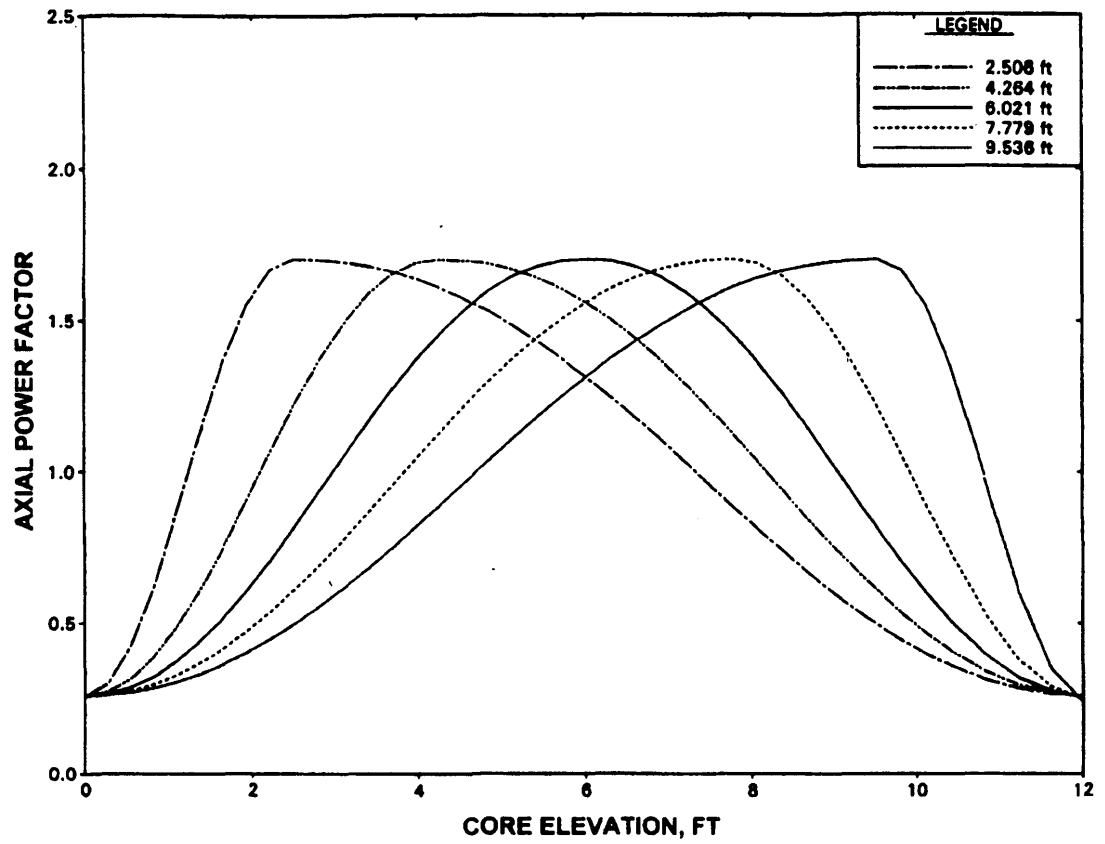
UPDATE - 15

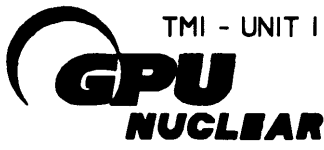
4/00

LBLOCA LIMIT CASE (BOL - 9.536-FT) -  
HOT CHANNEL FUEL AND CLAD  
TEMPERATURE AT PEAK RUPTURED  
LOCATION

CAD FILE: 6585R15.DWG

FIG 14.2-23





**GPU  
NUCLEAR**

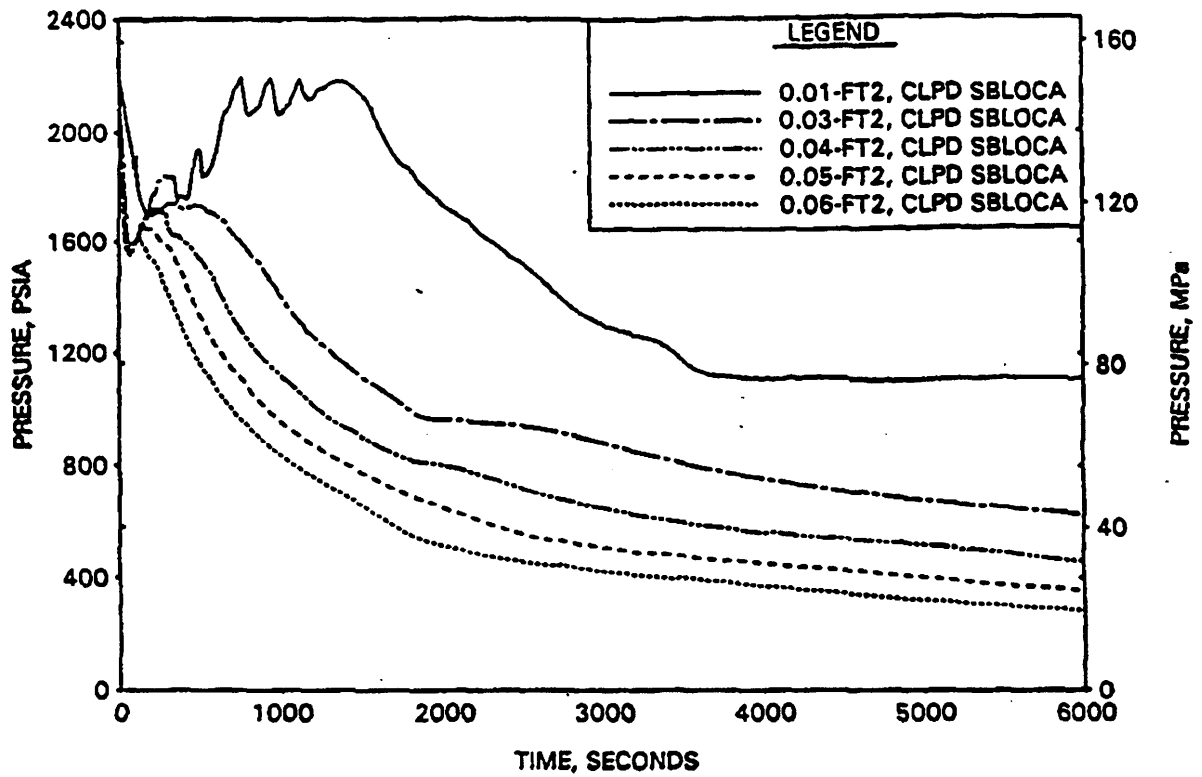
TMI - UNIT I

UPDATE - 14  
4/98

LOCA LIMIT AXIAL POWER SHAPES

CAD FILE: 6586RI4.DWG

FIG 14.2-24



**AmerGen**

TMI - UNIT 1

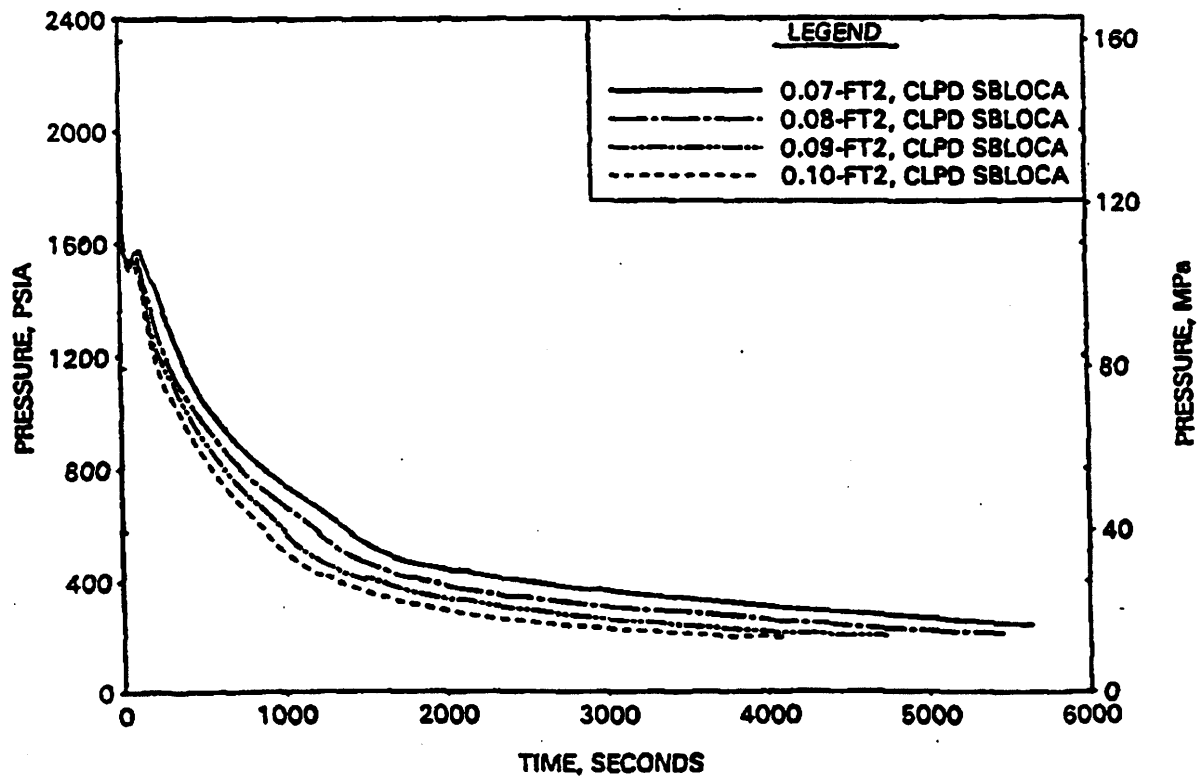
UPDATE - 15

4/00

SBLOCA COMPARISON OF RCS PRESSURE  
(0.01 - 0.06 FT<sup>2</sup> BREAKS)

CAD FILE: 6587R15.DWG

FIG 14.2-25



**AmerGen**

TMI - UNIT 1

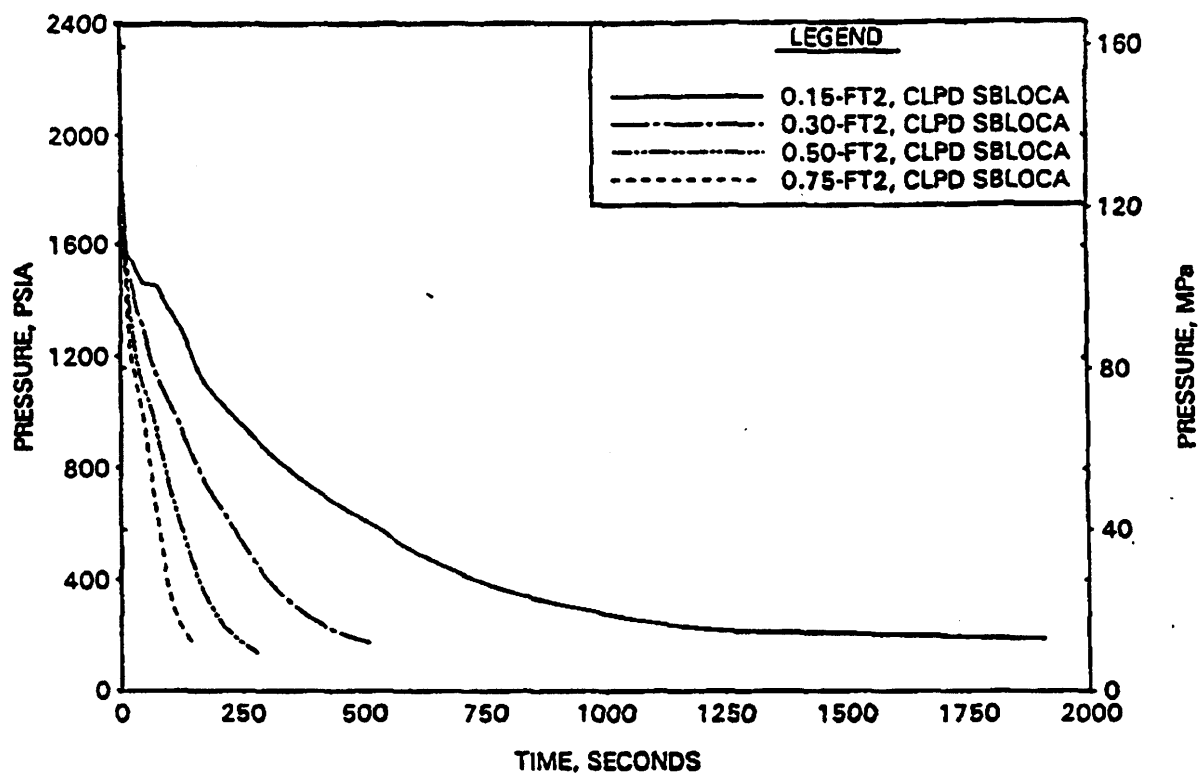
UPDATE - 15

4/00

SBLOCA COMPARISON OF RCS PRESSURE  
(0.07 - 0.10 FT<sup>2</sup> BREAKS)

CAD FILE: 6588R15.DWG

FIG 14.2-26



**AmerGen**

TMI - UNIT 1

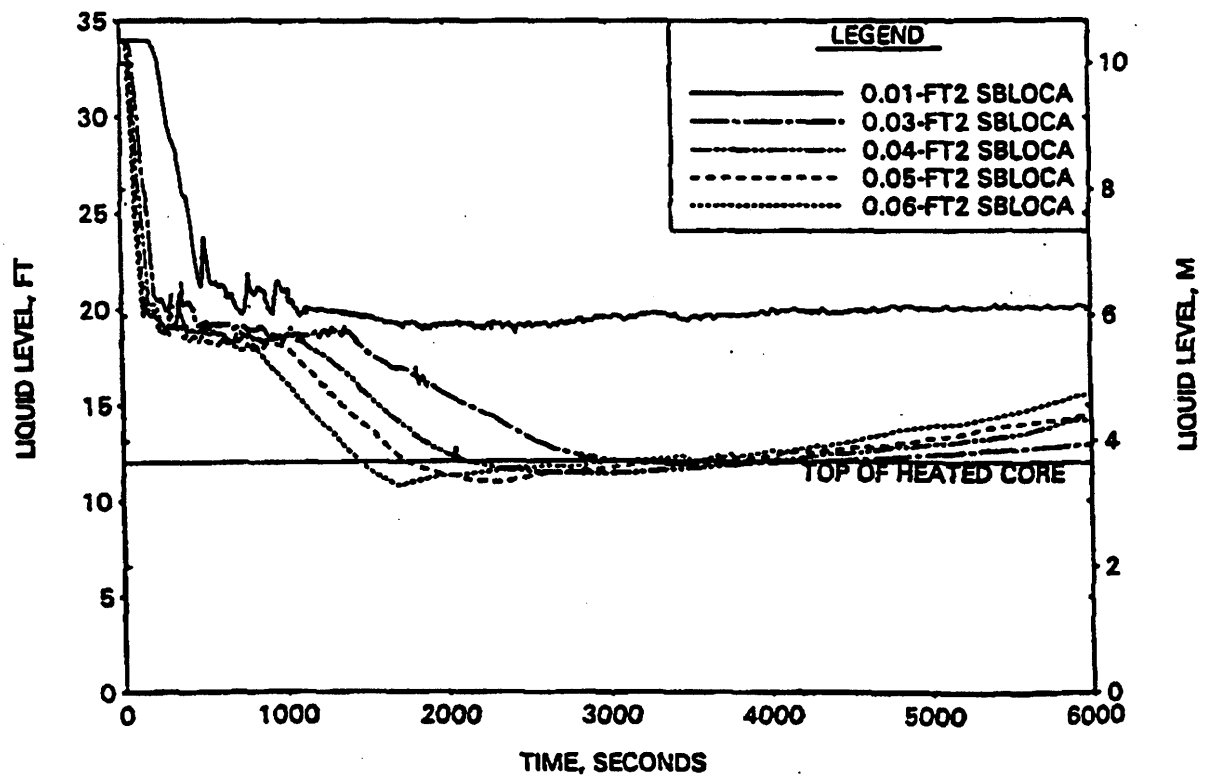
UPDATE - 15

4/00

SBLOCA COMPARISON OF RCS PRESSURE  
(0.15 - 0.75 FT<sup>2</sup> BREAKS)

