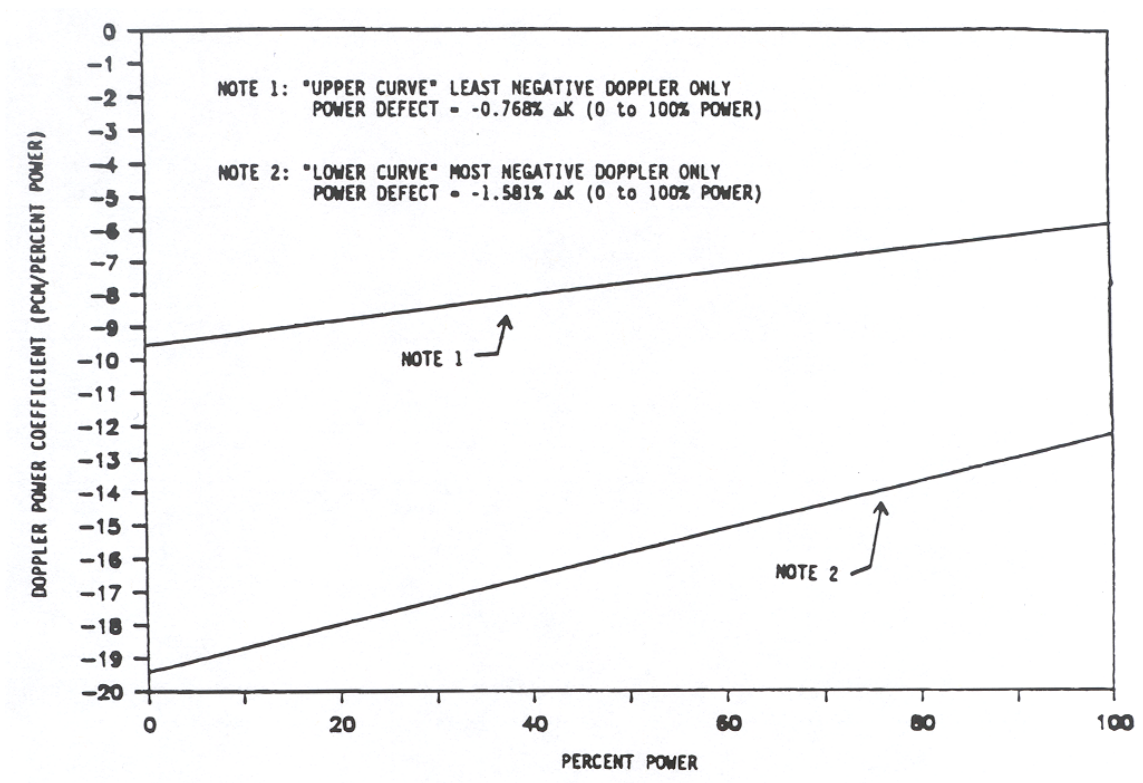


UFSAR Revision 30.0



Revision: 19.1		Change Description: UCR-1719	
AMERICAN ELECTRIC POWER COOK NUCLEAR PLANT NUCLEAR GENERATION GROUP BRIDGMAN, MICHIGAN		Title: Doppler Power Coefficient Used In Safety Analyses (where 100% power is 3588 MWt)	
		UFSAR Figure: 14.1.0-1	Sheet 1 of 1

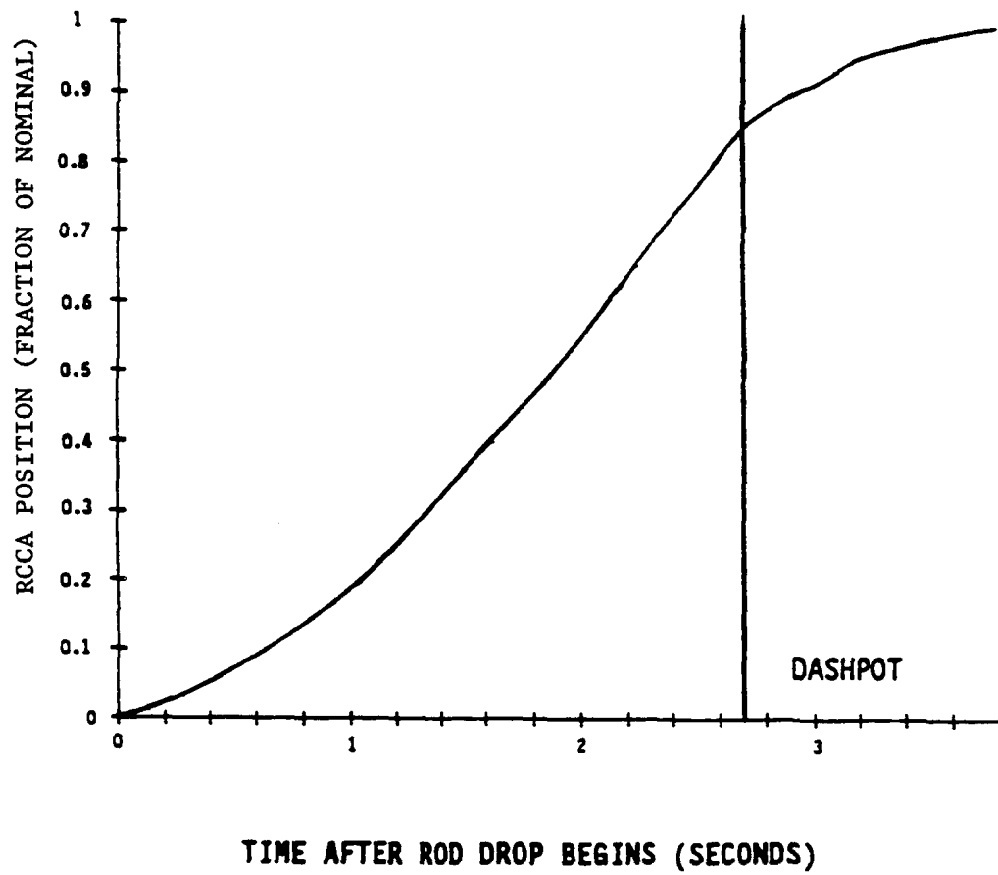


Figure 14.1.0-2 RCCA POSITION VS. TIME AFTER ROD DROP BEGINS

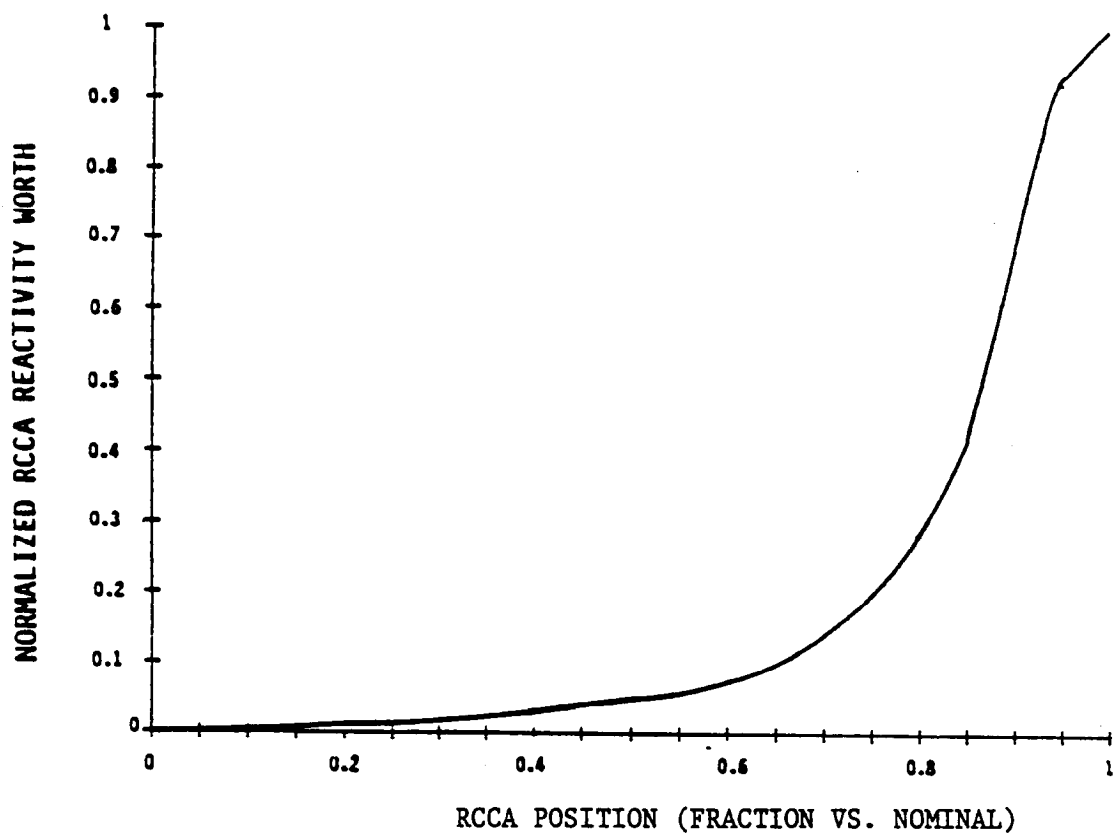


Figure 14.1.0-3 NORMALIZED RCCA REACTIVITY WORTH VS. RCCA POSITION

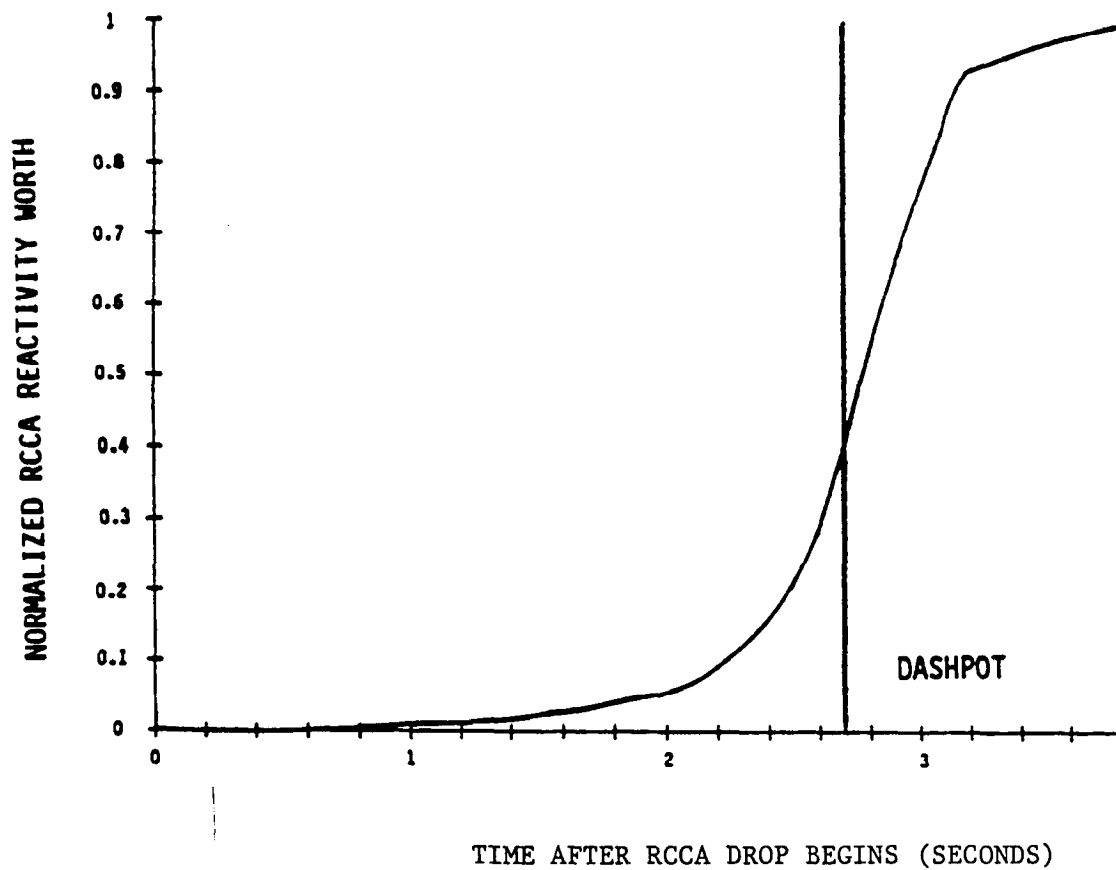
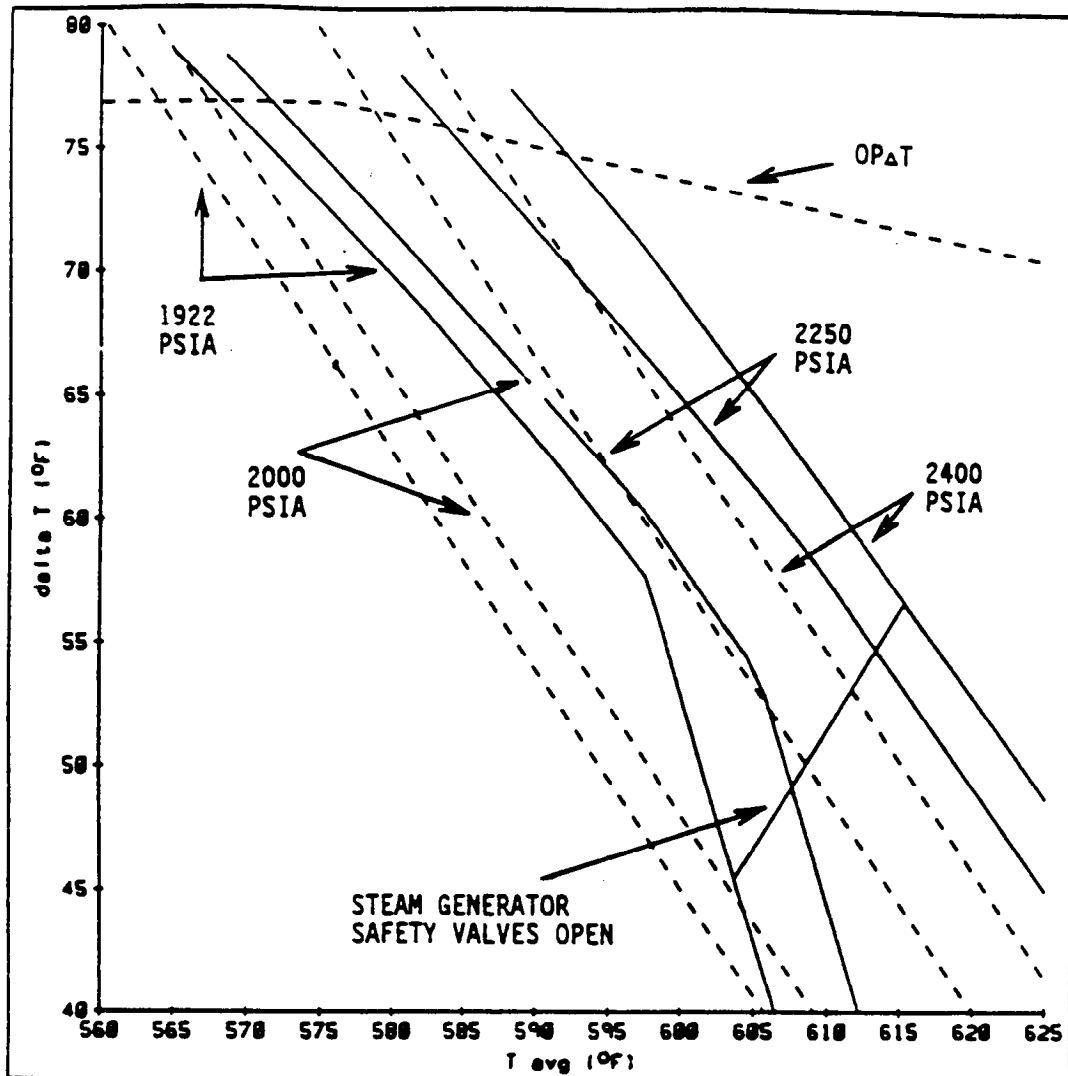


Figure 14.1.0-4 NORMALIZED RCCA REACTIVITY WORTH VS. TIME AFTER RCCA DROP BEGINS



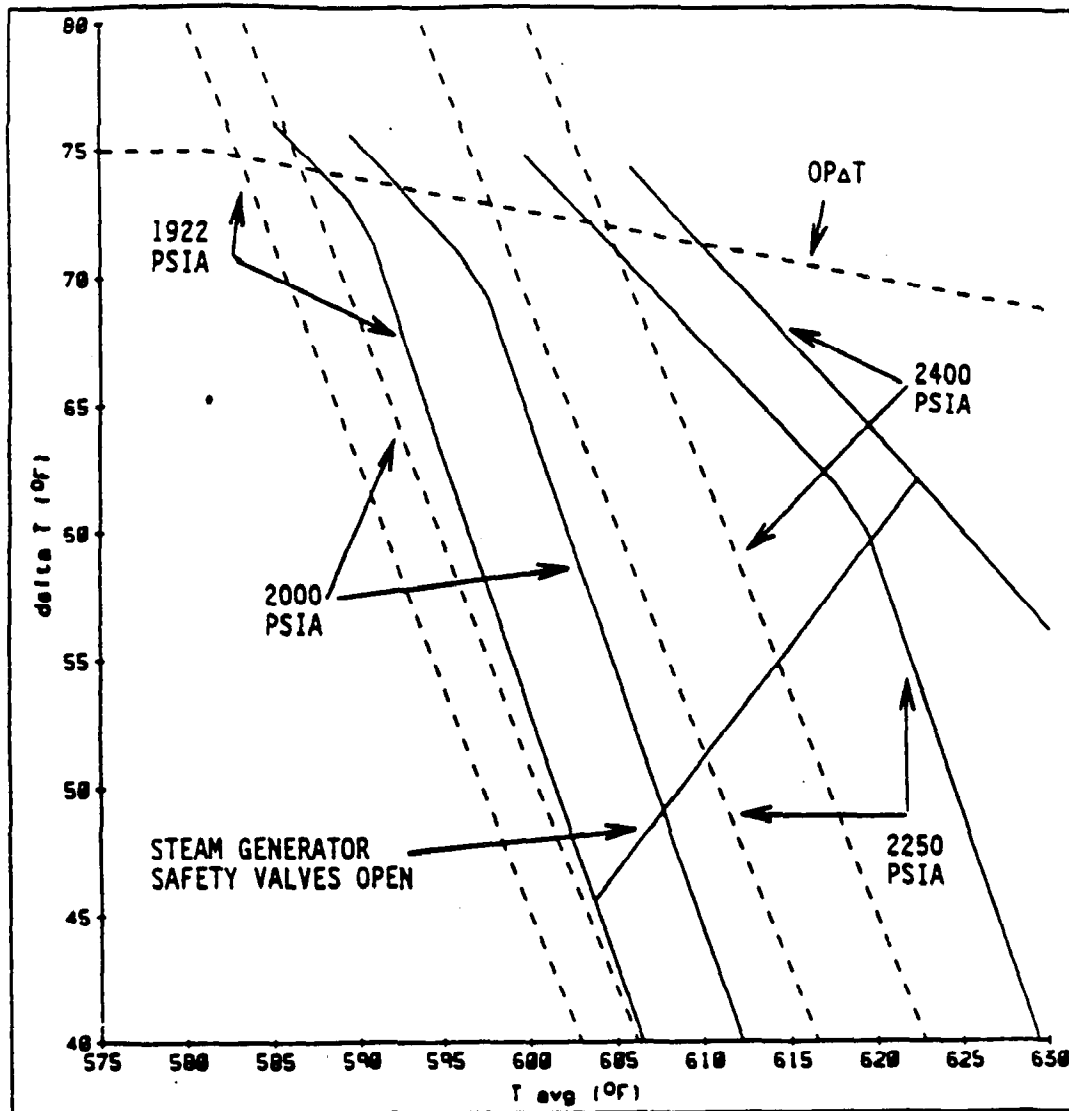
----- $OP\Delta T$ Protection Lines

_____ Core Thermal Safety Limits

Figure 14.1.0-5 Overtemperature and Overpower ΔT Protection

Core Conditions

- Transition Cycles
- Nominal Vessel Average Temperature = 576°F
- Nominal Pressurizer Pressure = 2250 psia



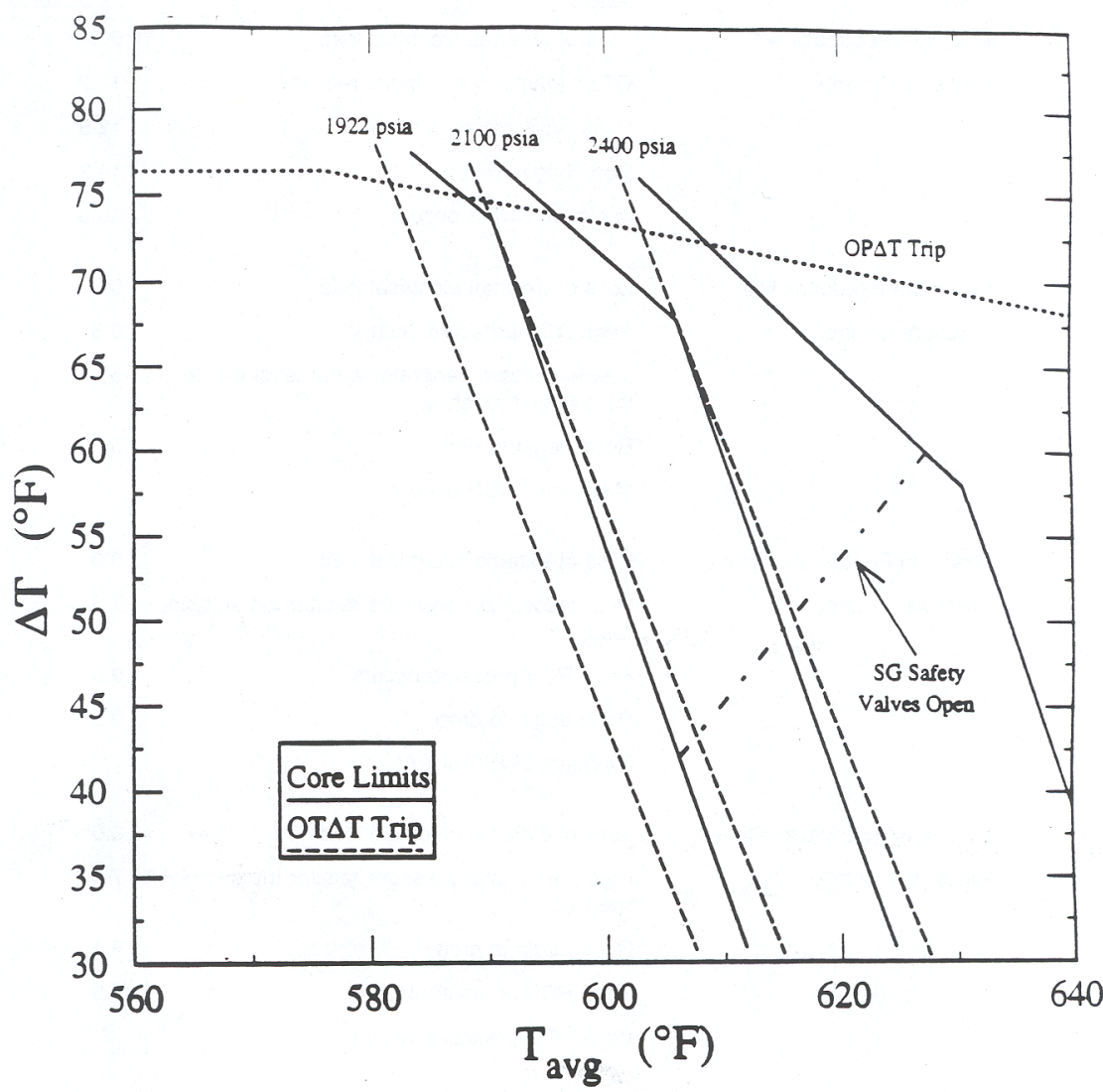
-----OT ΔT Protection Lines

_____Core Thermal Safety Limits

Figure 14.1.0-6 Overtemperature and Overpower ΔT Protection

Core Conditions:

- Full VANTAGE 5 Core
- Nominal Vessel Average Temperature = 581.3°F
- Nominal Pressurizer Pressure = 2100 psia.



Revision: 18.1		Change Description: UCR-1630	
AMERICAN ELECTRIC POWER COOK NUCLEAR PLANT NUCLEAR GENERATION GROUP BRIDGMAN, MICHIGAN		Title: Revised Overtemperature and Overpower ΔT Protection Core Conditions: -Full VANTAGE 5 Fuel -Nominal Vessel Average Temperature = 581.3°F -Nominal Pressurizer Pressure = 2100 psia (see section 14.1.0.6-1 for discussion)	
		UFSAR Figure: 14.1.0-6A	Sheet 1 of 1

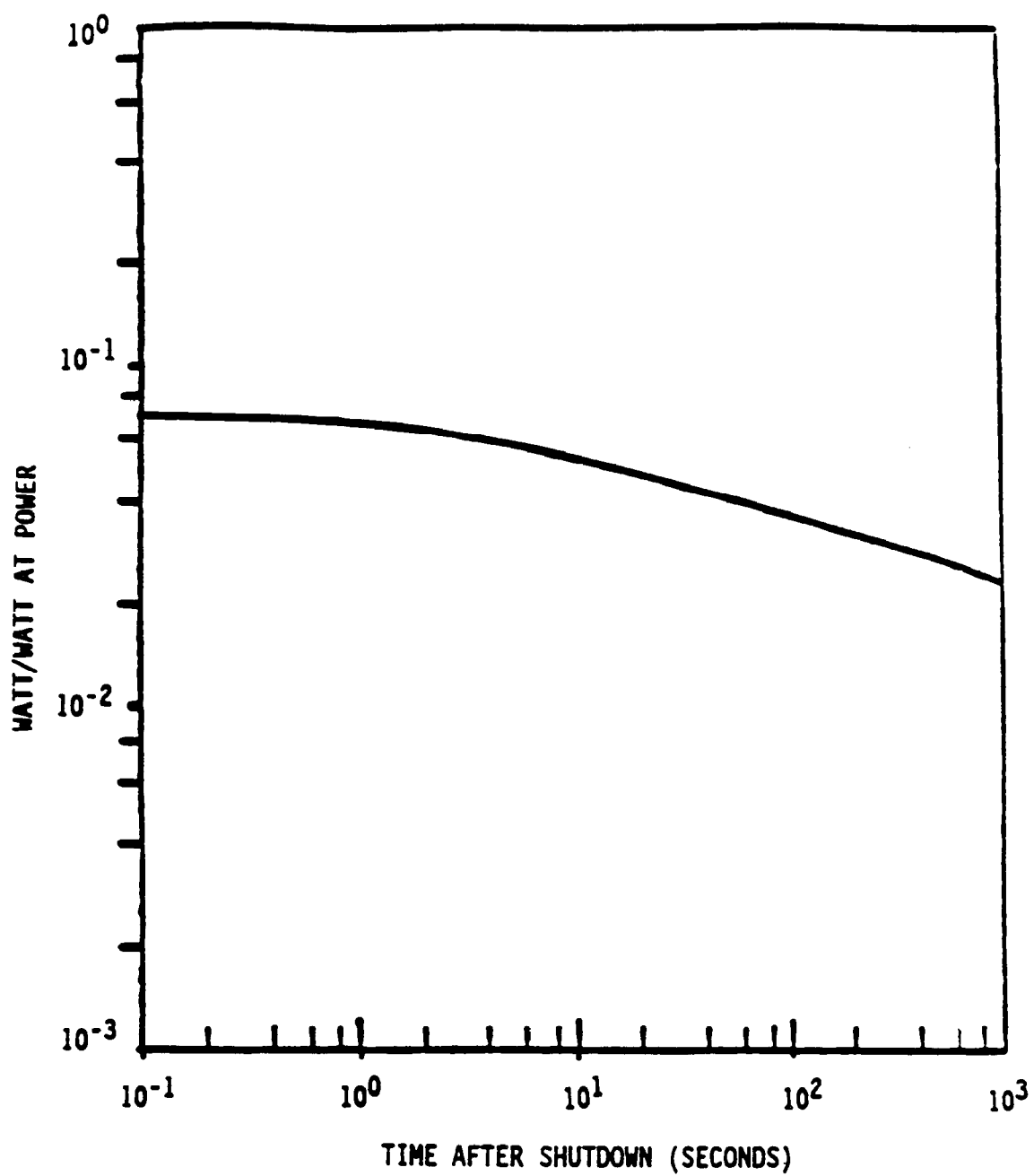
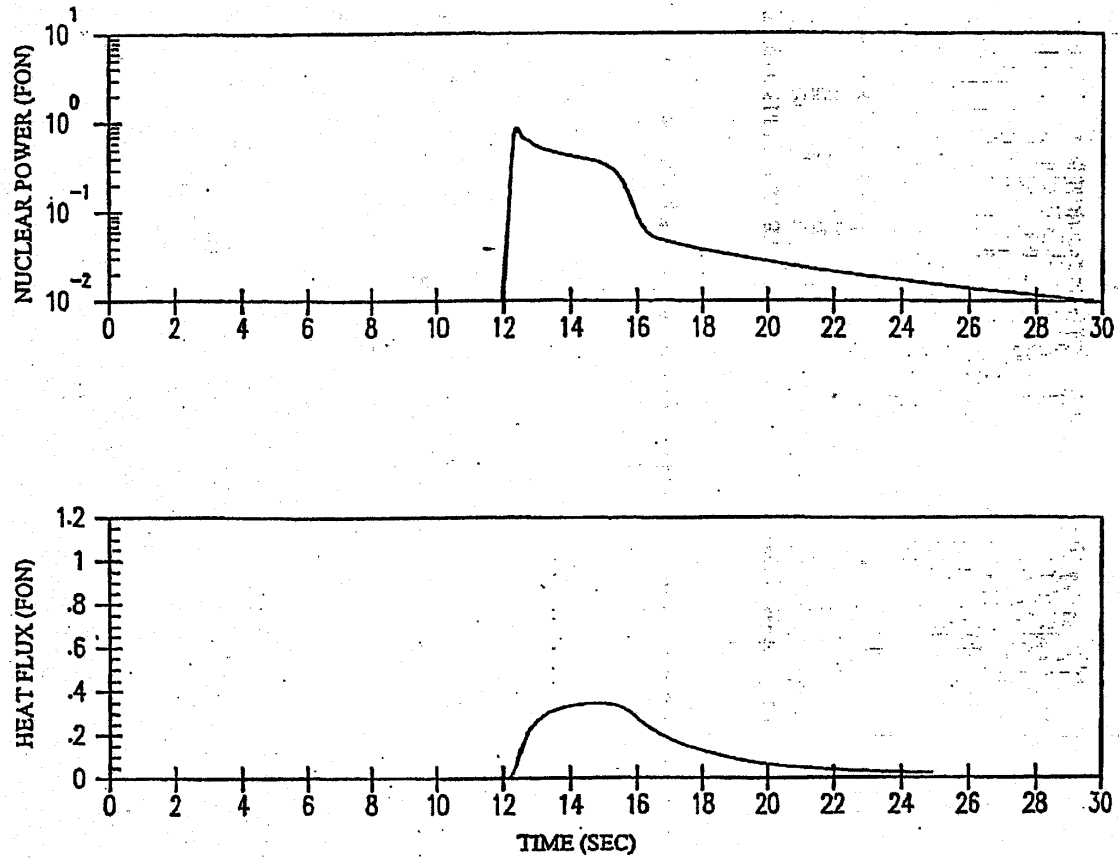


Figure 14.1.0-7 1979 ANS Residual Decay Heat Used In Accident Analyses

UFSAR Revision 30.0



Revision: **18**

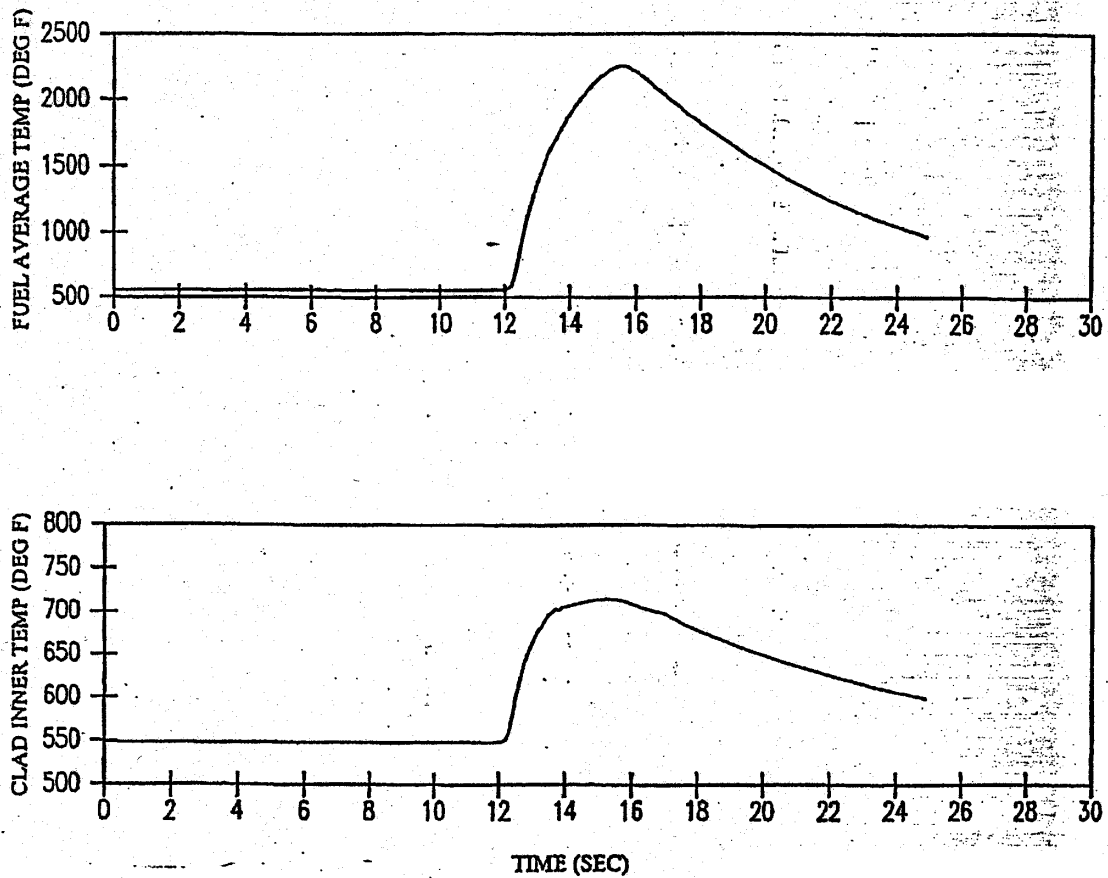
Change Description: **UCR-1611**

**AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
NUCLEAR GENERATION GROUP
BRIDGMAN, MICHIGAN**

Title: Rod Withdrawal from Subcritical Nuclear Power and Heat Flux Versus Time

UFSAR Figure: **14.1.1-1**

Sheet 1 of 1



Revision: **18** Change Description: **UCR-1611**

**AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
NUCLEAR GENERATION GROUP
BRIDGMAN, MICHIGAN**

Title: **Rod Withdrawal from Subcritical Fuel Average
and Clad Temperatures Versus Time**

