

BREAK AREA (ft²)

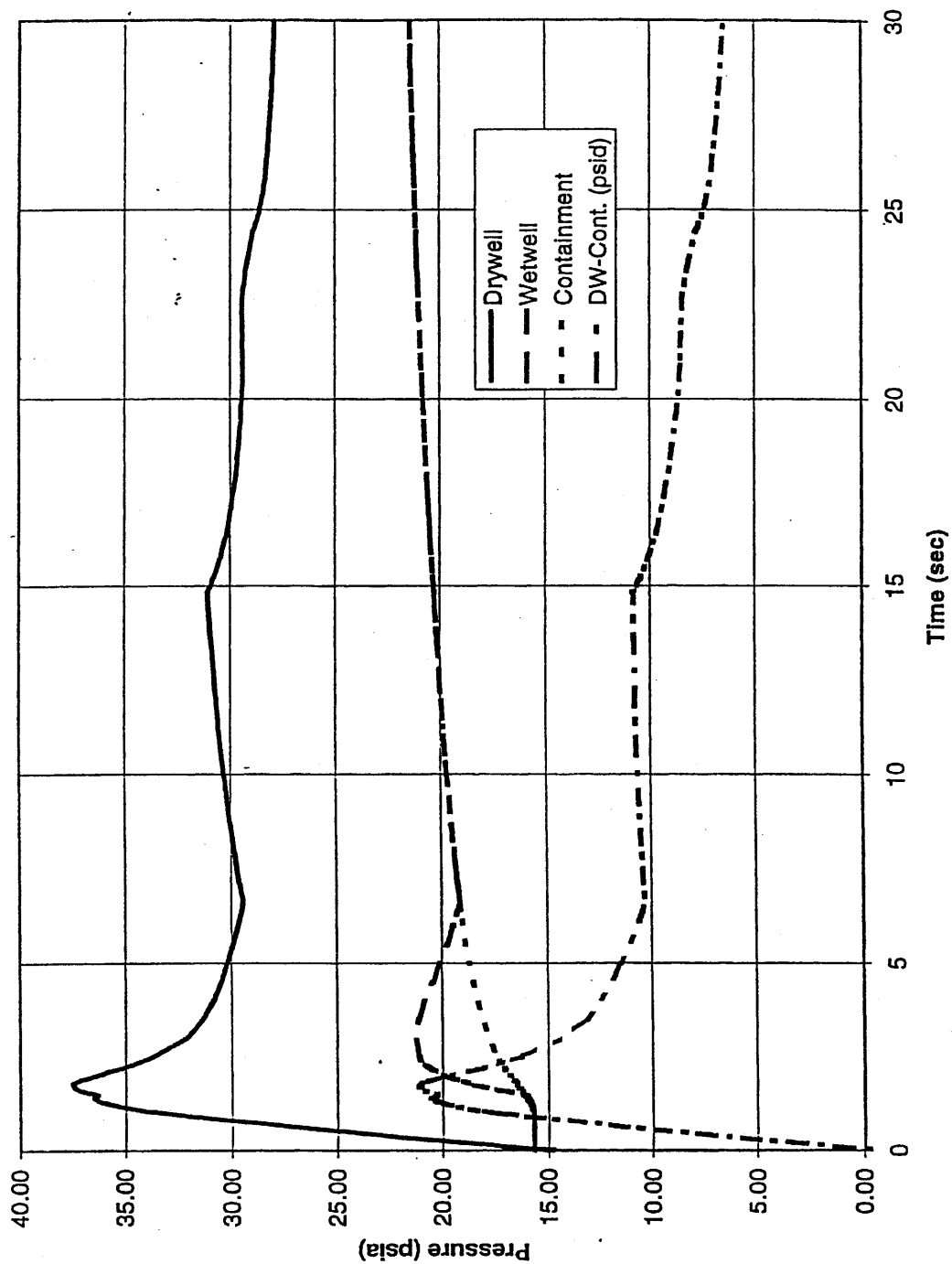
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Effective Blowdown Area
for Recirculation Line Break

Figure 6.2-1



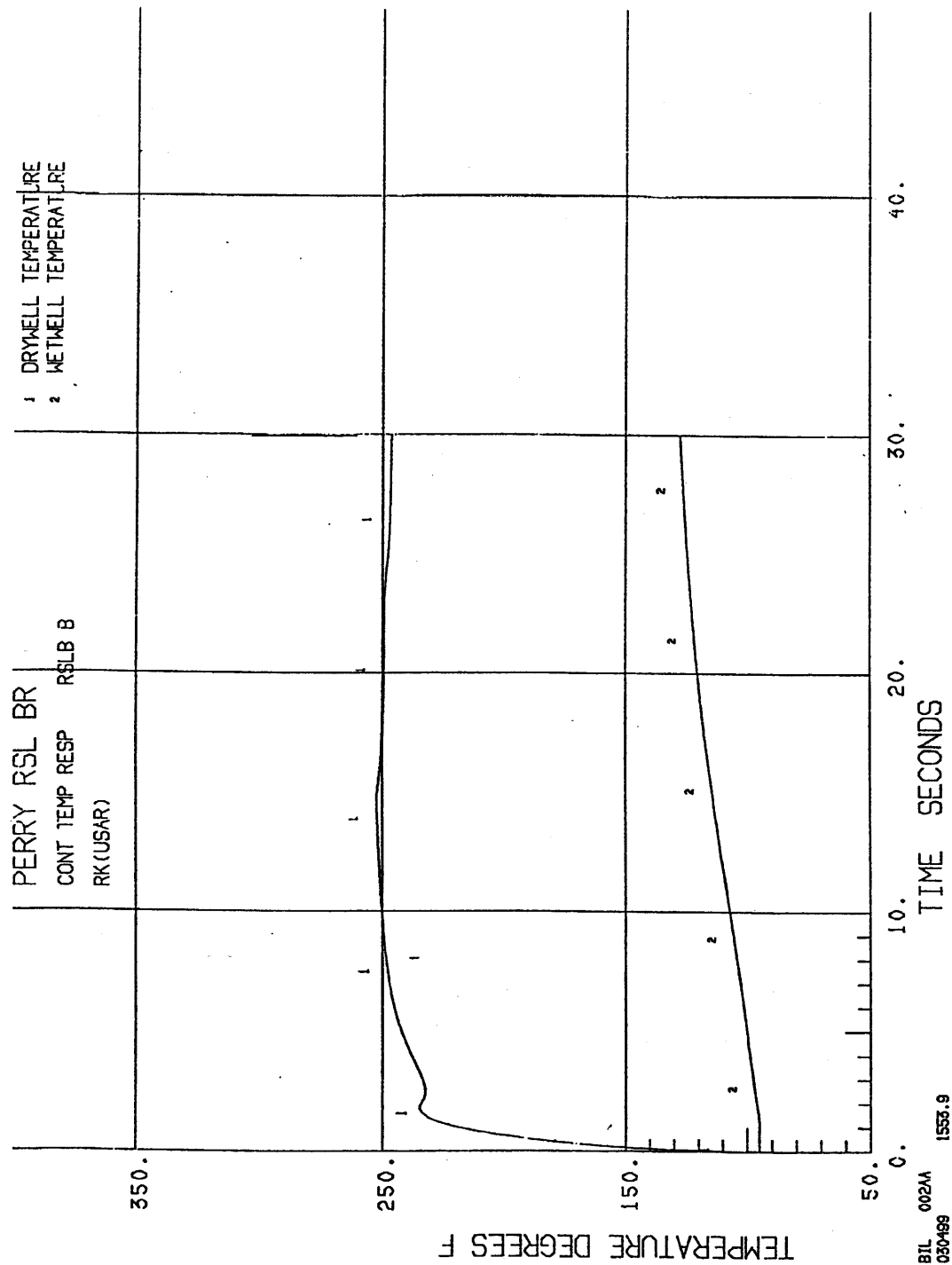
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Short Term Pressure Response
Following a Recirculation
Line Break

Figure 6.2-2



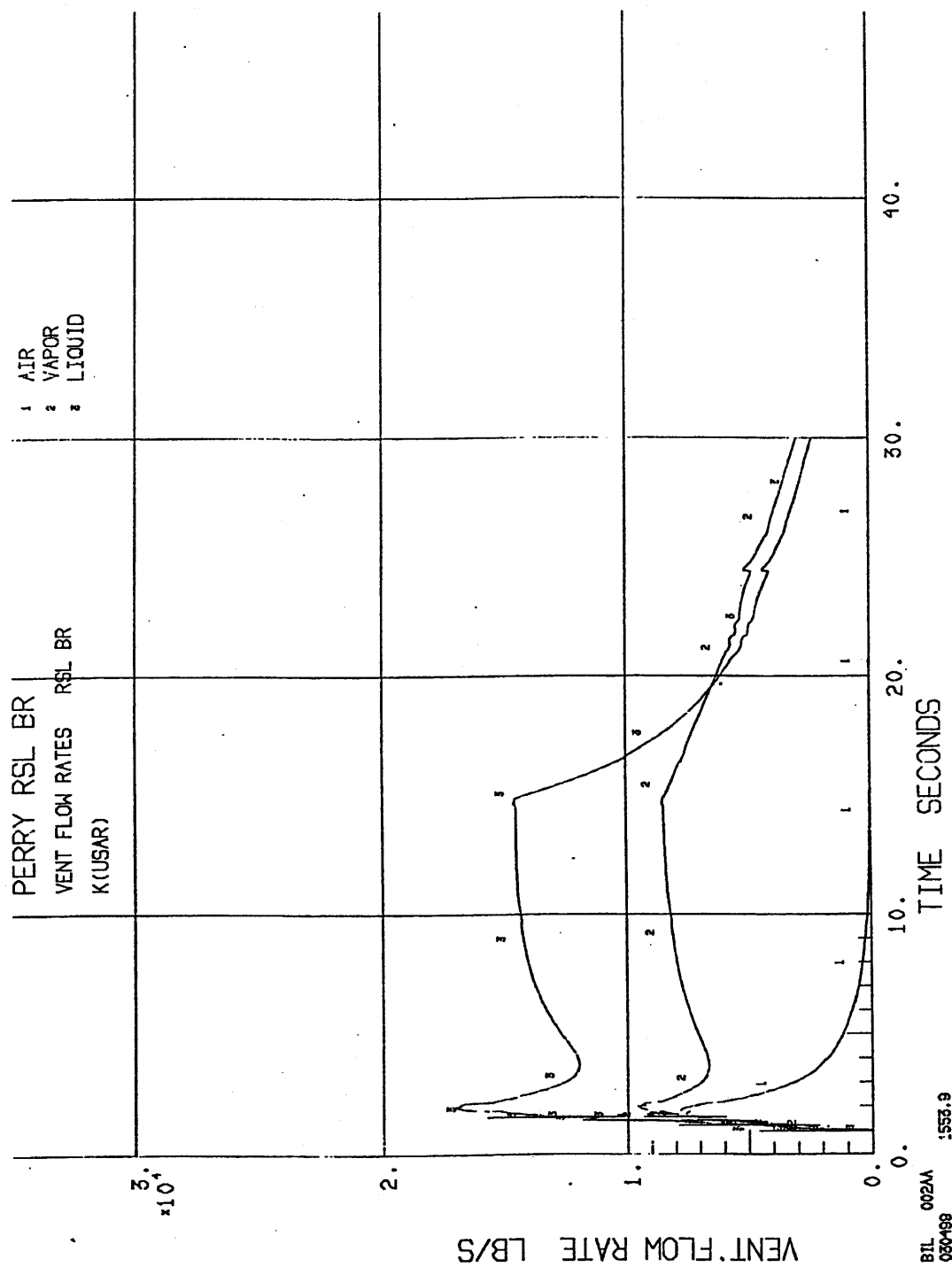
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Short Term Temperature Response
Following a Recirculation
Line Break

Figure 6.2-3



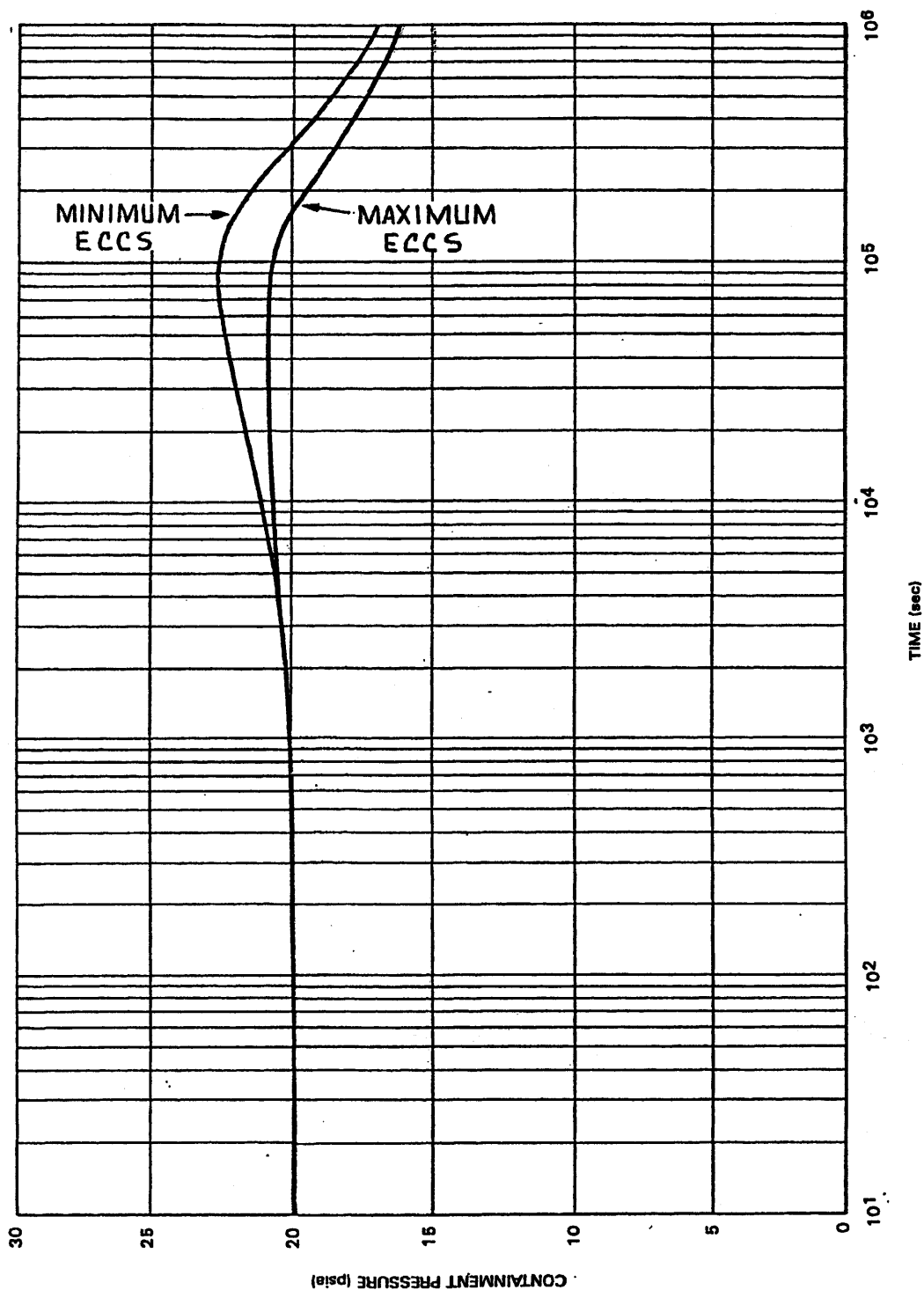
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Short Term Vent Flow Rates
Following a Recirculation Line
Break (Minimum ECCS)

Figure 6.2-5



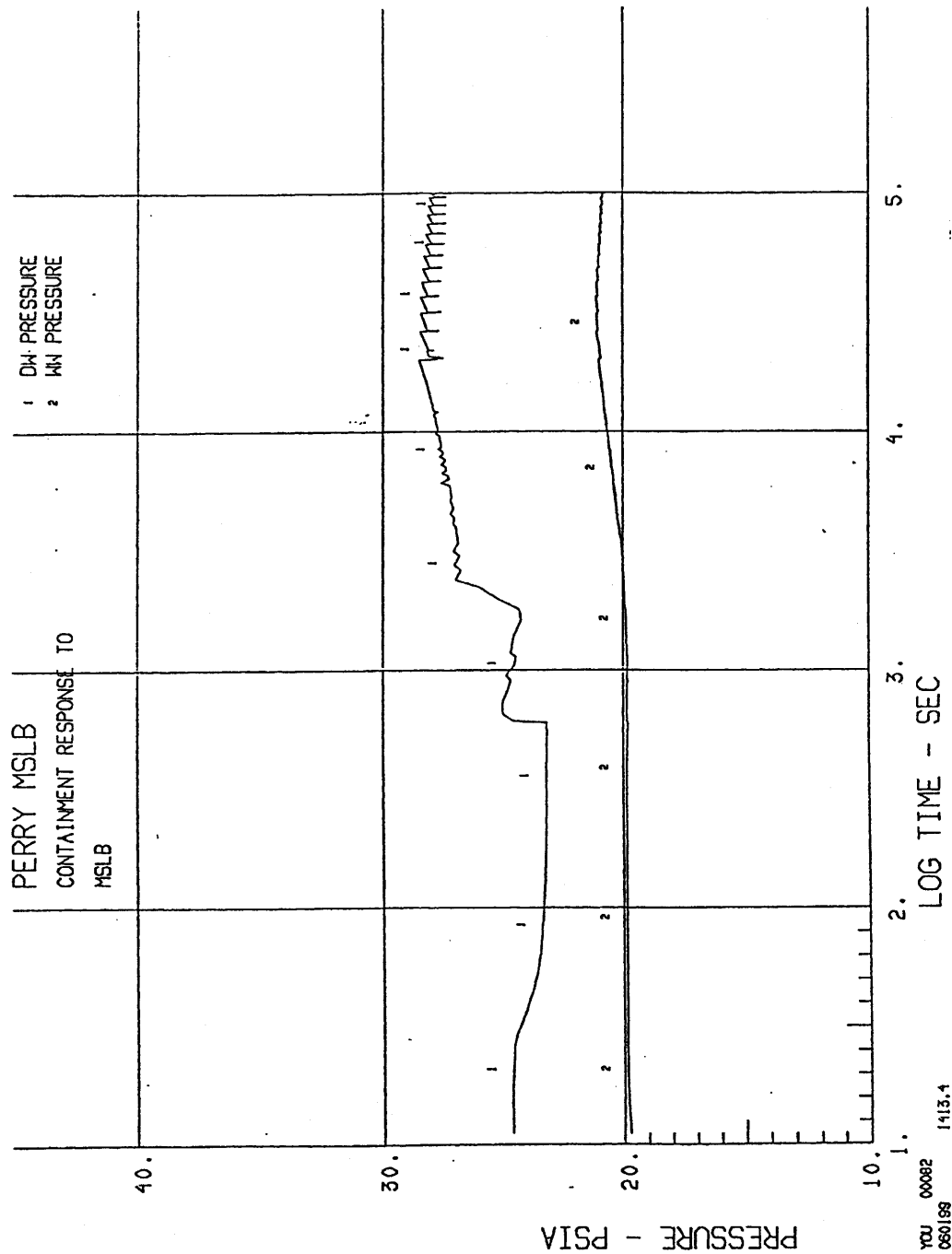
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Long Term Pressure Response
Following a Main Steam Line
Break (at 3729 MWt)

Figure 6.2-6



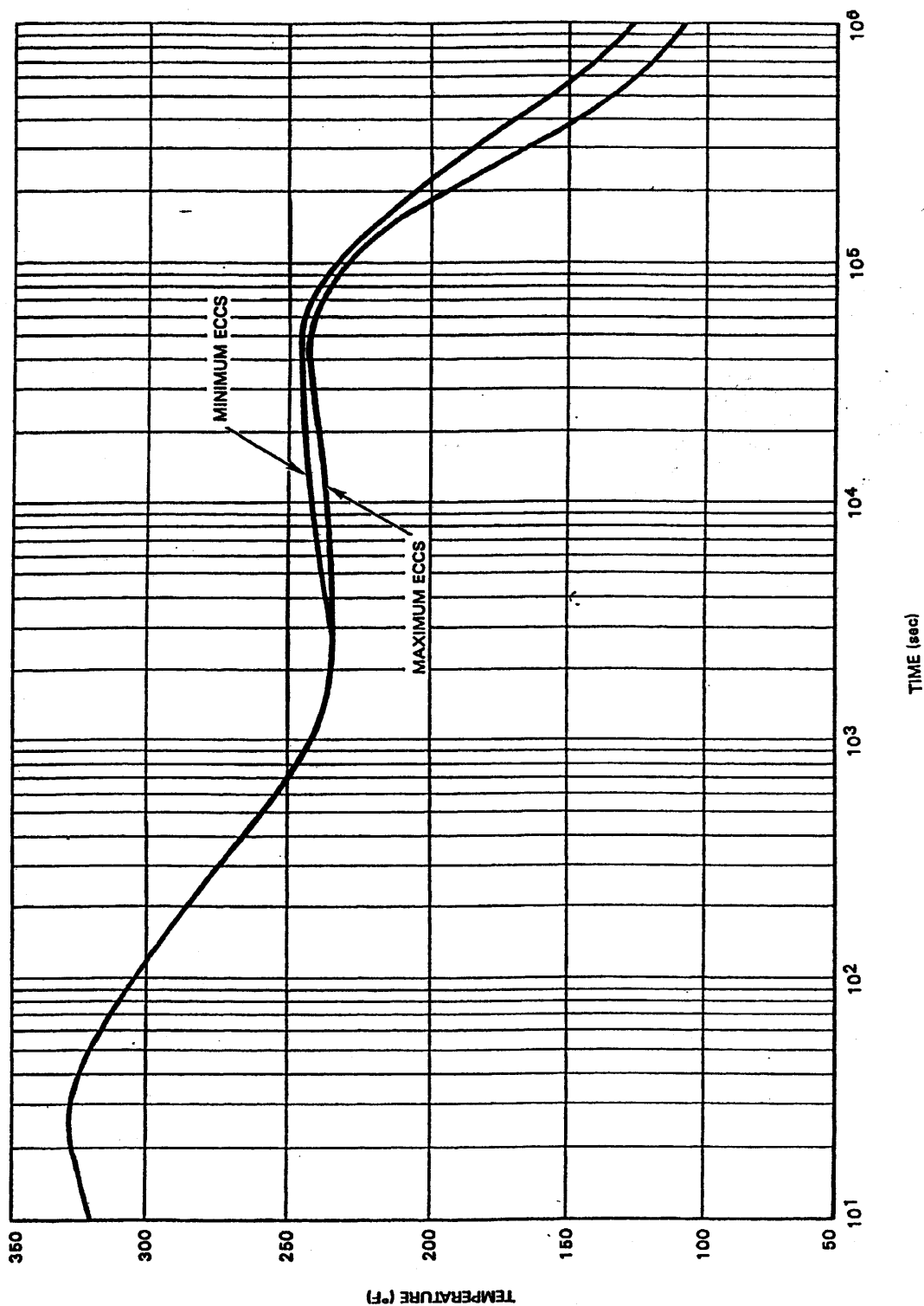
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Long Term Pressure Response
Following a Main Steam Line
Break (at 3833 MWt)

Figure 6.2-6a



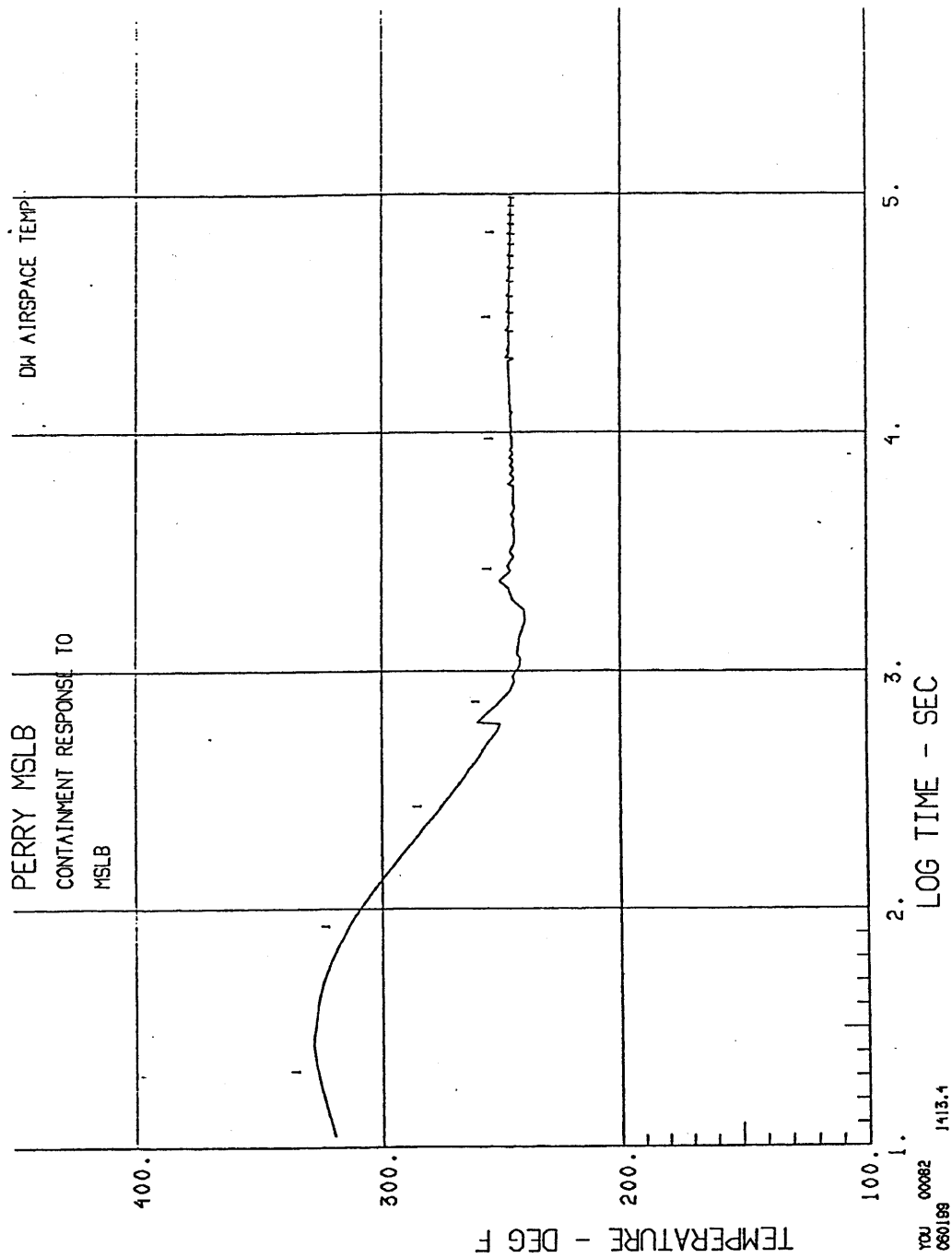
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Long Term Drywell Temperature
Response Following a Main Steam
Line Break (at 3729 MWt)

Figure 6.2-7



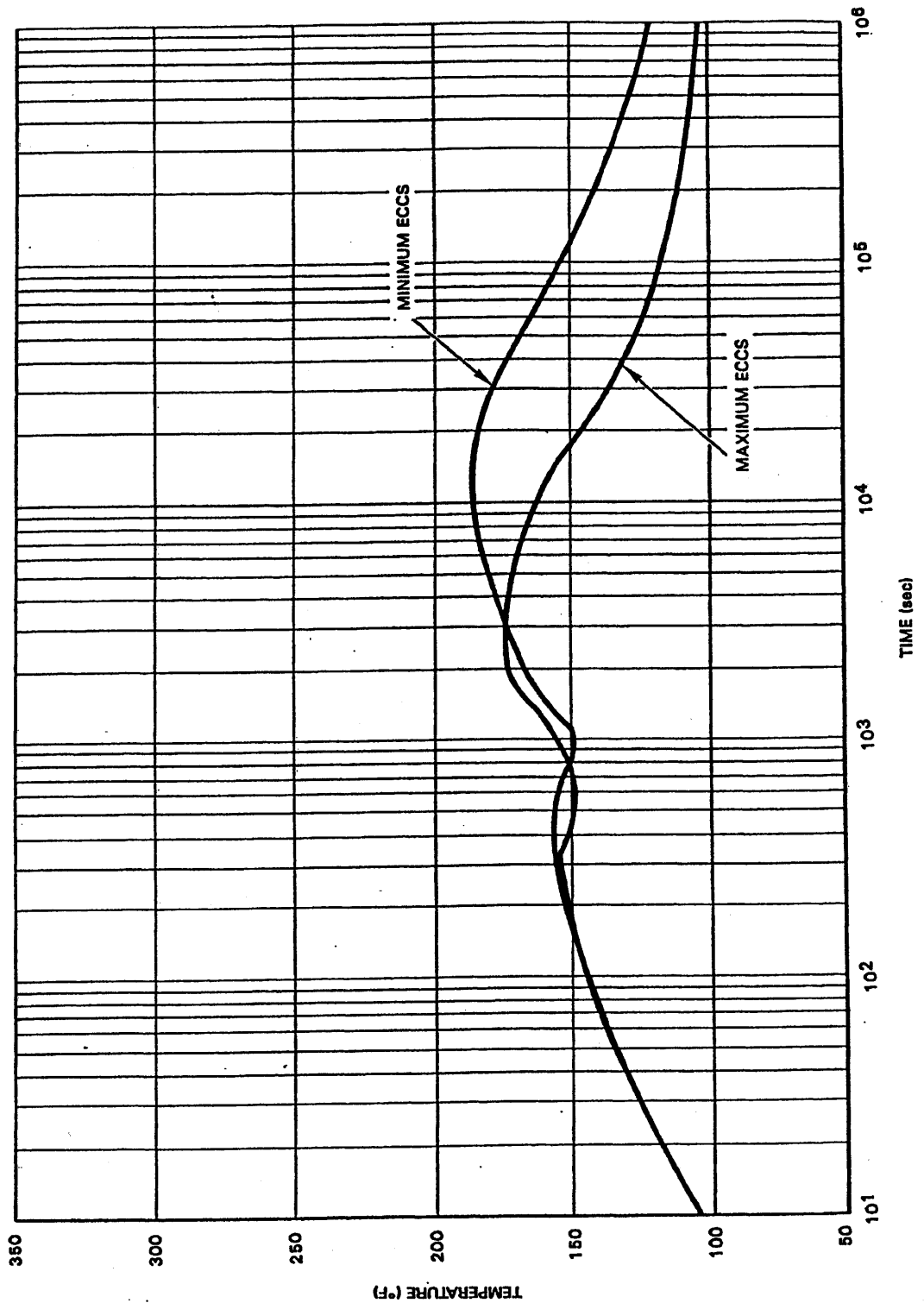
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Long Term Drywell Temperature
Response Following a Main Steam
Line Break (at 3833 MWt)

Figure 6.2-7a



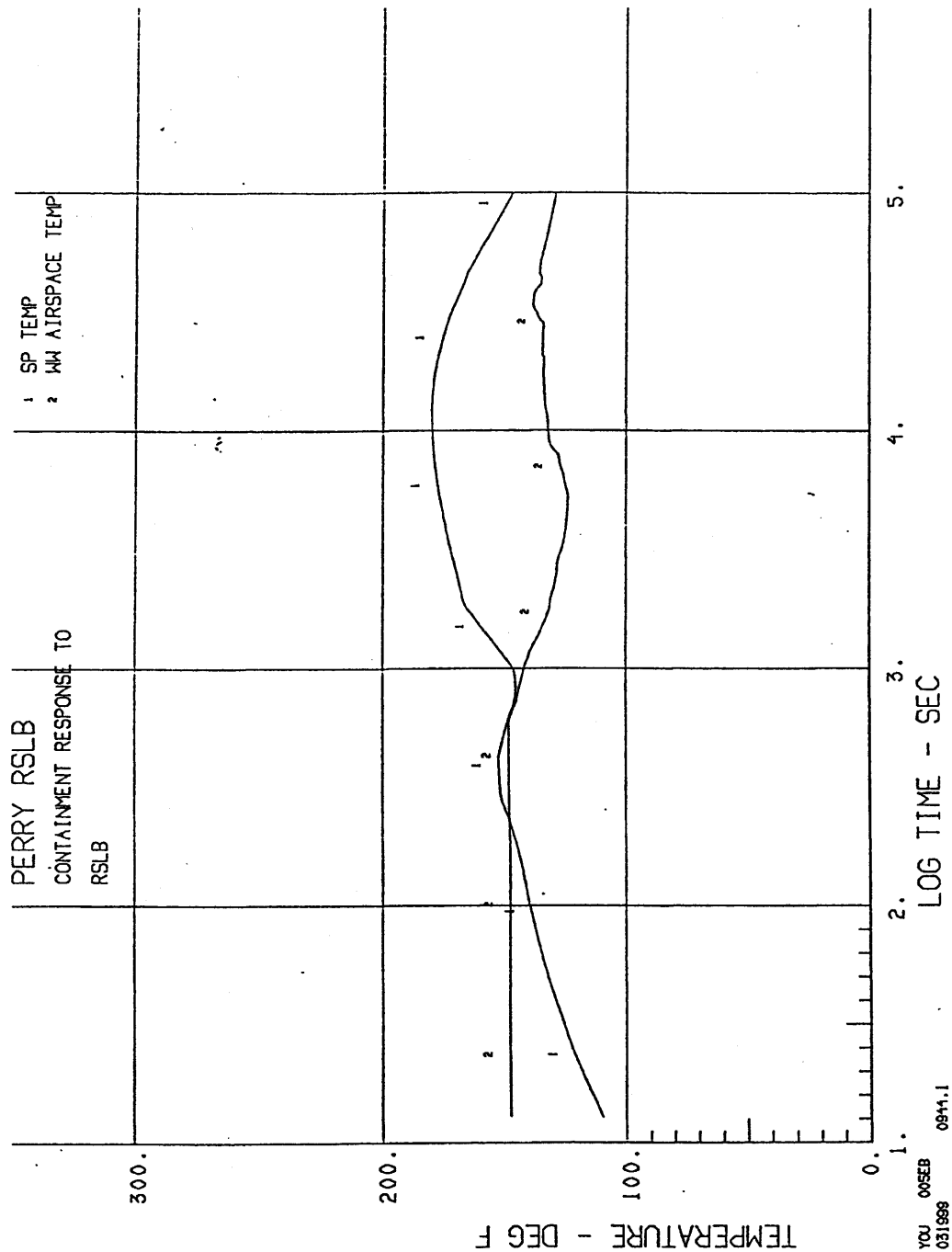
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Long Term Suppression Pool
Temperature Response Following a
Recirculation Line Break
(at 3729 MWt)

Figure 6.2-8



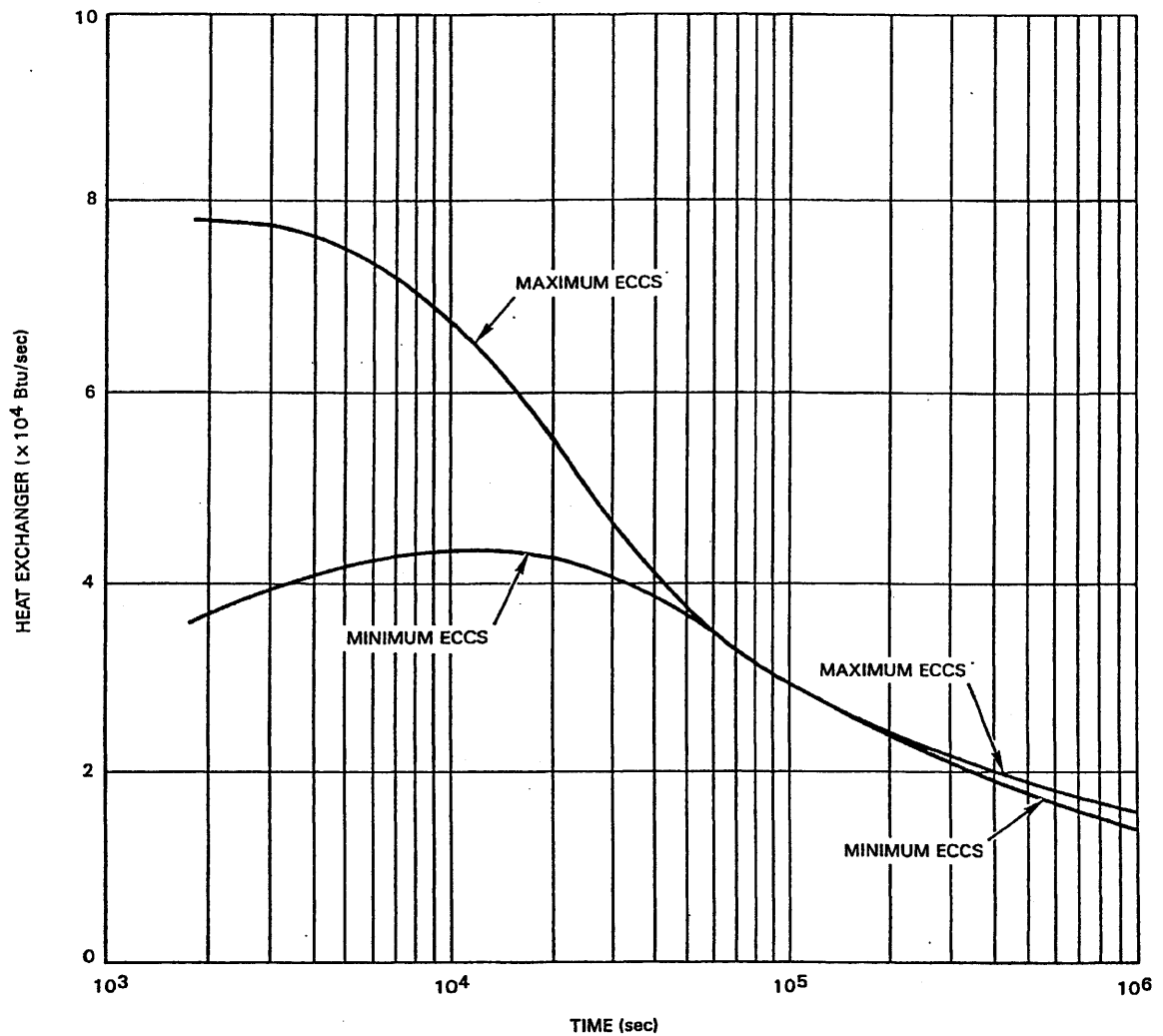
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Long Term Suppression Pool
Temperature Response Following a
Recirculation Line Break
(at 3833 MWt)

Figure 6.2-8a



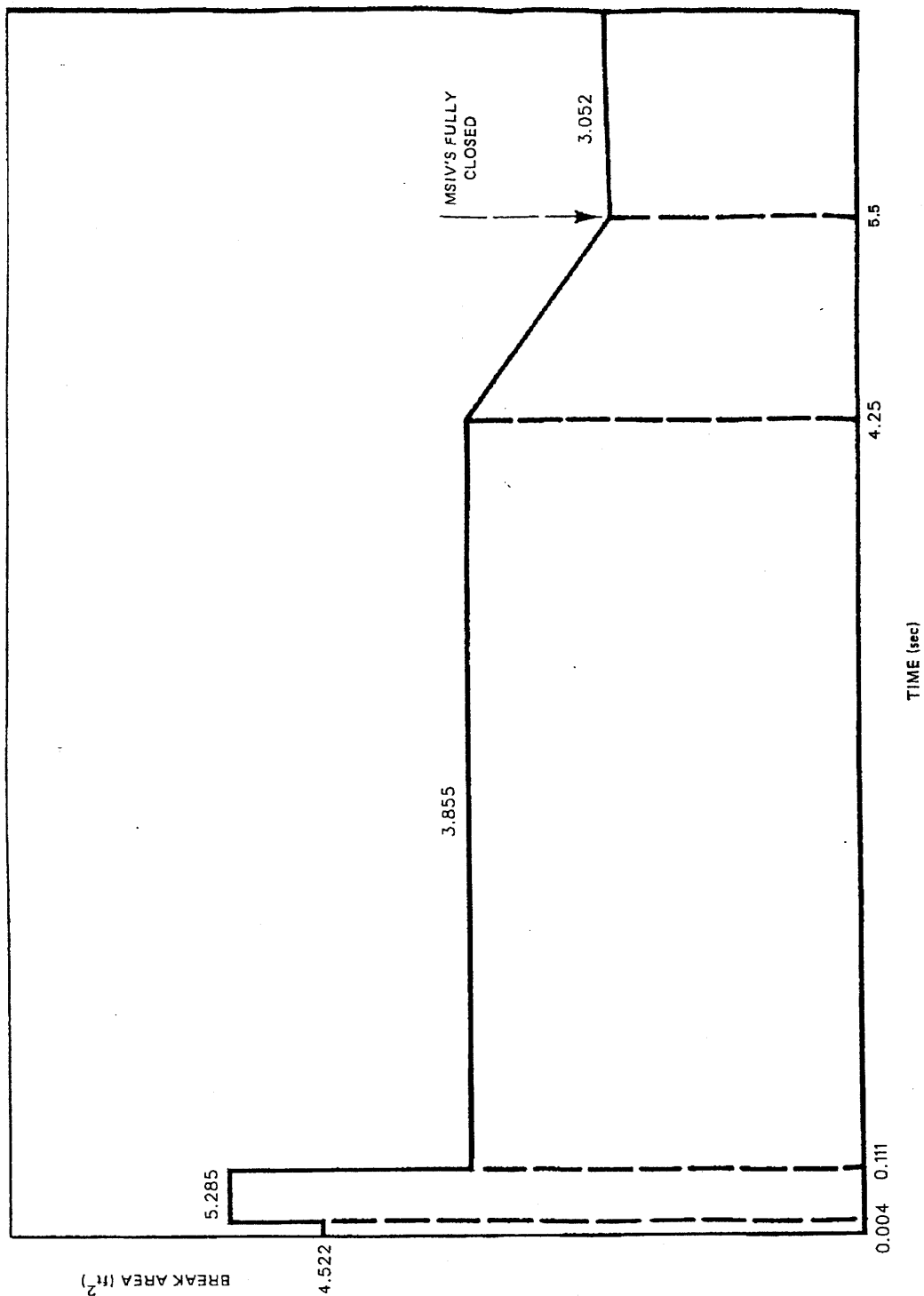
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

RHR Heat Removal Rate Following
a Recirculation Line Break
(at 3729 MWt)

Figure 6.2-9



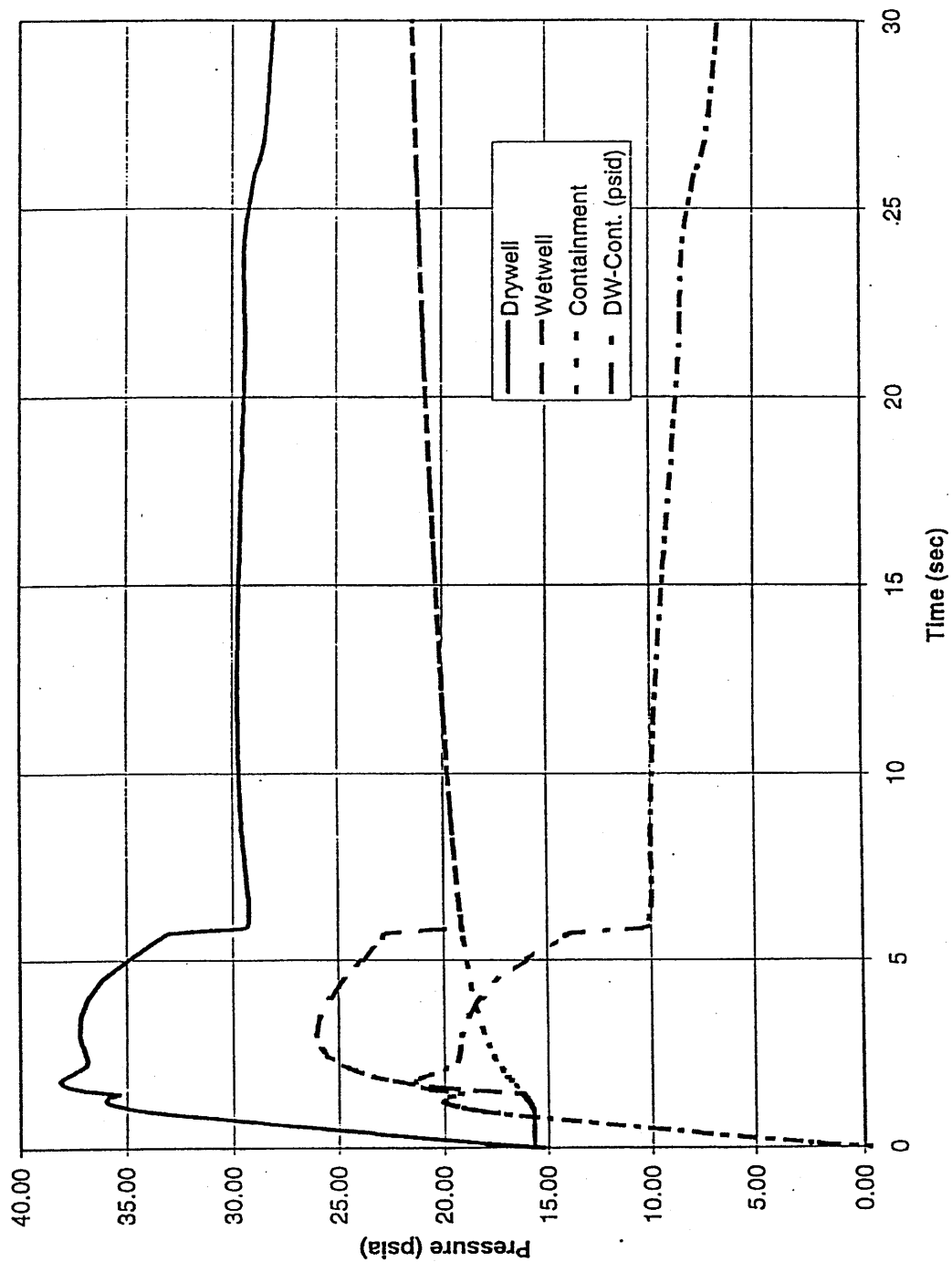
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Effective Blowdown Area for
Main Steam Line Break

Figure 6.2-10



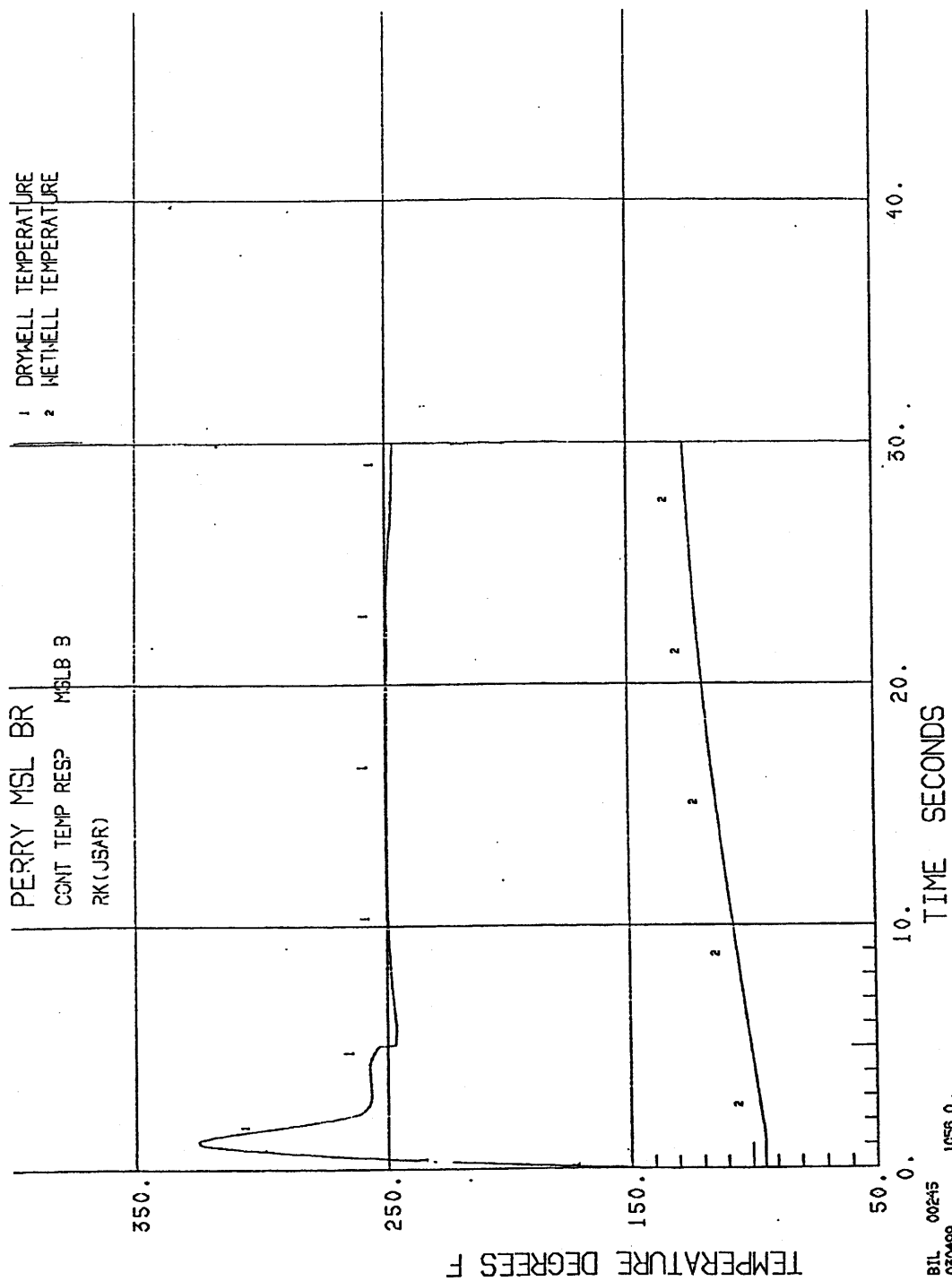
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Short Term Pressure Response
Following a Main Steam
Line Break

Figure 6.2-11



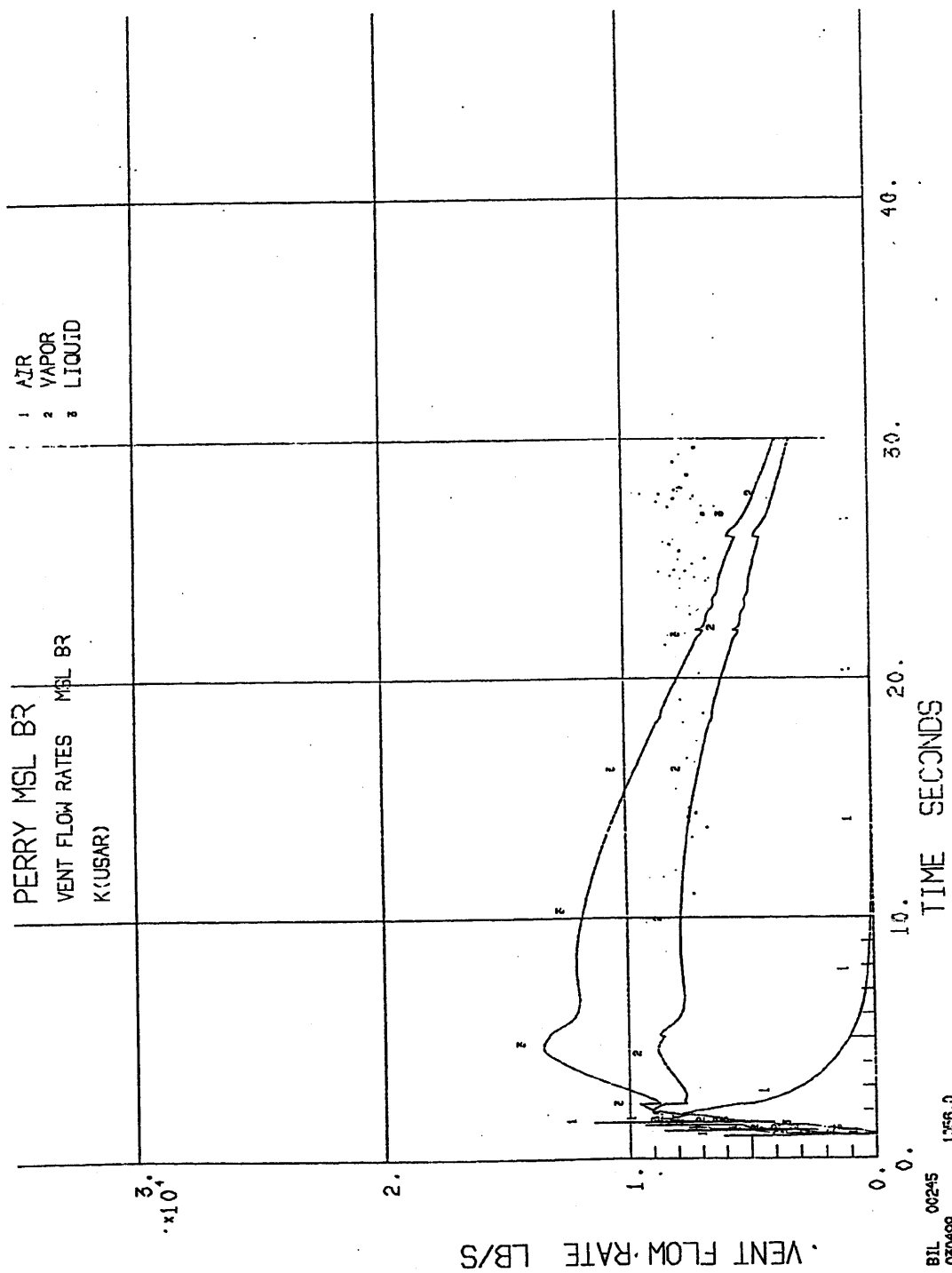
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Short Term Temperature Response
Following a Main Steam Line Break

Figure 6.2-12



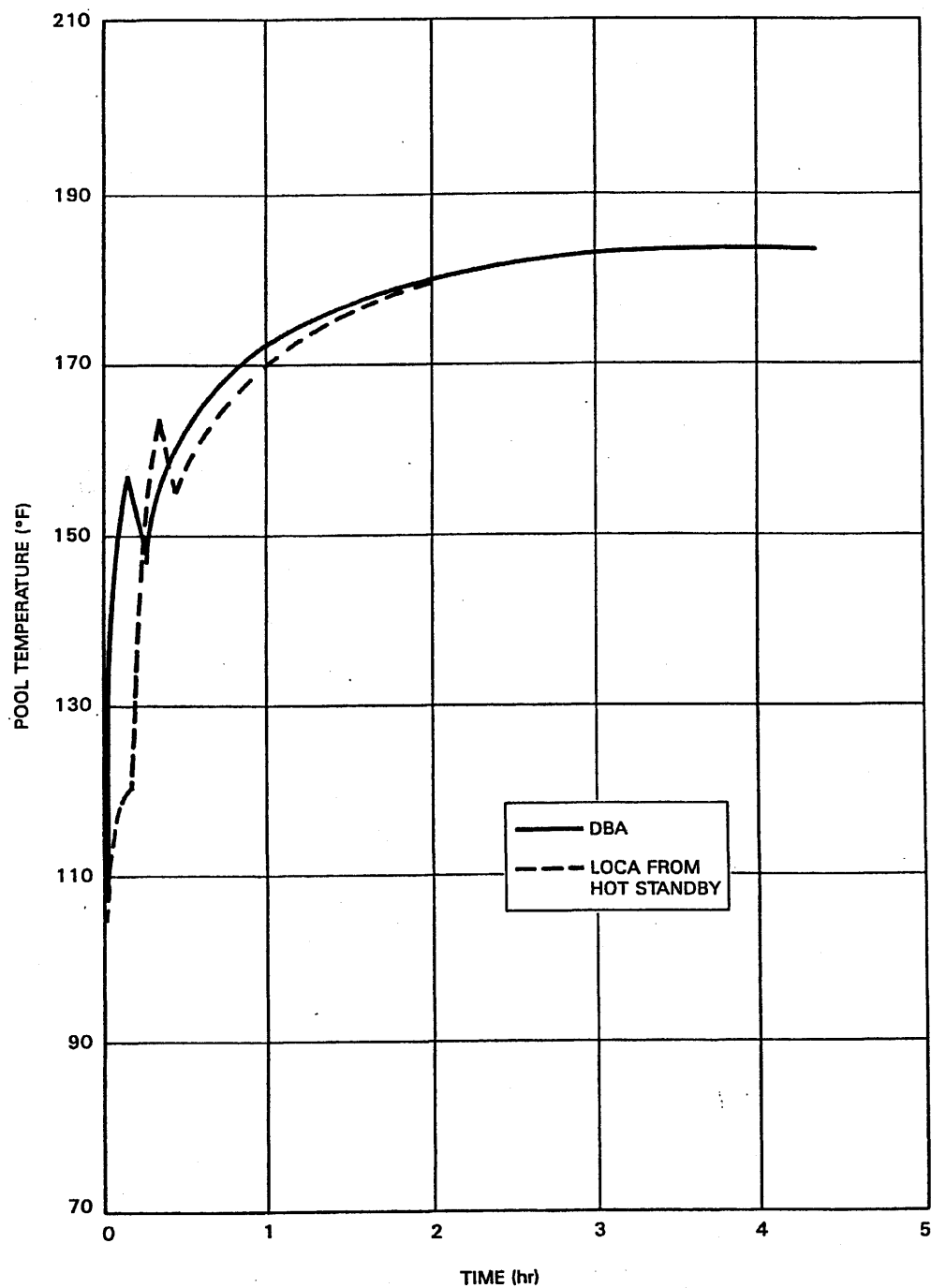
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Short Term Vent Flow Rates
Following a Main Steam Line
Break (Minimum ECCS)