CAD FILE: 6589R15.DWG

FIG 14.2-27



**AmerGen**

TMI - UNIT 1

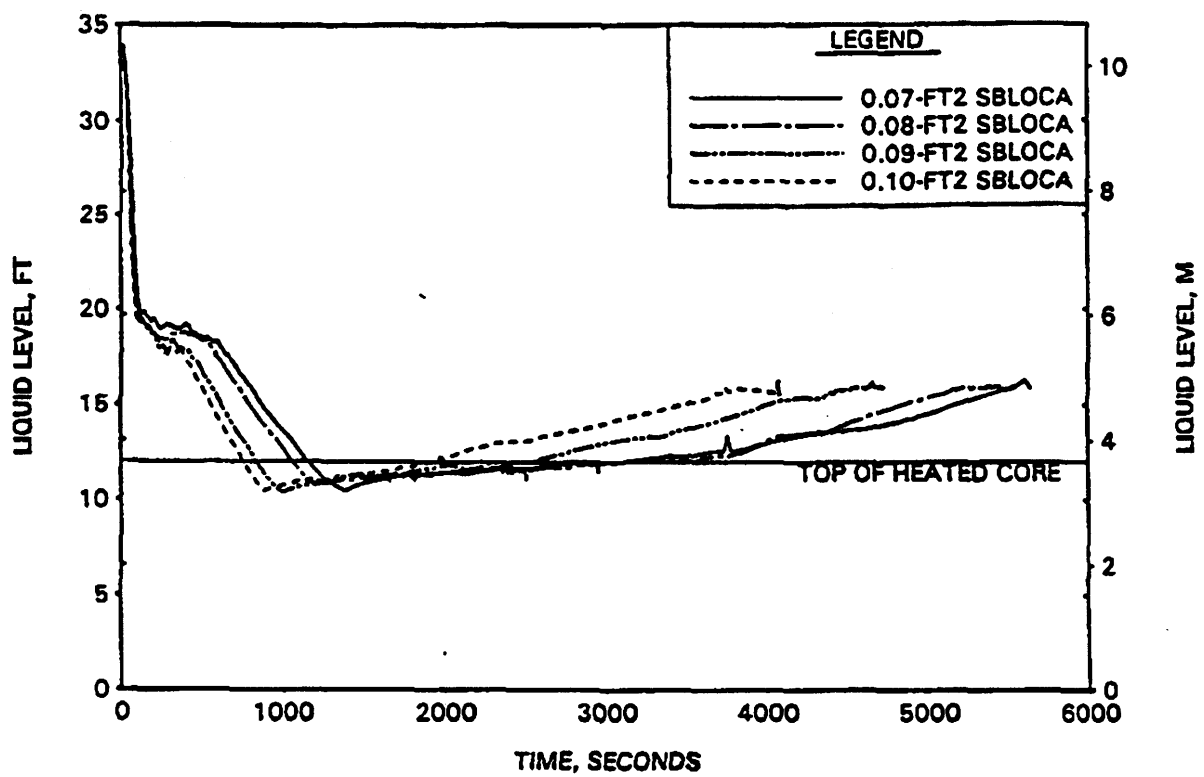
UPDATE - 15

4/00

SBLOCA COMPARISON OF REACTOR VESSEL  
COLLAPSED LIQUID LEVEL (0.01 - 0.06 FT<sup>2</sup>  
BREAKS)

CAD FILE: 6605R15.DWG

FIG 14.2-28



**AmerGen**

TMI - UNIT 1

UPDATE - 15

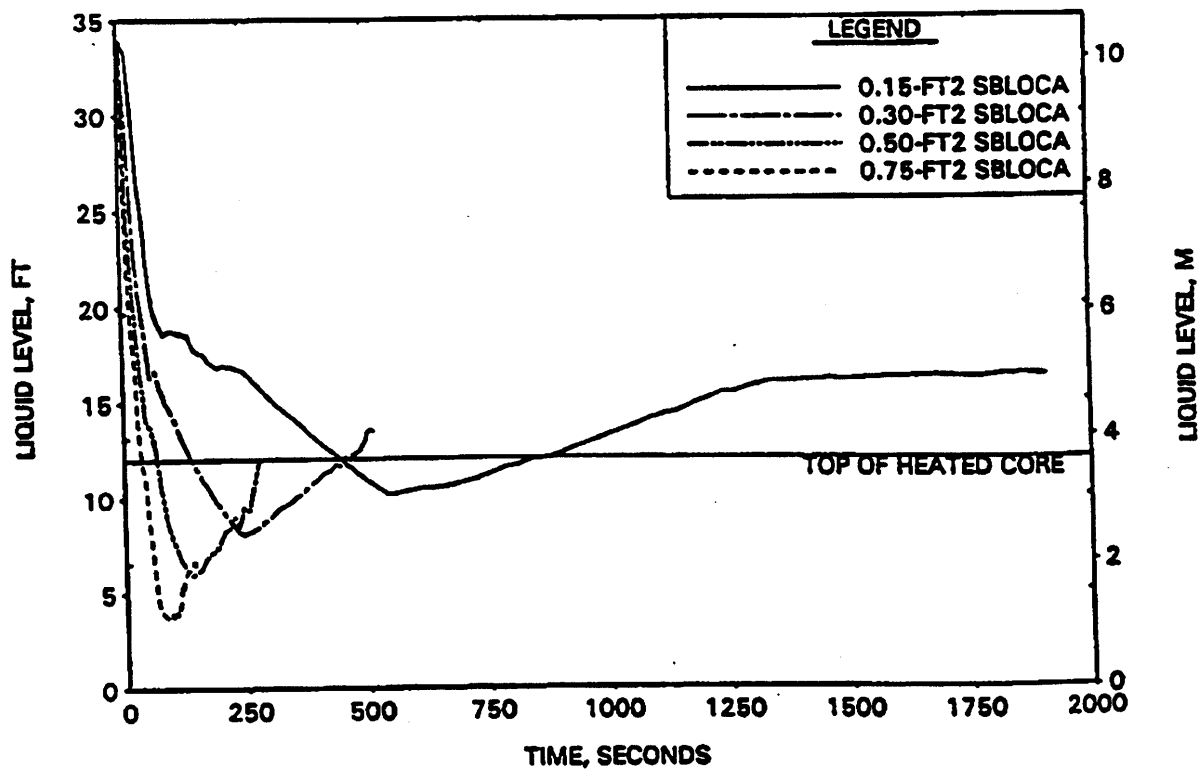
4/00

SBLOCA COMPARISON OF REACTOR VESSEL  
COLLAPSED LIQUID LEVEL (0.07 - 0.10 FT<sup>2</sup>  
BREAKS)

CAD FILE: 6606R15.DWG

FIG 14.2-29





**AmerGen**

TMI - UNIT 1

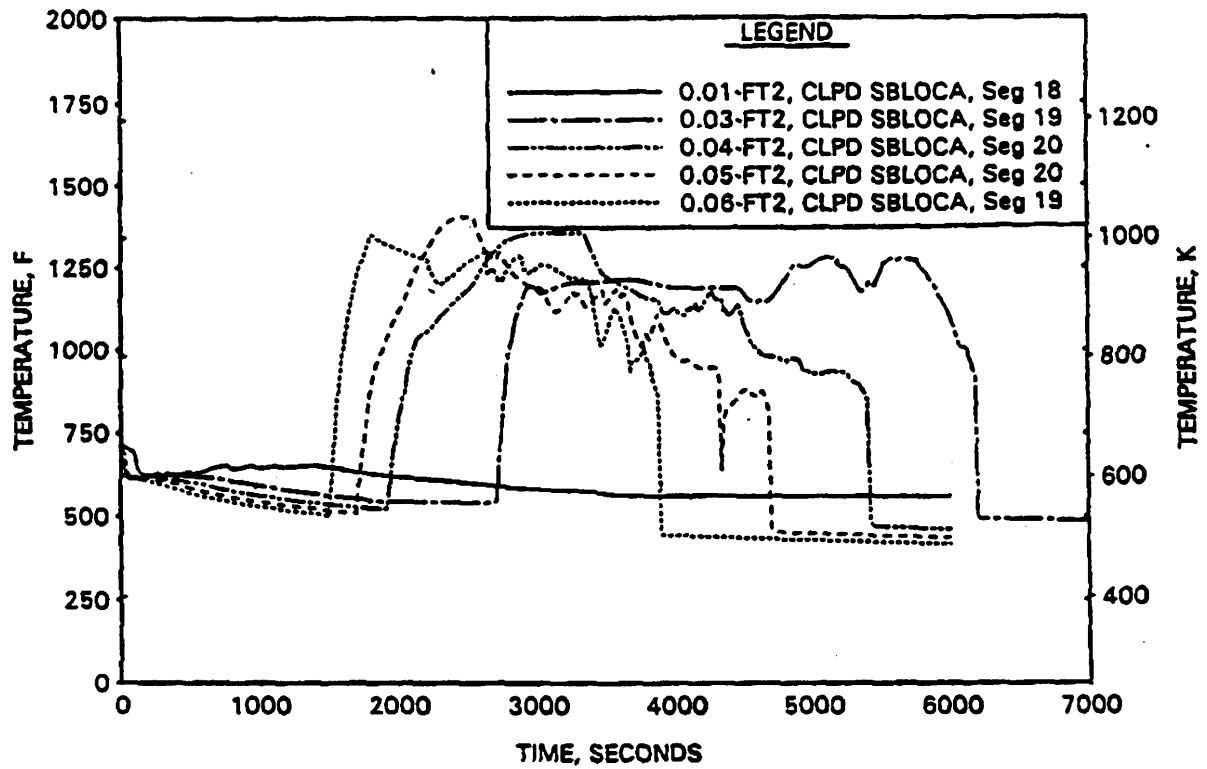
UPDATE - 15

4/00

SBLOCA COMPARISON OF REACTOR VESSEL  
COLLAPSED LIQUID LEVEL (0.15 - 0.75 FT<sup>2</sup>  
BREAKS)

CAD FILE: 6607R15.DWG

FIG 14.2-30



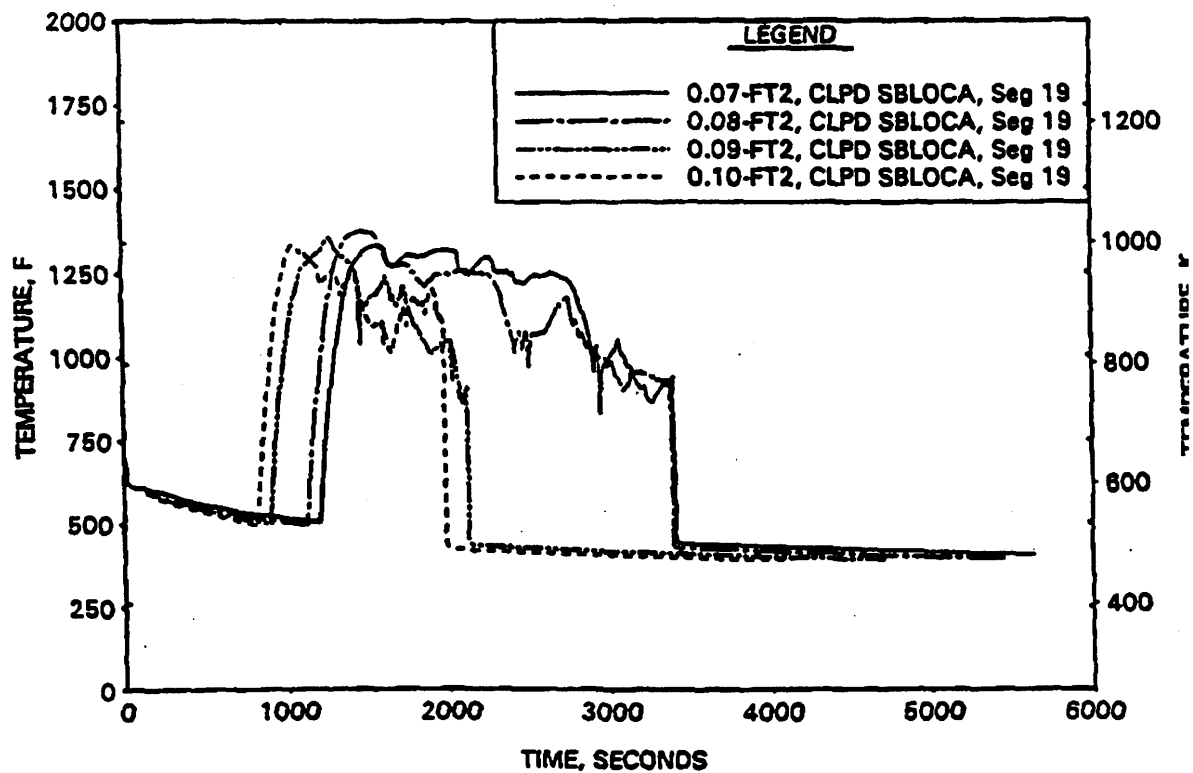
**AmerGen**  
TMI - UNIT 1

UPDATE - 15  
4/00

SBLOCA COMPARISON OF PEAK CLAD  
TEMPERATURES (0.01 - 0.06 FT<sup>2</sup> BREAKS)

CAD FILE: 6608R15.DWG

FIG 14.2-31



**AmerGen**

TMI - UNIT 1

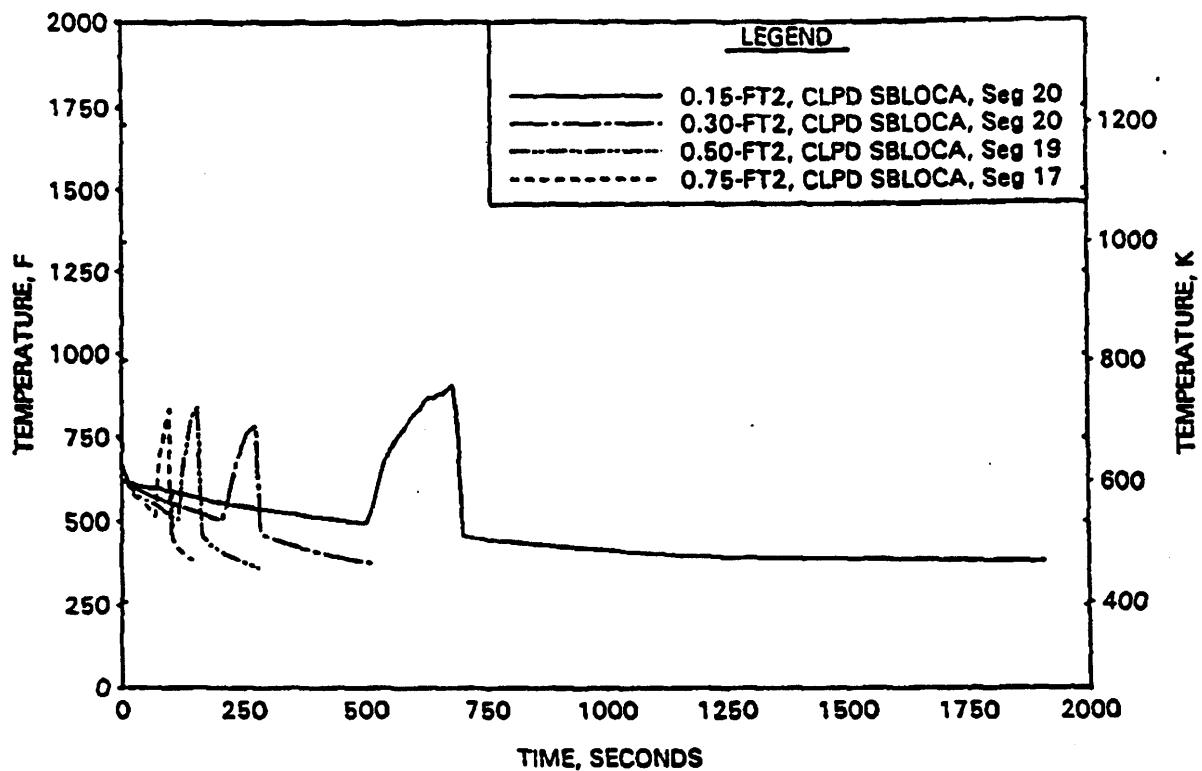
UPDATE - 15

4/00

SBLOCA COMPARISON OF PEAK CLAD  
TEMPERATURES (0.07 - 0.10 FT<sup>2</sup> BREAKS)

CAD FILE: 6590R15.DWG

FIG 14.2-32



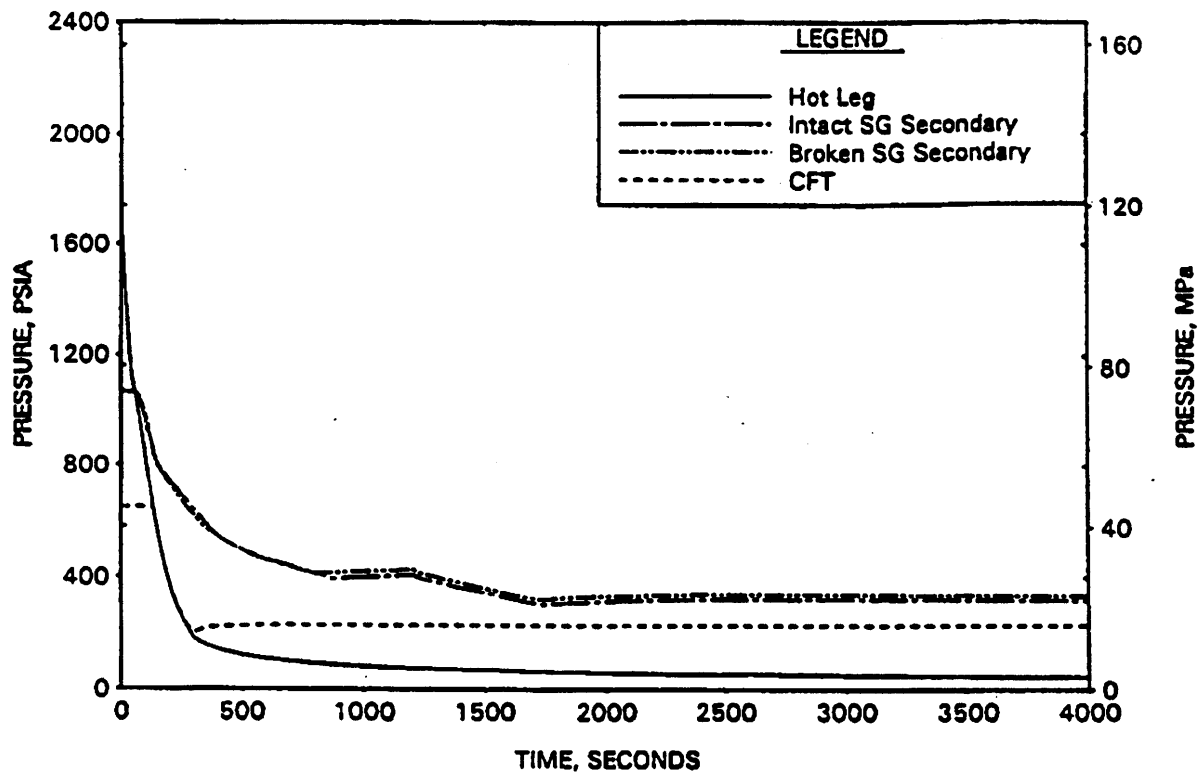
**AmerGen**  
TMI - UNIT 1

UPDATE - 15  
4/00

SBLOCA COMPARISON OF PEAK CLAD  
TEMPERATURES (0.15 - 0.75 FT<sup>2</sup> BREAKS)