UFSAR Figure: **14.1.1-2**

Sheet 1 of 1

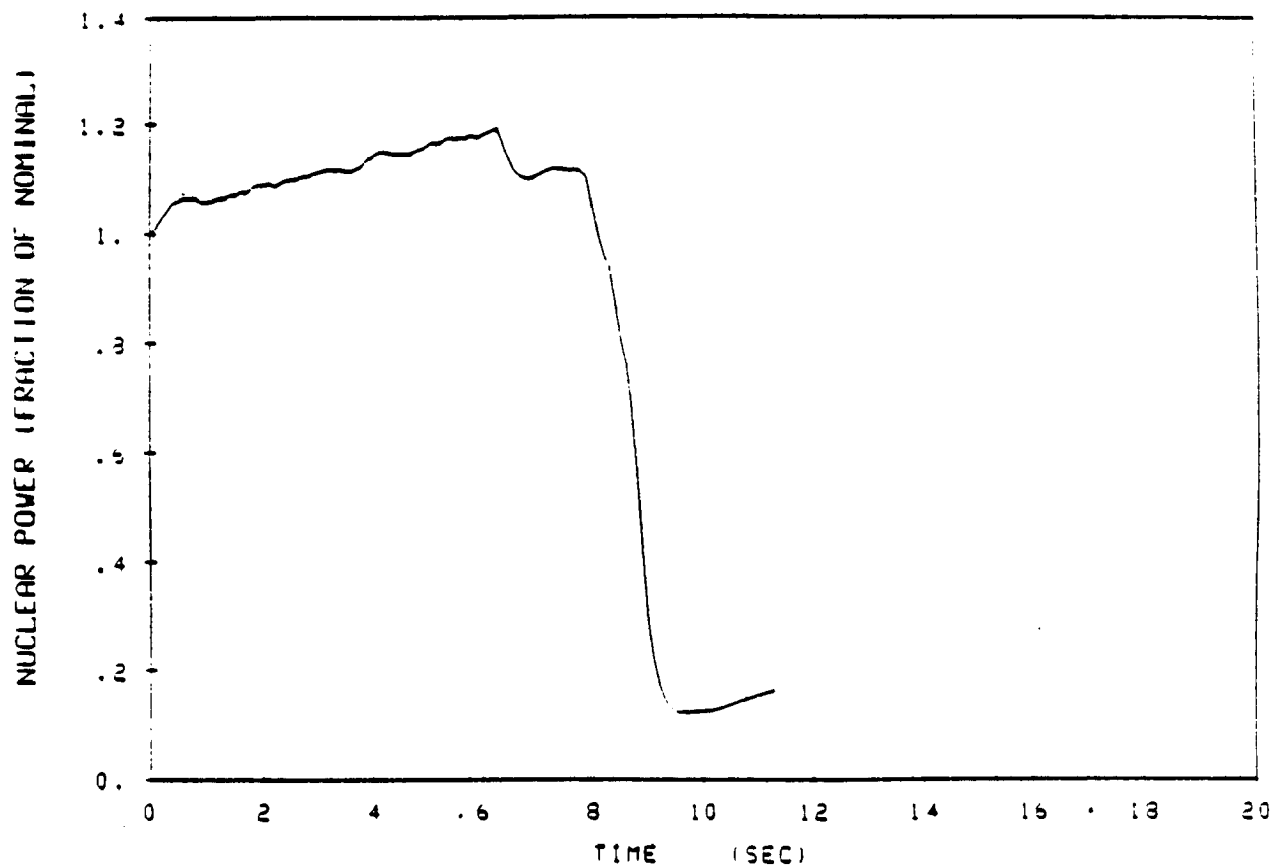


Figure 14.1.28-1 Rod Withdrawal at Power
Nuclear Power Versus Time for Full Power, 80 PCM/Sec
Insertion Rate, Maximum Reactivity Feedback

UFSAR Revision 30.0

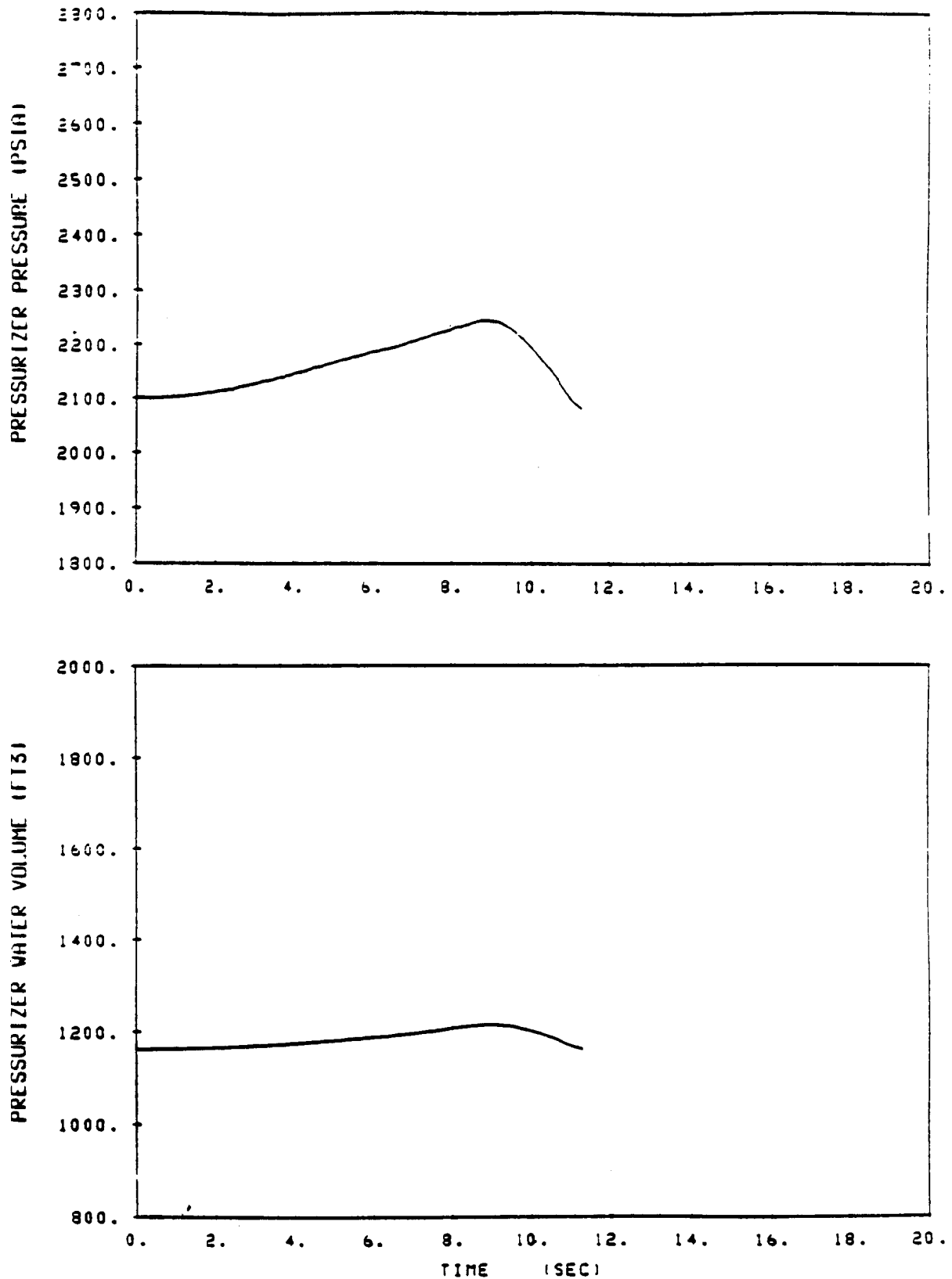


Figure 14.1.2B-2 Rod Withdrawal at Power
Pressurizer Pressure and Water Volume Versus Time for Full
Power, 80 PCM/Sec Insertion Rate, Maximum Reactivity Feedback

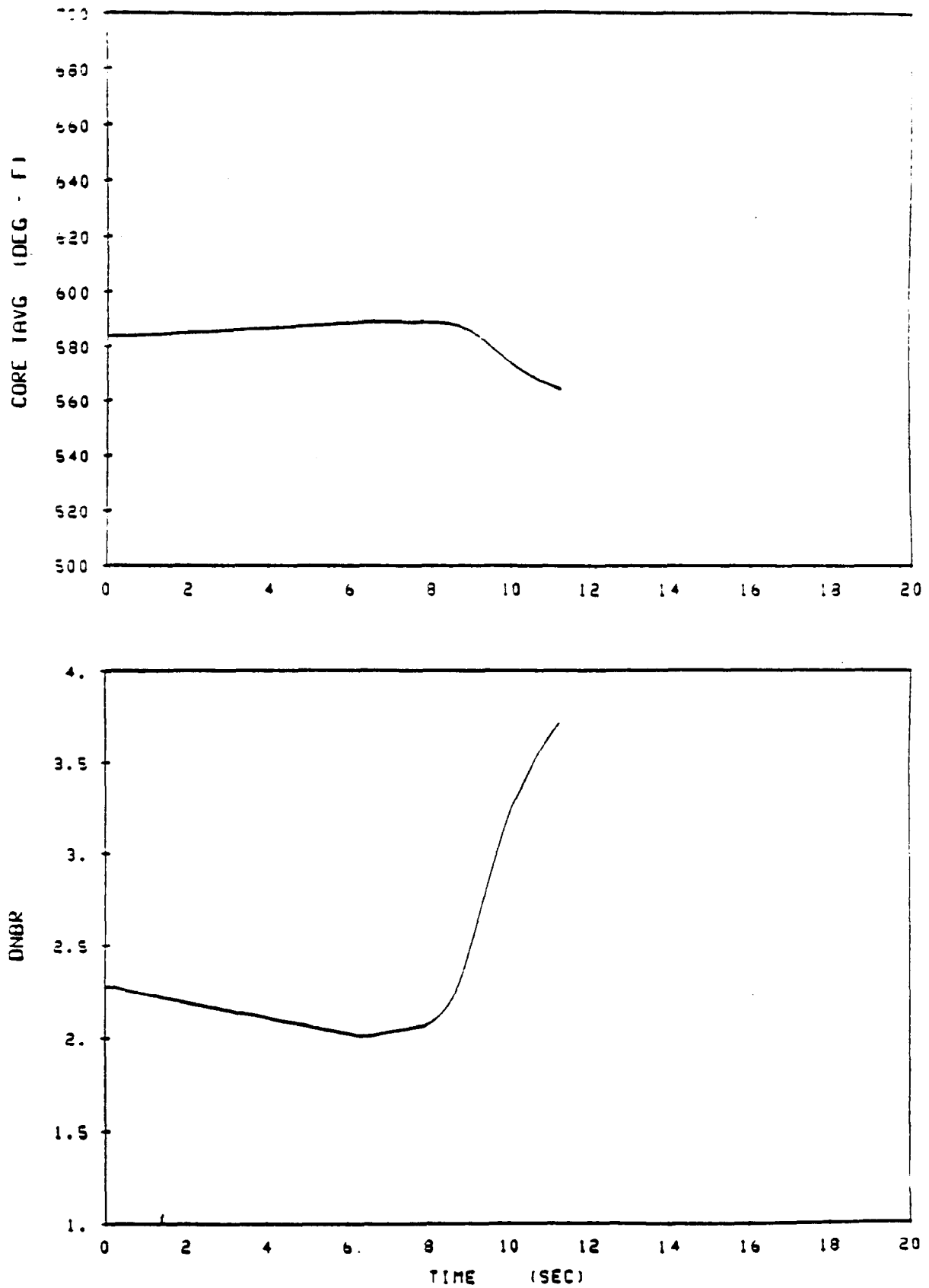


Figure 14.1.2B-3 Rod Withdrawal at Power
Core Average Temperature and DNBR Versus Time for Full Power,
80 PCM/Sec Insertion Rate, Maximum Reactivity Feedback

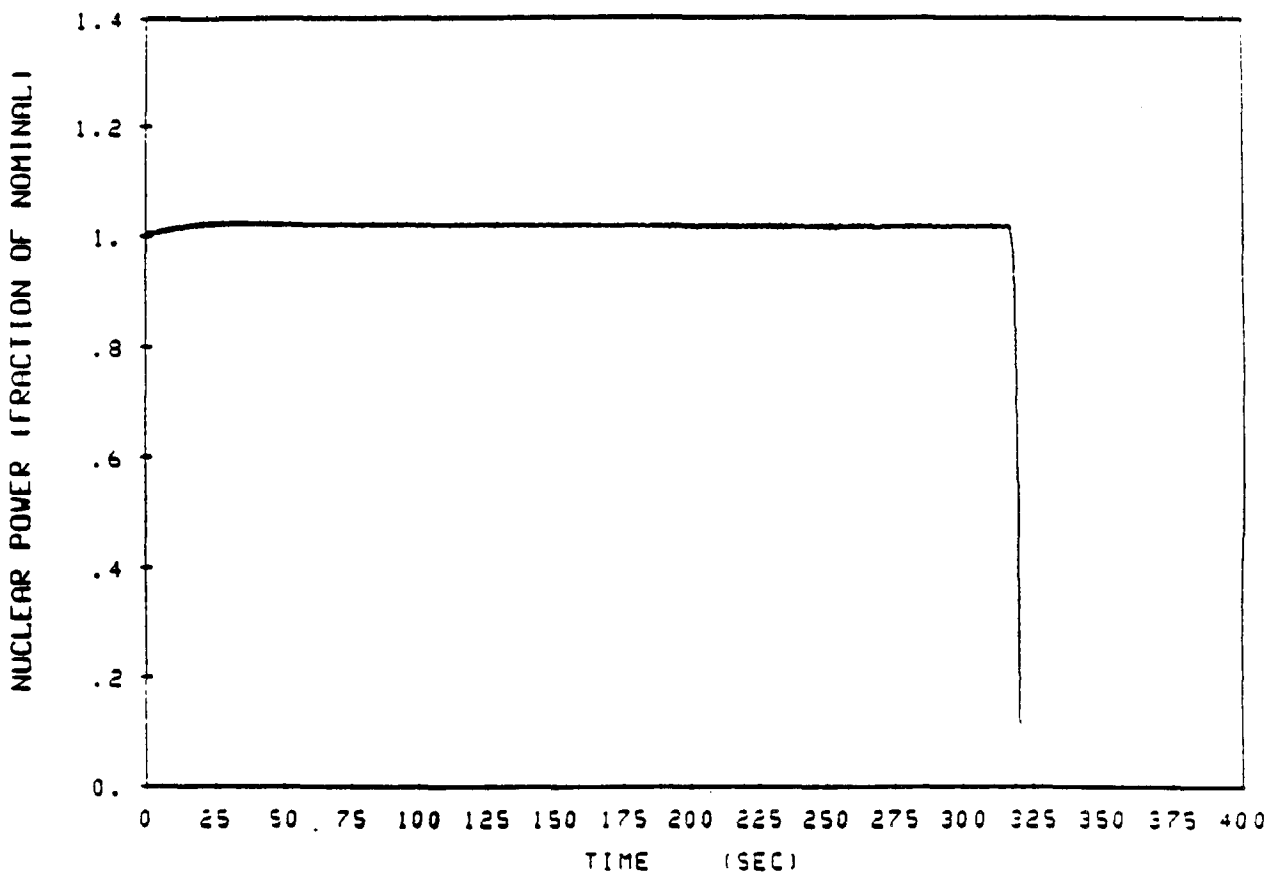


Figure 14.1.2B-4 Rod Withdrawal at Power
Nuclear Power Versus Time for Full Power, 4 PCM/Sec Insertion
Rate, Maximum Reactivity Feedback

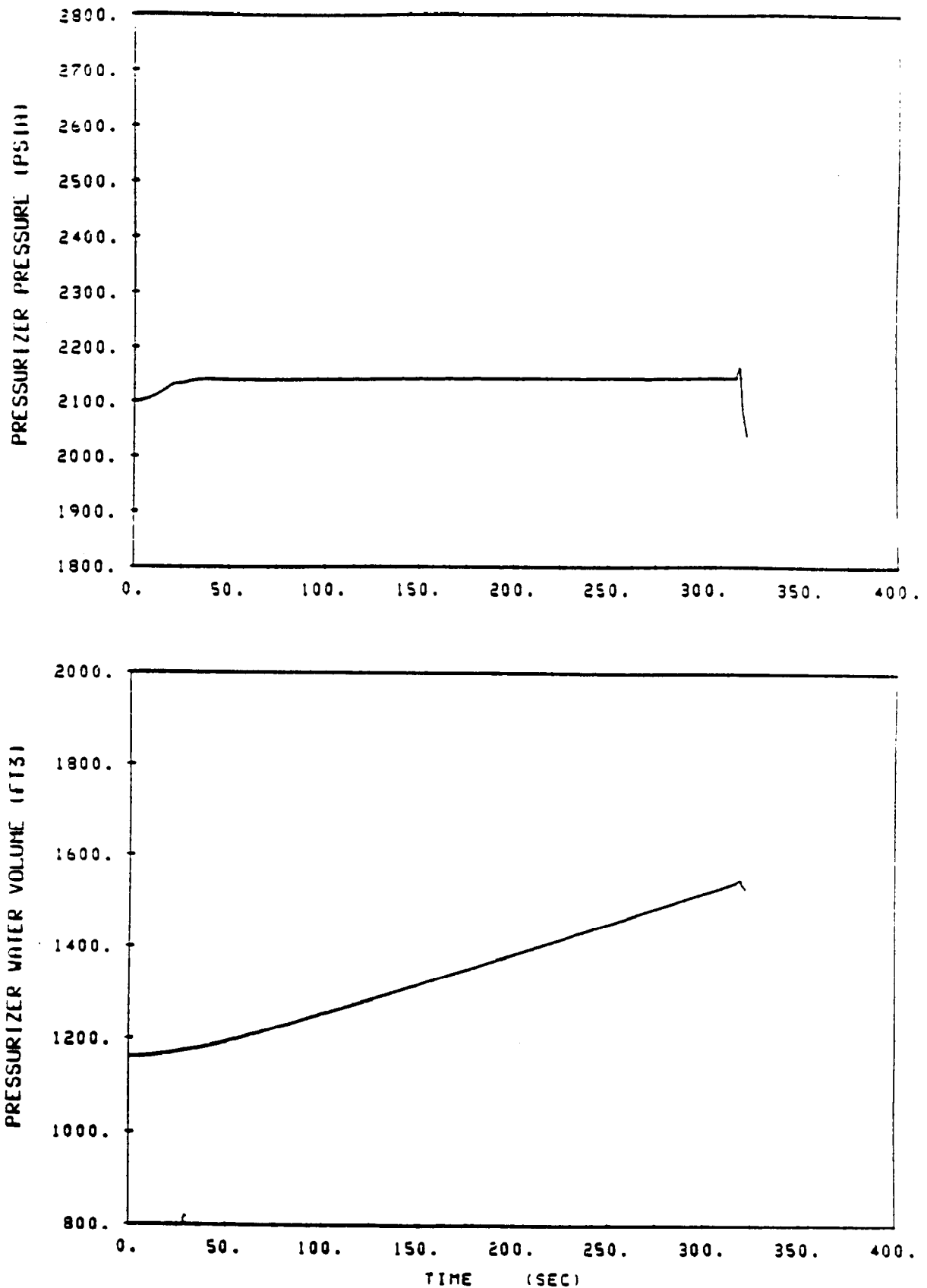


Figure 14.1.28-5 Rod Withdrawal at Power
Pressurizer Pressure and Water Volume Versus Time for Full
Power, 4 PCM/Sec Insertion Rate, Maximum Reactivity Feedback

UFSAR Revision 30.0

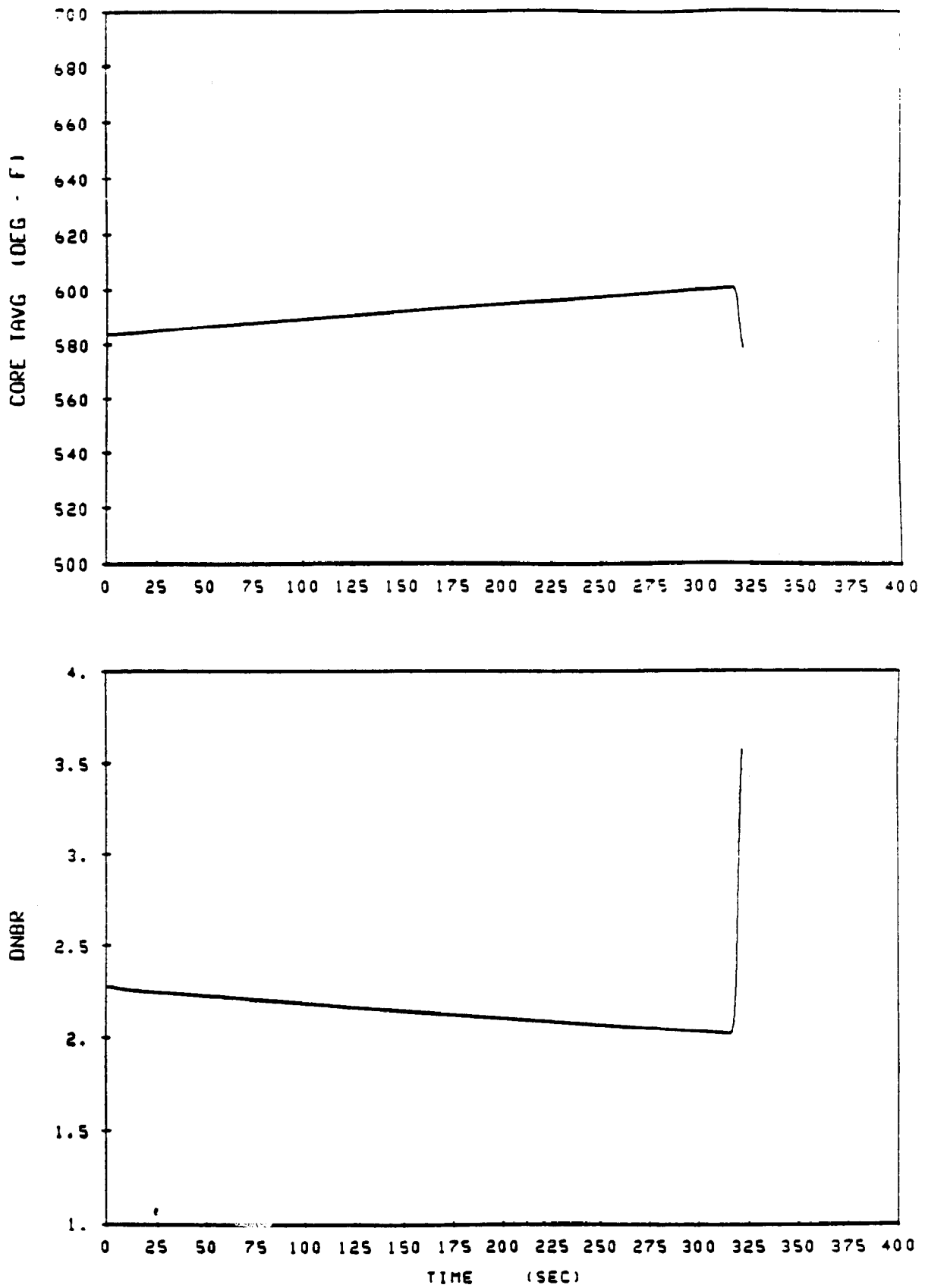


Figure 14.1.28-6 Rod Withdrawal at Power
Core Average Temperature and DNBR Versus Time for Full Power,
4 PCM/Sec Insertion Rate, Maximum Reactivity Feedback

Figure 14.1.2B-7 Rod Withdrawal at Power
100% Power, Minimum DNBR Versus Reactivity Insertion Rate

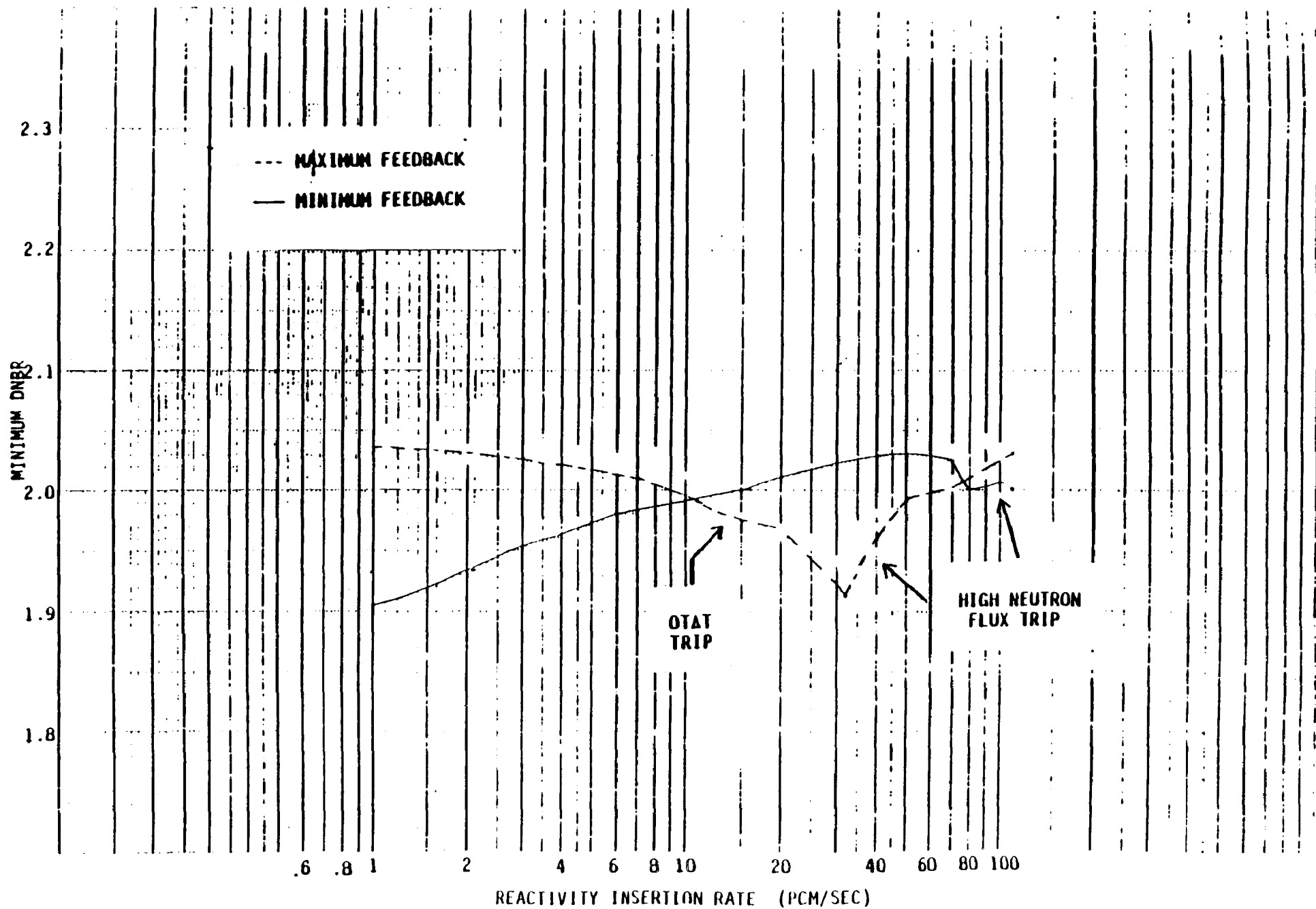


Figure 14.1.2B-8 Rod Withdrawal at Power
60% Power, Minimum DNBR Versus Reactivity Insertion Rate

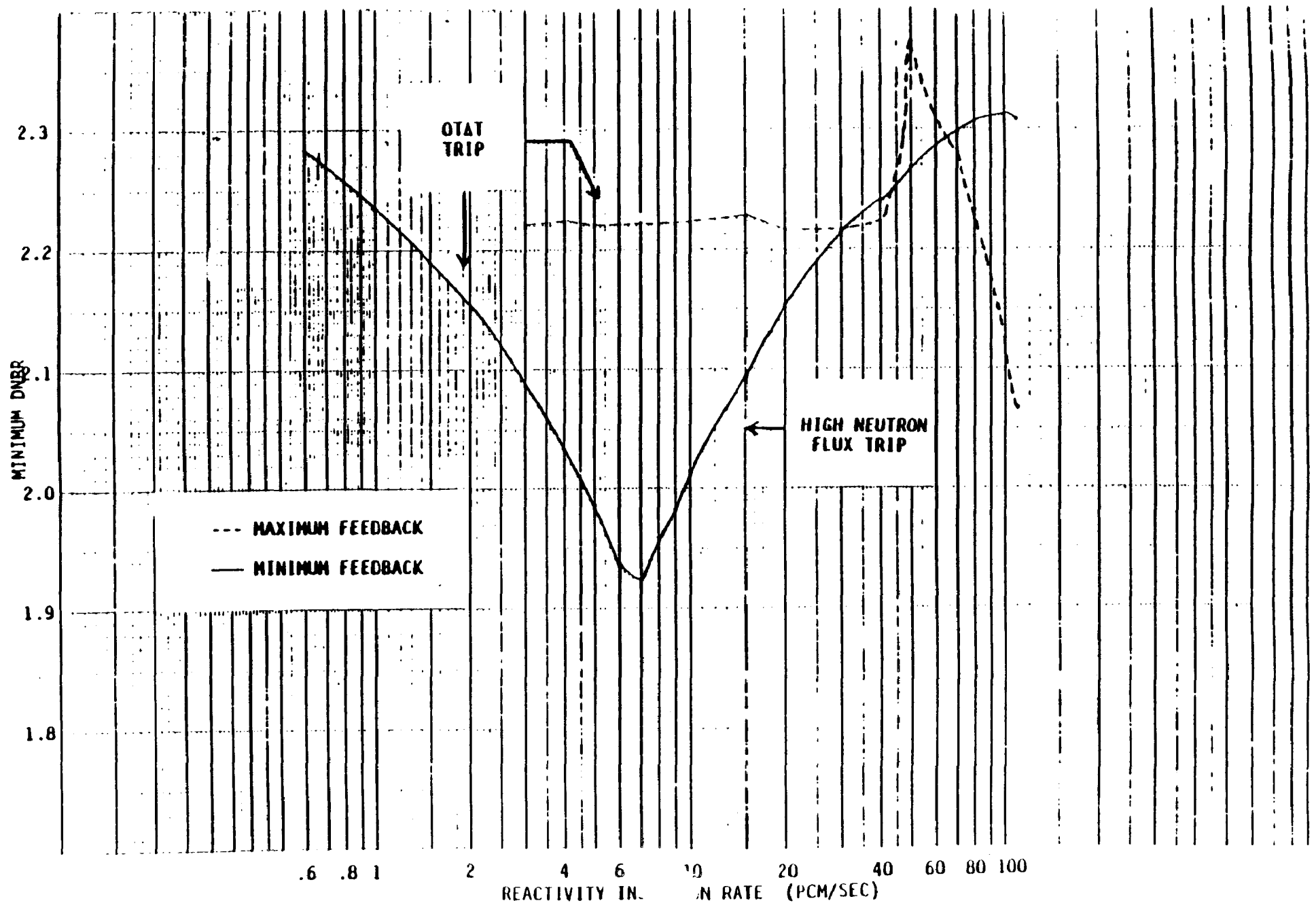
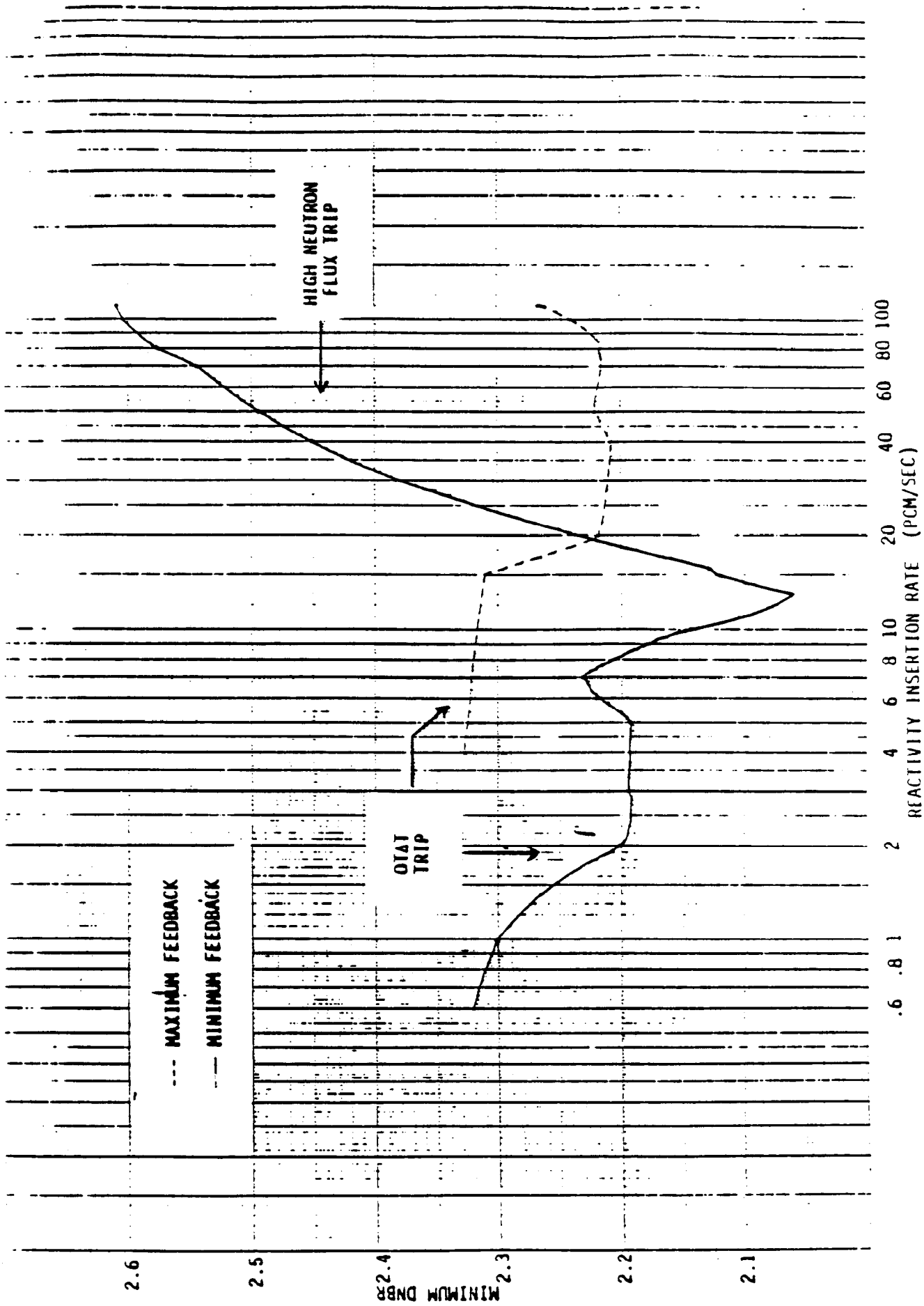