Figure 6.2-14



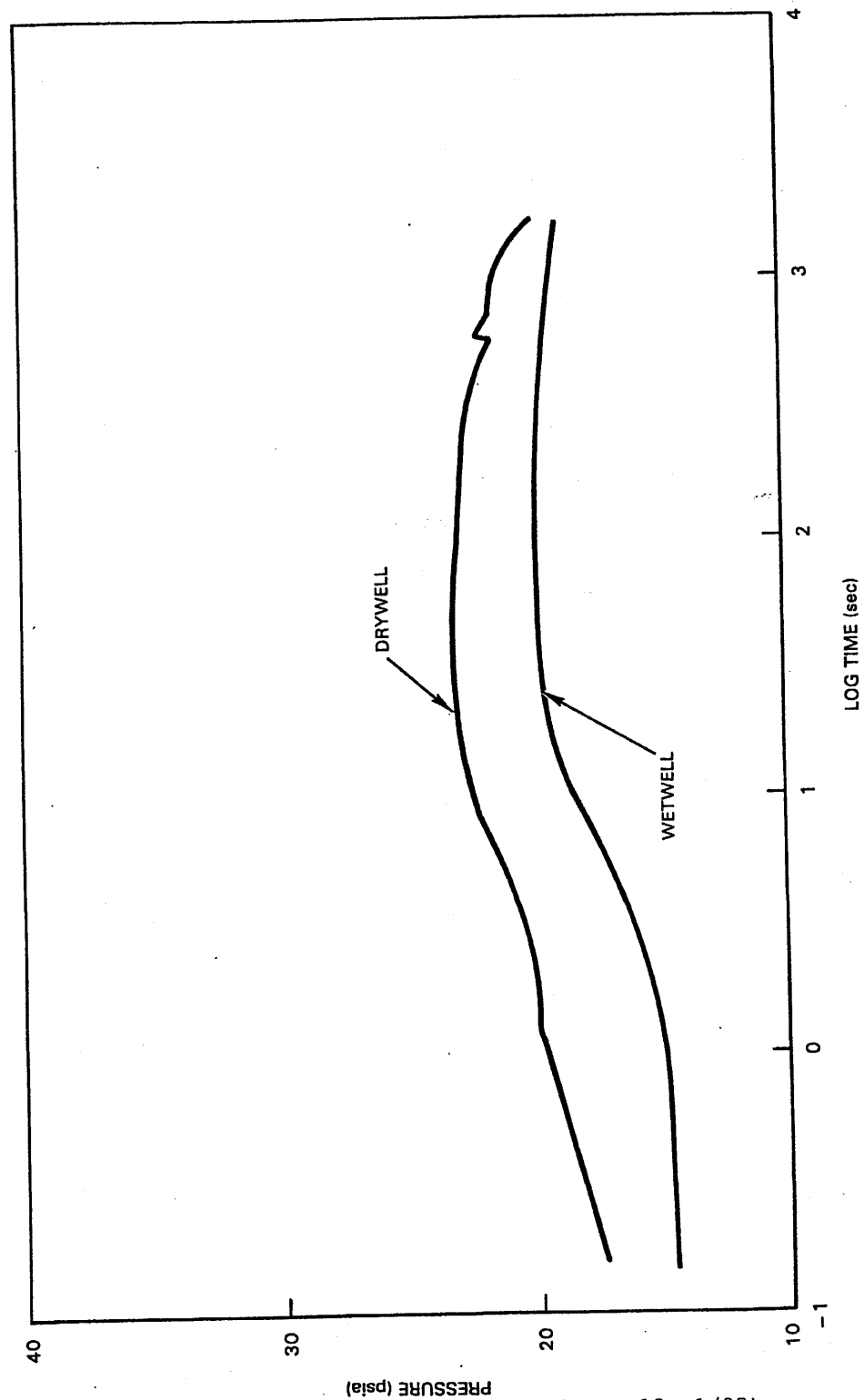
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Suppression Pool Temperature for
DBA and for Blowdown
During Hot Standby Operation
(at 3729 MWt)

Figure 6.2-15



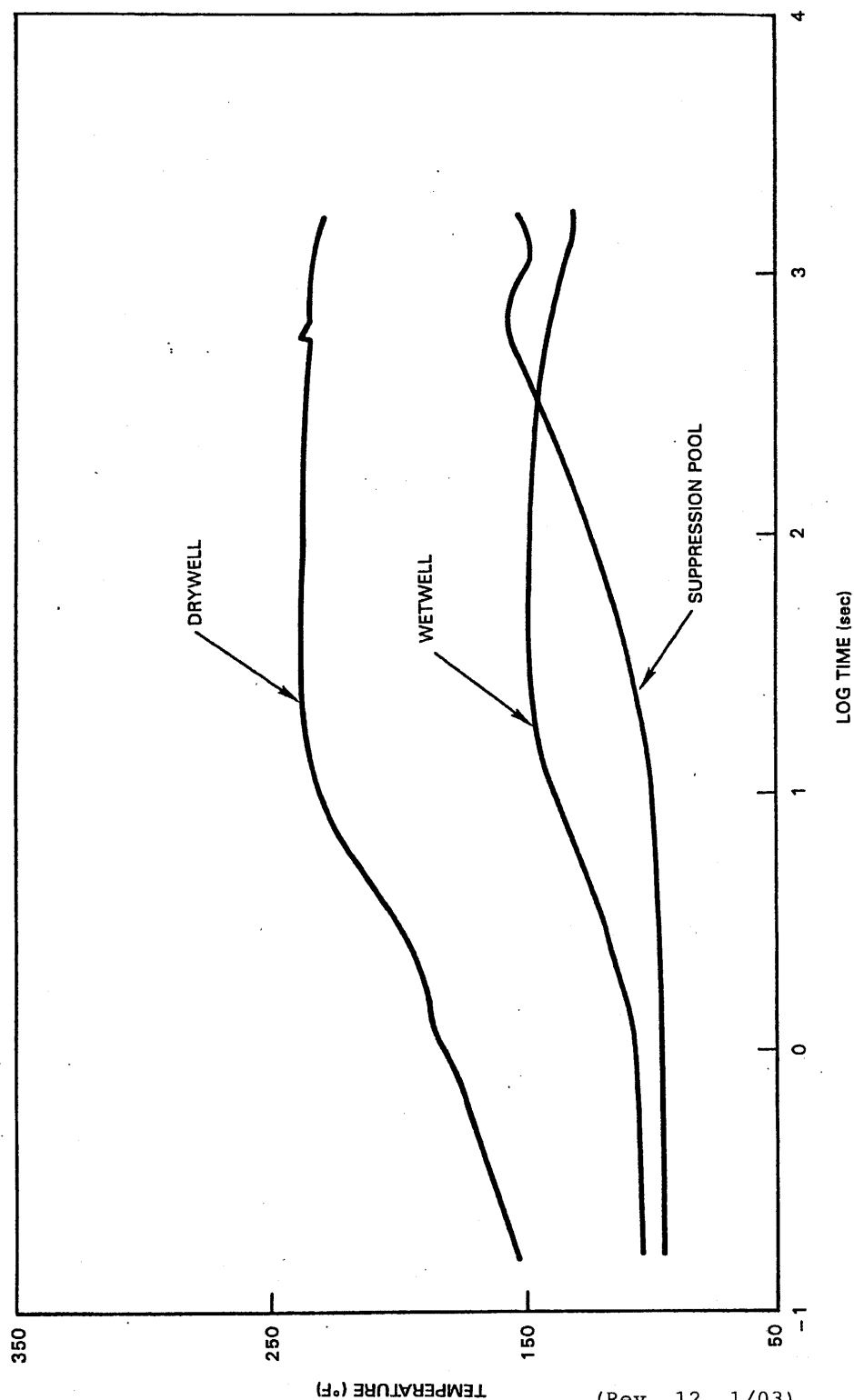
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Short Term Containment Pressure
Response Following an Intermediate
Size Break
(IBA = 0.68 ft²) (at 3729 MWt)

Figure 6.2-16



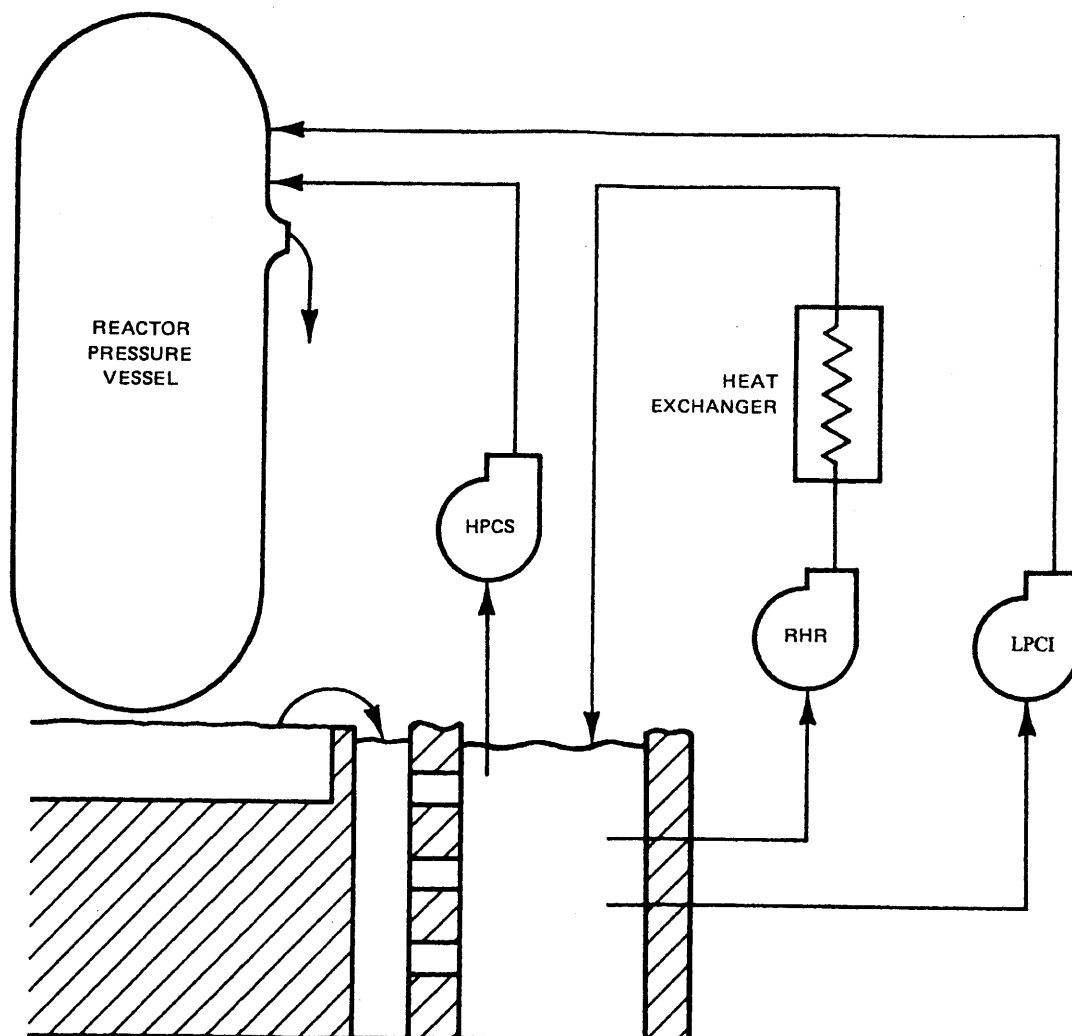
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Short Term Containment Temperature
Response Following an Intermediate
Size Break
(IBA = 0.68 ft²) (at 3729 MWt)

Figure 6.2-17



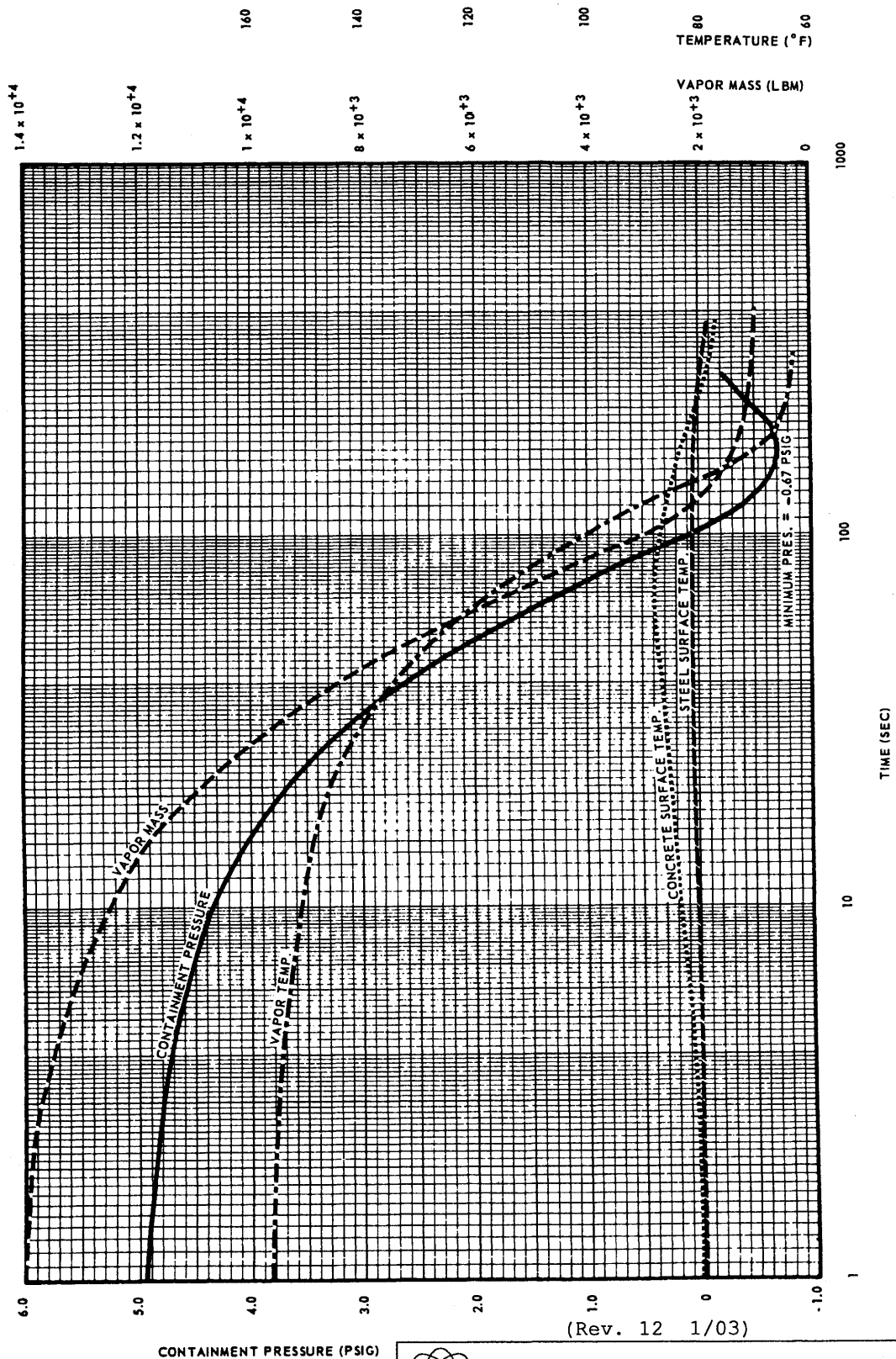
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Schematic of the RHR Containment
Cooling System Analytical
Model (Min. ECCS)

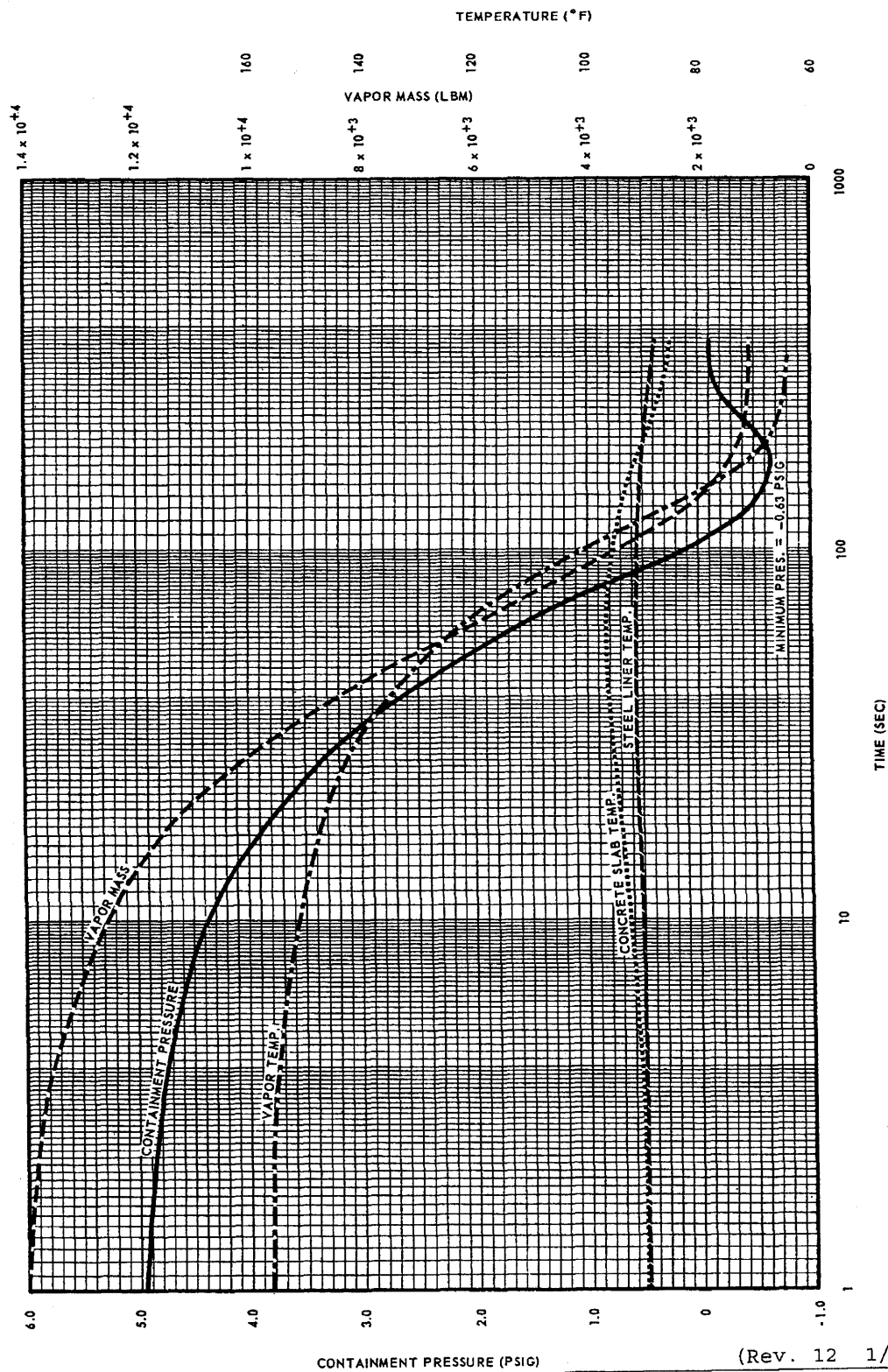
Figure 6.2-18



PERRY NUCLEAR POWER PLANT

Containment Vacuum Breaker
Analysis with Initial Internal
Surface Temperature 80°F

Figure 6.2-19



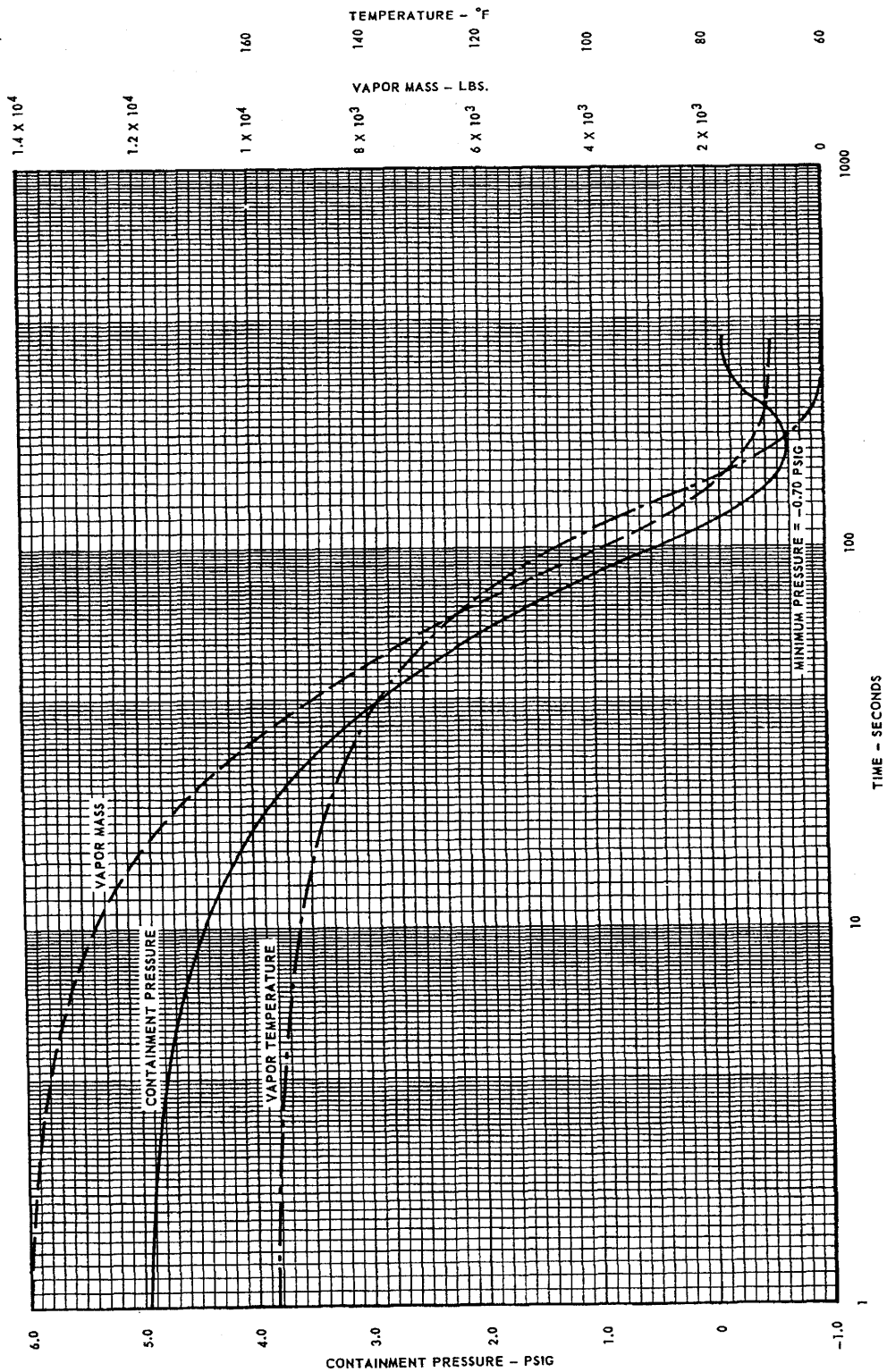
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Containment Vacuum Breaker
Analysis with Initial Internal
Surface Temperature 90°F

Figure 6.2-20



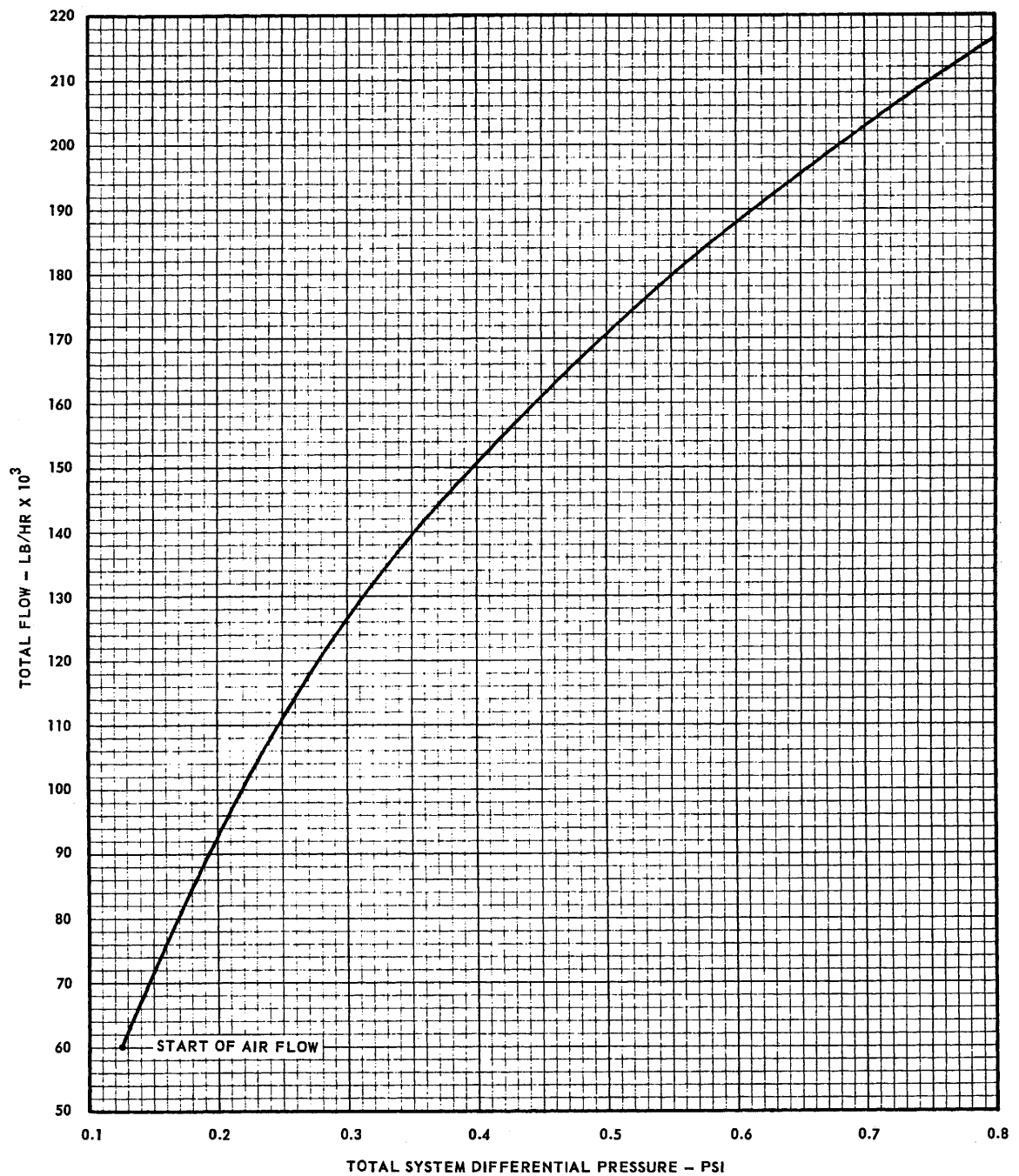
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Containment Pressure Versus
Time - Small Line Break

Figure 6.2-21



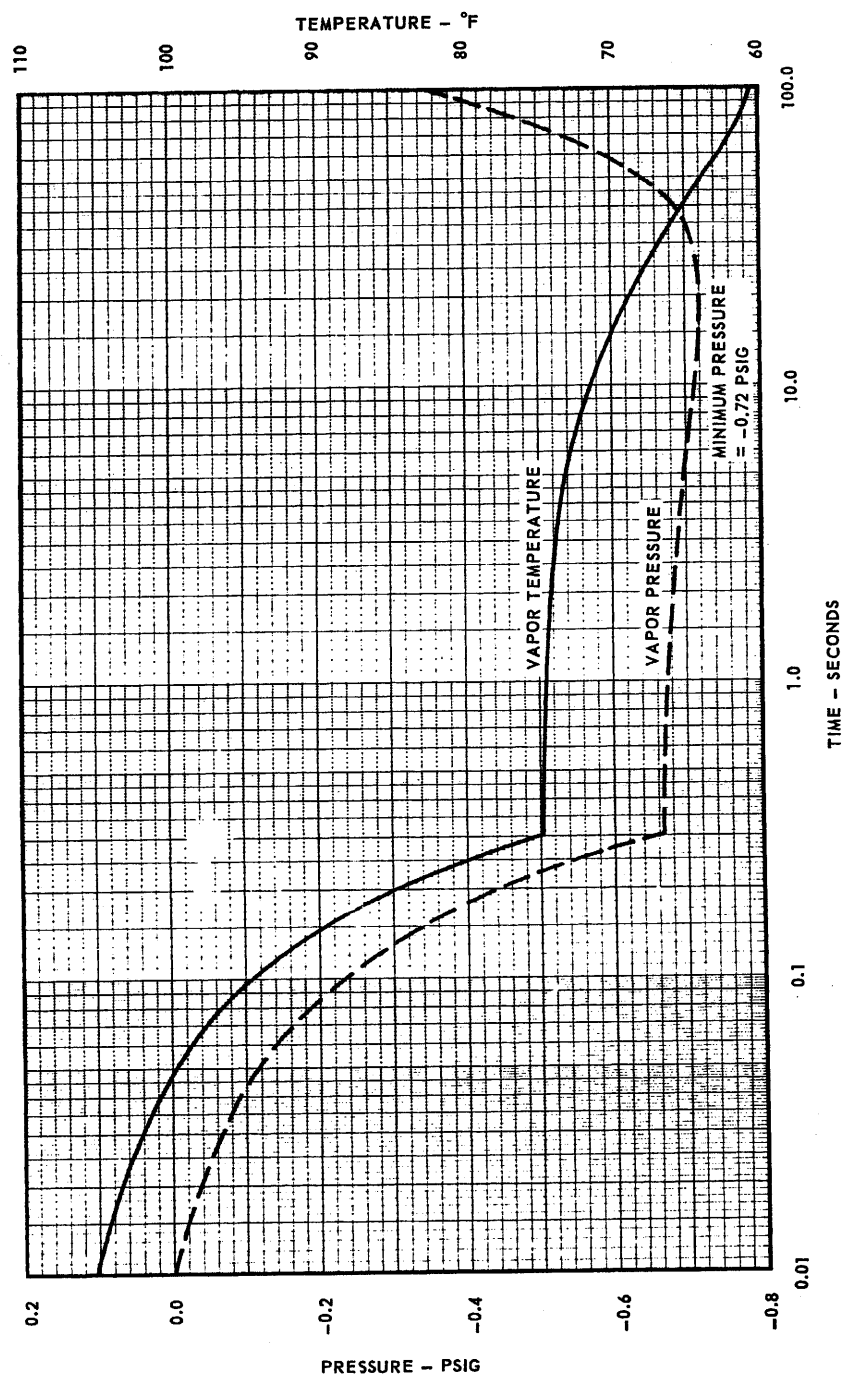
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Total Flow Through Two 24 - Inch
Diameter CVR Lines Versus Total
System Differential Pressure

Figure 6.2-22



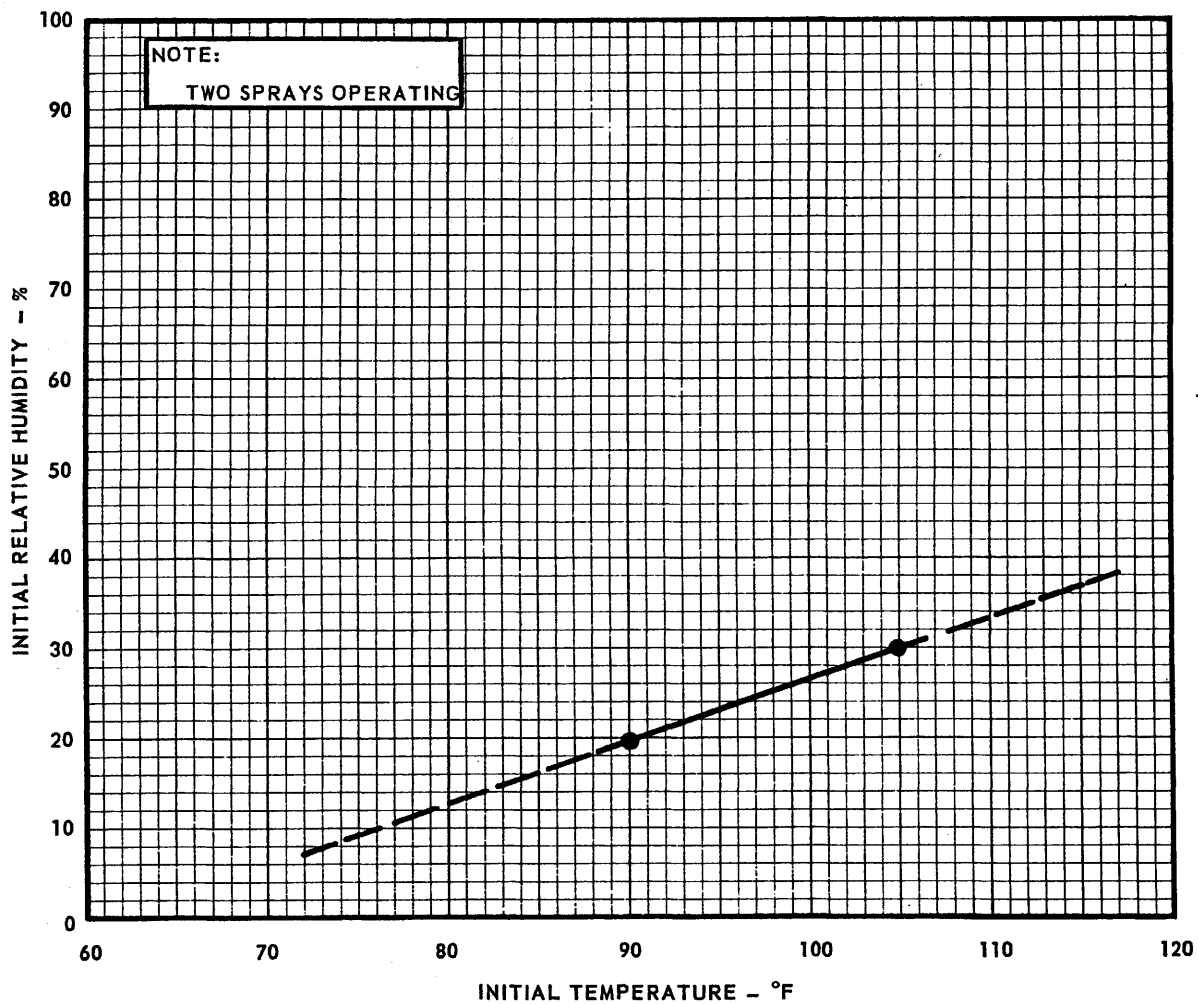
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PERRY NUCLEAR POWER PLANT

Containment Pressure Versus Time
Inadvertent Spray Operation -
Normal Operation

Figure 6.2-23



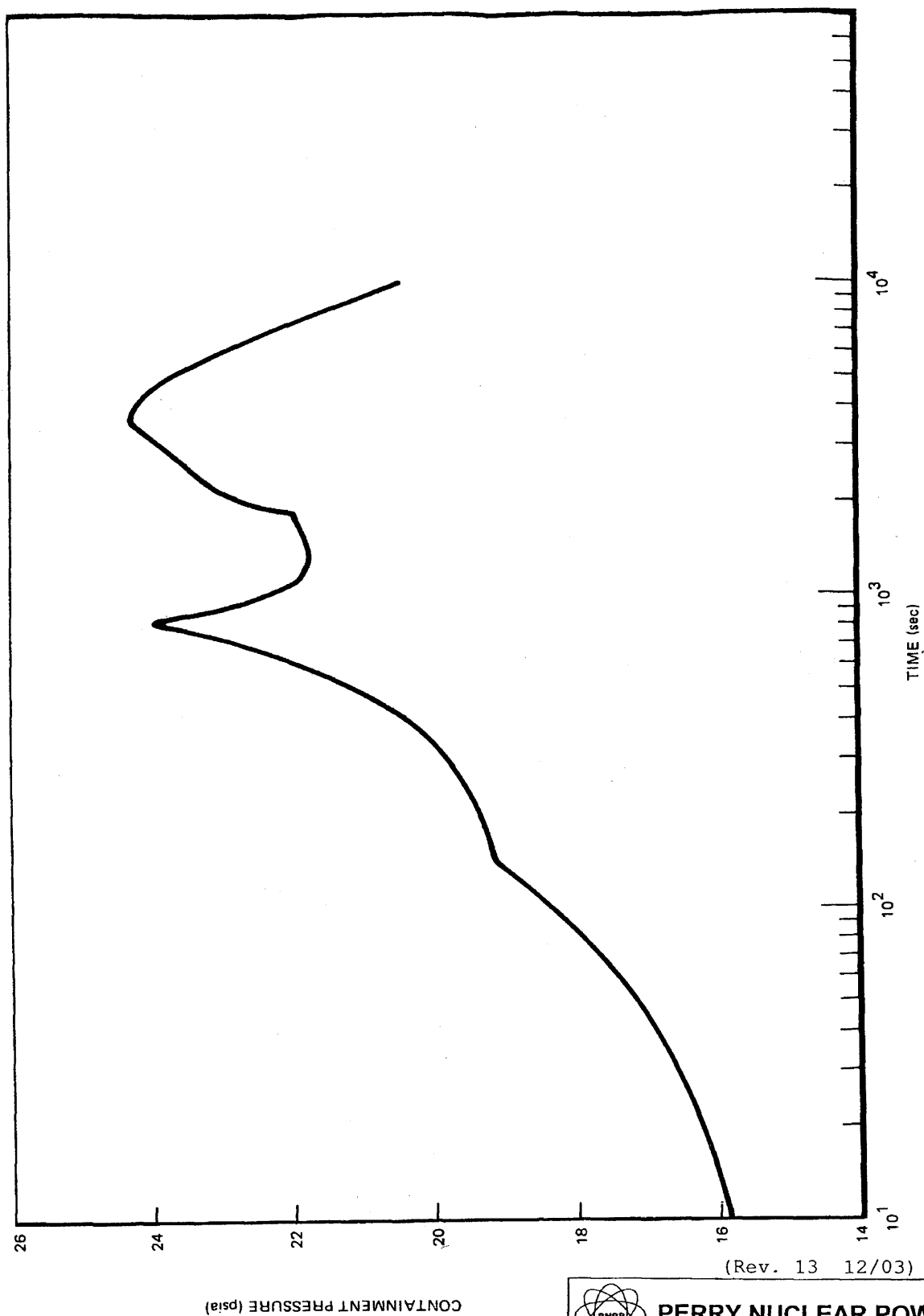
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Initial Relative Humidity Versus
Initial Temperature for
Inadvertent Spray Operation to
Maintain Peak Vacuum ≤ 0.72 PSI

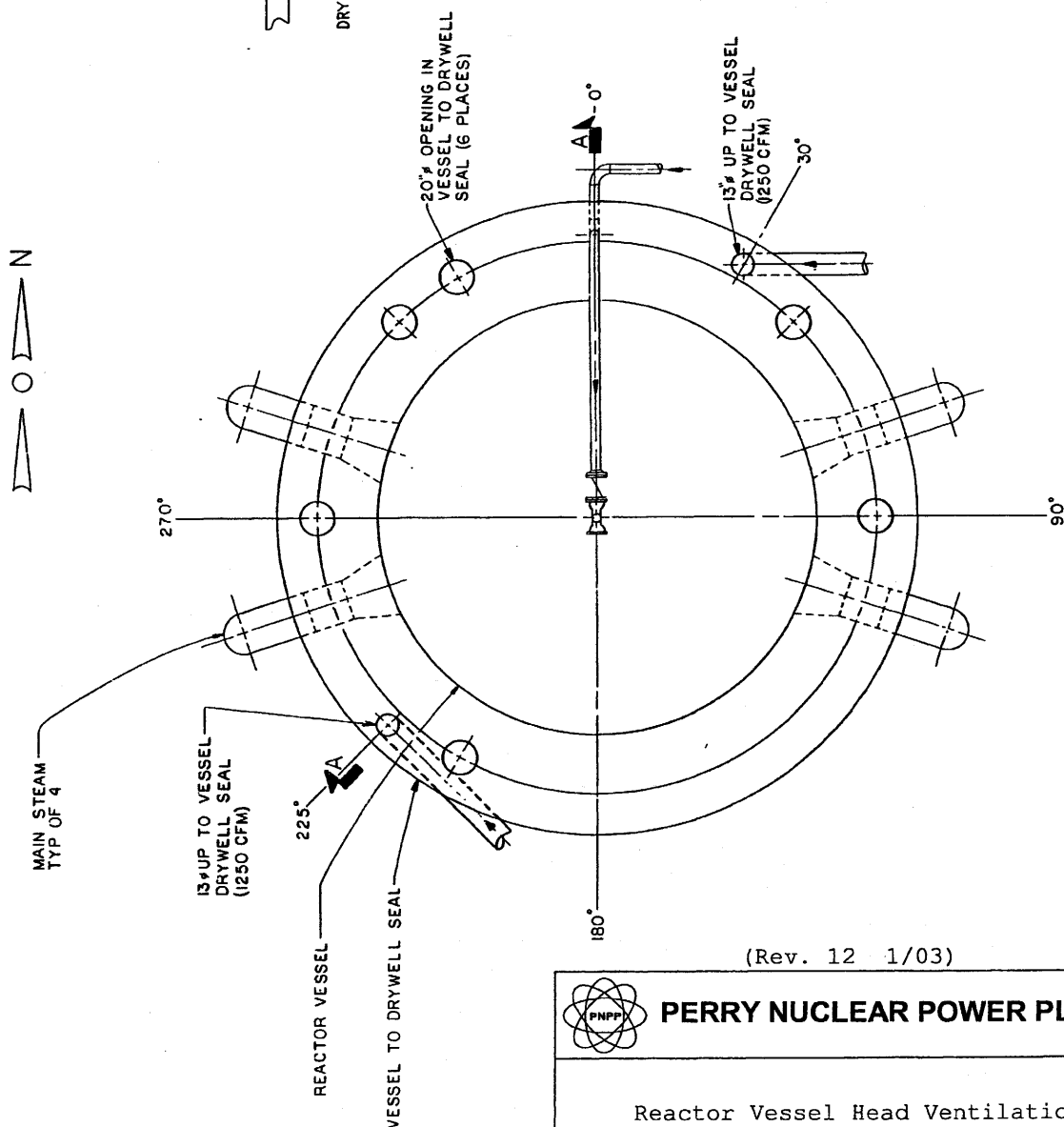
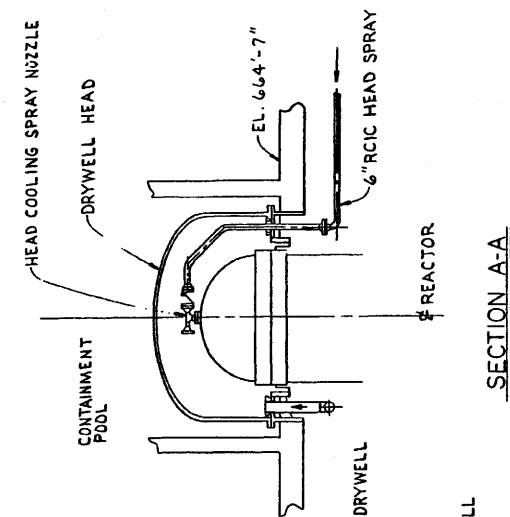
Figure 6.2-24



PERRY NUCLEAR POWER PLANT

Containment Pressure Following a
Small Break with Steam Bypass
(With Containment Spray and Heat
Sinks & a minimum Mark III Design
of $A/\sqrt{K} = 1.0 \text{ ft}^2$)

Figure 6.2-25



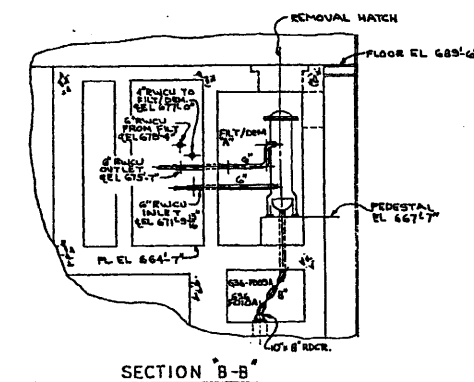
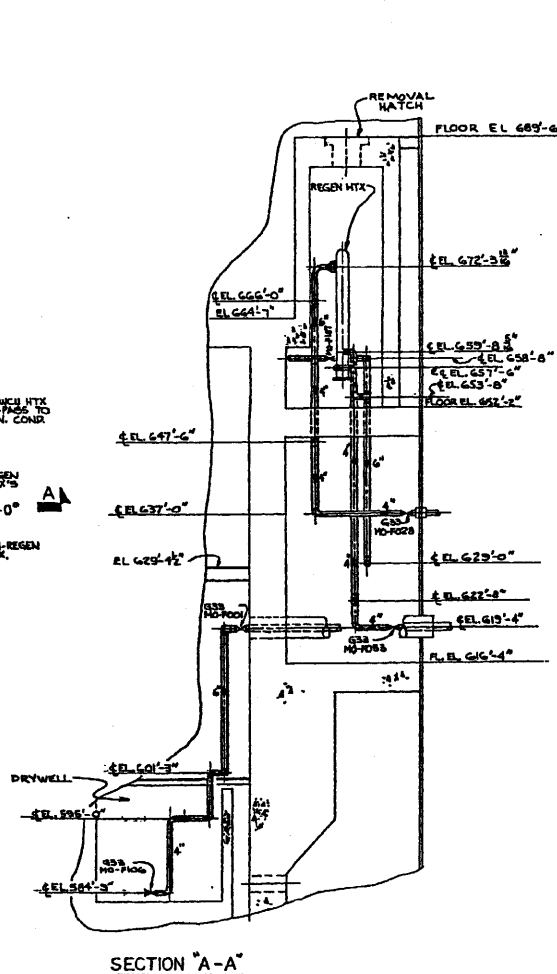
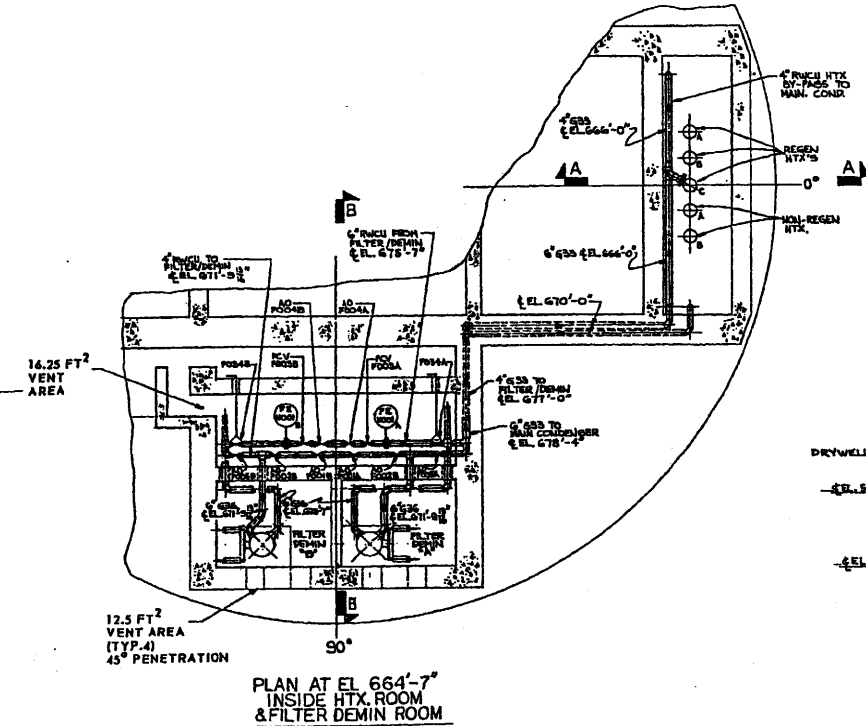
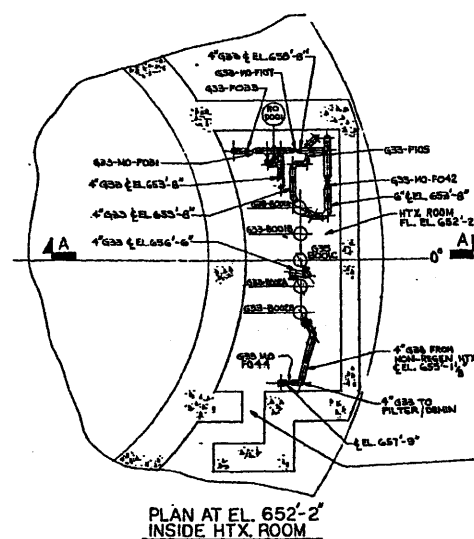
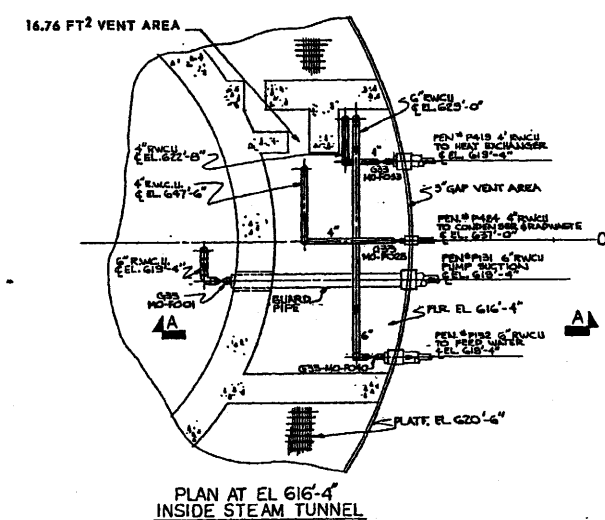
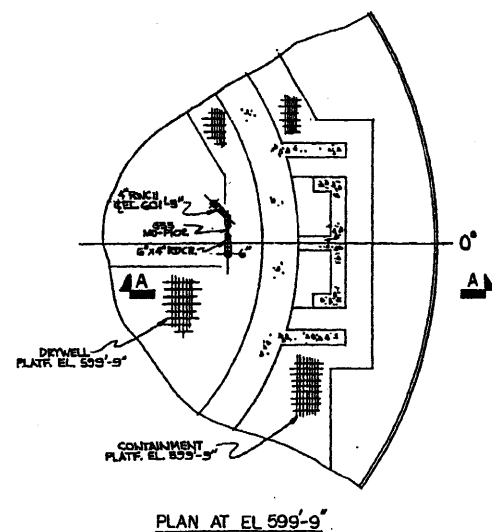
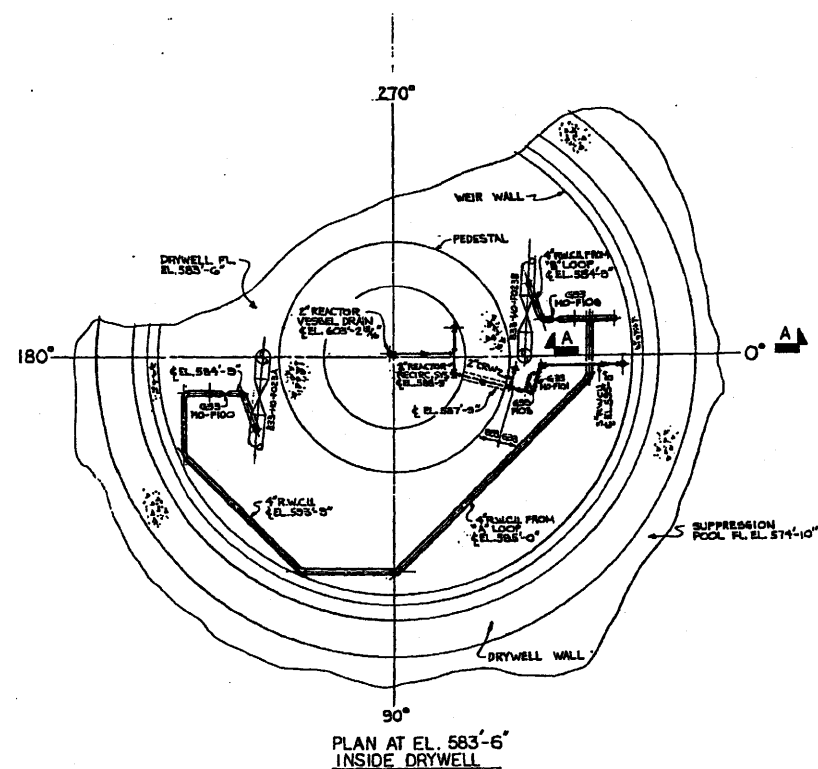
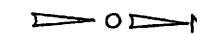
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Vessel Head Ventilation
System

Figure 6.2-26

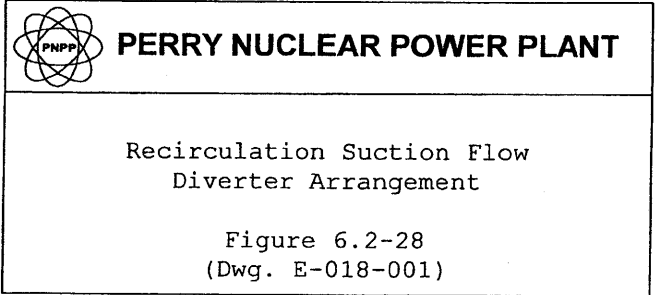


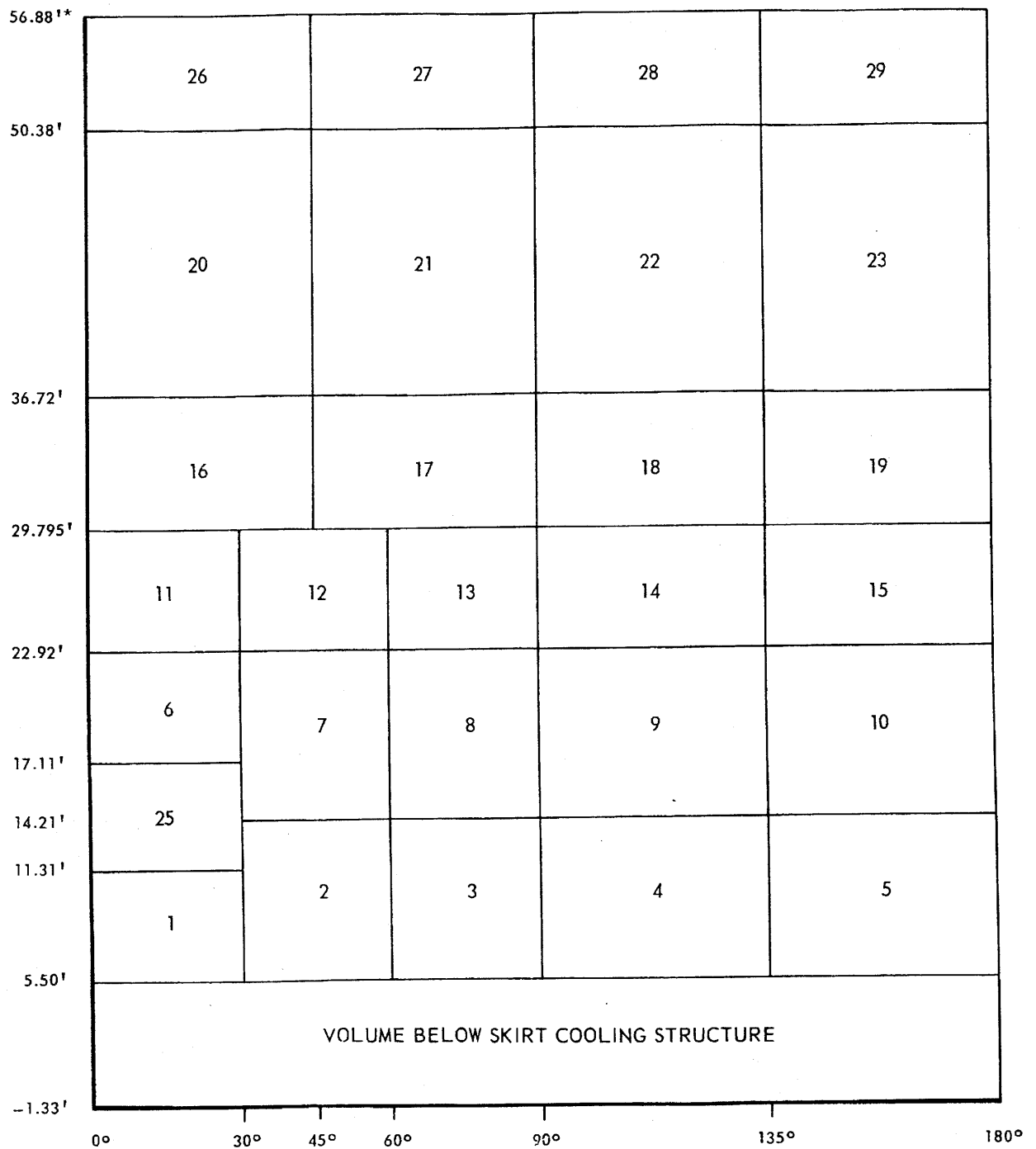
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PERRY NUCLEAR POWER PLANT

RWCU Main Flow Piping Inside
Containment and Drywell

Figure 6.2-27





ELEVATIONS GIVEN WITH RESPECT TO REACTOR
PRESSURE VESSEL ZERO POINT.

* VOLUME BETWEEN ELEVATIONS 50.38' TO 56.88'
REPRESENT THAT VOLUME BELOW THE REFUELING
BELLOWS & ABOVE THE BIOLOGICAL SHIELD &
STILL ISOLATED FROM THE DRYWELL.