CAD FILE: 6591R15.DWG

FIG 14.2-33



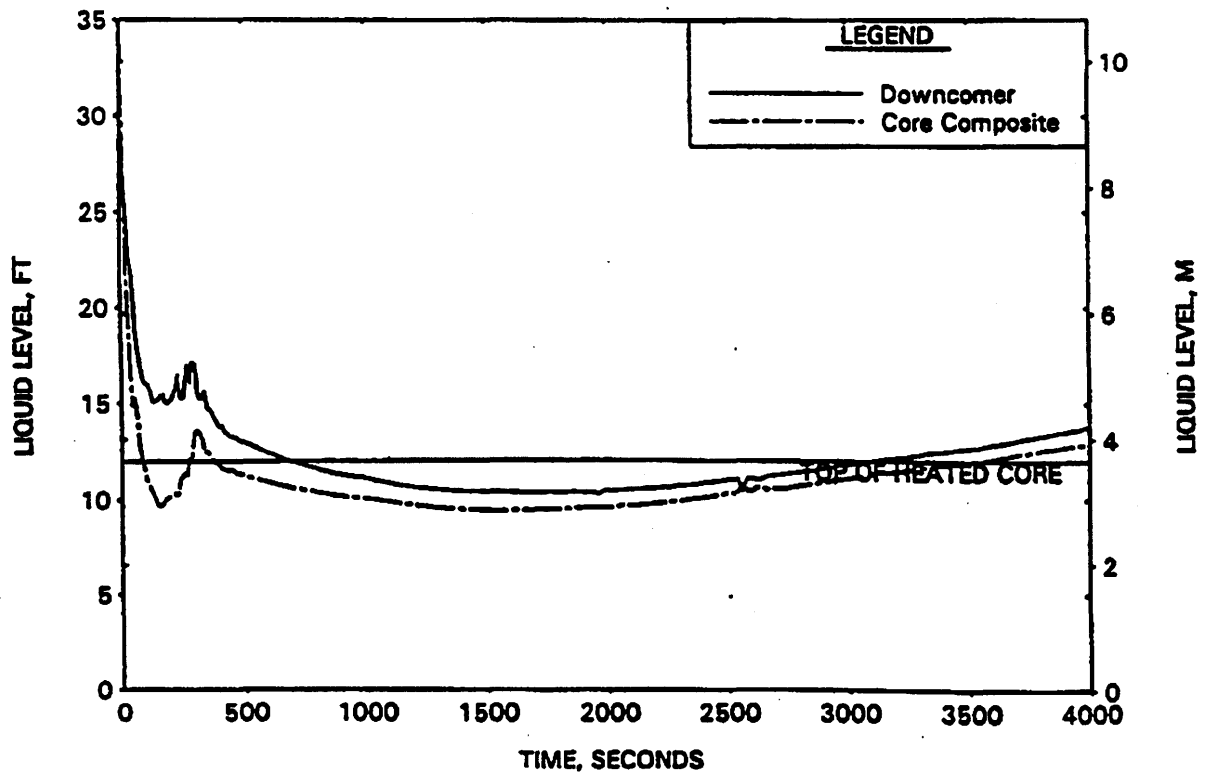
**AmerGen**  
TMI - UNIT 1

UPDATE - 15  
4/00

CFT LINE BREAK SYSTEM PRESSURE

CAD FILE: 6592R15.DWG

FIG 14.2-34



**AmerGen**

TMI - UNIT 1

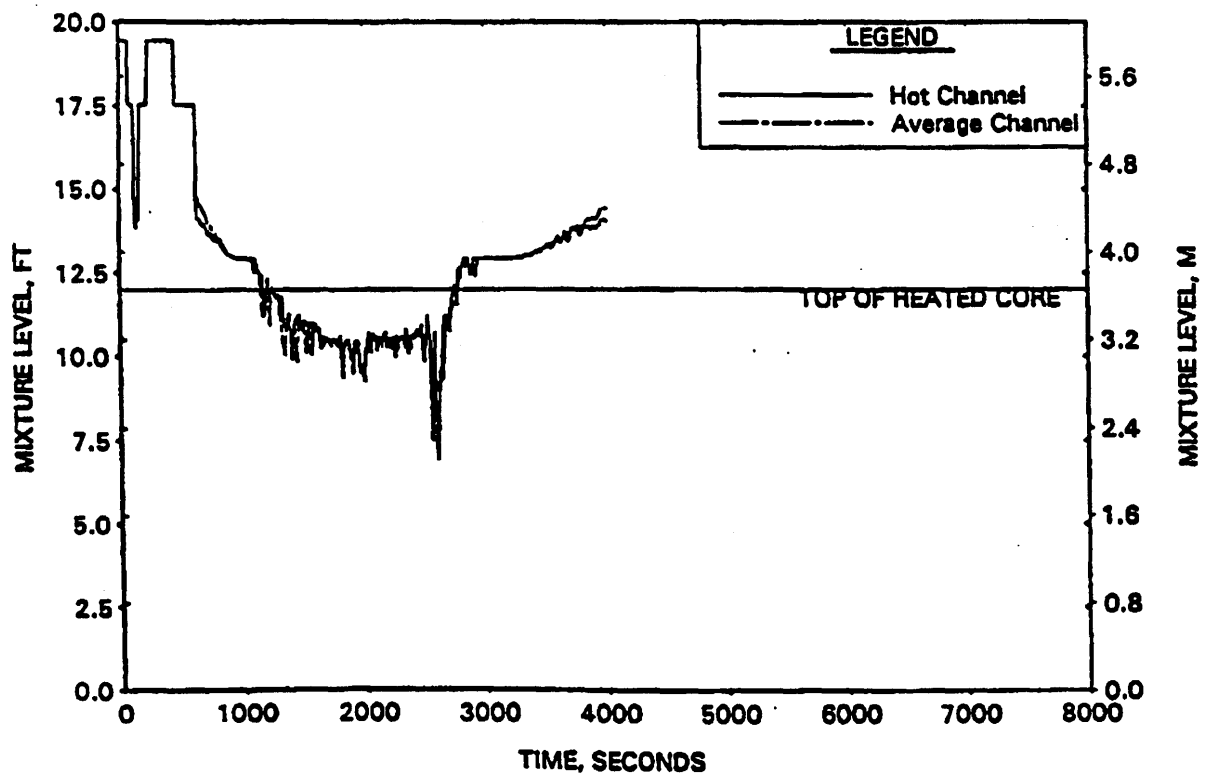
UPDATE - 15

4/00

CFT LINE BREAK COLLAPSED LIQUID LEVELS

CAD FILE: 6593R15.DWG

FIG 14.2-35



**AmerGen**

TMI - UNIT 1

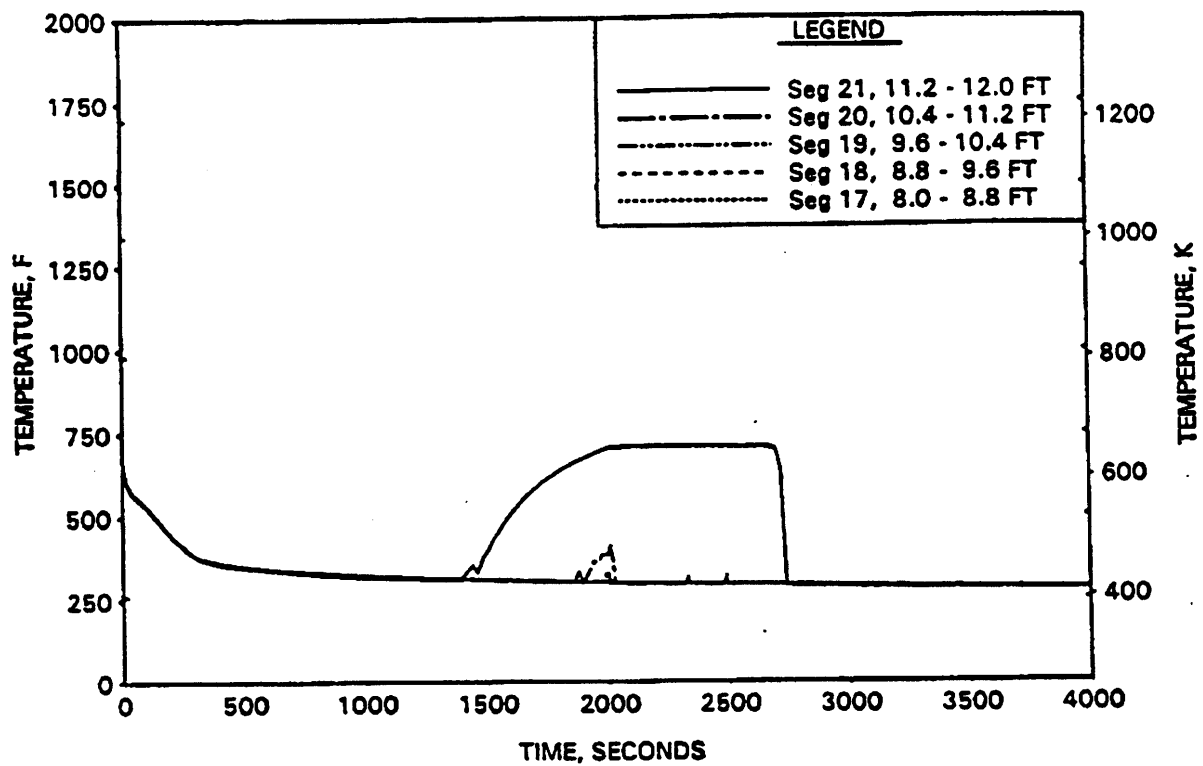
UPDATE - 15

4/00

CFT LINE BREAK MIXTURE LEVELS

CAD FILE: 6594R15.DWG

FIG 14.2-36



**AmerGen**

TMI - UNIT 1

UPDATE - 15

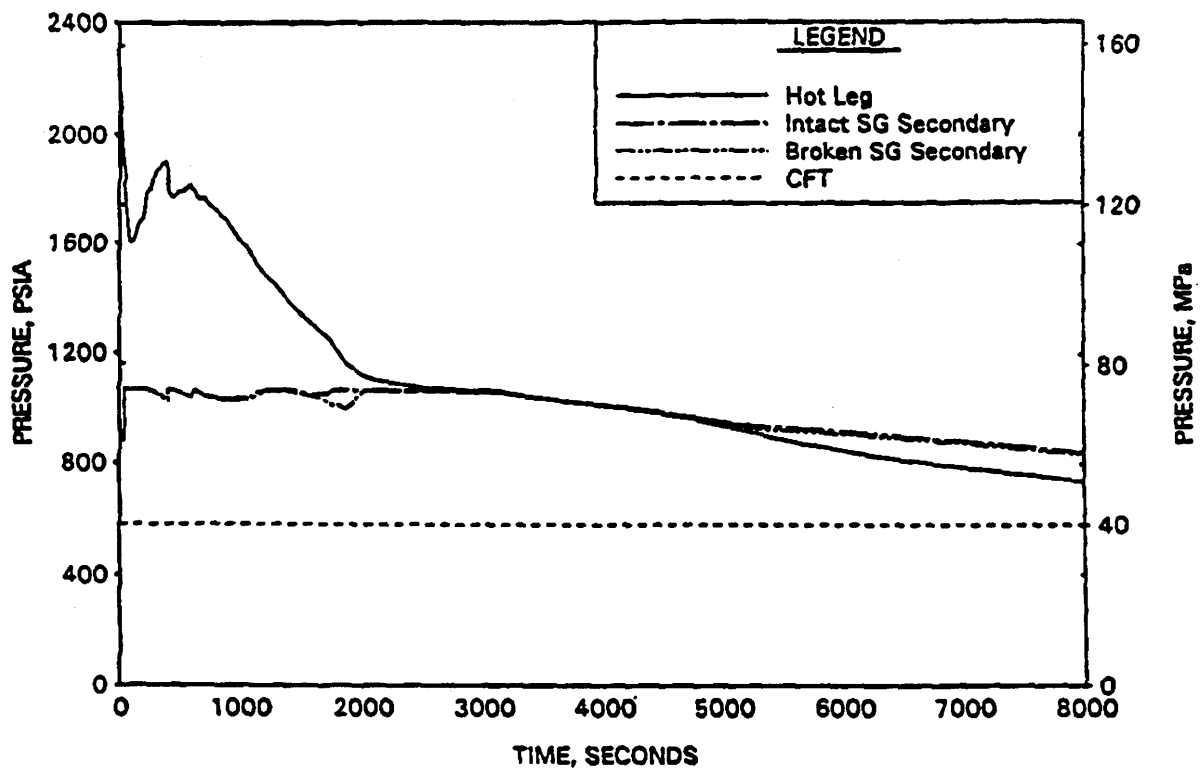
4/00

CFT LINE BREAK HOT CHANNEL CLAD  
TEMPERATURES

CAD FILE: 6595R15.DWG

FIG 14.2-37





**AmerGen**

TMI - UNIT 1

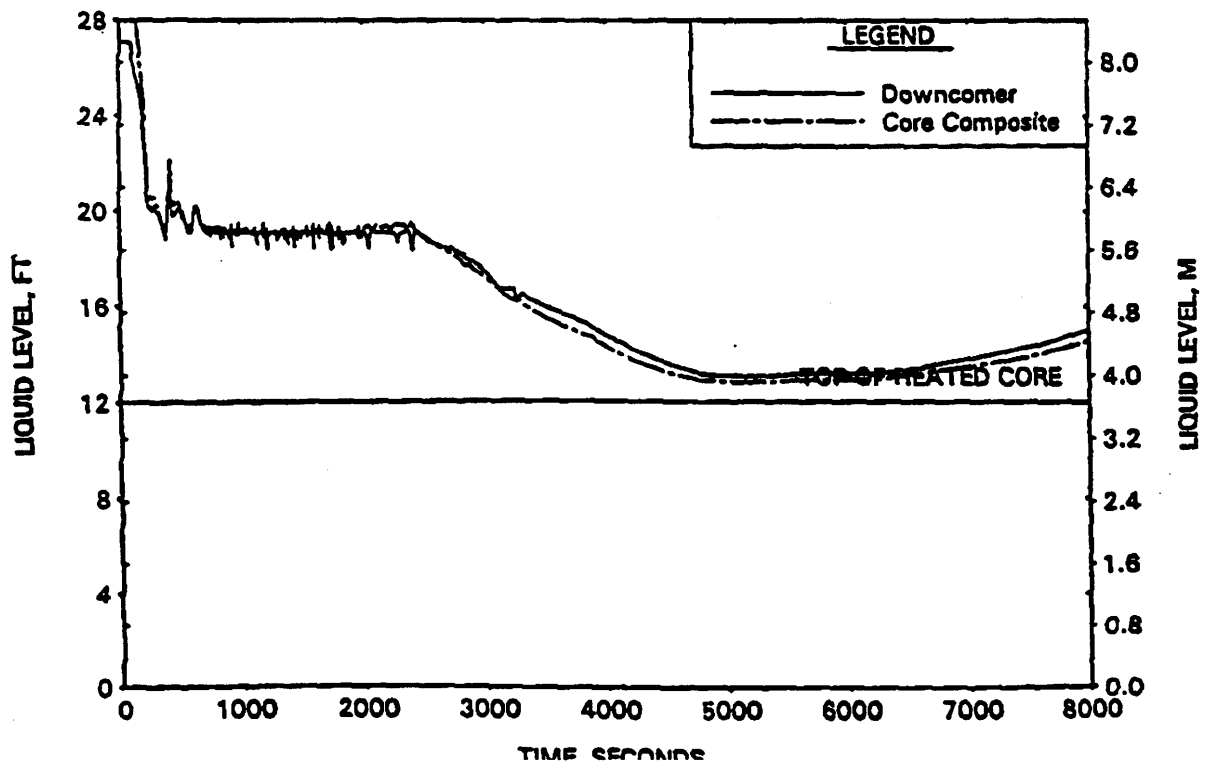
UPDATE - 15

4/00

HPI LINE BREAK SYSTEM PRESSURE  
(OPERATOR ACTION)