Figure 14.1.2B-9 Rod Withdrawal at Power
10% Power, Minimum DNBR Versus Reactivity Insertion Rate



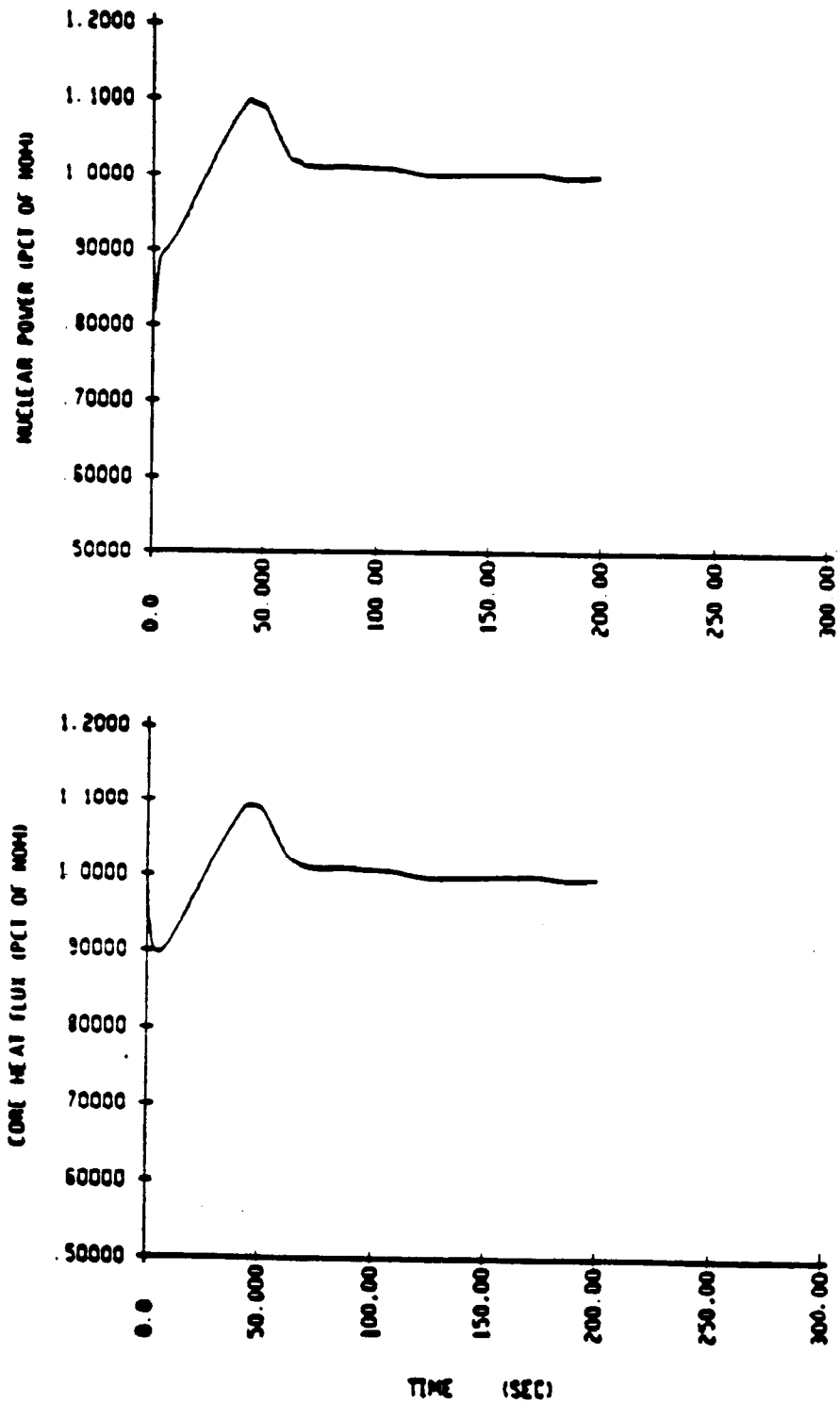


Figure 14.1.3-1 Dropped RCCA(s)
Nuclear Power and Core Heat Flux Versus Time for a Typical
Response in Automatic Control

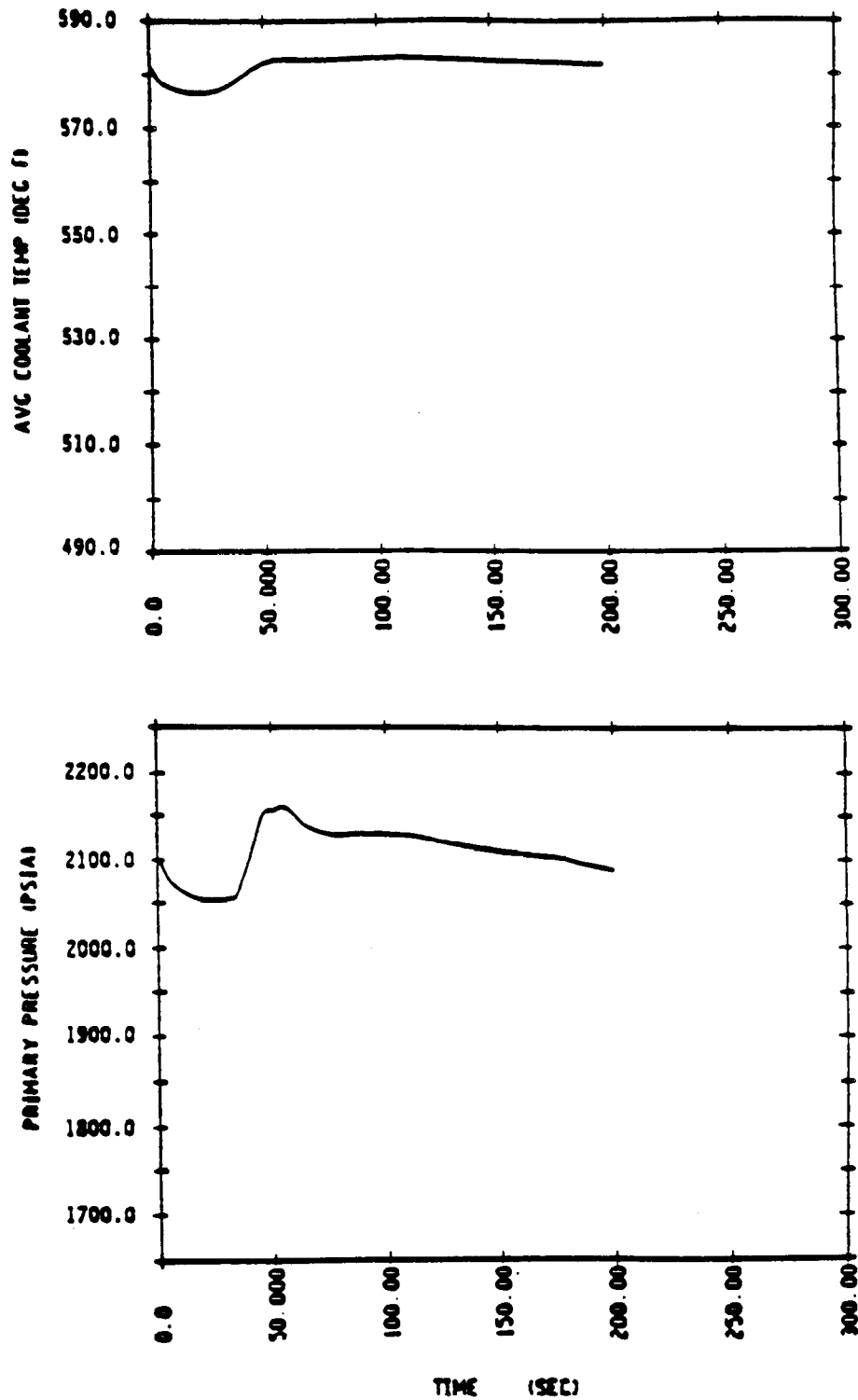


Figure 14.1.3-2 Dropped RCCA(s)
Average Coolant Temperature and Pressurizer Pressure Versus
Time for a Typical Response in Automatic Control

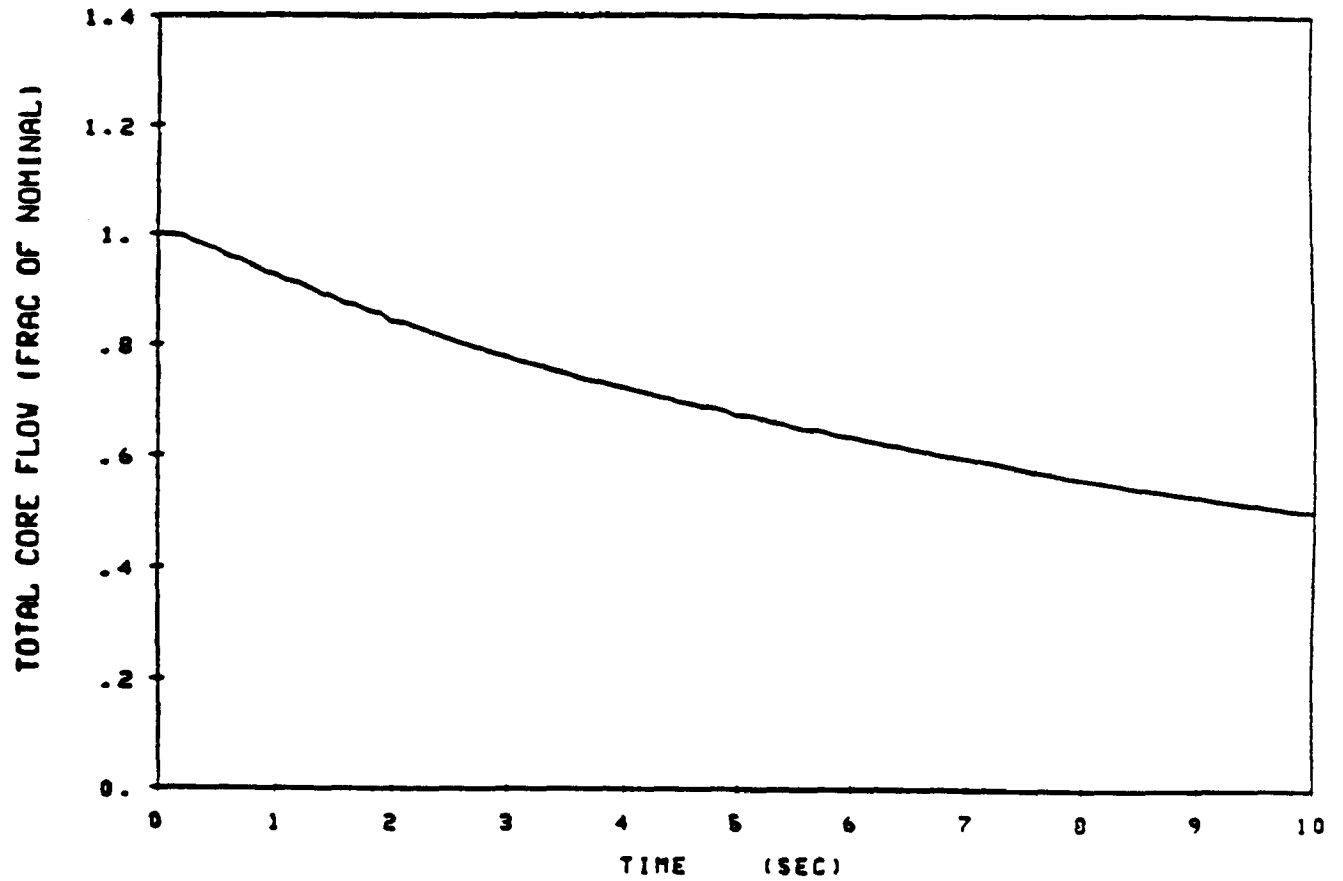


Figure 14.1.6-1 Complete Loss of Flow
Core Flow Coastdown Versus Time

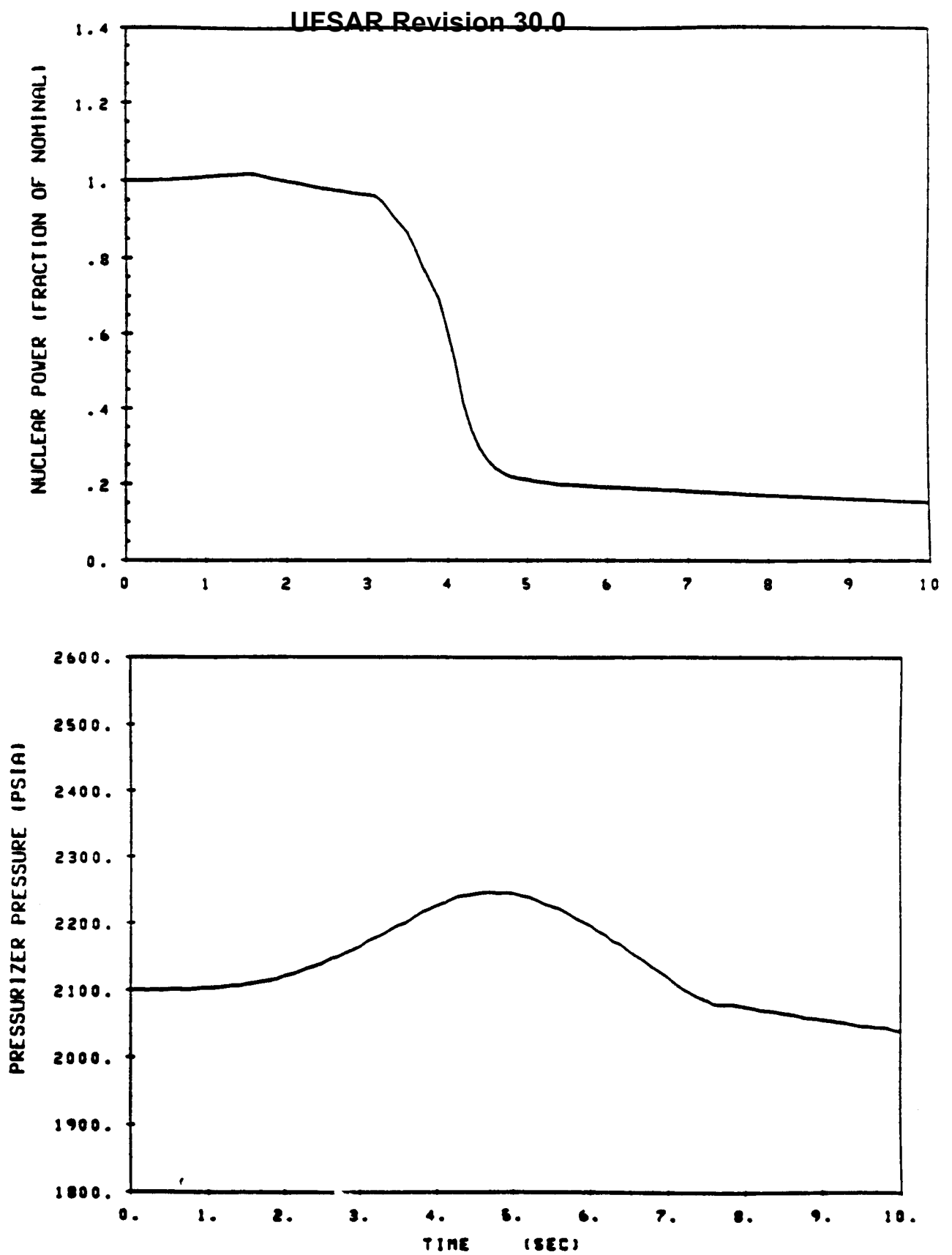


Figure 14.1.6-2 Complete Loss of Flow
Nuclear Power and Pressurizer Pressure Versus Time

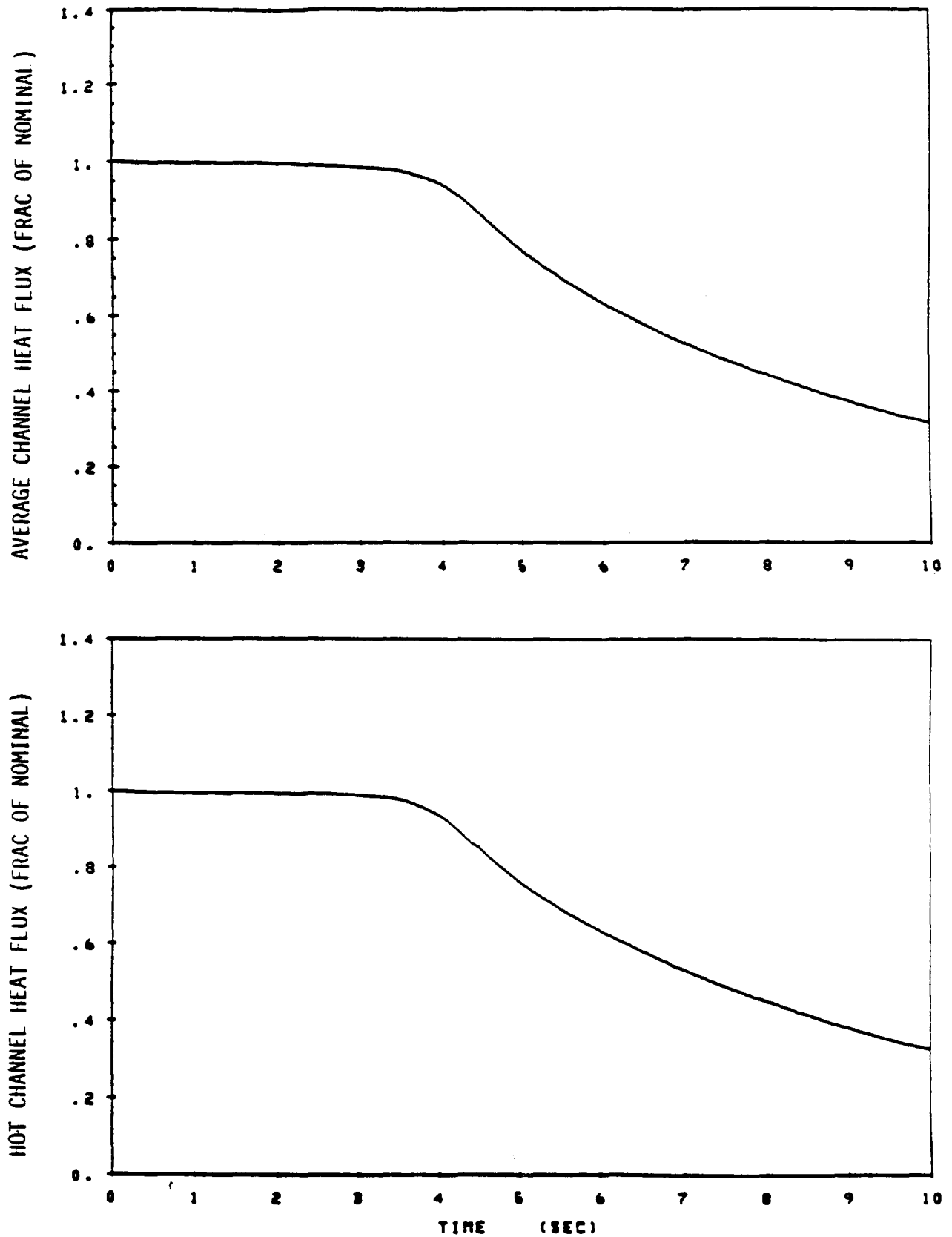


Figure 14.1.6-3 Complete Loss of Flow
Average Channel and Hot Channel Heat Flux Versus Time

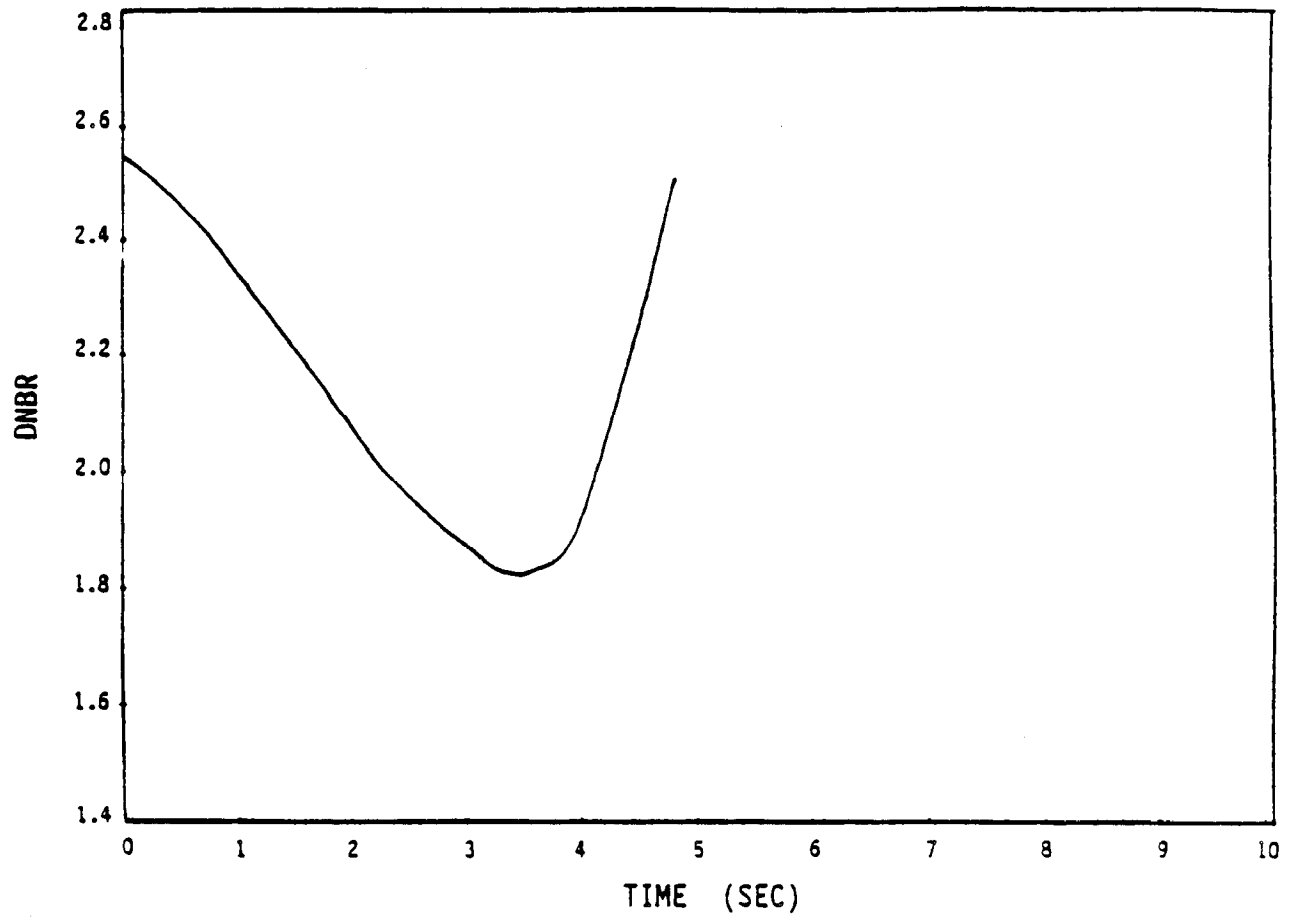


Figure 14.1.6-4 Complete Loss of Flow
DNBR Versus Time

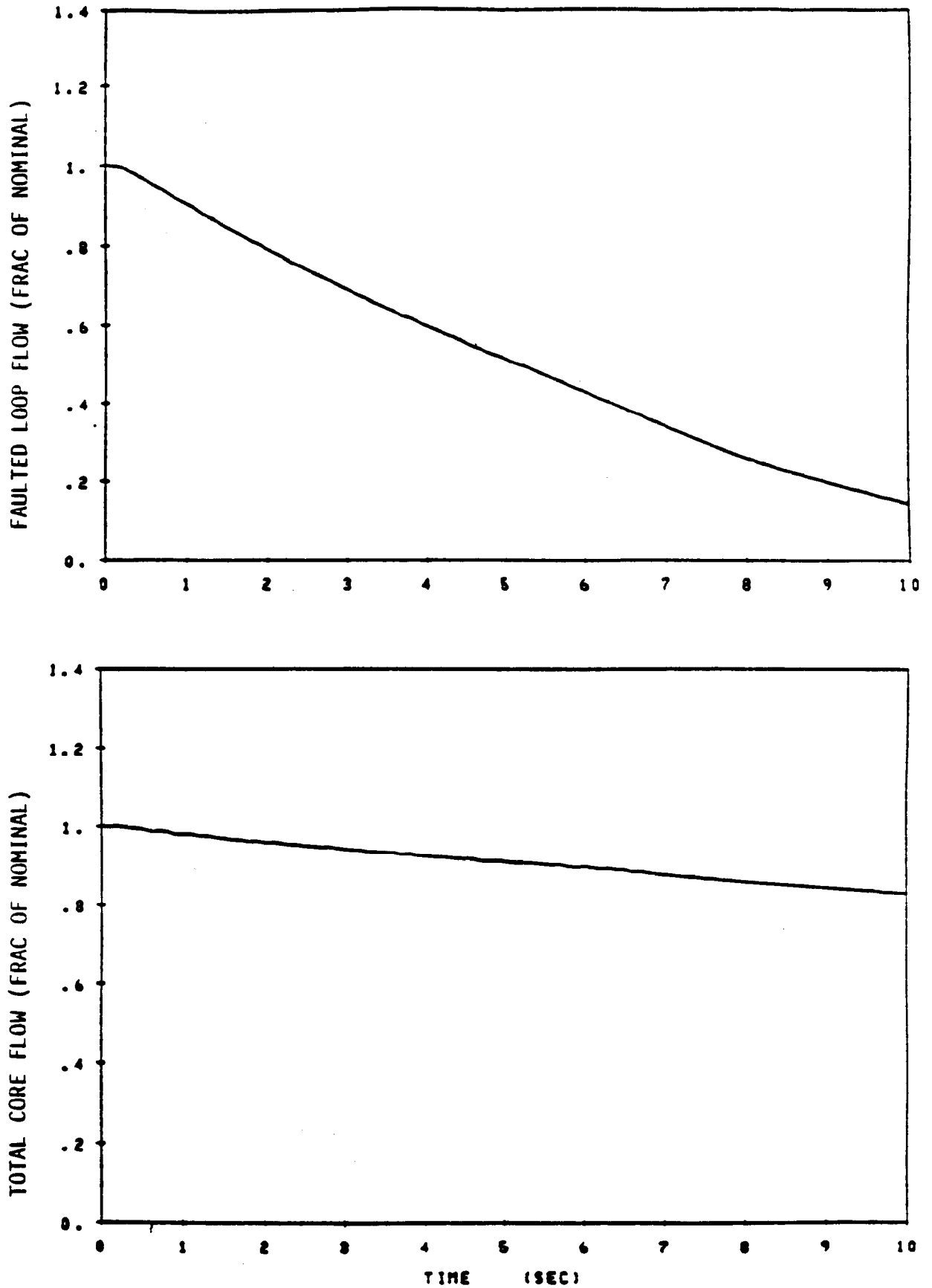


Figure 14.1.6-5 Partial Loss of Flow 1/4
Faulted Loop and Core Flows Versus Time

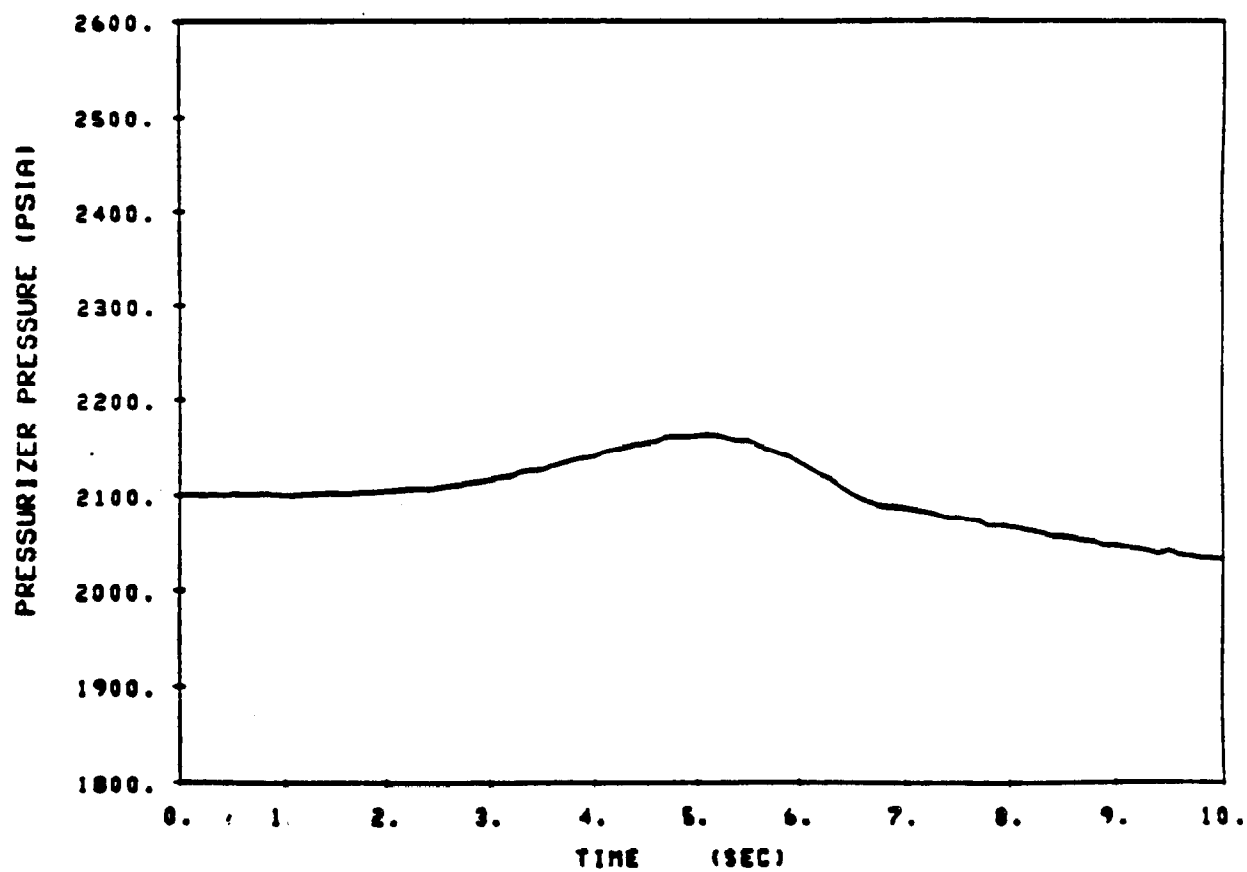
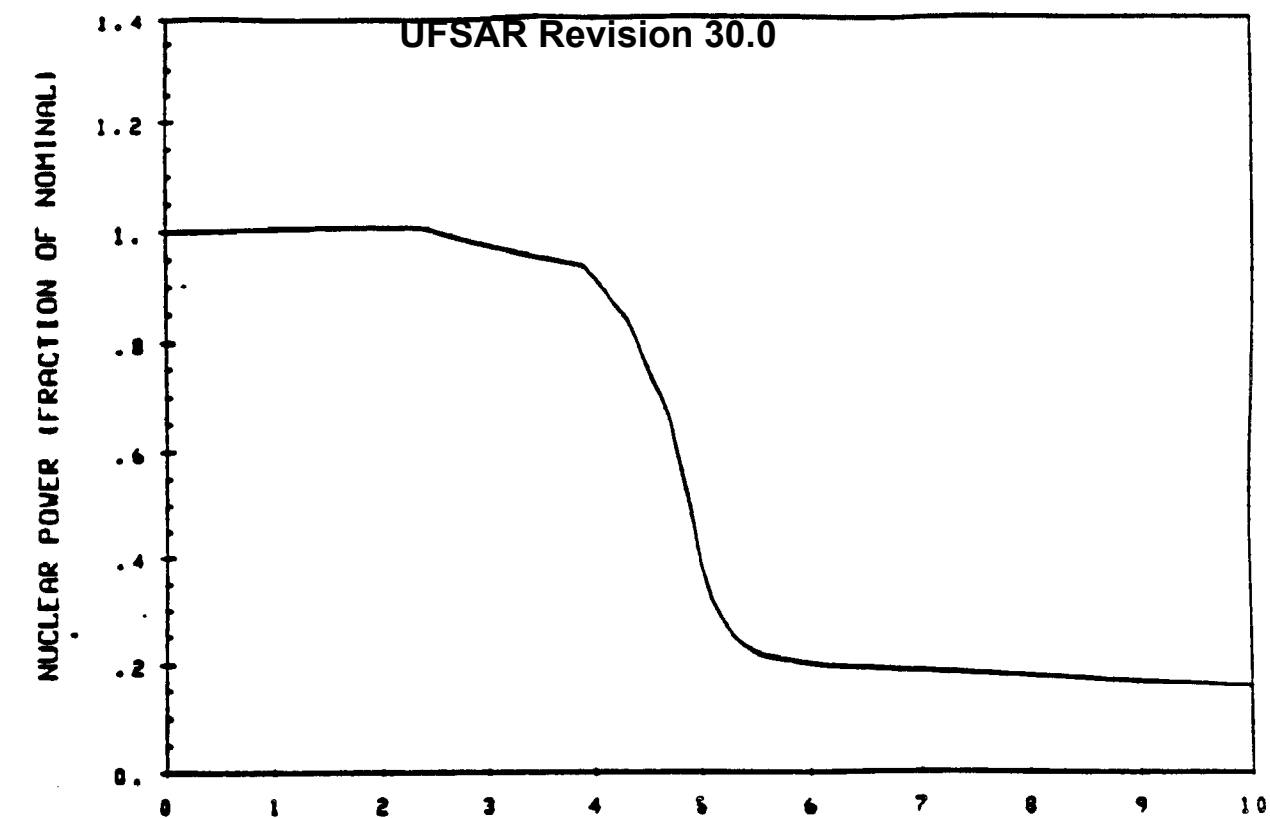