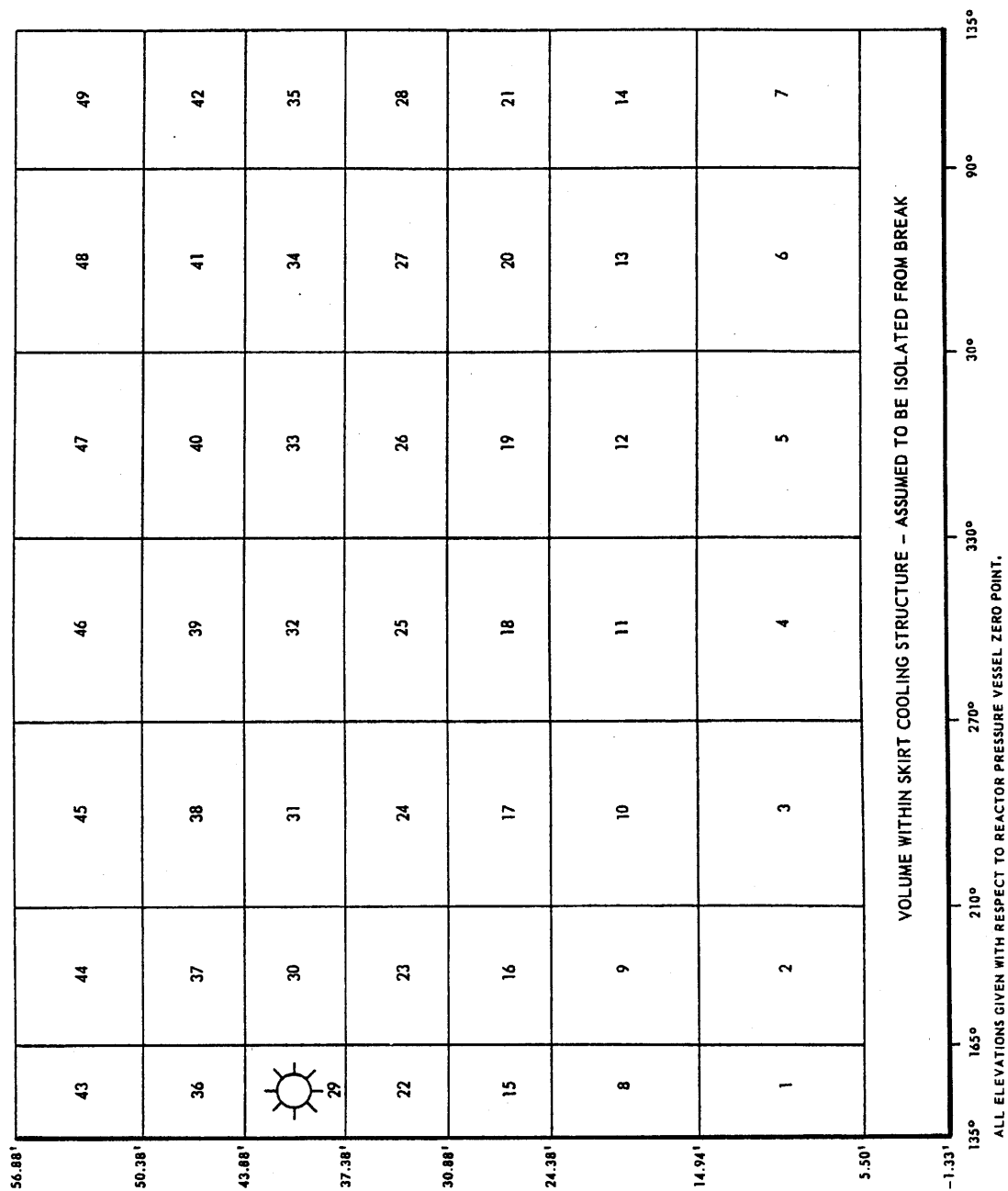
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Nodalization
- Recirculation Line Breaks

Figure 6.2-29



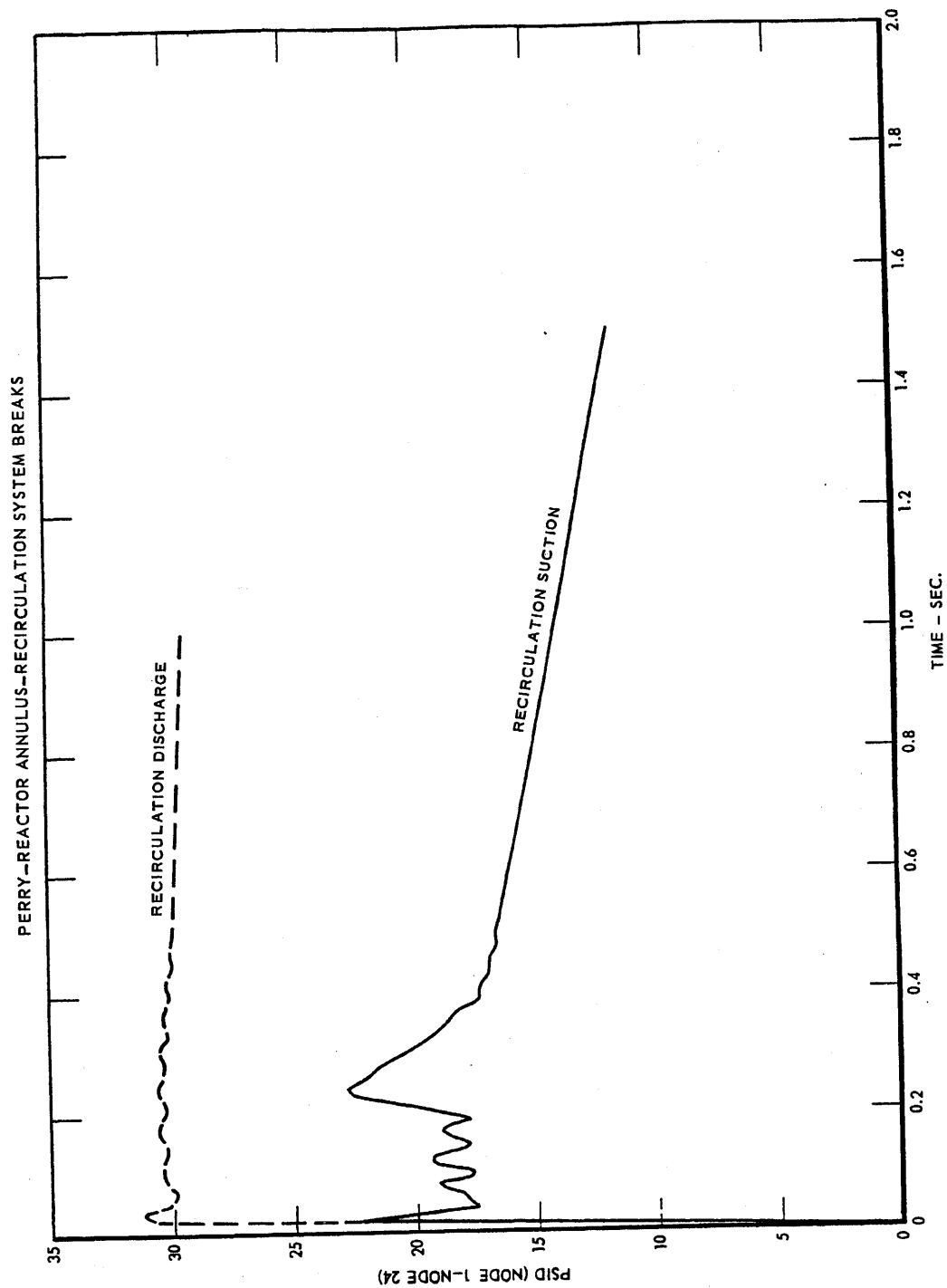
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Nodalization
Feedwater Line Break

Figure 6.2-30



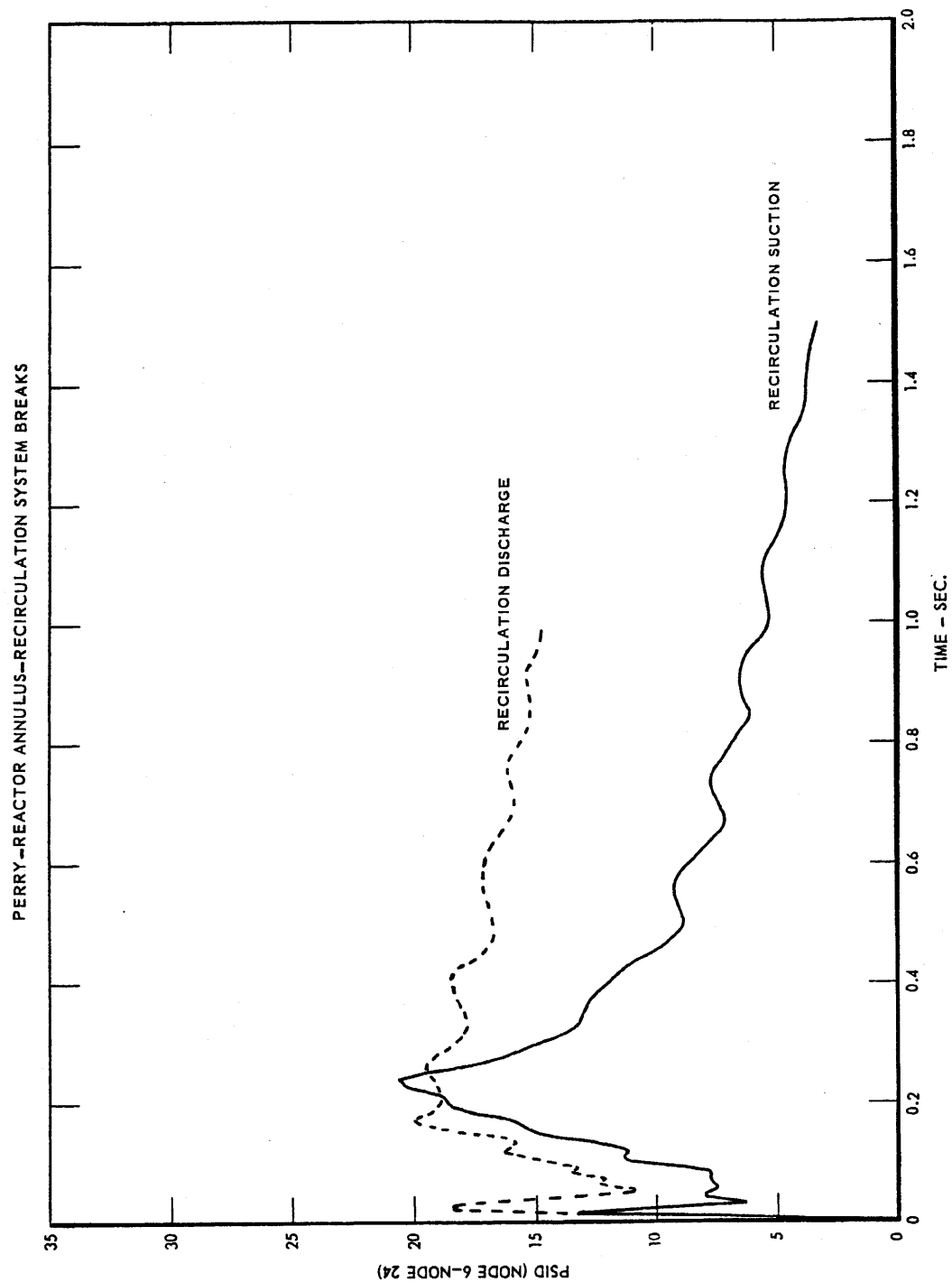
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 1 - 24)

Figure 6.2-31



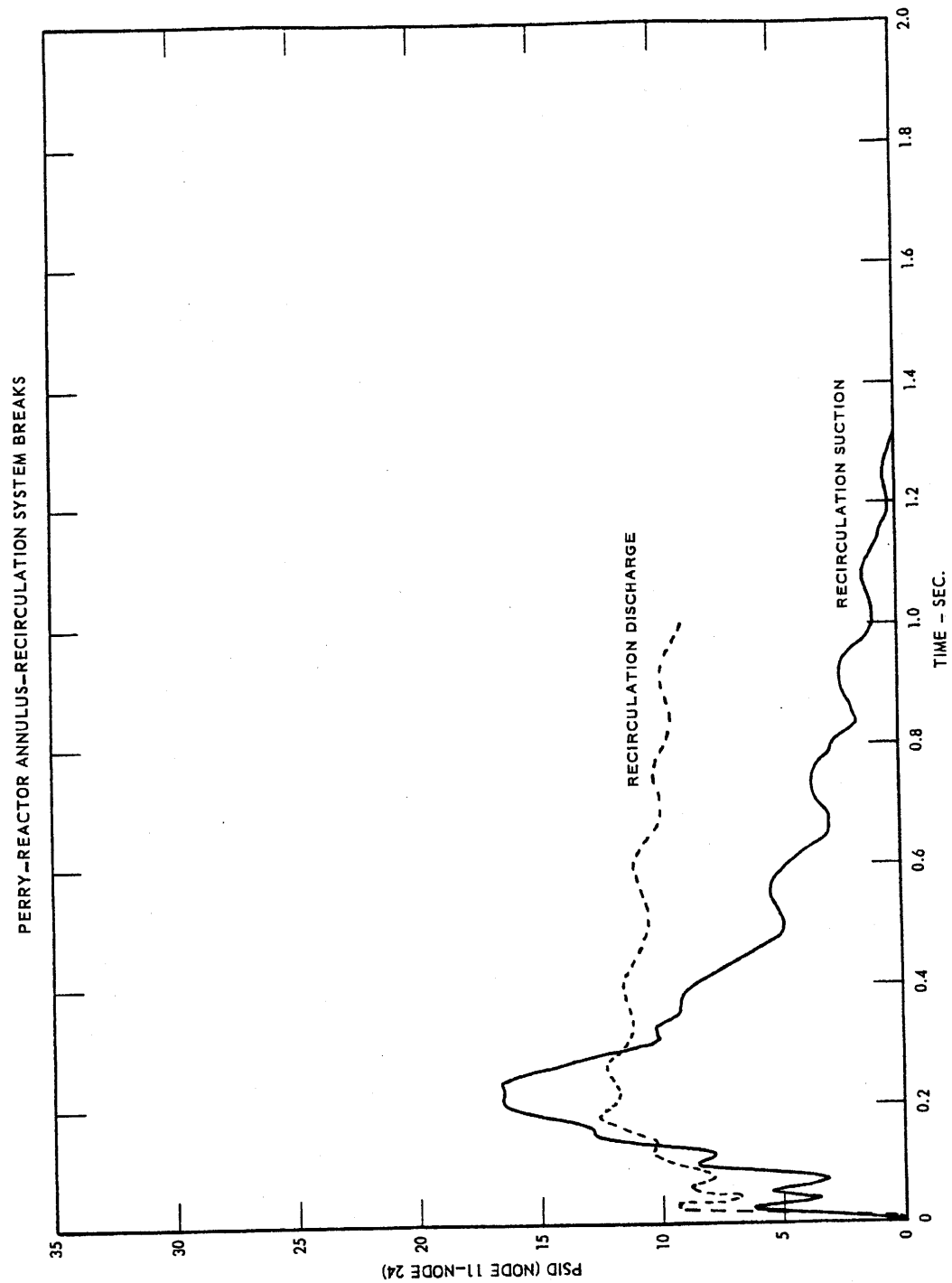
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 6 - 24)

Figure 6.2-32



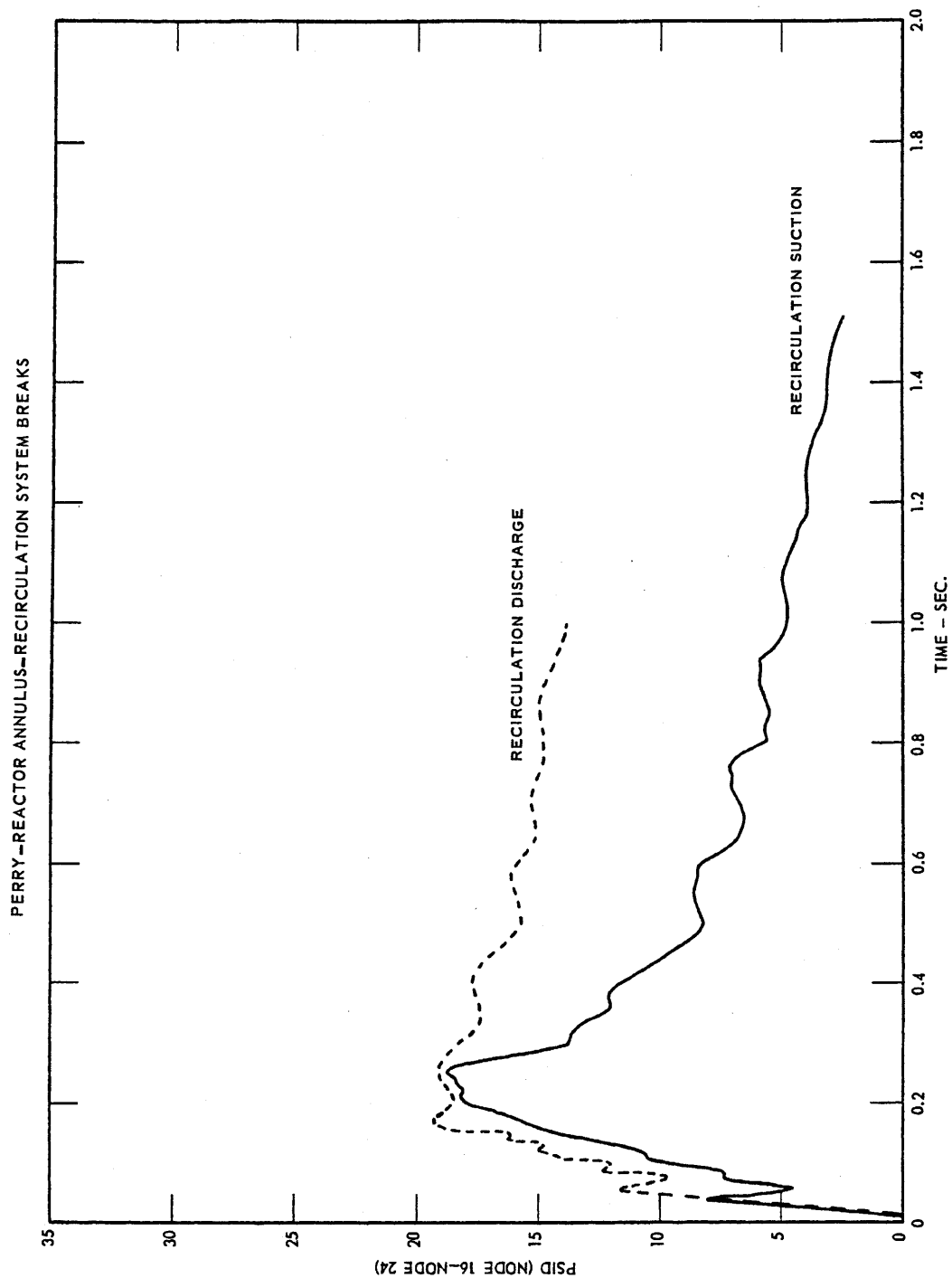
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 11 - 24)

Figure 6.2-33



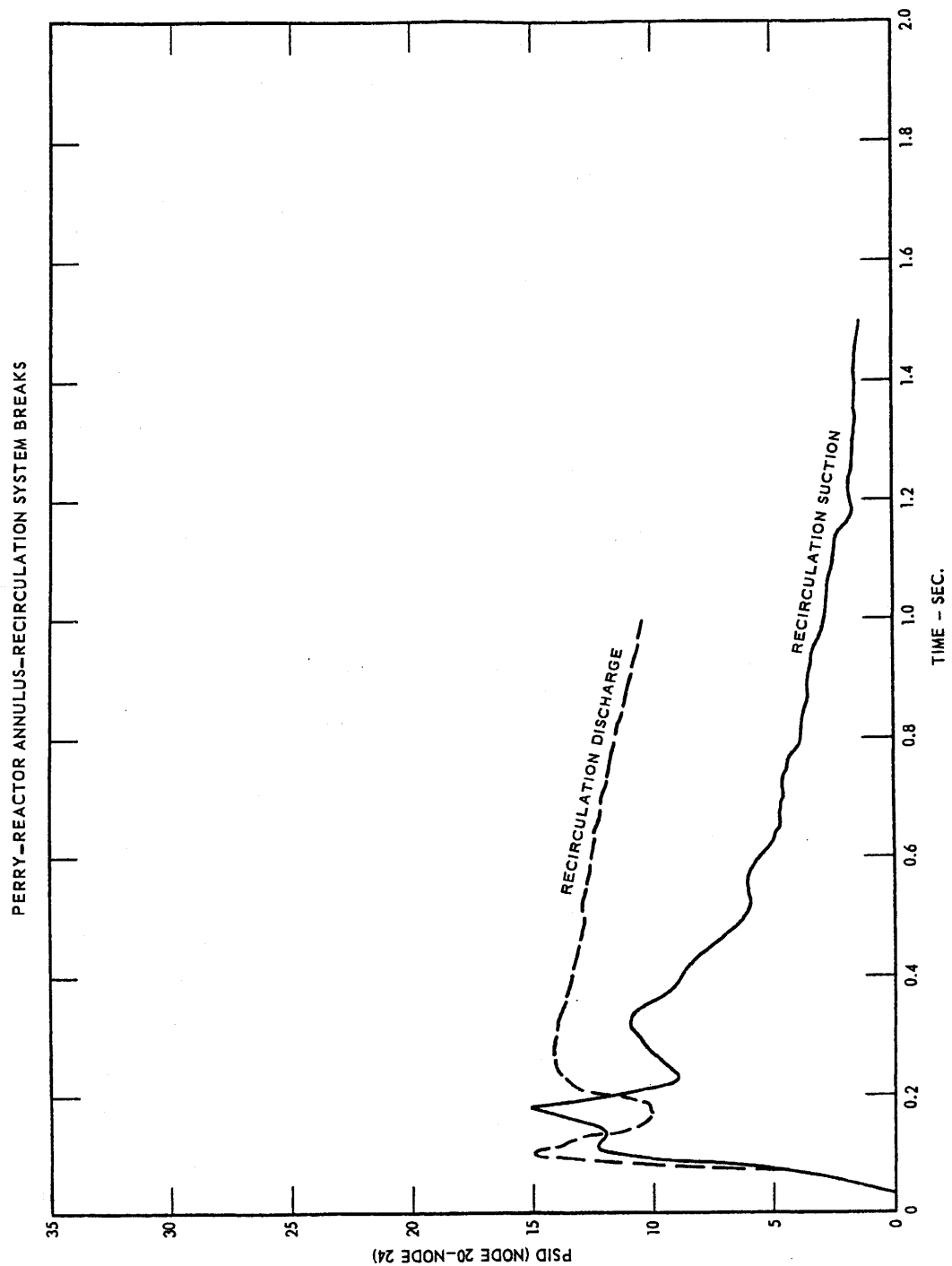
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 16 - 24)

Figure 6.2-34



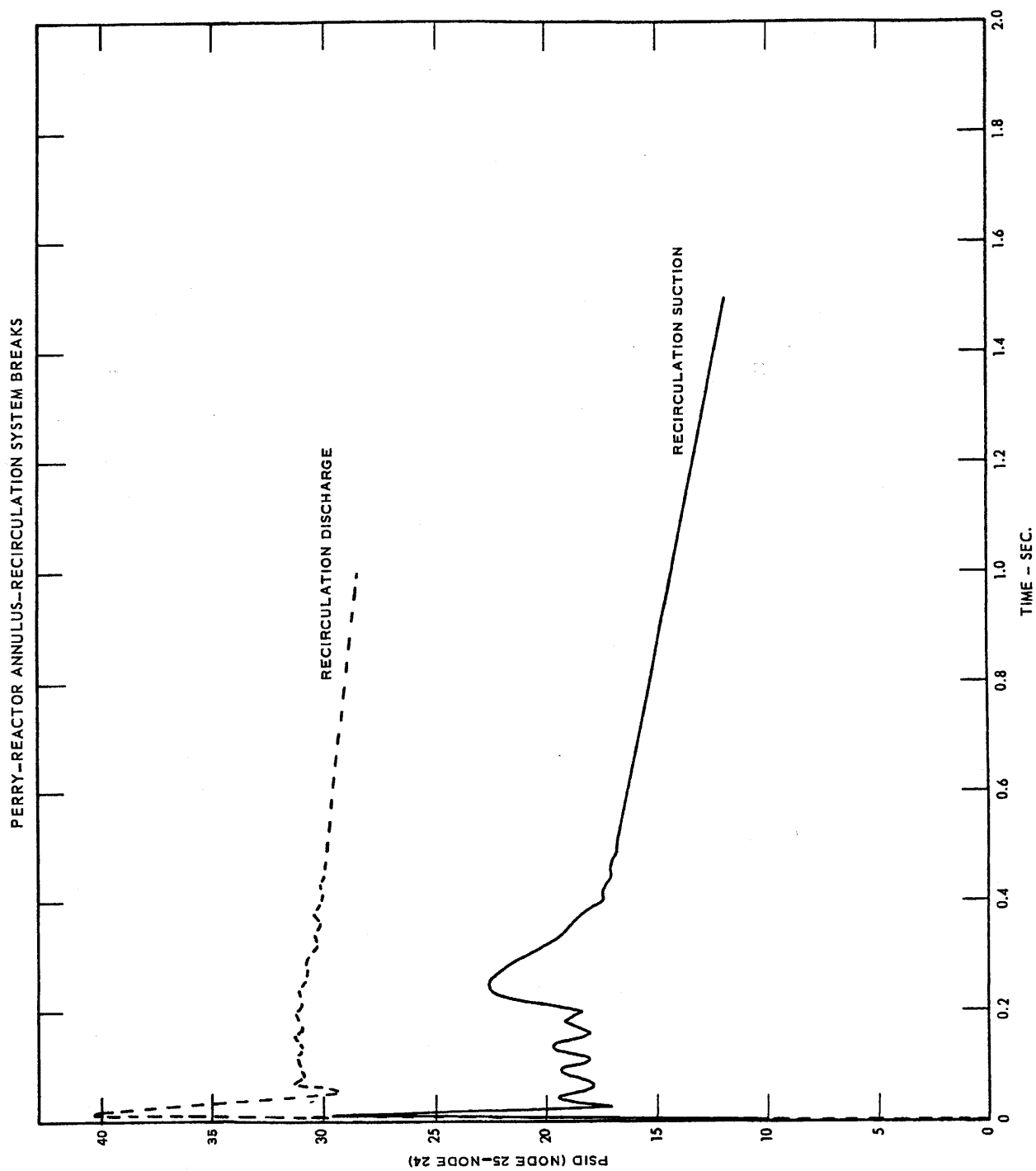
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 20 - 24)

Figure 6.2-35



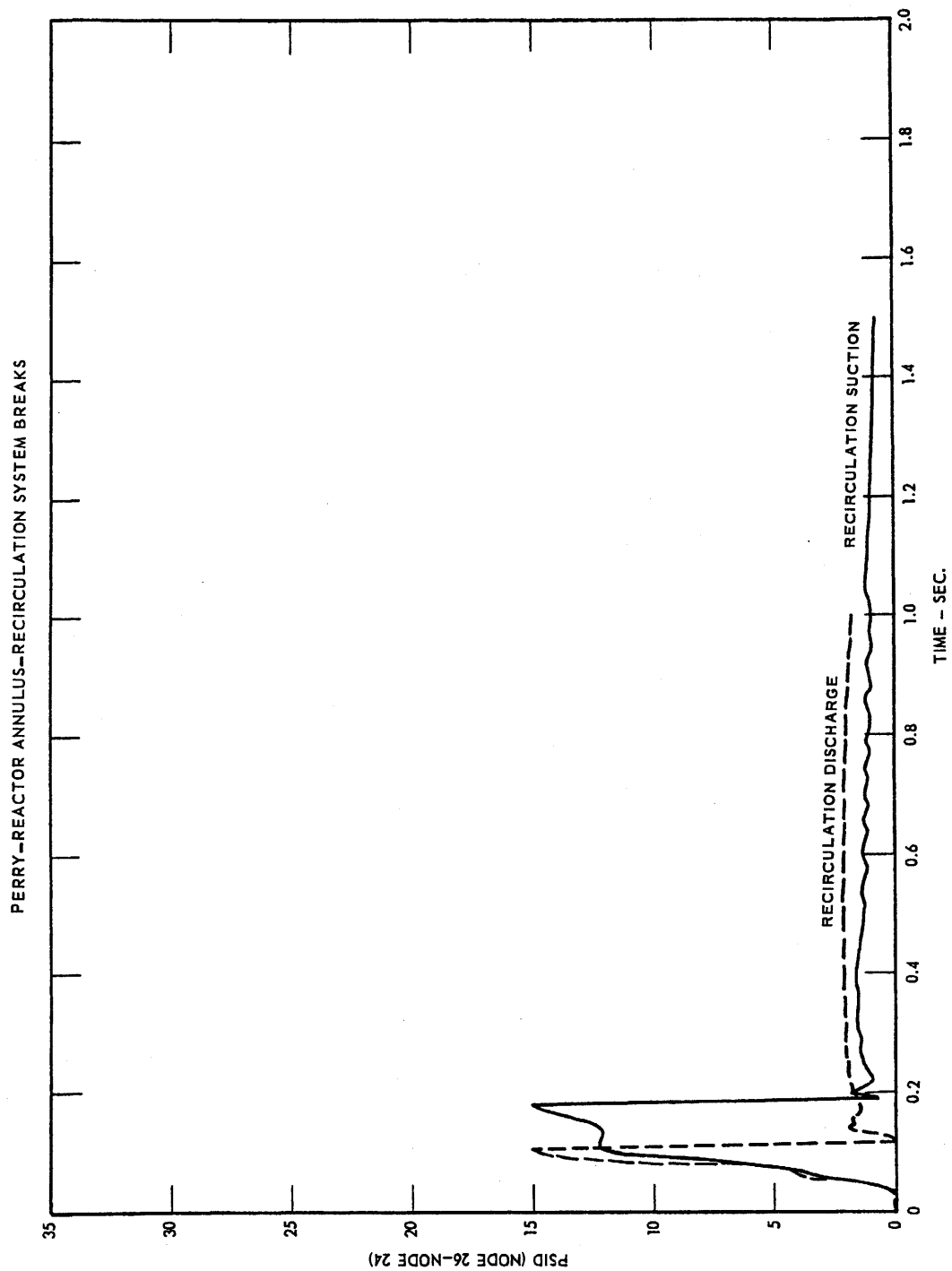
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 25 - 24)

Figure 6.2-36



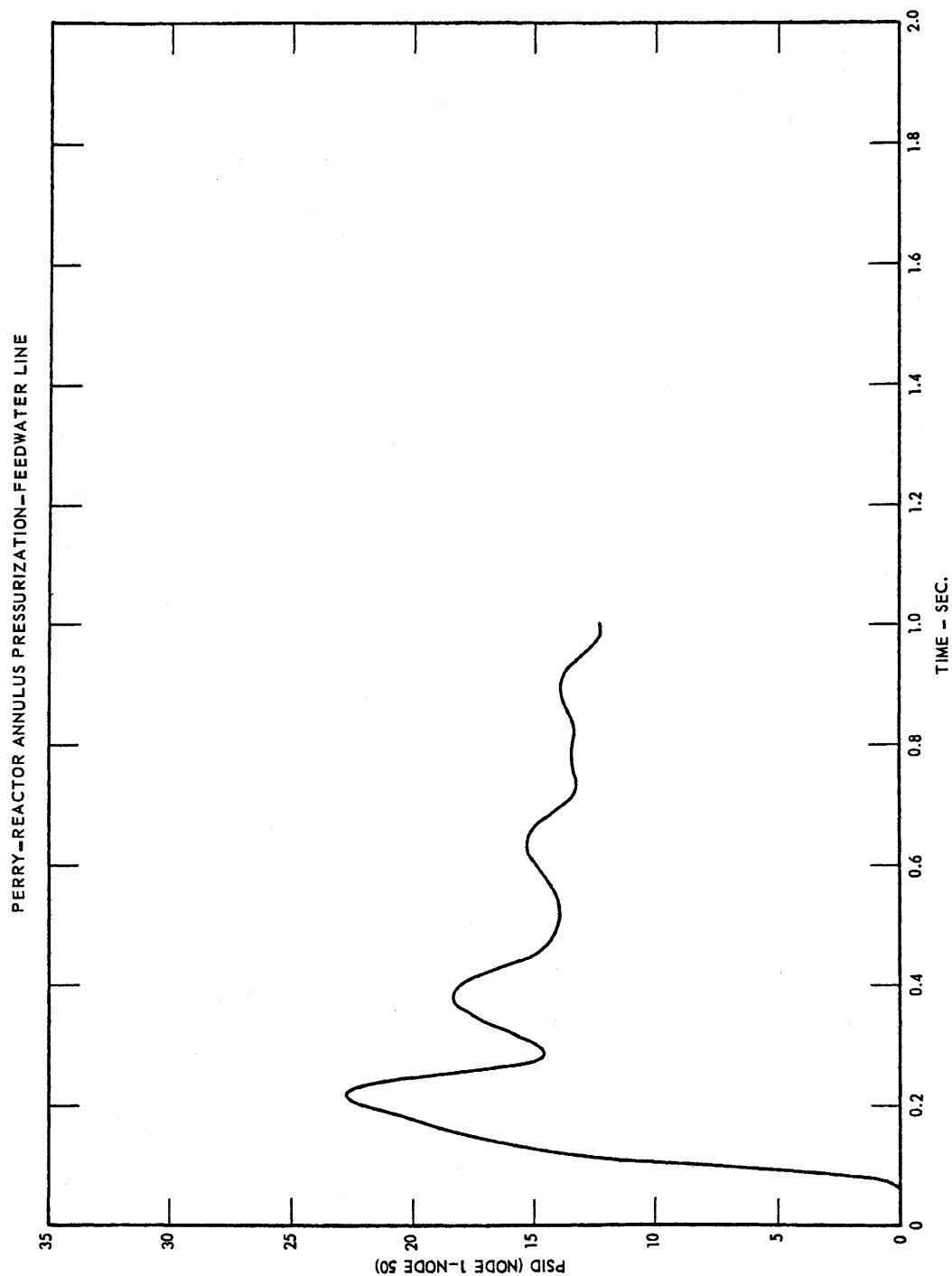
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 26 - 24)

Figure 6.2-37



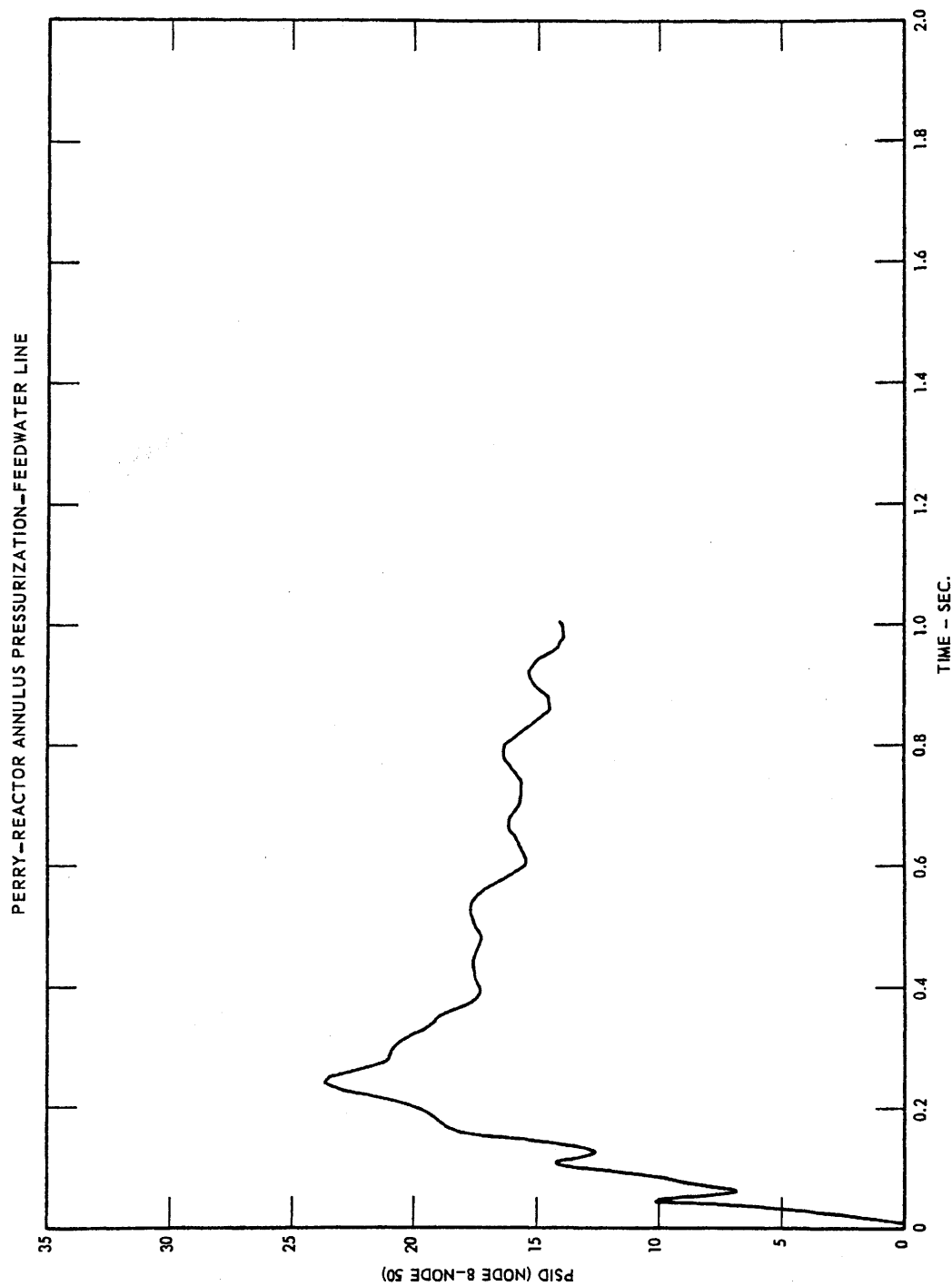
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 1 - 50)

Figure 6.2-38



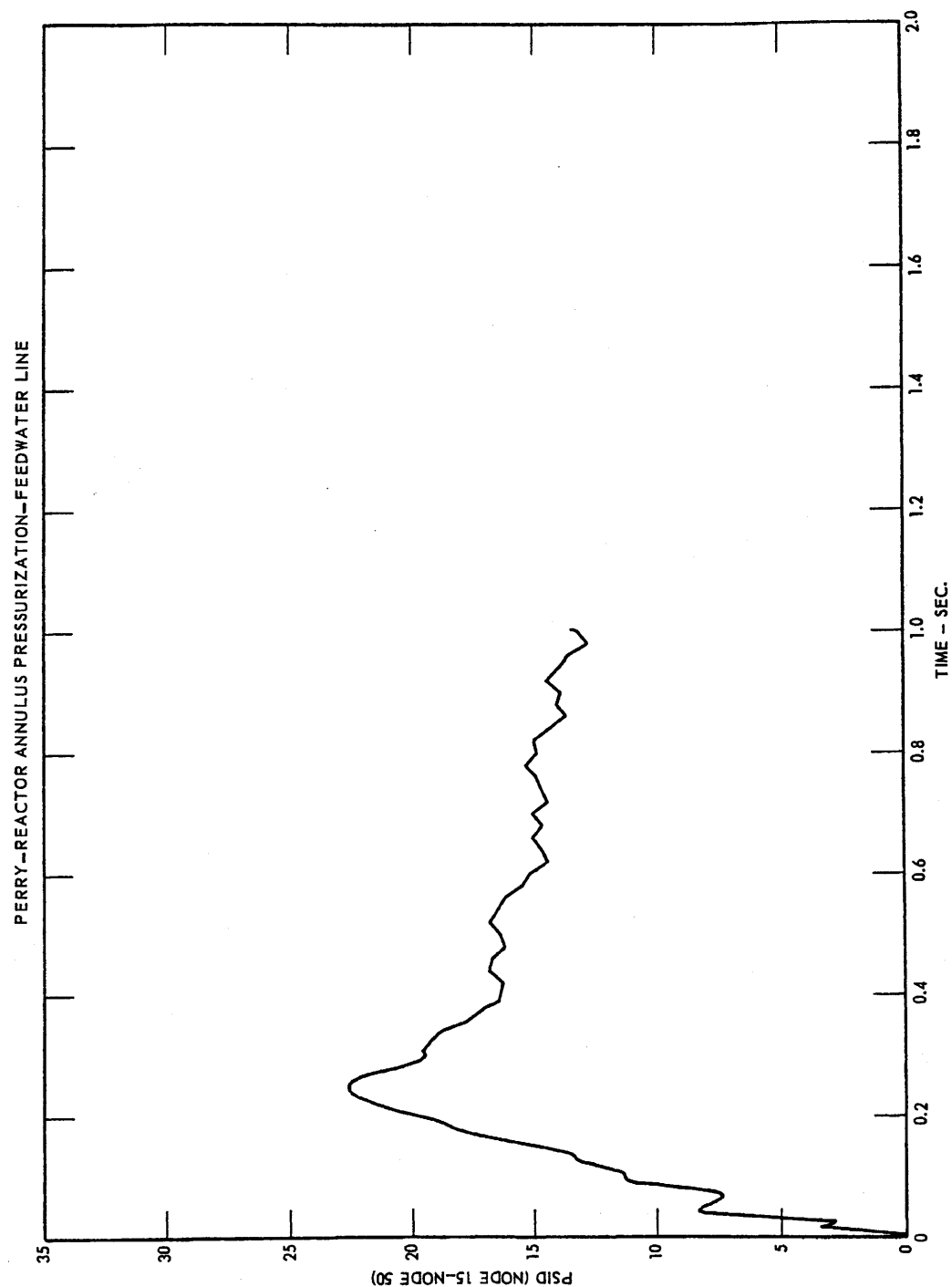
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 8 - 50)

Figure 6.2-39



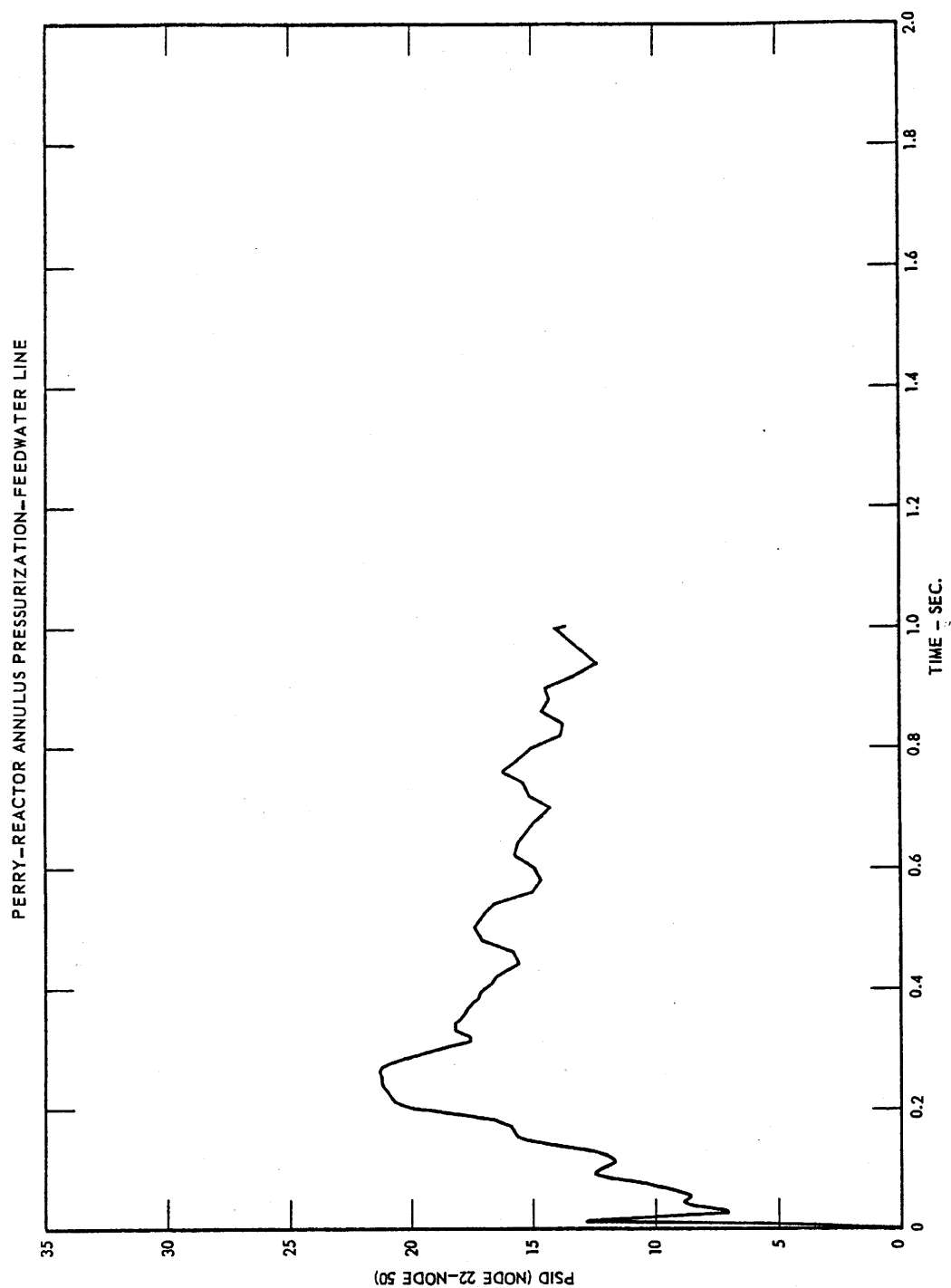
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 15 - 50)

Figure 6.2-40 ...



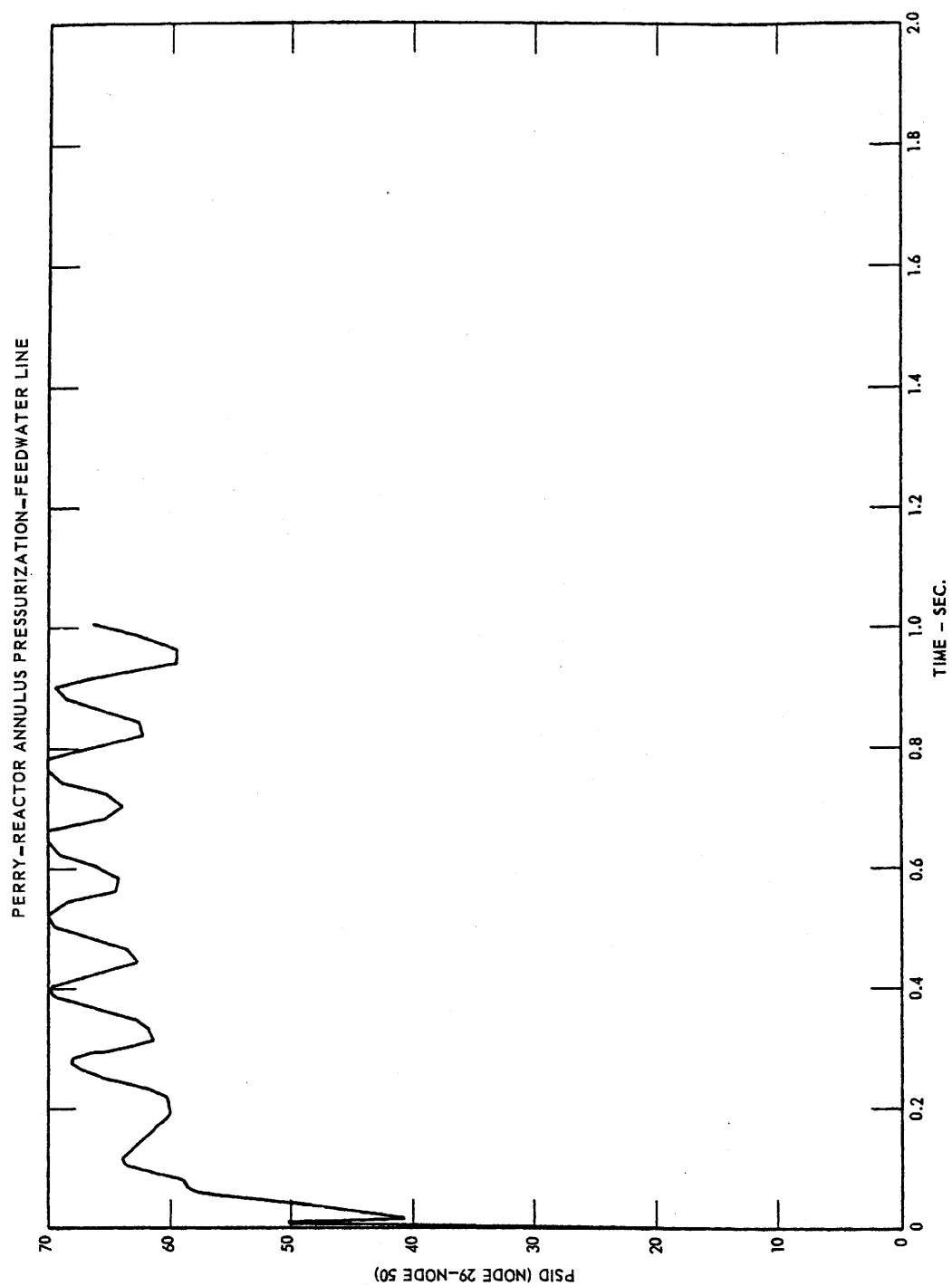
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 22 - 50)

Figure 6.2-41



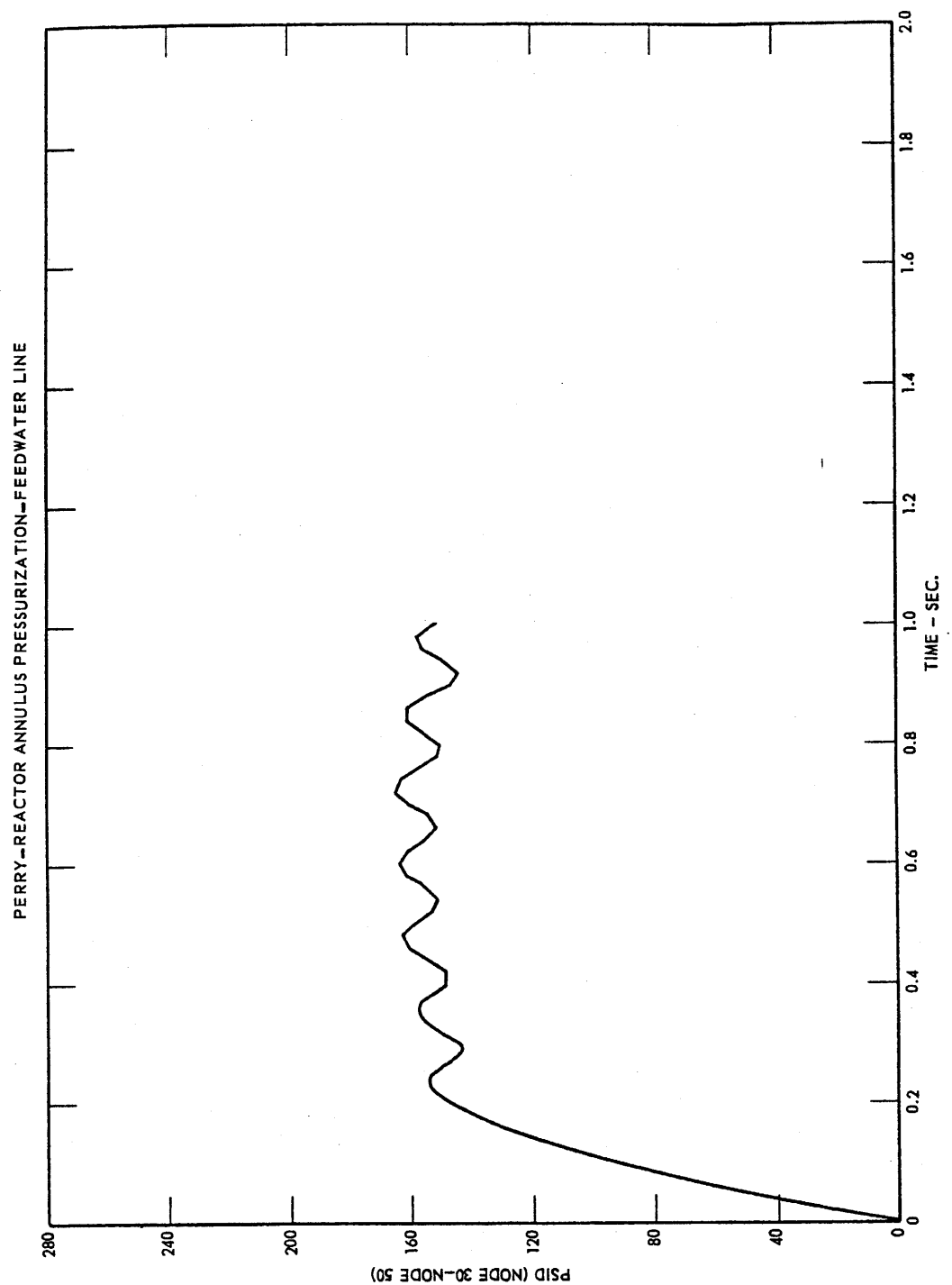
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 29 - 50)

Figure 6.2-42



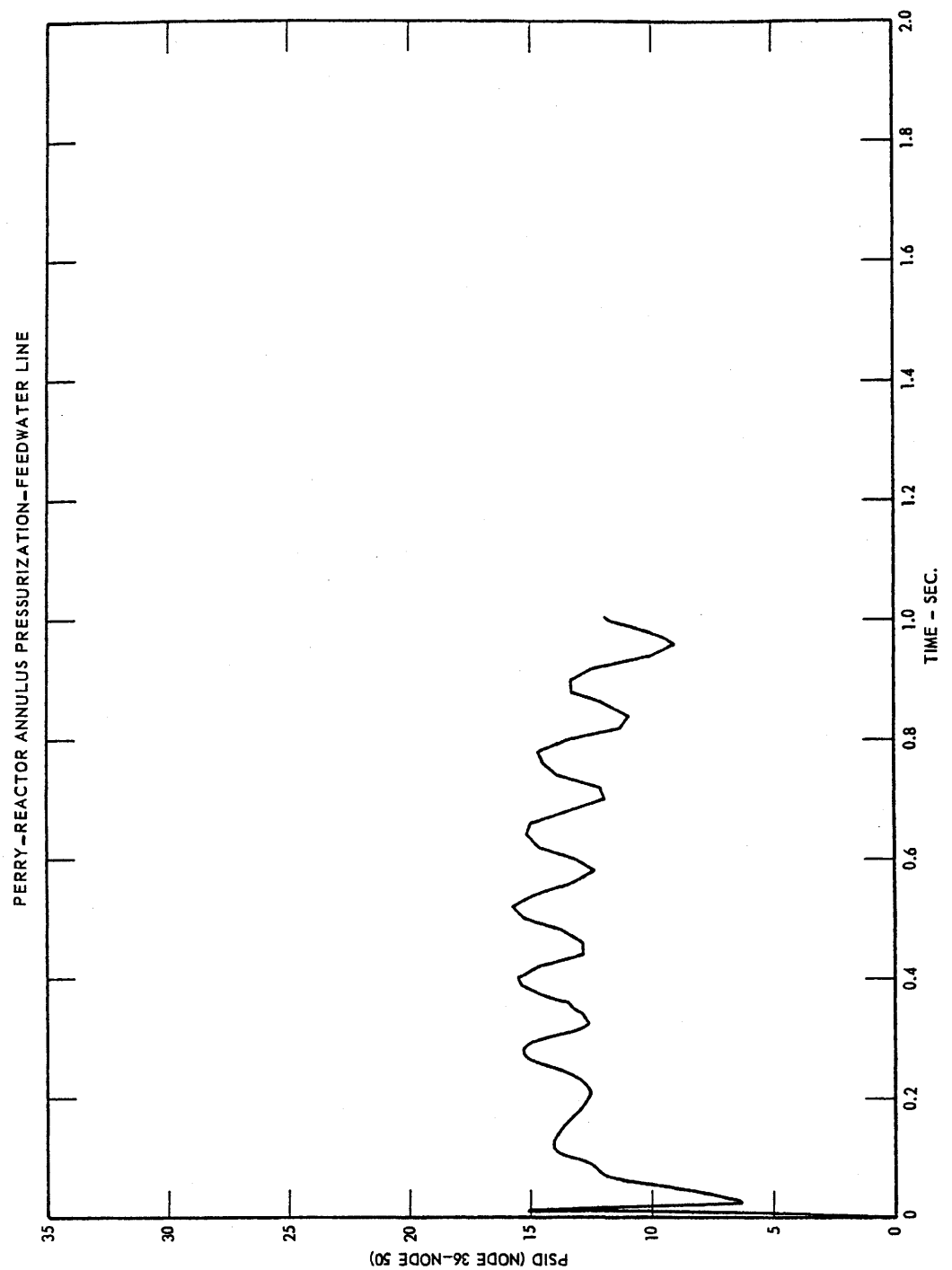
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 30 - 50)

Figure 6.2-43



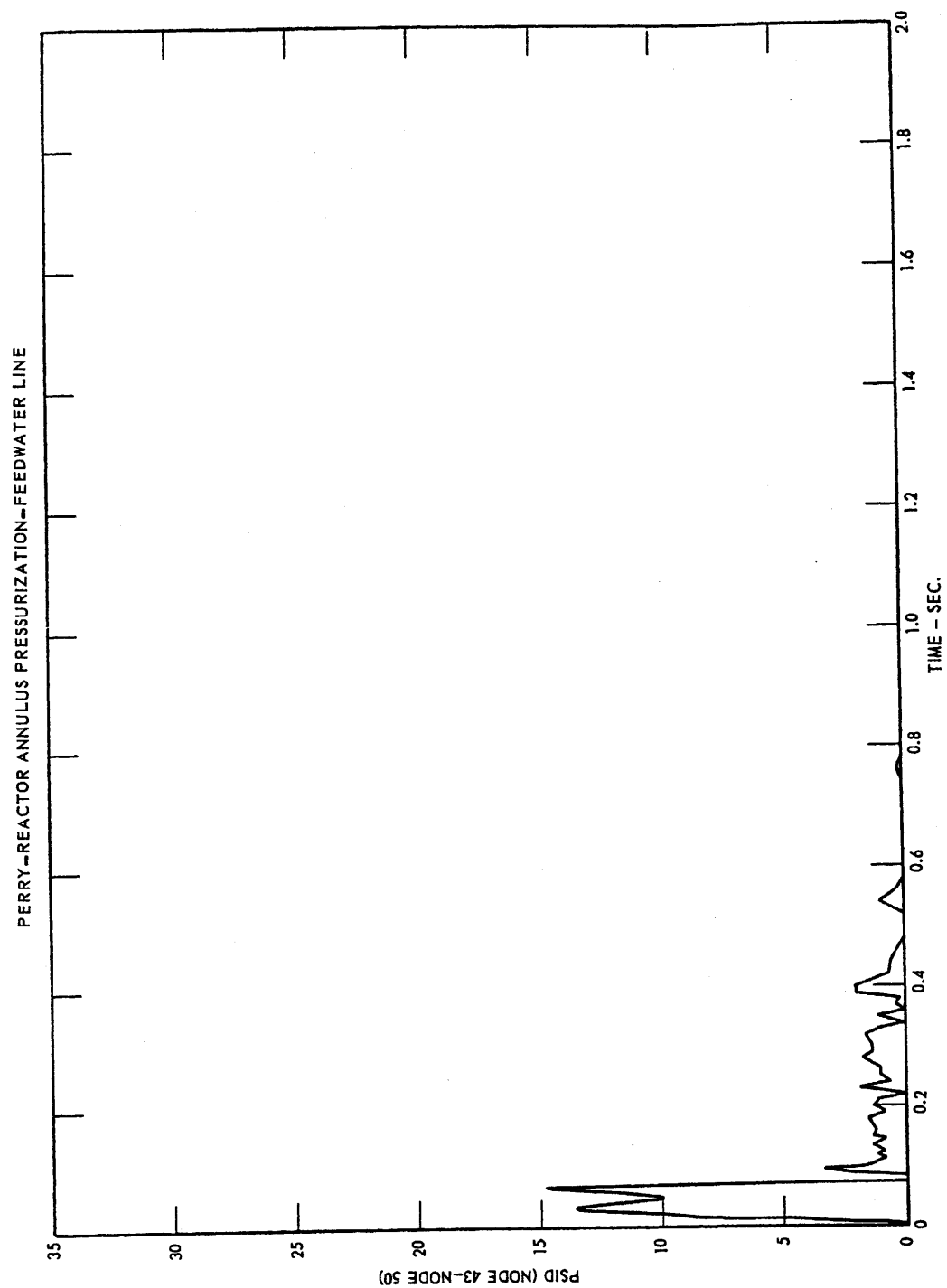
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 36 - 50)

Figure 6.2-44



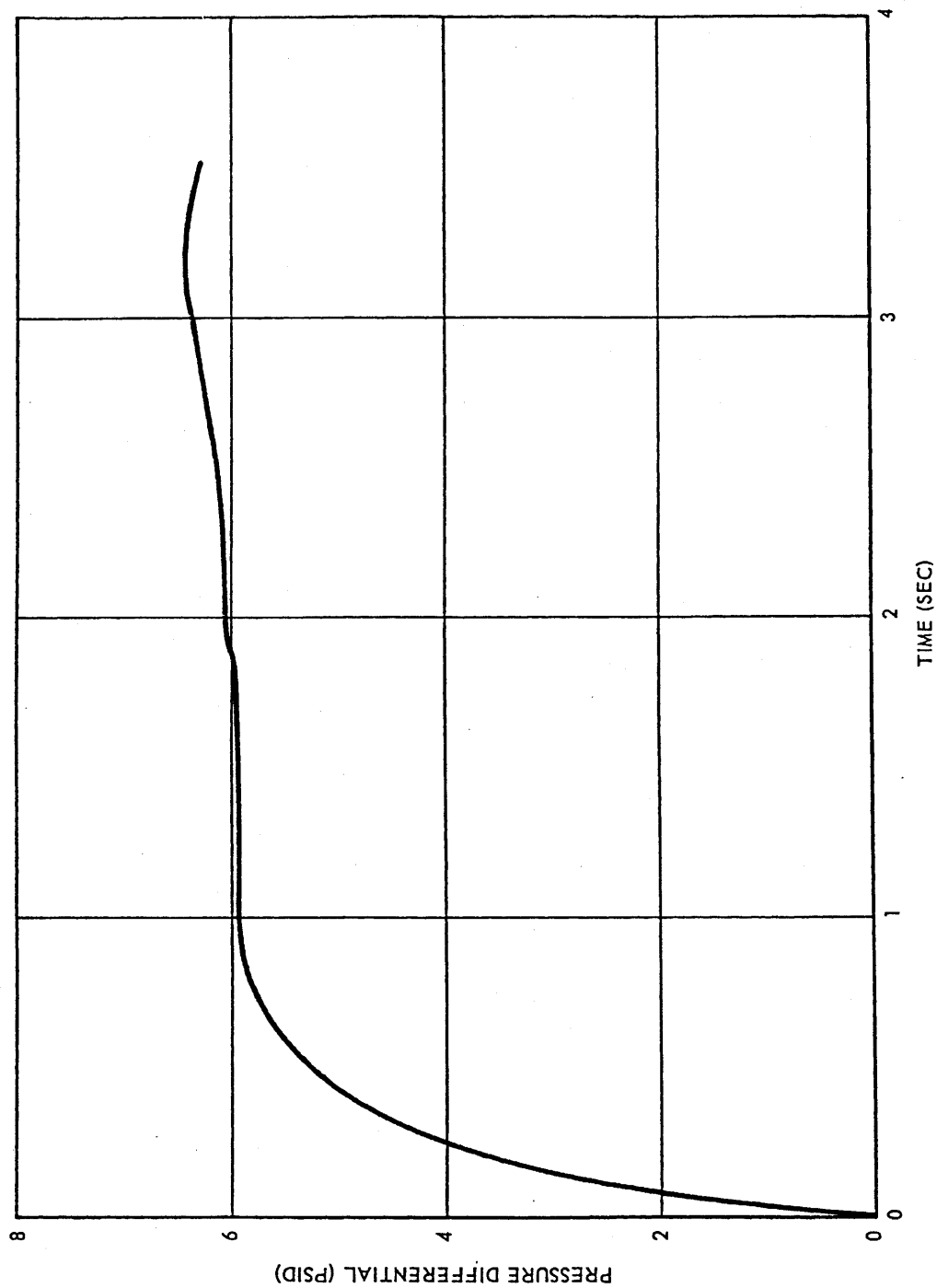
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PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 34 - 50)

Figure 6.2-45



(Rev. 12 1/03)

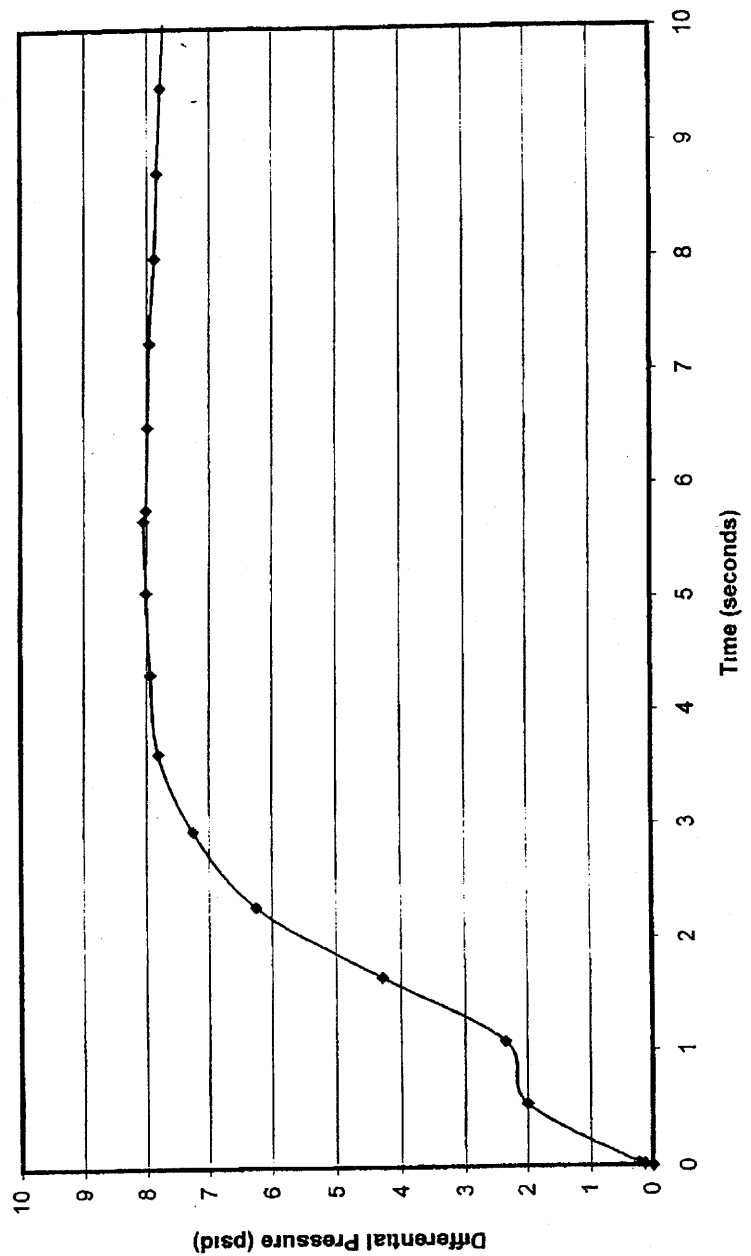


PERRY NUCLEAR POWER PLANT

Drywell Head Pressure
Differential

Figure 6.2-46 ...