CAD FILE: 6596R15.DWG

FIG 14.2-38



**AmerGen**

TMI - UNIT 1

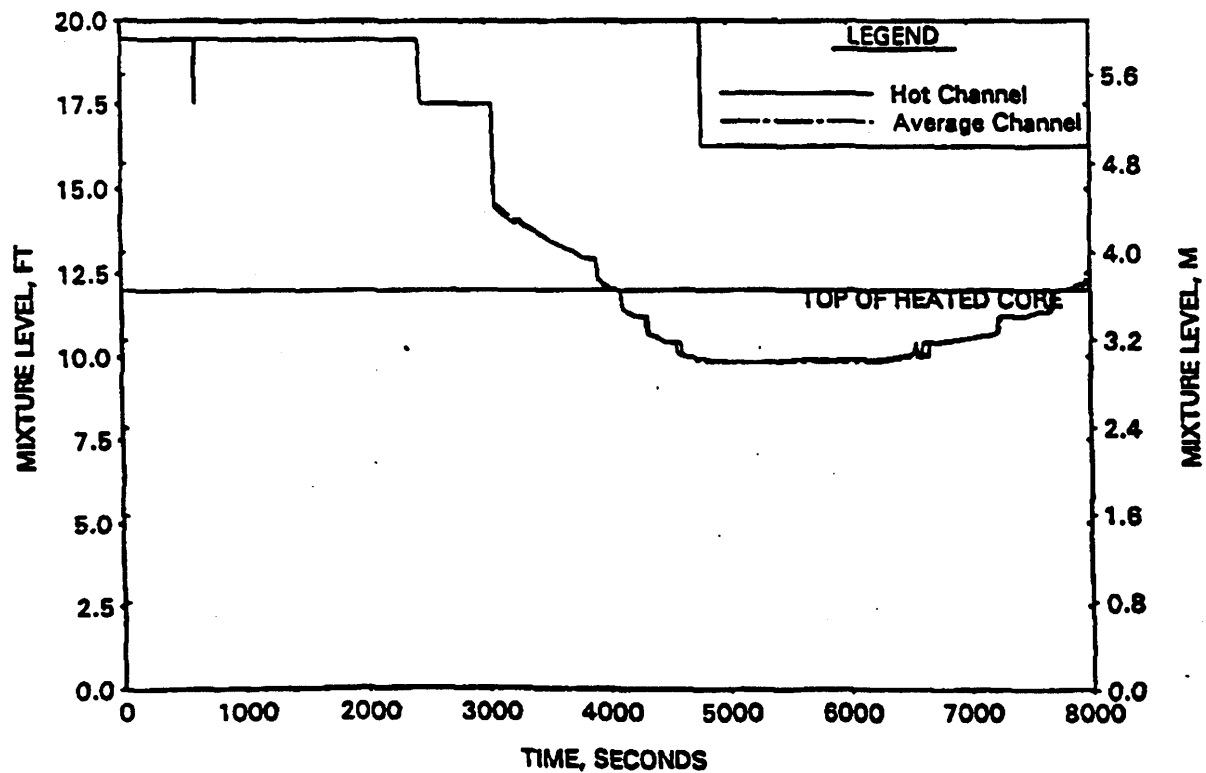
UPDATE - 15

4/00

HPI LINE BREAK COLLAPSED LIQUID LEVELS  
(OPERATOR ACTION)

CAD FILE: 6597R15.DWG

FIG 14.2-39



**AmerGen**

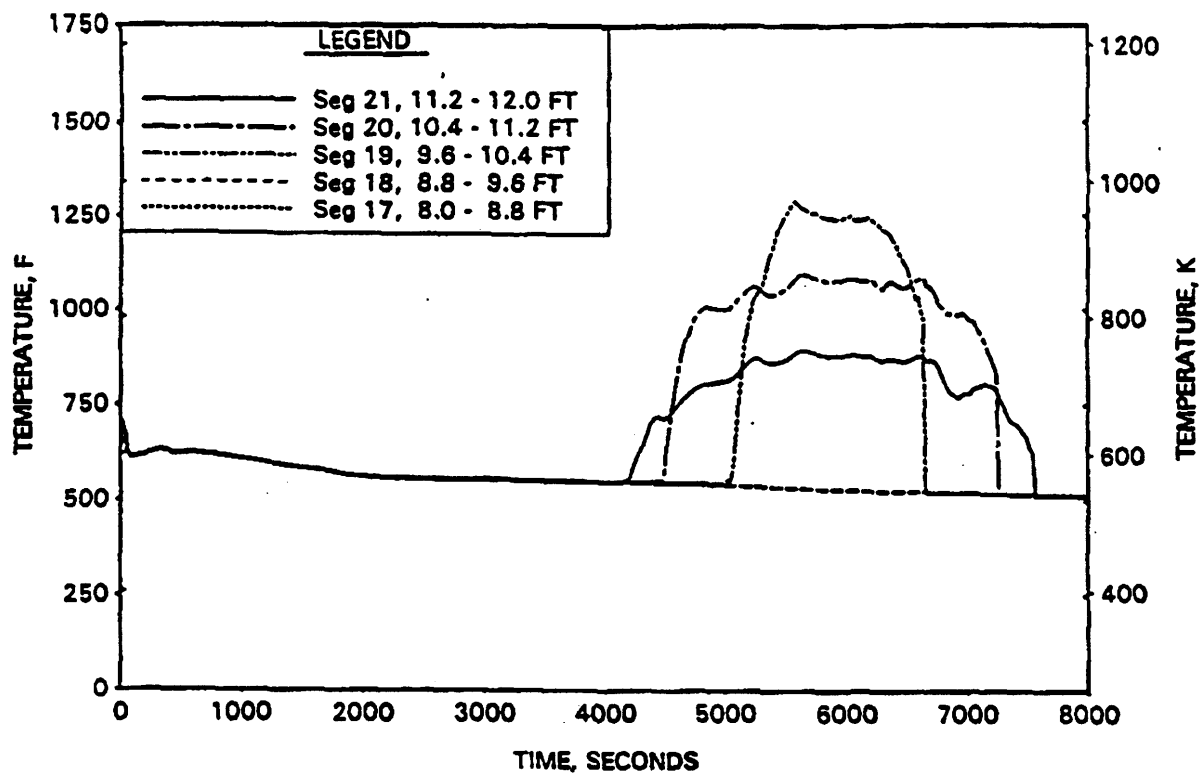
TMI - UNIT 1

UPDATE - 15  
4/00

HPI LINE BREAK MIXTURE LEVELS  
(OPERATOR ACTION)

CAD FILE: 6598R15.DWG

FIG 14.2-40



**AmerGen**

TMI - UNIT 1

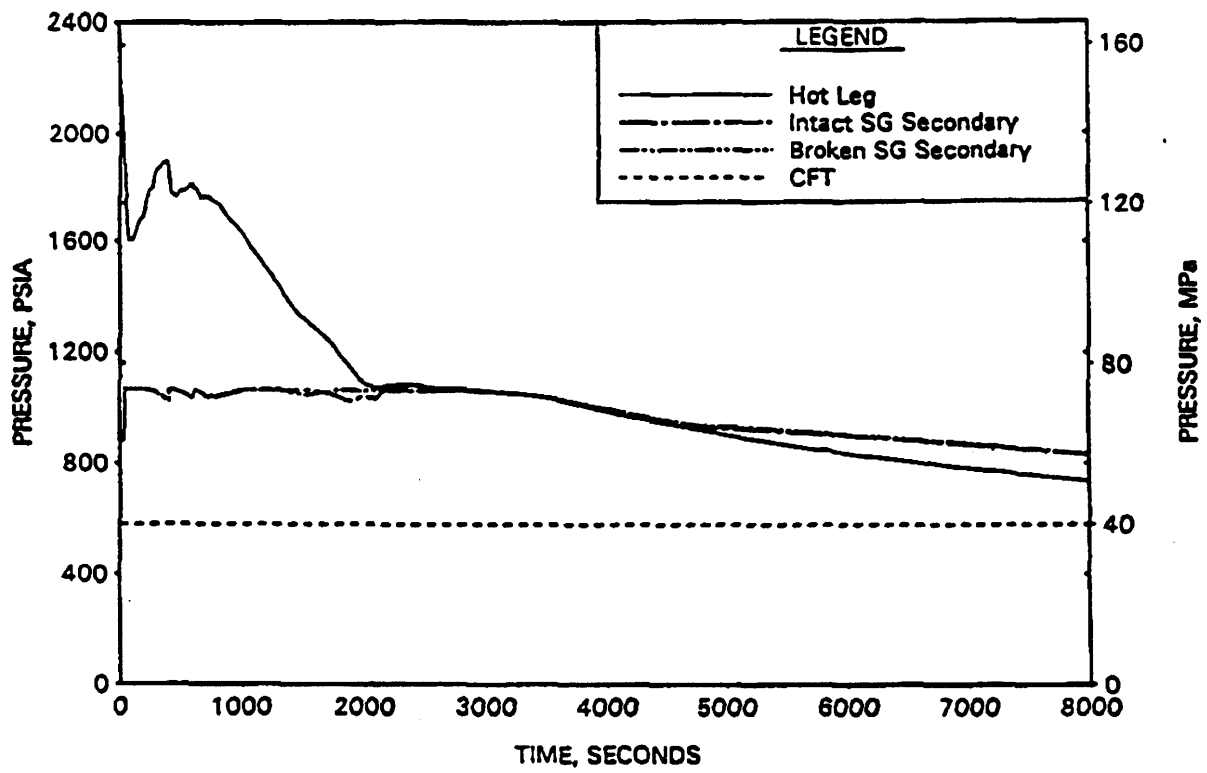
UPDATE - 15

4/00

HPI LINE BREAK HOT CHANNEL CLAD  
TEMPERATURES (OPERATOR ACTION)

CAD FILE: 6599R15.DWG

FIG 14.2-41



**AmerGen**

TMI - UNIT 1

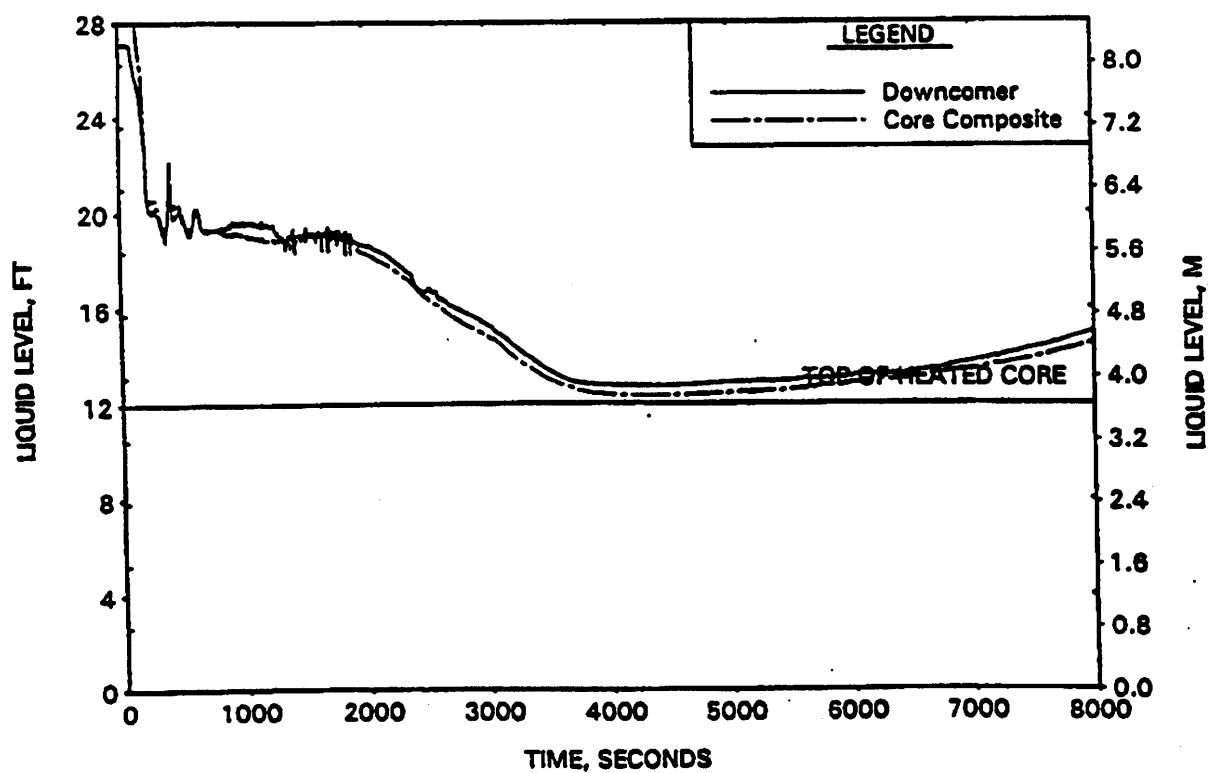
UPDATE - 15

4/00

HPI LINE BREAK SYSTEM PRESSURE (NO  
OPERATOR ACTION)

CAD FILE: 6600R15.DWG

FIG 14.2-42



**AmerGen**

TMI - UNIT 1

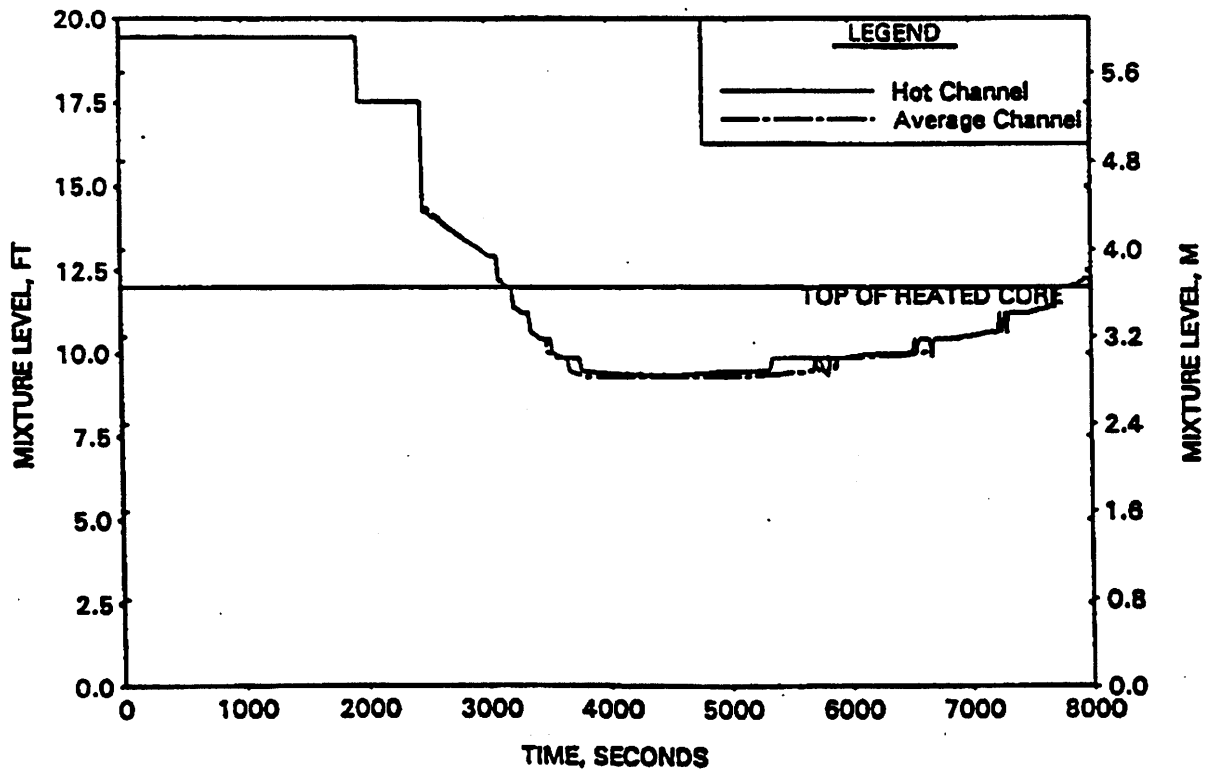
UPDATE - 15

4/00

HPI LINE BREAK COLLAPSED LIQUID LEVELS  
(NO OPERATOR ACTION)

CAD FILE: 6609R15.DWG

FIG 14.2-43



**AmerGen**

TMI - UNIT 1

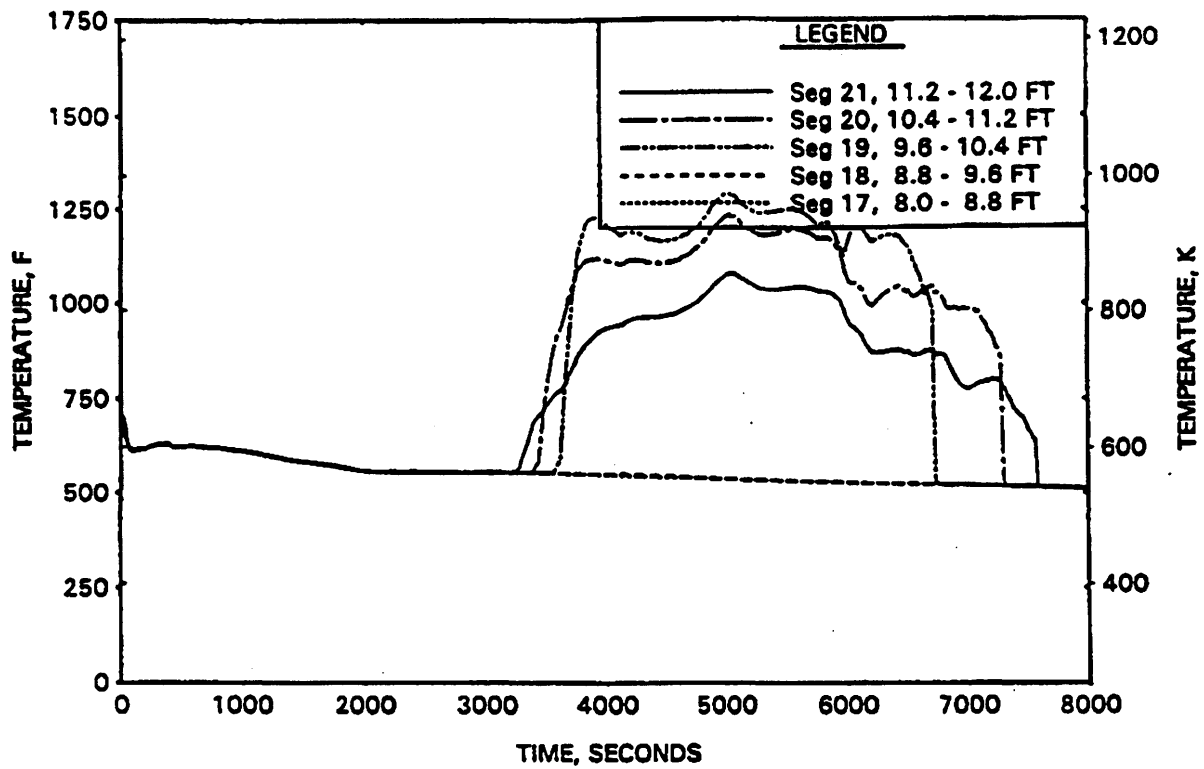
UPDATE - 15

4/00

HPI LINE BREAK MIXTURE LEVELS (NO OPERATOR ACTION)