Figure 14.1.6-6 Partial Loss of Flow 1/4
Nuclear Power and Pressurizer Pressure Versus Time

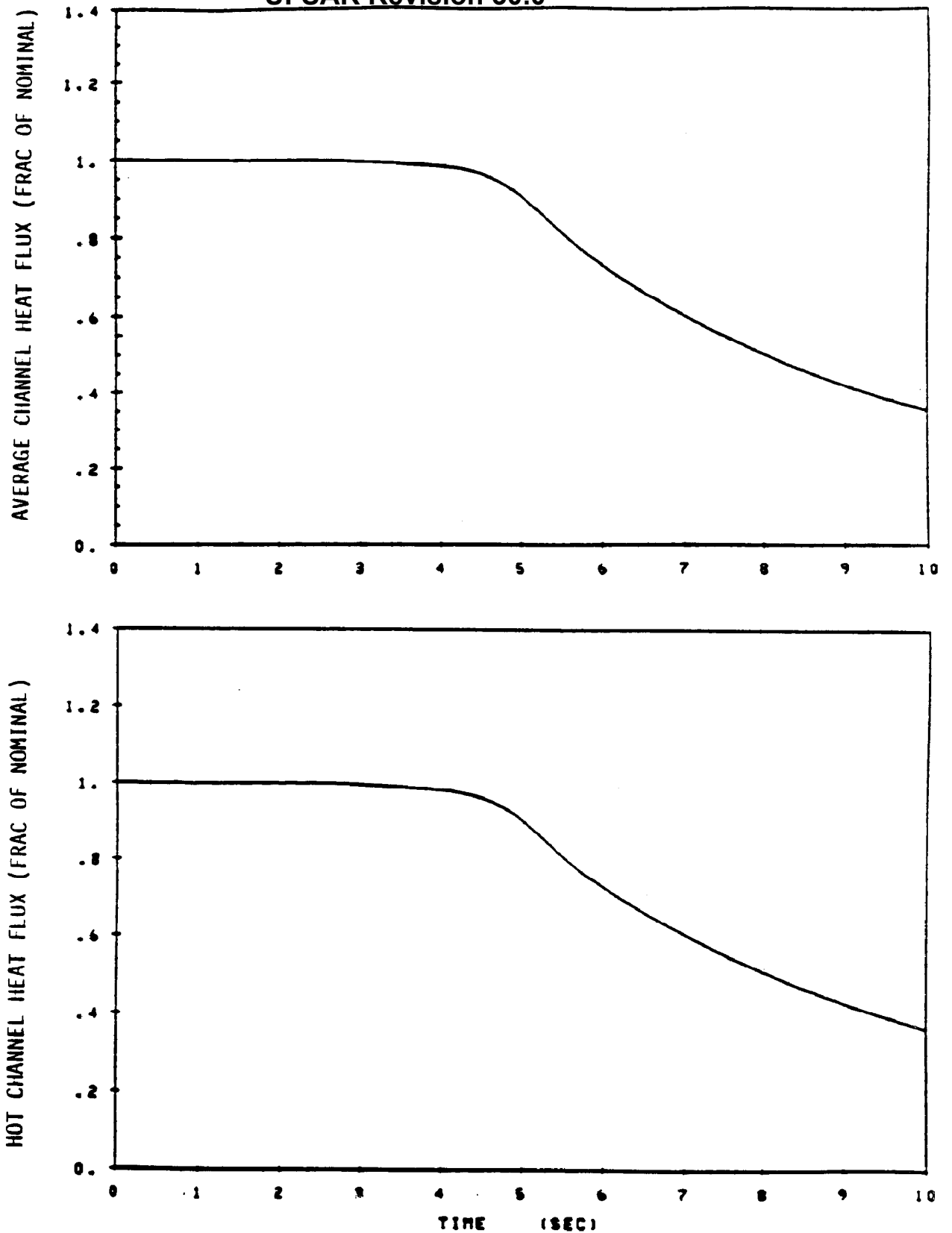


Figure 14.1.6-7 Partial Loss of Flow 1/4
Average Channel and Hot Channel Heat Flux Versus Time

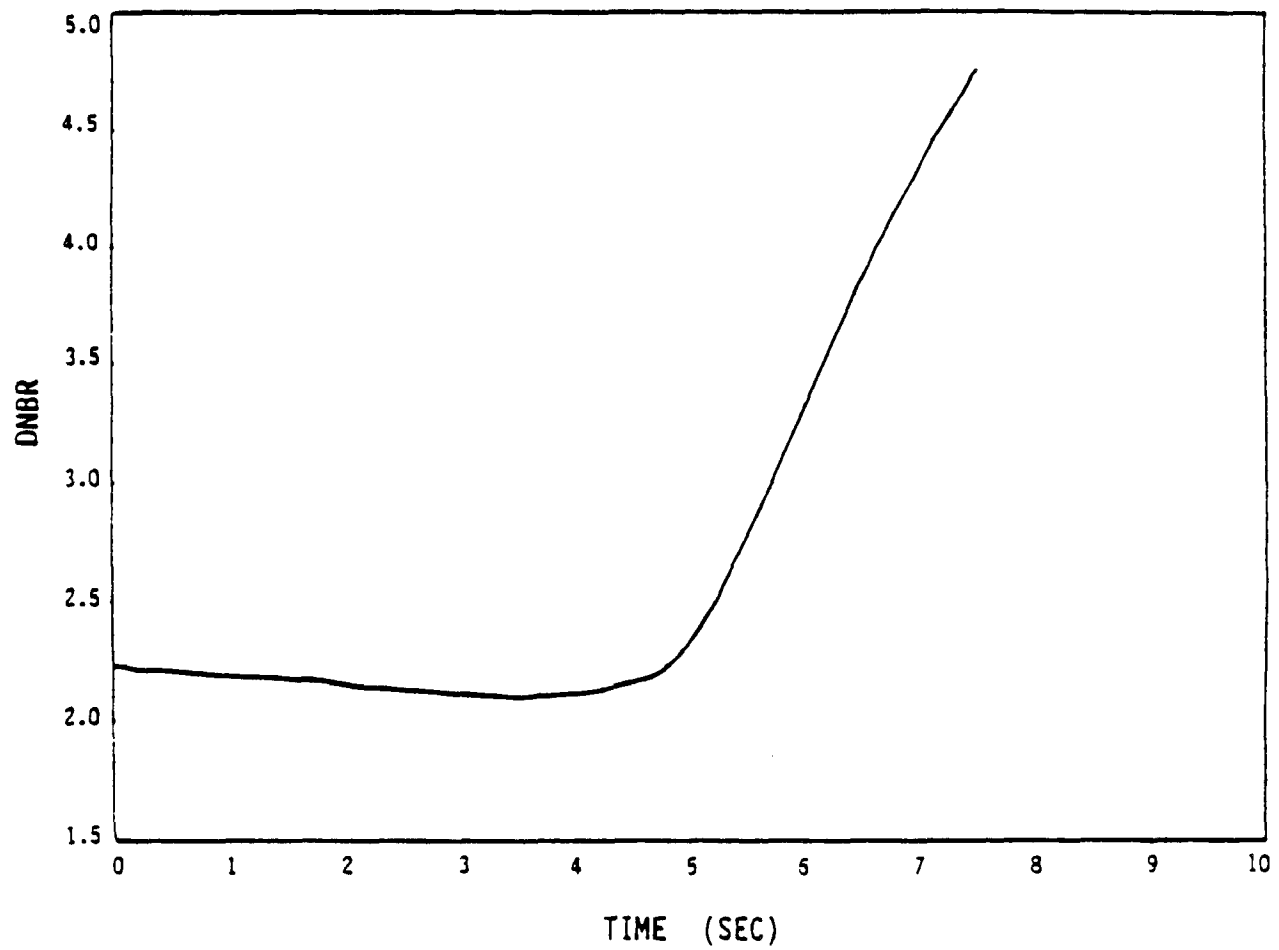
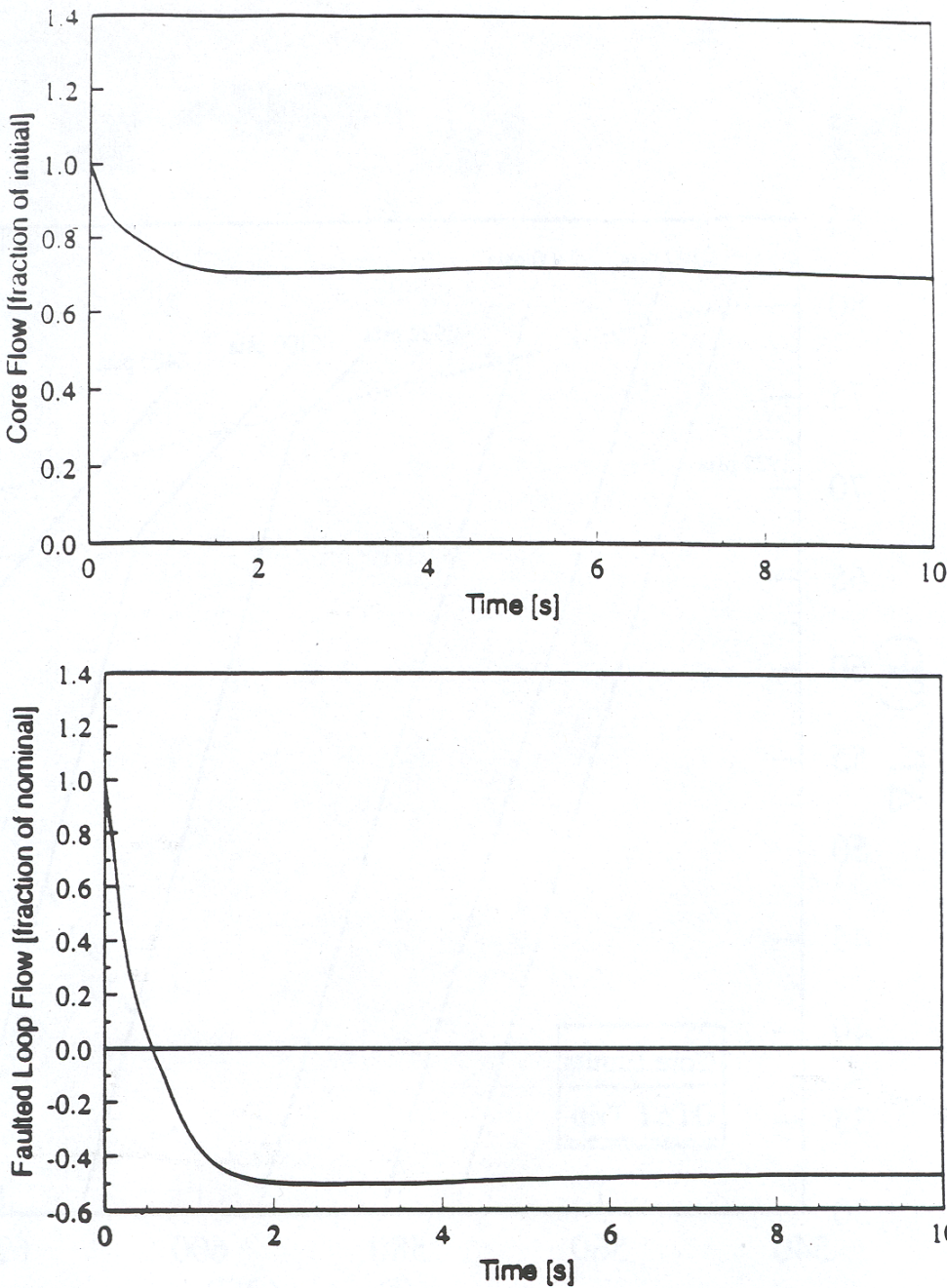
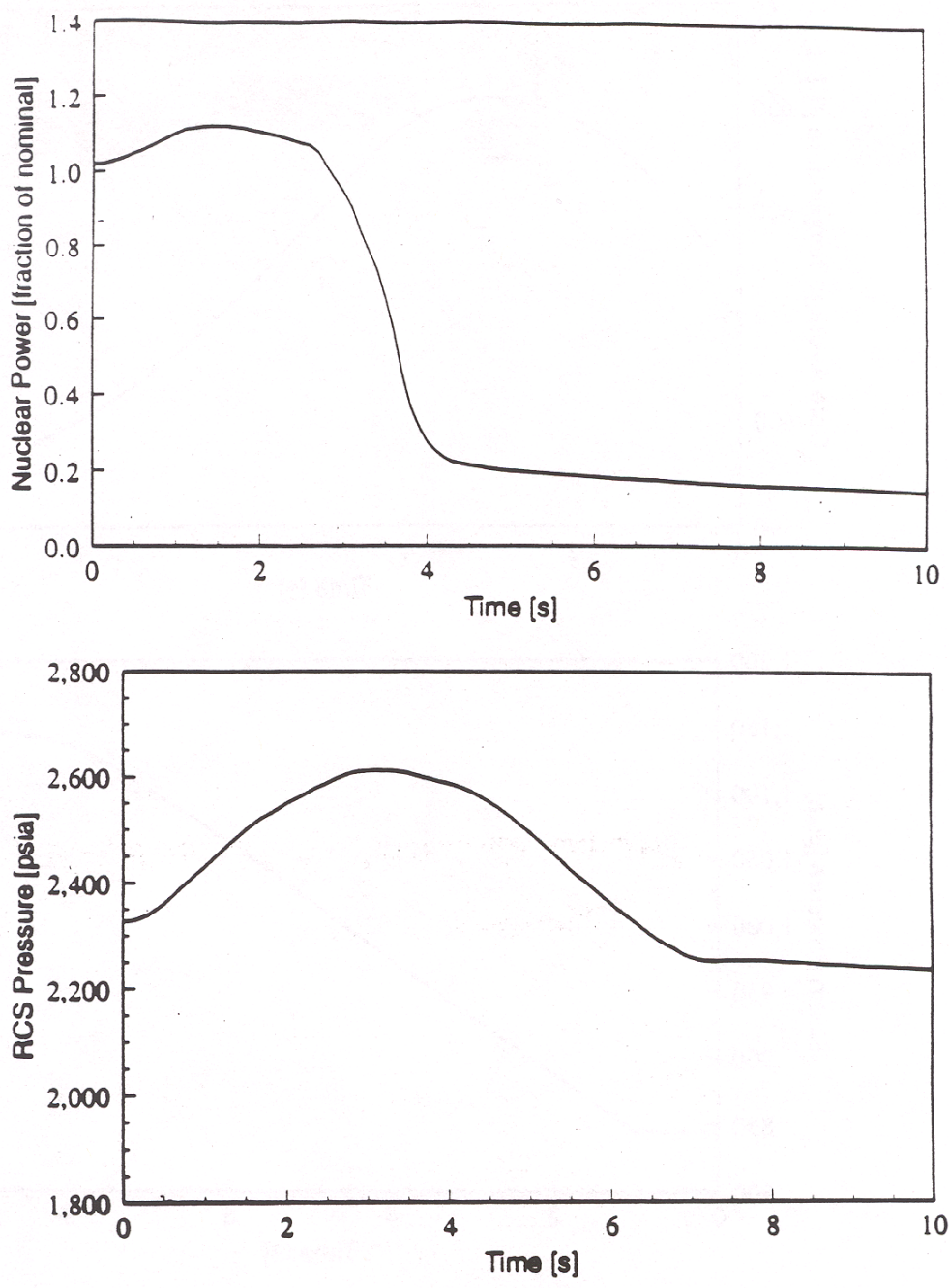


Figure 14.1.6-8 Partial Loss of Flow 1/4
DNBR Versus Time



Revision: 18.1	Change Description: UCR-1630	
AMERICAN ELECTRIC POWER COOK NUCLEAR PLANT NUCLEAR GENERATION GROUP BRIDGMAN, MICHIGAN	Title: Total Core Flow and Faulted Loop Flow vs. Time For The Locked Rotor Event	
	UFSAR Figure: 14.1.6-9	Sheet 1 of 1



Revision: 18.1		Change Description: UCR-1630	
AMERICAN ELECTRIC POWER COOK NUCLEAR PLANT NUCLEAR GENERATION GROUP BRIDGMAN, MICHIGAN		Title: Nuclear Power and RCS Pressure vs. Time For The Locked Rotor Event	
		UFSAR Figure: 14.1.6-10	Sheet 1 of 1

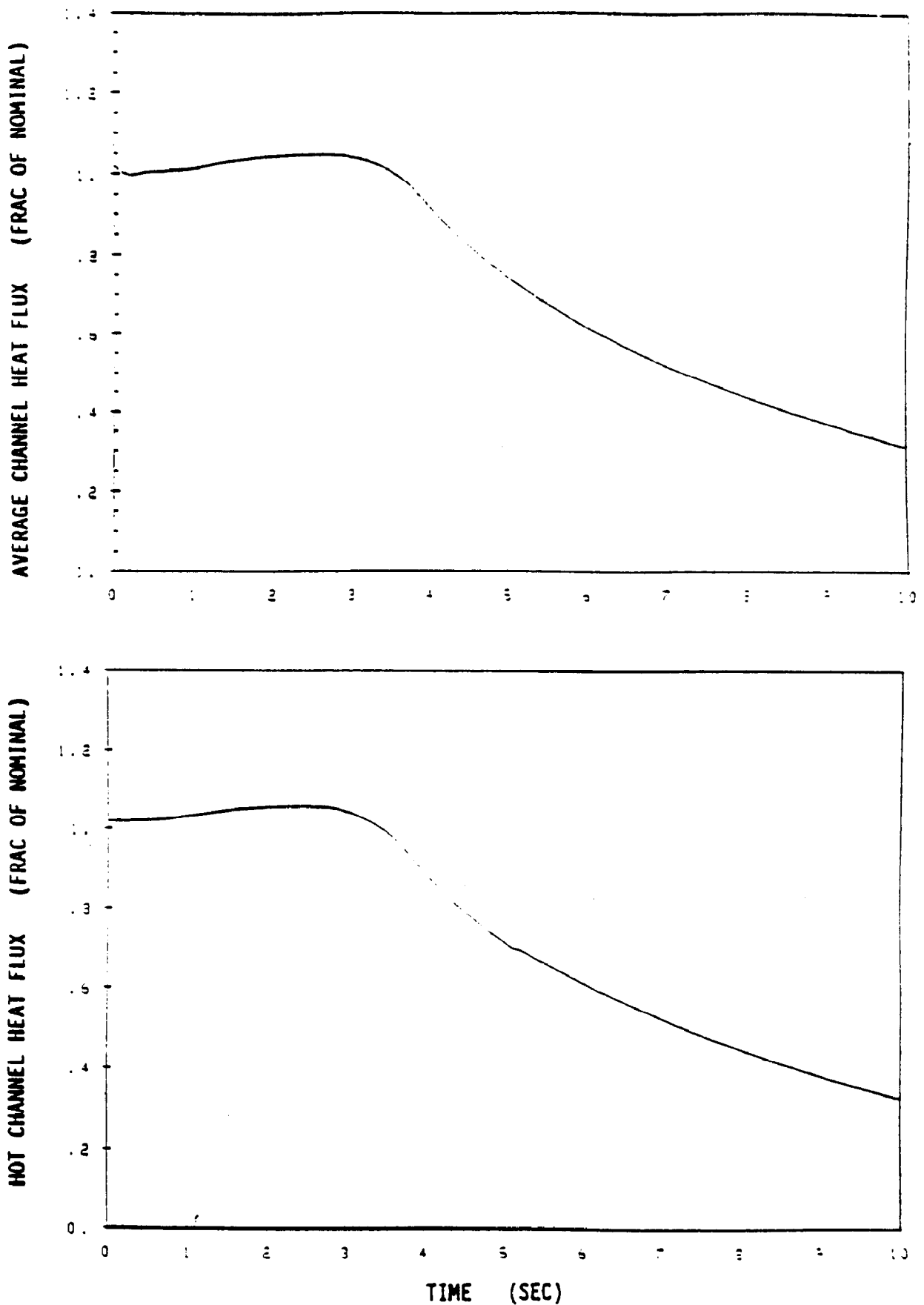


Figure 14.1.6-11 1/4 Locked Rotor
Average Channel and Hot Channel Heat Flux Versus Time

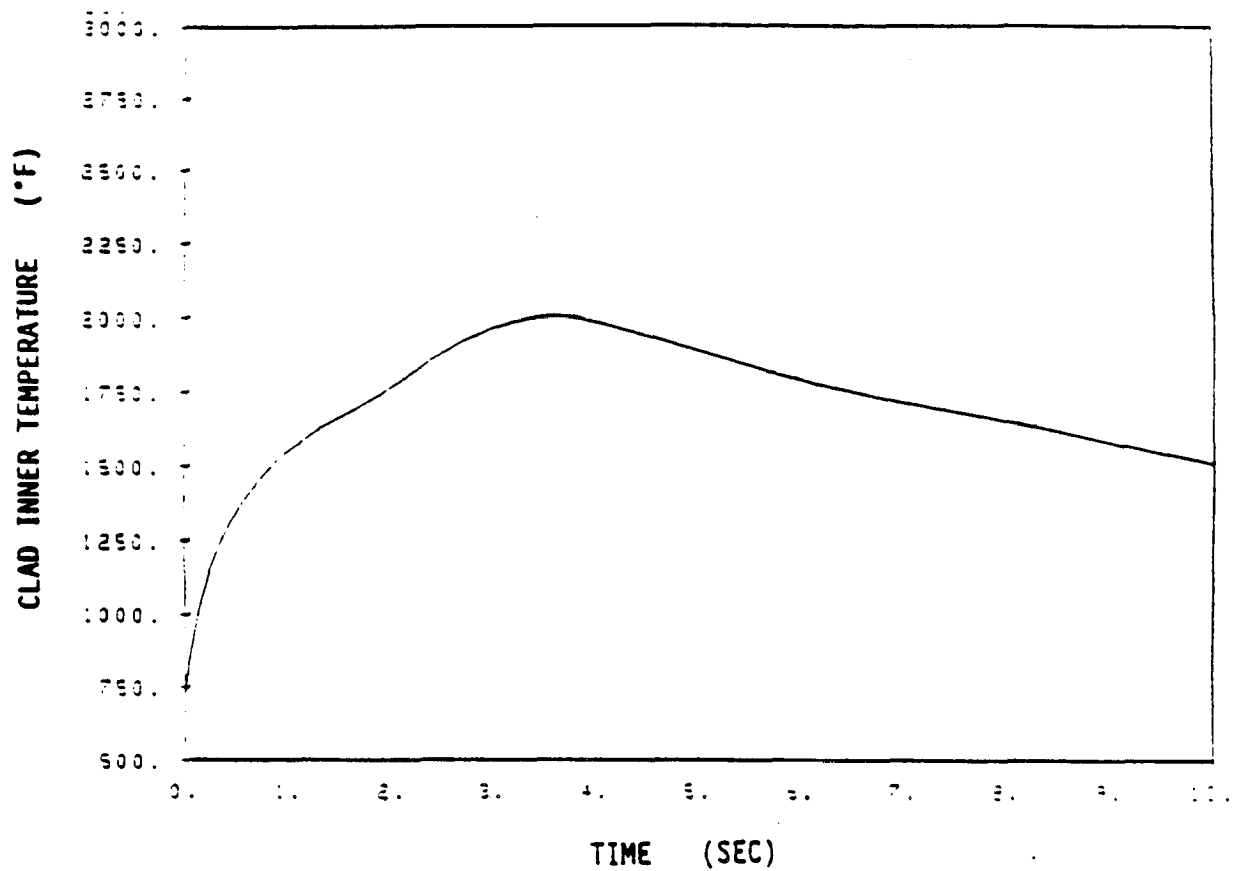
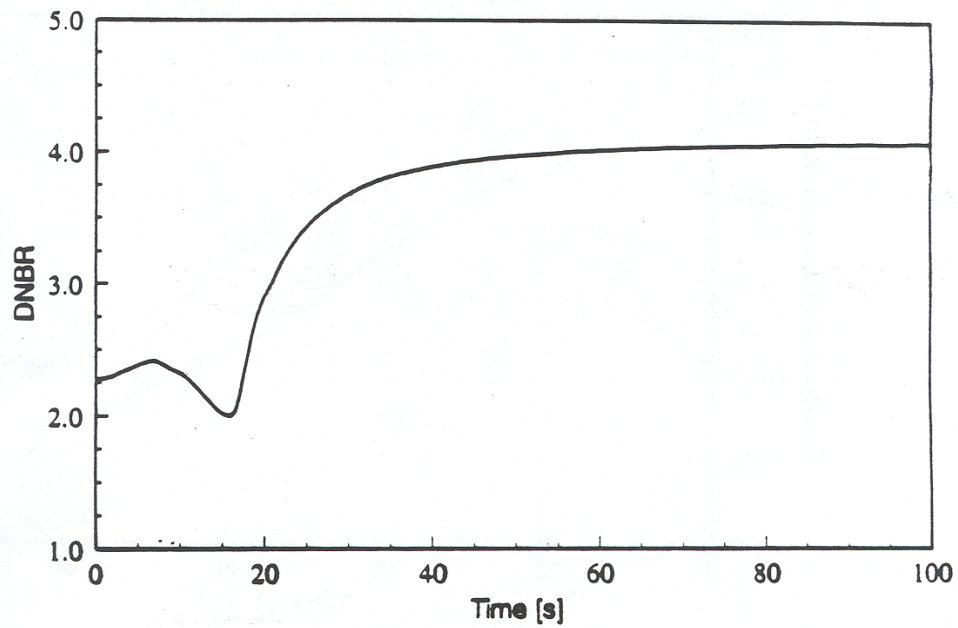
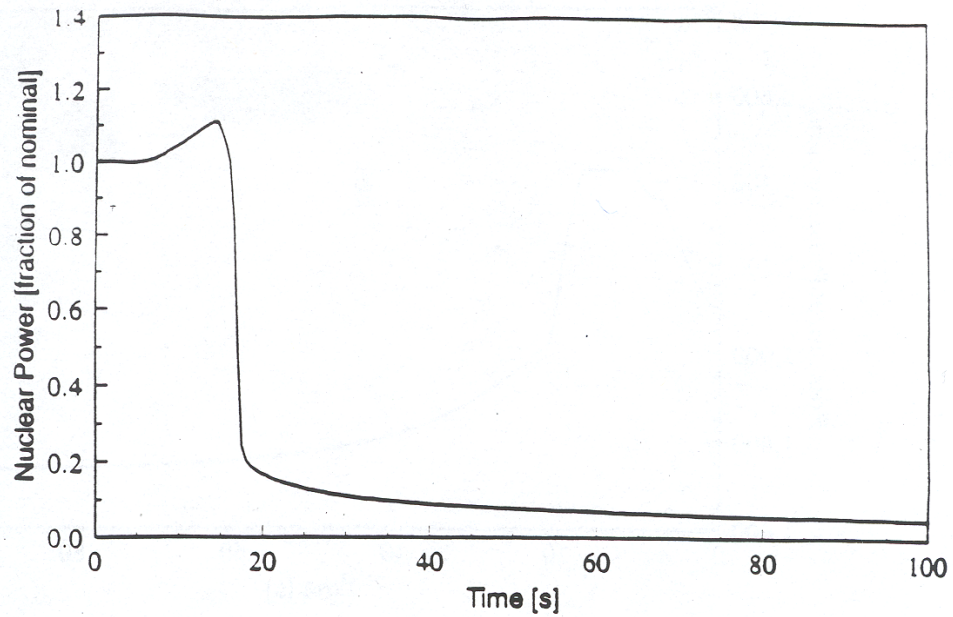


Figure 14.1.6-12 1/4 Locked Rotor
Clad Inner Temperature Versus Time

UFSAR Revision 30.0



Revision: **18.1**

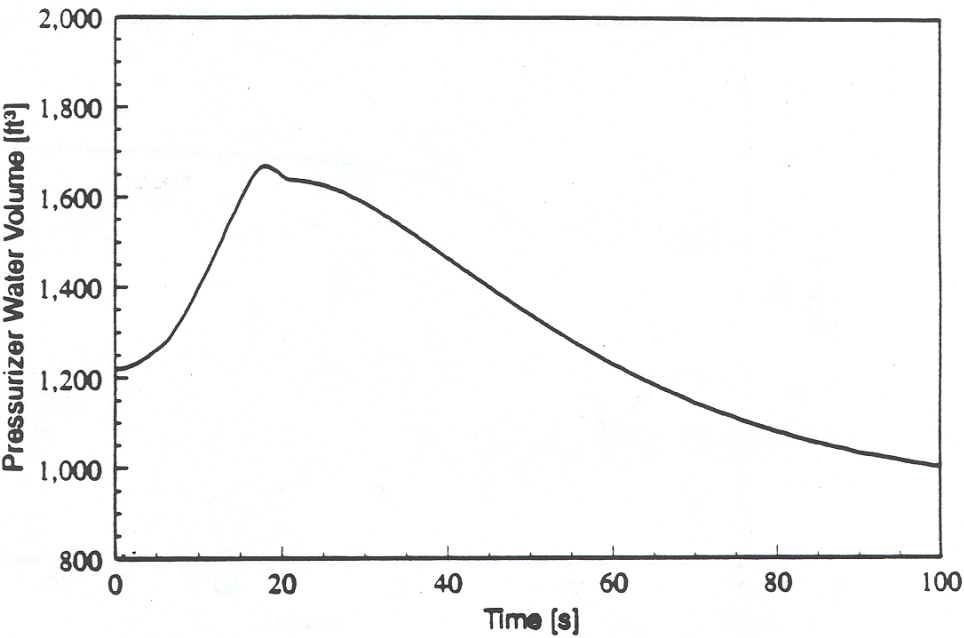
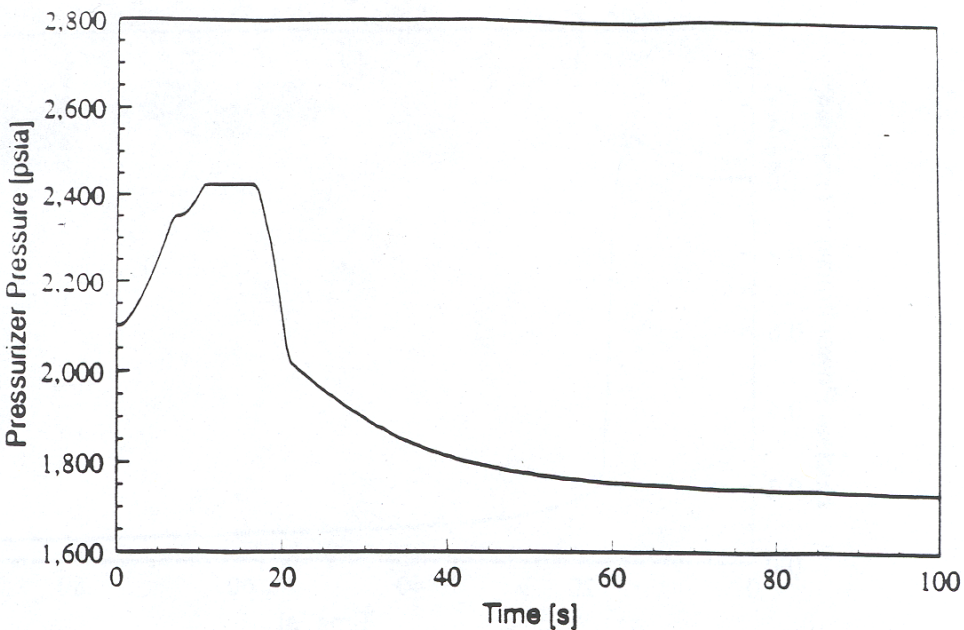
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**AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
NUCLEAR GENERATION GROUP
BRIDGMAN, MICHIGAN**

Title: **Nuclear Power and DNBR vs. Time For Loss of Load,
Minimum Reactivity Feedback With Pressurizer
Spray and PORVs**