RWCU Heat Exchanger Room Pressure Differential



(Rev. 15 10/07)

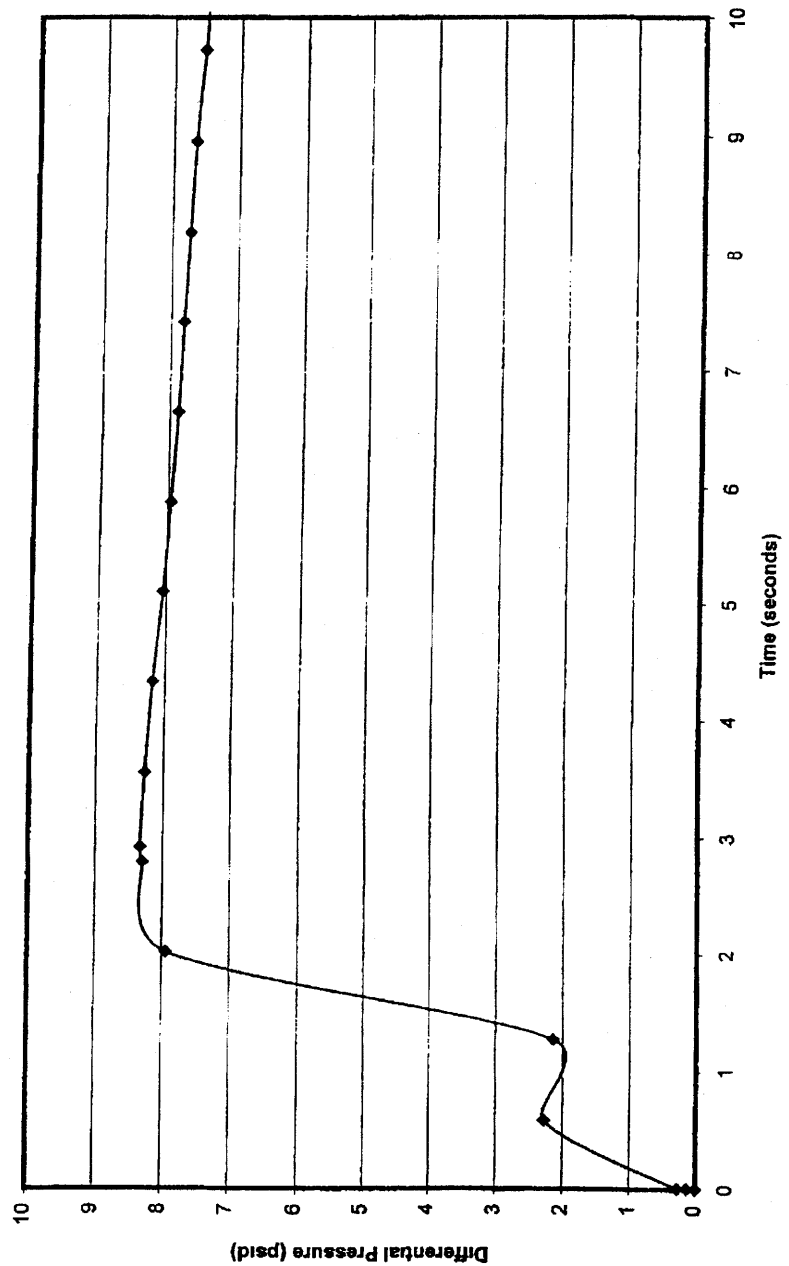


PERRY NUCLEAR POWER PLANT

RWCU Heat Exchanger
Pressure Differential

Figure 6.2-47

RCWU Drain Valve Nest Room Differential Pressure



(Rev. 15 10/07)

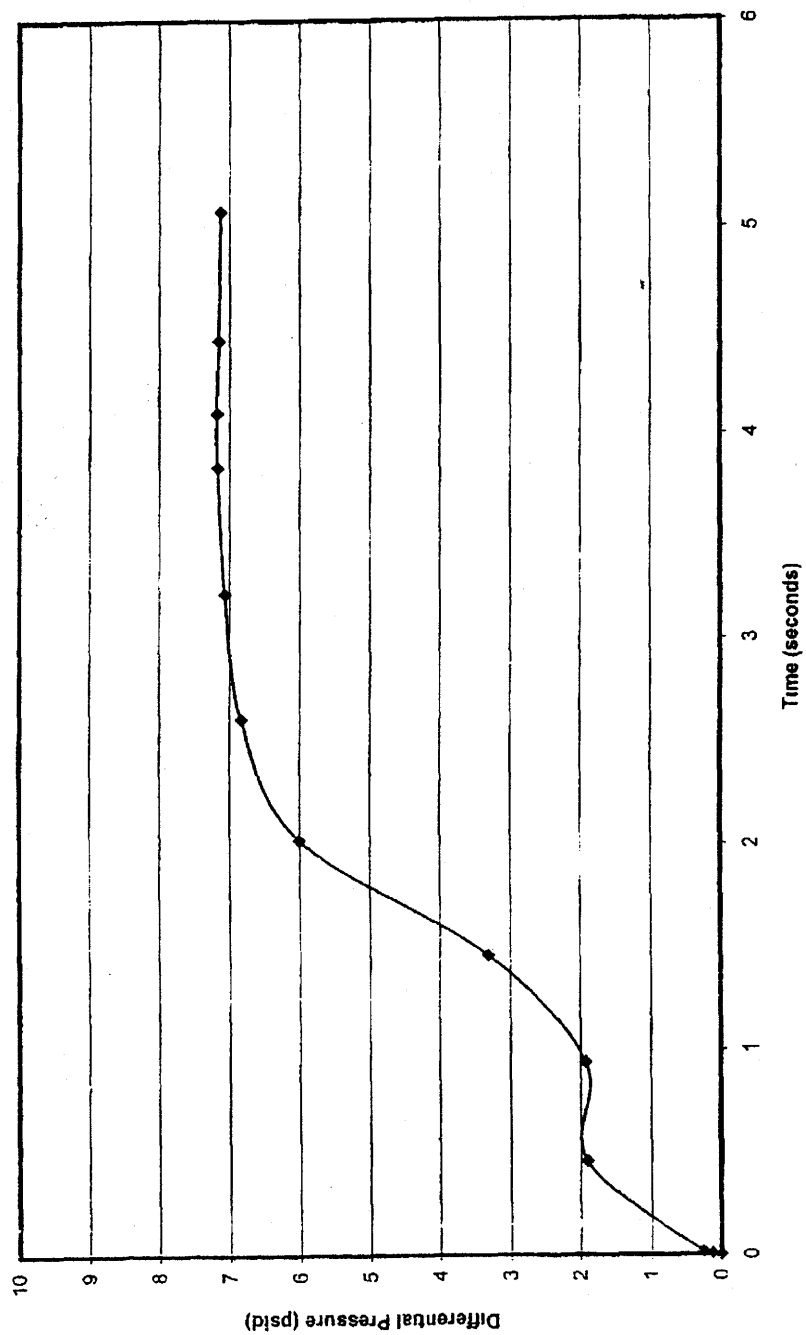


PERRY NUCLEAR POWER PLANT

RCWU Filter Demineralizer
Drain Valve Nest Room Pressure
Differential

Figure 6.2-48

RWCU Filter/Demin Valve Room Pressure Differential



(Rev. 15 10/07)

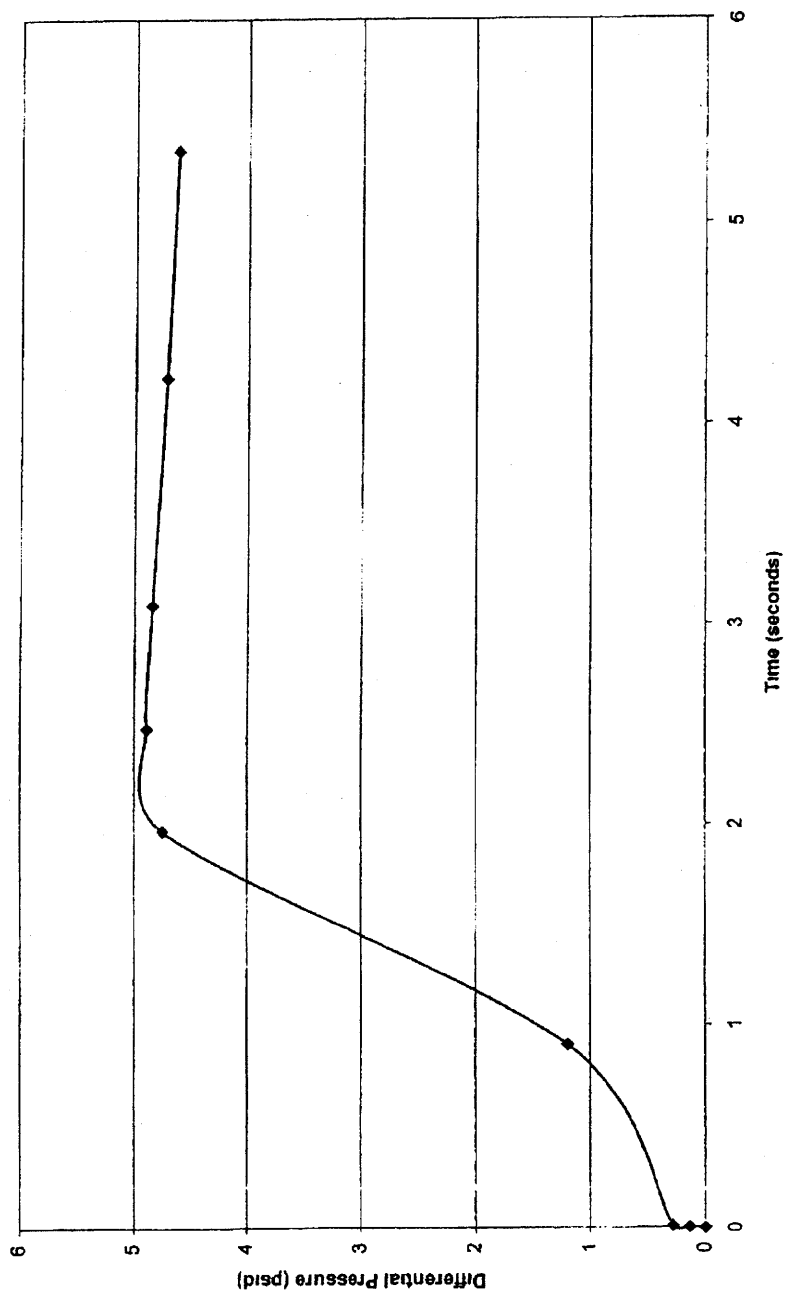


PERRY NUCLEAR POWER PLANT

RWCU Filter Demineralizer
Valve Room Pressure Differential

Figure 6.2-49

RWCU Filter Demineralizer Room Pressure Differential



(Rev. 15 10/07)

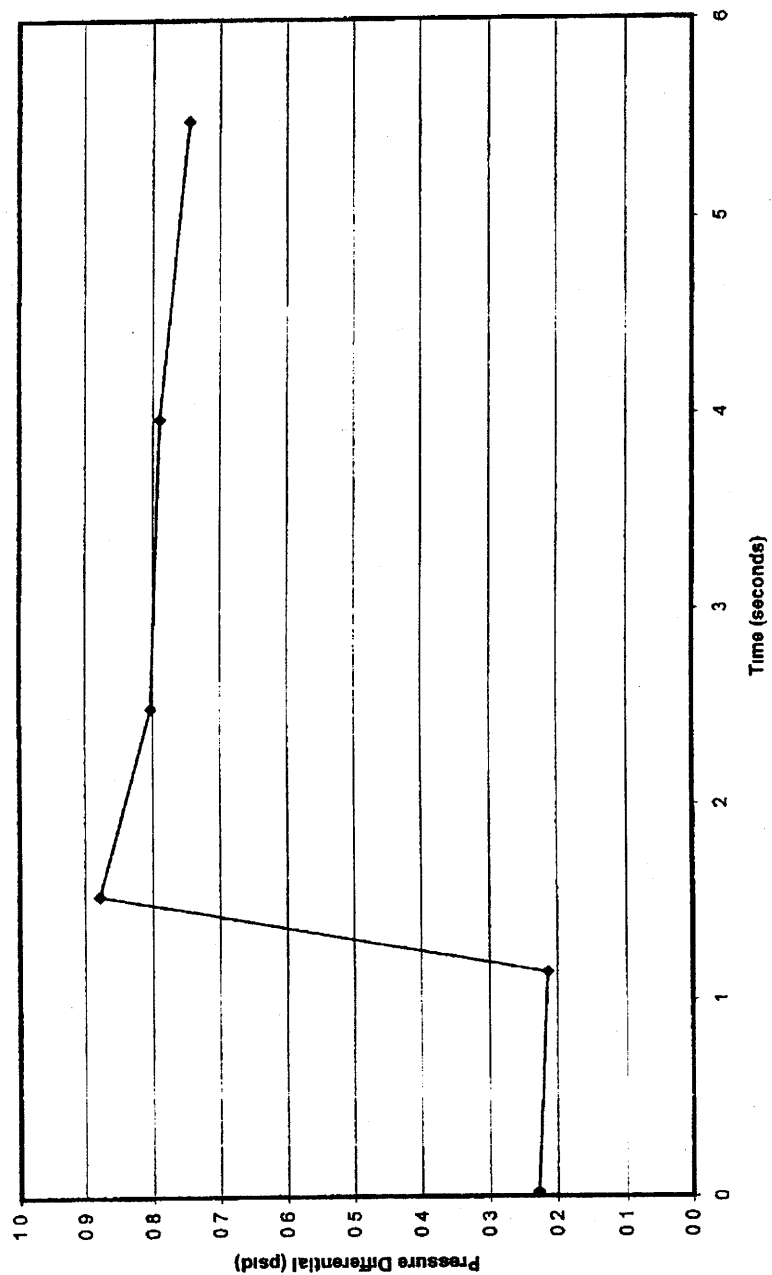


PERRY NUCLEAR POWER PLANT

RWCU Filter Demineralizer Room
Pressure Differential

Figure 6.2-50

Steam Tunnel Pressure Differential



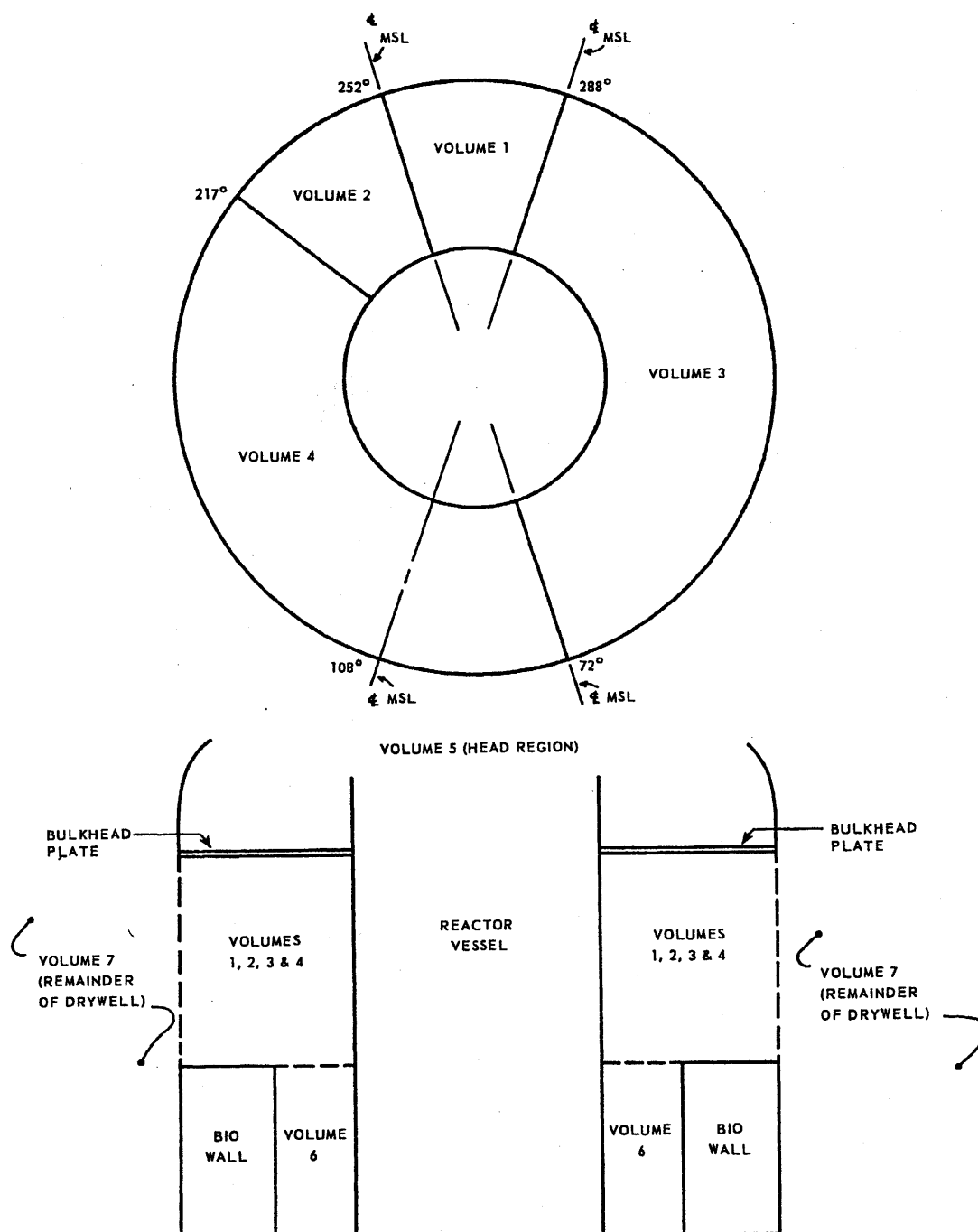
(Rev. 15 10/07)



PERRY NUCLEAR POWER PLANT

Steam Tunnel
Pressure Differential

Figure 6.2-51



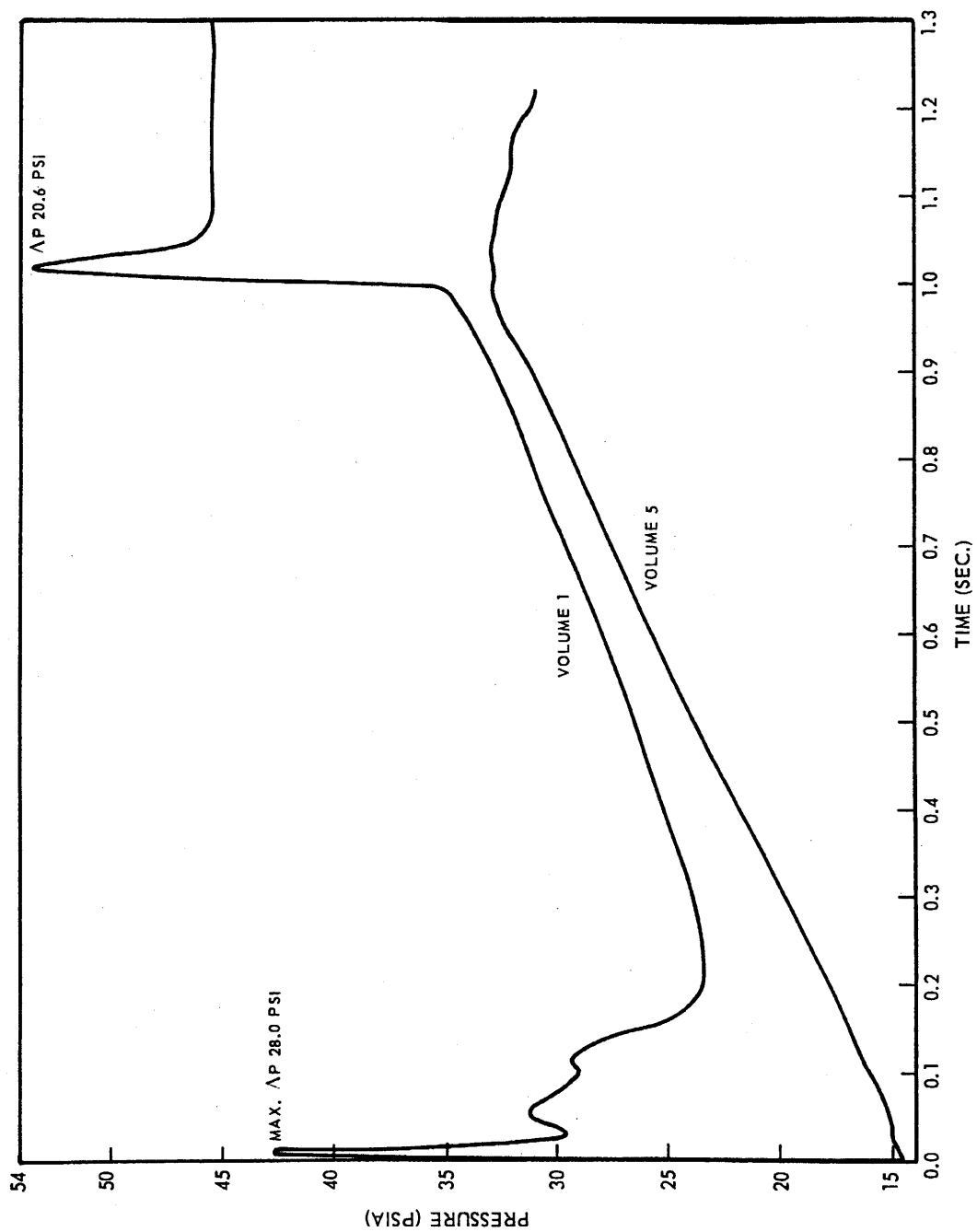
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Drywell Bulkhead ΔP Analysis
"COMPARE" Model

Figure 6.2-51a



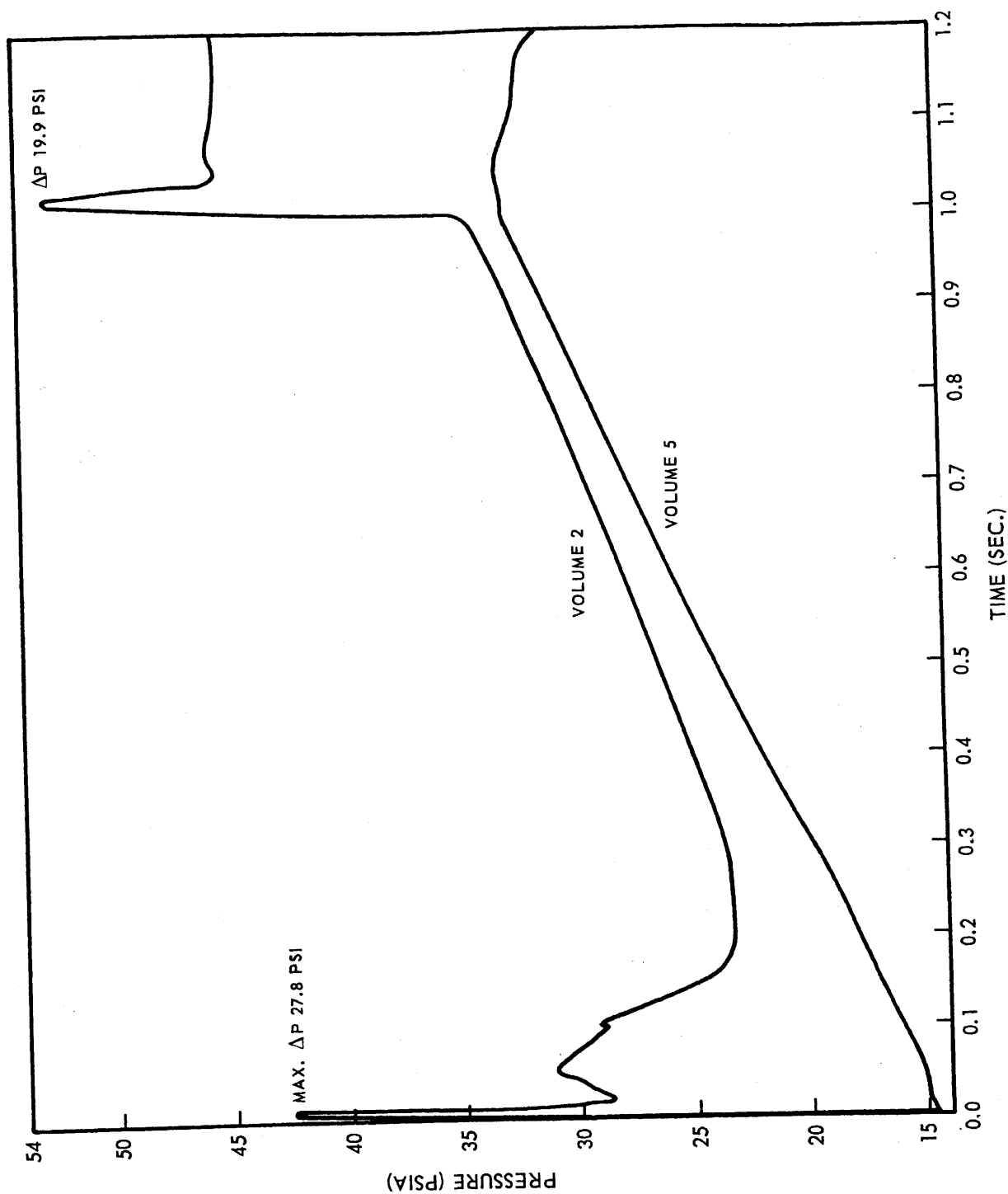
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PERRY NUCLEAR POWER PLANT

Pressure Differential Across
Bulkhead Plate Due to MSLB

Figure 6.2-51b



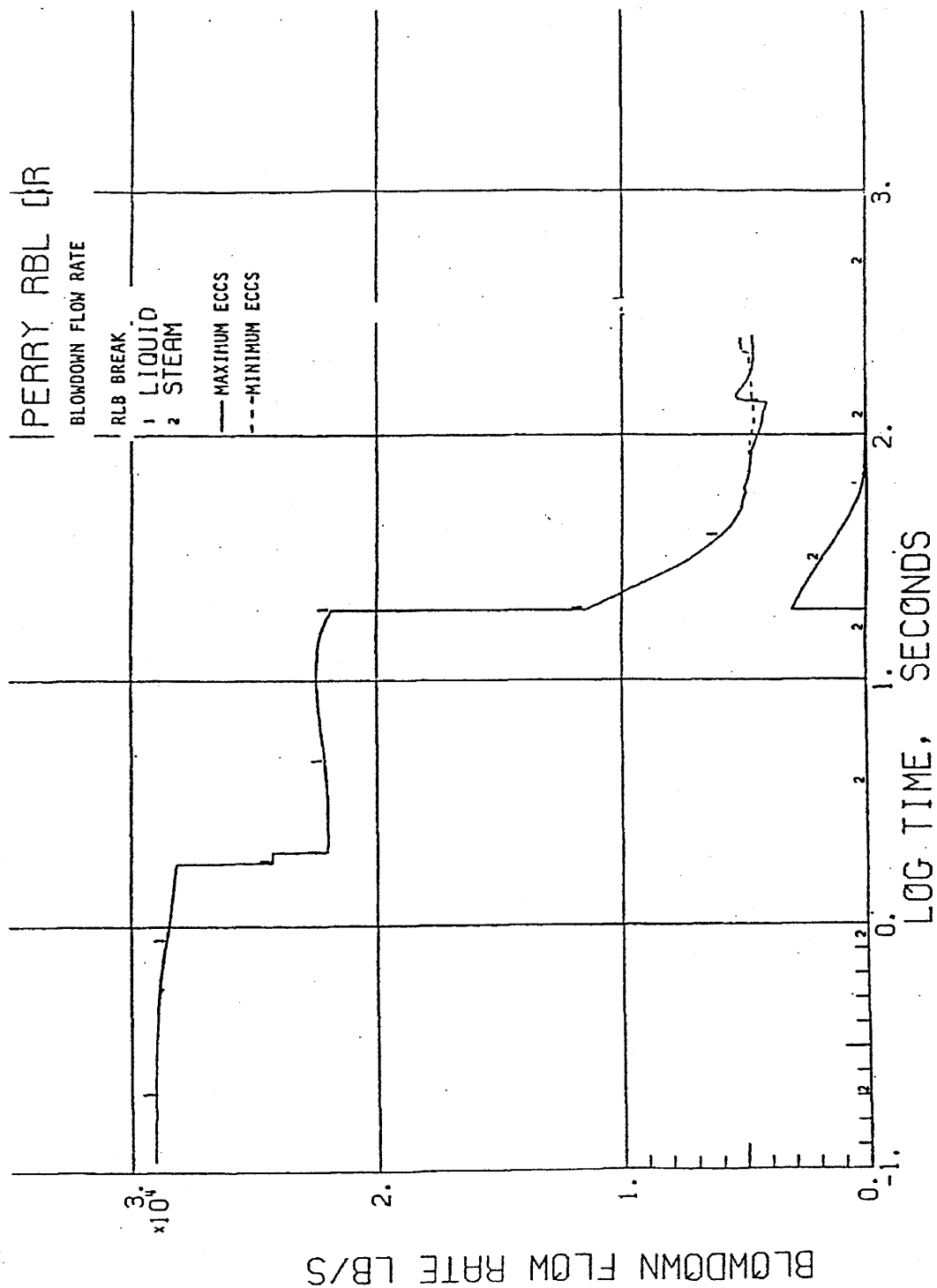
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Pressure Differential Across
Bulkhead Plate Due to MSLB

Figure 6.2-51c



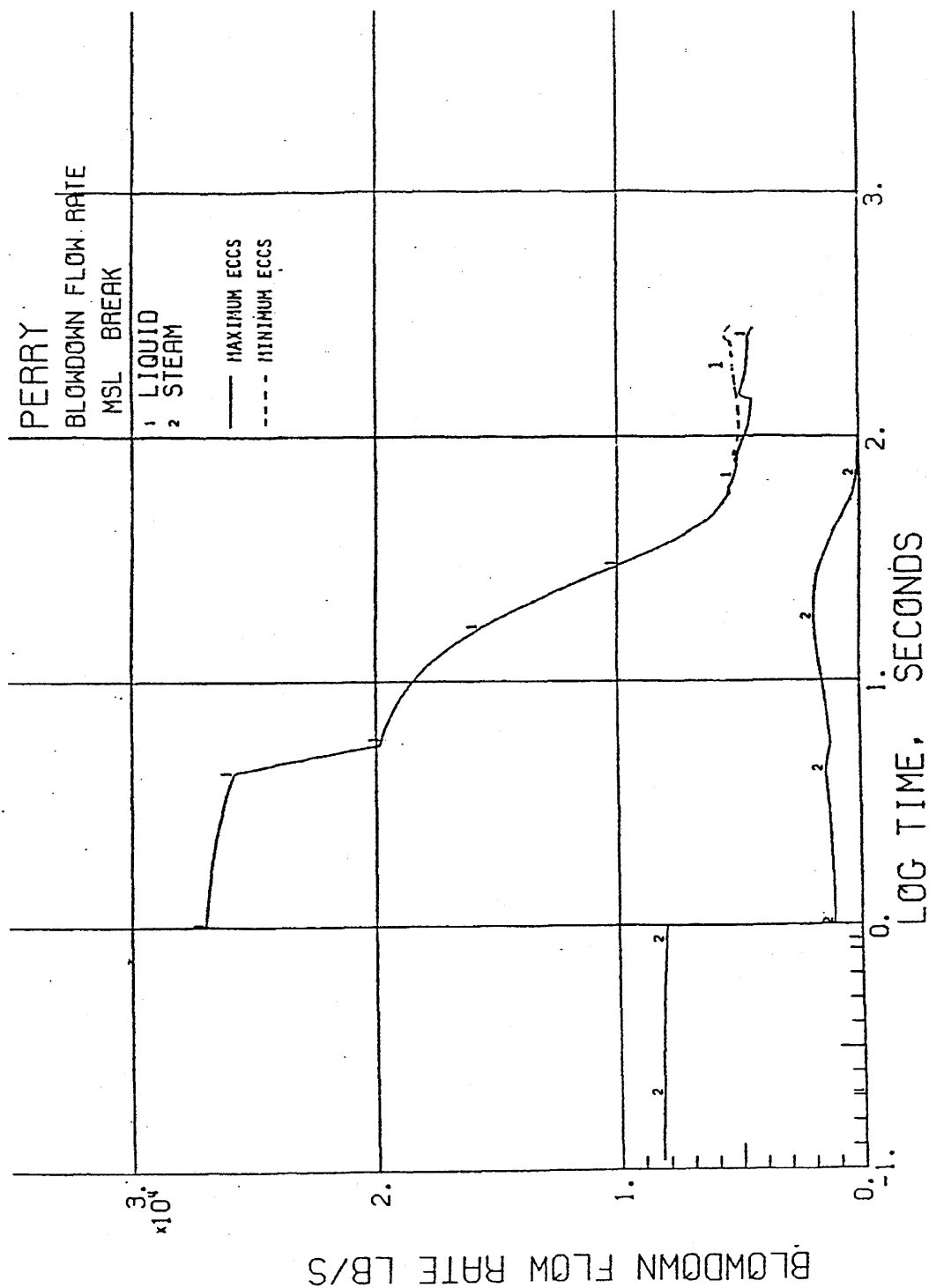
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Vessel Blowdown Flow Rates
Following a Recirculation
Line Break
(at 3729 MWt)

Figure 6.2-52



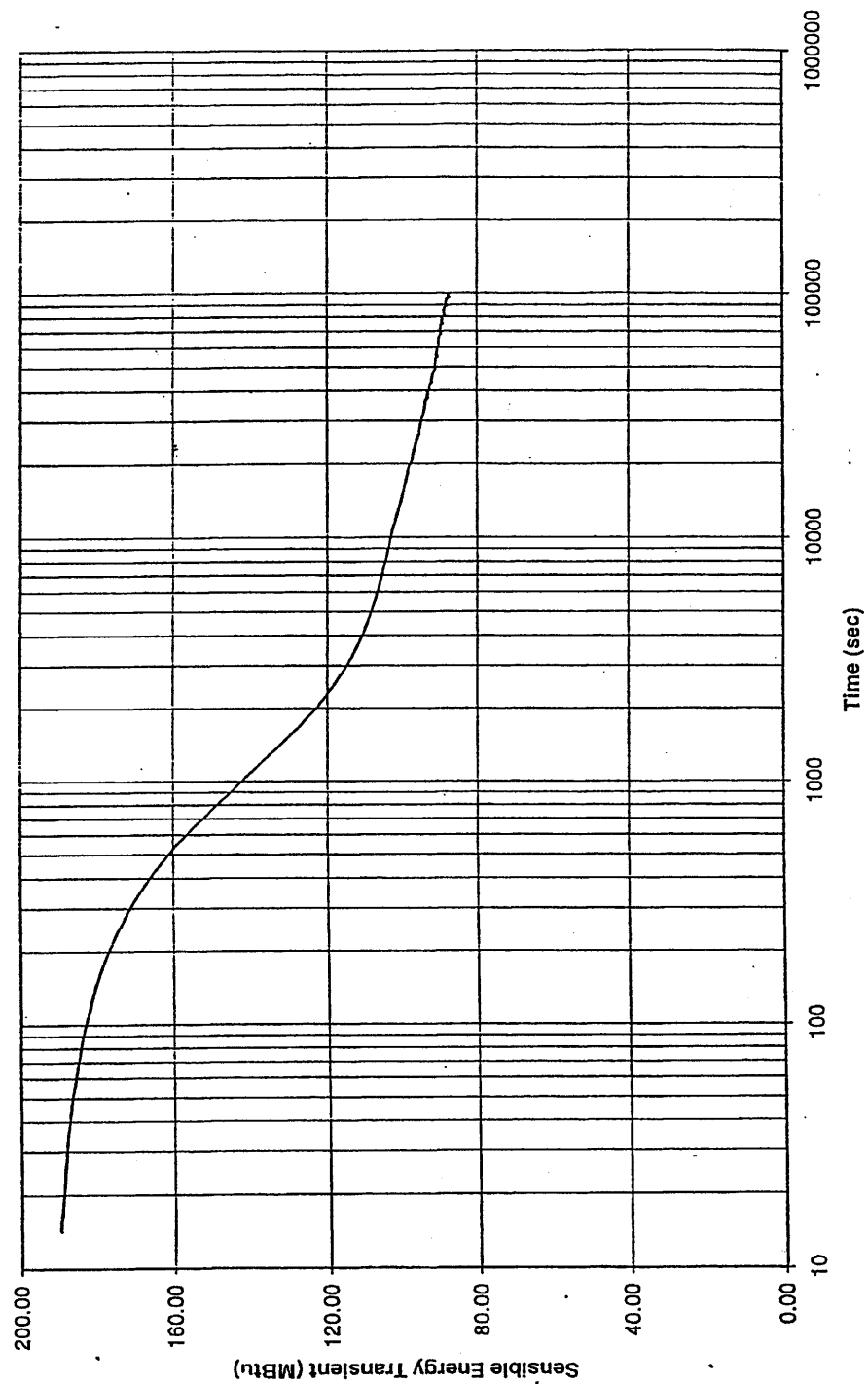
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Vessel Blowdown Flow Rates
Following a Main Steam
Line Break
(at 3729 MWt)

Figure 6.2-53



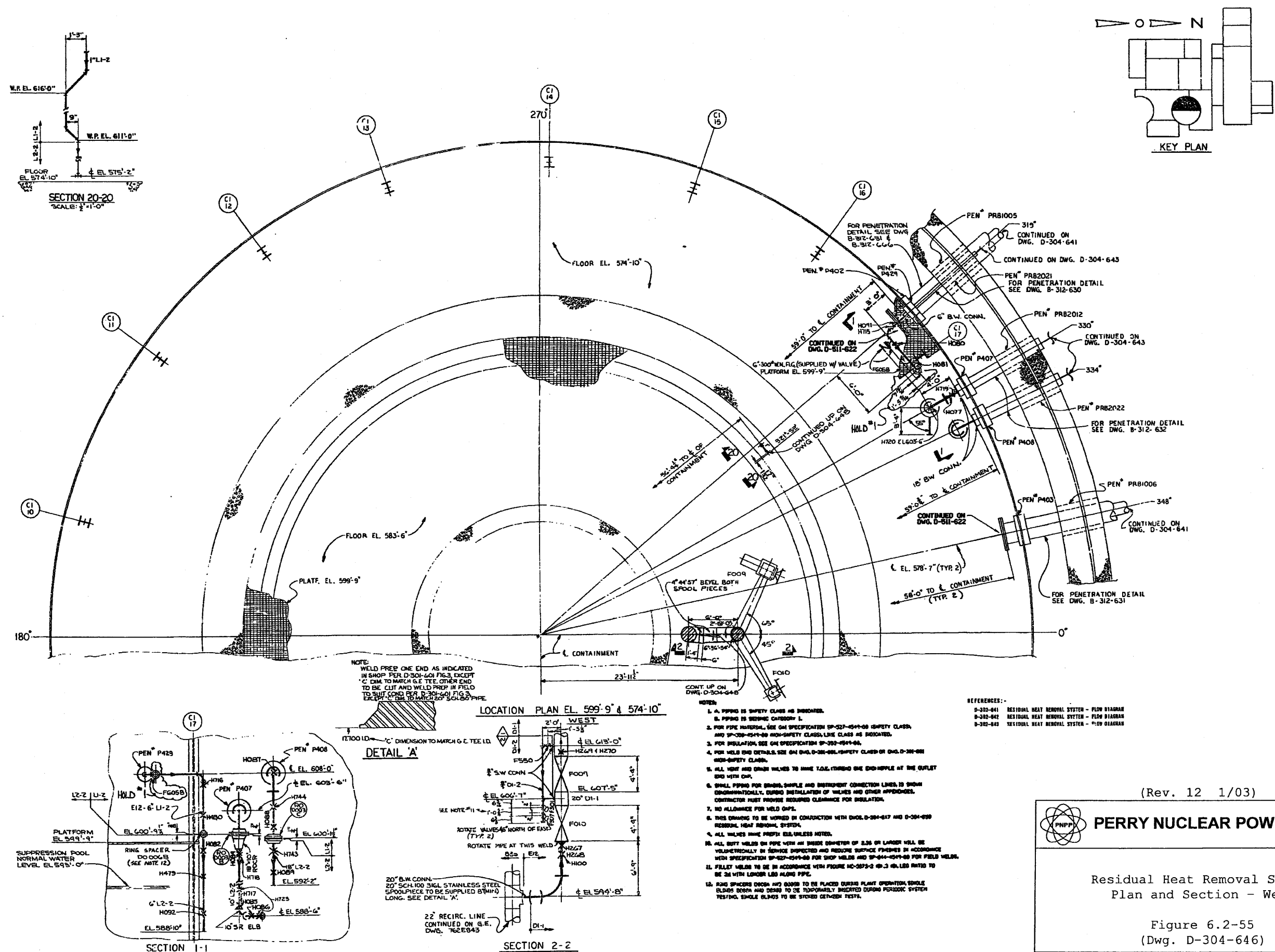
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Sensible Energy in the Reactor
Pressure Vessel and Internal
Metals Following a Main Steam
Line Break

Figure 6.2-54

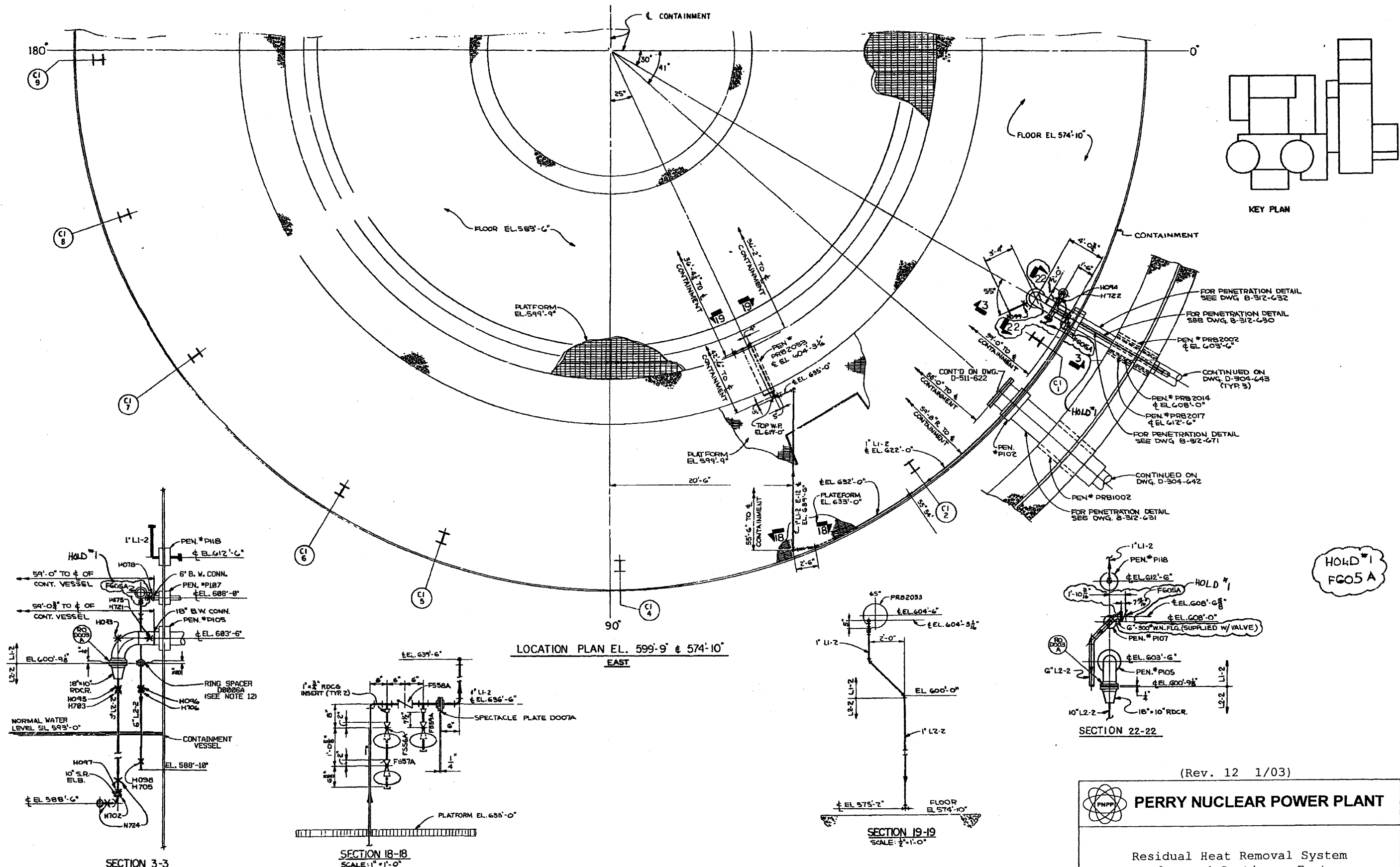


(Rev. 12 1/03)

PERRY NUCLEAR POWER PLANT

Residual Heat Removal System
Plan and Section - West

Figure 6.2-55
(Dwg. D-304-646)



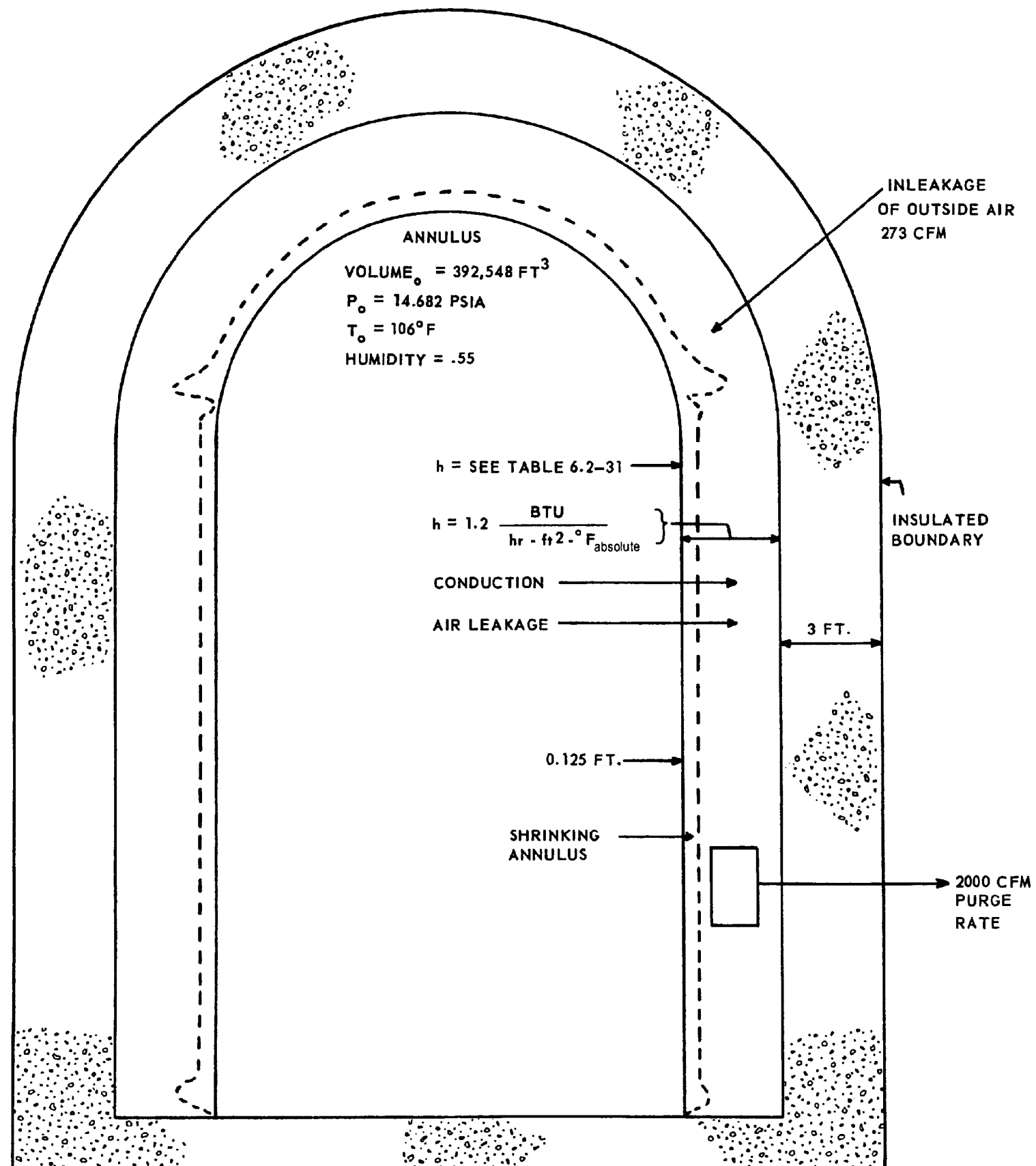
NOTES:
1. FOR NOTES AND REFERENCES, SEE DRAWING D-304-646

(Rev. 12 1/03)

PERRY NUCLEAR POWER PLANT

Residual Heat Removal System
 Plan and Section - East

Figure 6.2-56
 (Dwg. D-304-647)

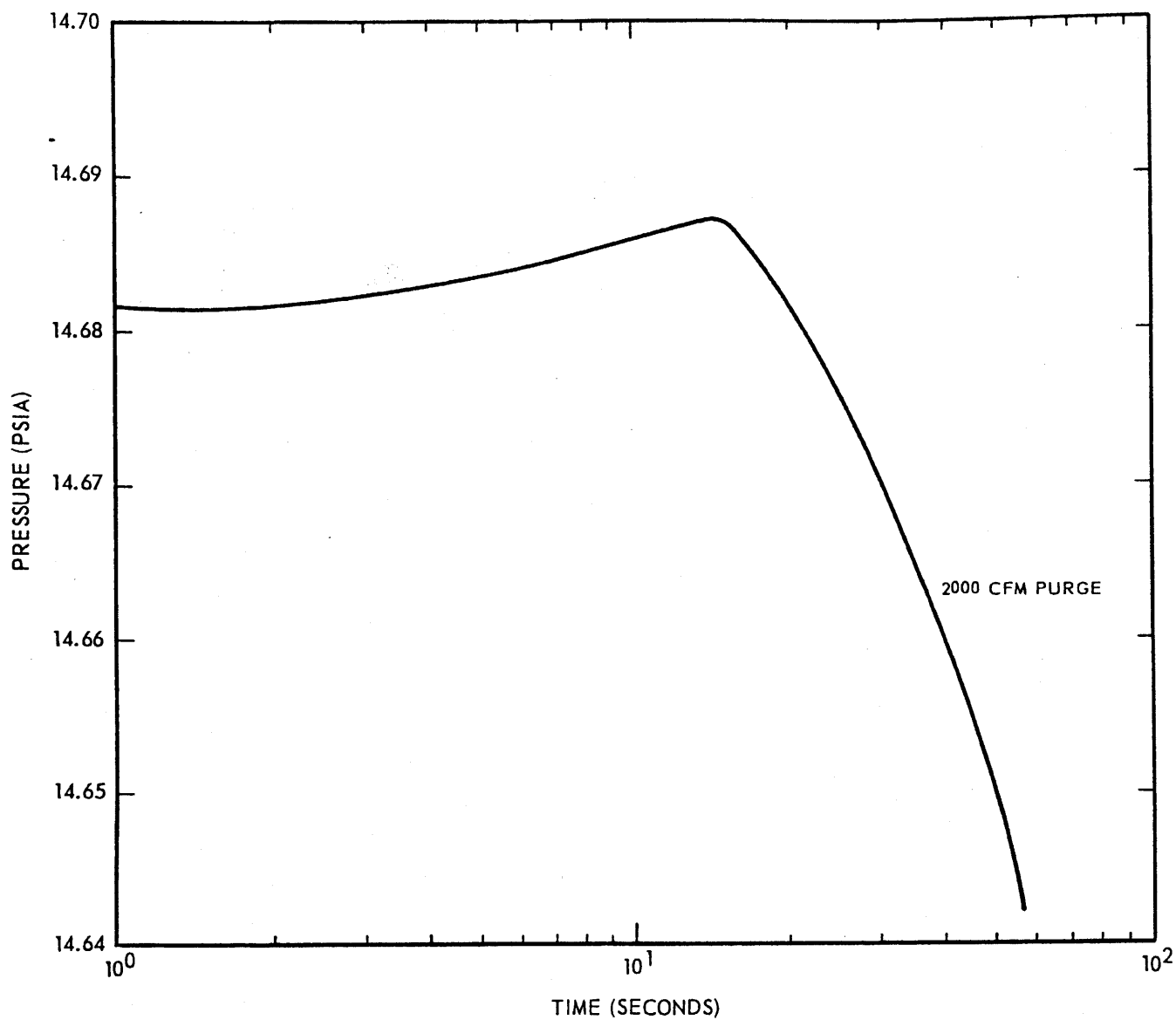


(REV. 20 10/2017)

PERRY NUCLEAR POWER PLANT
 10 CENTER RD., PERRY, OHIO 44081

MODEL USED IN CONTEMPT

FIGURE 6.2-57



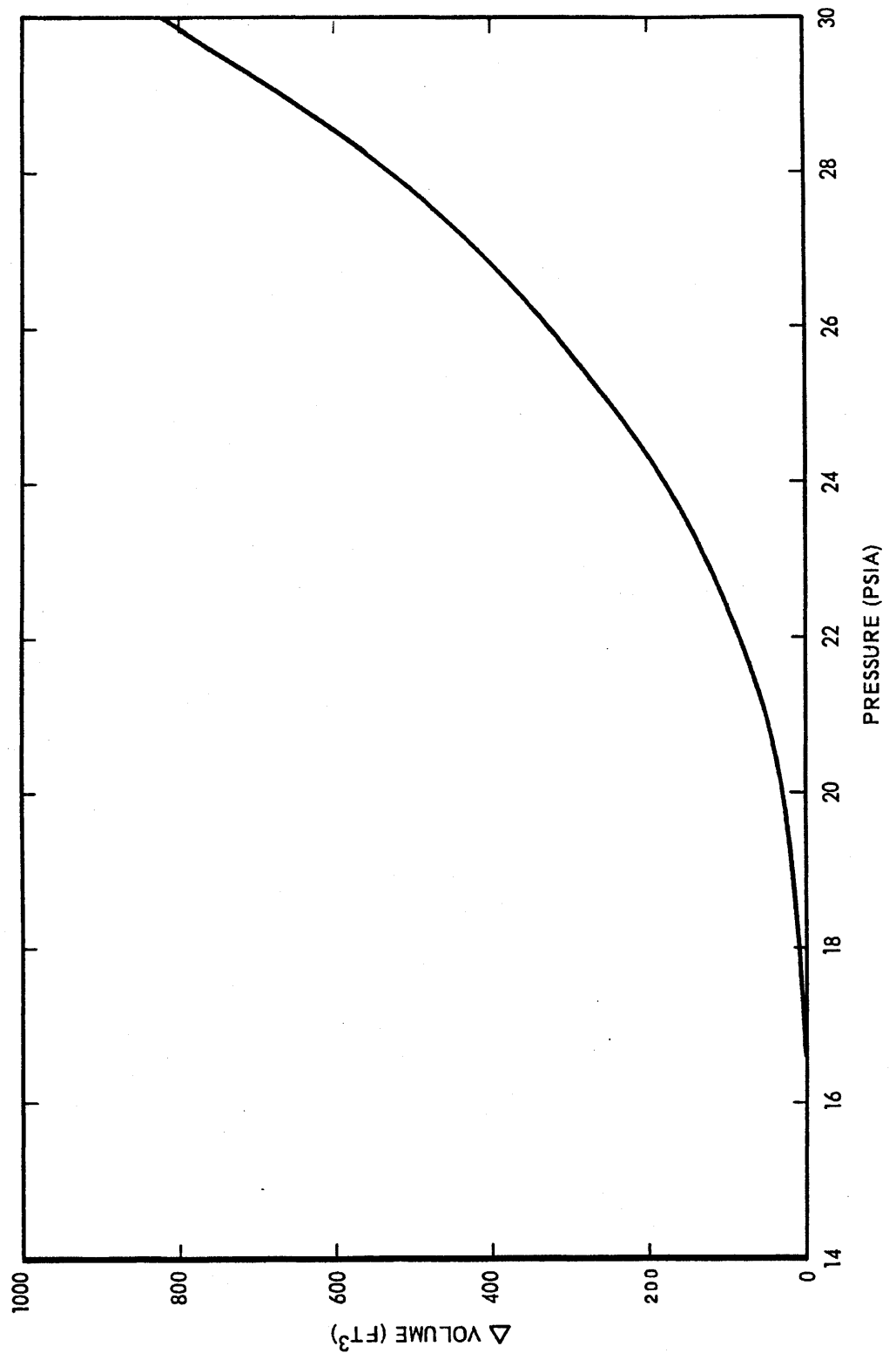
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Annulus Pressure Following
DBA LOCA Versus Time

Figure 6.2-58 ...