CAD FILE: 6610R15.DWG

FIG 14.2-44



**AmerGen**

TMI - UNIT 1

UPDATE - 15

4/00

HPI LINE BREAK HOT CHANNEL CLAD  
TEMPERATURES (NO OPERATOR ACTION)

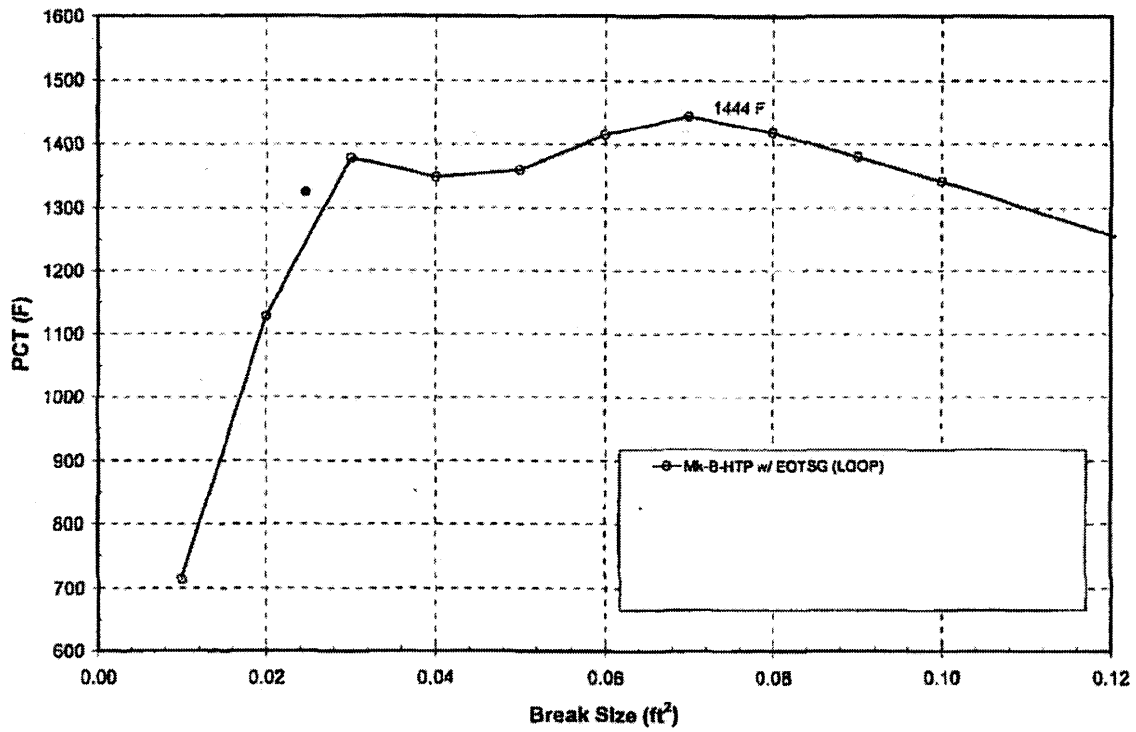
CAD FILE: 6611R15.DWG

FIG 14.2-45



# TMI-1 UFSAR

## Summary of SBLOCA PCT Spectrum – Limiting Break Range

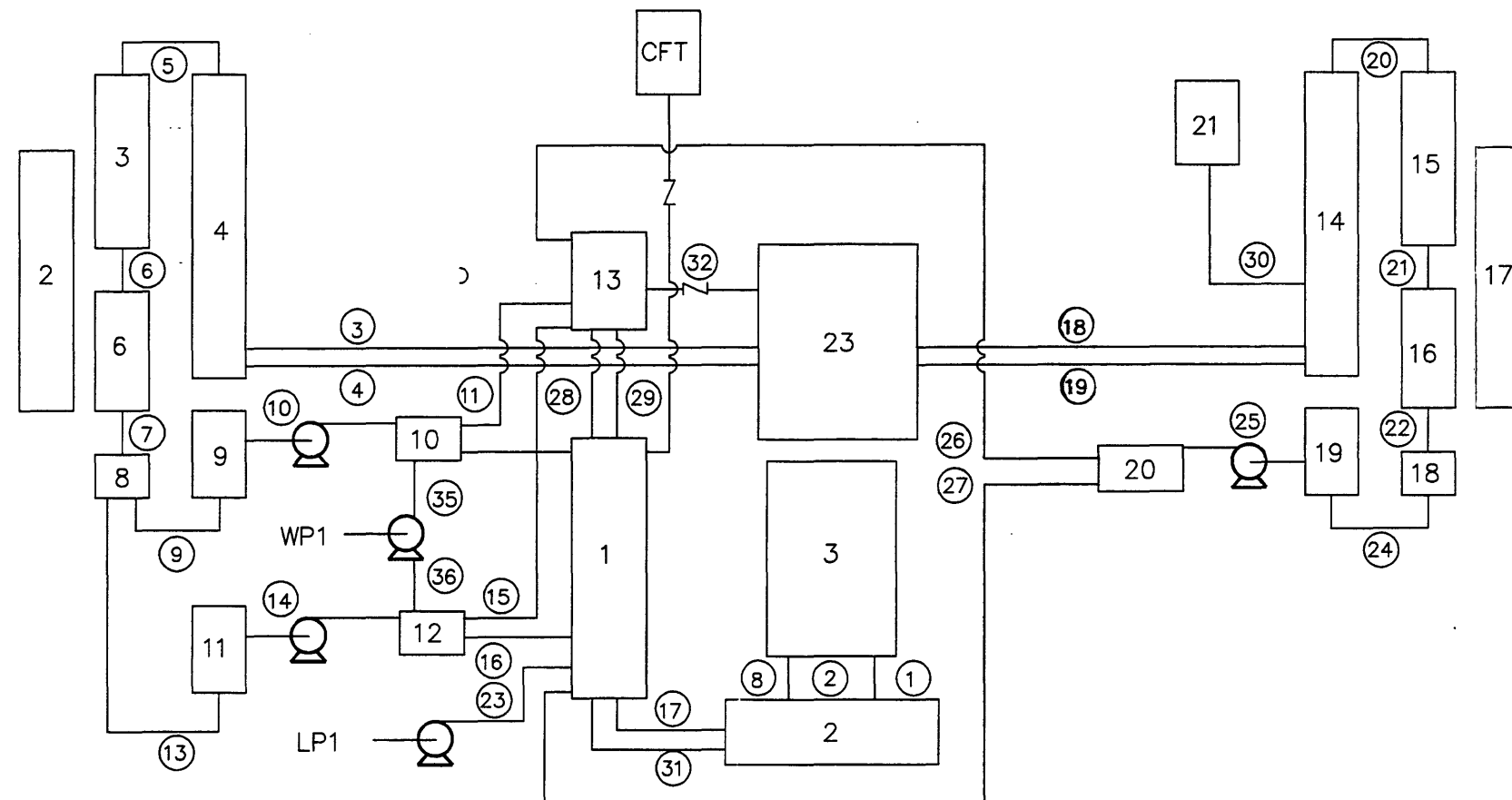


p. 14.FIG-68  
p. 14.FIG-68

**TMI-1**  
**Updated Final Safety Analysis Report**  
**SBLOCA SPECTRUM - PCT VERSUS**  
**BREAK SIZE**

Figure 14.2-68

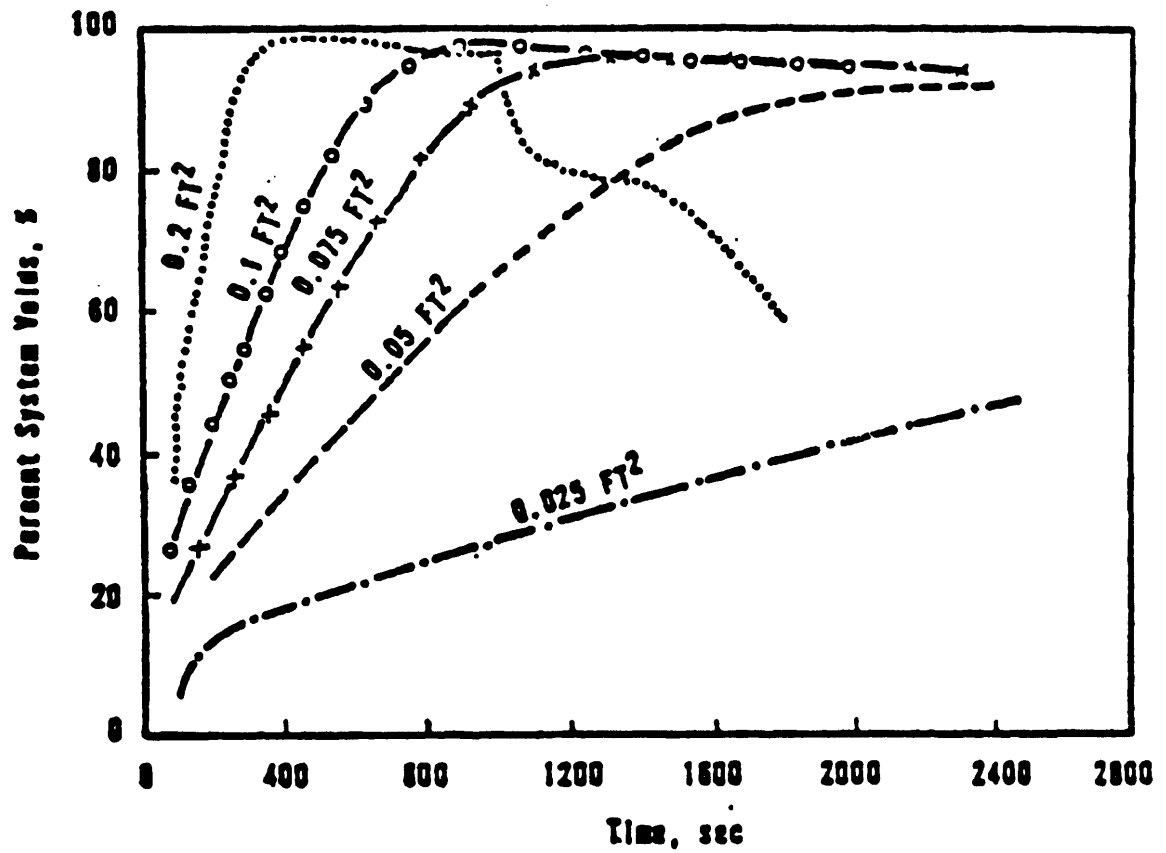
Rev. 20, 04/10

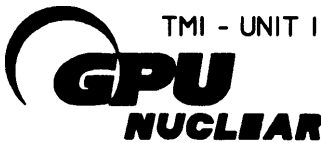


| Node No. | Identification        | Path No.          | Identification     |
|----------|-----------------------|-------------------|--------------------|
| 1        | Downcomer             | 1,2               | Core               |
| 2        | Lower Plenum          | 3,4,18,19         | Hot Leg Piping     |
| 3        | Core                  | 5,20              | Hot Leg,Upper      |
| 4,14     | Hot Leg Piping        | 6,21              | SG Tubes           |
| 5,15     | SG & Upper Head       | 7,22              | SG Lower Head      |
| 6,16     | Steam Generator Tubes | 8                 | Core Bypass        |
| 7,17     | Secondary,SG          | 9,13,24           | Cold Leg Piping    |
| 8,18     | SG Lower Head         | 10,14,25          | Pumps              |
| 9,11,19  | Cold Leg Piping       | 11,12,15,16,26,27 | Cold Leg Piping    |
| 10,12,20 | Cold Leg Piping       | 17,31             | Downcomer          |
| 13       | Upper Downcomer       | 23                | LPI                |
| 21       | Pressurizer           | 28,29             | Upper Downcomer    |
| 22       | Containment           | 30                | Pressurizer        |
| 23       | Upper Plenum          | 32                | Vent Valve         |
|          |                       | 33,34             | Leak & Return Path |
|          |                       | 35,36             | HPI                |
|          |                       | 37                | Containment Sprays |

Note: Additional Data Not Shown on Diagram are:

- Node 22 Is Containment Node
- Path 33 Is Leak Path From Break Node to Containment
- Path 34 Is Return Leak Path From Containment to Break Node
- Path 37 Represents Containment Spray System