UFSAR Figure: **14.1.8-1**

Sheet 1 of 1



Revision: **18.1**

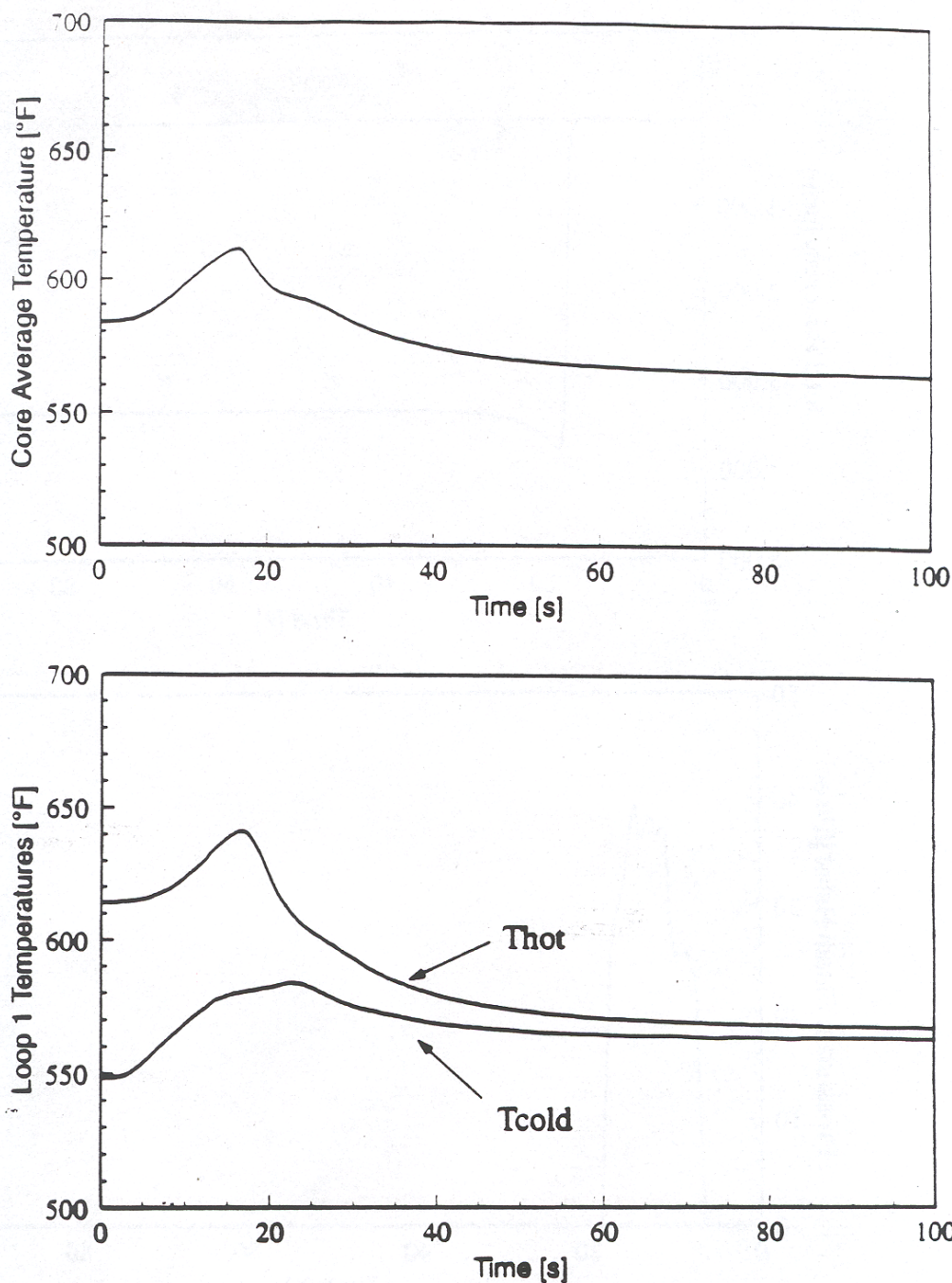
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**AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
NUCLEAR GENERATION GROUP
BRIDGMAN, MICHIGAN**

Title: **Pressurizer Pressure and Pressurizer Water Volume
vs. Time For Loss of Load, Minimum Reactivity
Feedback With Pressurizer Spray and PORVs**

UFSAR Figure: **14.1.8-2**

Sheet 1 of 1



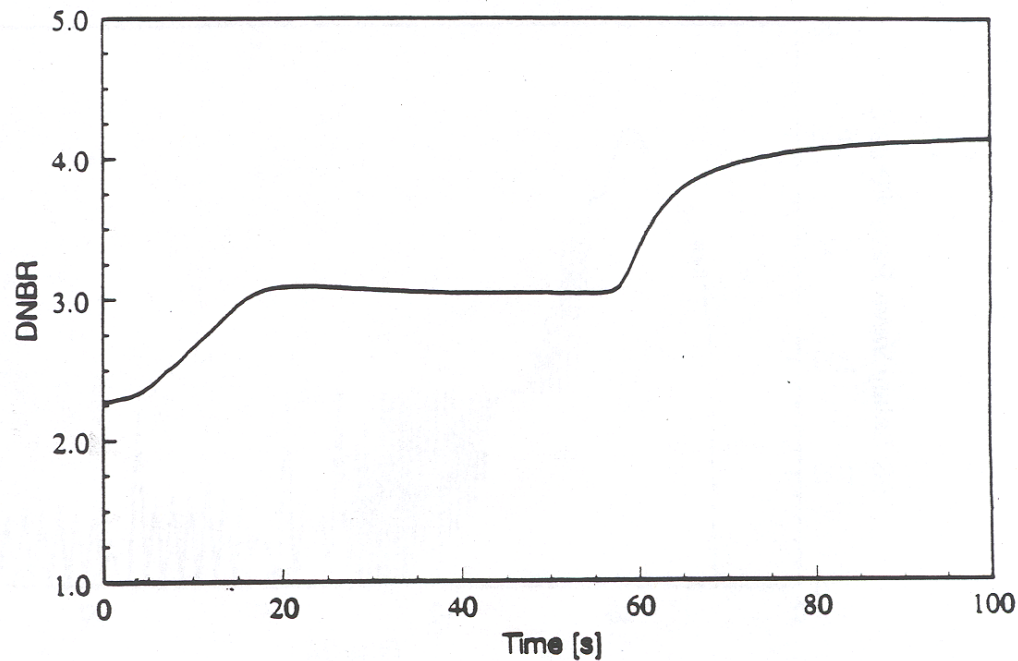
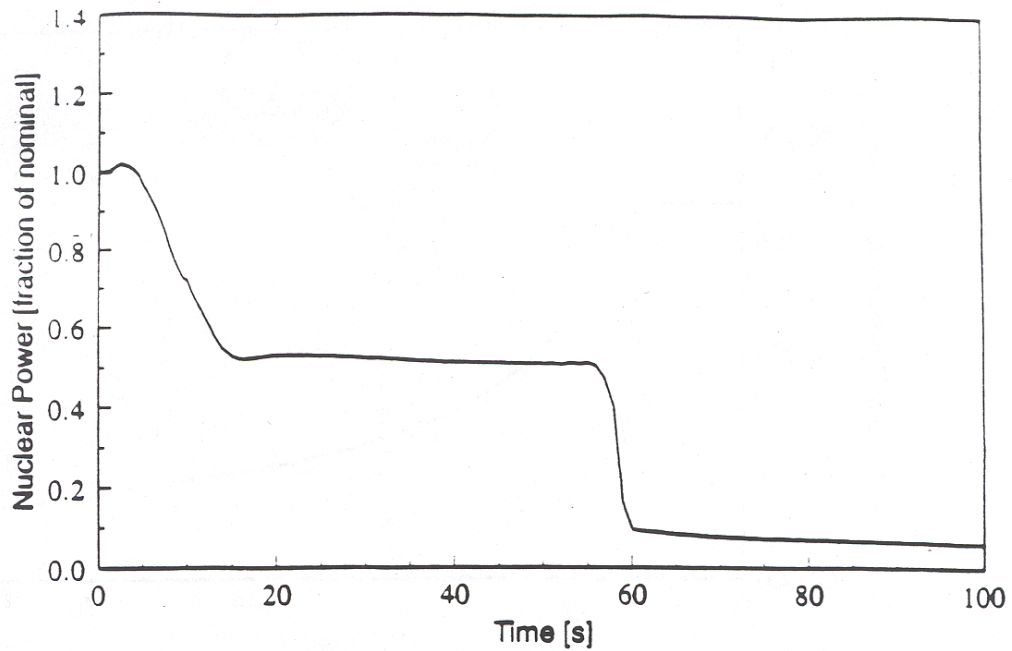
Revision: **18.1** Change Description: **UCR-1630**

AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
NUCLEAR GENERATION GROUP
BRIDGMAN, MICHIGAN

Title: **Core Average and Loop 1 Temperatures vs. Time For
Loss of Load, Minimum Reactivity Feedback With
Pressurizer Spray and PORVs**

UFSAR Figure: **14.1.8-3**

Sheet 1 of 1



Revision: **18.1**

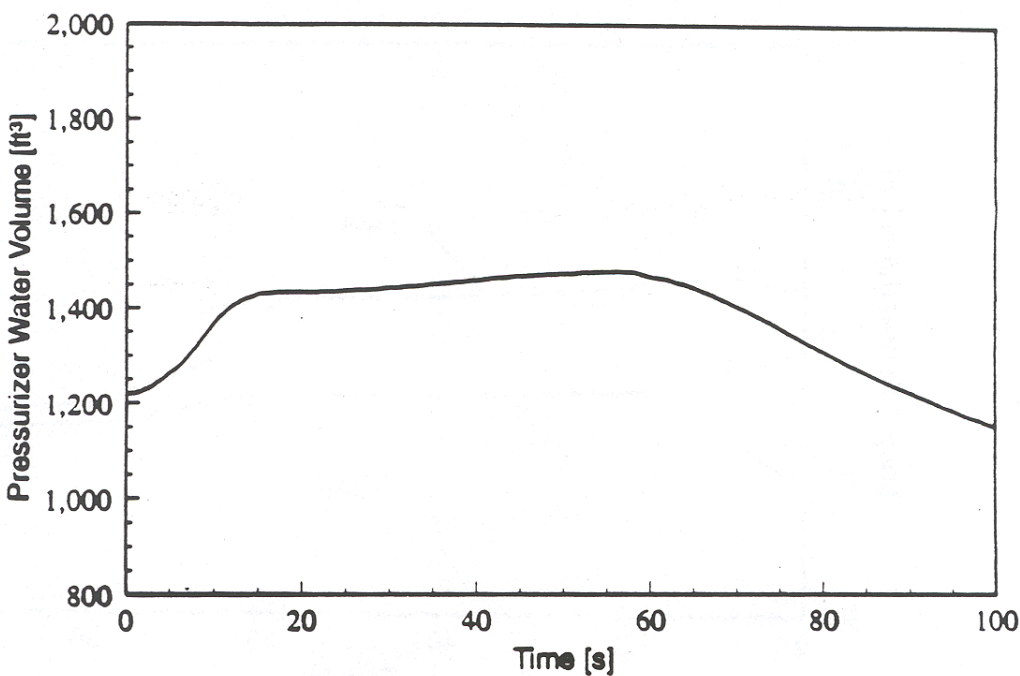
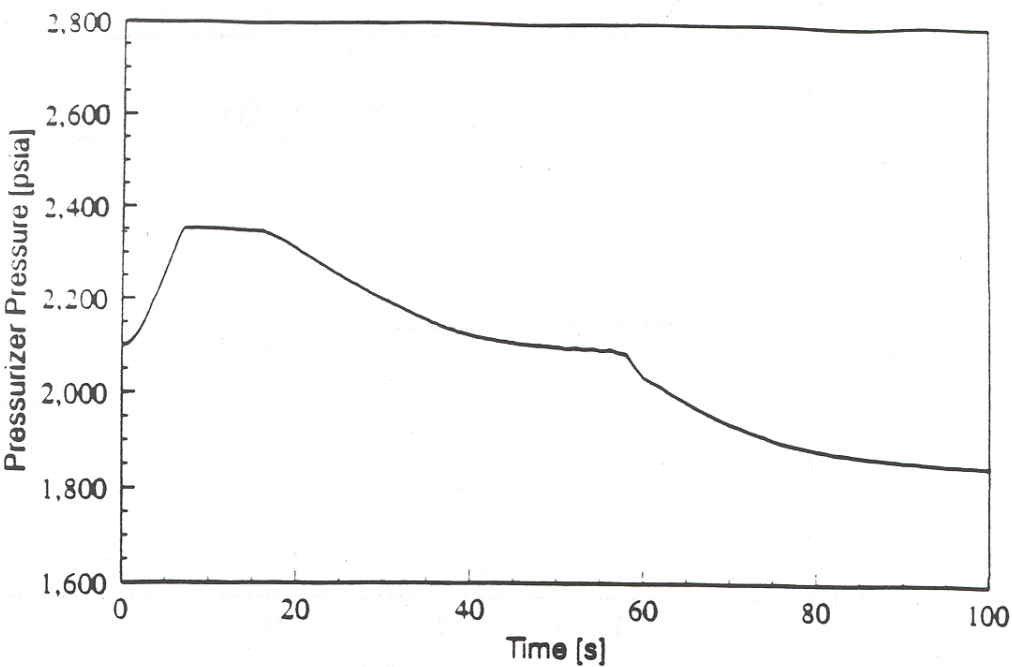
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**AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
NUCLEAR GENERATION GROUP
BRIDGMAN, MICHIGAN**

Title: **Nuclear Power and DNBR vs. Time For Loss of Load,
Maximum Reactivity Feedback With Pressurizer
Spray and PORVs**

UFSAR Figure: **14.1.8-4**

Sheet 1 of 1



Revision: **18.1**

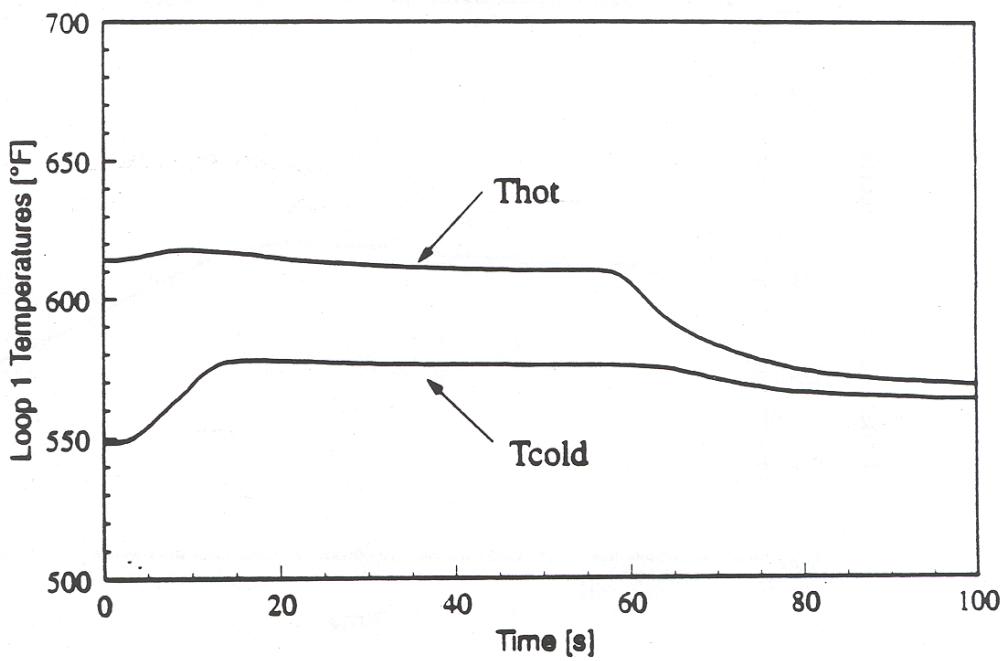
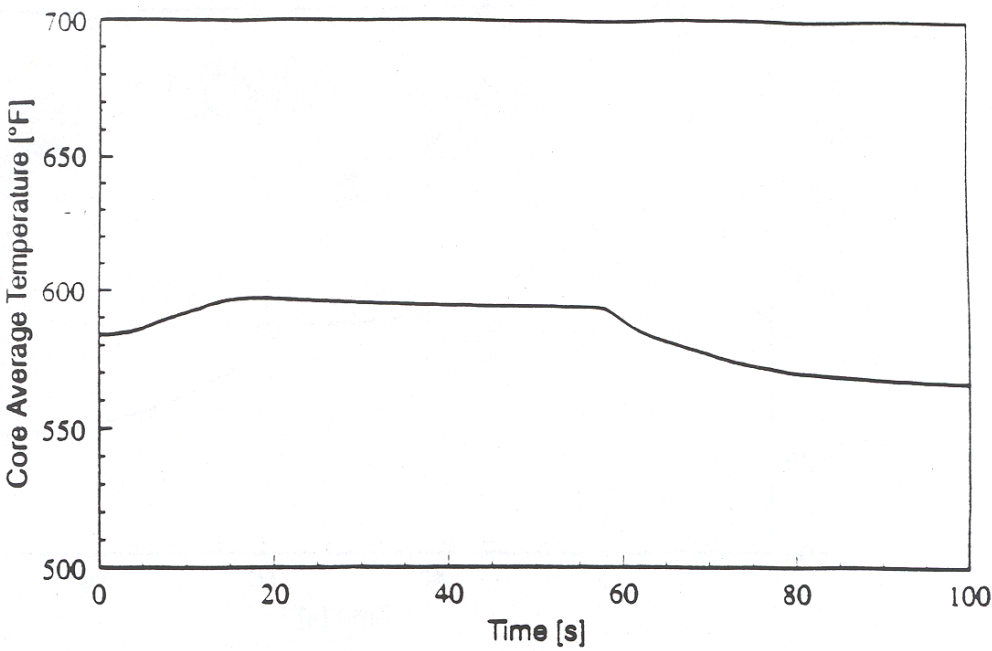
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**AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
NUCLEAR GENERATION GROUP
BRIDGMAN, MICHIGAN**

Title: **Pressurizer Pressure and Pressurizer Water Volume
vs. Time For Loss of Load, Maximum Reactivity
Feedback With Pressurizer Spray and PORVs**

UFSAR Figure: **14.1.8-5**

Sheet 1 of 1



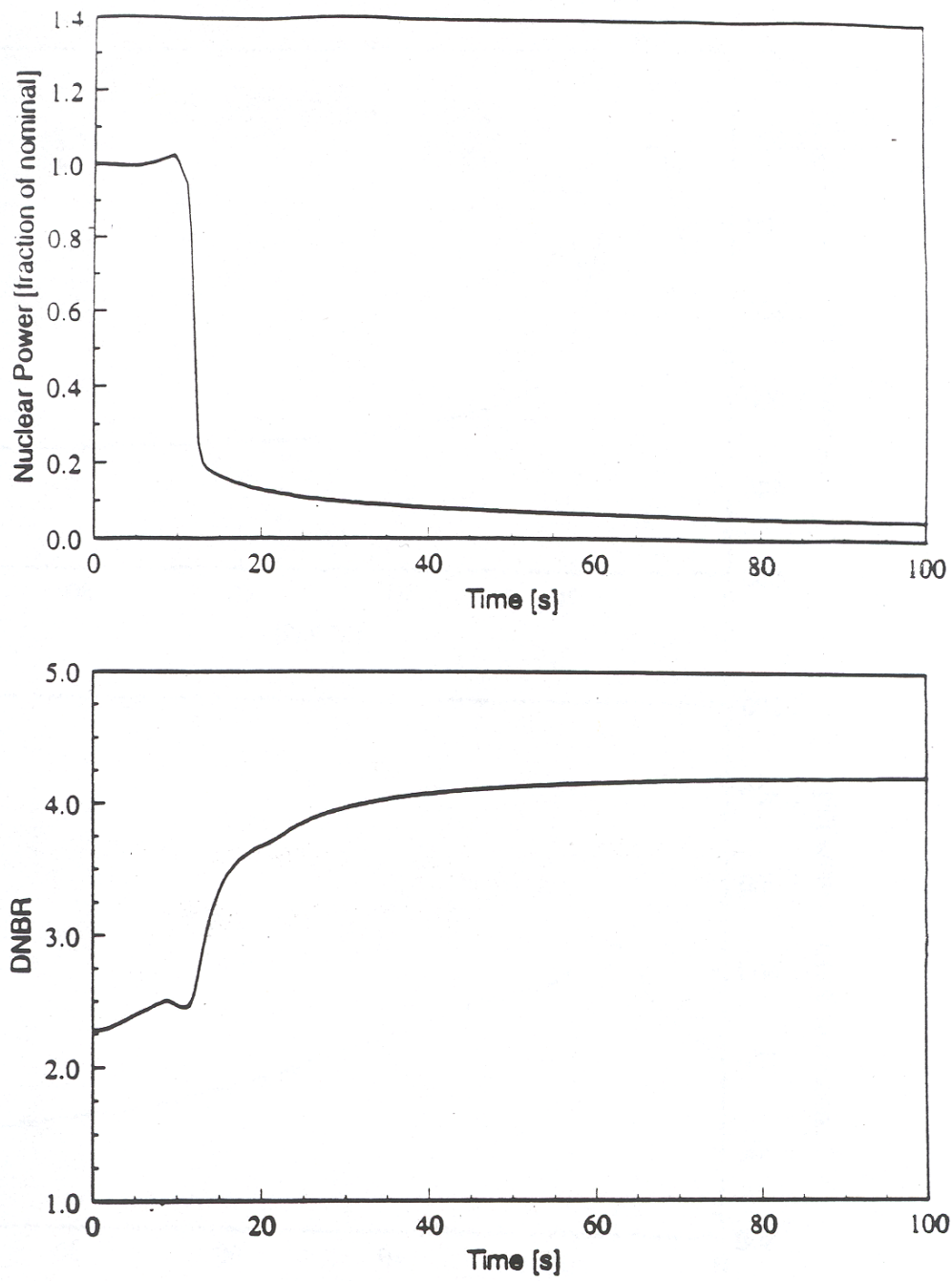
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**AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
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BRIDGMAN, MICHIGAN**

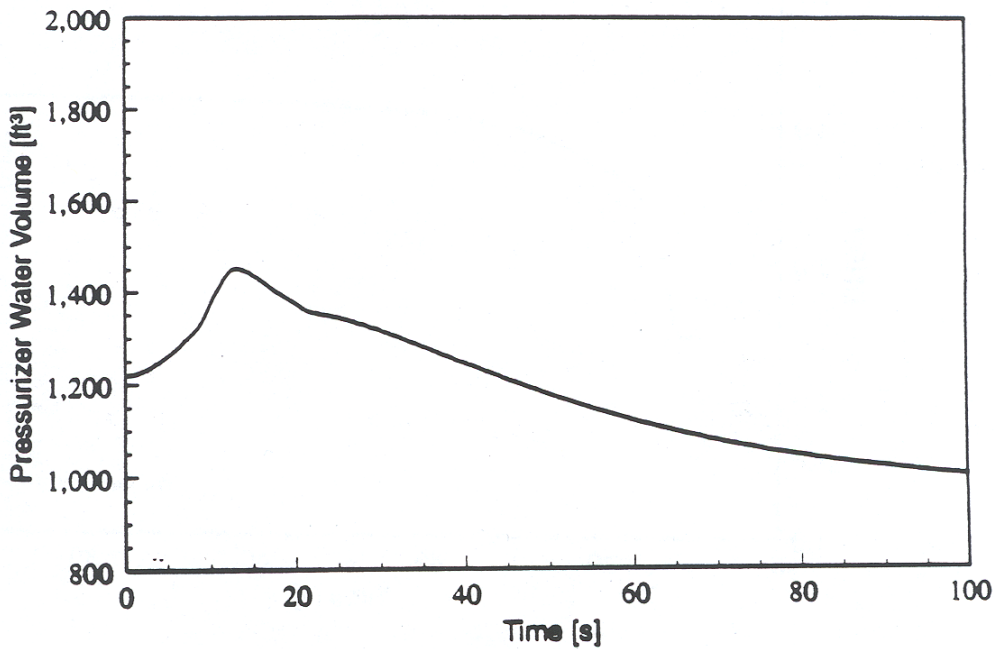
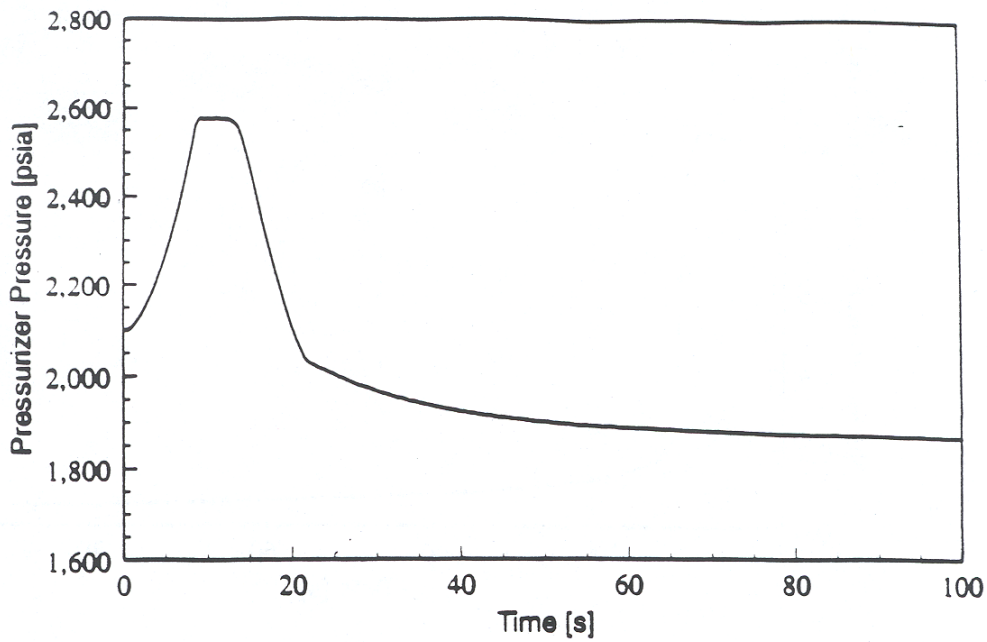
Title: **Core Average and Loop 1 Temperatures vs. Time For
Loss of Load, Maximum Reactivity Feedback With
Pressurizer Spray and PORVs**

UFSAR Figure: **14.1.8-6**

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Revision: 18.1	Change Description: UCR-1630	
AMERICAN ELECTRIC POWER COOK NUCLEAR PLANT NUCLEAR GENERATION GROUP BRIDGMAN, MICHIGAN	Title: Nuclear Power and DNBR vs. Time For Loss of Load, Minimum Reactivity Feedback Without Pressurizer Spray and PORVs	
	UFSAR Figure: 14.1.8-7	Sheet 1 of 1



Revision: **18.1**

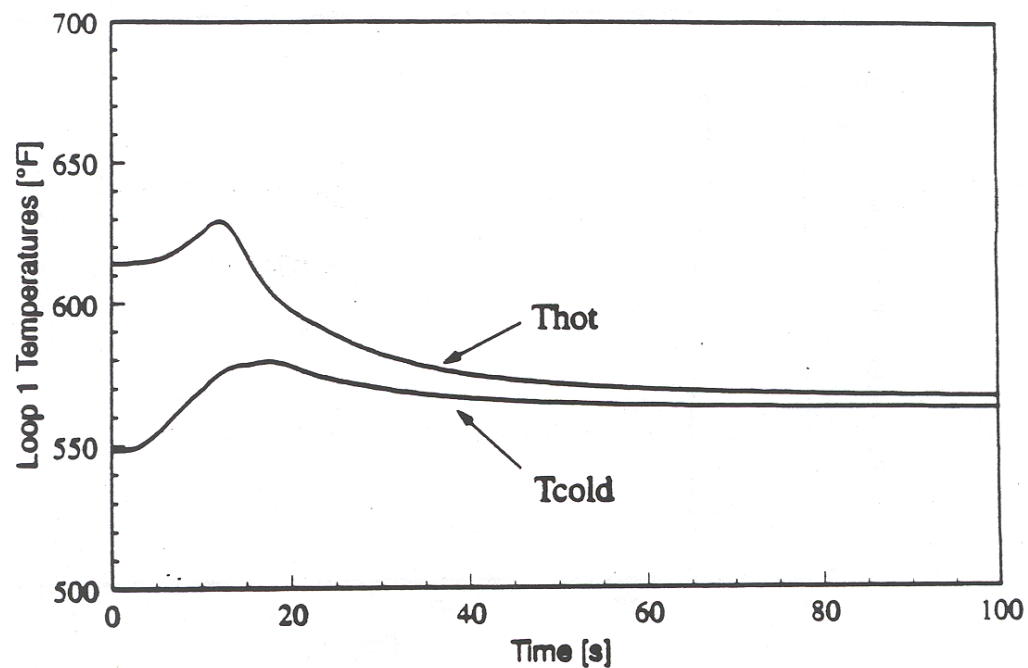
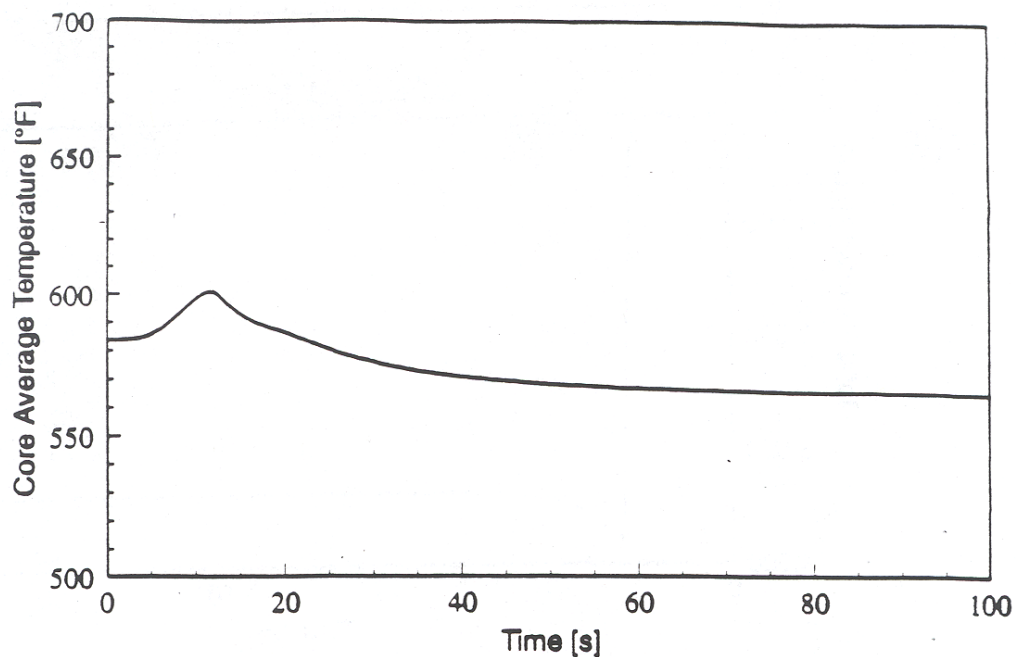
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**AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
NUCLEAR GENERATION GROUP
BRIDGMAN, MICHIGAN**

Title: **Pressurizer Pressure and Pressurizer Water Volume
vs. Time For Loss of Load, Minimum Reactivity
Feedback Without Pressurizer Spray and PORVs**

UFSAR Figure: **14.1.8-8**

Sheet 1 of 1



Revision: **18.1**

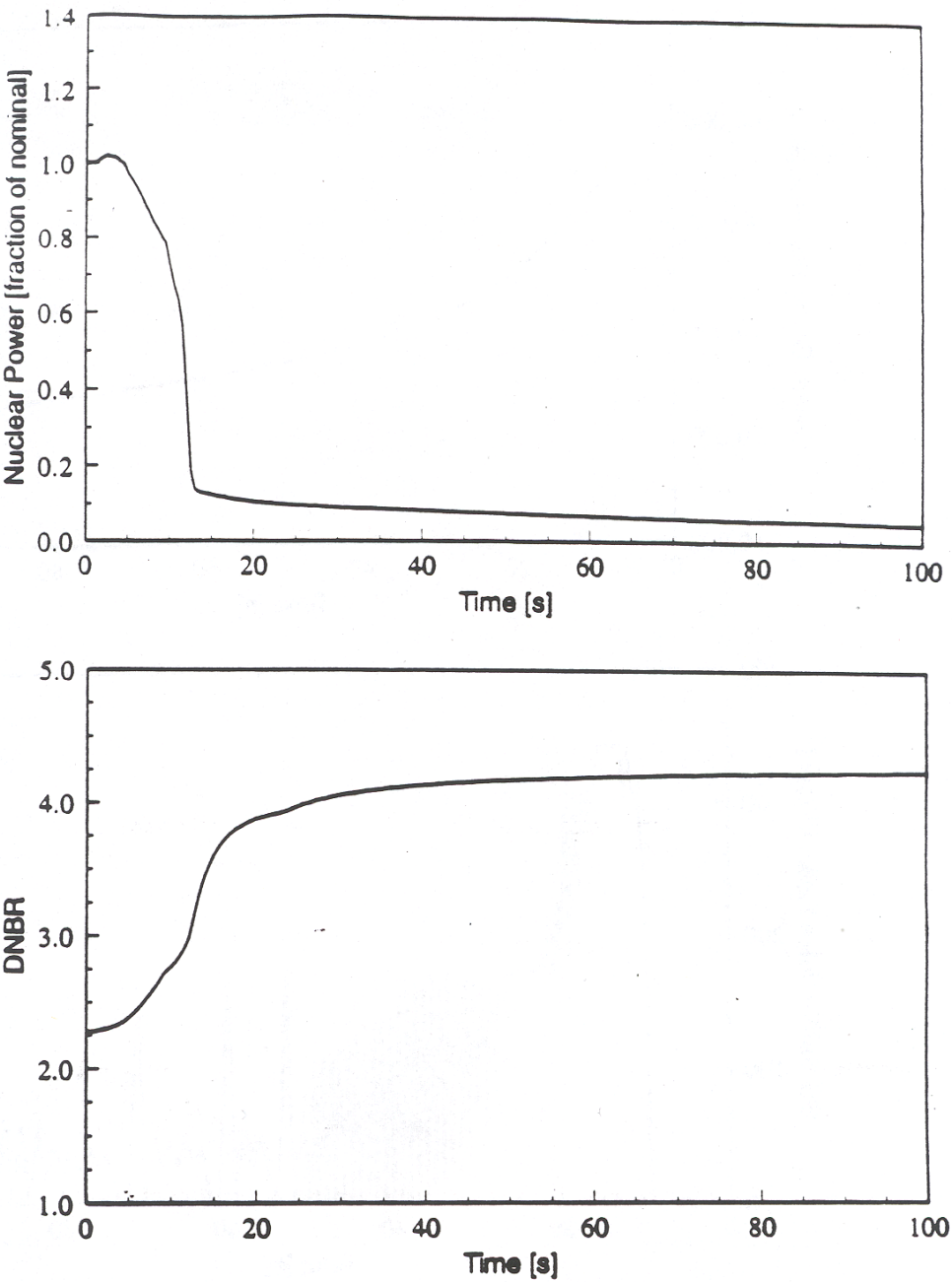
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**AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
NUCLEAR GENERATION GROUP
BRIDGMAN, MICHIGAN**