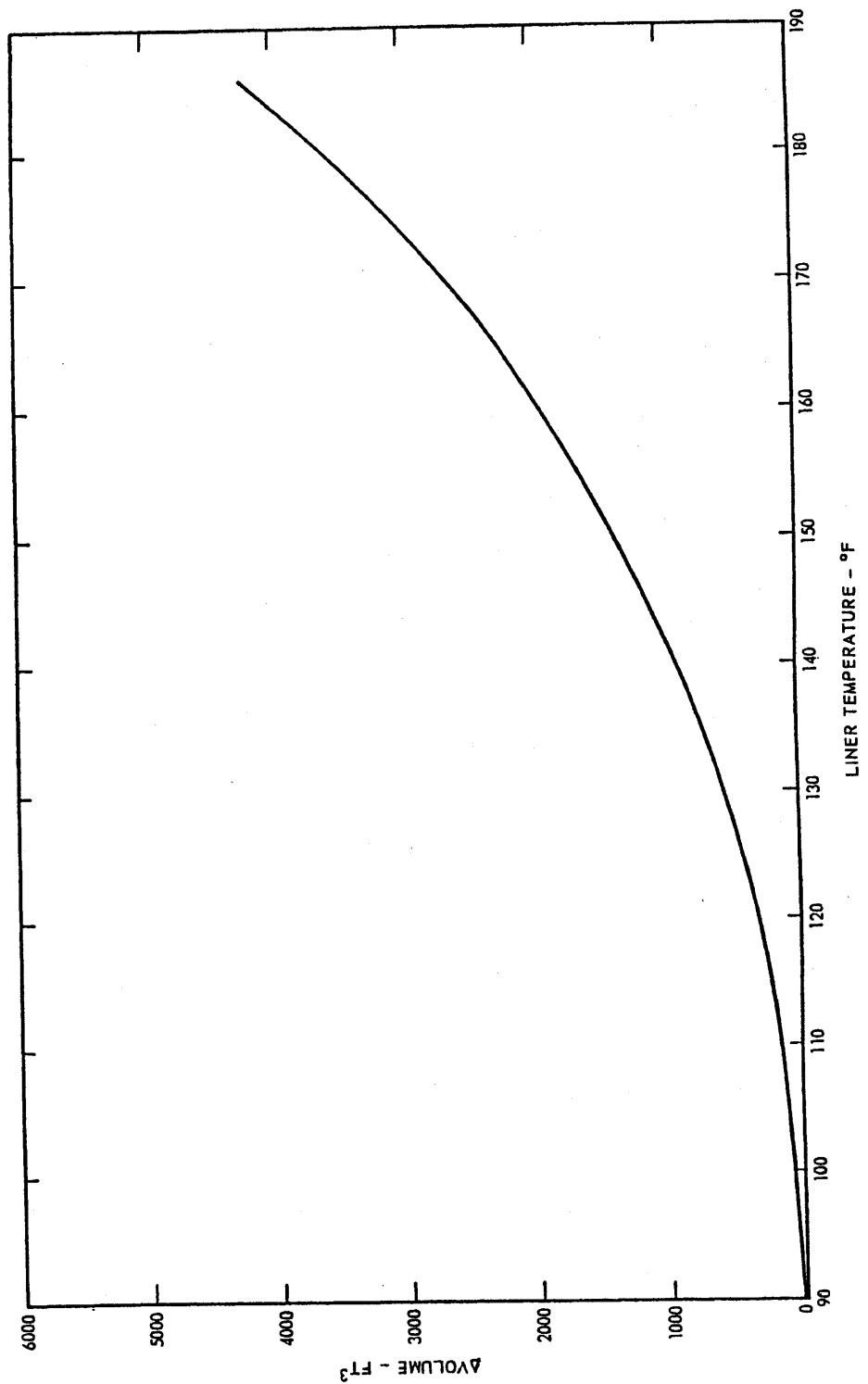
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Annulus Volume Reduction Due to
Containment Vessel Response to
Post-LOCA Containment Pressure

Figure 6.2-59a



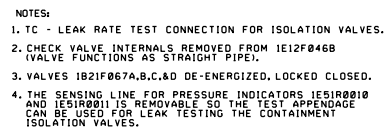
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Annulus Volume Reduction Due to
Containment Vessel Response to
Post LOCA Containment Temperature

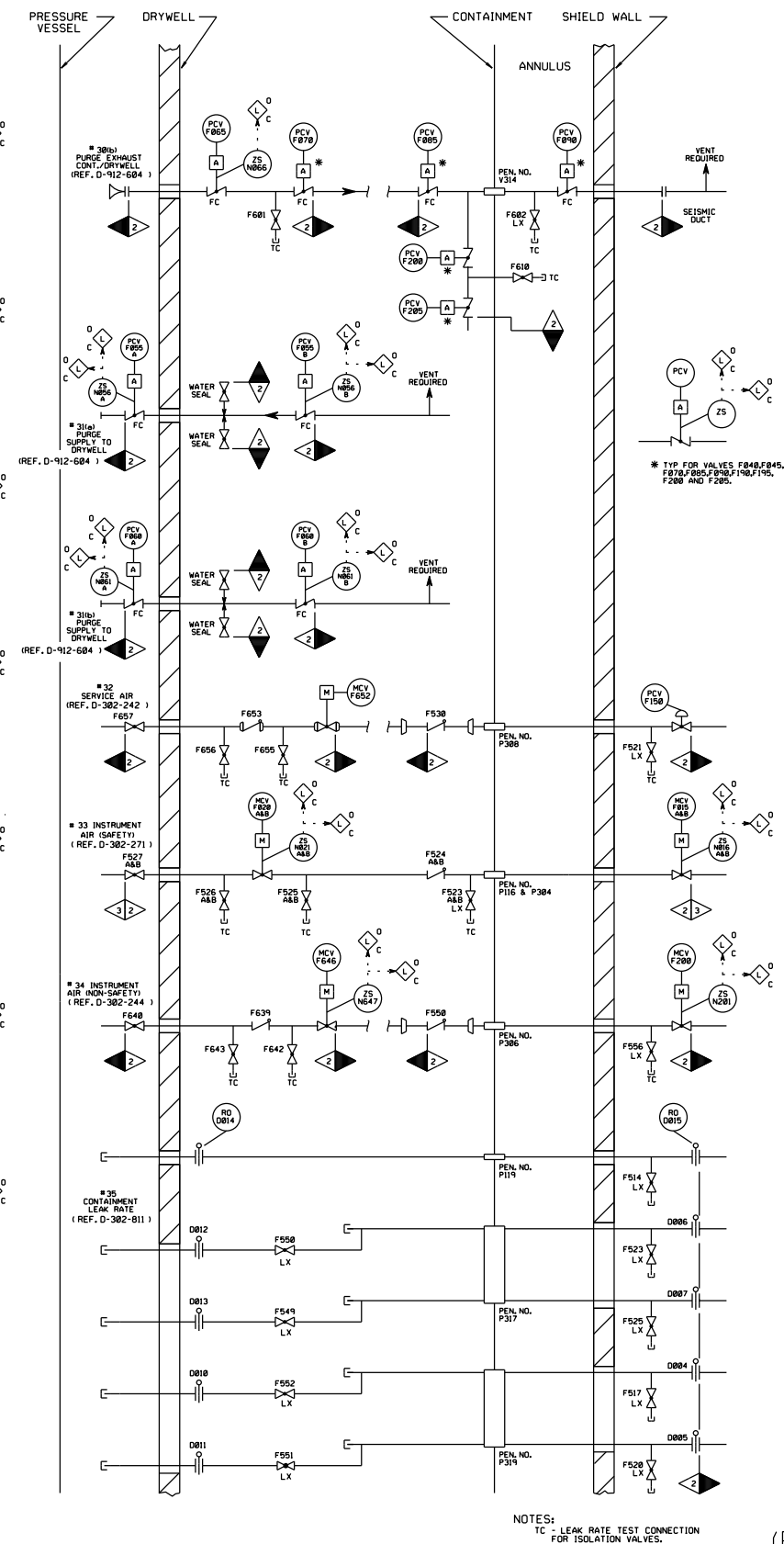
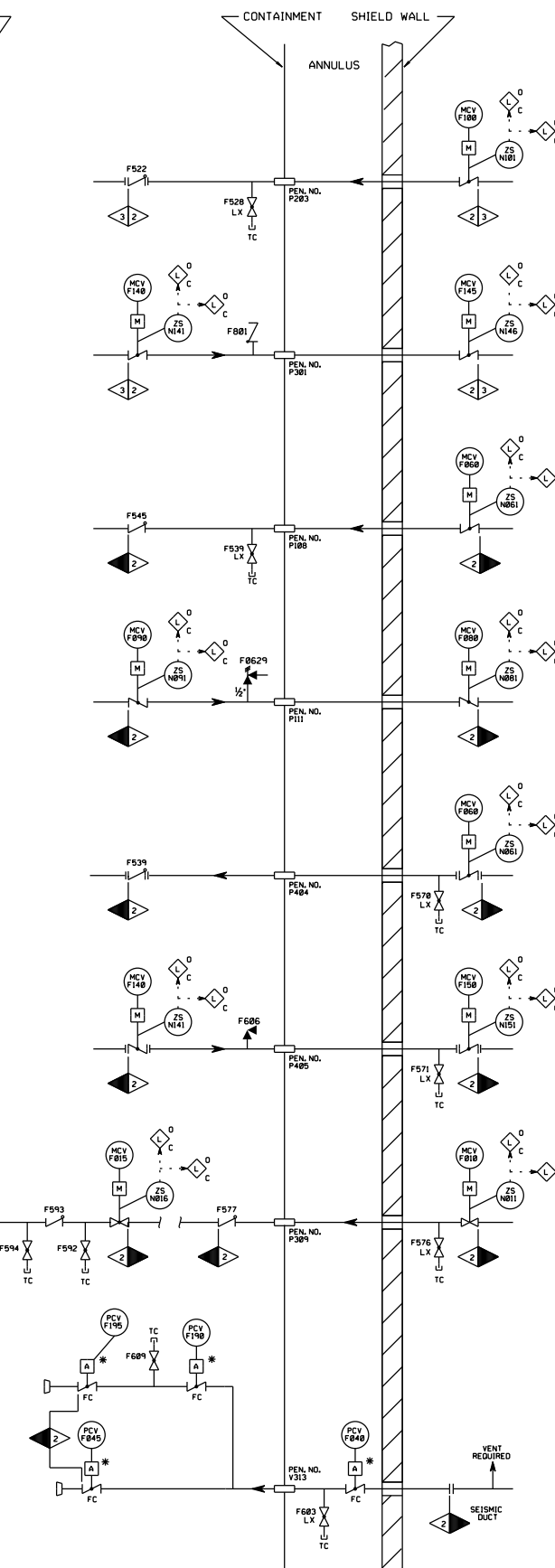
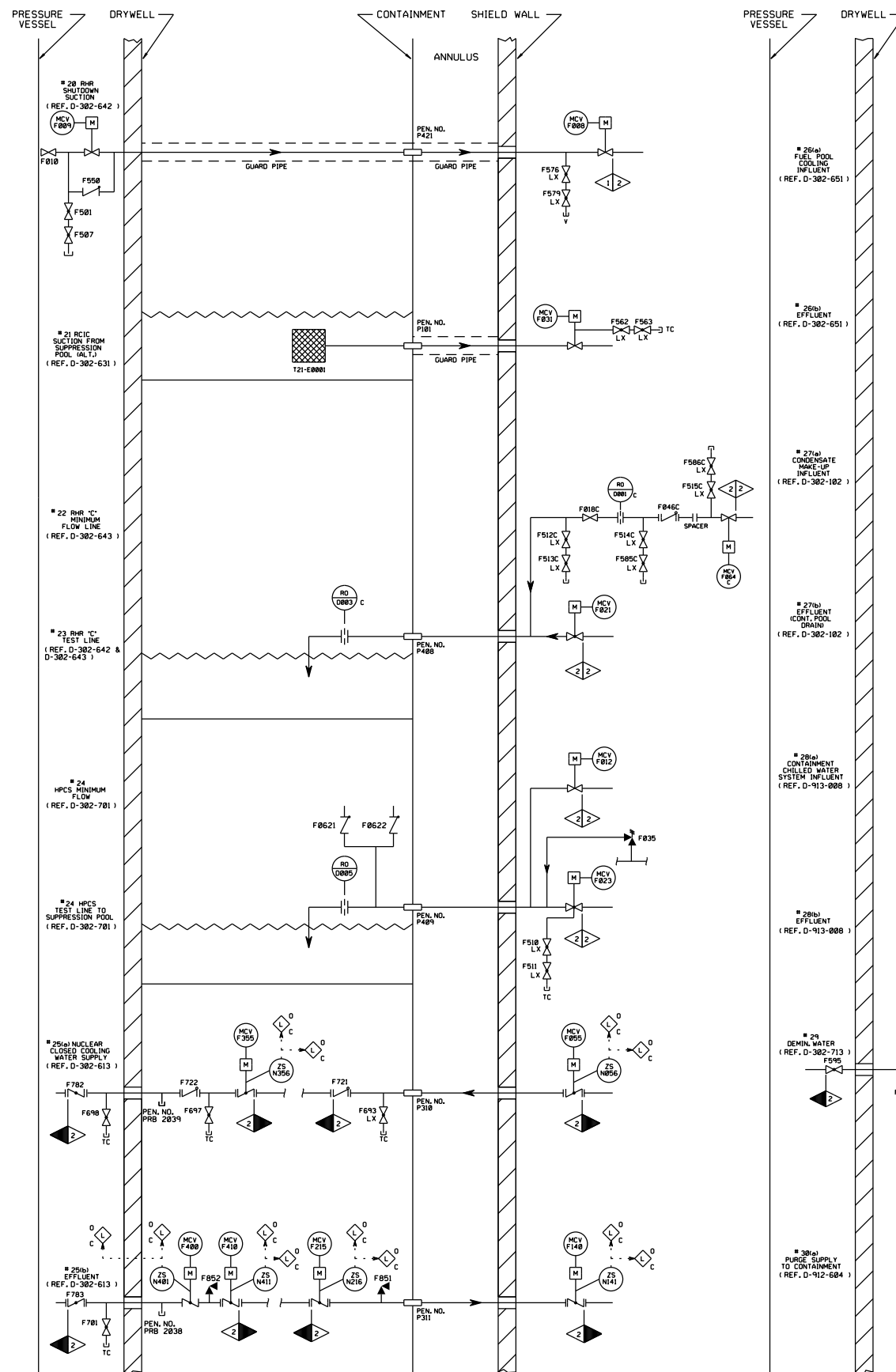
Figure 6.2-59b



PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

CONTAINMENT & DRYWELL ISOLATION

FIGURE 6.2-60 (SHEET 1 OF 4)
(DWG. D-300-0761-00000)

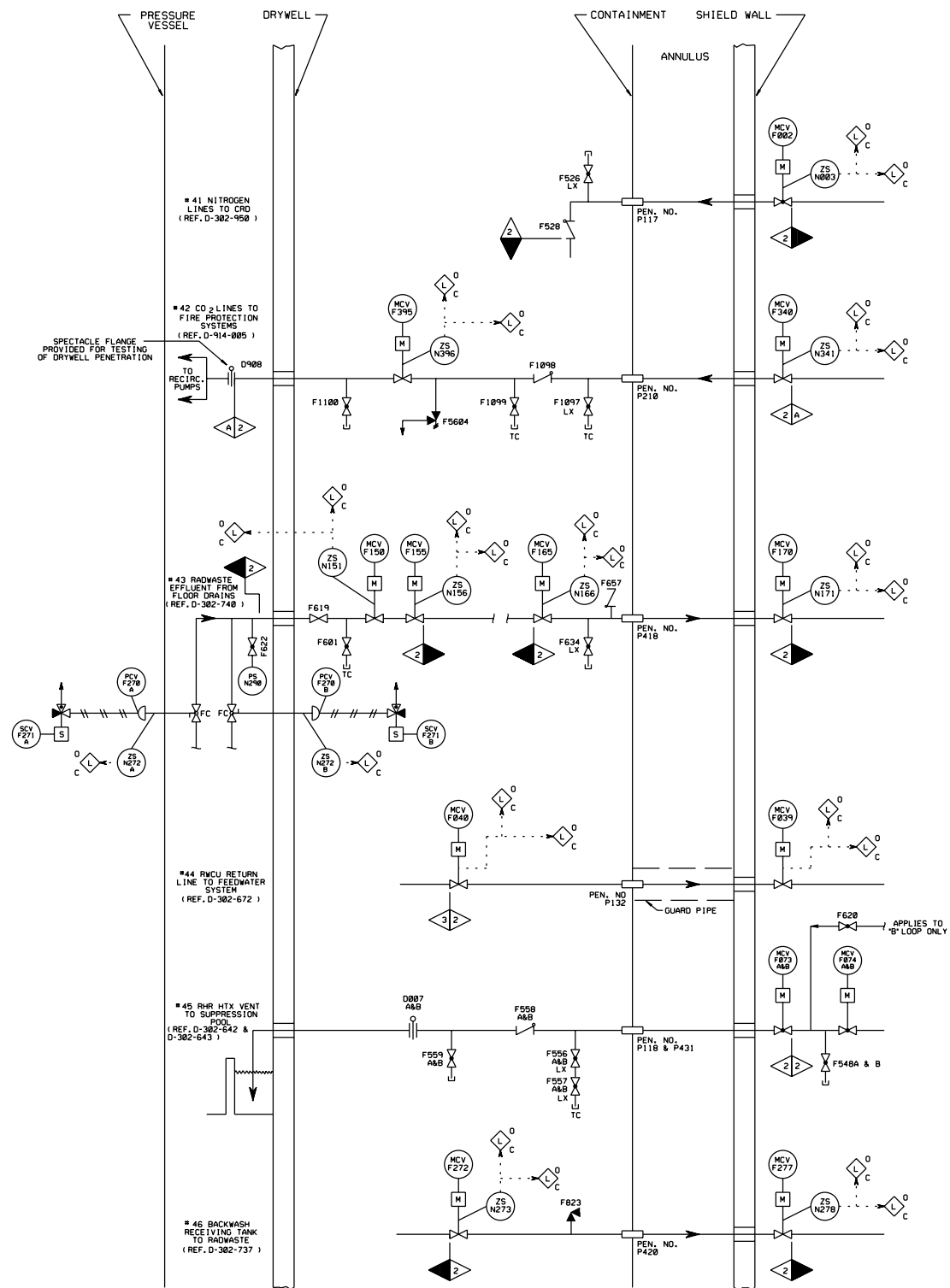


NOTES:
TC - LEAK RATE TEST CONNECTION
FOR ISOLATION VALVES.

(REV. 21 10/2019)

PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

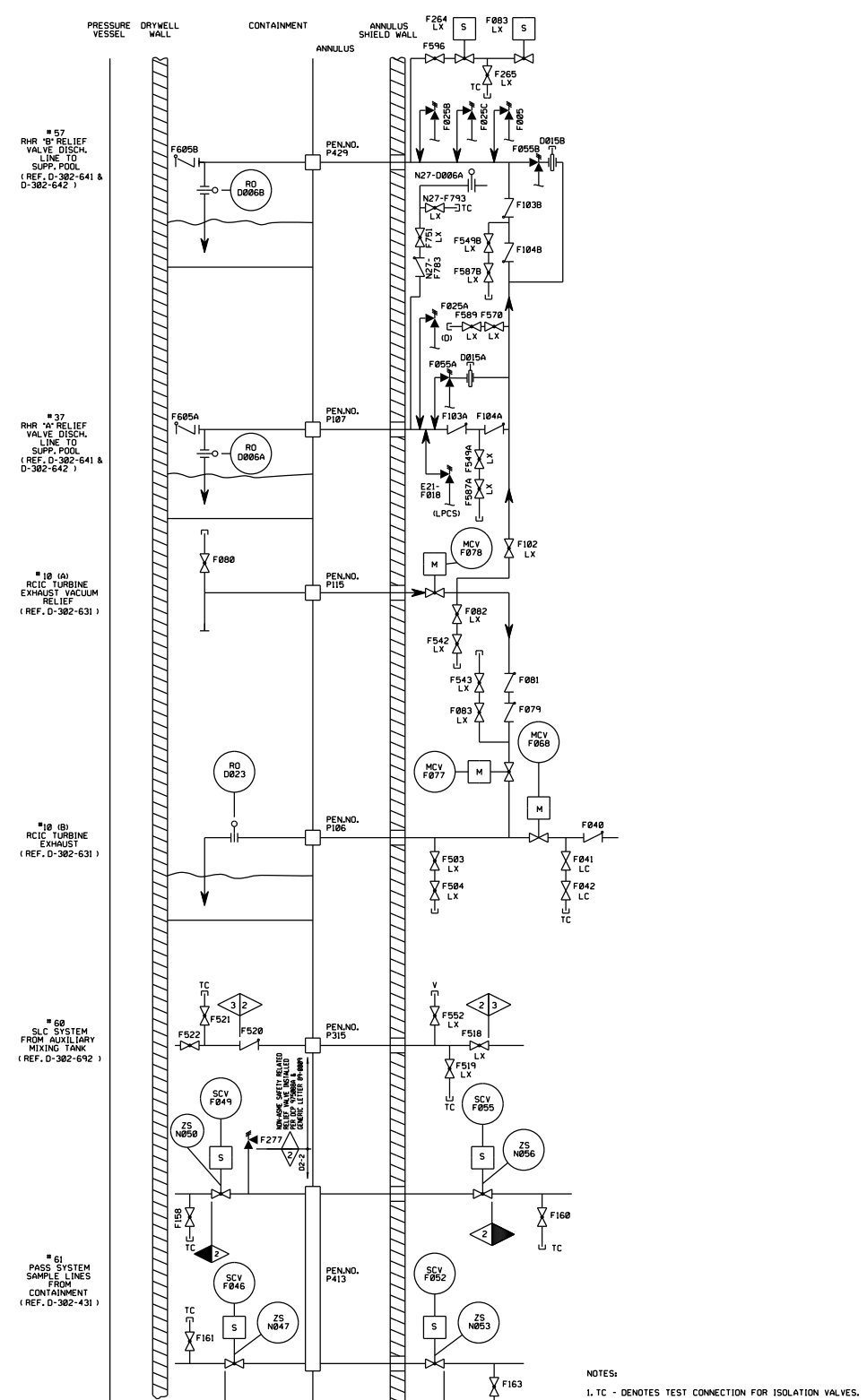
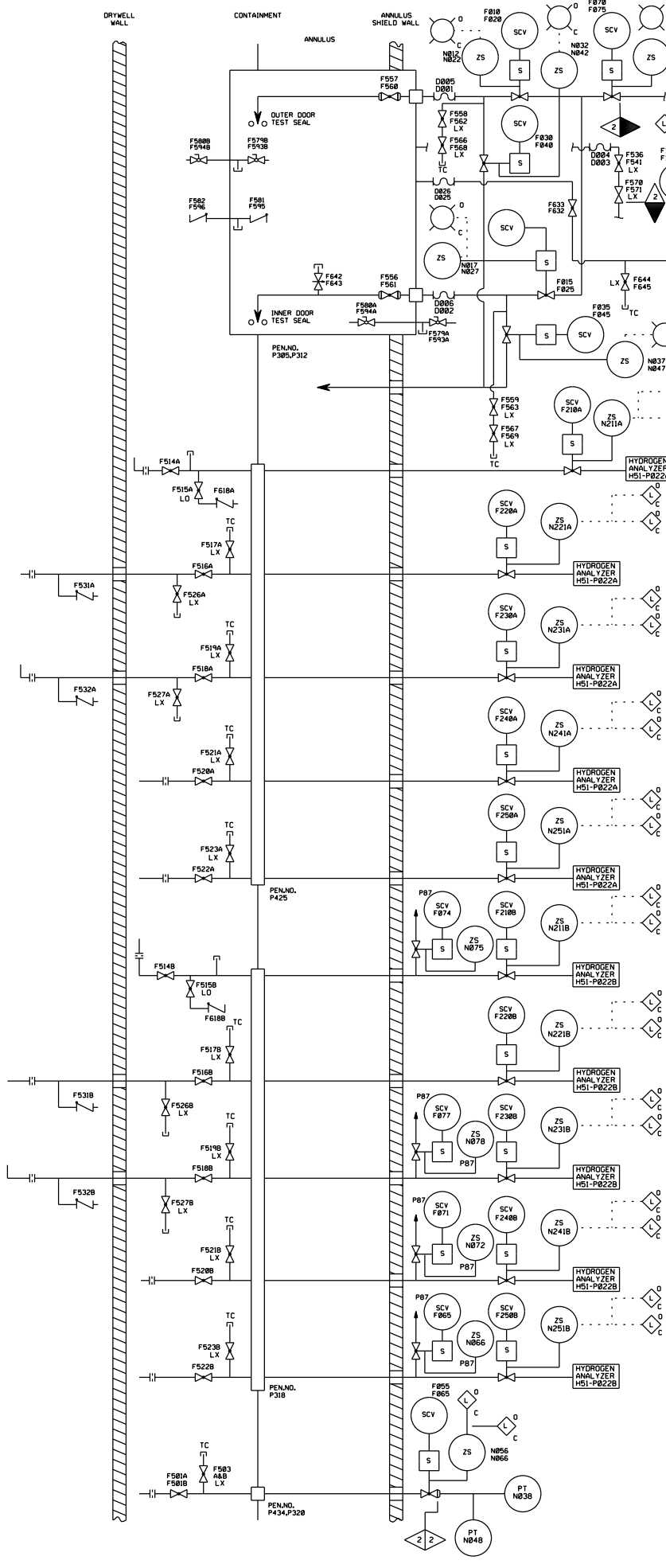
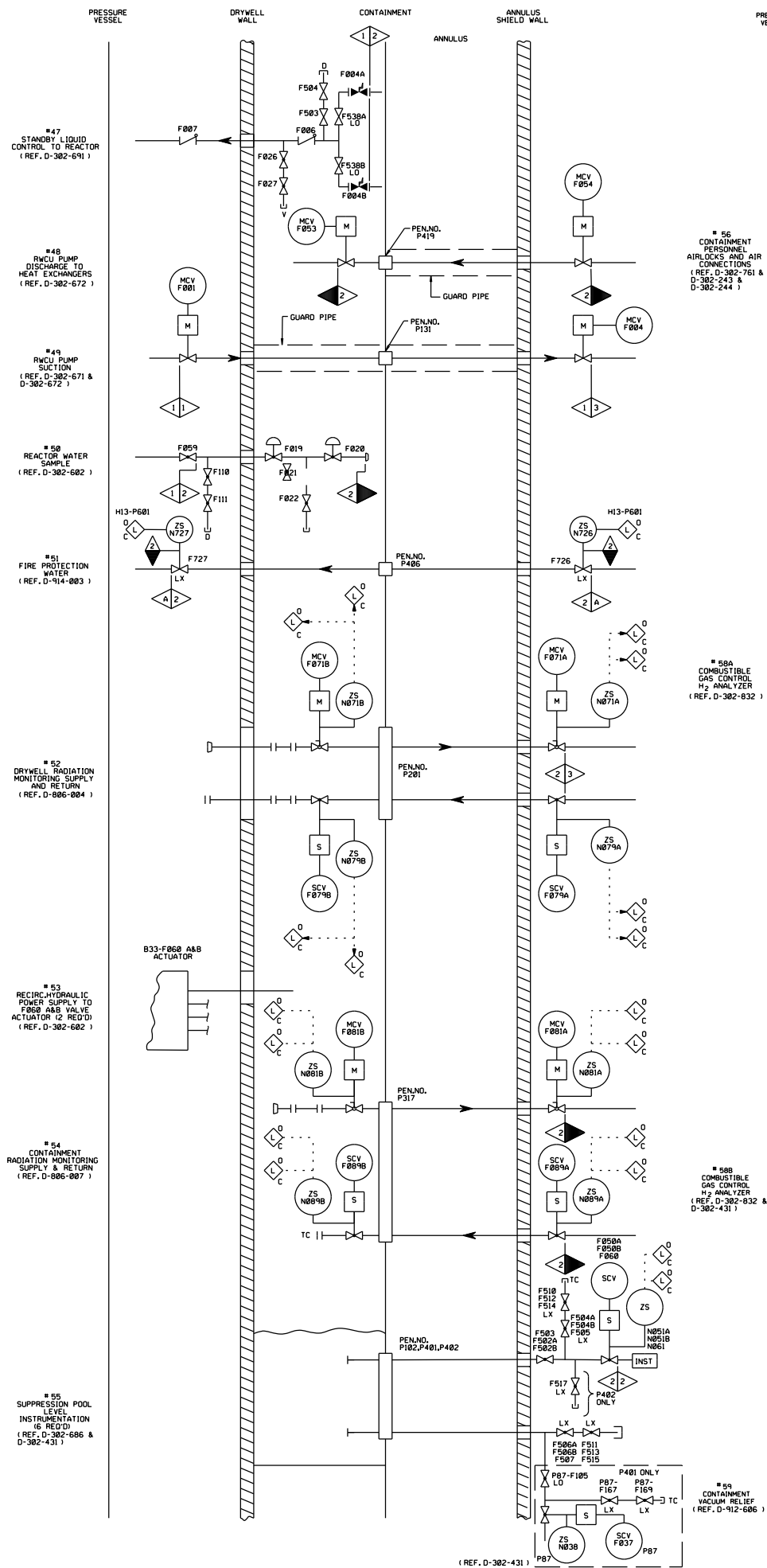
CONTAINMENT AND
DRYWELL ISOLATION
FIGURE 6.2-60 (SHEET 2 OF 4)
(DWG. D-300-0762-00000)



- (Rev. 18 10/13)

CONTAINMENT & DRYWELL ISOLATION
FIGURE 6.2-60 (SHEET 3 OF 4)

(DWG. 300-0763-00000)

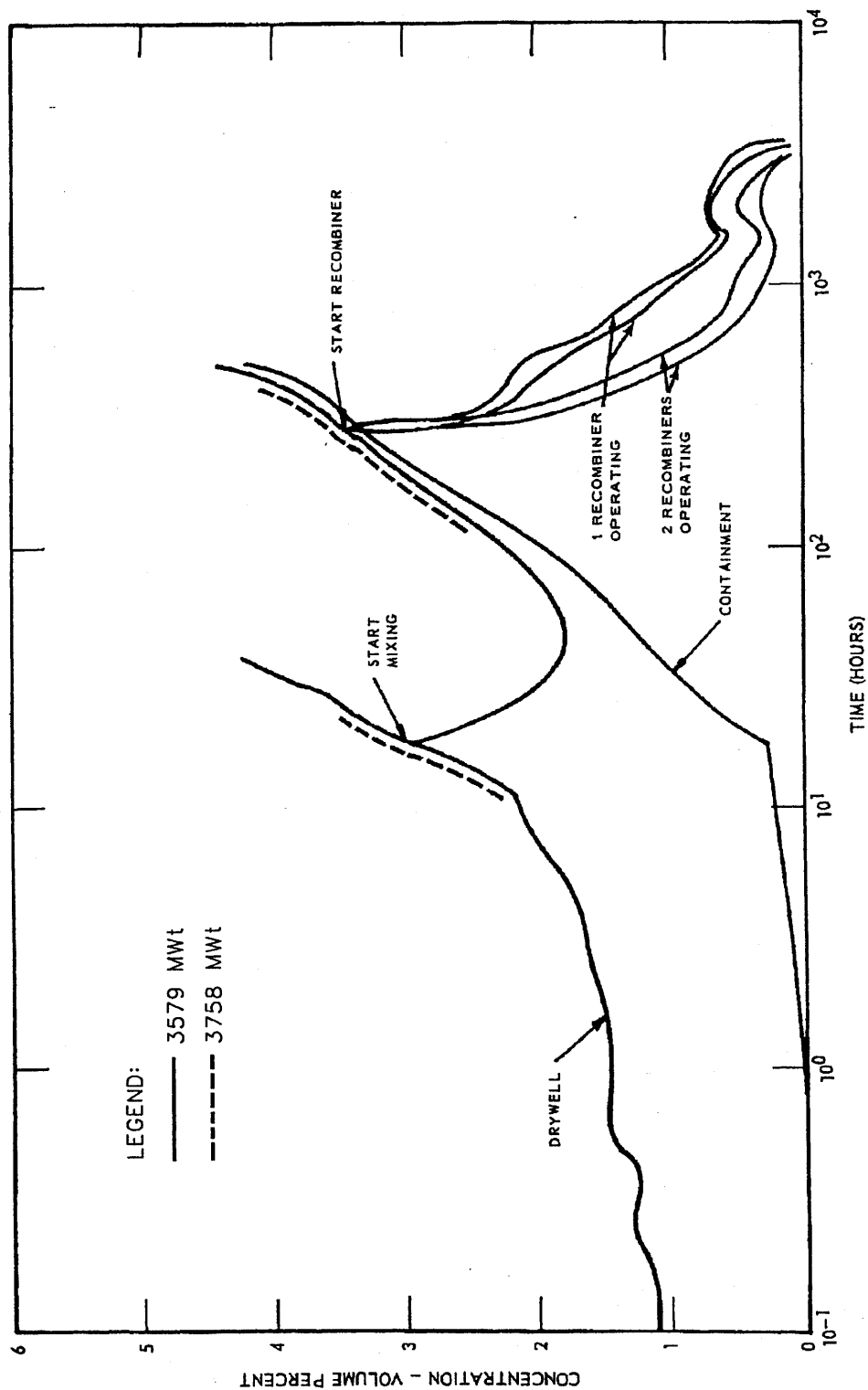


(REV. 21 10/2019)

PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

CONTAINMENT AND DRYWELL ISOLATION

FIGURE 6.2-60 (SHEET 4 OF 4)
(DWG. D-300-0764-00000)



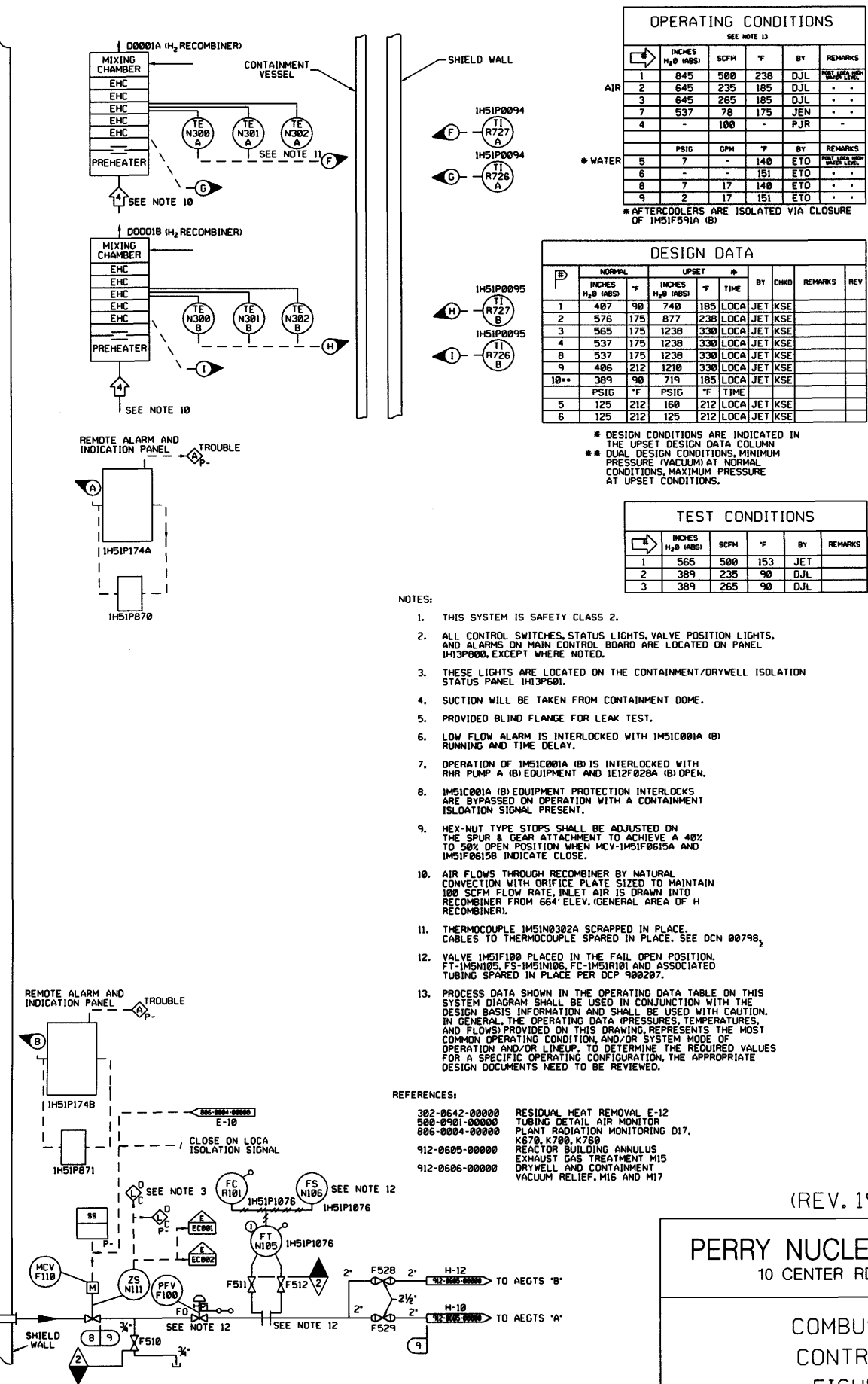
(Rev. 12 1/03)



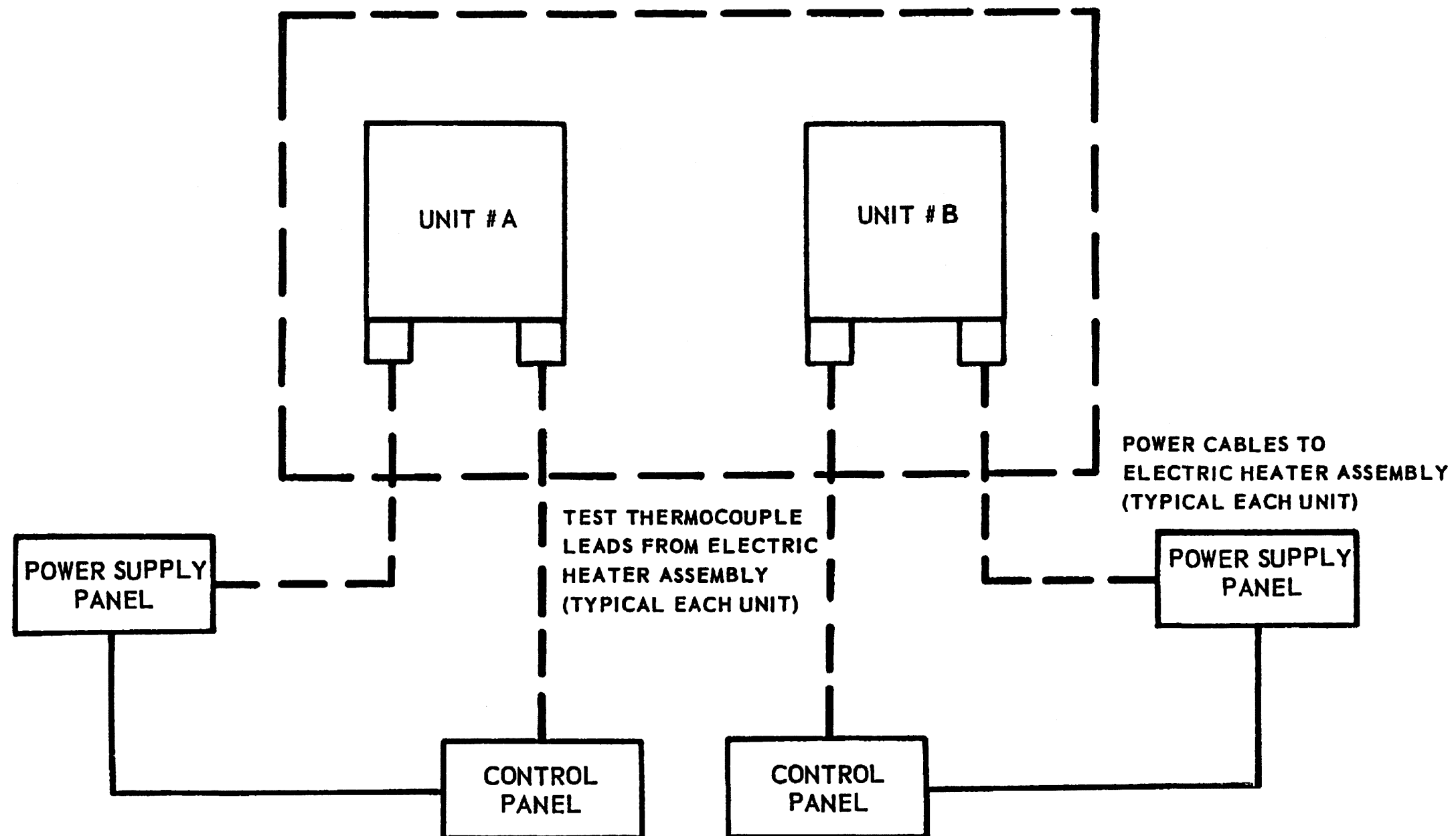
PERRY NUCLEAR POWER PLANT

Hydrogen Concentration Versus Time

Figure 6.2-61



COMBUSTIBLE GAS
CONTROL SYSTEM
FIGURE 6.2-62
(DWG. D-302-0831-00000)

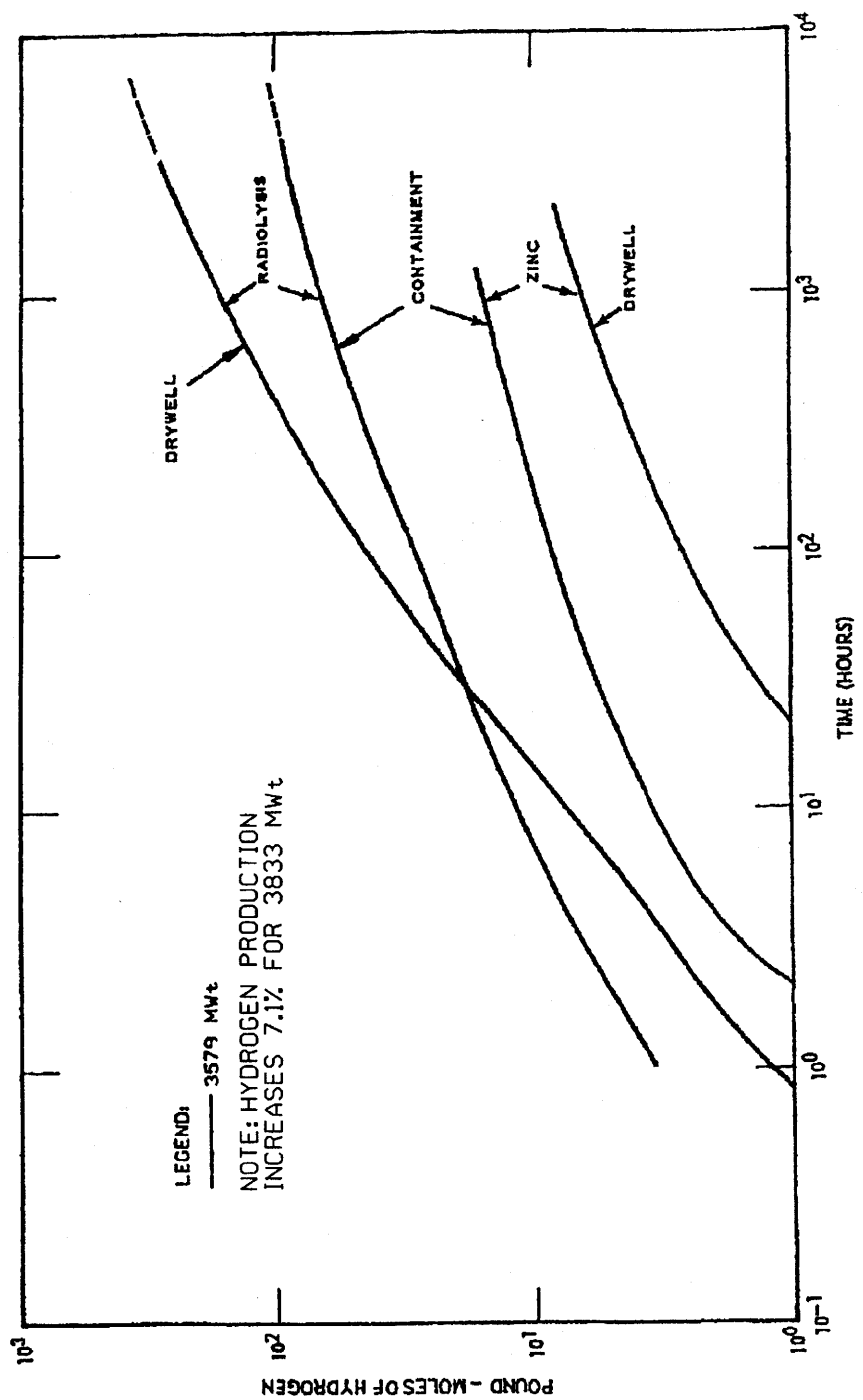


(REV. 19 10/2015)

PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

HYDROGEN
RECOMBINER SYSTEM

FIGURE 6.2-63



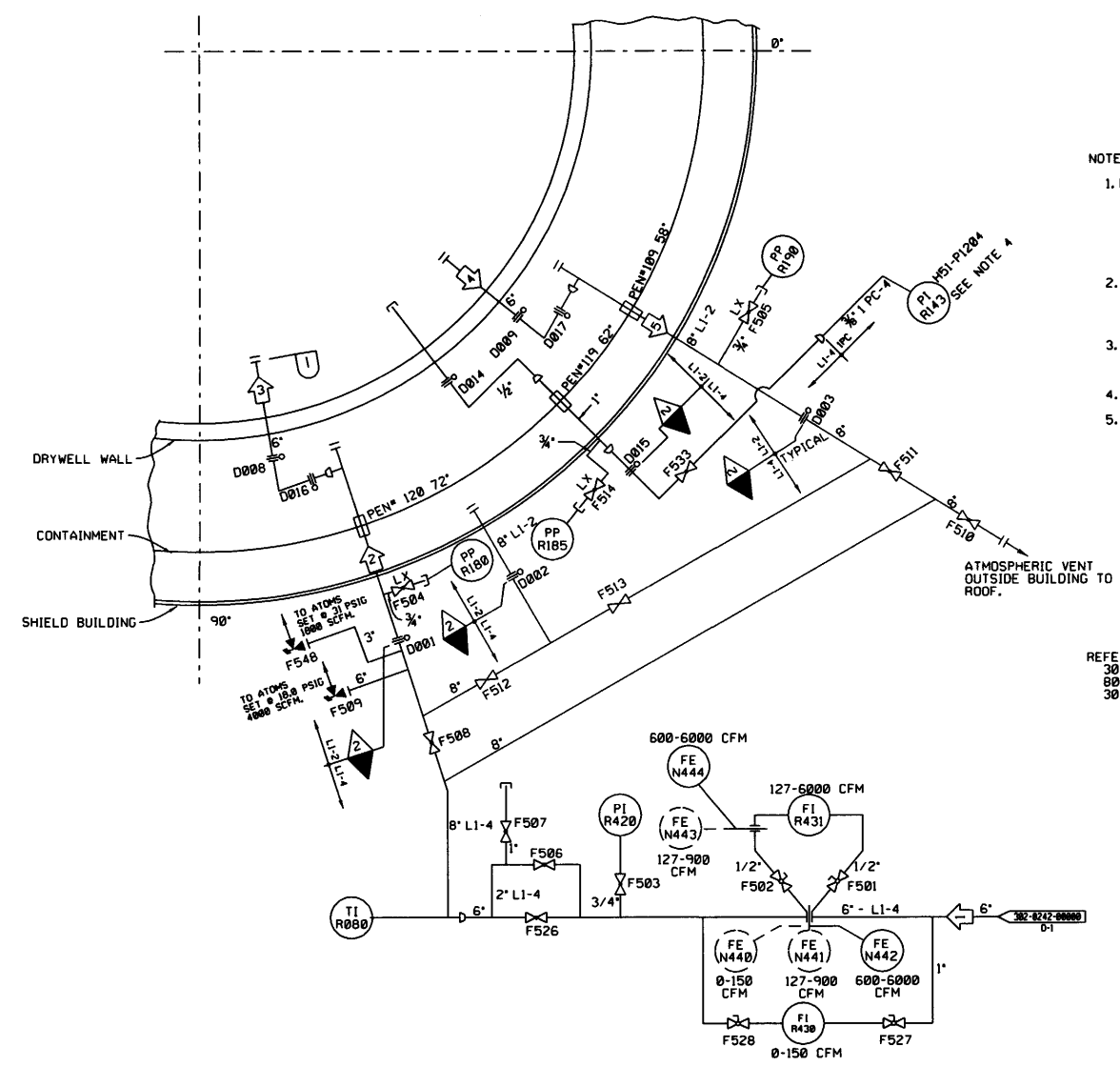
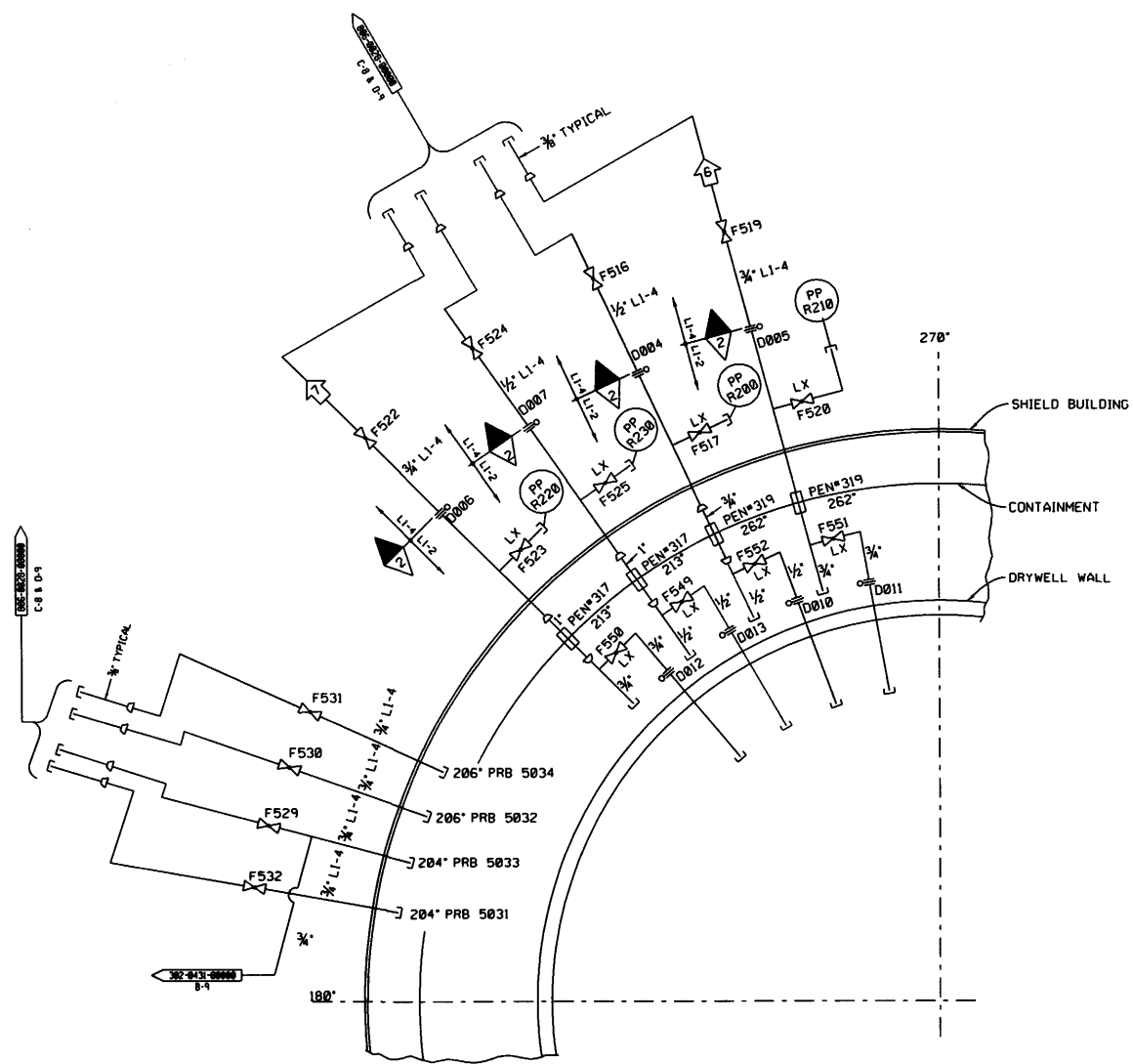
(Rev. 15 10/07)



PERRY NUCLEAR POWER PLANT

Integrated Hydrogen Production
Within Containment and Drywell
Due to Radiolysis

Figure 6.2-64



OPERATING DATA CONTAINMENT TEST						
SEE NOTE 5						
#	PSIG	CFM	F	BY	REMARKS	REV
1	100	560	100	DAK		
2	0	4250	90	DAK	MIN	
3	15	2100	90	DAK	MAX	
4	0			AEH		
5				AEH	5 PSI/HR MAX BDN.	
6	15	.5	90	AEH	FLOW VERIFICATION	
7	15	.5	90	AEH	FLOW VERIFICATION	

*CFM ACTUAL

OPERATING DATA DRYWELL TEST						
SEE NOTE 5						
#	PSIG	CFM	F	BY	REMARKS	REV
1	100	250	100	DAK		
2	0	1900	90	DAK	MIN	
3	30	625	90	DAK	MAX	
4				AEH	5 PSI/HR MAX BDN.	
5				AEH	5 PSI/HR MAX BDN.	
6	0			AEH		
7	0			AEH		

DESIGN DATA						
#	NORMAL	UPSET	BY	CHKD	REMARKS	REV
1	PSIG F	PSIG F	TIME		AEH/JPA	
	150	110	-	-		

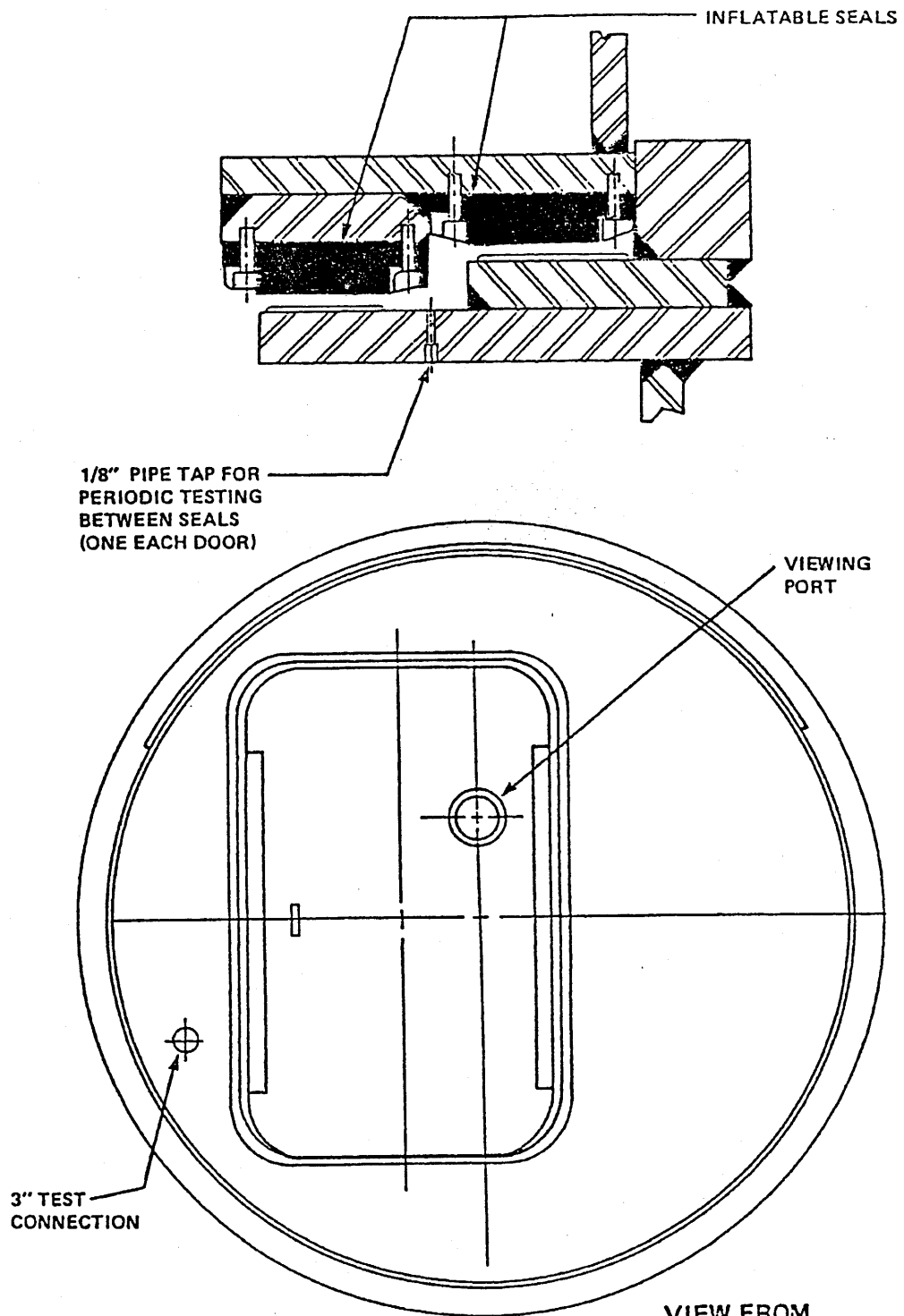
- NOTES:
1. PRIOR TO REACTOR OPERATION:
 - A. SPECTACLE FLANGES SHALL BE CLOSED ON ALL DRYWELL TEST LINES AND OUTBOARD SIDE OF ALL CONTAINMENT PENETRATIONS.
 - B. BLIND FLANGES SHALL BE INSTALLED ON INBOARD SIDE OF CONTAINMENT PENETRATIONS.
 2. WHEN THE LEAK RATE TEST SYSTEM IS USED TO PERFORM DRYWELL PRESSURIZATION THE LINES PENETRATING CONTAINMENT WILL BE CLOSED WITH BLIND FLANGES ON THE INTERIOR SIDE OF THE CONTAINMENT.
 3. FOR CONTINUATION OF THIS SYSTEM, REFER TO 352-0811-0000 (CONTAINMENT INTEGRATED LEAK RATE TEST SYSTEM - UNIT 2).
 4. PI R143 TO BE WALL MOUNTED NEAR F506 AND F526.
 5. PROCESS DATA SHOWN IN THE OPERATING DATA TABLE ON THIS SYSTEM DIAGRAM SHALL BE USED IN CONJUNCTION WITH THE DESIGN BASIS INFORMATION AND SHALL BE USED WITH CAUTION. IN GENERAL, THE OPERATING DATA (PRESSURES, TEMPERATURES, AND FLOWS) PROVIDED ON THIS DRAWING REPRESENTS THE MOST COMMON OPERATING CONDITION, AND/OR SYSTEM MODE OF OPERATION AND/OR LINEUP, TO DETERMINE THE REQUIRED VALUES FOR A SPECIFIC OPERATING CONFIGURATION, THE APPROPRIATE DESIGN DOCUMENTS NEED TO BE REVIEWED.