**GPU  
NUCLEAR**

TMI - UNIT I

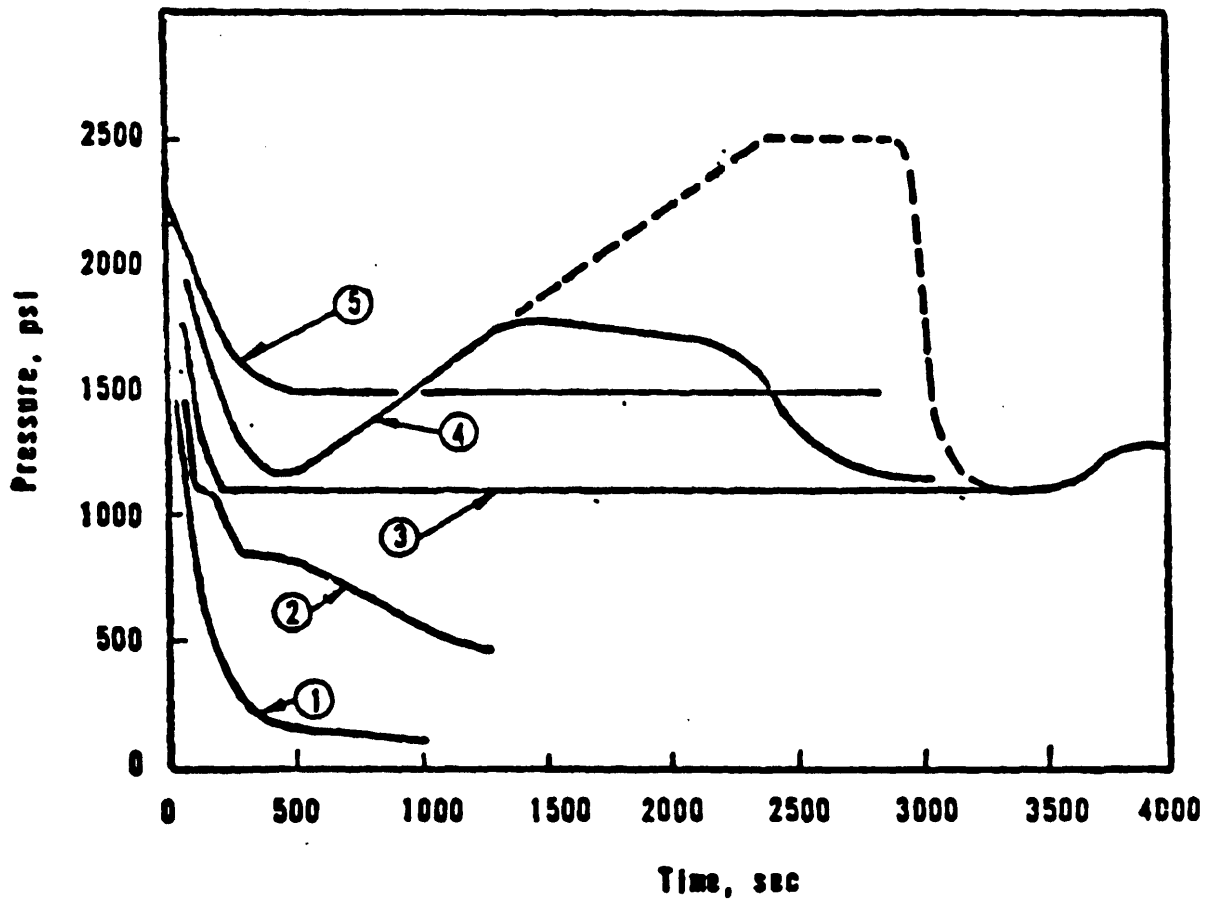
UPDATE - 14  
4/98

BREAK SPECTRUM - AVERAGE SYSTEM  
VOID FRACTION WITH THE RC PUMPS  
OPERATIVE AND 2 HPI PUMPS

CAD FILE: 6602RI4.DWG

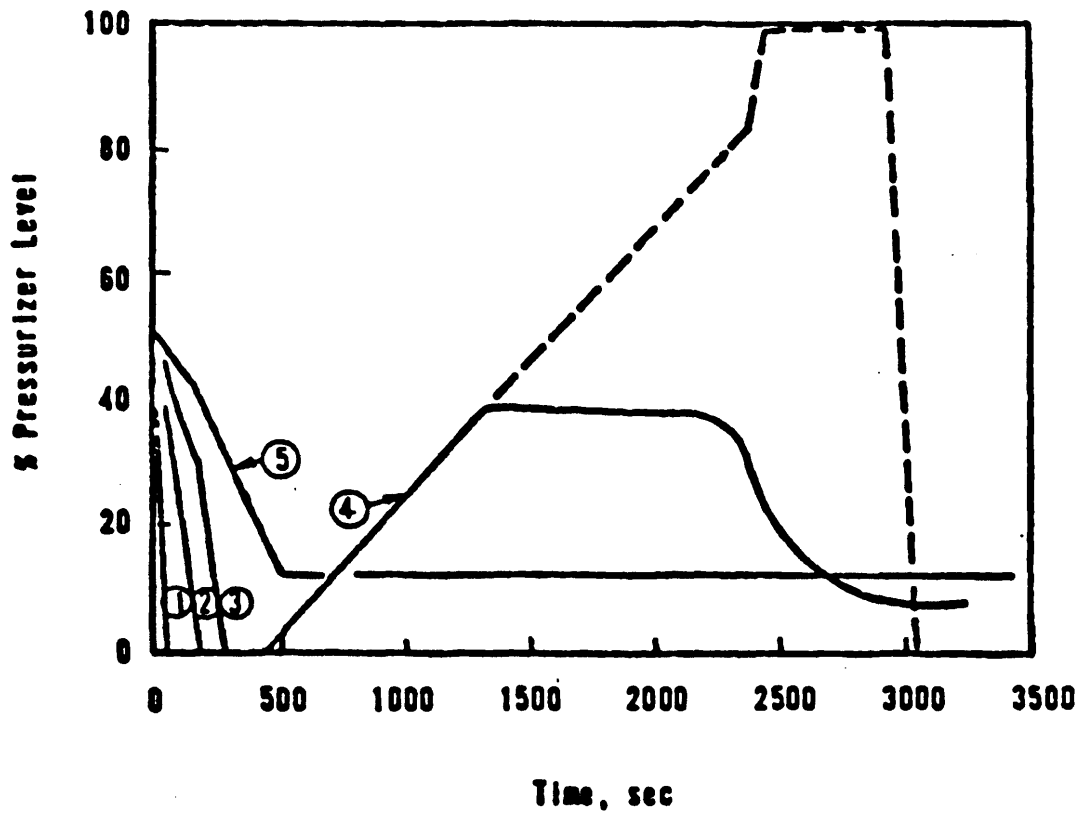
FIG 14.2-48

# PRESSURE VS TIME - SMALL BREAKS WITH AUXILIARY FEEDWATER



TMI - UNIT 1  
**GPU**  
**NUCLEAR**  
PRESSURE VS TIME - SMALL BREAKS  
WITH EMERGENCY FEED WATER  
CAD FILE: 6603R14.DWG  
UPDATE - 14  
4/98  
FIG 14.2-49