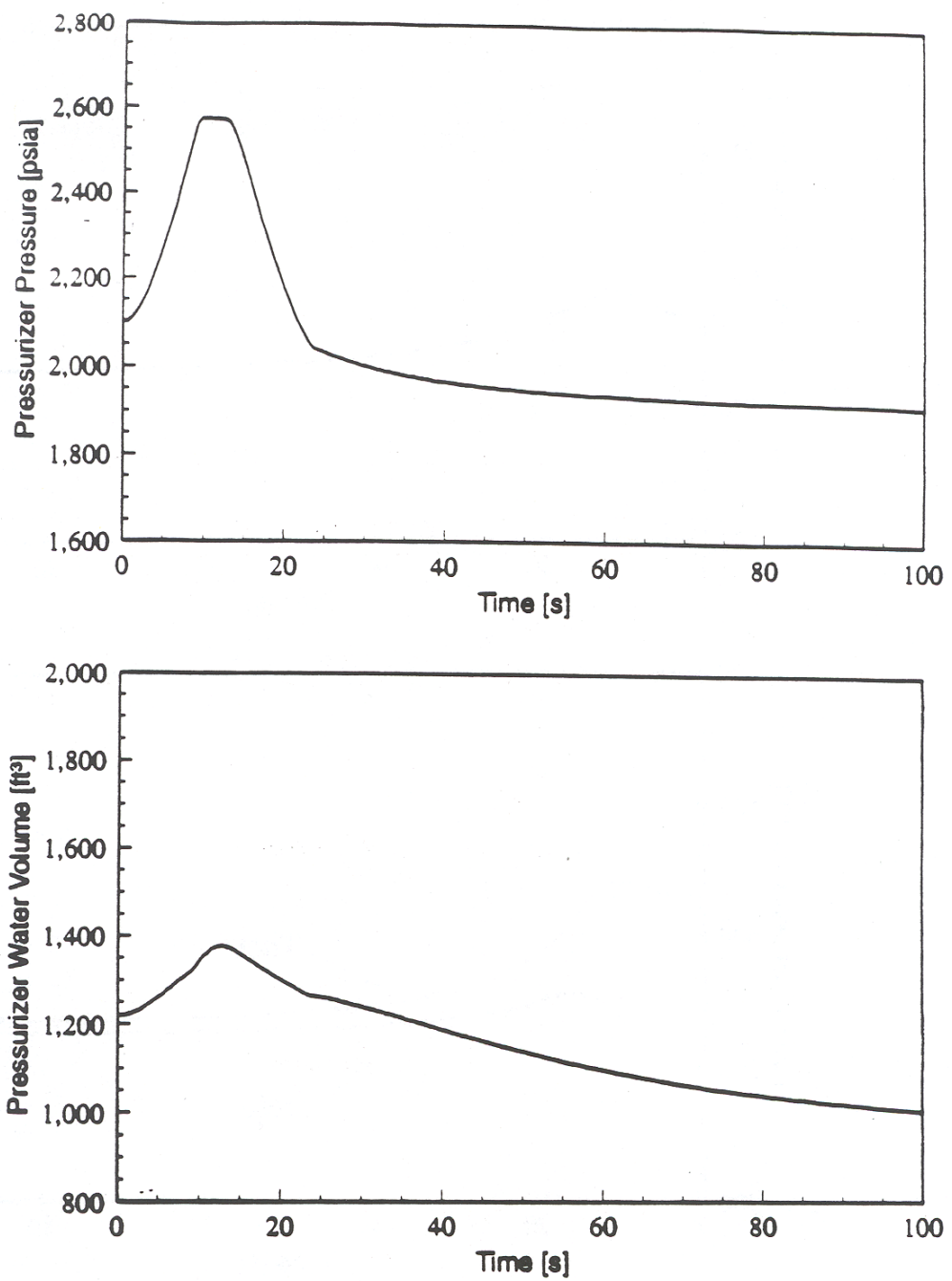
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Loss of Load, Minimum Reactivity Feedback Without
Pressurizer Spray and PORVs**

UFSAR Figure: **14.1.8-9**

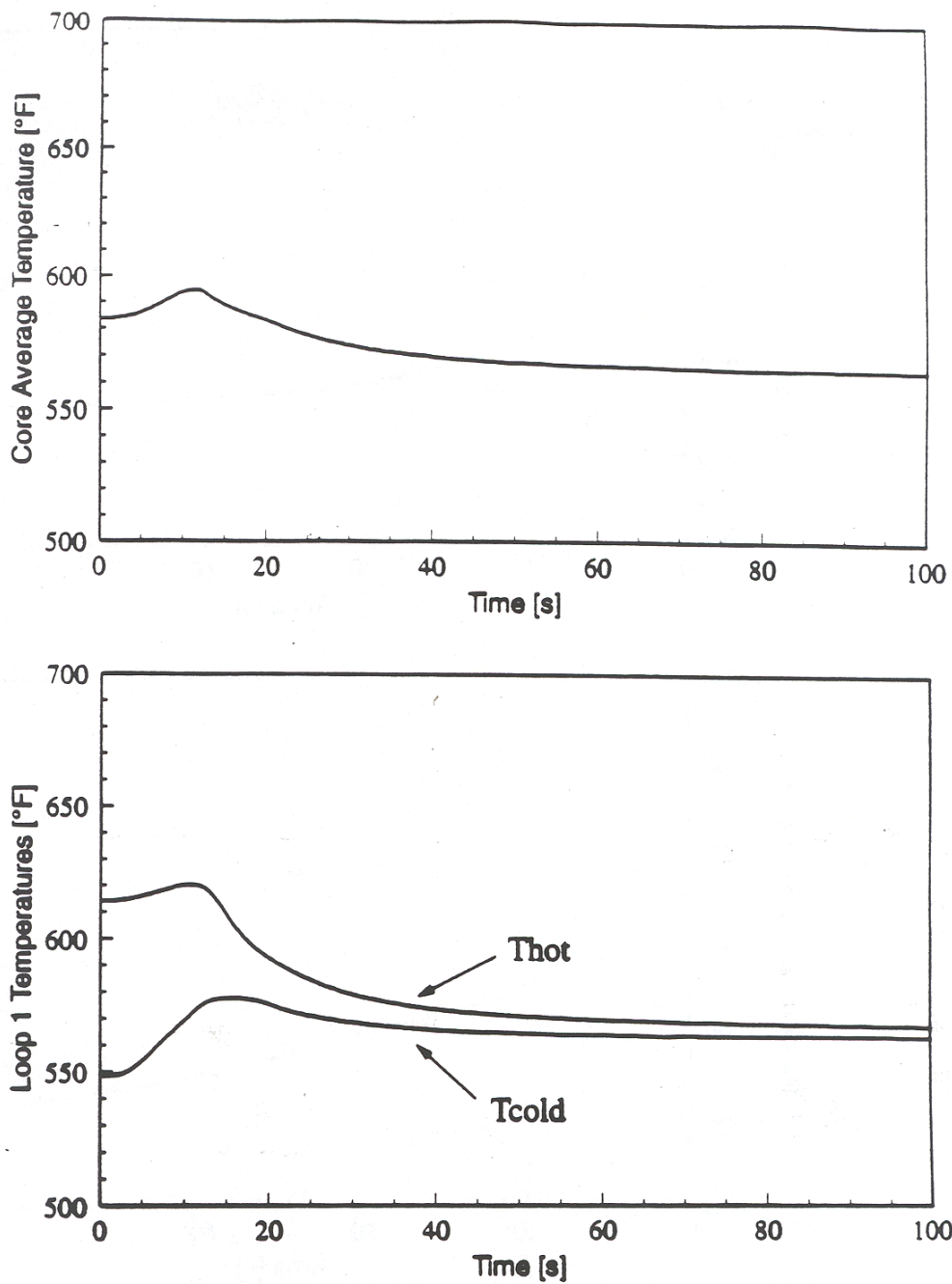
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Revision: 18.1	Change Description: UCR-1630		
AMERICAN ELECTRIC POWER COOK NUCLEAR PLANT NUCLEAR GENERATION GROUP BRIDGMAN, MICHIGAN	Title: Nuclear Power and DNBR vs. Time For Loss of Load, Maximum Reactivity Feedback Without Pressurizer Spray and PORVs		
	UFSAR Figure: 14.1.8-10		Sheet 1 of 1



Revision: 18.1		Change Description: UCR-1630	
AMERICAN ELECTRIC POWER COOK NUCLEAR PLANT NUCLEAR GENERATION GROUP BRIDGMAN, MICHIGAN		Title: Pressurizer Pressure and Pressurizer Water Volume vs. Time For Loss of Load, Maximum Reactivity Feedback Without Pressurizer Spray and PORVs	
		UFSAR Figure: 14.1.8-11	Sheet 1 of 1



Revision: **18.1** Change Description: **UCR-1630**

AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
NUCLEAR GENERATION GROUP
BRIDGMAN, MICHIGAN

Title: **Core Average and Loop 1 Temperature vs. Time For
Loss of Load, Maximum Reactivity Feedback Without
Pressurizer Spray and PORVs**

UFSAR Figure: **14.1.8-12**

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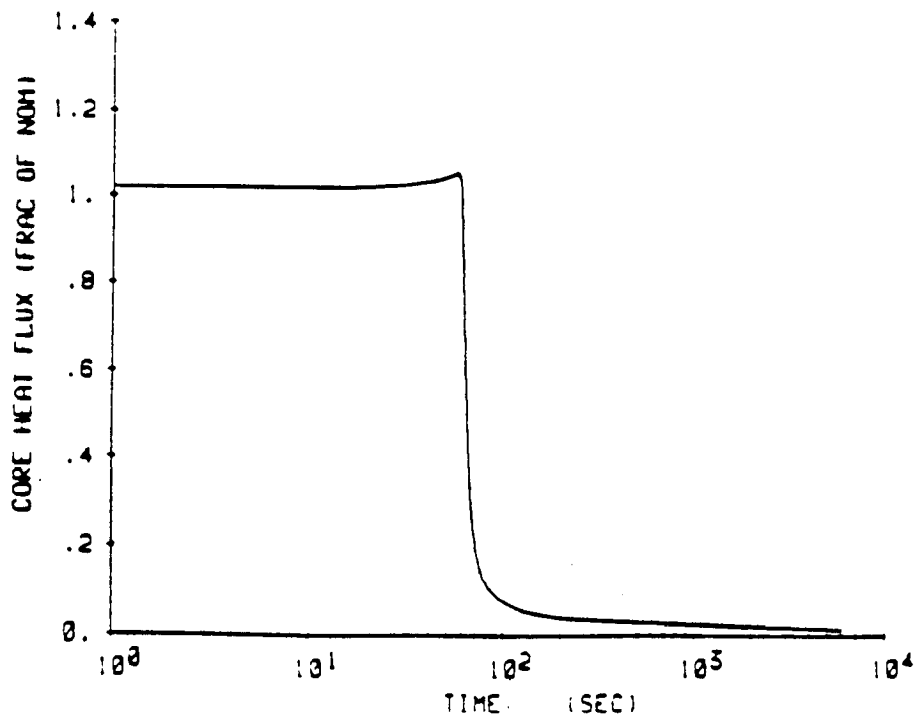
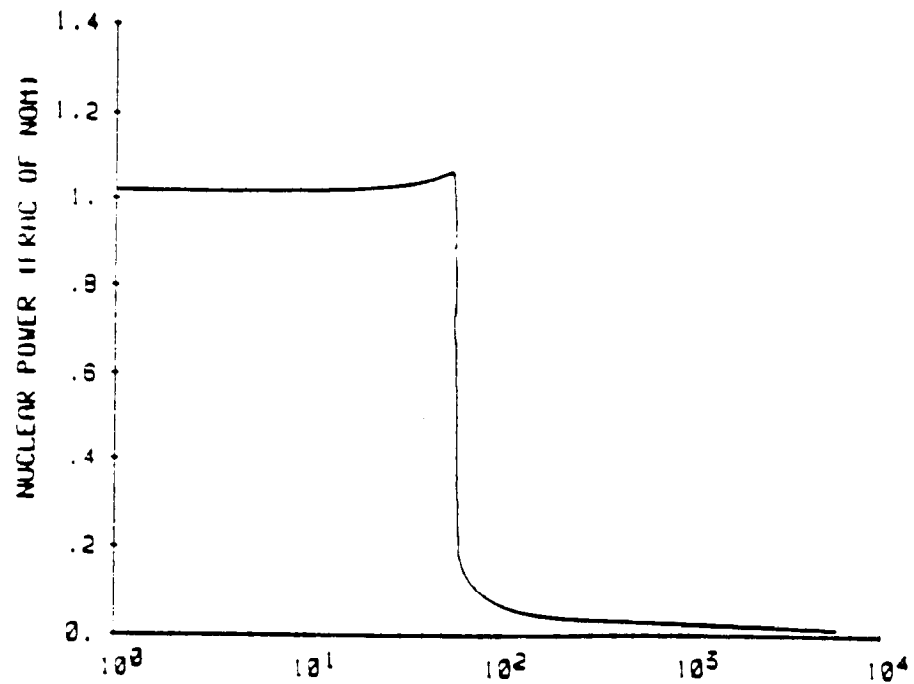
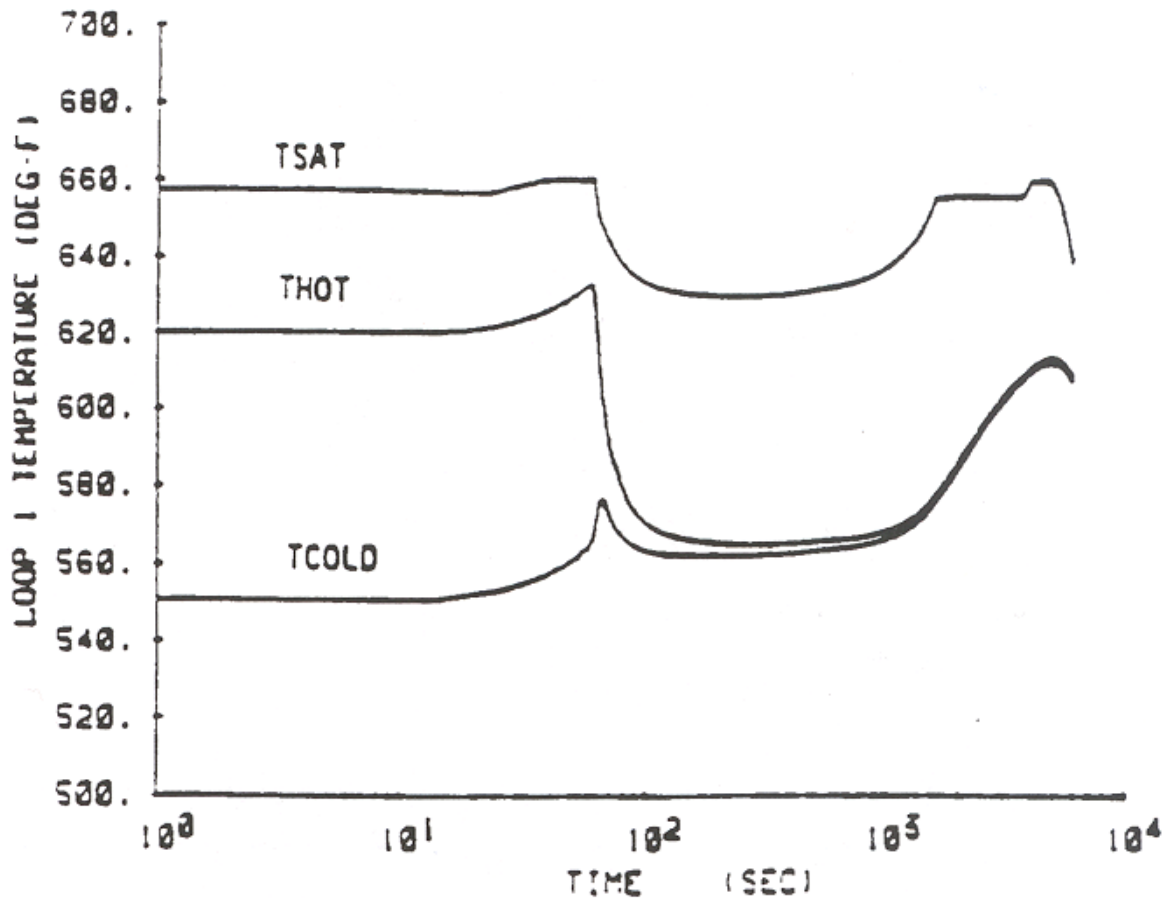


Figure 14.1.9-1 Loss of Normal Feedwater
Nuclear Power and Core Heat Flux Versus Time



Revision: **20.2**

Change Description: **UCR-1815**

AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
NUCLEAR GENERATION GROUP
BRIDGMAN, MICHIGAN

Title: **Loss of Normal Feedwater Loop Temperature
Versus Time**

UFSAR Figure: **14.1.9-2**

Sheet 1 of 1

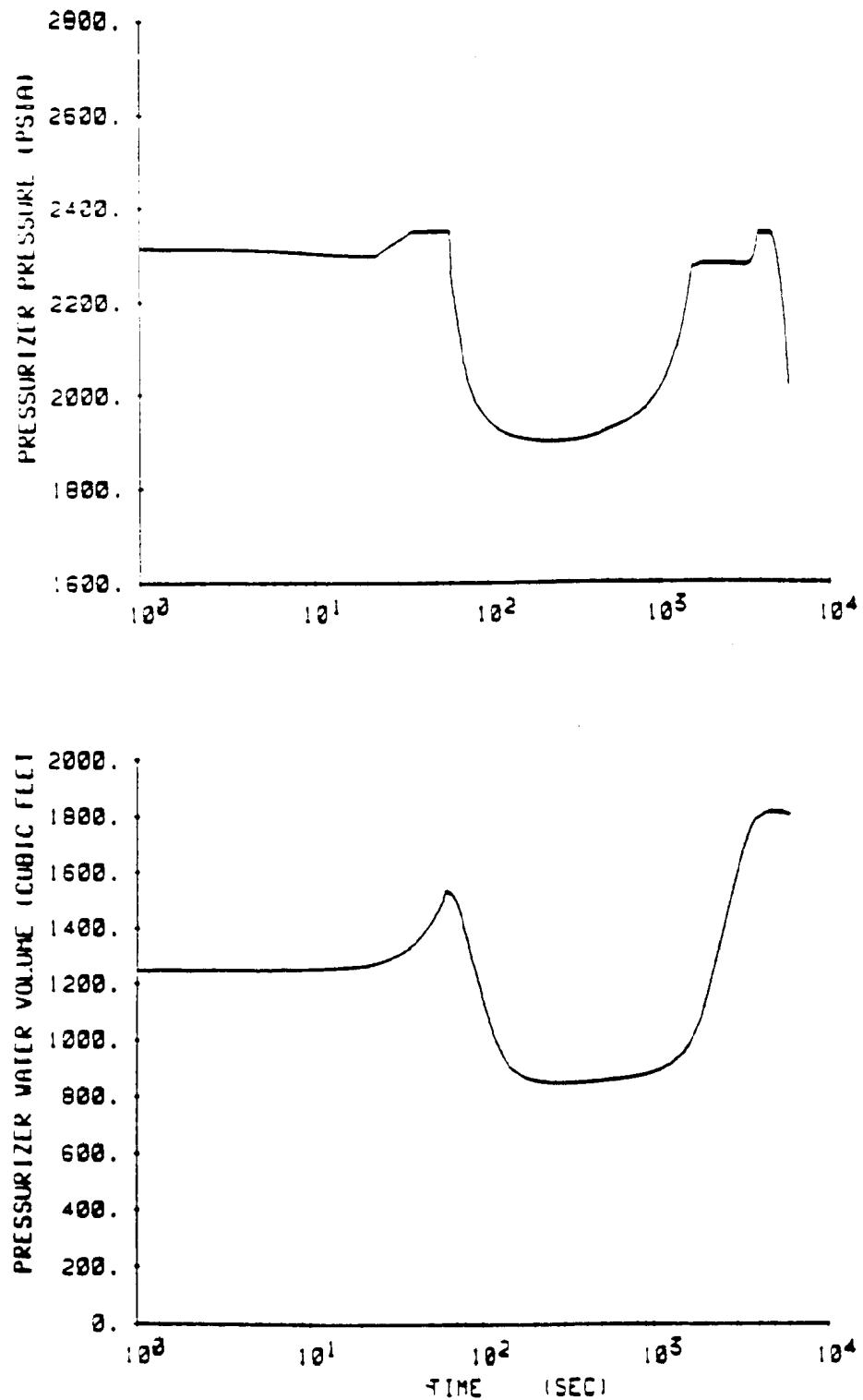
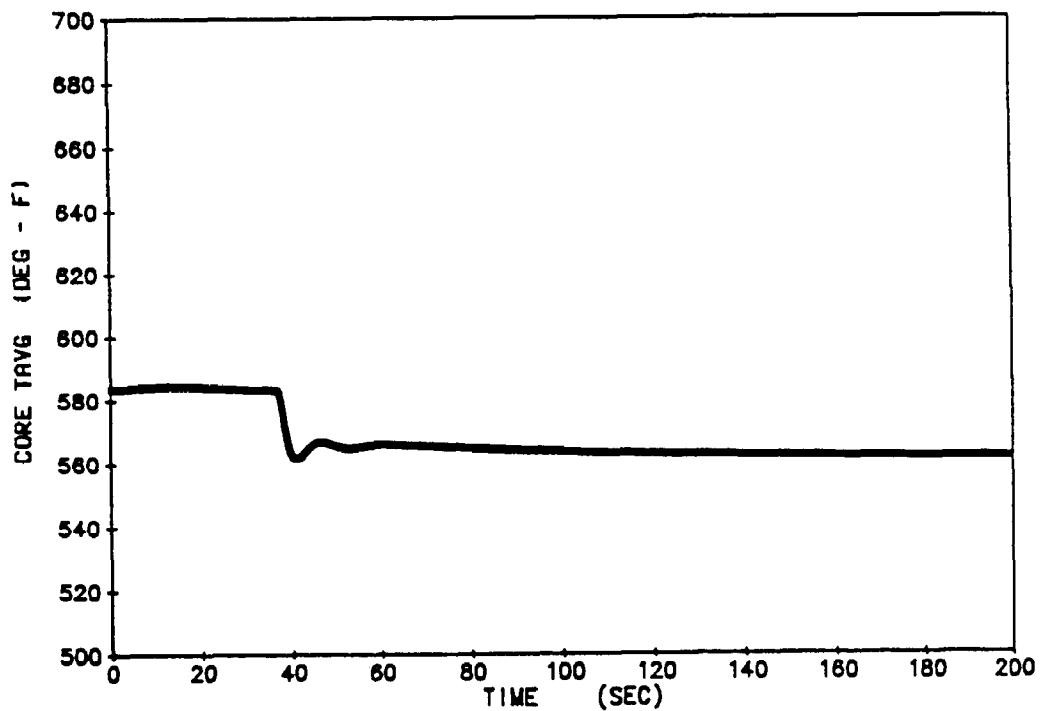
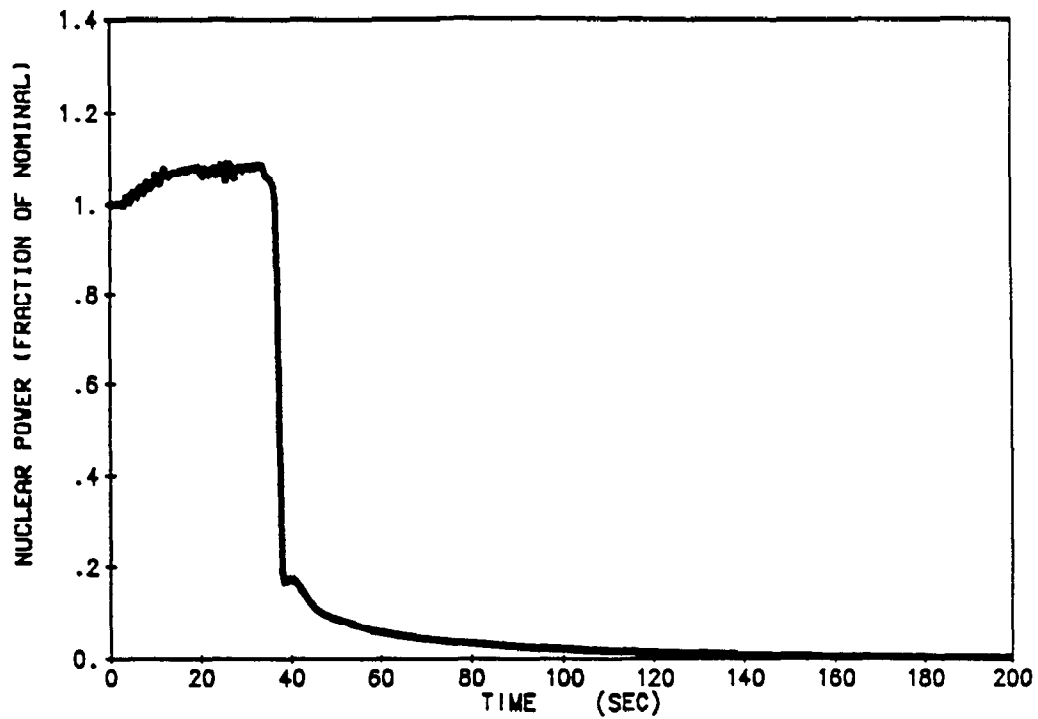


Figure 14.1.9-3 Loss of Normal Feedwater
Pressurizer Pressure and Pressurizer Water Volume Versus
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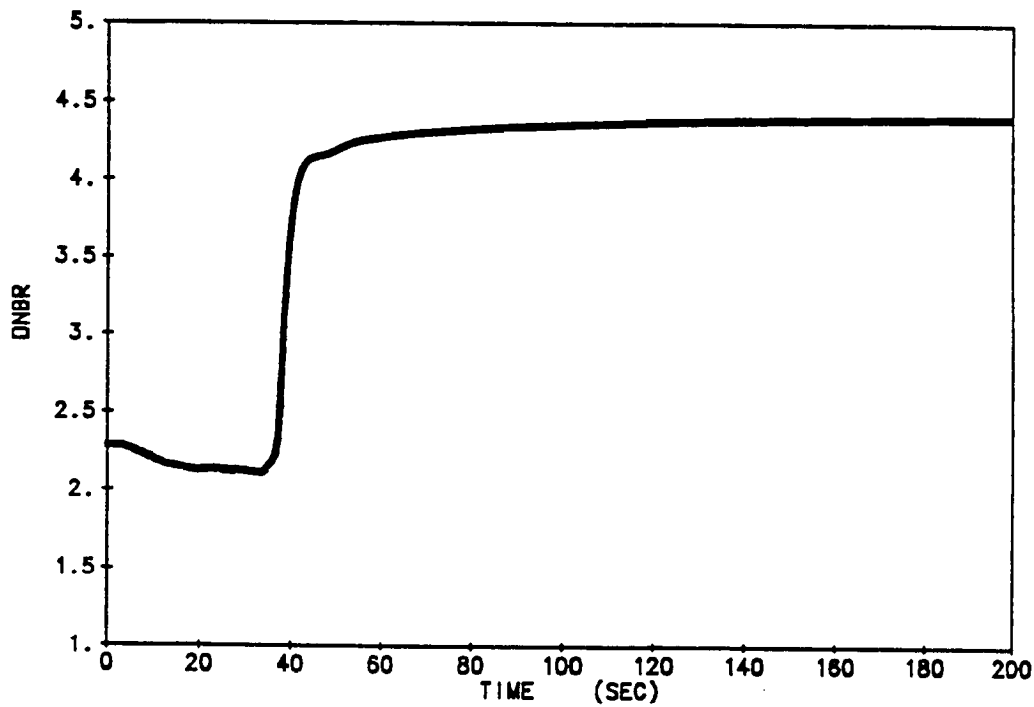
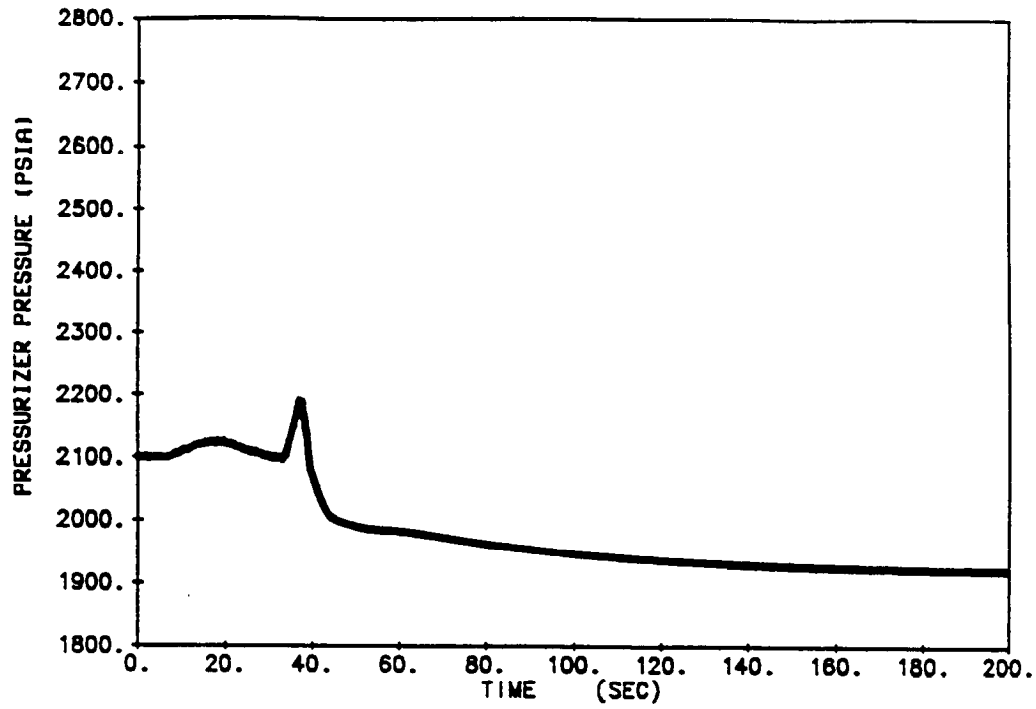


DONALD C. COOK
NUCLEAR PLANT
UNIT 2(FULL V5 CORE)

NUCLEAR POWER TRANSIENT & CORE
AVERAGE TEMPERATURE vs. TIME FOR
THE SINGLE LOOP FEEDWATER
MALFUNCTION WITH AUTOMATIC ROD
CONTROL AT FULL POWER

Figure 14.1.10B-1

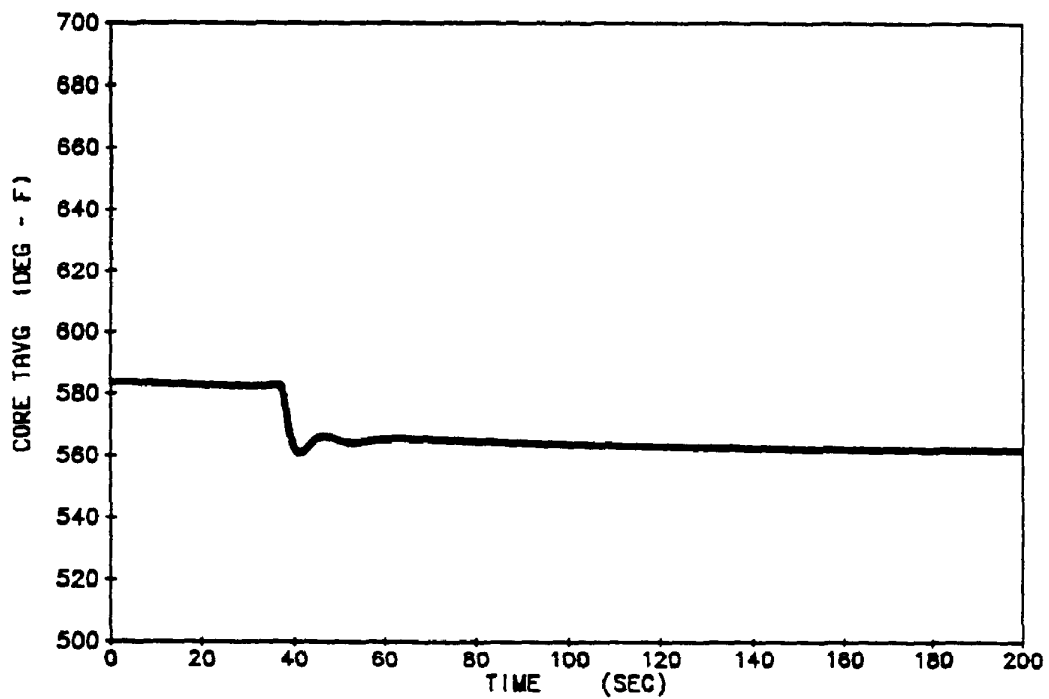
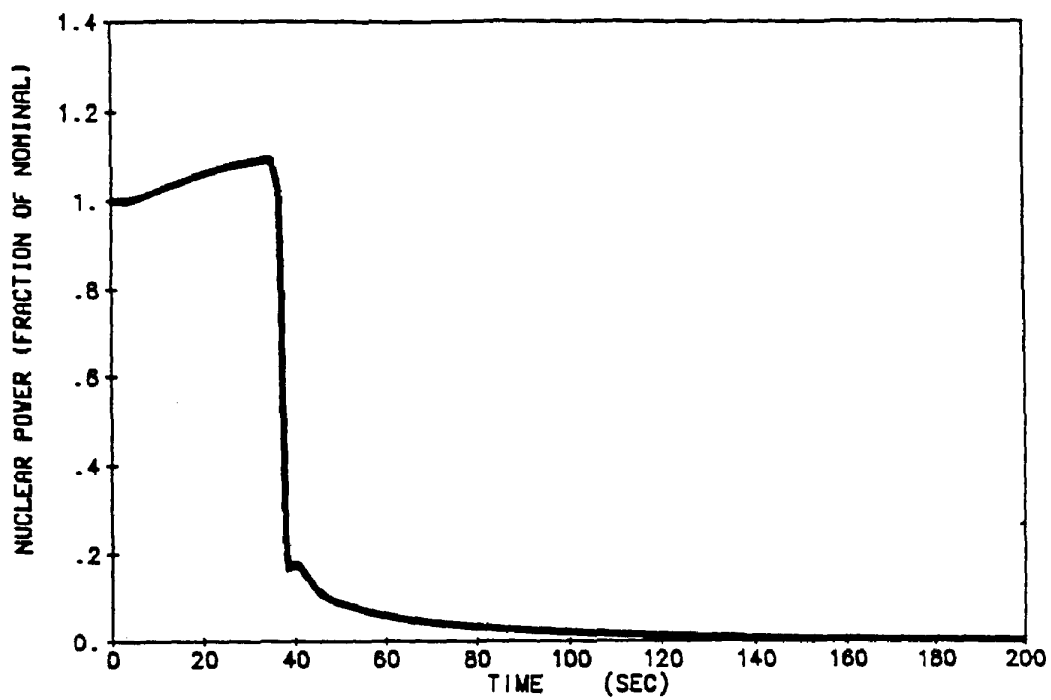
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DONALD C. COOK
NUCLEAR PLANT
UNIT 2(FULL VS CORE)