REFERENCES:
 302-0242-00000 SERVICE & INSTRUMENT AIR SUPPLY P51 & P52
 806-0028-00000 INTEGRATED LEAK RATE TEST INSTRUMENTATION
 302-0431-00000 POST ACCIDENT SAMPLING SYSTEM

(REV. 19 10/2015)

PERRY NUCLEAR POWER PLANT
 10 CENTER RD., PERRY, OHIO 44081

**CONTAINMENT INTEGRATED
 LEAK RATE TESTING SYSTEM**
 FIGURE 6.2-65
 (DWG. D-302-0811-00000)



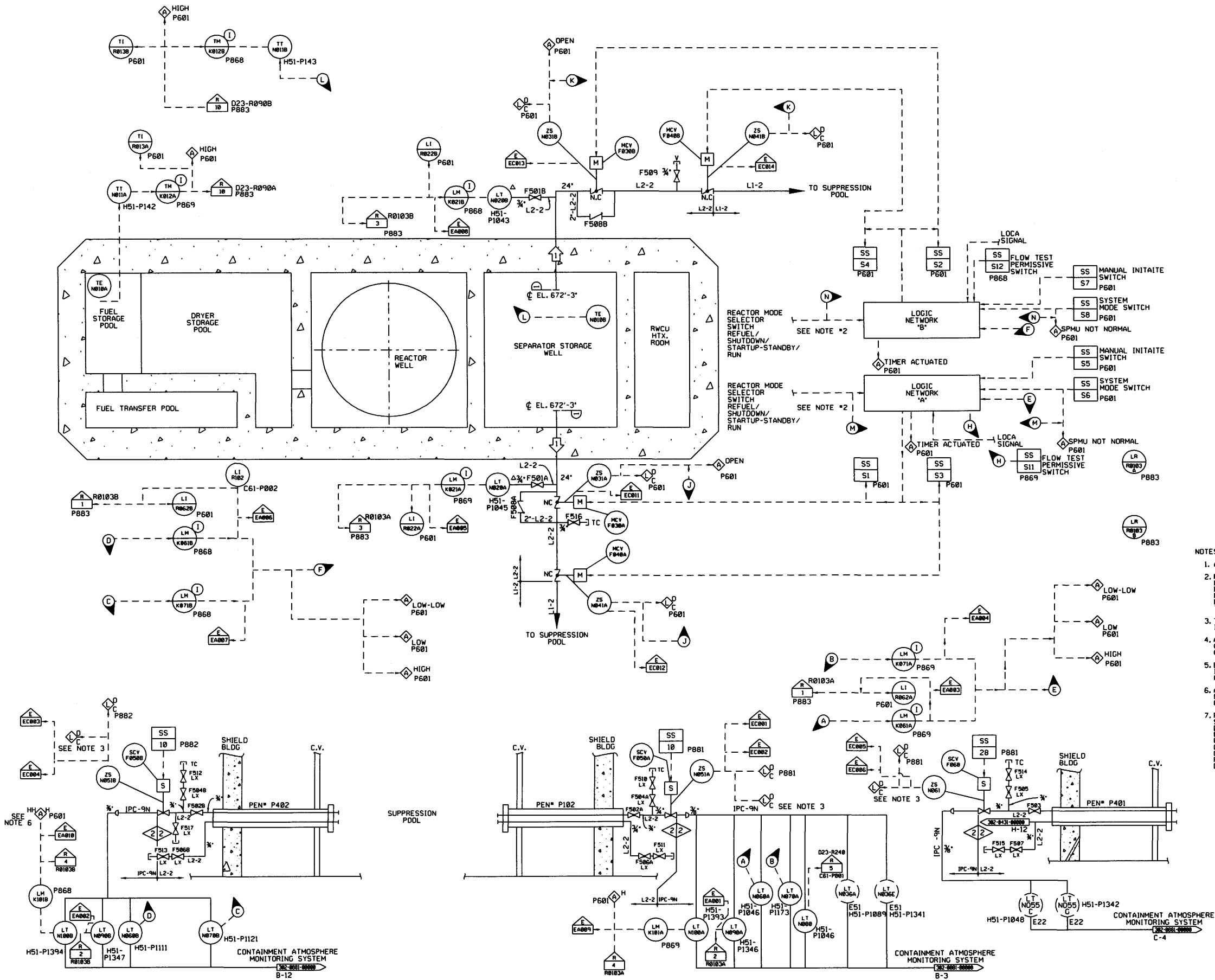
PERRY NUCLEAR POWER PLANT

Details of Personnel Lock
for Periodic Testing

Figure 6.2-66

OPERATING DATA SEE NOTE 7						
ID	QPM	PSIG	°F	BY	REMARKS	REV
1	35600	50	180	JET		1

DESIGN DATA						
ID	NORMAL	UPSET	BY	CHKD	REMARKS	REV
1	50	180	50	180	JET	



- NOTES:
1. ALL PANELS CARRY PREFIX IH13, UNLESS OTHERWISE NOTED.
 2. PROVIDED APPLICABLE PERMISSIVE SIGNALS ARE PRESENT, BOTH MCVS ARE OPENED AUTOMATICALLY UPON RECEIPT OF THE FOLLOWING: (1) SUPPRESSION POOL LOW-LOW WATER LEVEL SIGNAL FROM EITHER LEVEL SENSOR SIGNAL WITH A LOCA (OR ECCS MANUALLY ACTUATED) SIGNAL, (2) LOCA SIGNAL PLUS 30 MINUTES TIME DELAY.
 3. THESE LIGHTS ARE LOCATED ON THE CONTAINMENT/DRYWELL ISOLATION STATUS SECTION OF HI3-P601.
 4. ALL "A" TRAIN CHANNELS HAVE A COMMON FAILURE ALARM (COMPUTER POINT) AND A COMMON OUT-OF-LIMITS ALARM (COMPUTER POINT). "B" TRAIN CHANNELS ARE IDENTICAL.
 5. BOTH MCVS CAN BE OPENED REMOTE MANUALLY WITH THE MANUAL INITIATE SWITCH, PROVIDED A LOCA SIGNAL IS PRESENT OR ECCS HAS BEEN MANUALLY ACTIVATED.
 6. A HIGH ALARM IS PROVIDED ON THE DIV. 2 "B" CHANNEL IN THE CONTROL ROOM TO SIGNIFY THAT SUPPRESSION POOL WATER MAY OVERFLOW THE WEIR WALL INTO THE DRYWELL.
 7. PROCESS DATA SHOWN IN THE OPERATING DATA TABLE ON THIS SYSTEM DIAGRAM SHALL BE USED IN CONJUNCTION WITH THE DESIGN BASIS INFORMATION AND SHALL BE USED WITH CAUTION. IN GENERAL, THE OPERATING DATA (PRESSURES, TEMPERATURES, AND FLOWS) PROVIDED ON THIS DRAWING REPRESENTS THE MOST COMMON OPERATING CONDITION AND/OR SYSTEM MODE OF THE OPERATION AND OR LINEUP. TO DETERMINE THE REQUIRED VALUES FOR A SPECIFIC OPERATING CONFIGURATION, THE APPROPRIATE DESIGN DOCUMENTS NEED TO BE REVIEWED.

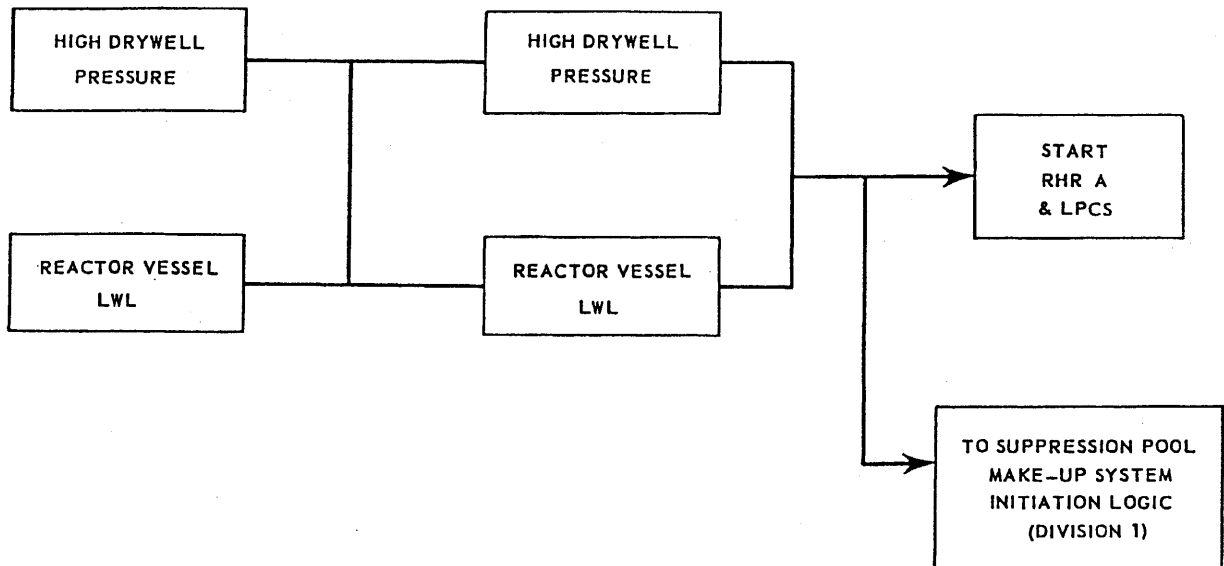
- REFERENCES:
- 302-0881-00000 CONTAINMENT ATMOSPHERE MONITORING SYSTEM D23
 - 302-0431-00000 POST ACCIDENT SAMPLING SYSTEM P87

(REV. 19 10/2015)

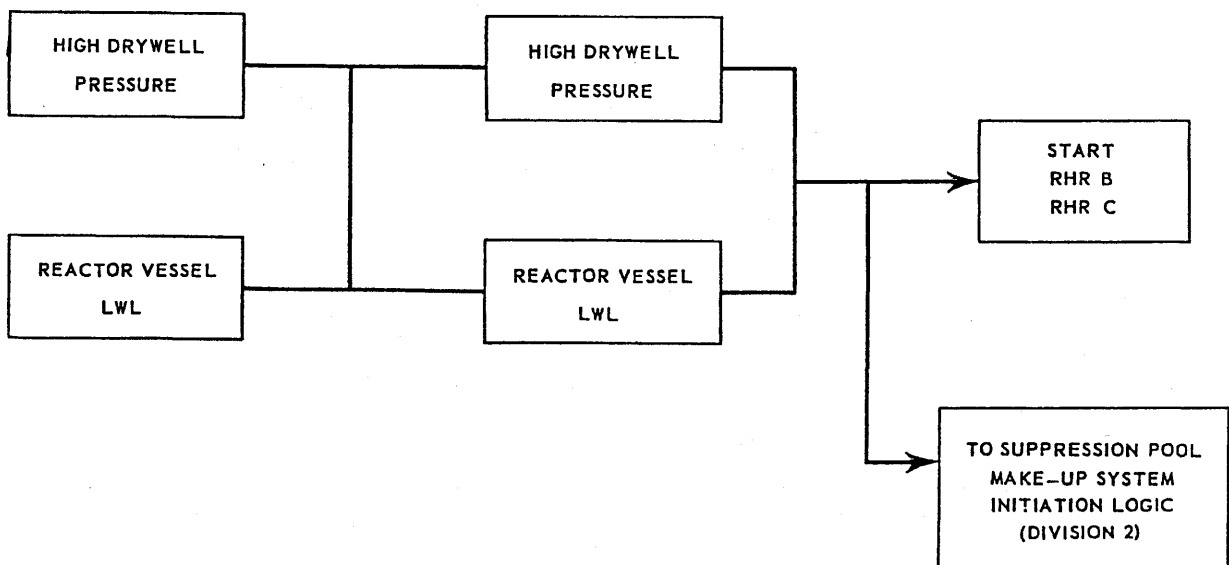
PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

SUPPRESSION POOL
MAKEUP SYSTEM
FIGURE 6.2-67
(DWG. D-302-0686-00000)

DIVISION 1



DIVISION 2



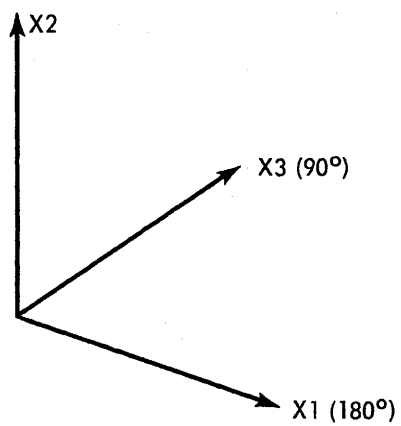
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

LOCA Signal Used in Initiation
Logic of Suppression Pool
Makeup System

Figure 6.2-68



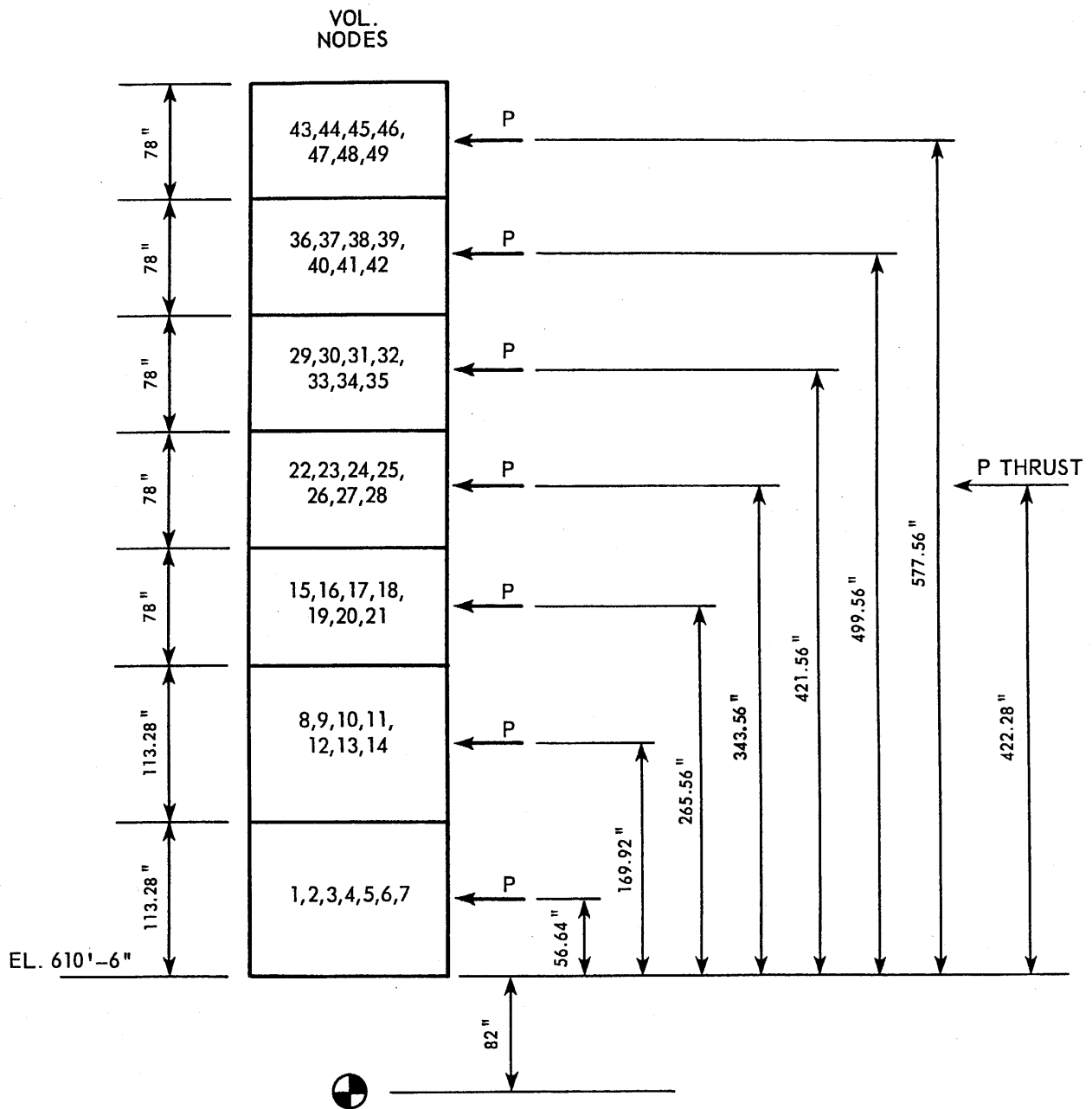
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Right Hand Coordinate System
Used for Bio-Wall Annulus
Pressurization Loadings

Figure 6.2-70



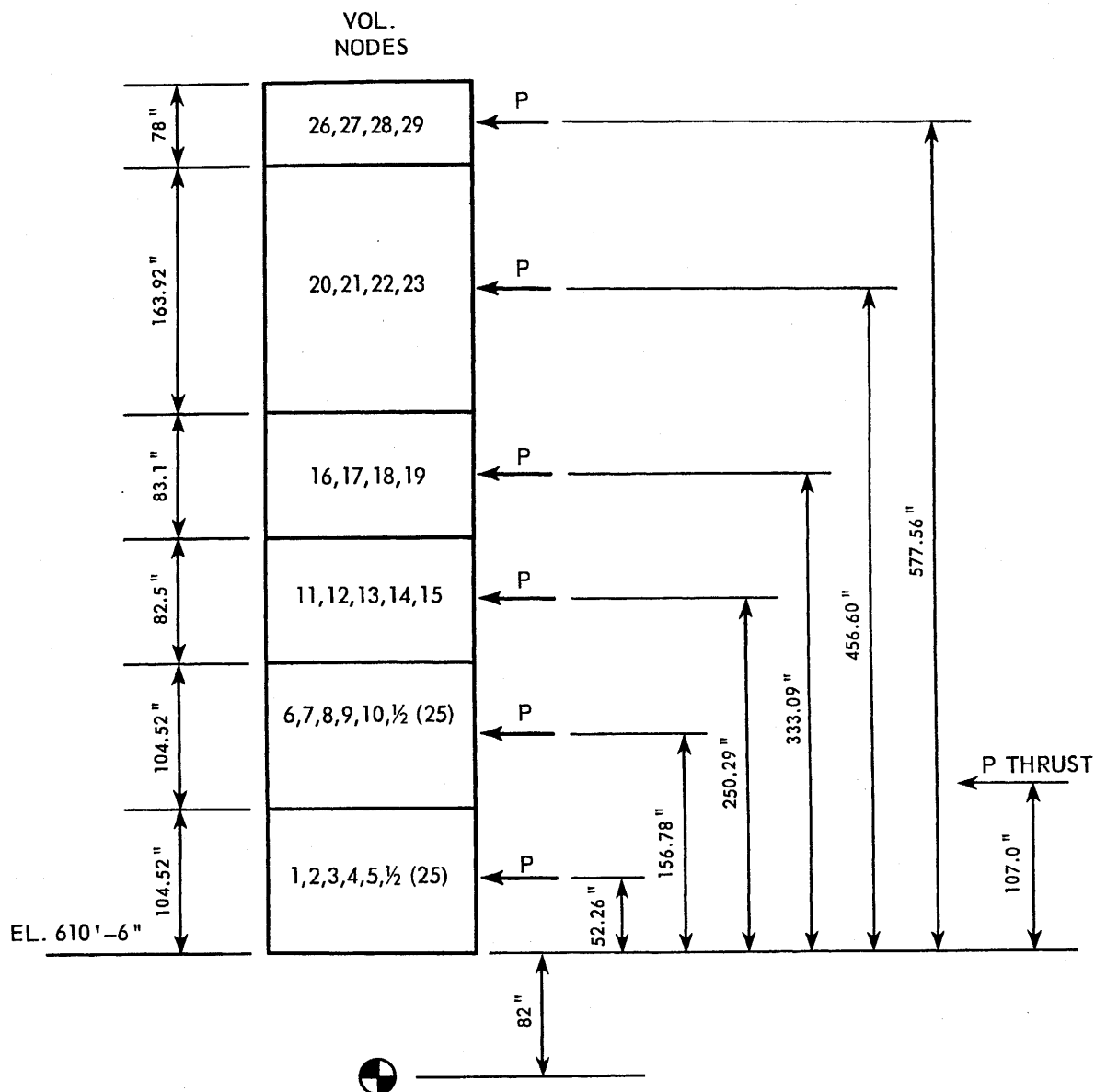
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Force Moment Arms on Bio-Wall
For Annulus Pressurization Due to
Feedwater Line Break

Figure 6.2-71



(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Force Moment Arms on Bio-Wall
For Annulus Pressurization Due to
Recirc Discharge and Suction Line
Breaks

Figure 6.2-72

BREAK	SHEAR (KIPS)	MOMENT (IN-KIP)	TIME STEP (SEC)
FEEDWATER	2713.5	1,123,300.0	0.500
RECIRC. SUCTION	1380.5	286,137.0	0.024
RECIRC. DISCHARGE	1865.4	385,443.0	0.024
RECIRC. DISCHARGE	1652.0	464,821.0	0.400

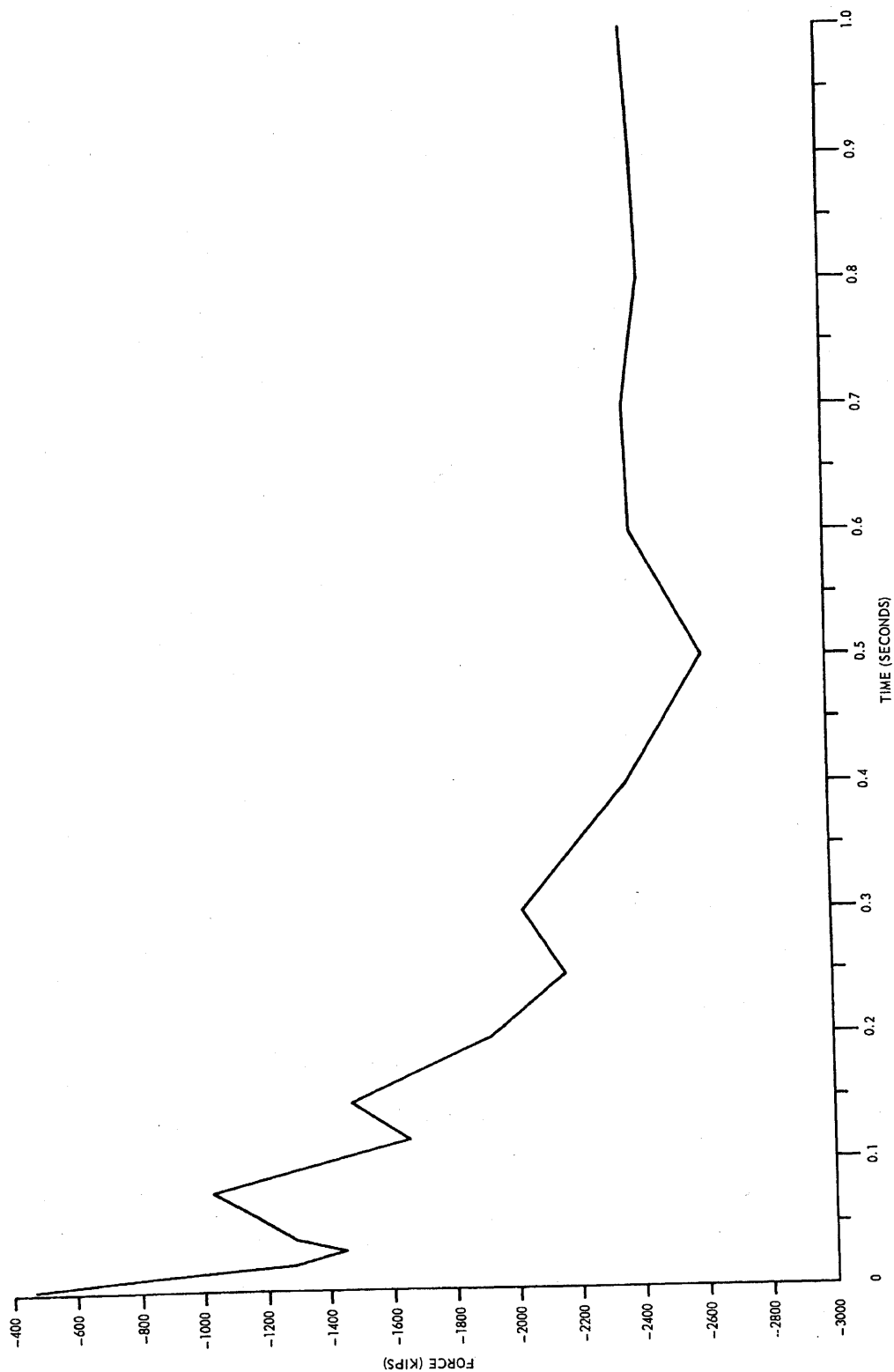
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Resultant Bio-Wall Forces and
Moments Due to Annulus
Pressurization

Figure 6.2-73 ...



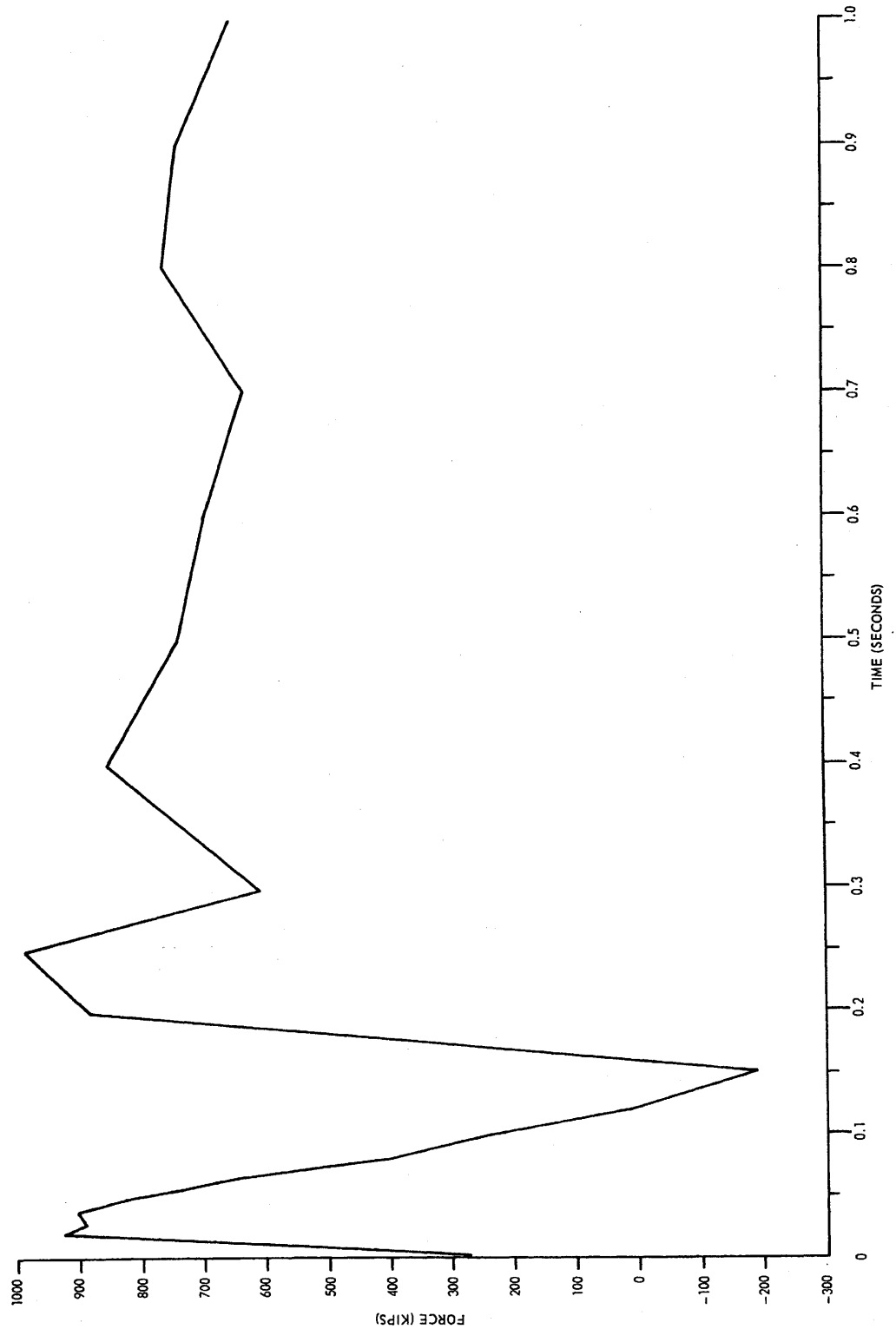
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Feedwater Line Break Force X1
Bio-Shield Wall

Figure 6.2-74



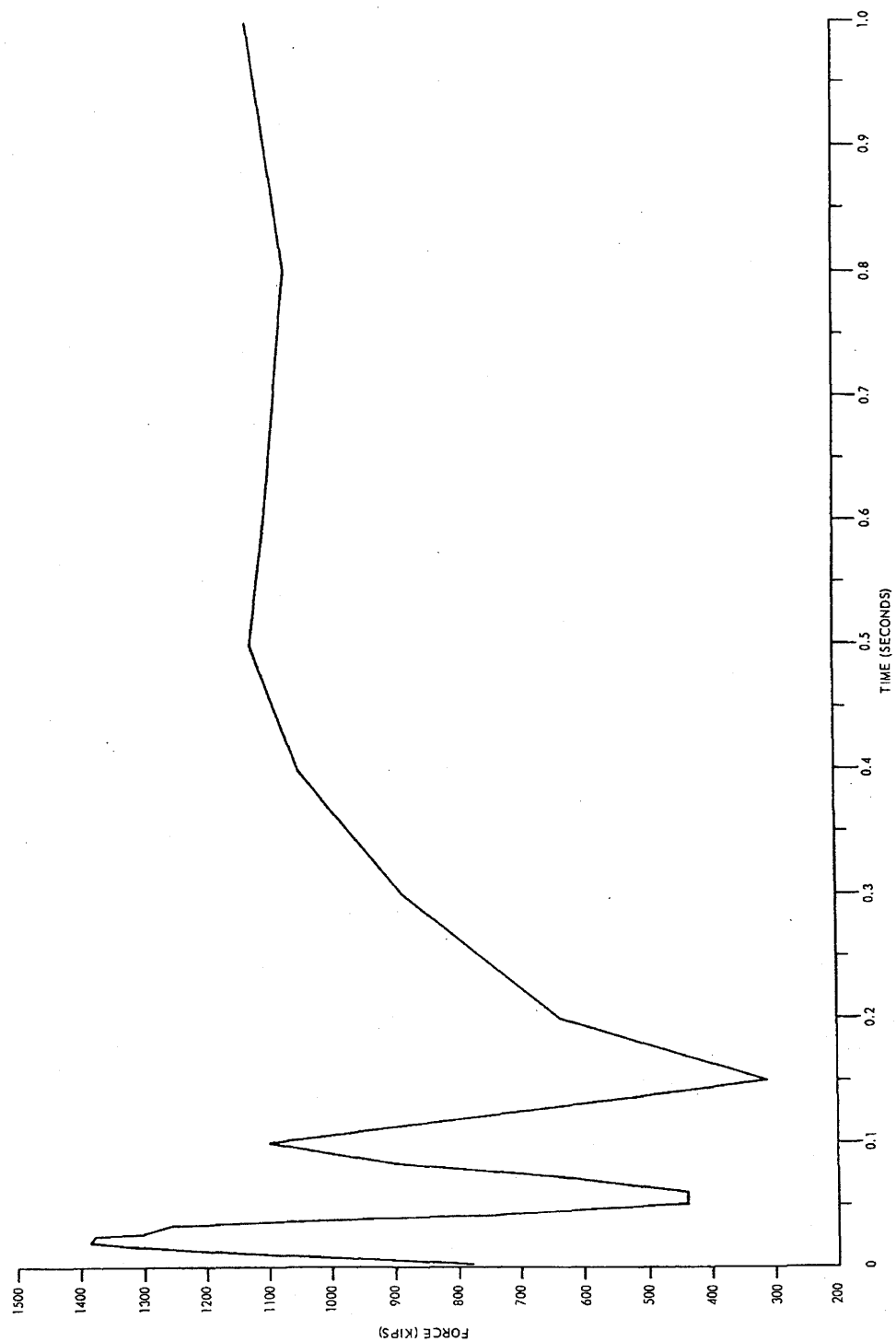
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Feedwater Line Breaks Force X3
Bio-Shield Wall

Figure 6.2-75



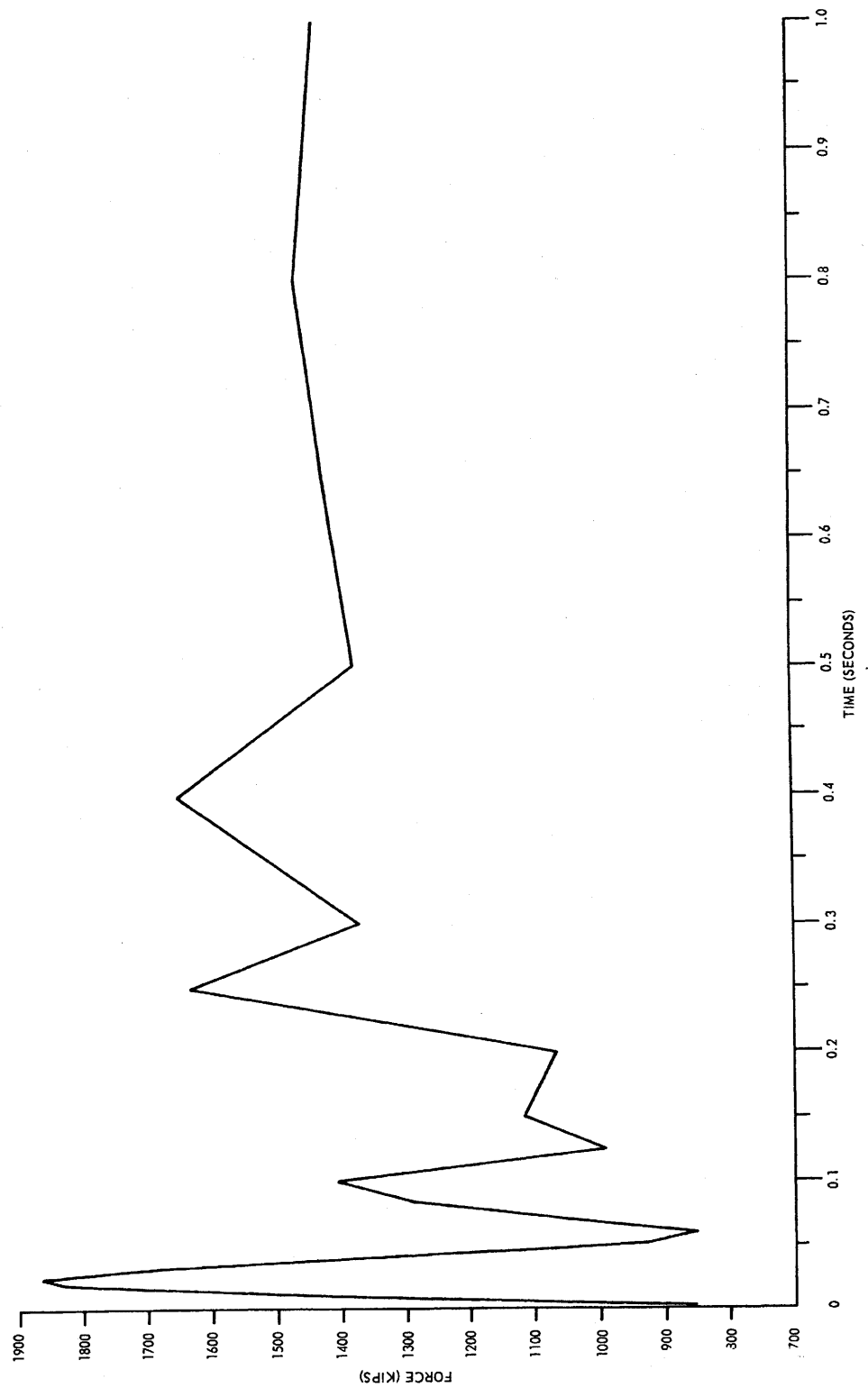
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Recirculation Suction Line Break
Force X1 Bio-Shield Wall

Figure 6.2-76



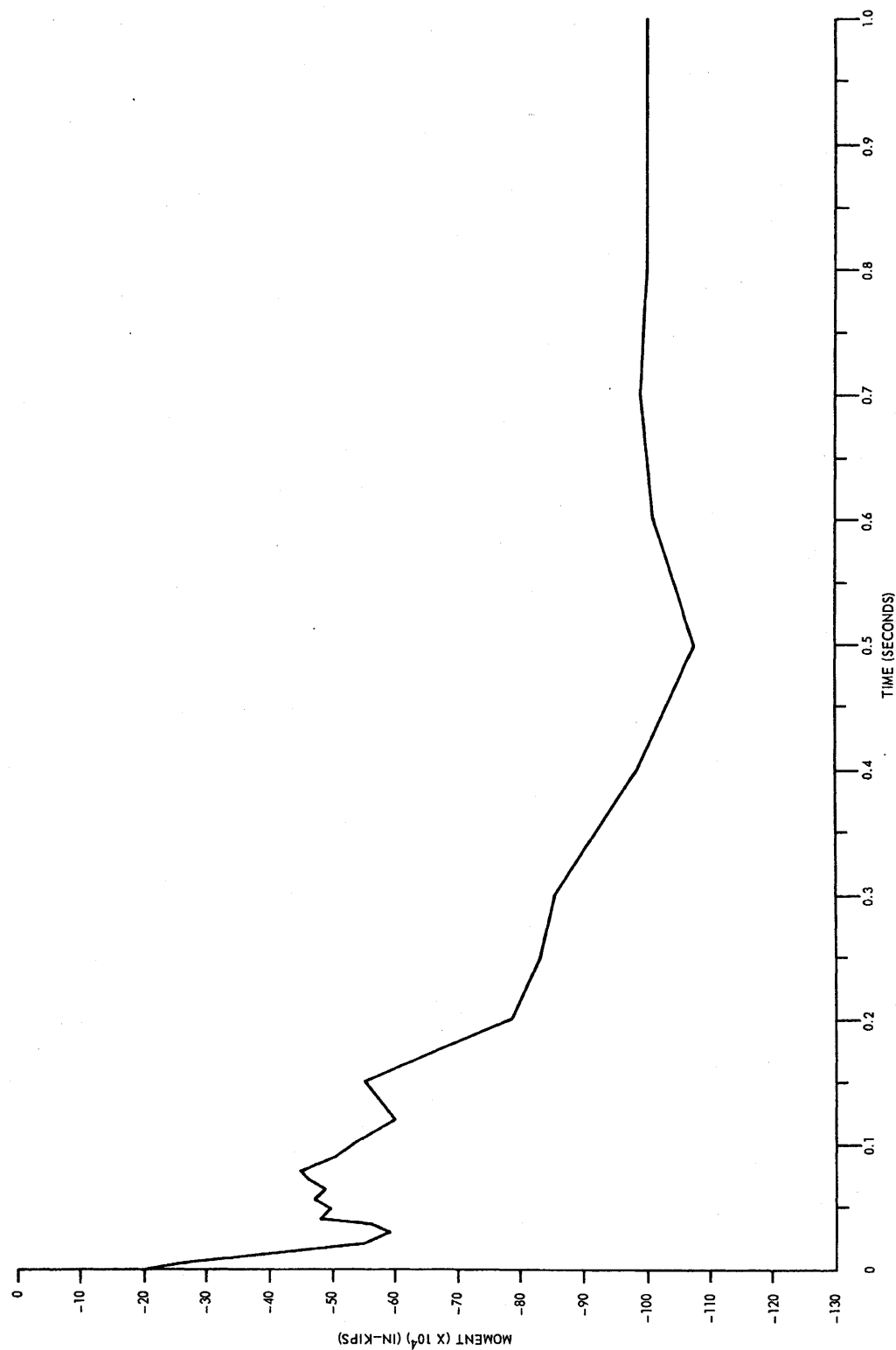
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Recirculation Discharge Line Break
Force X3 Bio-Shield Wall

Figure 6.2-77



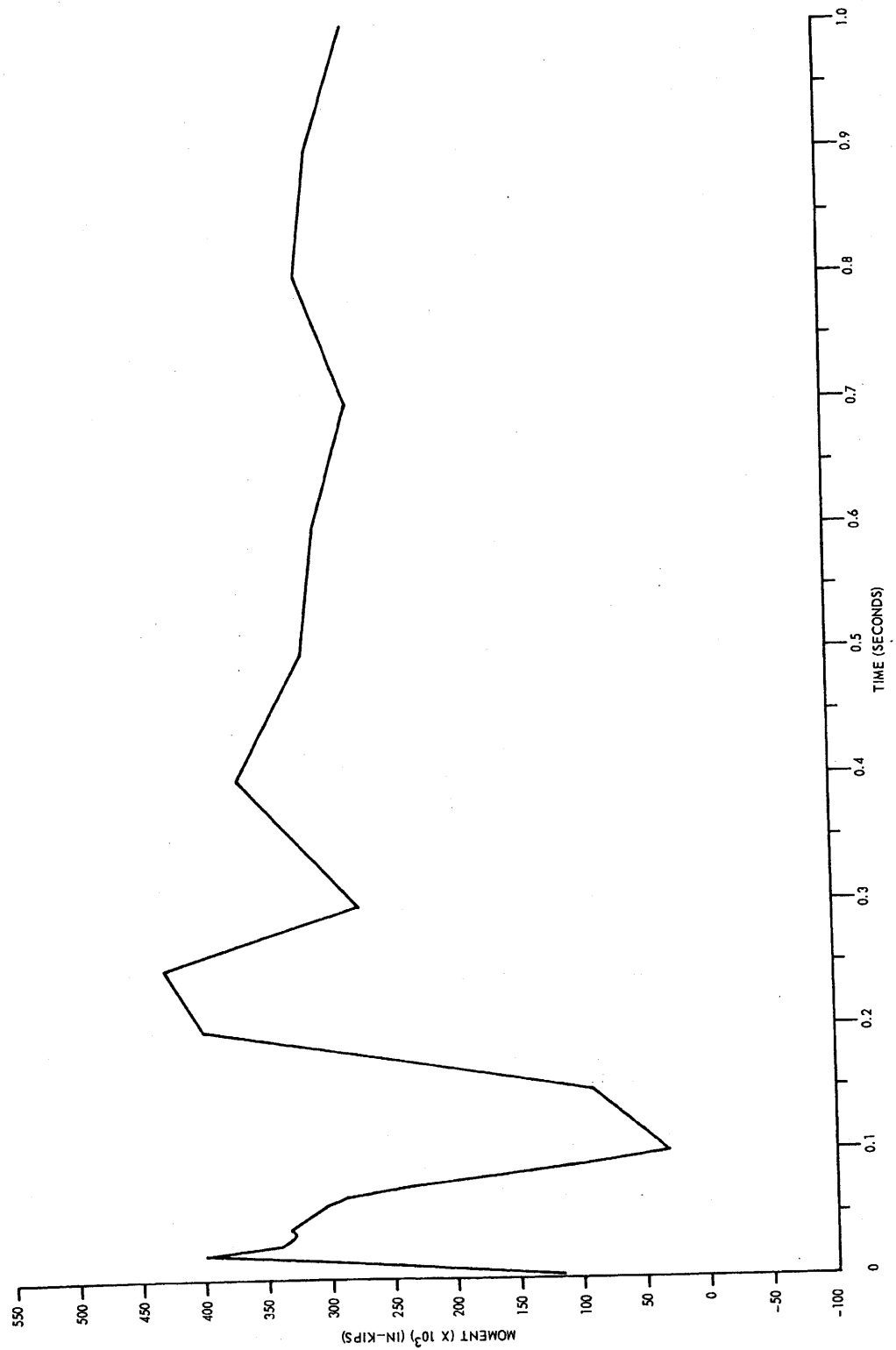
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Feedwater Line Break Moment X1
Bio-Shield Wall

Figure 6.2-78



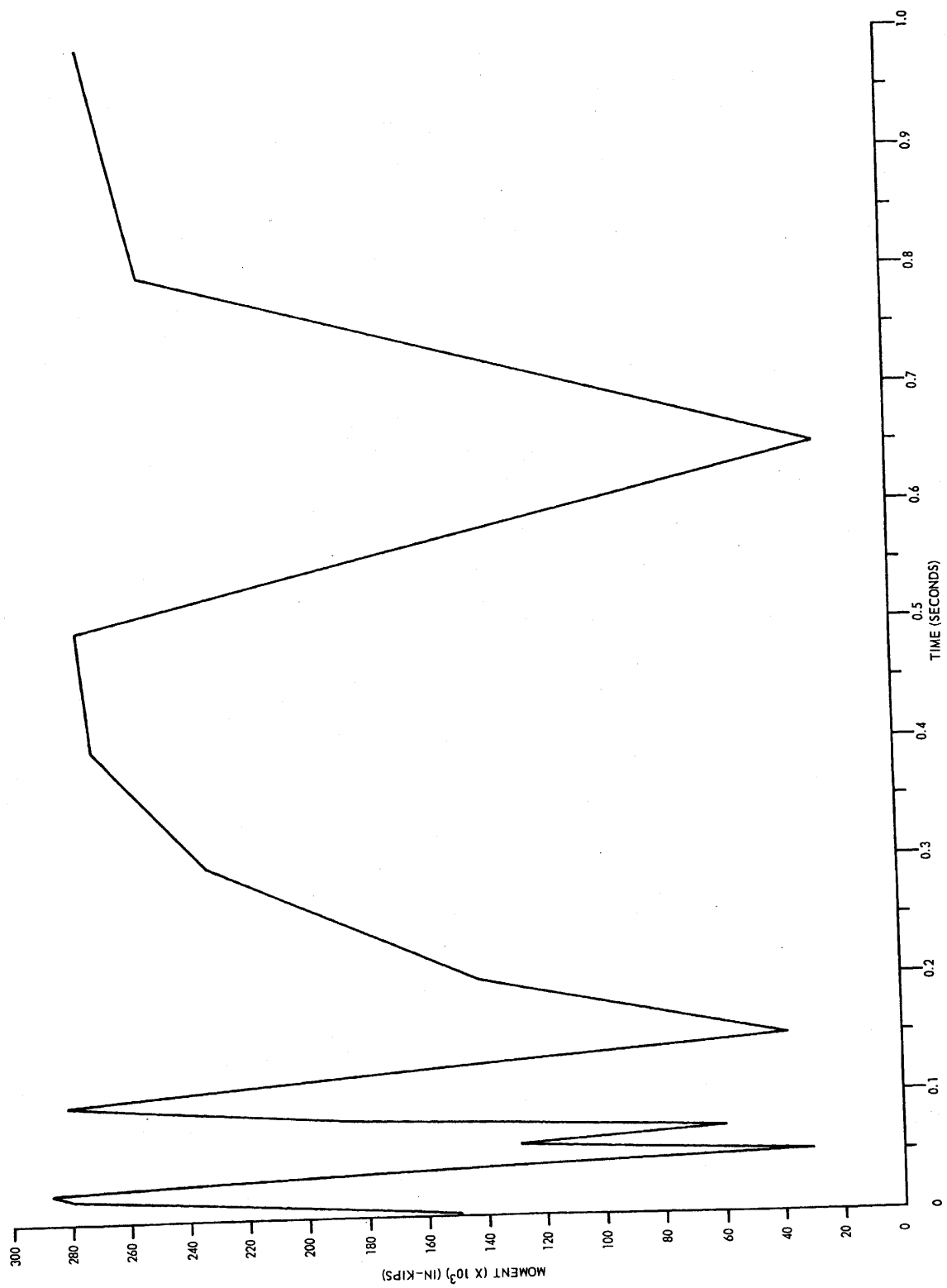
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Feedwater Line Break Moment X3
Bio-Shield Wall

Figure 6.2-79



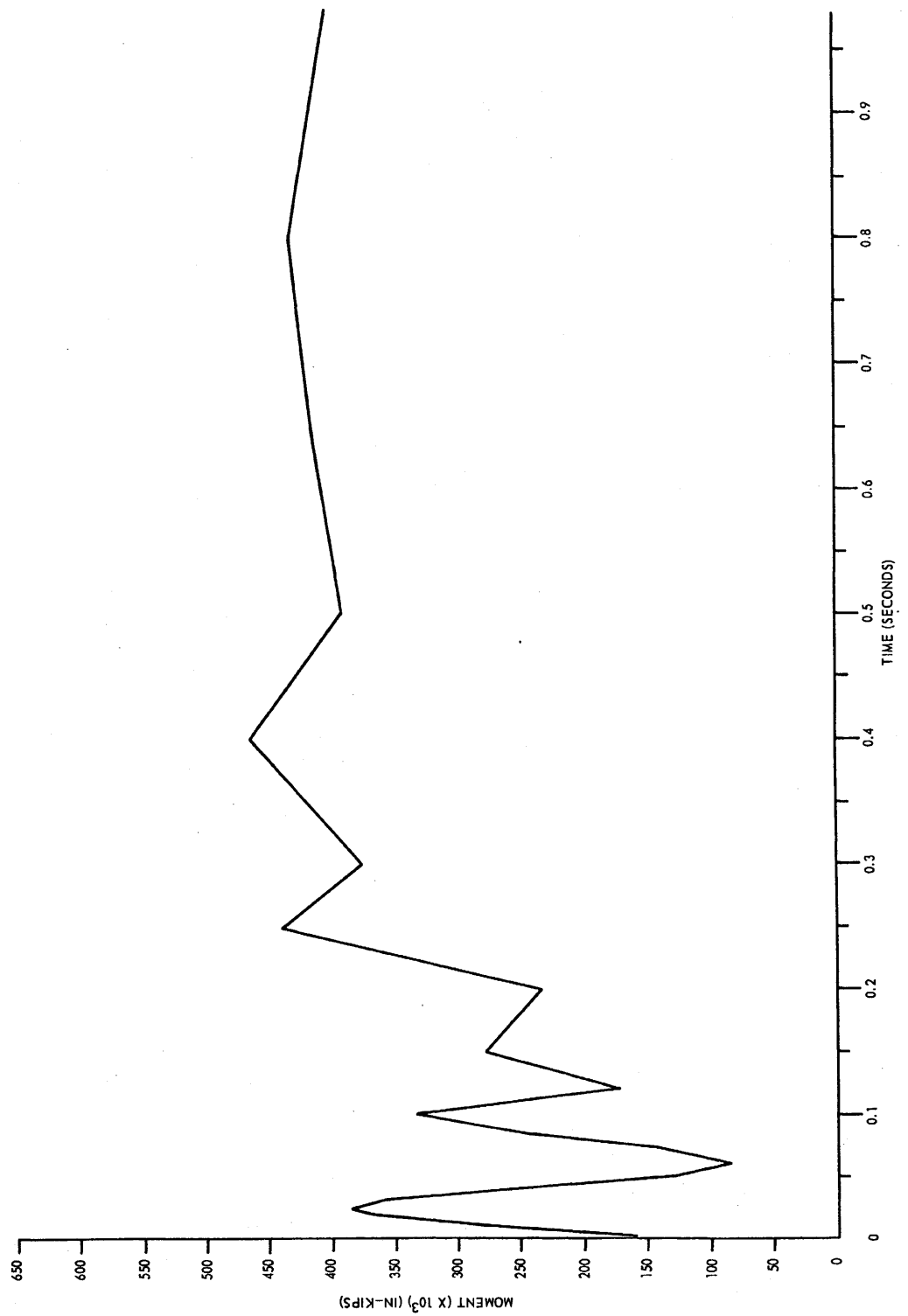
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Recirculation Suction Line Break
Moment At X3 Bio-Shield Wall

Figure 6.2-80



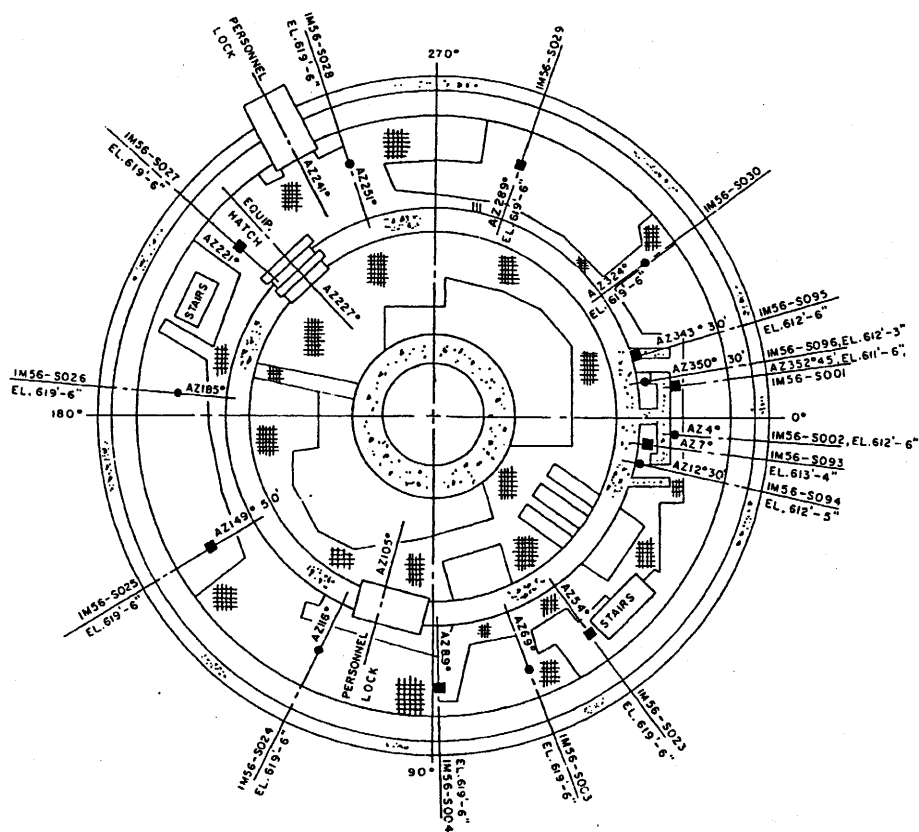
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Recirculation Discharge Line Break
Moment At X1 Bio-Shield Wall