# PRESSURIZER LEVEL VS TIME - SMALL BREAKS WITH AUXILIARY FEEDWATER



TMI - UNIT I

**GPU**

**NUCLEAR**

UPDATE - 14

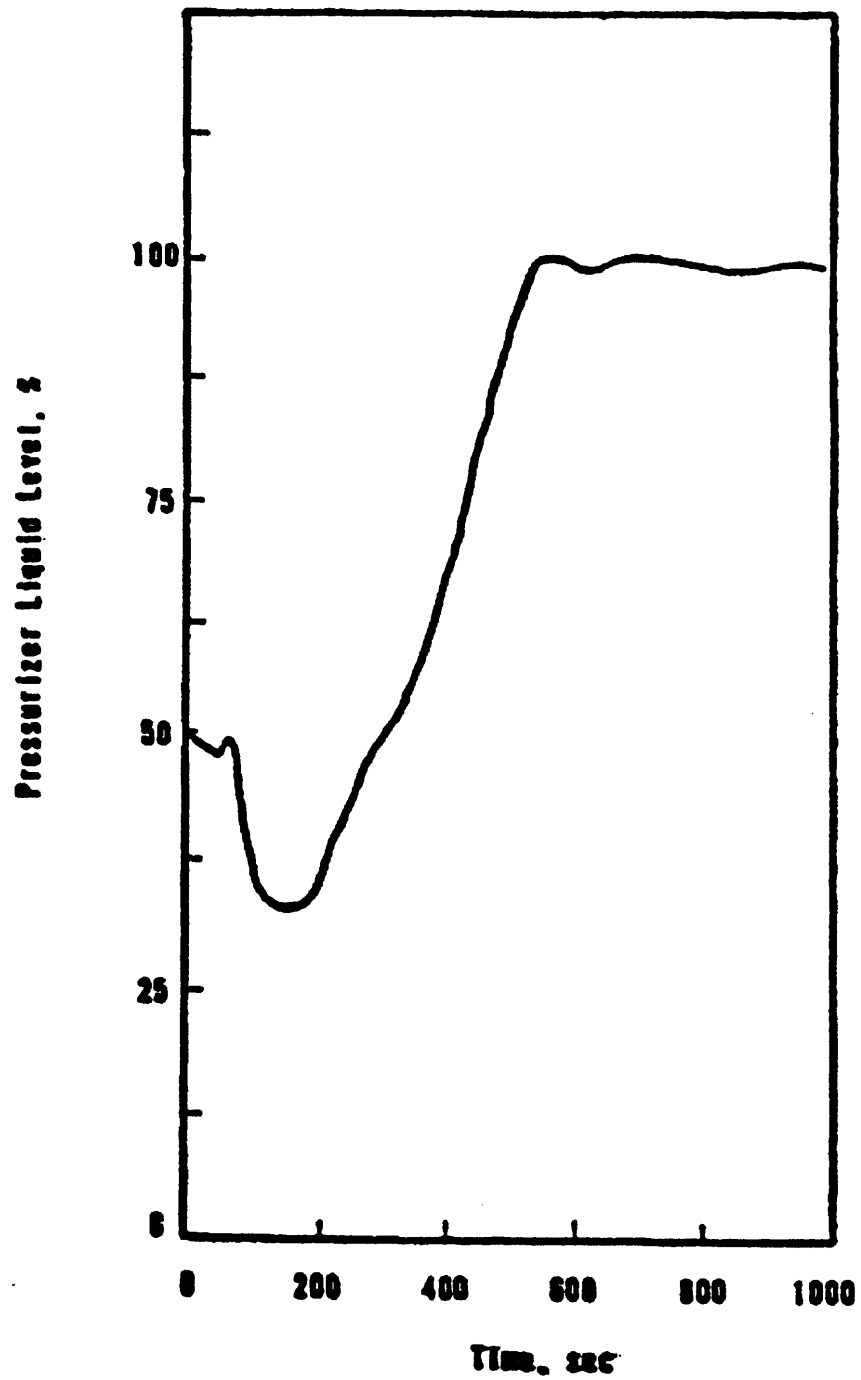
4/98

PRESSURE LEVEL VS TIME - SMALL BREAKS  
WITH EMERGENCY FEED WATER

CAD FILE: 6604RI4.DWG

FIG 14.2-50

# PRESSURIZER LEVEL VS TIME FOR SMALL BREAK IN PRESSURIZER





TMI - UNIT I

**GPU**

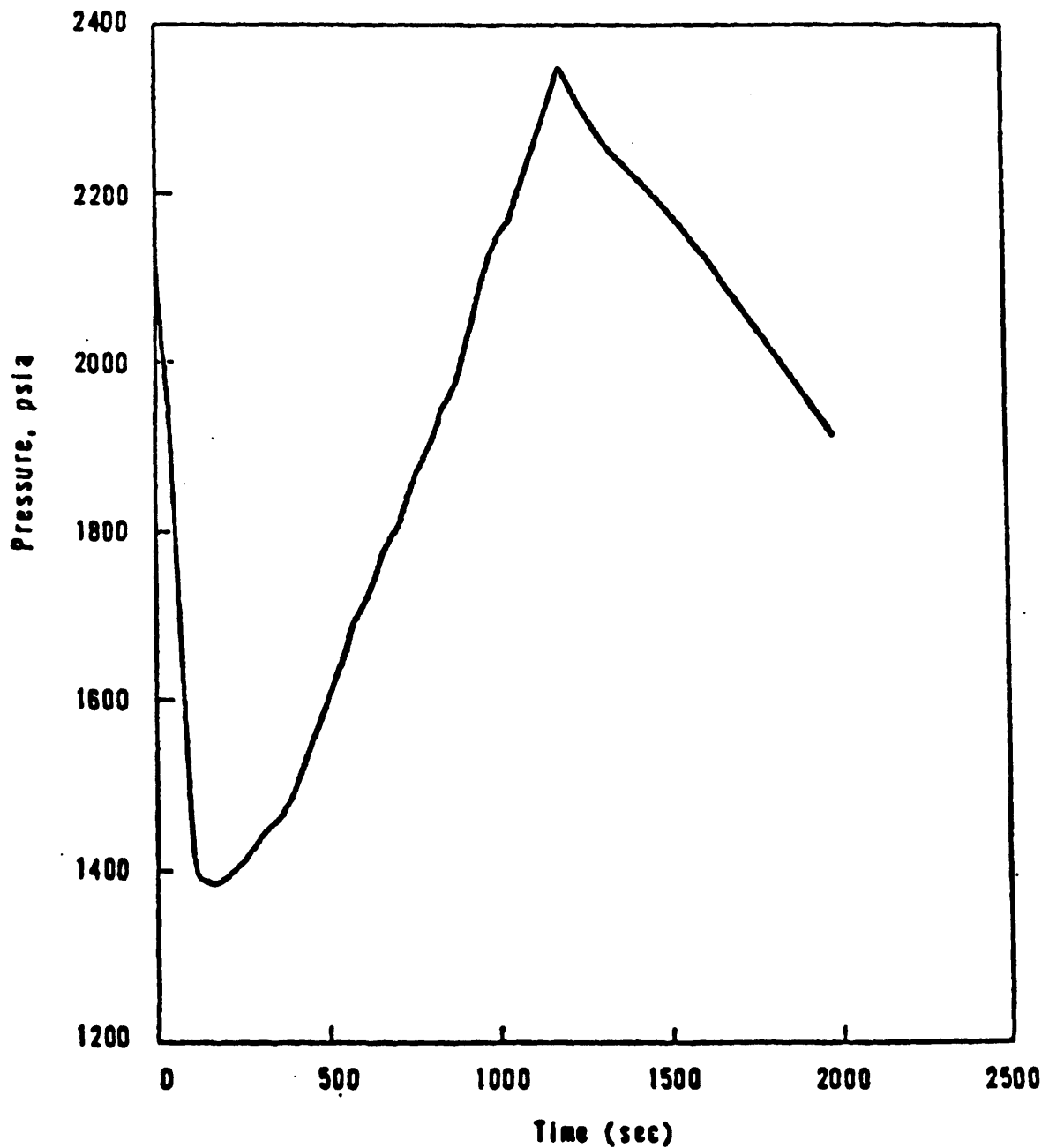
**NUCLEAR**

UPDATE - 14  
4/98

PRESSURIZER LEVEL VS. TIME - SMALL  
BREAK IN PRESSURIZER

CAD FILE: 6626RI4.DWG

FIG 14.2-51



TMI - UNIT 1

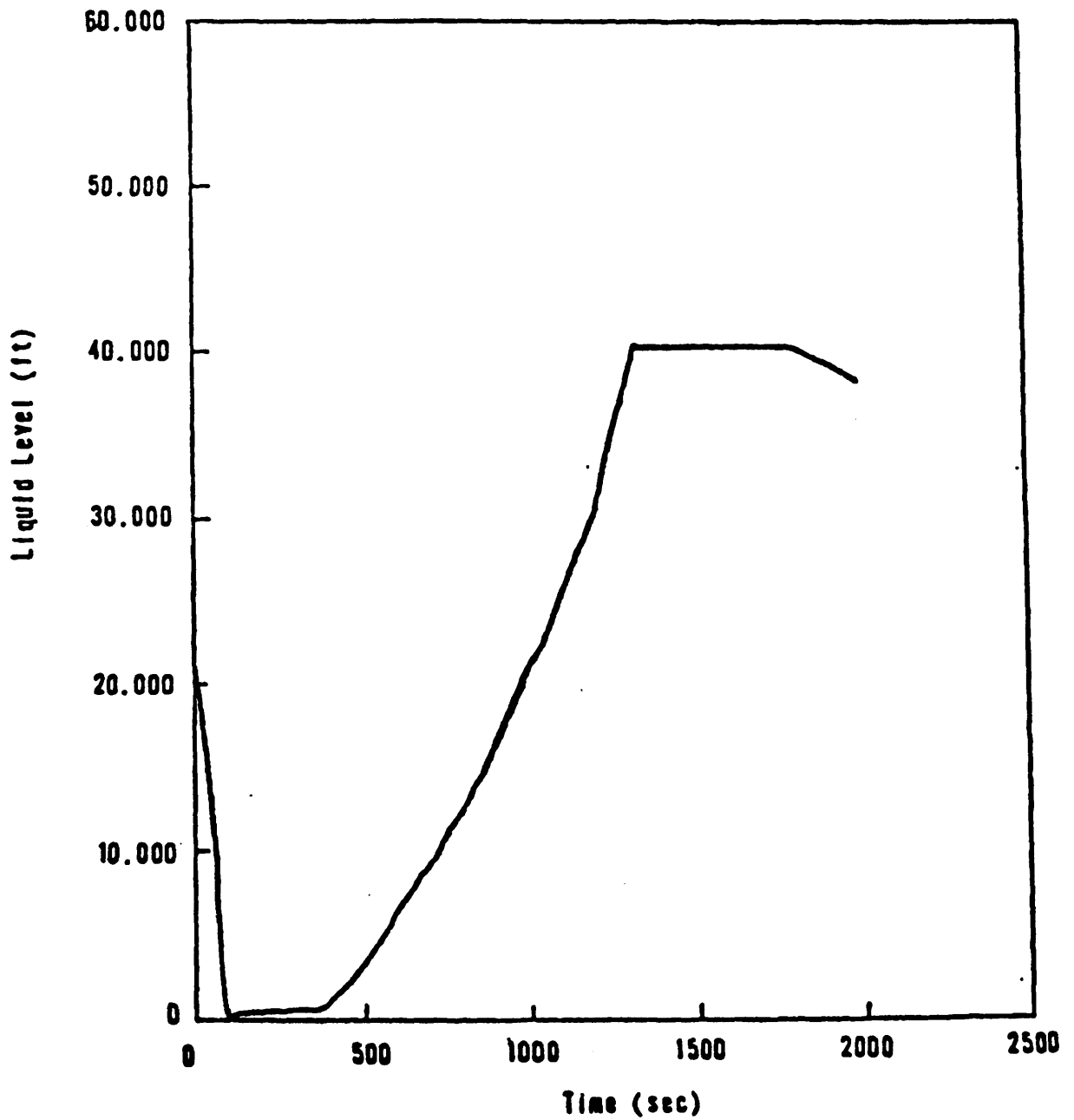
UPDATE - 14  
4/98

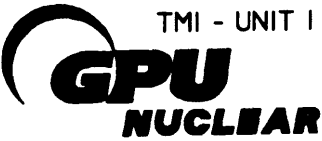
**GPU**  
**NUCLEAR**

0.01 FT<sup>2</sup> COLD LEG BREAK WITH NO EFW  
2 HPI'S & STUCK PORV AT 20 MIN-  
NODE 14 PRESSURE VS. TIME

CAD FILE: 6627RI4.DWG

FIG 14.2-52





TMI - UNIT I

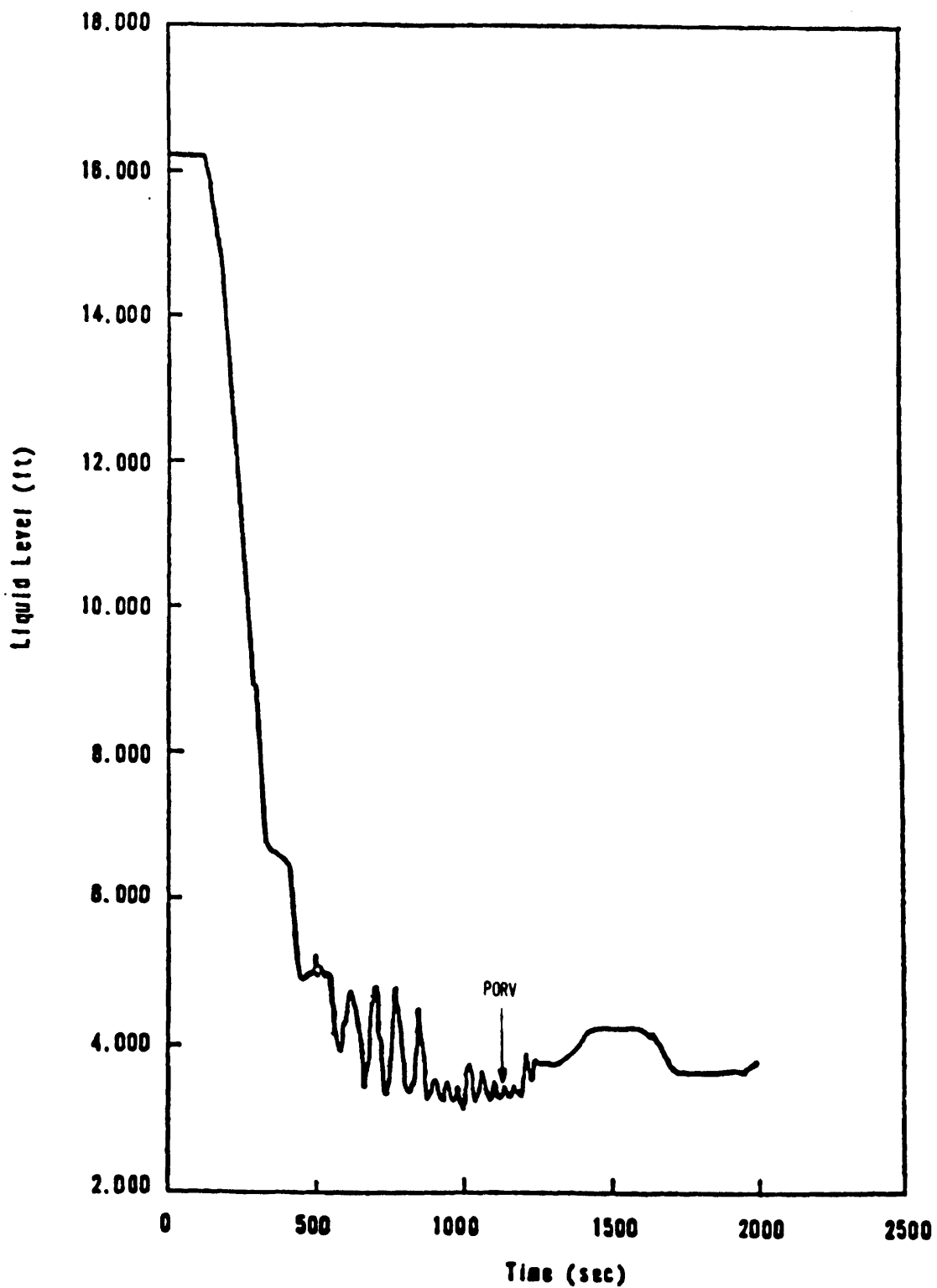
UPDATE - 14  
4/98

0.01 FT<sup>2</sup> COLD LEG BREAK WITH NO EFW  
2 HPI'S & STUCK PORV AT 20 MIN-  
PRESSURIZER LIQUID LEVEL

CAD FILE: 6628RI4.DWG

FIG 14.2-53



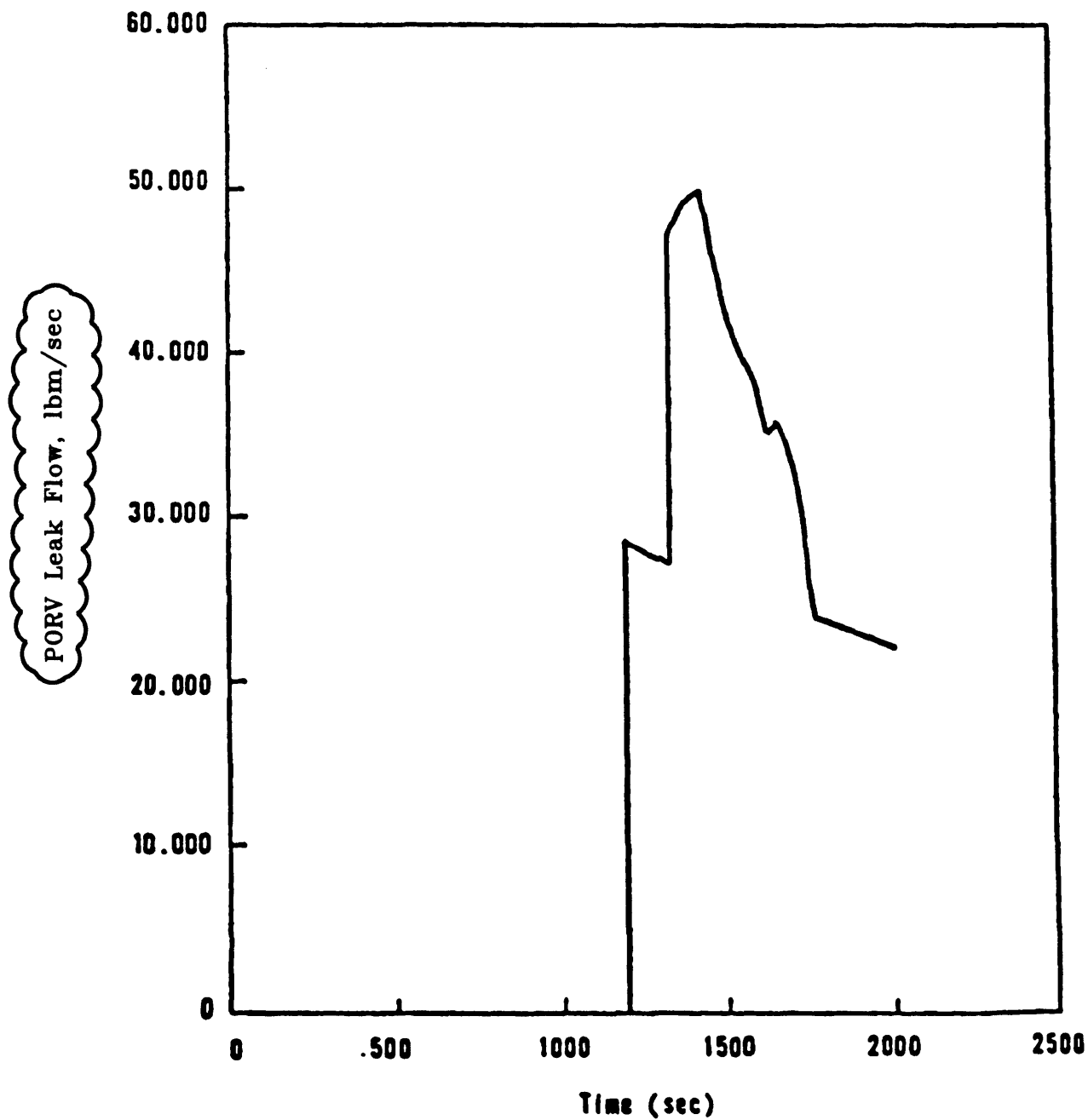


TMI - UNIT 1  
**GPU**  
**NUCLEAR**

UPDATE - 14  
 4/98

0.01 FT<sup>2</sup> COLD LEG BREAK WITH NO EFW  
 2 HPI's & STUCK PORV AT 20 MIN-  
 UPPER PLENUM LIQUID LEVEL

CAD FILE: 6629RI4.DWG  
 FIG 14.2-54

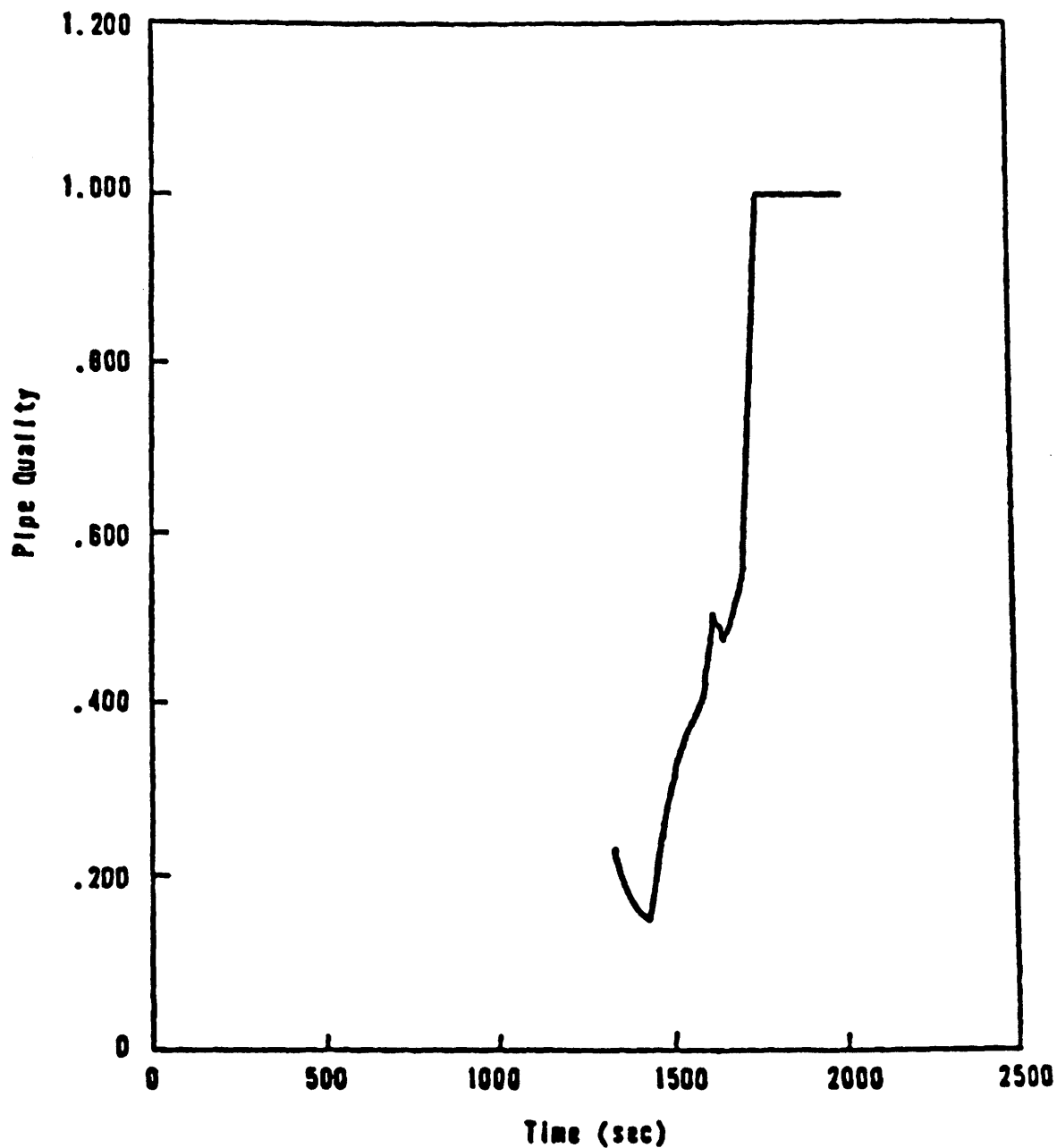


TMI - UNIT 1  
UPDATE - 14  
4/98

**GPU**  
**NUCLEAR**

0.01 FT<sup>2</sup> COLD LEG BREAK WITH NO EFW  
2 HPI'S & STUCK PORV AT 20 MIN-  
PORV LEAK FLOW

CAD FILE: 6613R14.DWG  
FIG 14.2-55





TMI - UNIT 1

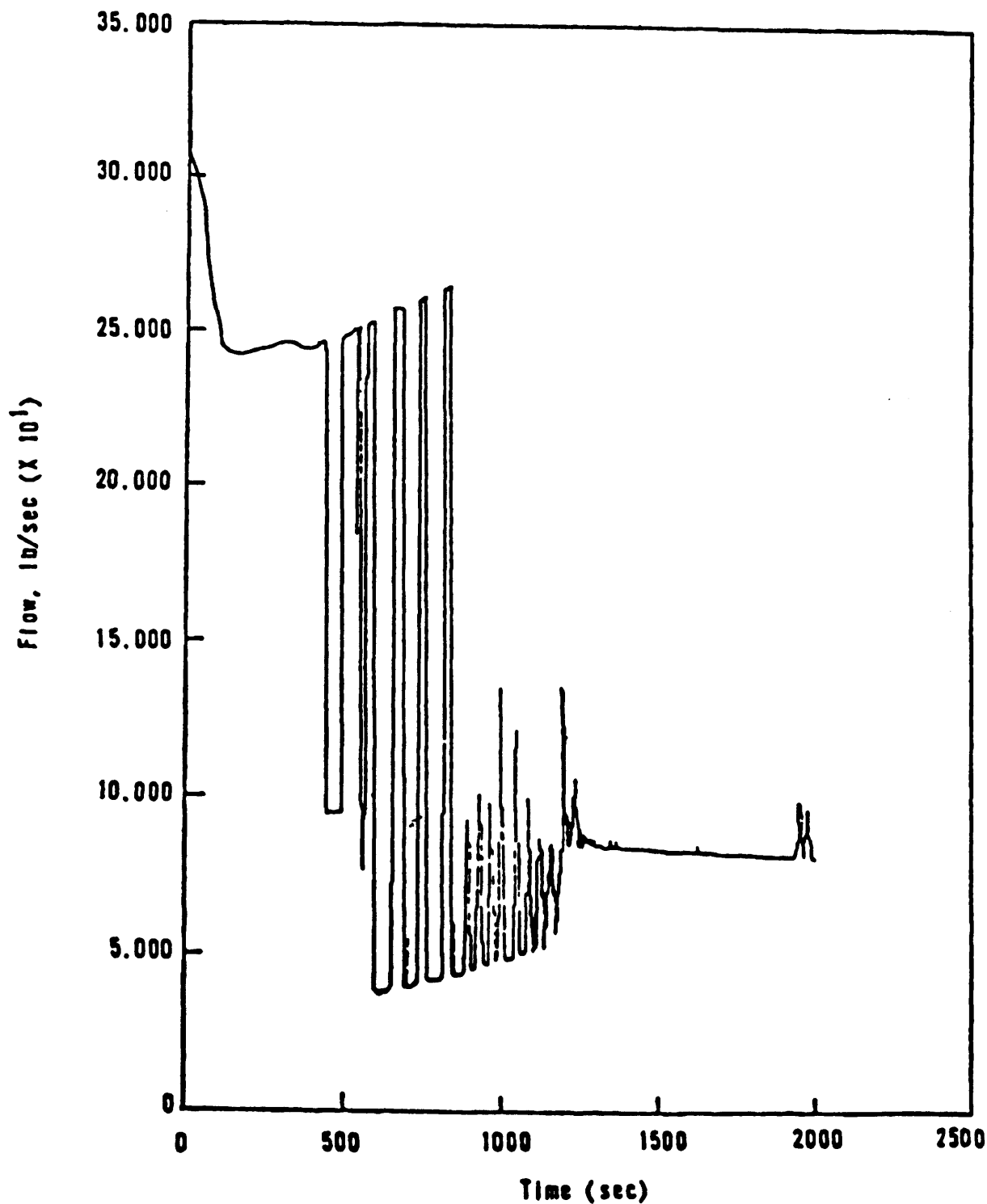
UPDATE - 14  
4/98

**GPU  
NUCLEAR**

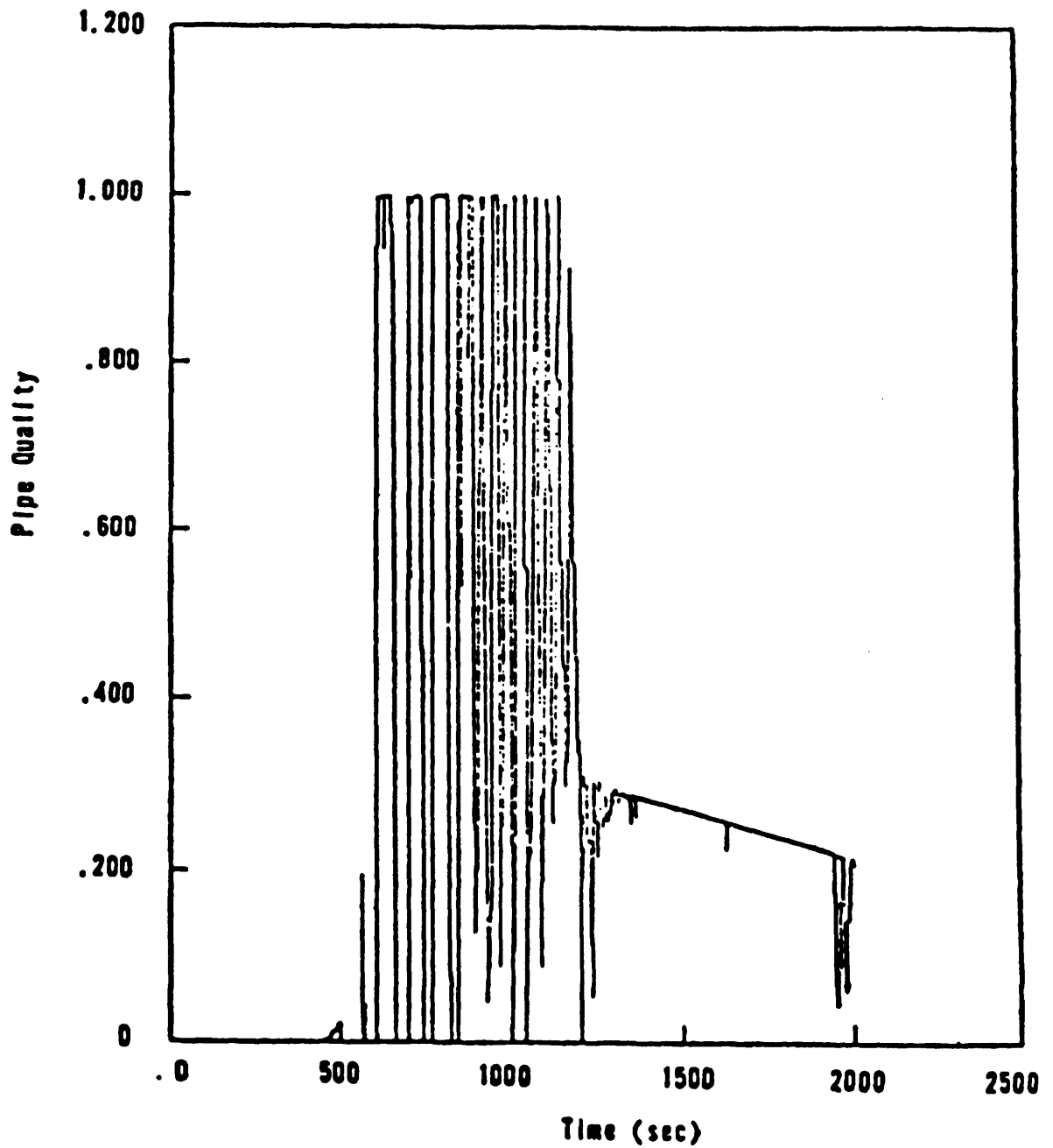
0.01 FT<sup>2</sup> COLD LEG BREAK WITH NO EFW  
2 HPI'S & STUCK PORV AT 20 MIN-  
PORV LEAK FLOW QUALITY