PRESSURIZER PRESSURE & DNBR vs. TIME FOR
THE SINGLE LOOP FEEDWATER
MALFUNCTION WITH AUTOMATIC ROD
CONTROL AT FULL POWER

Figure 14.1.10B-2

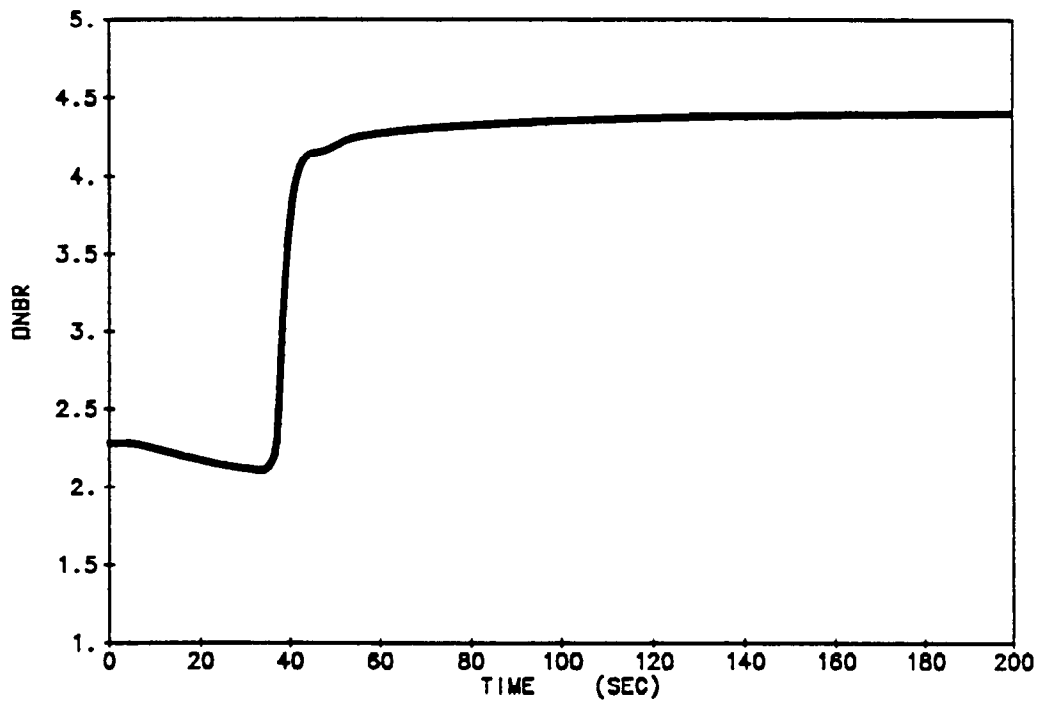
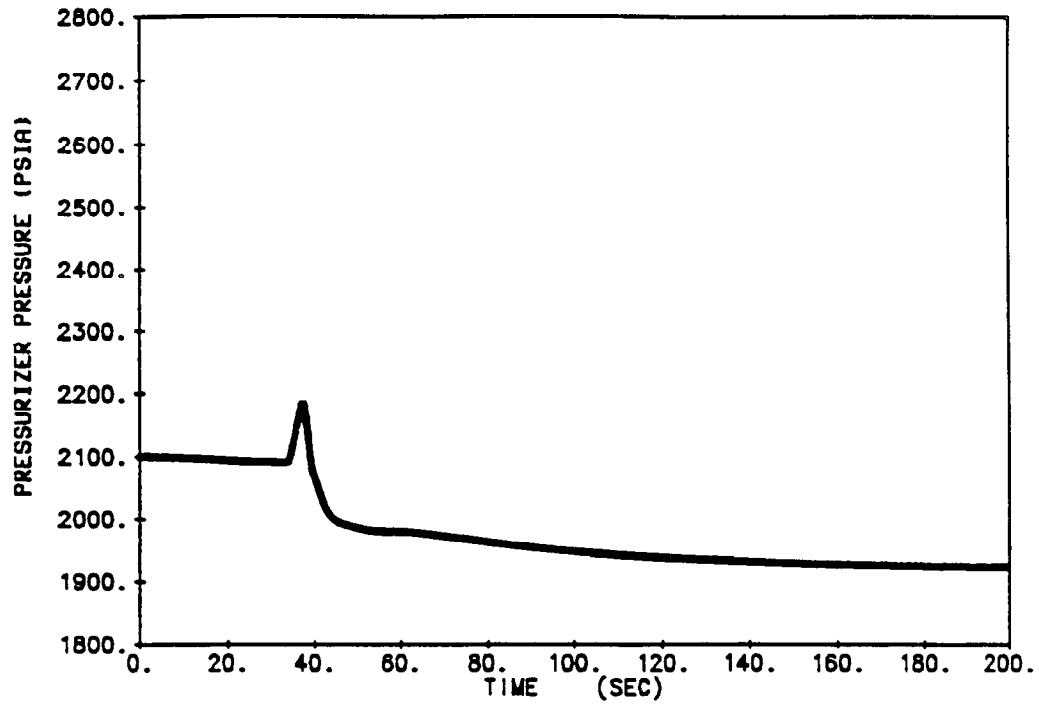


DONALD C. COOK
NUCLEAR PLANT
UNIT 2(FULL VS CORE)

NUCLEAR POWER TRANSIENT & CORE
AVERAGE TEMPERATURE vs. TIME FOR
THE SINGLE LOOP FEEDWATER
MALFUNCTION WITH MANUAL ROD
CONTROL AT FULL POWER

Figure 14.1.10B-3

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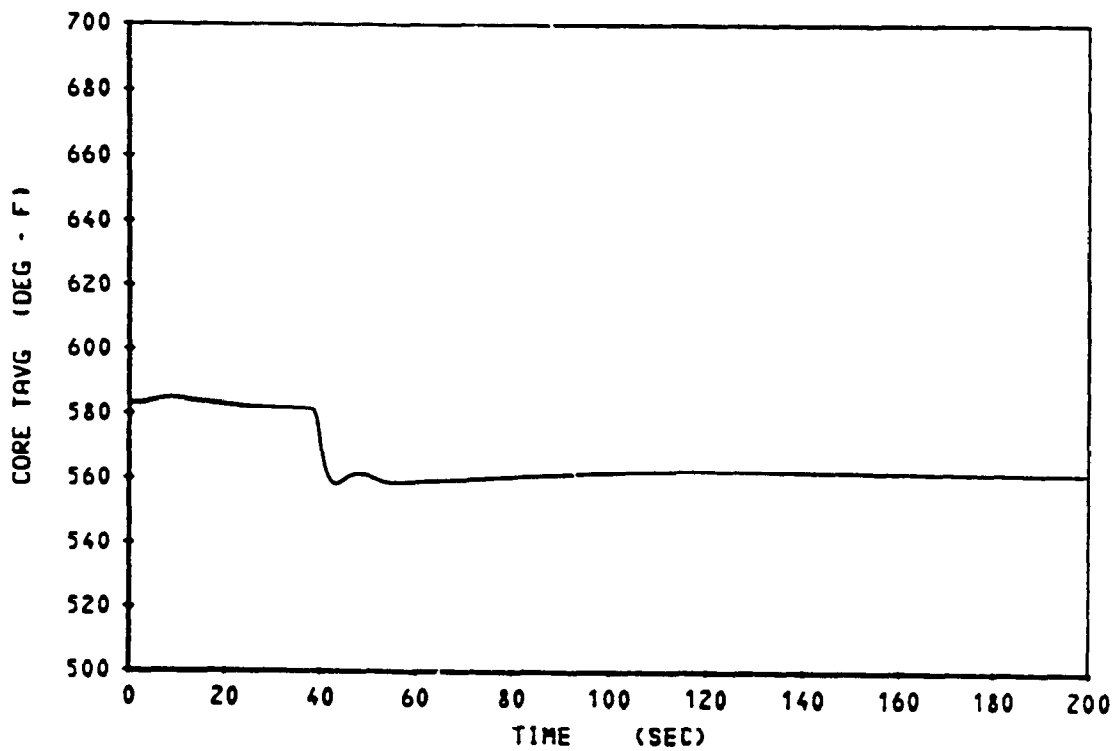
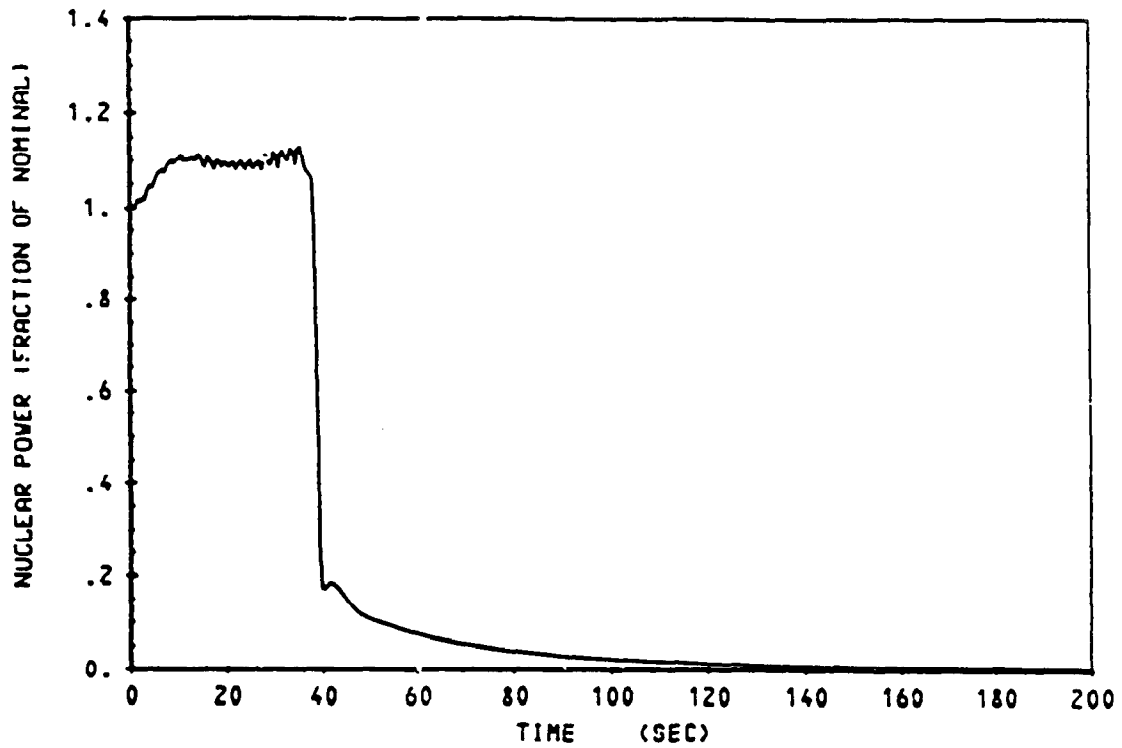


DONALD C. COOK
NUCLEAR PLANT
UNIT 2(FULL V5 CORE)

PRESSURIZER PRESSURE & DNBR vs. TIME FOR
THE SINGLE LOOP FEEDWATER
MALFUNCTION WITH MANUAL ROD
CONTROL AT FULL POWER

Figure 14.1.10B-4

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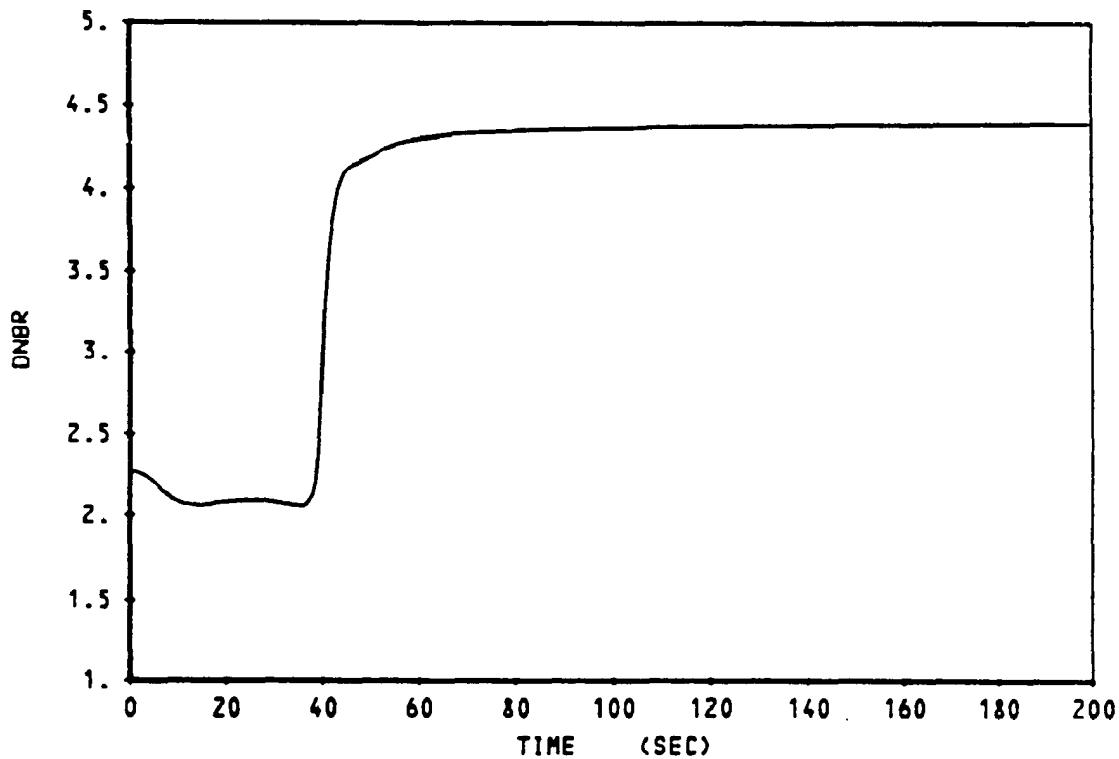
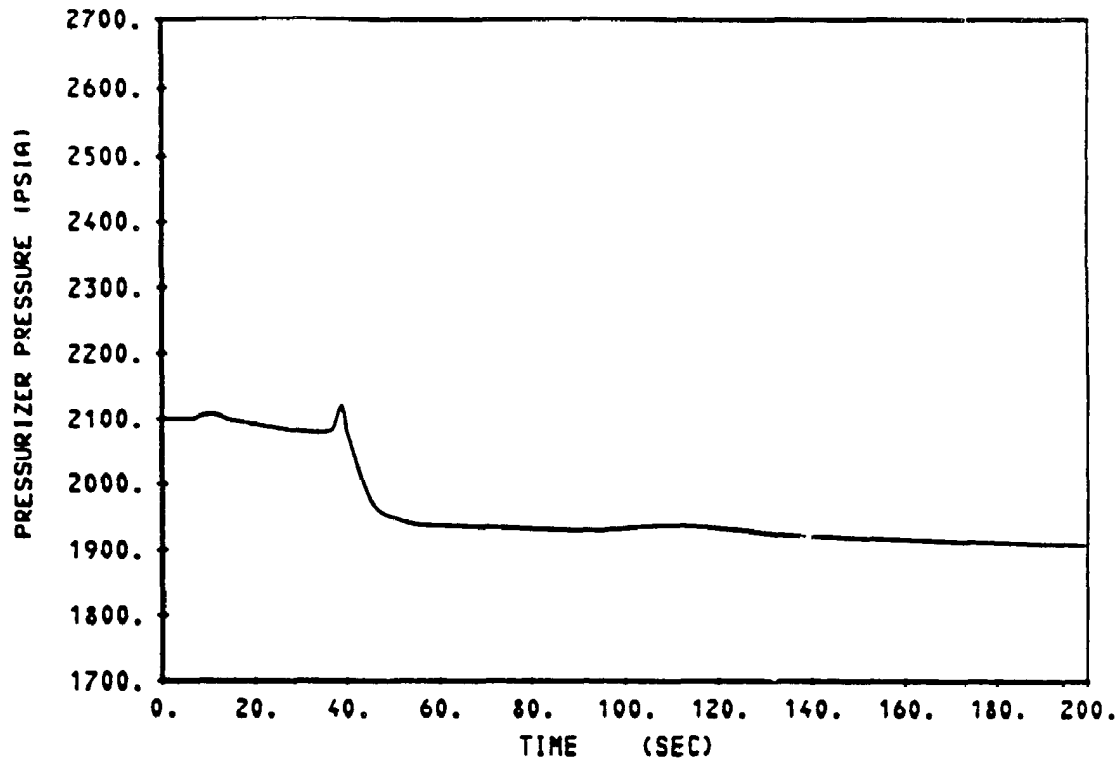


DONALD C. COOK
NUCLEAR PLANT
UNIT 2(FULL V5 CORE)

NUCLEAR POWER TRANSIENT & CORE
AVERAGE TEMPERATURE vs. TIME FOR
THE MULTI-LOOP FEEDWATER
MALFUNCTION WITH AUTOMATIC ROD
CONTROL AT FULL POWER

Figure 14.1.10B-5

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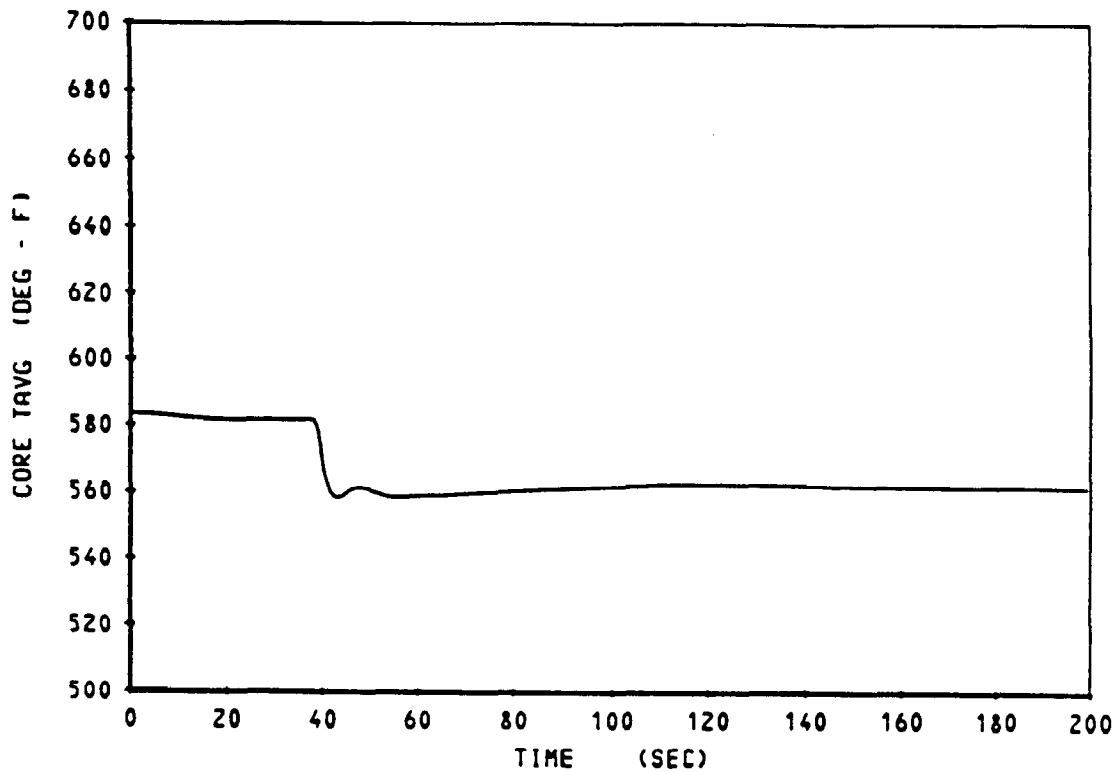
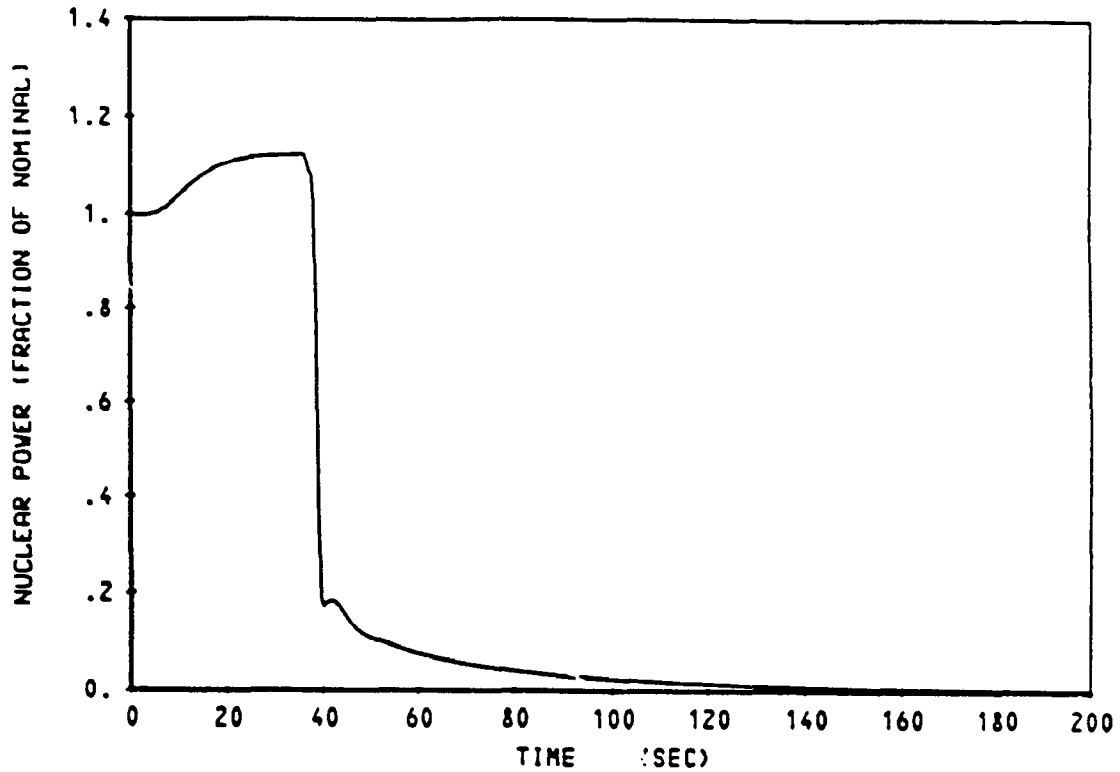


DONALD C. COOK
NUCLEAR PLANT
UNIT 2(FULL VS CORE)

PRESSURIZER PRESSURE & DNBR vs. TIME FOR
THE MULTI-LOOP FEEDWATER
MALFUNCTION WITH AUTOMATIC ROD
CONTROL AT FULL POWER

Figure 14.1.10B-6

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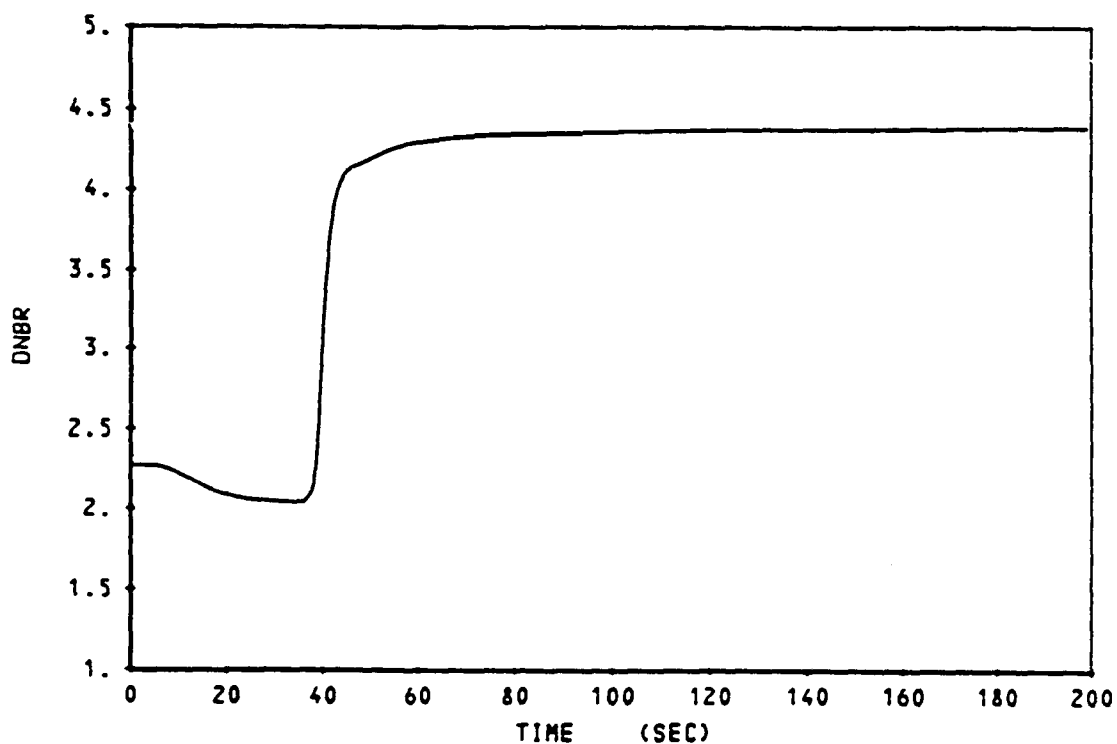
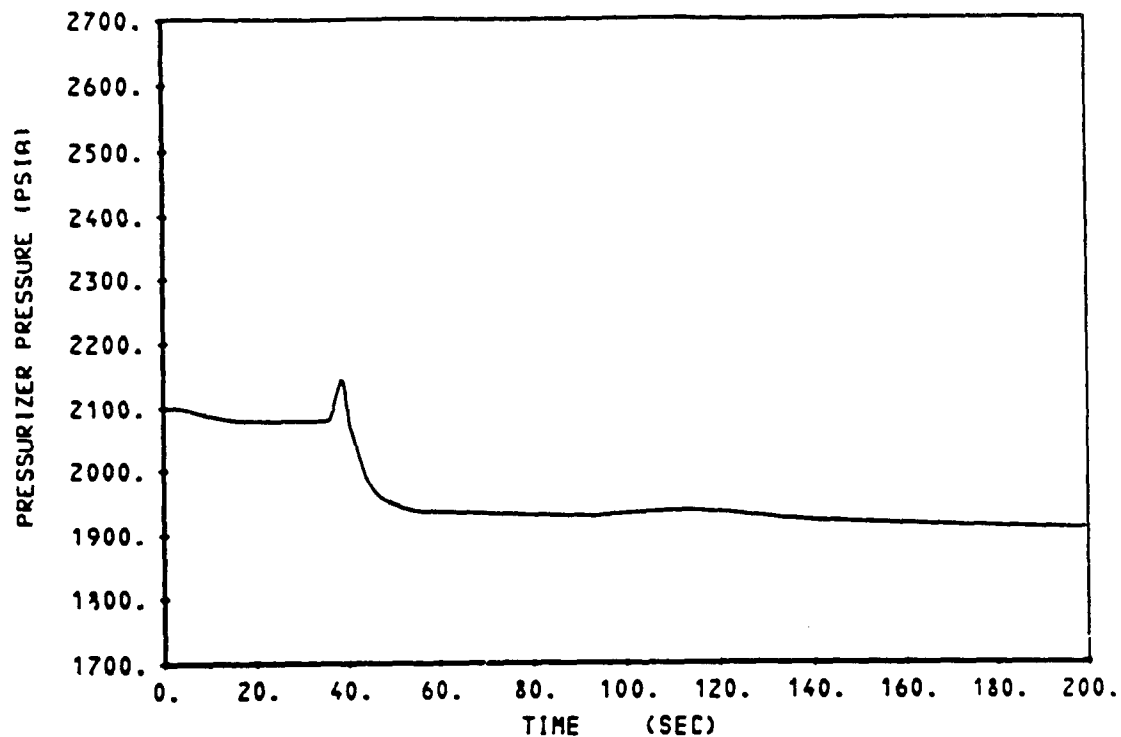


DONALD C. COOK
NUCLEAR PLANT
UNIT 2(FULL VS CORE)

NUCLEAR POWER TRANSIENT & CORE
AVERAGE TEMPERATURE vs. TIME FOR
THE MULTI-LOOP FEEDWATER
MALFUNCTION WITH MANUAL ROD
CONTROL AT FULL POWER

Figure 14.1.10B-7

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DONALD C. COOK
NUCLEAR PLANT
UNIT 2(FULL VS CORE)

PRESSURIZER PRESSURE & DNBR vs. TIME FOR
THE MULTI-LOOP FEEDWATER
MALFUNCTION WITH MANUAL ROD
CONTROL AT FULL POWER

Figure 14.1.10B-8

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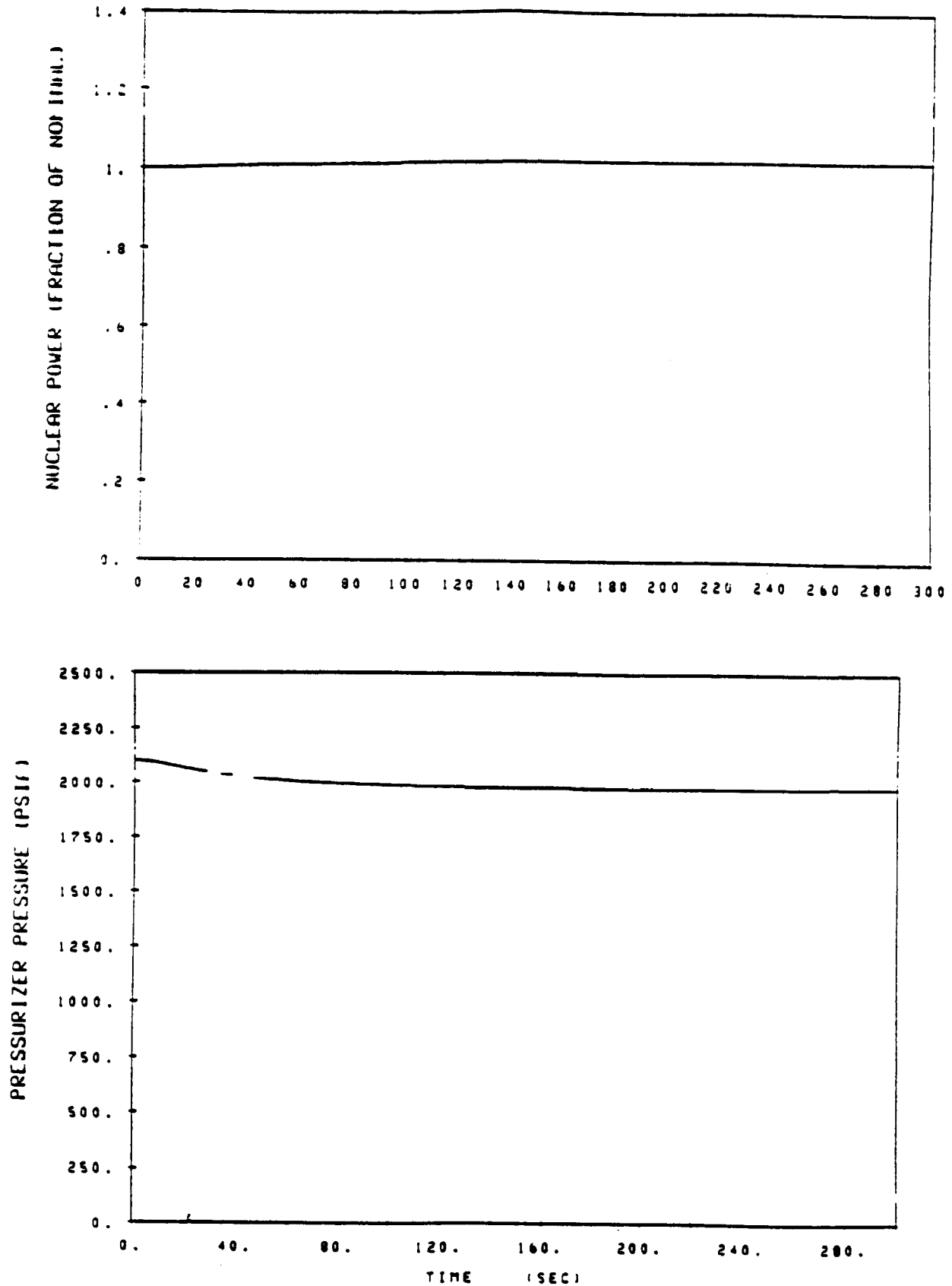


Figure 14.1.118-1 Excessive Load Increase
Nuclear Power and Pressurizer Pressure Versus Time for
Minimum Reactivity Feedback with Manual Rod Control