Figure 6.2-81



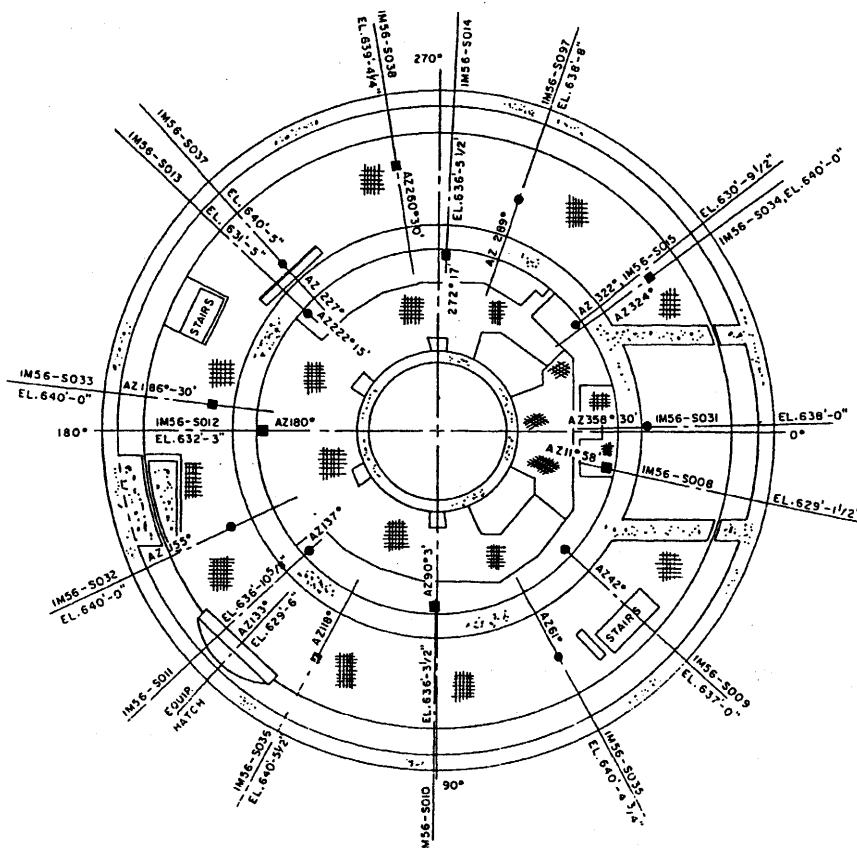
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Essential Equipment Location
Plan El. 599'-9"

Figure 6.2-82 (Sheet 1 of 5)



LEGEND
 ■ HYDROGEN IGNITER (DIV. 1)
 ● HYDROGEN IGNITER (DIV. 2)

(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Essential Equipment Location
 Plan El. 620'-6"

Figure 6.2-82 (Sheet 2 of 5)

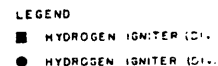
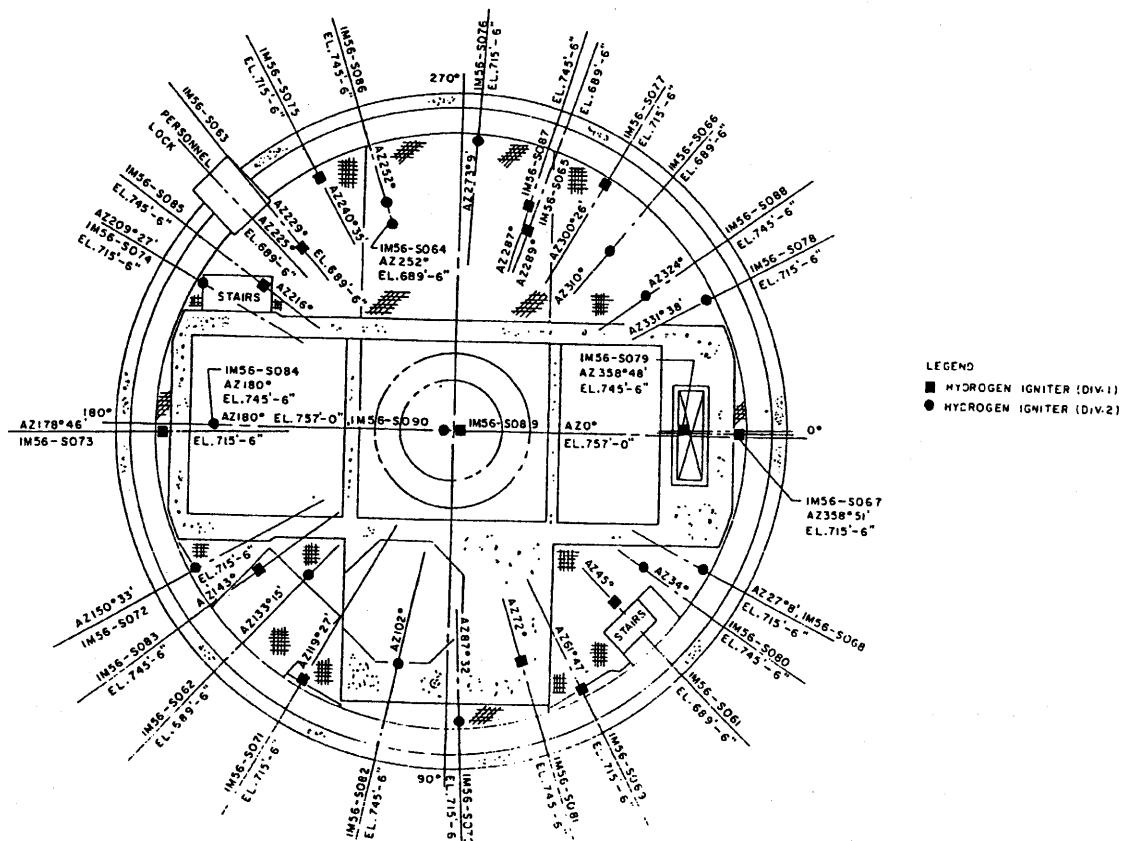


Figure 6.2-82 (Sheet 4 of 5)



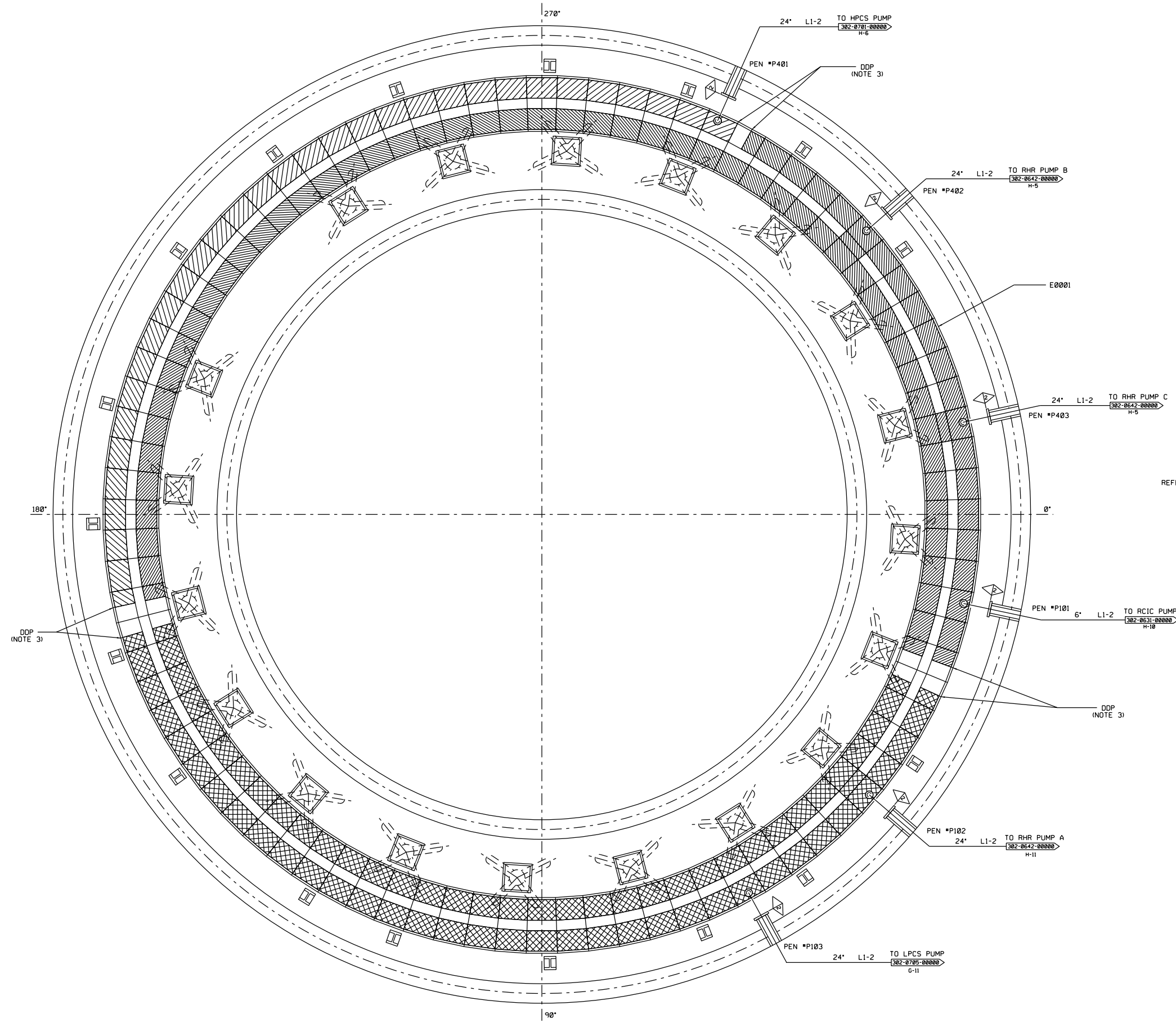
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Essential Equipment Location
Plan El. 689'-6"

Figure 6.2-82 (Sheet 5 of 5)

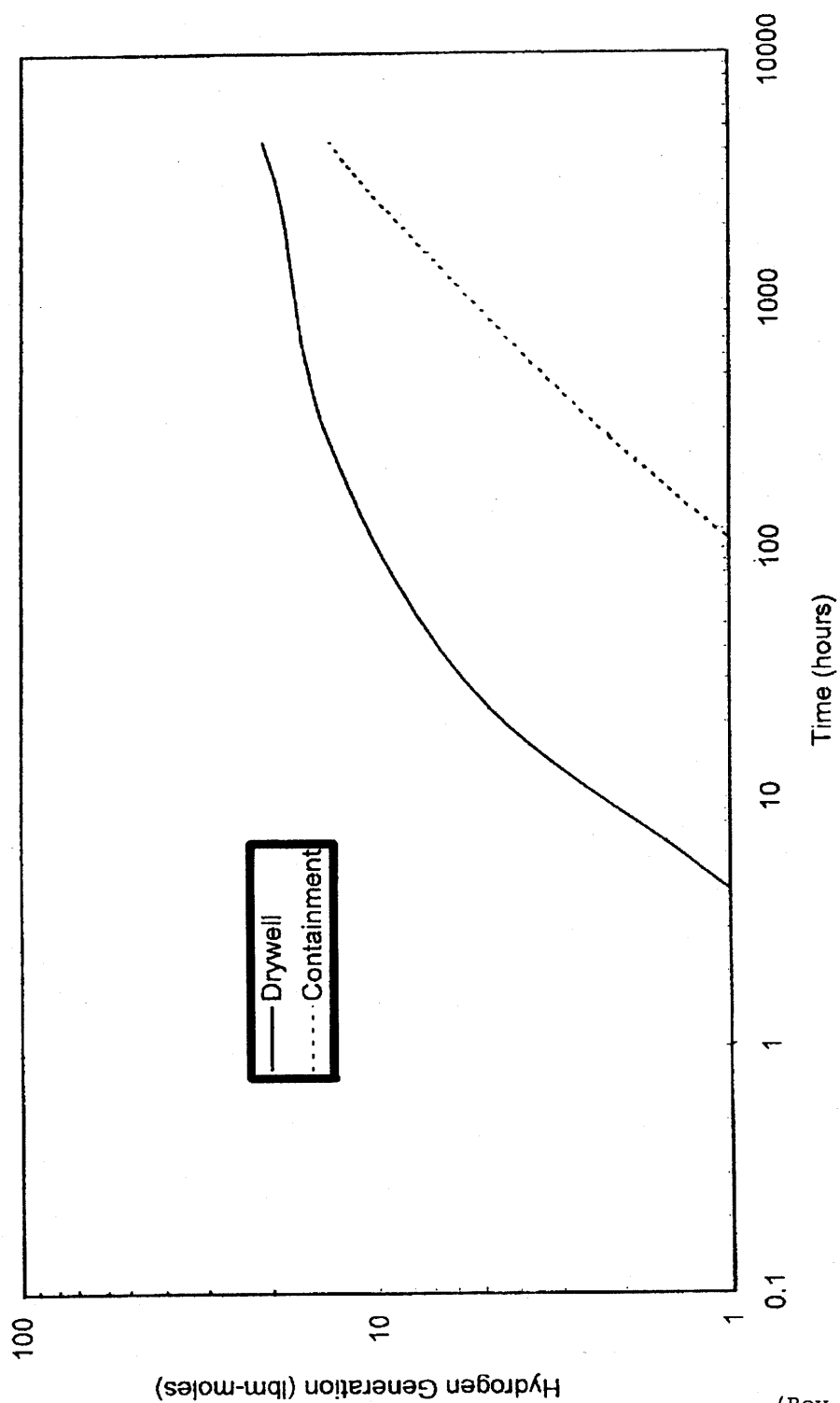


- NOTES:
1. ALL EQUIPMENT IS PREFIXED BY T21, UNLESS NOTED OTHERWISE.
 2. STRAINER IS SAFETY RELATED, NON-ASME INSTALLED VIA DCP 960042.
 3. DDP = DIVISION DIVIDER PLATE
 4. DIVISIONS ARE DEFINED AS FOLLOWS:
- | | |
|--|----------|
| | - DIV. 1 |
| | - DIV. 2 |
| | - DIV. 3 |

- REFERENCES:
- | | |
|----------------|---|
| 302-0642-00000 | RHR SYSTEM E12 |
| 302-0701-00000 | HIGH PRESSURE CORE SPRAY SYSTEM E22 |
| 302-0631-00000 | REACTOR CORE ISOLATION COOLING SYSTEM E51 |
| 302-0705-00000 | LOW PRESSURE CORE SPRAY SYSTEM E21 |
| 511-0622-00000 | ECCS SUCTION STRAINER PLAN |

(REV. 21 10/2019)

<p>PERRY NUCLEAR POWER PLANT 10 CENTER RD., PERRY, OHIO 44081</p>
<p>ECCS SUCTION STRAINER FIGURE 6.2-83 (DWG. D-302-0574-00000)</p>



(Rev. 15 10/07)



PERRY NUCLEAR POWER PLANT

Integrated Hydrogen Production
Within Containment and Drywell Due
to Corrosion of Zinc (3833 MWc)

Figure 6.2-84

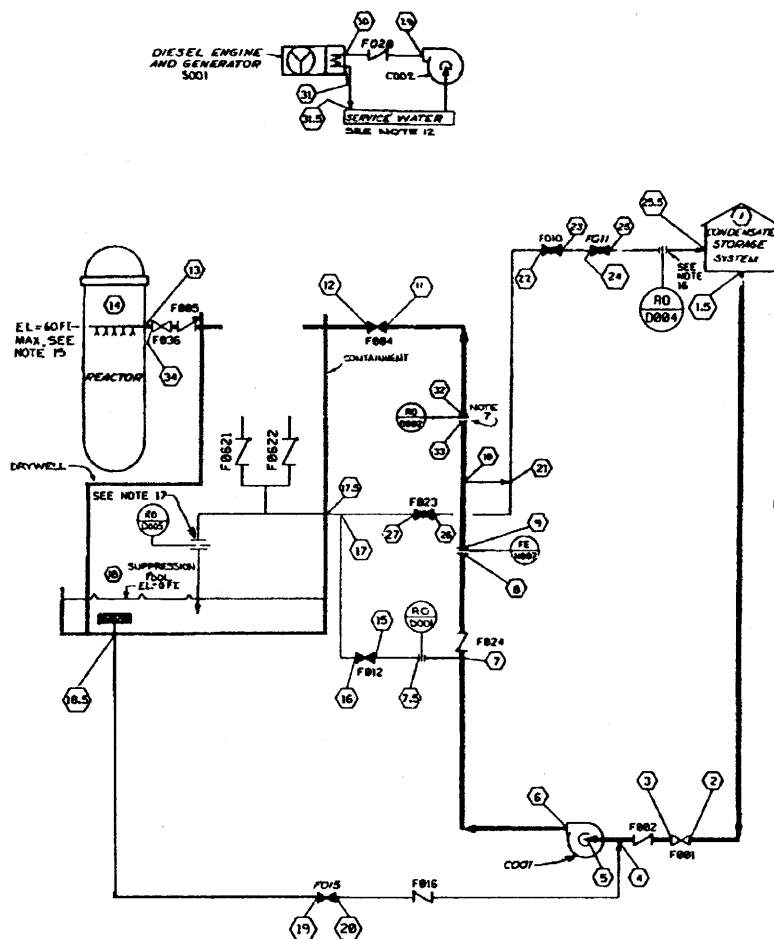


TABLE I
VALVE POSITION TABLE

VALVE	F801	F802	F803	F804	F805	F806	F807	F808	F809	F810	F811	F812	F813	F814	F815	F816	F817	F818	F819	F820	F821	F822	F823	F824
MODE A	O	O	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
MODE B	C	O	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
MODE C	C	O	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
MODE CC	C	O	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
MODE E	O	O	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
MODE F	C	O	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
MODE G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
MODE H	O	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
MODE J	O	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
MODE 3	O	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

O-VALVE OPEN
C-VALVE CLOSED

MODE J PUMP OPERATING ON BYPASS SUCTION FROM CONDENSATE STORAGE

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FLOW GPM	N/A	600												N/A
PRESS PSIA	14.7													14.7
TEMP °F	AMB													AMB
VAL PRESS DIFFERENCE FT														

MODE 3 SYSTEM ON STANDBY DUTY

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FLOW GPM	N/A	8												N/A
PRESS PSIA	14.7													14.7
TEMP °F	AMB													AMB
VAL PRESS DIFFERENCE FT														

PRIMARY MODES

MODE A ACCIDENT OR RCC BACKUP REACTOR AT HIGH PRESSURE SUCTION FROM CONDENSATE STORAGE

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FLOW GPM	N/A	550												550
PRESS PSIA	14.7													14.7
TEMP °F	AMB													AMB
VAL PRESS DIFFERENCE FT														

SEE NOTE 10

MODE B ACCIDENT REACTOR AT HIGH PRESSURE SUCTION FROM SUPPRESSION POOL

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FLOW GPM	550													550
PRESS PSIA	14.7													14.7
TEMP °F	70													70
VAL PRESS DIFFERENCE FT														

SEE NOTE 8

MODE C ACCIDENT SYSTEM INJECTION AT RATED CORE SPRAY SUCTION FROM SUPPRESSION POOL

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FLOW GPM	610													610
PRESS PSIA	14.7													14.7
TEMP °F	70													70
VAL PRESS DIFFERENCE FT														

SEE NOTE 19

MODE CC ACCIDENT OR RCC BACKUP REACTOR AT HIGH PRESSURE SUCTION FROM SUPPRESSION POOL

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FLOW GPM	594													594
PRESS PSIA	14.7													14.7
TEMP °F	AMB													AMB
VAL PRESS DIFFERENCE FT														

SEE NOTE 19

MODE E ACCIDENT SYSTEM INJECTION AT RATED CORE SPRAY SUCTION FROM CONDENSATE STORAGE

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FLOW GPM	N/A	610												610
PRESS PSIA	14.7													14.7
TEMP °F	AMB													AMB
VAL PRESS DIFFERENCE FT														

SEE NOTE 19

MODE F ACCIDENT SYSTEM OPERATING AT RUNOUT SUCTION FROM SUPPRESSION POOL

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FLOW GPM	7800													7800
PRESS PSIA	14.7													14.7
TEMP °F	70													70
VAL PRESS DIFFERENCE FT														

SEE NOTE 19

MODE G SYSTEM TEST SUCTION FROM SUPPRESSION POOL

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FLOW GPM	7800													7800
PRESS PSIA	14.7													14.7
TEMP °F	70													70
VAL PRESS DIFFERENCE FT														

SEE NOTE 19

MODE H SYSTEM TEST SUCTION FROM CONDENSATE STORAGE

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FLOW GPM	N/A	610												610
PRESS PSIA	14.7													14.7
TEMP °F	AMB													AMB
VAL PRESS DIFFERENCE FT														

SEE NOTE 19

TABLE II
LIMITING LINE LOSS

MODE	FLOW PATH	COMMENT
F	18.5-19-20-4-5	SEE NOTE 5
E	1.5-2-3-4	SEE NOTE 6
C OR E	6-7-8-9-10-11-12-13	
J	7-15-16-17	
H	21-22-23-24-25-25.5	
G	18-21-26-27-17-17.5	

MISCELLANEOUS INFORMATION (SEE NOTE 18)																			
LOCATION	1	2	4	5	6	11	12	13	14	16	17	20	21	25	25.5	29	30	31	31.5
DESIGN TEMP	140	212	212			212	575	575	575	575	575	575	575	575	575	575	575	575	575
DESIGN PRESS (PSIA)	100		100			1575	1575	1575	1575	1575	1575	1575	1575	1575	1575	1575	1575	1575	1575
ESTIMATED LINE SIZE (IN.)	16	24	24			16	12	12	12	12	12	12	12	12	12	12	12	12	12
LINE	CONDENSATE	SUPPRESSION	SUPPRESSION			MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS
	CONDENSATE	SUPPRESSION	SUPPRESSION			MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS	MAIN HP CS

• DUAL DESIGN CONDITIONS
1250 PSI @ 575°F AND
1575 PSI @ 148°F

NOTES:

- ALL EMPTY PRESSURE DATA BLANKS CAN BE FILLED IN BY OTHERS BASED ON ACTUAL ARRANGEMENT OR EQUIVALENT HYDRAULIC DATA SUBMITTED TO GE. ☒ INDICATES DATA IS NOT SIGNIFICANT.
- ☒ INDICATES MAXIMUM AND MINIMUM VALUE OF PARAMETER FOR THE MODE SPECIFIED.
- ELEVATIONS ARE NOT INCLUDED IN ΔP VALUES GIVEN. ELEVATIONS SHALL BE INCLUDED WHEN DETERMINING FINAL VALUES FOR EMPTY PRESSURE DATA BLANKS.
- THE PUMP MAXIMUM SHUTOFF HEAD WILL NOT EXCEED 3500 FT.
- IN MODE F, AT THE FLOW SPECIFIED, THE NET POSITIVE SUCTION HEAD (NPSH) AVAILABLE AT A REFERENCE LOCATION 3 FEET ABOVE THE PUMP MOUNTING FLANGE MUST EQUAL OR EXCEED 4.5 FEET. THE NPSH AVAILABLE AT THE PUMP SUCTION NOZZLE MUST EQUAL OR EXCEED THIS VALUE PLUS THE DIFFERENCE IN ELEVATION BETWEEN THE REFERENCE LOCATION AND THE CENTERLINE OF THE PUMP SUCTION NOZZLE.
- IN MODE E AND AT FLOW RATE OF 7800 GPM, THE AVAILABLE NPSH MUST EQUAL OR EXCEED THE VALUE SPECIFIED IN NOTE 5 FOR MODE F.
- THE ΔP BETWEEN LOCATIONS 32 AND 33 WILL BE DETERMINED IN PRE-OPERATIONAL TEST. THE ΔP WILL BE ADJUSTED SUCH THAT:
 - THE FLOW SPECIFIED FOR MODES C AND E ARE EQUALED OR EXCEEDED AT THE REACTOR PRESSURE SPECIFIED.
 - THE FLOW IN MODE F IS LESS THAN OR EQUAL TO THE FLOW SPECIFIED WITH A REACTOR PRESSURE OF 14.7 PSIA.
 - THE FLOW IN MODE E IS EQUAL TO OR LESS THAN 7800 GPM WITH A VESSEL PRESSURE OF 14.7 PSIA AND A PUMP TON OF 564 FT.
 - THE FLOW IN MODES E AND F WITH A VESSEL PRESSURE OF 14.7 PSIA IS LESS THAN OR EQUAL TO THE MAXIMUM FLOW THAT THE PUMP HAS BEEN TESTED TO BY THE PUMP SUPPLIER.
 - THE FLOW IS LESS THAN OR EQUAL TO A VALUE THAT ASSURES ADEQUATE NPSH TO THE PUMP FOR MODES E AND F AT A VESSEL PRESSURE OF 14.7 PSIA AS DETERMINED FROM THE NPSH PERFORMANCE TEST DATA.
 - THE FLOW IN MODES E AND F WITH A VESSEL PRESSURE OF 14.7 PSIA IS LESS THAN OR EQUAL TO THE MAXIMUM ALLOWABLE PUMP FLOW RATE SPECIFIED IN THE PUMP INSTRUCTION MANUAL (IF ANY UPPER LIMIT IS SPECIFIED).
- THE ΔP GIVEN FOR THE VALVES IN MODES G AND H ARE THE MINIMUM POSSIBLE AND MAY BE INCREASED BY PIPING DESIGNER (THROTTLING) TO ACCOMMODATE PIPING ARRANGEMENT.
- THE BYPASS FLOW SPECIFIED IN MODE J IS APPROXIMATE AND WILL BE SPECIFIED BY THE PUMP VENDOR.
- PIPING SYSTEM DESIGN PRESSURE AND TEMPERATURE AND THE ESTIMATED LINE SIZES ARE FOR INFORMATION ONLY. ACTUAL DESIGN TEMPERATURE AND PRESSURE AND LINE SIZES AS DETERMINED BY PIPING DESIGNER SHALL MEET THE PROCESS DIAGRAM HYDRAULIC REQUIREMENTS.
- THE TEMPERATURE RANGE AT LOCATION (29) AND (30) IS EQUAL TO THE TEMPERATURE RANGE OF THE SERVICE WATER AVAILABLE TO THE HP CS DIESEL GENERATOR. THE TEMPERATURE AT LOCATION (31) CAN BE AS HIGH AS 30°F GREATER THAN THE MAXIMUM SERVICE WATER TEMPERATURE AND AS LOW AS THE LOWEST SERVICE WATER TEMPERATURE.
- THE DIESEL SERVICE WATER FLOW RATE IS A FUNCTION OF MAXIMUM SITE SERVICE WATER TEMPERATURE AS SPECIFIED IN THE DATA SHEETS OF HP CS SYSTEM.
- ΔP VALUES FOR EQUIPMENT WITHIN G.E. SCOPE AS NOTED.
- TABLE I INDICATES VALVE POSITION DURING VARIOUS OPERATING MODES.
- THE DIFFERENCE IN ELEVATION BETWEEN THE MINIMUM WATER LEVEL OF THE SUPPRESSION POOL AFTER LOCA FOLLOWING POOL PUMP DOWN AND THE CORE SPRAY SPARGER SHALL NOT EXCEED 60 FEET.
- IT IS RECOMMENDED THAT THIS ORIFICE BE INSTALLED IF IT IS REQUIRED TO LIMIT FLOW TO 6110 GPM IN MODE H WHEN VALVES F810 AND F811 ARE FULLY OPEN.
- IT IS RECOMMENDED THAT THIS ORIFICE BE INSTALLED IF IT IS REQUIRED TO LIMIT FLOW IN MODE G TO THE VALUE SPECIFIED OR TO THE MAXIMUM FLOW PERMITTED BY NOTE 7(D), 7(E), OR 7(F) WHEN VALVE F823 IS FULLY OPEN.
- FOR MODES A AND B ONE THIRD OF THE FLOW SPECIFIED SHALL BE DELIVERED TO THE REACTOR VESSEL WITH THE REACTOR VESSEL PRESSURE AT 1215 PSIA AND THE LOW FLOW BYPASS VALVE (E22-F812) OPEN.
- THE FLOW SPECIFIED FOR MODE CC MUST BE EQUALED OR EXCEEDED WITH SUCTION FROM THE CONDENSATE STORAGE SYSTEM AND WITH THE REACTOR PRESSURE EQUAL TO 1215 PSIA.

REFERENCES:

- A42-1010 PIPING AND INSTRUMENT SYMBOLS DRAWING
GENERAL ELECTRIC INFORMATION REFER TO
DESIGN SPECIFICATION DSP-E22-1-4549-00
PERRY PROCESS DIAGRAM

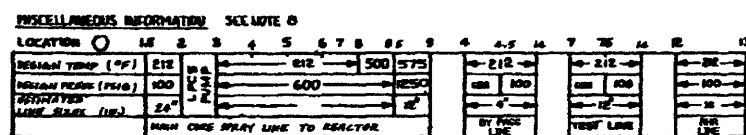
(Rev. 15 10/07)



PERRY NUCLEAR POWER PLANT

High Pressure Core Spray System
Process Diagram

Figure 6.3-1



HECK 5		JPM-9 ON STATION DUTY															
LOCATION		1	2	3	4	5	6	7	8	9	10		12	13	14		
FLOW - GPM	N/A	D													0		
PRESS - PSIA	M-7		X	X	X	X	X	X	X	X	X						
TEMP - °F	M-7 40							60						120	120	120	
WIND SPEED DIRECTION - FEET			-0"						AMS	AMS	AMS			4			

- P-PARTIALLY OPEN
C-FULLY CLOSED
O-FULLY OPEN



PERRY NUCLEAR POWER PLANT

Low Pressure Core Spray System Process Diagram

Figure 6.3-2

MODE A-1 (SEE NOTES 3 & 13)

POSITION	1	2	3	4	5	6	7 _{A,B}	8 _{A,B}	9	10	46	11	29
FLOW GPM	—	7100										7100	—
PRESSURE PSIA	29.7	14.7										53.7	38.7
TEMPERATURE °F	—	170	40									170	40
MAX. PRESSURE													
DROP FEET													

LOOP A & B LOOP C SEE NOTE 7 TYP ALL TABLES

MODE A-2 SEE NOTE 13

POSITION	1	2	3	4	5	6	7 _{A,B}	8 _{A,B}	9	10	46	11	29
FLOW GPM	—	8520										8520	—
PRESSURE PSIA	14.7											14.7	
TEMPERATURE °F	—	180	90									180	90
MAX. PRESSURE													
DROP FEET													

LOOP A & B LOOP C

MODE B-1 SEE NOTE 20

POSITION	1	2 _B	3 _B	4 _B	5 _B	6 _B	10 _B	19 _B	9 _B	10 _B	13 _B	53 _B	44 _B	43 _B	24 _B	1	60 _B	61 _B
FLOW GPM	—	7100													7100	—		
PRESSURE PSIA	29.7	14.7													29.7	14.7		
TEMPERATURE °F	—	185						185	139.4						139.4	—		
MAX. PRESSURE																		
DROP FEET																		

TDH = 275

HEAT REMOVAL CAPABILITY PER HX LOOP 158.4 X 10⁶ BTU/HR (1 HX OPERATING)

MODE B-2 (SEE NOTE 20)

POSITION	1	2	3 _B	4 _B	5 _B	6 _B	10 _B	19 _B	9 _B	10 _B	16 _B	67 _B	68 _B	69 _B	1	60 _B	61 _B
FLOW GPM	—	5250												5250	—		
PRESSURE PSIA	29.7	14.7												29.7	14.7		
TEMPERATURE °F	—	200						200	139.7					139.7	—		
MAX. PRESSURE																	
DROP FEET																	

TDH = 370

HEAT REMOVAL CAPABILITY PER HX LOOP 153 X 10⁶ BTU/HR (1 HX OPERATING)

NOTES:

1.

- PIPING BETWEEN POINTS WITH EMPTY DATA BLANKS (SEE ALSO TABLE 3) SHALL BE SIZED BY CUSTOMER OR AS BASED ON SPECIFIED OPERATING CONDITIONS. EMPTY DATA BLANKS CAN BE FILLED IN BASED ON ACTUAL ARRANGEMENT OR EQUIVALENT HYDRAULIC DATA SUBMITTED TO BURNS FOR REVIEW.
- INDICATES THE DATA IS NOT SIGNIFICANT.
- SHOWN AS TYPICAL FOR ONE LOOP. IF LOOPS ON SIDE 1 AND SIDE 11 ARE NOT SYMMETRICALLY ARRANGED, VALUES FOR BOTH SIDES SHALL BE SUBMITTED.
- ΔH VALUES FOR EQUIPMENT WITHIN GE SCOPE ARE AS NOTED.
- ELEVATIONS ARE NOT INCLUDED IN ΔP VALUES GIVEN. ELEVATIONS SHALL BE INCLUDED WHEN DETERMINING FINAL VALUES FOR THE EMPTY DATA BLANKS.
- INDICATES MAXIMUM (X) AND MINIMUM (Y) VALUES FOR THE MODE SPECIFIED.
- DASHED LINES INDICATE FLOW DOES NOT PASS THRU THESE POINTS. SOLID LINES INDICATE FLOW DOES PASS THRU THESE POINTS.
- THE NPSH AVAILABLE IN MODE A-2, AT A REFERENCE LOCATION 3 FEET ABOVE THE PUMP MOUNTING FLANGE MUST EQUAL OR EXCEED 6.2 FEET, ASSUMING SATURATION TEMPERATURE OF 202°F. THE NPSH AVAILABLE IN MODES B-1 & D-1 AT A REFERENCE LOCATION 3 FEET ABOVE THE PUMP MOUNTING FLANGE MUST EQUAL OR EXCEED 4 FEET ASSUMING SATURATION TEMPERATURES OF 212°F AND 350°F, RESPECTIVELY. THE NPSH AVAILABLE AT THE PUMP SUCTION NOZZLE MUST EQUAL OR EXCEED THIS VALUE PLUS THE DIFFERENCE IN ELEVATION BETWEEN THE REFERENCE LOCATION AND THE CENTER-LINE OF THE PUMP SUCTION NOZZLE.
- PIPING SYSTEM DESIGN PRESSURE AND TEMPERATURE AND THE ESTIMATED LINE SIZES ARE FOR INFORMATION ONLY. ACTUAL DESIGN PRESSURE AND TEMPERATURE AND LINE SIZES AS DETERMINED BY PIPING DESIGNER SHALL MEET THE PROCESS DATA HYDRAULIC REQUIREMENTS. REFER TO HARDWARE DWS, FOR NOZZLE SIZES ON GE SUPPLIED EQUIPMENT.
- FUEL POOL CONNECTIONS MUST PROVIDE ADEQUATE NPSH TO AVOID PUMP CAVITATION AND AT THE SAME TIME PROVIDE FOR GREATER THAN MINIMUM PUMP FLOW.
- TABLE 1 INDICATES VALVE POSITION DURING VARIOUS MODES OF OPERATION.
- DELETED
- TYPICAL VALUES FOR MAX. SUPPRESSION POOL TEMP SHOWN. FINAL TEMPERATURE DEPENDS ON INITIAL POOL WATER TEMPERATURE & POOL WATER VOLUME.
- WATER FLOWS ARE IN GPM.
- MAXIMUM SOH 700 FEET.

- SERVICE WATER CROSSIE SHALL BE SIZED TO FLOW 300 GPM AND ENOUGH HEAD TO FLOOD THE CONTAINMENT.
- THE WEIGHT OF WATER IN THE SHUTDOWN COOLING SUBSYSTEM PIPING, INCLUDING THE HEAT EXCHANGERS AND PUMPS SHALL NOT EXCEED 270,000 LBS AT 75°F TO PREVENT DILUTION OF STANDBY LIQUID CONTROL NEUTRON ABSORBER BELOW MINIMUM REQUIREMENTS.
- SEE REFERENCE 5 FOR SUPPLEMENTAL FLOWS ENTERING DOWNSTREAM OF E12-F05C DURING NORMAL PLANT OPERATIONS.
- FLOW SHOWN IS A MAXIMUM. ACTUAL FLOW WILL BE INDICATED LATER FOR EACH PROJECT.
- MAXIMUM SHELL SIDE FLOW RATE IS 7800 GPM.
- FLOW SHOWN AT POSITION 71 DOES NOT INCLUDE FLOW FROM FUEL POOL COOLING AND CLEANUP SYSTEM.
- SEE SYSTEM DATA SHEET FOR SUGGESTED VALVE SIZING.
- SUCTION TEMPERATURE AND PRESSURE ARE FOR LOOPS A&B ONLY. LOOP C CONDITIONS ARE 0 PSIG VESSEL PRESSURE 125 °F.
- THE HX INLET PRESSURE SHALL BE GREATER THAN 60 PSIA TO MINIMIZE THE POSSIBILITY OF FLOW INDUCE VIBRATION.
- FOR LOOPS A AND B, MODE 6 MAYBE ELIMINATED FROM DESIGN CONSIDERATION DURING SHUTDOWN COOLING IF MDV - FLOW IS ELECTRICALLY DISABLED.
- WHEN SHUTDOWN COOLING IS INITIATED IN THE A+B LOOP, ONLY ONE VALVE SHOULD BE DISABLED AT ANY GIVEN TIME. CUSTOMER ESTABLISHED DESIGN ALTERNATE TO GE STANDARDS.
- REFER TO DSP-E12-1-4549-00, TABLE 1, MODE J, NOTE 5 FOR OPERATING PARAMETERS IN THE SHUTDOWN COOLING HEADER LEAK-OFF LINE PIPING DURING NORMAL OPERATION.
- THE RHR STEAM CONDENSING MODE IS NO LONGER USED AT THE PERRY NUCLEAR POWER PLANT (REF: GENE-E122061-1).
- THE DIAPHRAGM ACTUATOR, BONNET, YOKER, VALVE STEM AND PLUG HAVE BEEN REMOVED FROM VALVES F050A & F050B AND REPLACED WITH A BLIND BONNET. VALVE FUNCTIONS AS STRAIGHT PIPE.
- FOR CORRESPONDING ESW OPERATING DATA REFER TO PAID 302-8793-00000. ESW OPERATING DATA CORRESPONDING TO RHR MODES B-2 AND D-2 ARE NOT PROVIDED SINCE THESE MODES ARE NOT LISTED FOR ESW. HOWEVER, ESW INLET POSITION OR FLOW RATES AND TEMPERATURES ARE THE SAME FOR MODES B-1 AND B-2 AND MODES D-1 AND D-2.

LEGEND:

- ΔH - HEAD LOSS
- ΔP - PRESSURE LOSS
- R1 PRESS - REACTION VESSEL PRESSURE
- SOH - SHUTOFF HEAD
- TBH - TOTAL DYNAMIC HEAD

REFERENCE DOCUMENTS

- RCIC SYSTEM PROCESS DIAGRAM E51-1020
- RCIC SYSTEM DESIGN SPEC DATA B39-4010
- LOW PRESSURE CORE SPRAY SYSTEM PD E21-1020
- NUCLEAR BOILER SYSTEM PROCESS DIAGRAM B21-1020
- REACTOR WATER CLEANUP SYSTEM PD B33-1030

SUPPORTING DOCUMENTS

- PIPING & INSTRUMENT SYMBOLS A42-1010

MODES

- A-1 LOW PRESSURE COOLANT INJECTION (LPCDI) RECIRCULATION LINE BREAK IN EITHER SIDE AND THREE PUMPS OPERATING, ONE STRAINER 50% PLUGGED.
- A-2 LOW PRESSURE COOLANT INJECTION (LPCDI) RECIRCULATION LINE BREAK IN EITHER SIDE AND THREE PUMPS OPERATING, ONE STRAINER 50% PLUGGED, VESSEL PRESSURE 0 PSIG.
- B-1 POST ACCIDENT SUPPRESSION POOL COOLING WITH ONE PUMP OPERATION AND STRAINER 50% PLUGGED, PEAK SUPPRESSION POOL TEMPERATURE
- B-2 POST ACCIDENT CONTAINMENT SPRAY WITH HEAT REJECTION WITH ONE PUMP OPERATION AND STRAINER 50% PLUGGED.
- D-1 INITIATION OF SHUTDOWN COOLING AFTER BLOWDOWN TO MAIN CONDENSER AT 4 HOURS.
- D-2 CONTINUATION OF SHUTDOWN COOLING AT 20 HOURS.
- E-1 CONTINUATION OF SHUTDOWN COOLING AT 20 HOURS AND FUNCTIONAL PUMP TEST AFTER SHUTDOWN.
- E-2 CONTINUATION OF SHUTDOWN COOLING WITH RETURN TO UPPER CONTAINMENT POOL AT GREATER THAN 20 HOURS AND FUNCTIONAL PUMP TEST AFTER SHUTDOWN.
- F RHR SYSTEM TEST DURING PLANT OPERATION.
- G MINIMUM FLOW BYPASS MODE, 2 SUCTION SOURCES.
- S SYSTEM ON STANDBY DUTY.

(Rev. 13 12/03)



PERRY NUCLEAR POWER PLANT


Residual Heat Removal System
Process Diagram

Figure 6.3-3 (Sheet 1 of 3)

MODE D-1 RX PRESSURE 100 PSIG										SEE NOTE 20										SEE NOTE 20									
POSITION	29	25	26	5 _{AB}	6 _{AB}	18 _{AB}	19 _{AB}	16 _{AB}	50 _B	59 _A	27 _A	28 _A	14	30	31	66	33	29	27 _B	28 _B	29	60 _{AB}	61 _A						
FLOW GPM	—	14200	14200	7100	7100	< 7100	< 7100	7100	7100	7100	6200	7100	6200	900	—	—	900	—	125	7100	7100	—	—	—					
PRESSURE PSIA	125	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	125	—	—	125	—	—					
TEMPERATURE °F	—	344	—	—	—	344	304.1	—	—	—	—	—	—	—	—	—	—	—	304.1	—	304.1	304.1	—	—					
MAX PRESSURE	15	—	—	—	—	101	275	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—					
DROP FEET	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—					

HEAT REMOVAL CAPABILITY PER RX LOOP 1351 x 10⁶ BTU/HR (2 RX'S OPERATING)

LOOP B LOOP A WITH LOOP A WITHOUT SEE REF. 1

MODE D-2		REF PRESSURE 0 PSIG				SEE NOTE 20														SEE NOTE 24	
POSITION		29	25	28	5 AB	8 AB	18 AB	19 AB	16 AB	50 AB	27 AB	28 AB	29					60 AB	61 AB		
FLOW GPM	—	—	14200	14200	7100	—	—	—	—	—	—	7100	—					—	—		
PRESSURE PSIA	14.7	—	—	—	—	—	—	—	—	—	—	—	14.7					—	—		
TEMPERATURE °F	—	125	—	—	—	—	125	102	—	—	—	102	—					—	—		
MAX PRESSURE	—	—	—	—	TOM= 275														—	—	
DROP FEET	—	—	—	—															—	—	
HEAT REMOVAL CAPABILITY PER HEX LOOP <u>80.5 x 10⁶</u> BTU/HR (2 HEX'S OPERATING)																					

MODE E-1		RX PRESSURE @ PS16		SEE NOTE 20																SEE NOTE 20	
POSITION	29	25	26	56	88.1	4	5	6	7 AB	18 AB	19 AB	20 AB	9	10	16 AB	20 AB	27 AB	28 AB	67 AB	11	29
FLOW GPM	1420	7100	7100	7100	7100	7100											7100	7100	7100	7900	
PRESSURE PSIA	16.7																				16.7
TEMPERATURE °F	104.1									104.1	90.5									90.5	
MAX PRESSURE																					
LOOP FEET																					


HEAT REMOVAL CAPABILITY PER HK LOOP 46.3 x 10⁶ BTU/Hr (2 HK'S OPERATING)

LOOP C TEST

LOOP A & B TEST

LOOP A & B


MODE C-2		IN PRESSURE 0 PSIG		SEE NOTE 20B.21																SEE NOTE 29	
POSITION		29	25	26	56	54.1	4	5	6	7 _{AB}	18 _{AB}	15 _{AB}	8 _{AB}	9	10	11	67 _{AB}	70 _{AB}	71	20	
FLOW GPM		14200	14200	14200	7100	7100	7100											7100	14200		
PRESSURE PSIA		14.7																			
TEMPERATURE °F			510.4								510.1	510.5						510.5		54.7	
MAX PRESSURE DROP FEET																					
HEAT REMOVAL CAPABILITY PER HH LOOP = 40.9 X 10 ⁶ BTU/HR (2 HH'S OPERATING)										LOOP C TEST				LOOP A & B TEST				LOOP B		LOOP A	

MODE F		SEE NOTE 3																									
POSITION		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
FLOW GPM		---	7100	←																					7100	---	
PRESSURE PSIA		14.7																								14.7	
TEMPERATURE °F		---	120	40																					120	40	---
MAX PRESSURE																											
DROP FEET		1																								1	

TDB= 375

LOOP A & B TEST

LOOP C TEST

MODE C	RX PRESSURE	110 PSIG	SEE NOTE 23 AND NOTE 25																				
POSITION		29	25	26	55	4	5	6	6.1	43	24	1	2	3	4	5	6	6.1	43	24	1		
FLOW GPH		>1250									>1250		—	1250		SEE NOTE 19					1250		14.7
PRESSURE PSIA		125									14.7		14.7									14.7	
TEMPERATURE °F		—	344								344		—	120	40						120	40	—
MAX PRESSURE									TBM= 620														
DROP FEET																							

LOOP A & B

SEE NOTE 15

TBM= 620

SEE NOTE 16

[illegible]

DESIGN PRESSURE AND TEMPERATURE TABLE															SEE NOTE 9																																	
POSITION	3-1	3-2	4	5	6	7	8	9	10	16	46	11	7	7-1	18	19	8	3-1	3-2	5	6	9	10	16	46	11	23	54	28	44B	SAB	16	50	27	28	67	70	71	14	30	31	51	66	57	70	60	89	
DESIGN PRESSURE IN PSIG	100	200									500	SEE 4						500	100								500	SEE	SEE		200			500	125		500	SEE REF 1	500	125								
DESIGN TEMP IN	212	358									358	480	REF 4					358	212								212	480	REF 4	REF 2	388			480	REF 4		358	212		358		358	212					
ESTIMATED LINE SIZE											12"							18"									12"																					
	LPG/LINE LOOP A & B (VIA INR. PK BYPASS)												HEAT EXCHANGER LINE					LPG/LINE LOOP C (DIRECT TO REACTOR)					SHUTDOWN SUCTION					SHUTDOWN RETURN LINES					HEAD SPRAY LINE					CONTAINMENT SPRAY										

DESIGN PRESSURE AND TEMPERATURE TABLE														SEE NOTE 9																
POSITION		36	38	37	18	19	20	38	38	40LT	41	42	40	40.2	44	13	53	24	56	56.1	4C	49	40.1	34C	6	6.1	43	6	6.1	43
DESIGN PRESSURE IN PSIG	1250	B	D89			500				125			500	125		500	125		200	100L		500	125		580	125		500	125	
DESIGN TEMP IN °F	575	A#B	308			356				140			358	212		358	212		358	212			212		358	212			212	
ESTIMATED LINE SIZE		10"	SEE NOTE 22	10"		18"			4"				4"			18"			18"			18"			LATER			LATER		
	SEE NOTE 27 DMSI-21-GEN GH.1							SEE NOTE 27 DMSI-21-GEN GH.1					SEE NOTE 27 DMSI-21-GEN GH.1			SYSTEM TEST LINE(S) LOOP A & B)			SYSTEM TEST LINE(S) LOOP C)			SYSTEM TEST LINE(S) LOOP C)			MINIMUM FLOW BYPASS (LOOP A & B)			MINIMUM FLOW BYPASS (LOOP C)		

TABLE 2 LIMITING LINE LOSSES NUMBERS REFER TO POSITIONS ① ②	
MODE A-1	6-7-8-9-10-31 PUMP DISCHARGE LINE TO R/W FLOODING PENETRATION
MODE A-2	1-2-5 SUCTION LINE SUPPRESSION POOL TO PUMP
MODE B-1	1-2-5 SUCTION LINE SUPPRESSION POOL TO PUMP 17-18-19-20HX PIPING-68-61 SERVICE WATER
MODE B-2	67-68-69-1 CONTAINMENT SPRAY FROM LPCI LINE
MODE D-1 & D-2	14-51-68 VESSEL HEAD SPRAY LINE
	16-25-4 SHUTDOWN SUCTION LINE R/W TO PUMP
MODE E-1	16-27 SHUTDOWN RETURN LINE LPCI BRANCH TO FEEDWATER SYS. 56-4C C PUMP TEST
MODE E-2	67-70-71 SHUTDOWN RETURN LINE TO UPPER CONTAINMENT POOL
MODE F	12-43-24 & 49-49.1-24 TEST LINES TO SUPPRESSION POOL
MODE G	6-43 PUMP MINIMUM FLOW BYPASS LINE

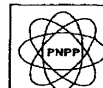
O VALVE OPEN
T VALVE THROTTLED
T-C VALVE THROTTLED OR CLOSED
O-T VALVE OPEN OR THROTTLED
P STRAINER PLUGGED
BLANK SPACE INDICATES VALVE IS CLOSED

NOTE: SYSTEM DATA PROVIDED IN THE ABOVE TABLE REFLECTS NOMINAL DESIGN VALUES FOR SYSTEM MODES A-1, A-2, B-1, AND F, AND DOES NOT ACCOUNT FOR THE FOLLOWING:

- - LPCI FLOW PATH IS SPLIT BETWEEN IE12F003A/B AND IE12F040A/B
- ** - IE12F024A/B THROTTLING IN SP COOLING AND TESTING FLOWPATHS

	T003	T004	T005	T007	T008	T009	T010	T011	T012	T013	T014	T015	T016	T017	T018	T019	T020	T021	T022	T023	T024	T025	T026	T027	T028	T029	T030	T031	T032	T033	T034	T035	T036	T037	T038	T039	T040	T041	T042	T043	T044	T045	T046	T047	T048	T049	T050	T051	T052	T053	T054	T055	T056	T057	T058	T059	T060	T061	T062	T063	T064	T065	T066	T067	T068	T069	T070	T071	T072	T073	T074	T075	T076	T077	T078	T079	T080	T081	T082	T083	T084	T085	T086	T087	T088	T089	T090	T091	T092	T093	T094	T095	T096	T097	T098	T099	T100	T101	T102	T103	T104	T105	T106	T107	T108	T109	T110	T111	T112	T113	T114	T115	T116	T117	T118	T119	T120	T121	T122	T123	T124	T125	T126	T127	T128	T129	T130	T131	T132	T133	T134	T135	T136	T137	T138	T139	T140	T141	T142	T143	T144	T145	T146	T147	T148	T149	T150	T151	T152	T153	T154	T155	T156	T157	T158	T159	T160	T161	T162	T163	T164	T165	T166	T167	T168	T169	T170	T171	T172	T173	T174	T175	T176	T177	T178	T179	T180	T181	T182	T183	T184	T185	T186	T187	T188	T189	T190	T191	T192	T193	T194	T195	T196	T197	T198	T199	T200	T201	T202	T203	T204	T205	T206	T207	T208	T209	T210	T211	T212	T213	T214	T215	T216	T217	T218	T219	T220	T221	T222	T223	T224	T225	T226	T227	T228	T229	T230	T231	T232	T233	T234	T235	T236	T237	T238	T239	T240	T241	T242	T243	T244	T245	T246	T247	T248	T249	T250	T251	T252	T253	T254	T255	T256	T257	T258	T259	T260	T261	T262	T263	T264	T265	T266	T267	T268	T269	T270	T271	T272	T273	T274	T275	T276	T277	T278	T279	T280	T281	T282	T283	T284	T285	T286	T287	T288	T289	T290	T291	T292	T293	T294	T295	T296	T297	T298	T299	T300	T301	T302	T303	T304	T305	T306	T307	T308	T309	T310	T311	T312	T313	T314	T315	T316	T317	T318	T319	T320	T321	T322	T323	T324	T325	T326	T327	T328	T329	T330	T331	T332	T333	T334	T335	T336	T337	T338	T339	T340	T341	T342	T343	T344	T345	T346	T347	T348	T349	T350	T351	T352	T353	T354	T355	T356	T357	T358	T359	T360	T361	T362	T363	T364	T365	T366	T367	T368	T369	T370	T371	T372	T373	T374	T375	T376	T377	T378	T379	T380	T381	T382	T383	T384	T385	T386	T387	T388	T389	T390	T391	T392	T393	T394	T395	T396	T397	T398	T399	T400	T401	T402	T403	T404	T405	T406	T407	T408	T409	T410	T411	T412	T413	T414	T415	T416	T417	T418	T419	T420	T421	T422	T423	T424	T425	T426	T427	T428	T429	T430	T431	T432	T433	T434	T435	T436	T437	T438	T439	T440	T441	T442	T443	T444	T445	T446	T447	T448	T449	T450	T451	T452	T453	T454	T455	T456	T457	T458	T459	T460	T461	T462	T463	T464	T465	T466	T467	T468	T469	T470	T471	T472	T473	T474	T475	T476	T477	T478	T479	T480	T481	T482	T483	T484	T485	T486	T487	T488	T489	T490	T491	T492	T493	T494	T495	T496	T497	T498	T499	T500	T501	T502	T503	T504	T505	T506	T507	T508	T509	T510	T511	T512	T513	T514	T515	T516	T517	T518	T519	T520	T521	T522	T523	T524	T525	T526	T527	T528	T529	T530	T531	T532	T533	T534	T535	T536	T537	T538	T539	T540	T541	T542	T543	T544	T545	T546	T547	T548	T549	T550	T551	T552	T553	T554	T555	T556	T557	T558	T559	T560	T561	T562	T563	T564	T565	T566	T567	T568	T569	T570	T571	T572	T573	T574	T575	T576	T577	T578	T579	T580	T581	T582	T583	T584	T585	T586	T587	T588	T589	T590	T591	T592	T593	T594	T595	T596	T597	T598	T599	T600	T601	T602	T603	T604	T605	T606	T607	T608	T609	T610	T611	T612	T613	T614	T615	T616	T617	T618	T619	T620	T621	T622	T623	T624	T625	T626	T627	T628	T629	T630	T631	T632	T633	T634	T635	T636	T637	T638	T639	T640	T641	T642	T643	T644	T645	T646	T647	T648	T649	T650	T651	T652	T653	T654	T655	T656	T657	T658	T659	T660	T661	T662	T663	T664	T665	T666	T667	T668	T669	T670	T671	T672	T673	T674	T675	T676	T677	T678	T679	T680	T681	T682	T683	T684	T685	T686	T687	T688	T689	T690	T691	T692	T693	T694	T695	T696	T697	T698	T699	T700	T701	T702	T703	T704	T705	T706	T707	T708	T709	T710	T711	T712	T713	T714	T715	T716	T717	T718	T719	T720	T721	T722	T723	T724	T725	T726	T727	T728	T729	T730	T731	T732	T733	T734	T735	T736	T737	T738	T739	T740	T741	T742	T743	T744	T745	T746	T747	T748	T749	T750	T751	T752	T753	T754	T755	T756	T757	T758	T759	T760	T761	T762	T763	T764	T765	T766	T767	T768	T769	T770	T771	T772	T773	T774	T775	T776	T777	T778	T779	T780	T781	T782	T783	T784	T785	T786	T787	T788	T789	T790	T791	T792	T793	T794	T795	T796	T797	T798	T799	T800	T801	T802	T803	T804	T805	T806	T807	T808	T809	T810	T811	T812	T813	T814	T815	T816	T817	T818	T819	T820	T821	T822	T823	T824	T825	T826	T827	T828	T829	T830	T831	T832	T833	T834	T835	T836	T837	T838	T839	T840	T841	T842	T843	T844	T845	T846	T847	T848	T849	T850	T851	T852	T853	T854	T855	T856	T857	T858	T859	T860	T861	T862	T863	T864	T865	T866	T867	T868	T869	T870	T871	T872	T873	T874	T875	T876	T877	T878	T879	T880	T881	T882	T883	T884	T885	T886	T887	T888	T889	T890	T891	T892	T893	T894	T895	T896	T897	T898	T899	T900	T901	T902	T903	T904	T905	T906	T907	T908	T909	T910	T911	T912	T913	T914	T915	T916	T917	T918	T919	T920	T921	T922	T923	T924	T925	T926	T927	T928	T929	T930	T931	T932	T933	T934	T935	T936	T937	T938	T939	T940	T941	T942	T943	T944	T945	T946	T947	T948	T949	T950	T951	T952	T953	T954	T955	T956	T957	T958	T959	T960	T961	T962	T963	T964	T965	T966	T967	T968	T969	T970	T971	T972	T973	T974	T975	T976	T977	T978	T979	T980	T981	T982	T983	T984	T985	T986	T987	T988	T989	T990	T991	T992	T993	T994	T995	T996	T997	T998	T999	T1000	T1001	T1002	T1003	T1004	T1005	T1006	T1007	T1008	T1009	T1010	T1011	T1012	T1013	T1014	T1015	T1016	T1017	T1018	T1019	T1020	T1021	T1022	T1023	T1024	T1025	T1026	T1027	T1028	T1029
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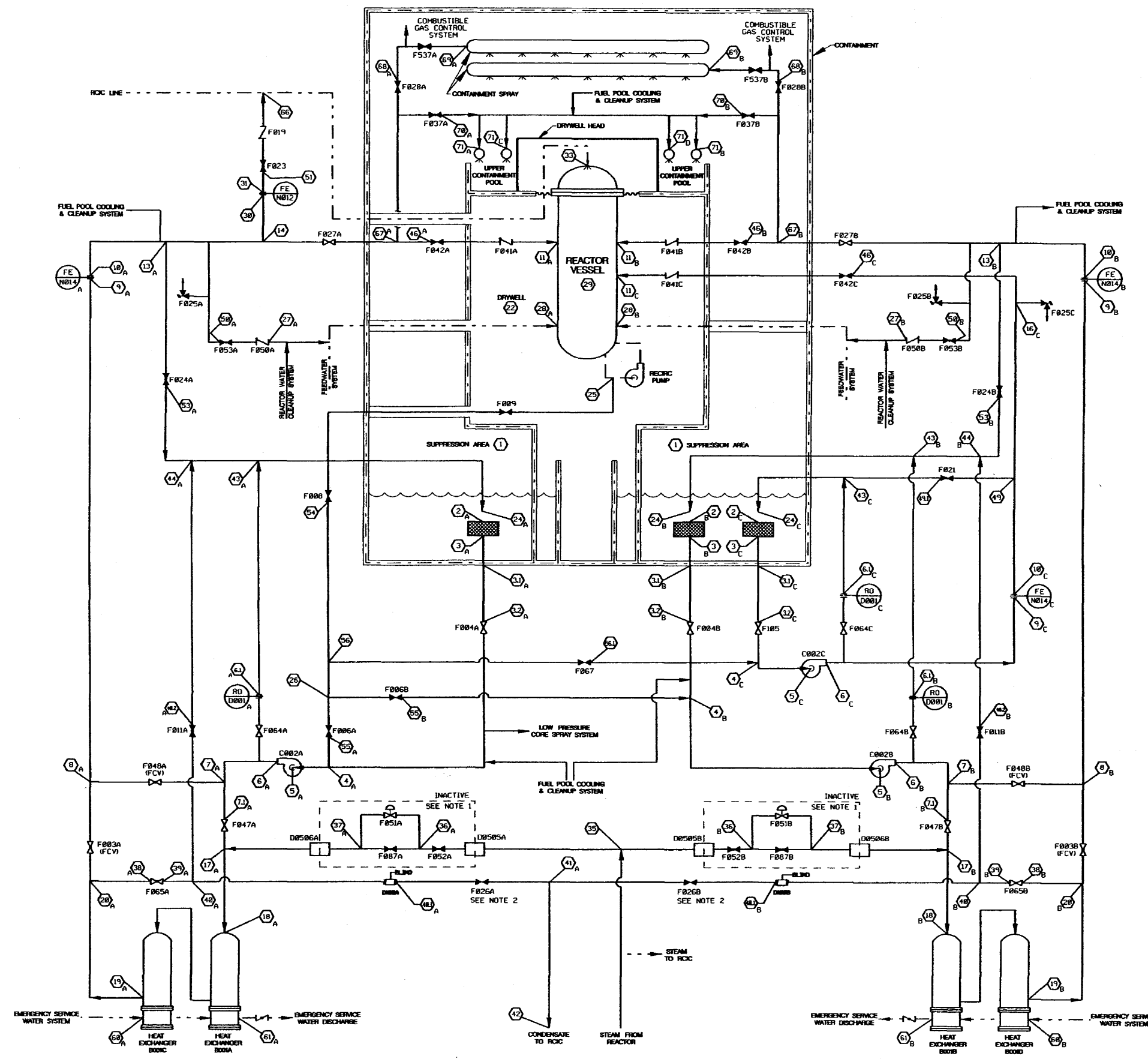
(Rev. 13 12/03)



○ PERRY NUCLEAR POWER PLANT

Residual Heat Removal System Process Diagram

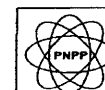
Figure 6.3-3 (Sheet 2 of 3)



NOTES:

1. THE PIPING & COMPONENTS BETWEEN BLINDS D0505A/B & D0506A/B ARE INACTIVE & ARE REQUIRED ONLY FOR THE SEISMIC & STRUCTURAL INTEGRITY OF THE PIPING SYSTEM.
2. VALVES F026A/B HAVE BEEN DETERMINED AT THE MCC COMPARTMENT. THEY ARE REQUIRED TO MAINTAIN THE SEISMIC & STRUCTURAL INTEGRITY OF THE PIPING SYSTEM & TO MAINTAIN A PRESSURE BOUNDARY.