CAD FILE: 6614RI4.DWG

FIG 14.2-56



TMI - UNIT 1  
**GPU**  
**NUCLAR**  
0.01 FT<sup>2</sup> COLD LEG BREAK WITH NO EFW  
2 HPI's & STUCK PORV AT 20 MIN-  
COLD LEG BREAK FLOW  
CAD FILE: 6615RI4.DWG  
UPDATE - 14  
4/98  
FIG 14.2-57



TMI - UNIT 1

**GPU**

**NUCLEAR**

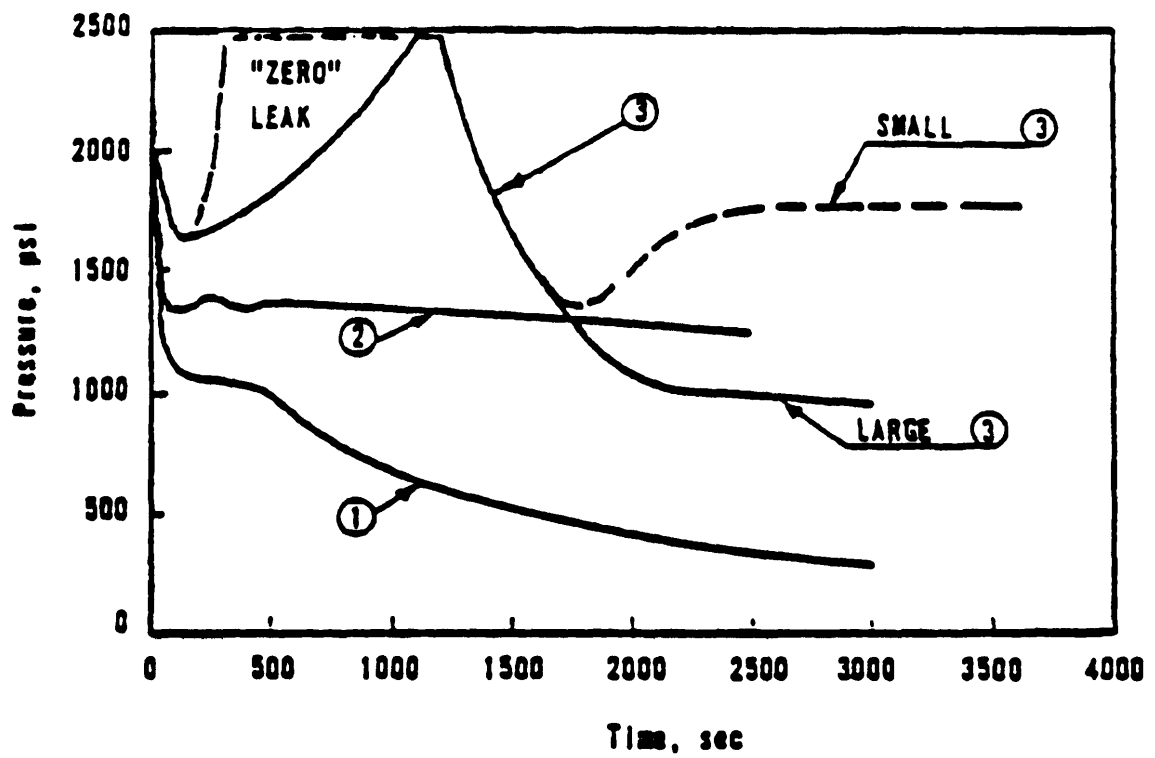
UPDATE - 14

4/98

0.01 FT<sup>2</sup> COLD LEG BREAK WITH NO EFW  
 2 HPI's & STUCK PORV AT 20 MIN-  
 COLD LEG BREAK LEAK FLOW QUALITY

CAD FILE: 6616RI4.DWG

FIG 14.2-58





**GPU  
NUCLEAR**

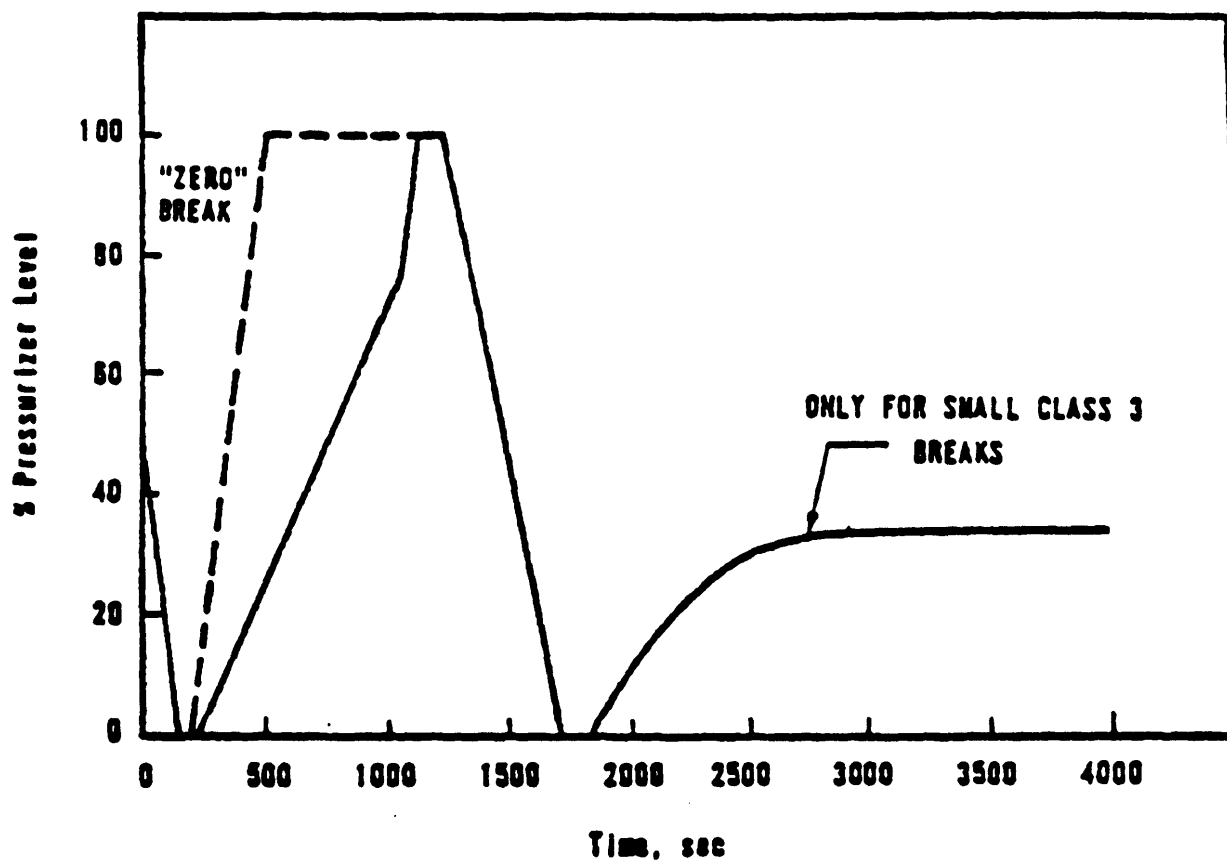
TMI - UNIT I

UPDATE - 14  
4/98

SYSTEM PRESSURE VS. TIME - SMALL  
BREAKS W/O EMERGENCY FEEDWATER

CAD FILE: 6617RI4.DWG

FIG 14.2-59



TMI - UNIT I

**GPU**

**NUCLEAR**

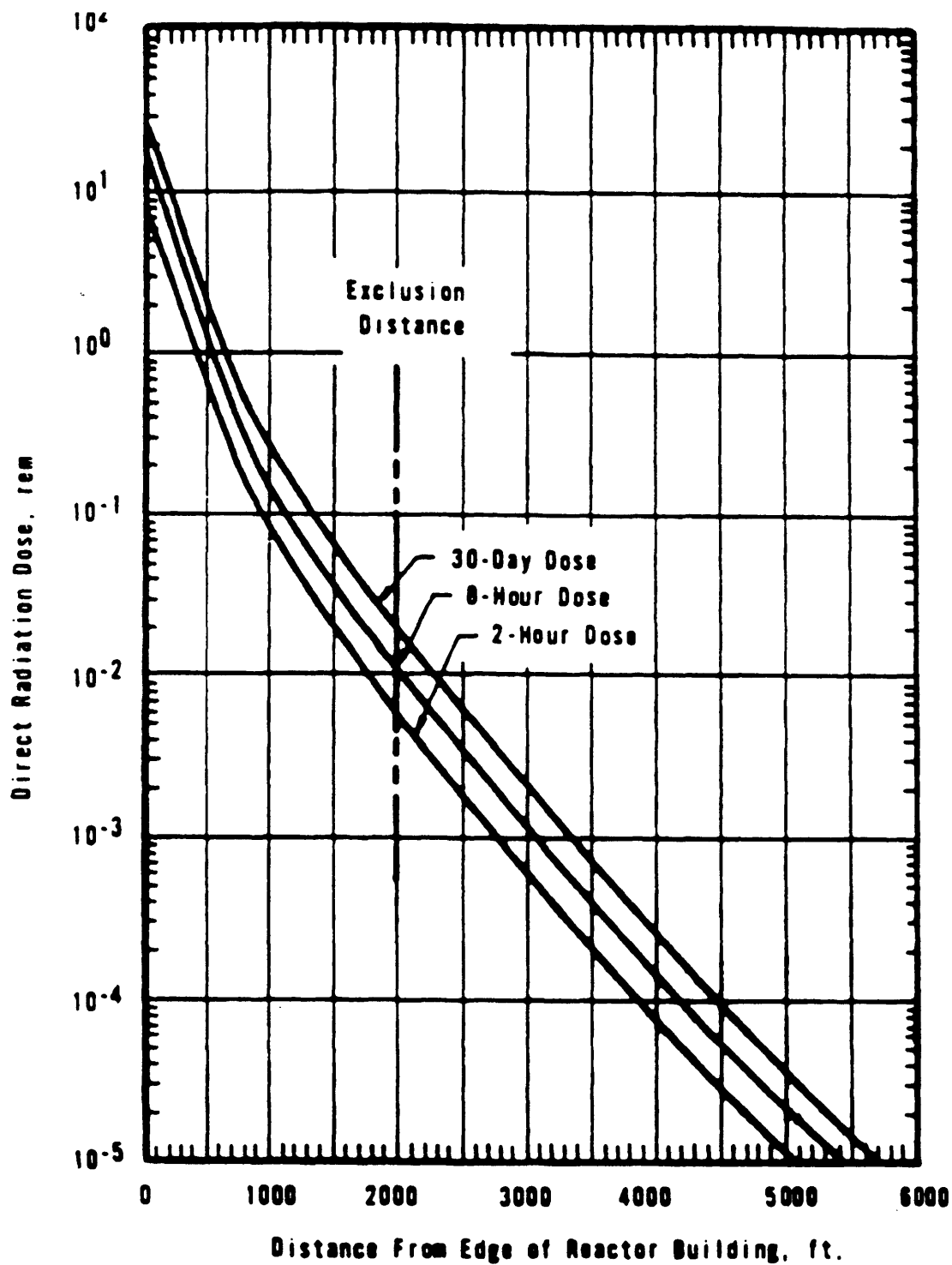
UPDATE - 14

4/98

PRESSURIZER LEVEL VS. TIME - CLASS 3 BREAKS W/O EMERGENCY FEEDWATER

CAD FILE: 6618RI4.DWG

FIG 14.2-60





TMI - UNIT 1

UPDATE - 14  
4/98

INTEGRATED DIRECT DOSE FOLLOWING MHA WITH  
3-1/2 FT. REACTOR BUILDING WALL THICKNESS

CAD FILE: 66I9RI4.DWG

FIG 14.2-61



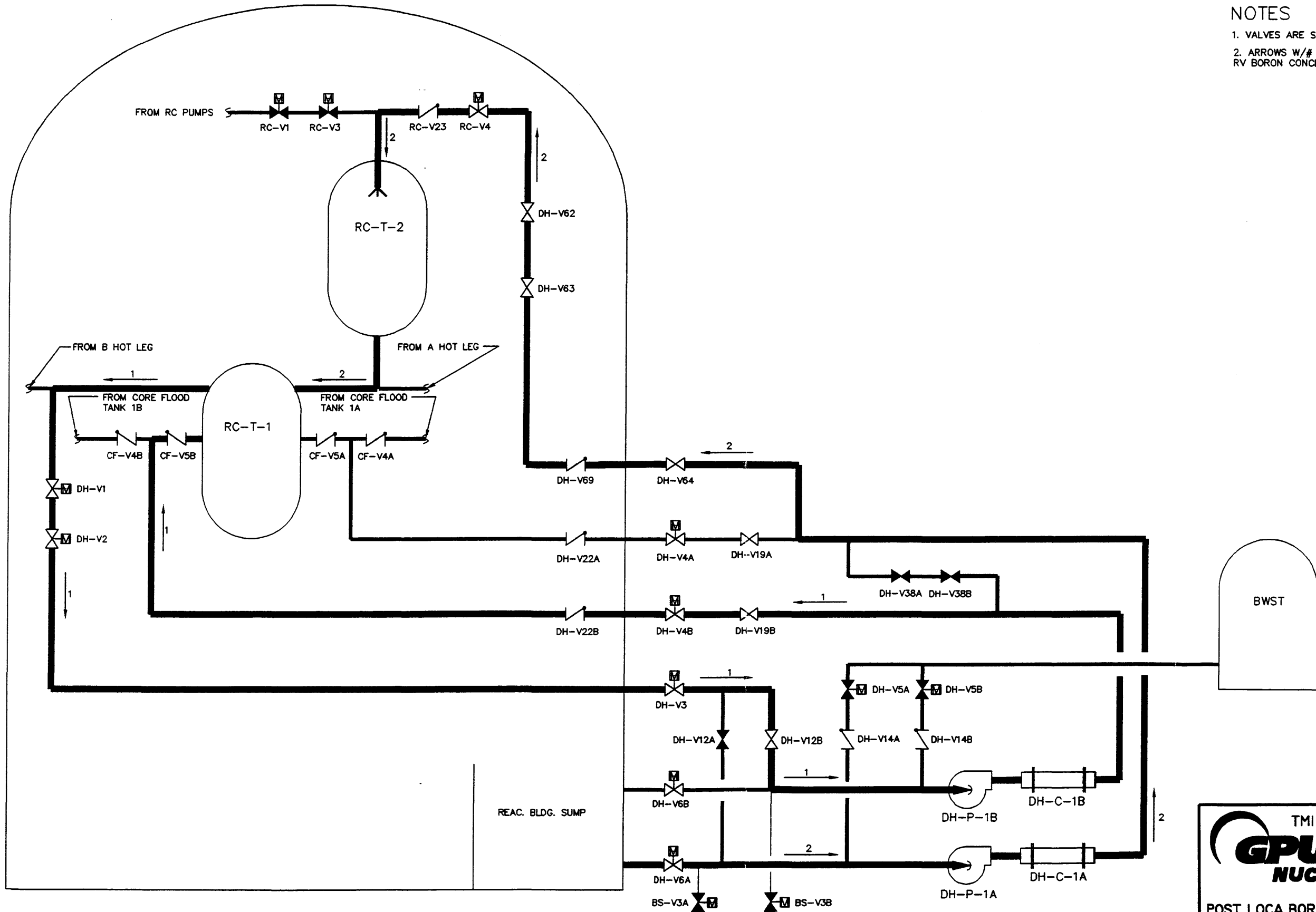
## TMI UFSAR

Figure 14.2-62

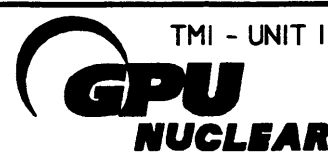
Deleted

NOTES

1. VALVES ARE SHOWN IN TYPICAL POST LOCA POSITION
2. ARROWS W/# INDICATE TWO ACTIVE FLOW PATHS FOR RV BORON CONCENTRATION CONTROL



p. 14.FIG-85



TMI - UNIT 1

UPDATE - 14  
4/98

POST LOCA BORON CONCENTRATION CONTROL  
FLOW PATHS

CAD FILE: 6550R0.DWG

SHEET 1 OF 1  
FIG 14.2-63