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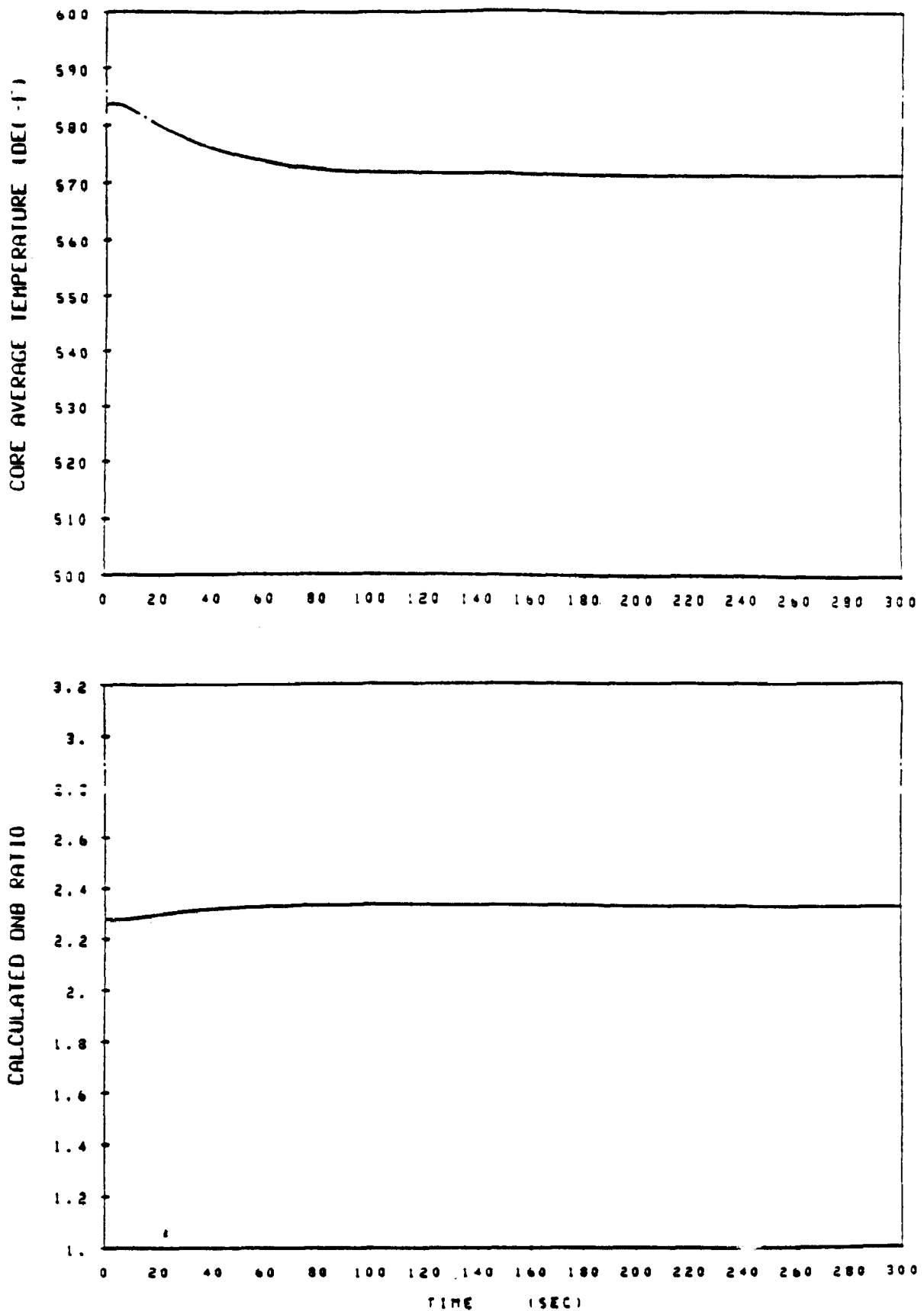


Figure 14.1.11B-2 Excessive Load Increase
Core Average Temperature and DNBR Versus Time for Minimum
Reactivity Feedback with Manual Rod Control

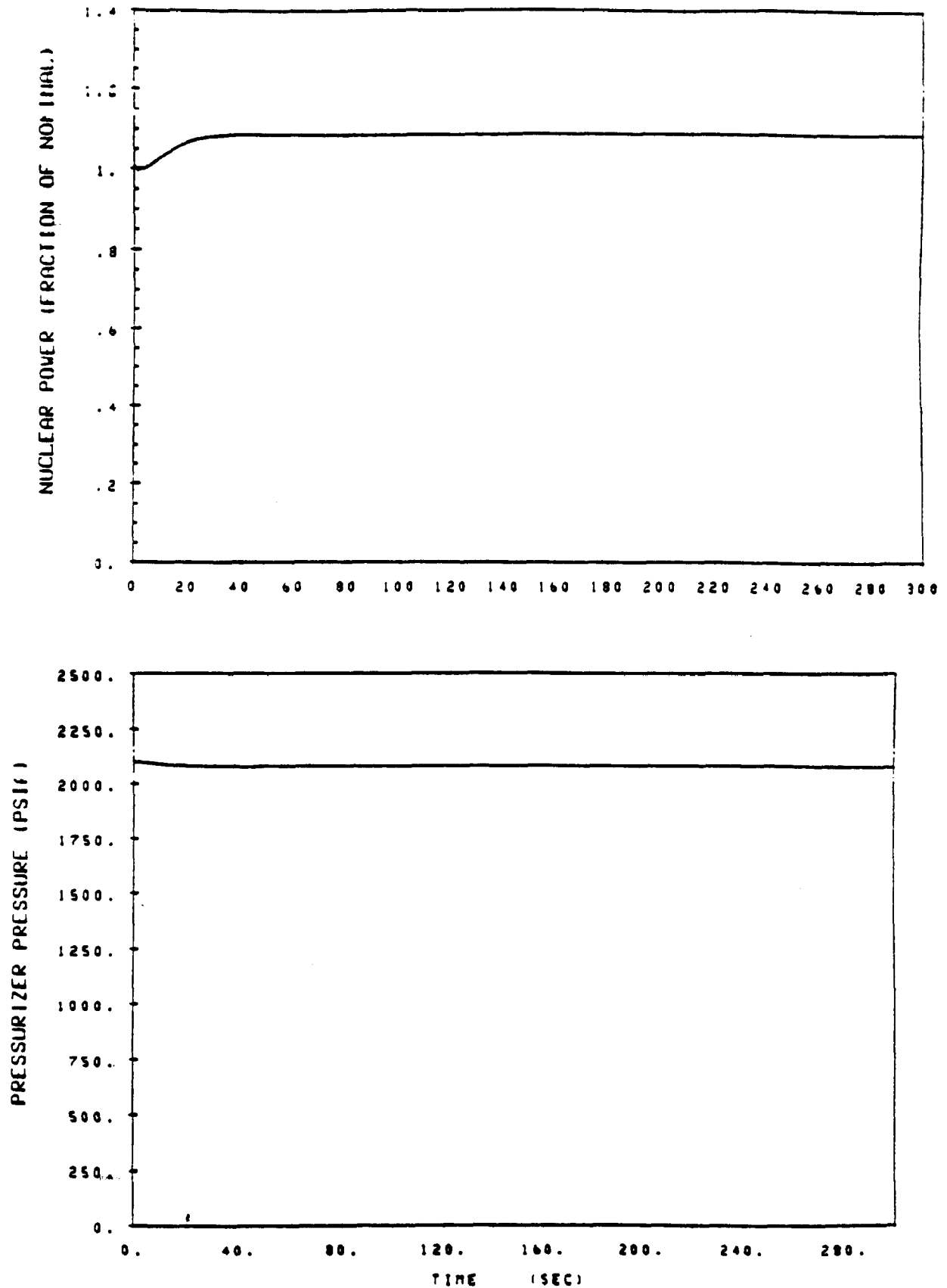


Figure 14.1.11B-3 Excessive Load Increase
Nuclear Power and Pressurizer Versus Time for
Maximum Reactivity Feedback with Manual Control

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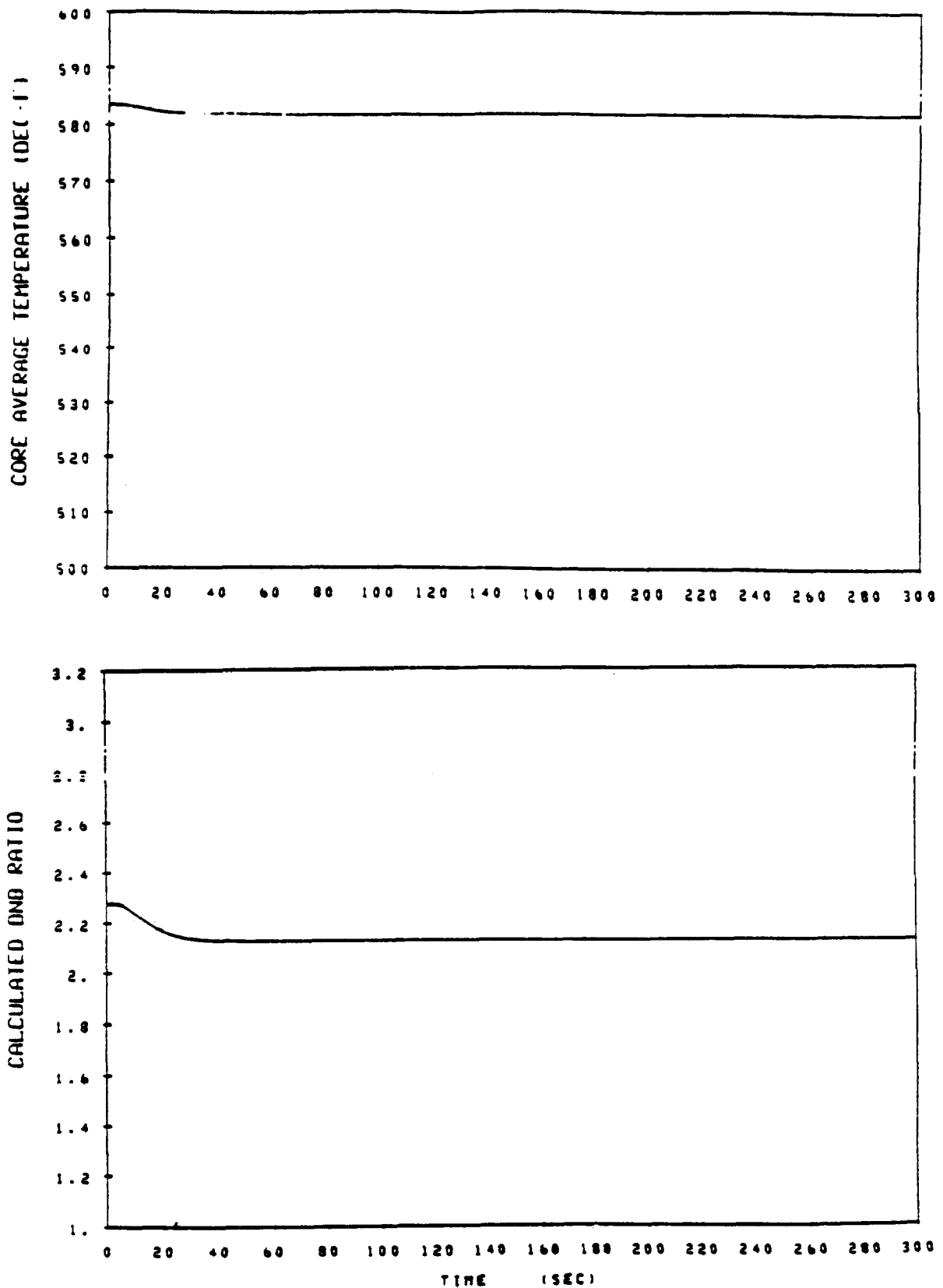


Figure 14.1.11B-4 Excessive Load Increase
Core Average Temperature and DNBR Versus Time for Maximum
Reactivity Feedback with Manual Control

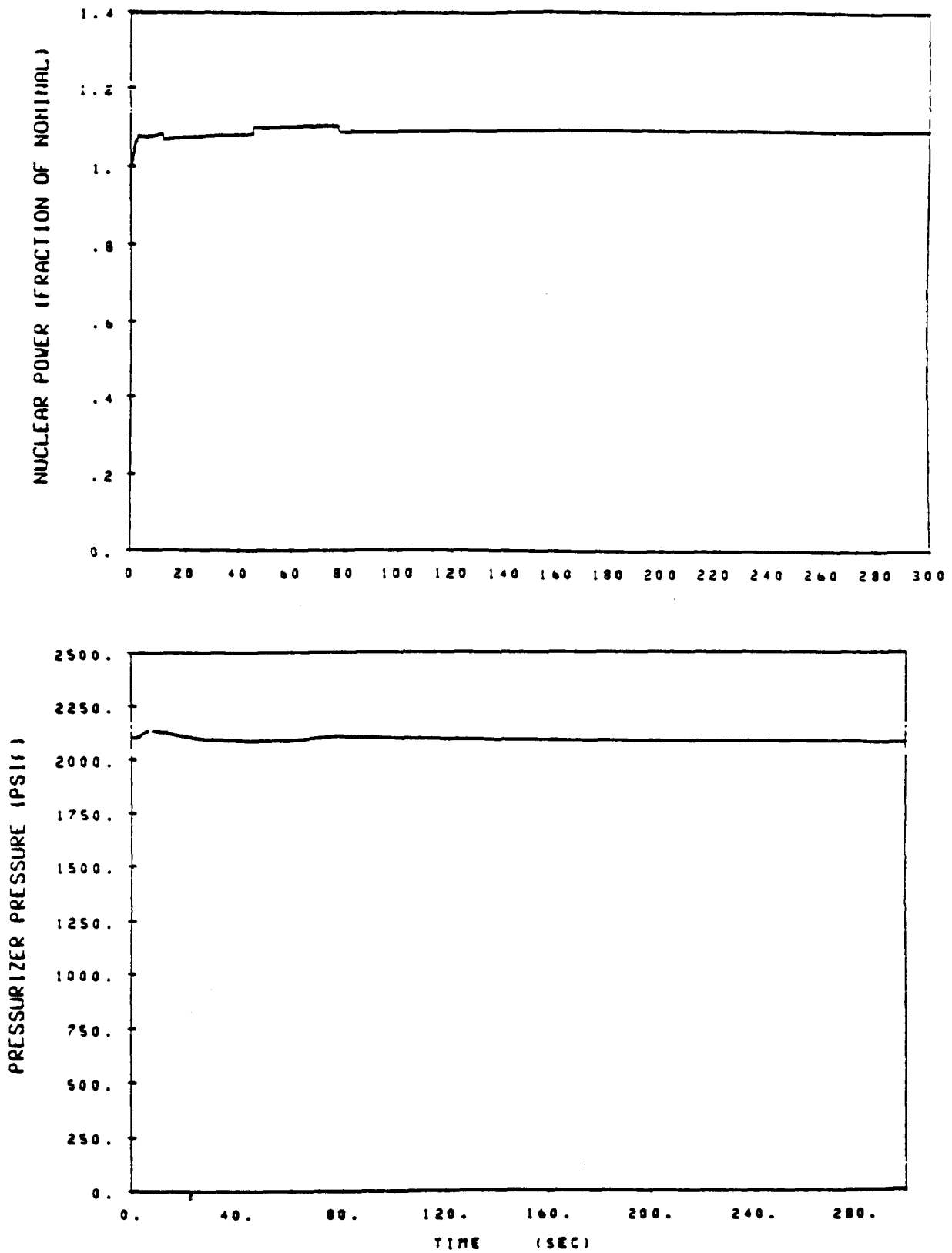


Figure 14.1.11B-5 Excessive Load Increase
Nuclear Power and Pressurizer Pressure Versus Time for
Minimum Reactivity Feedback with Automatic Rod Control

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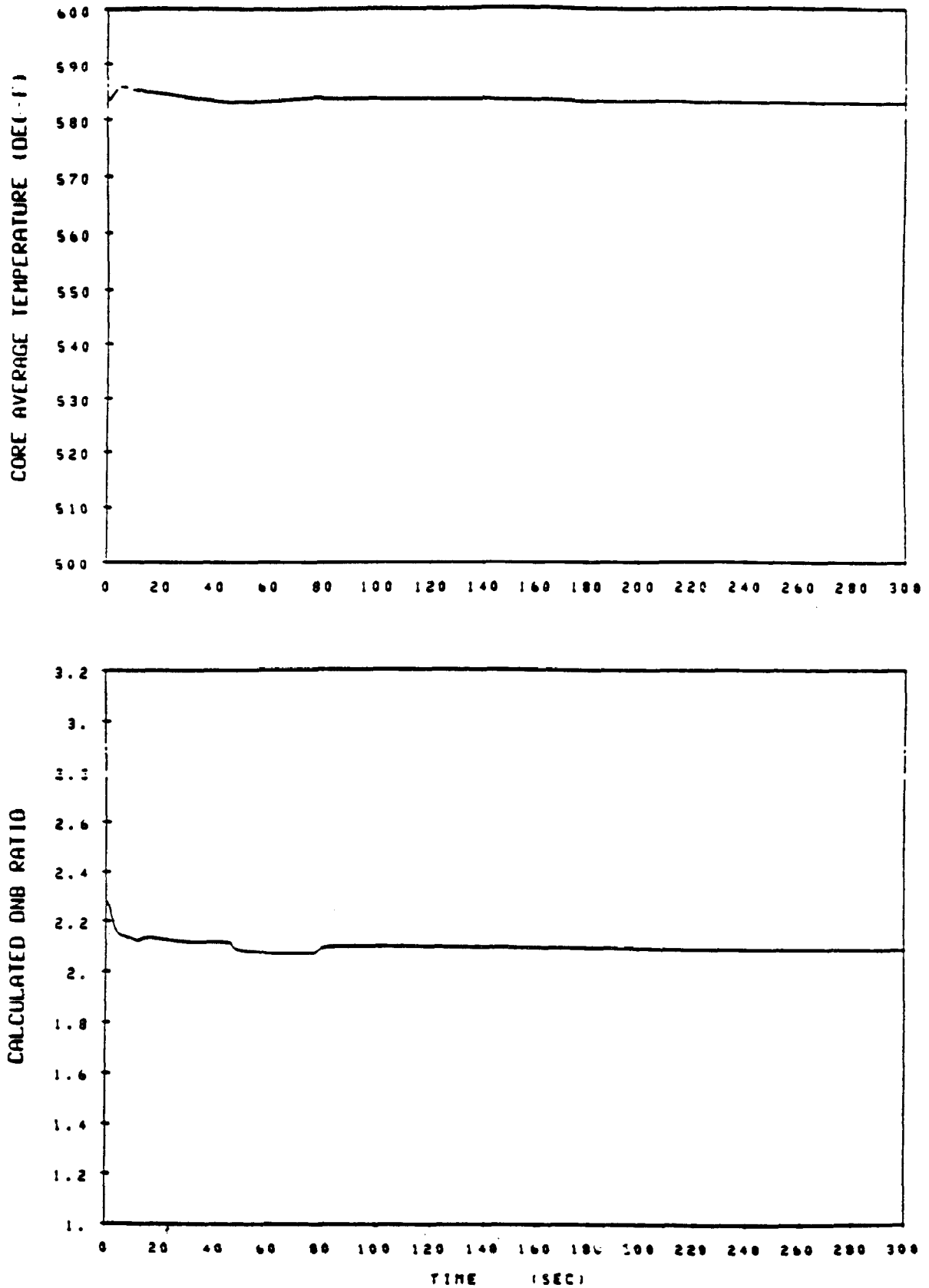


Figure 14.1.11B-6 Excessive Load Increase
Core Average Temperature and DNBR Versus Time for Minimum
Reactivity Feedback with Automatic Rod Control

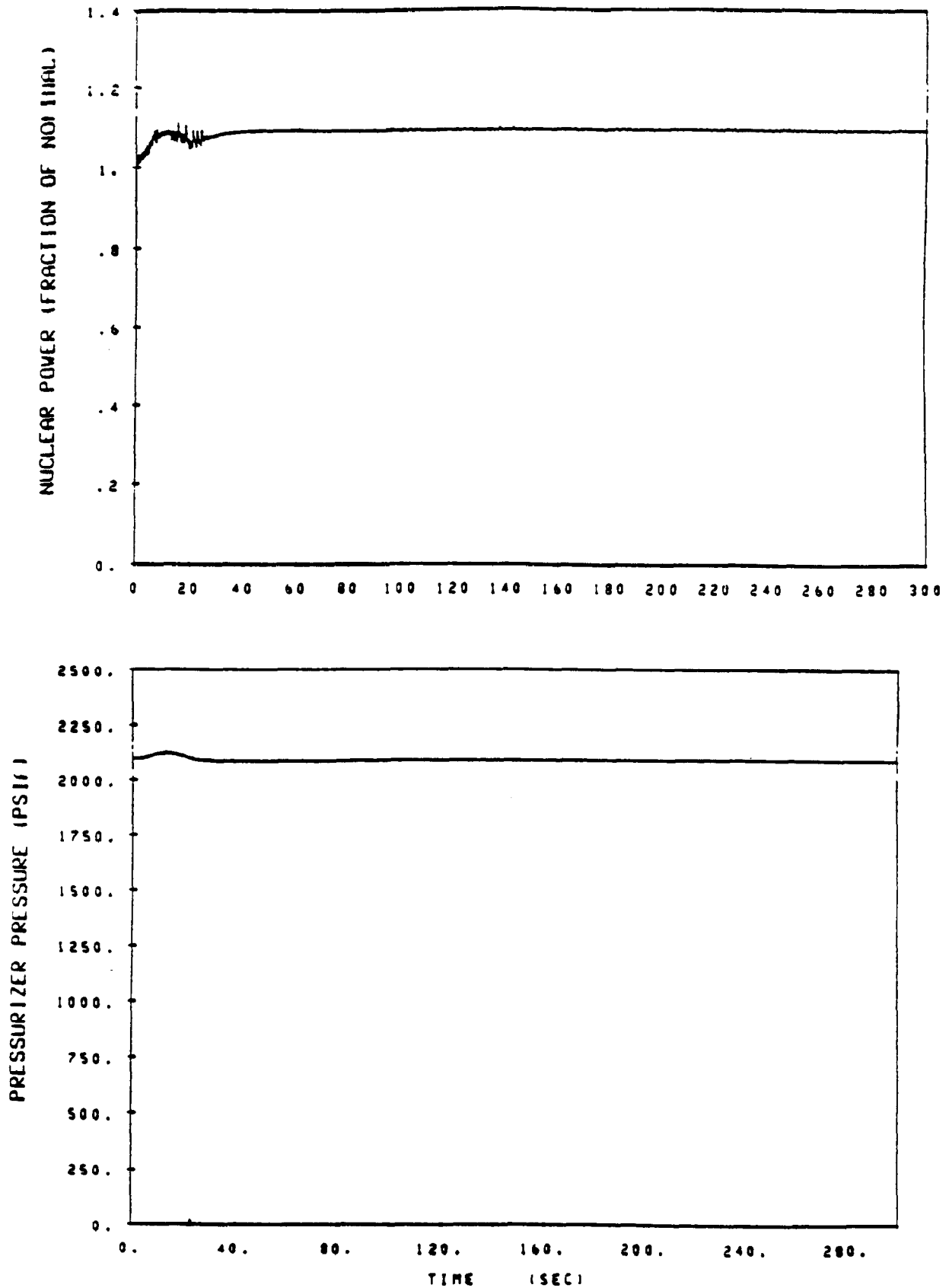


Figure 14.1.11B-7 Excessive Load Increase
Nuclear Power and Pressurizer Pressure Versus Time for
Maximum Reactivity Feedback with Automatic Rod Control

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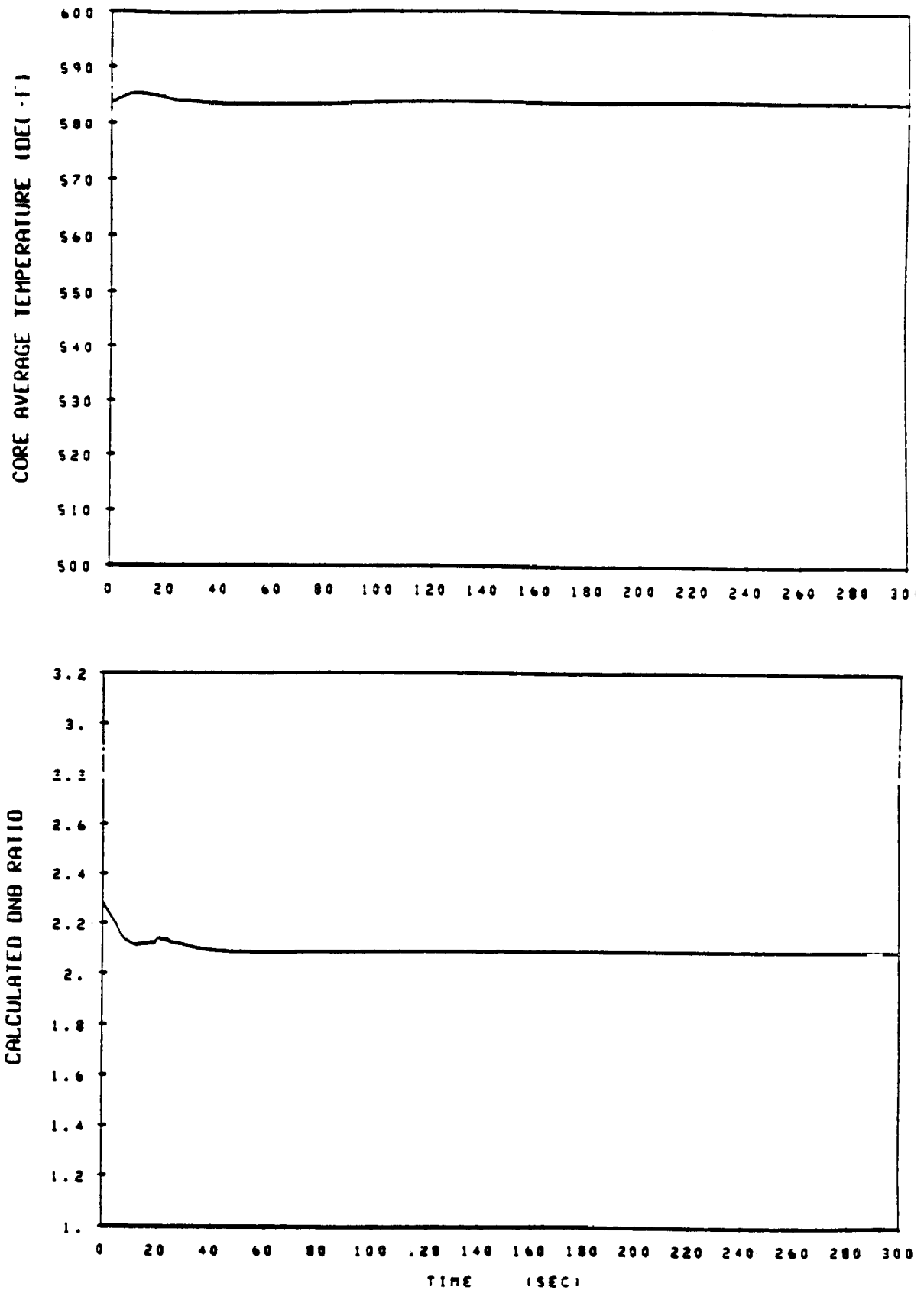
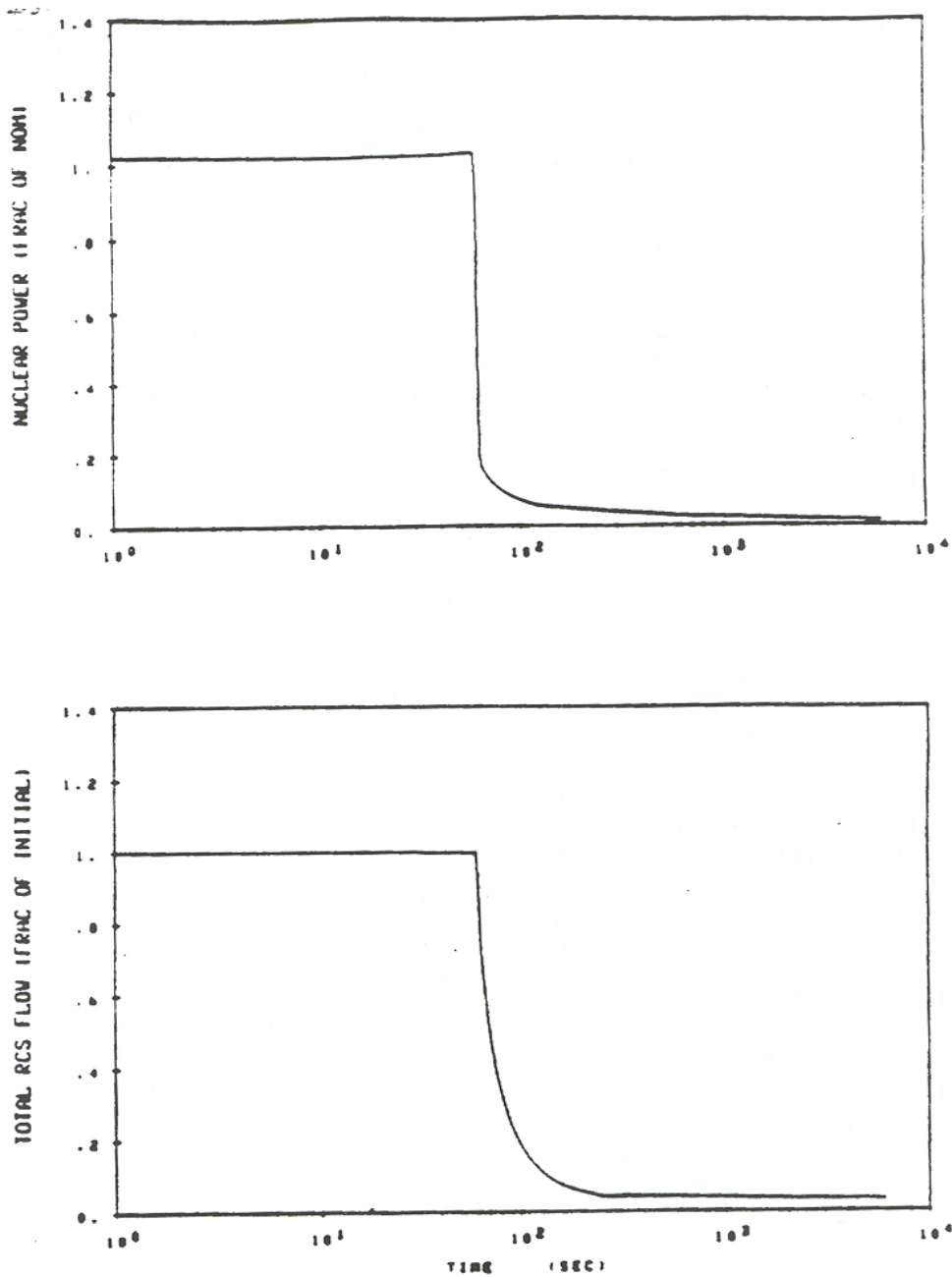


Figure 14.1.11B-8 Excessive Load Increase
Core Average Temperature and DNBR Versus Time for Maximum
Reactivity Feedback with Automatic Rod Control



Revision: 20.2

Change Description: UCR-1815

AMERICAN ELECTRIC POWER
COOK NUCLEAR PLANT
NUCLEAR GENERATION GROUP
BRIDGMAN, MICHIGAN

Title: Loss of Offsite Power to the Station Auxiliaries
Nuclear Power and Core Flow Versus Time

UFSAR Figure: 14.1.12-1

Sheet 1 of 1

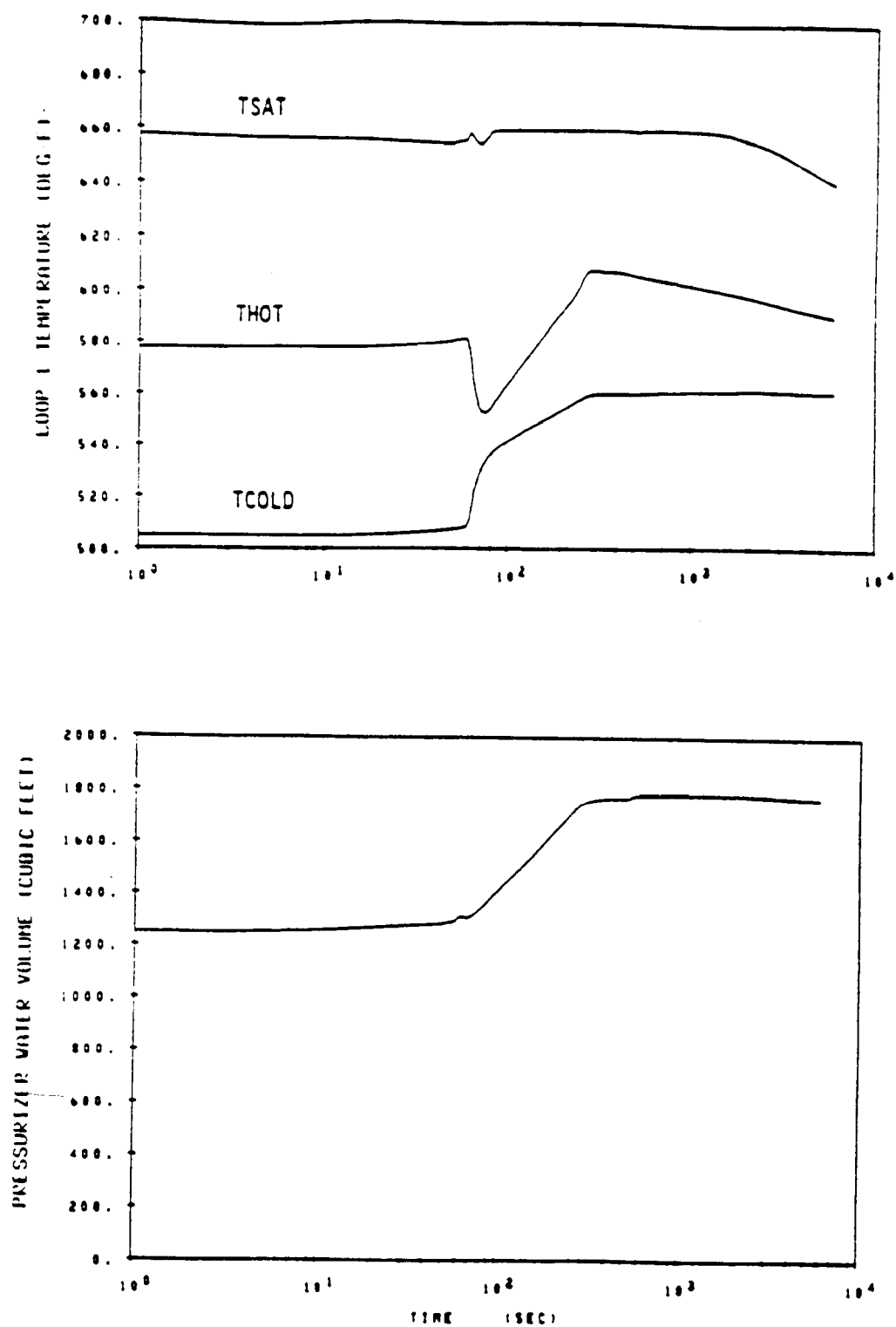


Figure 14.1.12-2 Loss of Offsite Power to the Station Auxiliaries
Loop Temperature and Pressurizer Water Volume Versus Time