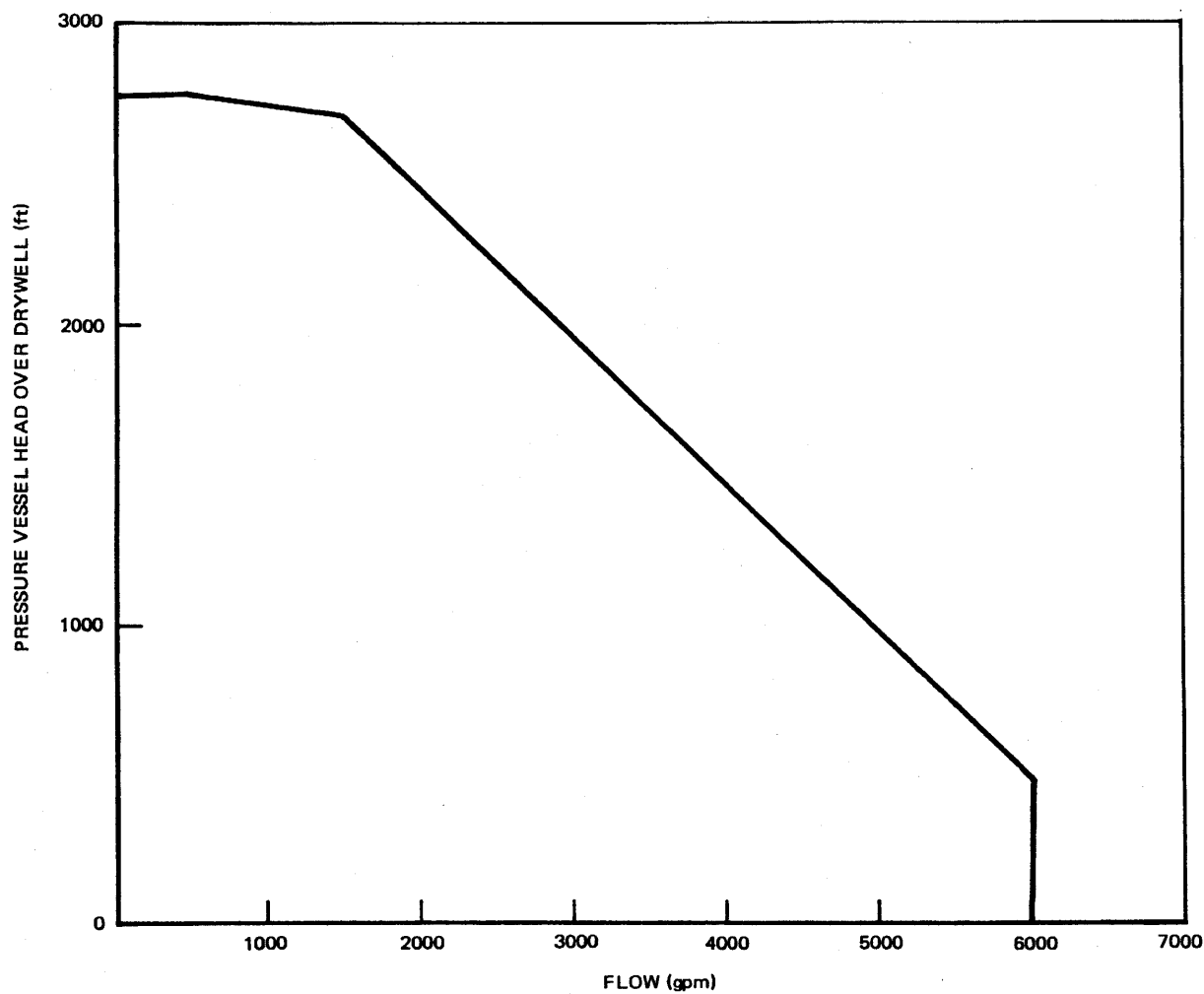
(Rev. 13 12/03)



PERRY NUCLEAR POWER PLANT

Residual Heat Removal System
Process Diagram

Figure 6.3-3 (Sheet 3 of 3)



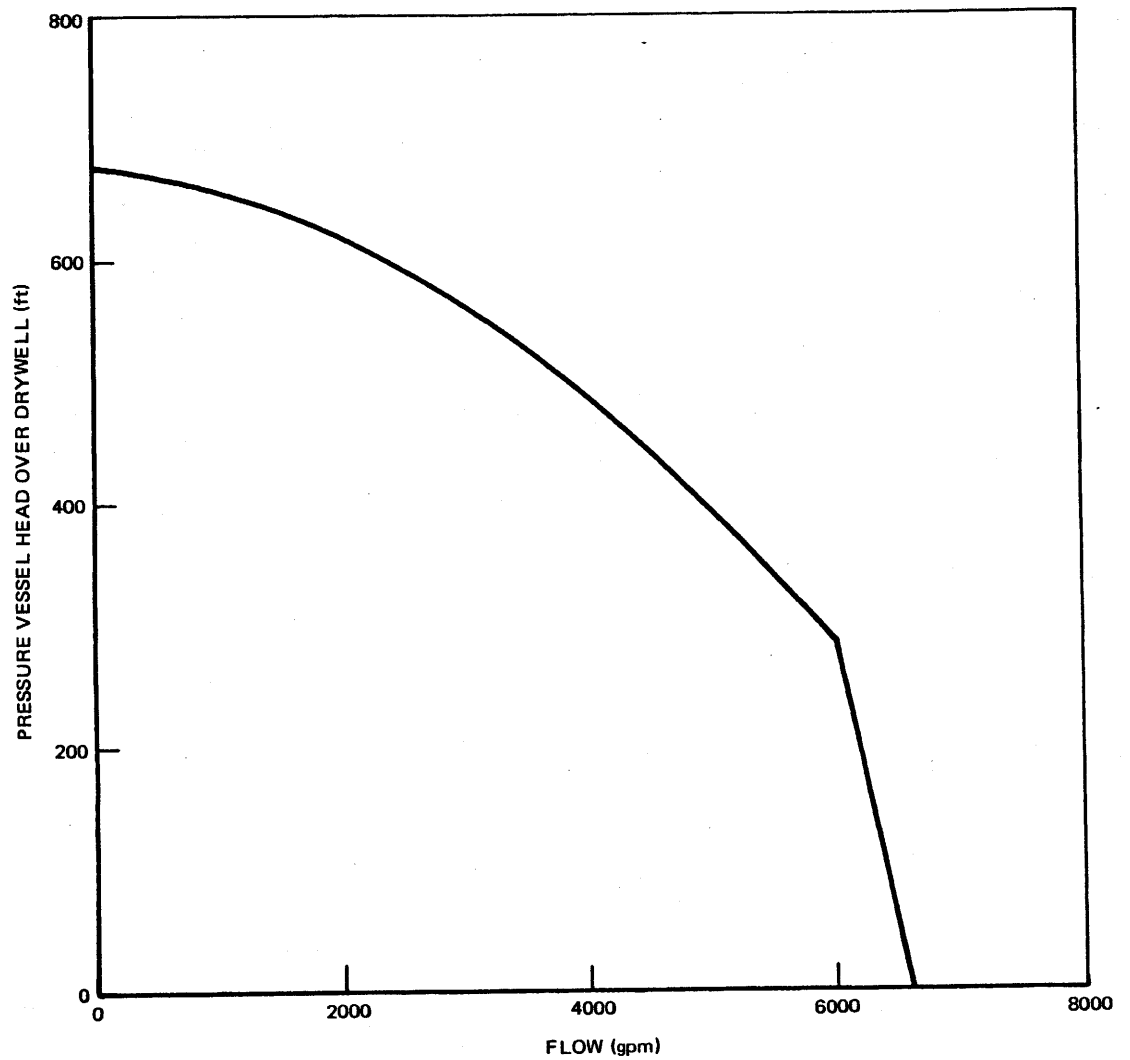
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Head Versus High Pressure Core
Spray Flow Used in LOCA Analysis

Figure 6.3-4



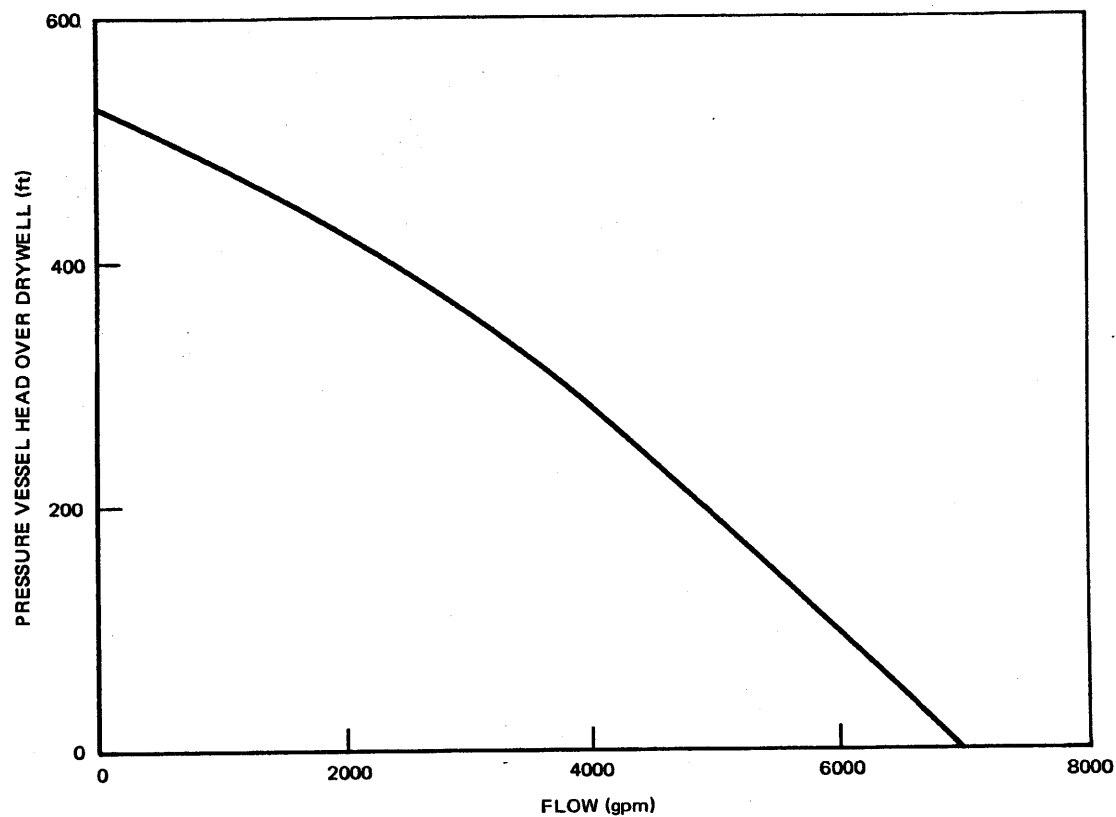
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Head Versus Low Pressure Core Spray
Flow Used in LOCA Analysis

Figure 6.3-5



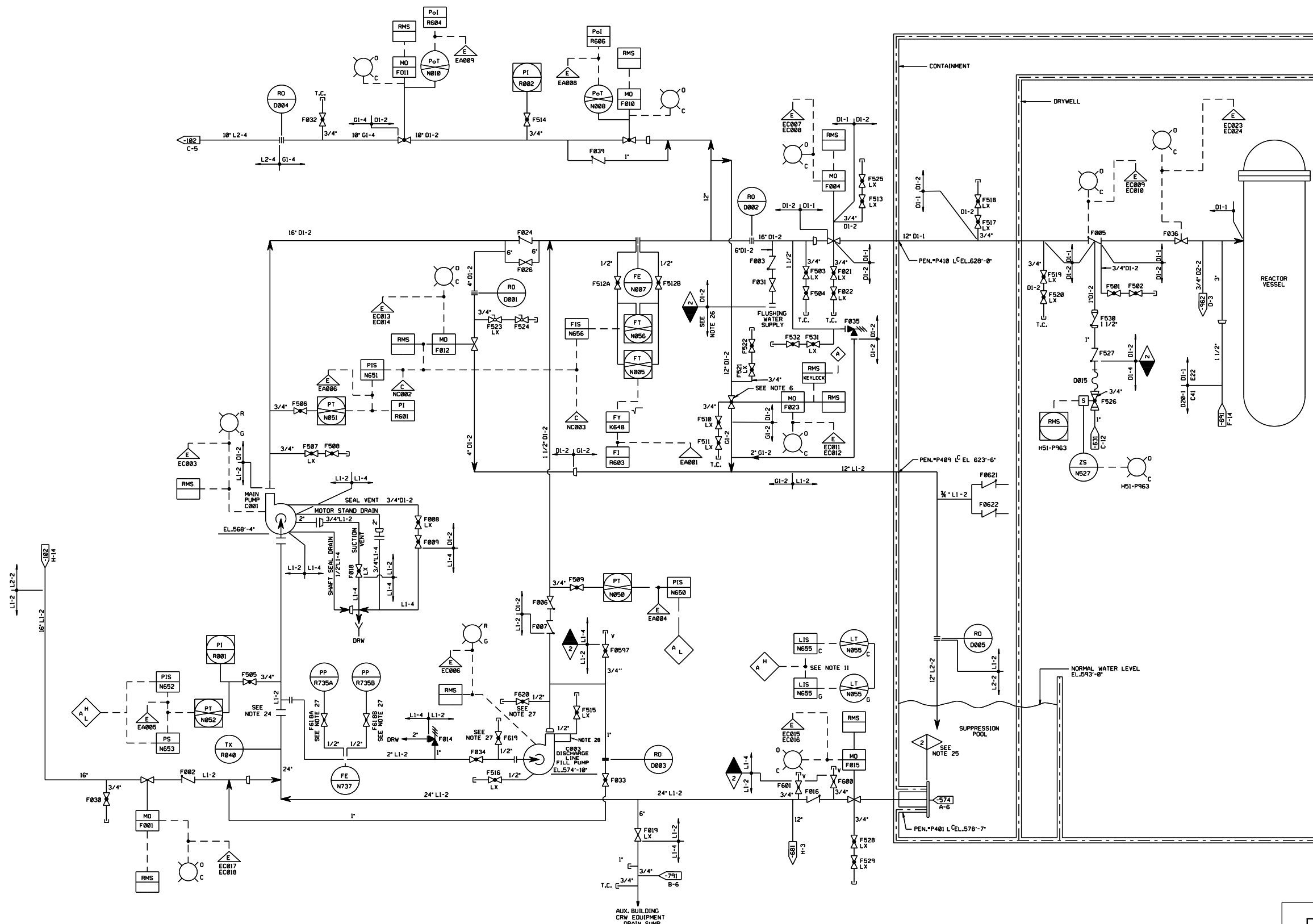
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Head Versus Low Pressure Coolant
Injection Flow Used in LOCA Analysis
for 1 Pump Only

Figure 6.3-6



- NOTES:
- EQUIPMENT AND INSTRUMENTS ARE PREFIXED BY SYSTEM NUMBER E22, UNLESS NOTED OTHERWISE.
 - DELETED
 - CHEMICAL CLEANING CONNECTIONS, VALVES, ETC., IF REQUIRED, ARE TO BE PROVIDED AS NECESSARY.
 - INSTRUMENT LINE DESIGN AND VALVING SHALL BE IN ACCORDANCE WITH INSTRUMENTATION SPECIFICATION A62-407B.
 - DELETED
 - VALVE F023 SHALL BE INSTALLED WITH THE PACKING GLAND ON THE UPSTREAM SIDE OF THE VALVE DISCHARGE.
 - DELETED
 - FOR ADDITIONAL CONTROL ROOM LIGHTS, SYSTEM ALARMS AND REMOTE MANUAL SWITCHES, SEE HPCS SYSTEM FCD AND ELECTRICAL ONE LINE DIAGRAM.
 - PROVISION FOR ISOLATION SHALL BE IN ACCORDANCE WITH CURRENT LICENSING REQUIREMENTS.
 - E22 LEVEL INSTRUMENTATION (LT-N054G, LIS-N054C, LIS-N054D) FOR THE CONDENSATE STORAGE TANK IS SHOWN ON DWG. 302-0102-00000.
 - E22 LEVEL INSTRUMENTATION (LT-N055C, LT-N055G, LIS-N055C, LIS-N055G) IMPULSE LINES FOR THE SUPPRESSION POOL ARE SHOWN ON DWG. 302-0608-00000, AREA J-5.
 - DELETED
 - DELETED
 - DELETED
 - EXCEPT AT POINTS CONNECTING WITH G.E. SUPPLIED EQUIPMENT OR PIPING, THE PIPING DESIGNER SHALL SIZE PIPES IN CONFORMANCE WITH THE SYSTEM DESIGN SPECIFICATION AND PROCESS DIAGRAM.
 - FLUSHING CONNECTIONS SHALL BE PROVIDED IN ACCORDANCE WITH A62-414B. TEMPORARY STRAINER SCREENS SHALL BE PROVIDED ON THE SUCTION SIDE OF ALL PUMPS IN ACCORDANCE WITH A62-414B.
 - DELETED
 - DELETED
 - DELETED
 - ALL MOTOR OPERATED VALVES ARE AC OPERATED, UNLESS OTHERWISE NOTED.
 - THIS SYSTEM DIAGRAM WAS ADAPTED FROM G.E. DRAWING 795E873.
 - ALL LIGHTS, ALARMS, SWITCHES AND INDICATORS ARE LOCATED ON H13-P081, UNLESS OTHERWISE NOTED.
 - ALL INSTRUMENT LOCATIONS ARE IDENTIFIED ON THE INSTRUMENT INDEX.
 - TEMPORARY STRAINER D003, USED FOR START-UP ONLY, IS REMOVED FOR PLANT OPERATION.
 - STRAINER IS SAFETY RELATED NON-ASME INSTALLED VIA DCP-960042.
 - "FAST FIRE WATER" HOSE CONNECTION ASSEMBLY (NORMAL PLANT CONFIGURATION) IS NON-SAFETY, NON-ASME, INSTALLED VIA DCP-930017. "FAST FIRE WATER" HOSE CONNECTION ASSEMBLY TO BE REPLACED WITH ALTERNATE BORON INJECTION CONNECTION ASSEMBLY, WHEN REQUIRED (DCP-940073), (REFERENCE DRAWING 302-0692-00000, NOTE 9) SEE SDA-0011.
 - VALVES ARE NOT IN ACCORDANCE WITH LINE SPEC LI-2. SEE SDA-0011.
 - VENDOR SUPPLIED PIPING BELOW VALVE F515 SERVES BOTH AS A PUMP CASING VENT AND TO PROVIDE COOLING WATER TO THE PUMP SEAL.

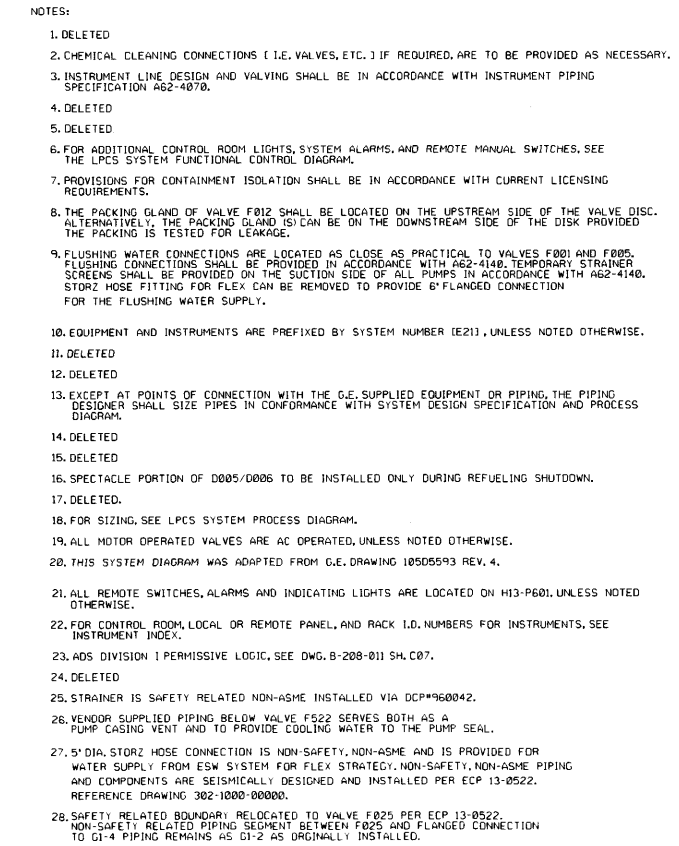
REFERENCE DRAWINGS

302-0601-00000	SUPPRESSION POOL CLEAN-UP G42
302-0102-00000	CONDENSATE TRANSFER P11
302-0962-00000	LEAK DETECTION SYSTEM E31
302-0964-00000	LEAK DETECTION SYSTEM E31
C91-4030	INPUT/OUTPUT LIST
E22-1020	HIGH PRESSURE CORE SPRAY PROCESS DIAGRAM
302-0791-00000	EMERGENCY SERVICE WATER SYSTEM
302-0691-00000	STANDBY LIQUID CONTROL C41
302-0631-00000	REACTOR CORE ISOLATION COOLING E51
302-0574-00000	EMERGENCY CORE COOLING SYSTEM SUCTION STRAINER T21

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PERRY NUCLEAR POWER PLANT
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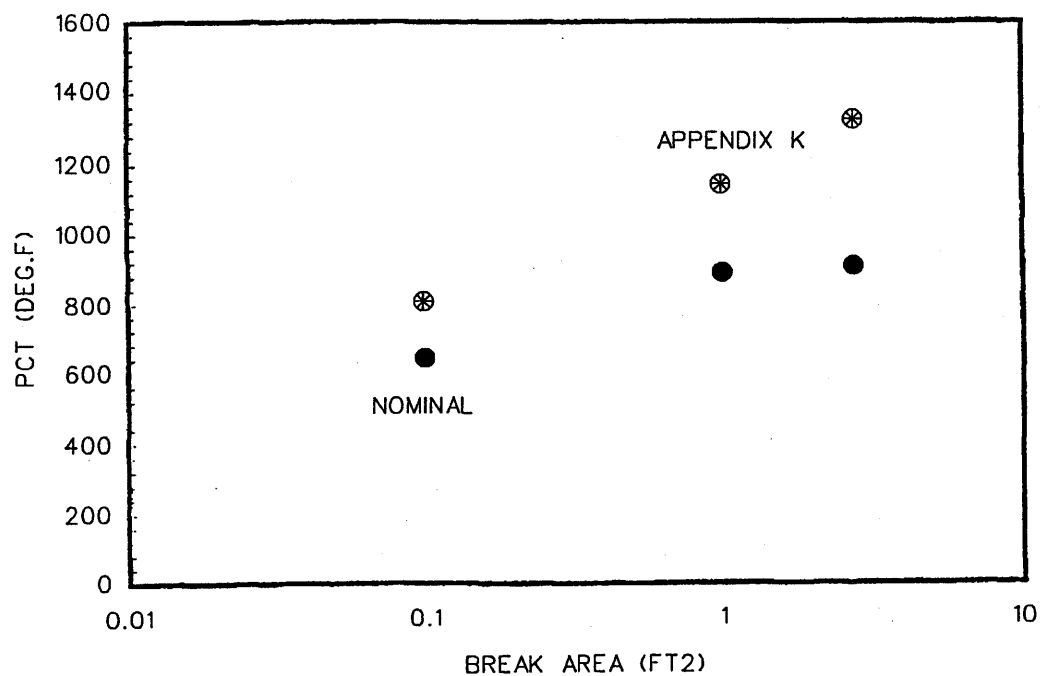
HIGH PRESSURE
CORE SPRAY SYSTEM
FIGURE 6.3-7
(DWG. D-302-0701-00000)



302-0641-00000 RHR SYSTEM E12
302-0642-00000 RHR SYSTEM E12
C91-4030 PROCESS COMPUTER SYSTEM INPUT/OUTPUT LIST
302-0962-00000 LEAK DETECTION SYSTEM E31
302-0964-00000 LEAK DETECTION SYSTEM E31
I21-1030 NUCLEAR BOILER SYSTEM FCD
A62-4230 EMERGENCY EQUIPMENT COOLING WATER
E21-1020 LOW PRESSURE CORE SPRAY PROCESS DIAGRAM
302-0971-00000 FEEDWATER LEAKAGE CONTROL SYSTEM, N2?
302-0631-00000 REACTOR CORE ISOLATION COOLING SYSTEM, E51
302-0574-00000 EMERGENCY CORE COOLING SYSTEM
SUCTION STRAINER T21

PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

LOW PRESSURE
CORE SPRAY SYSTEM
FIGURE 6.3-8
(DWG. D-302-0705-00000)



NOTE: LIMITING FUEL TYPE IS GE11 FOR CYCLE 8.

LEGEND:

- REF. 18 UPRATE (NOMINAL)
- ⊗ REF. 18 UPRATE (APPENDIX K)

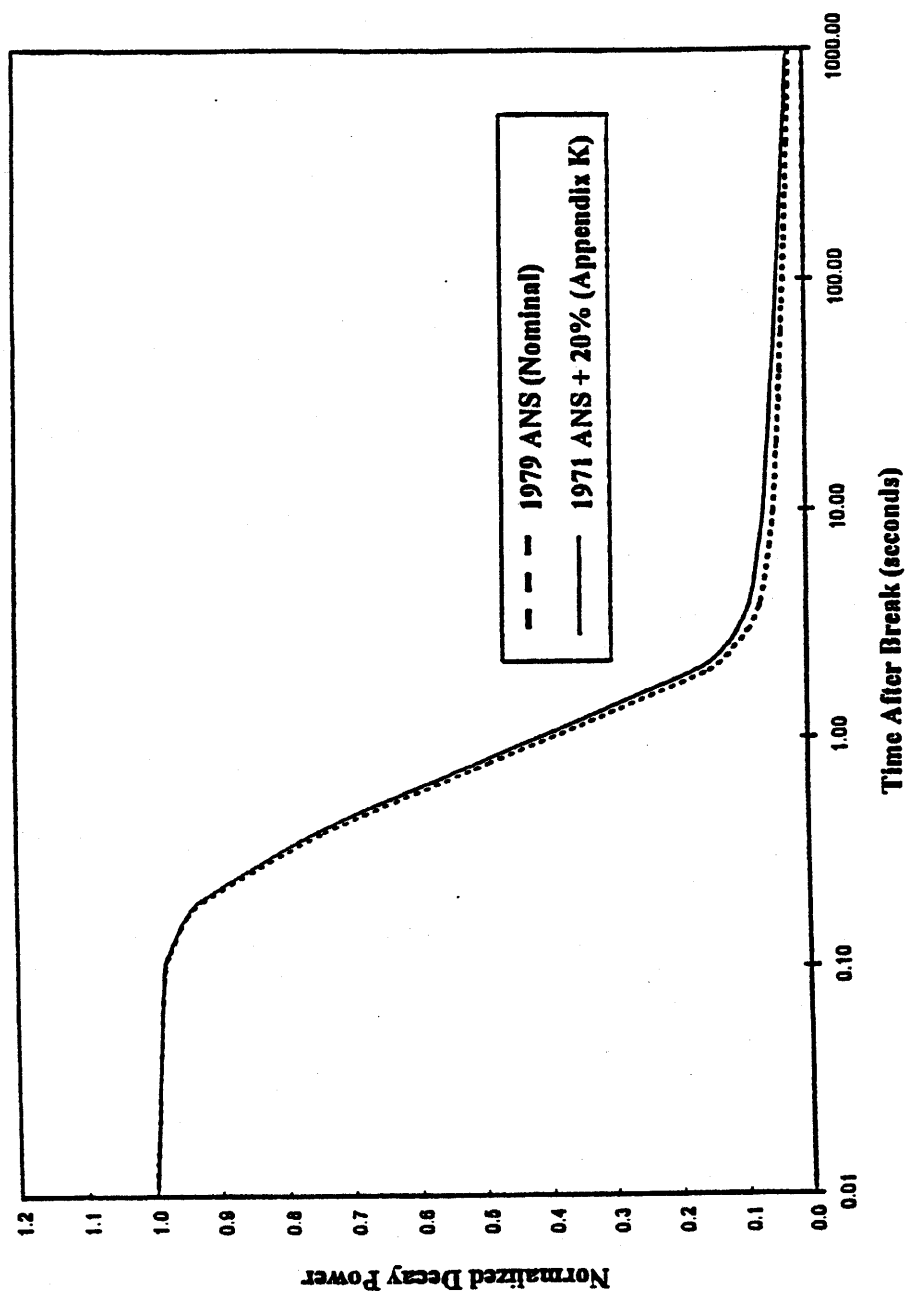
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Limiting Peak Cladding
Temperature Versus Break Area

Figure 6.3-9



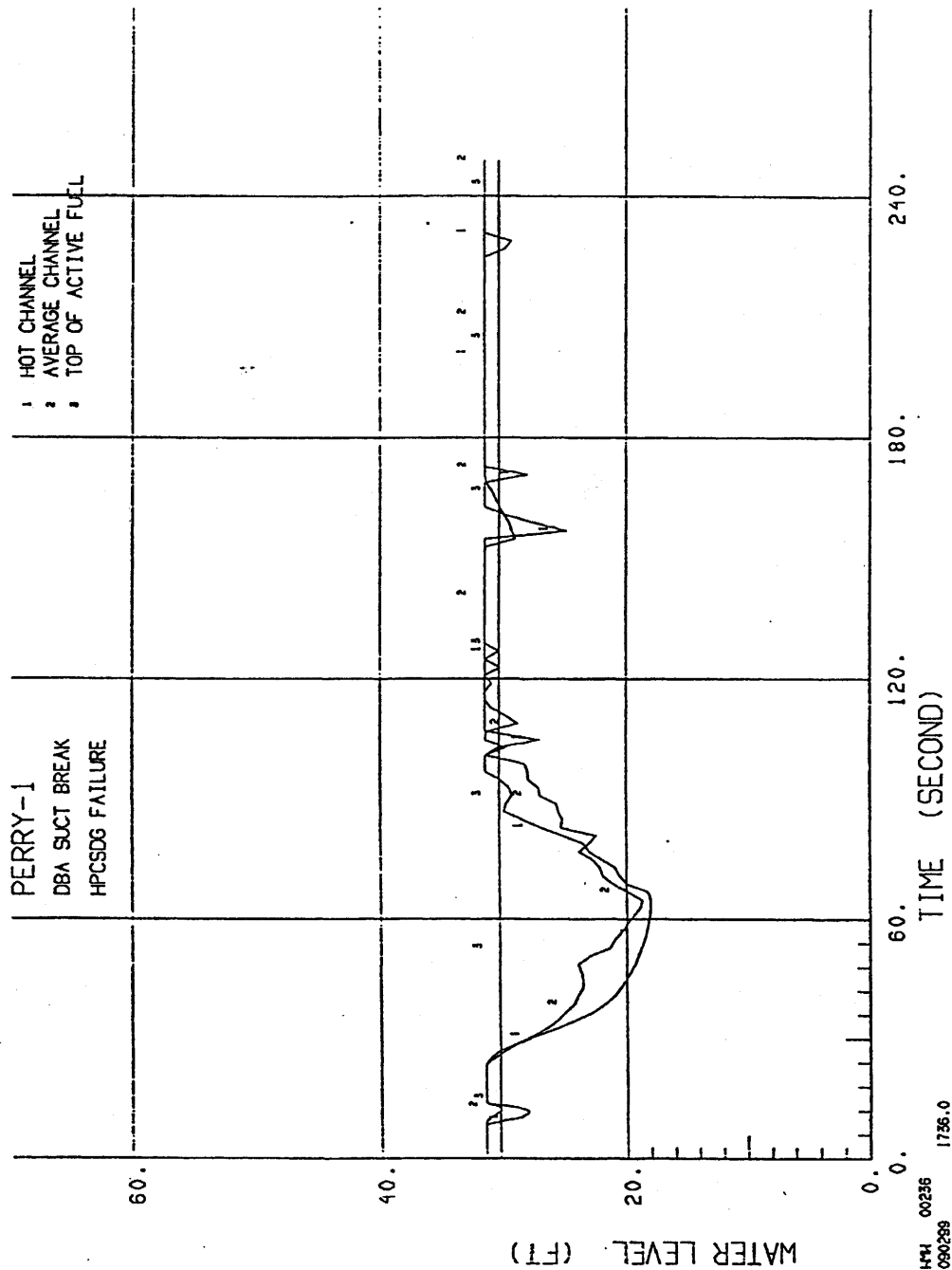
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Normalized Power Versus Time

Figure 6.3-10



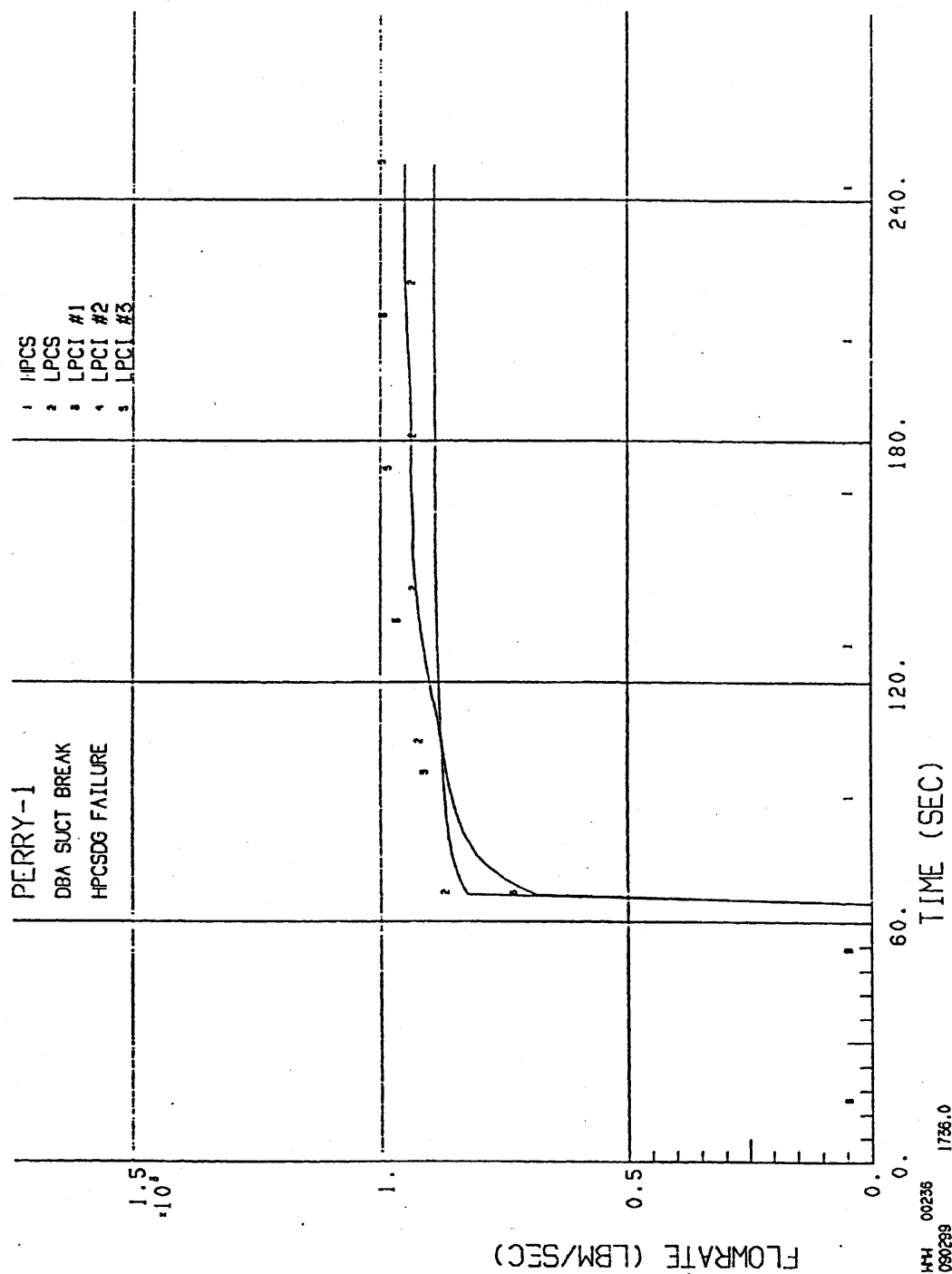
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Water Level in Hot and Average
Channels - DBA Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-11 (Sheet 1 of 11)



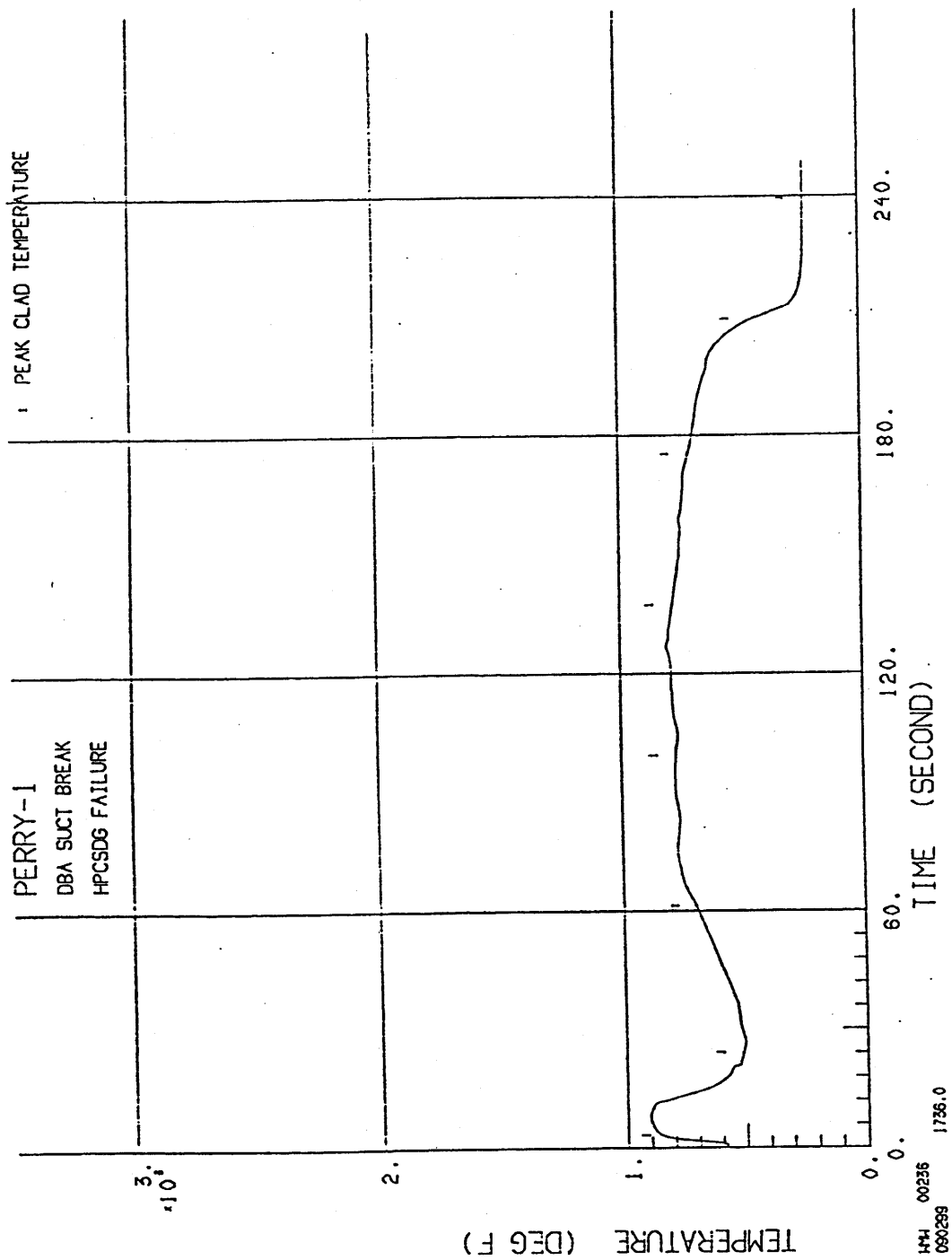
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

ECCS Flow - DBA Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-11 (Sheet 5 of 11)



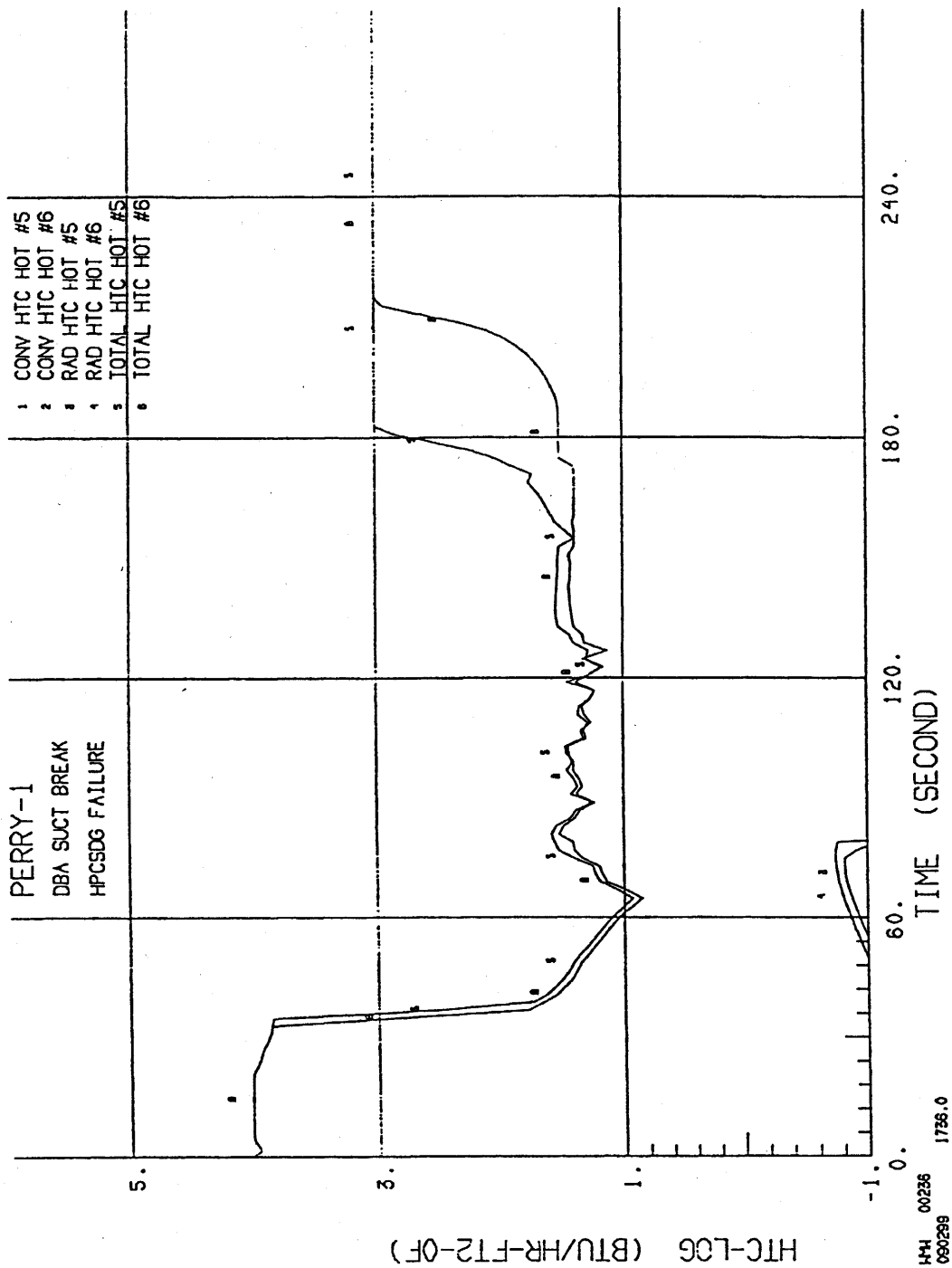
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Peak Cladding Temperature
(GE11) - DBA Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-11 (Sheet 6 of 11)



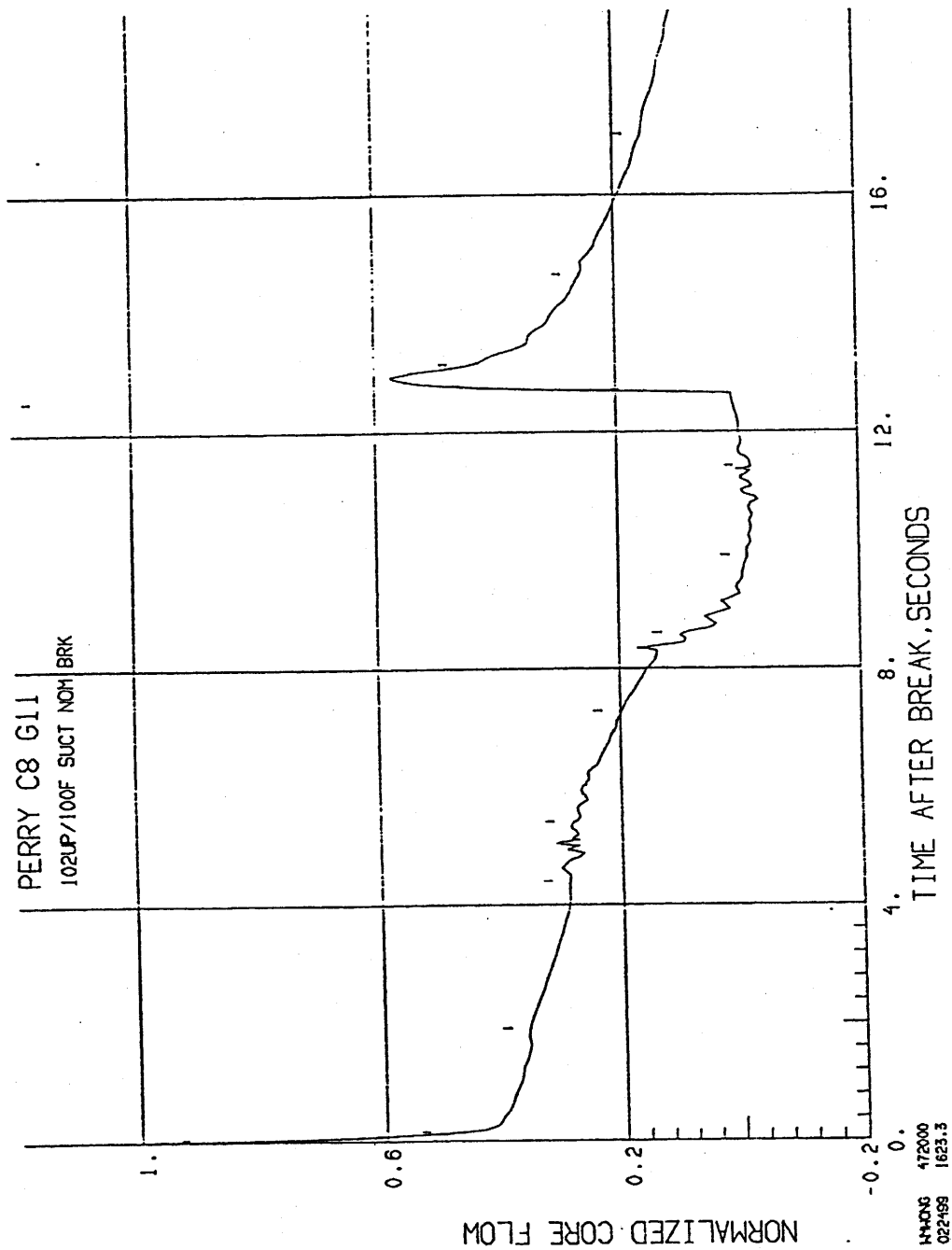
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PERRY NUCLEAR POWER PLANT

Heat Transfer Coefficient
(GE11) - DBA Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-11 (Sheet 7 of 11)



(Rev. 12 1/03)

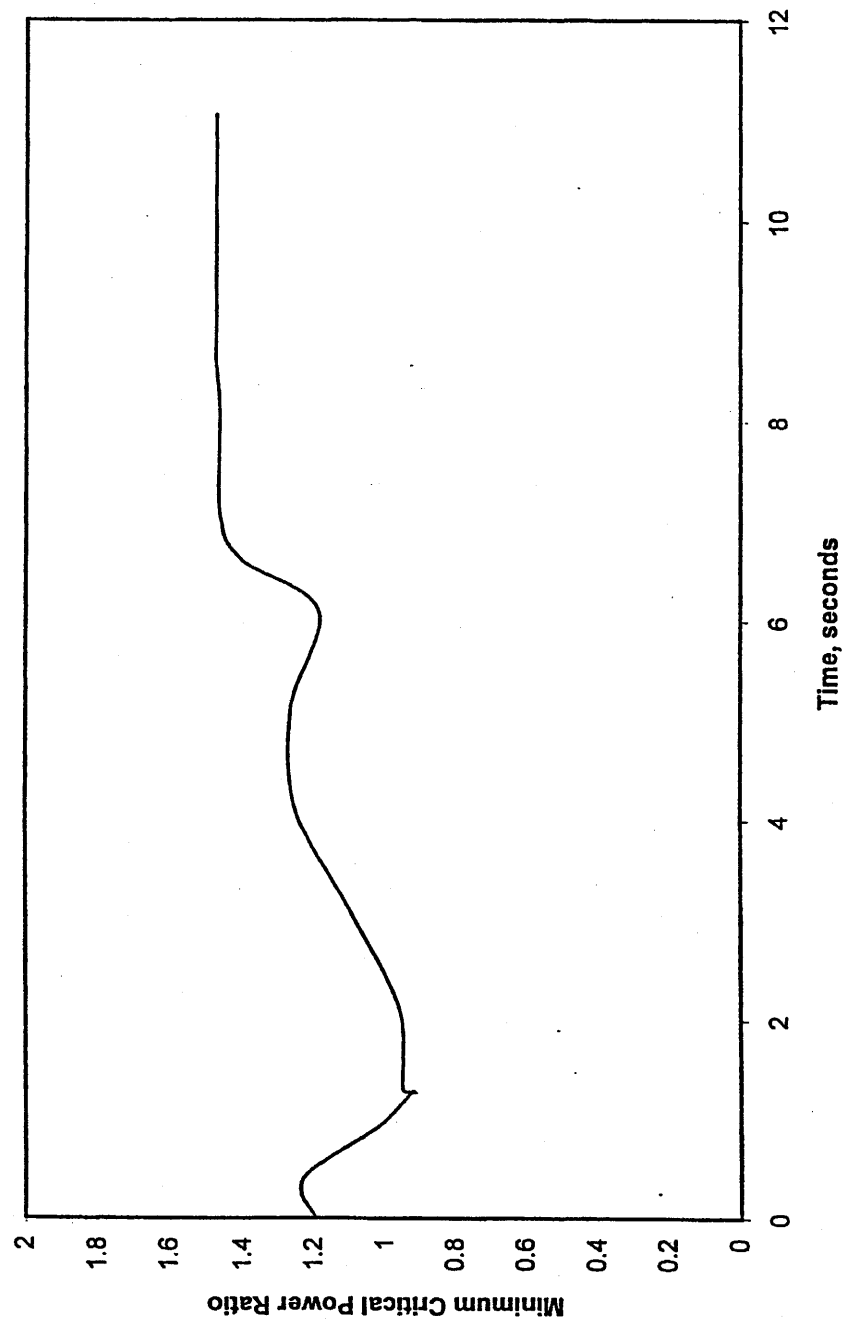


PERRY NUCLEAR POWER PLANT

Core Average Inlet Flow -
DBA Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-11 (Sheet 10 of 11)

MCPR (Nominal)



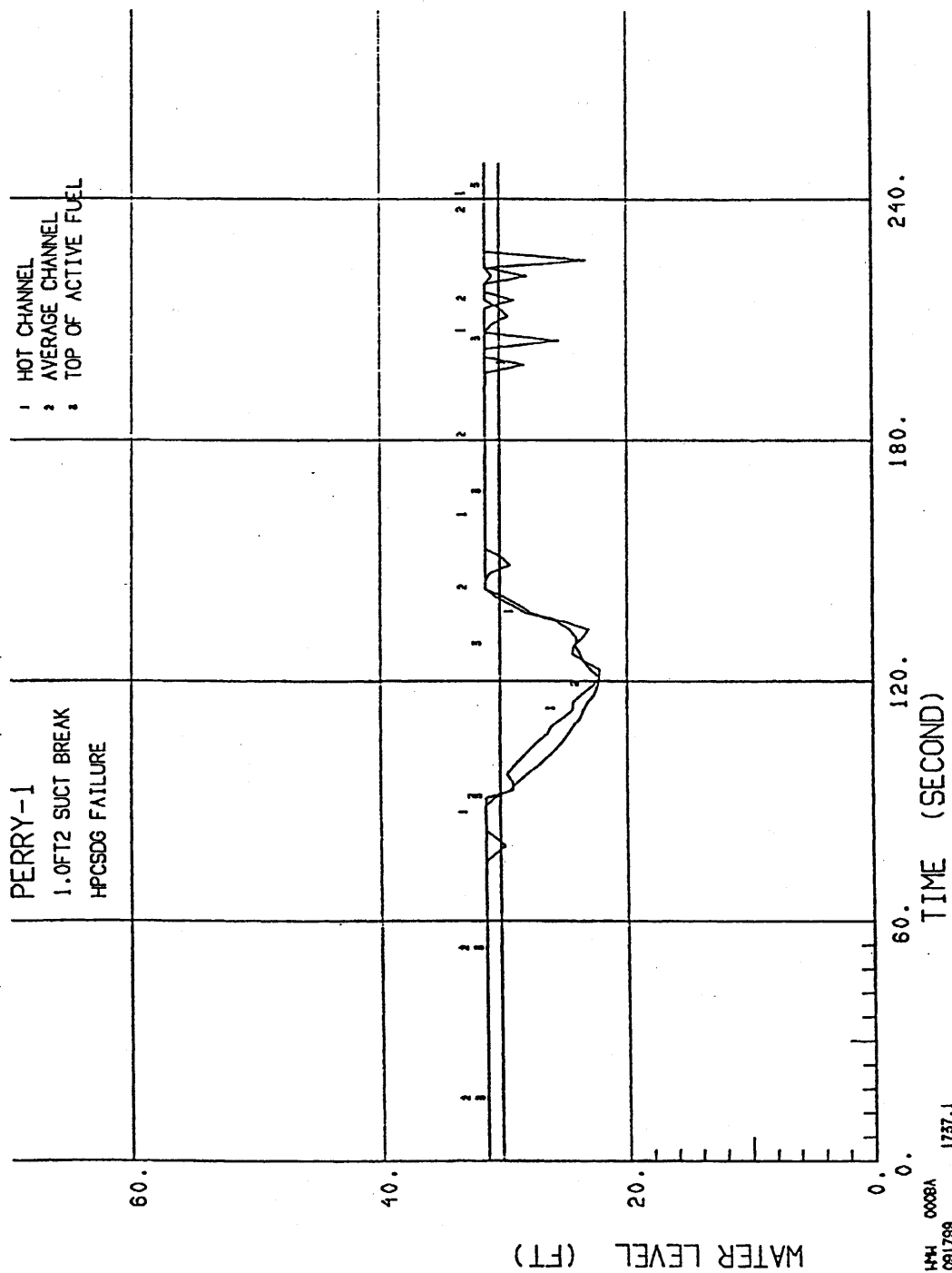
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PERRY NUCLEAR POWER PLANT

Minimum Critical Power Ratio -
 DBA Suction -
 HPCS D/G Failure (Nominal)
 LPCS + 3LPCI + ADS Available

Figure 6.3-11 (Sheet 11 of 11)



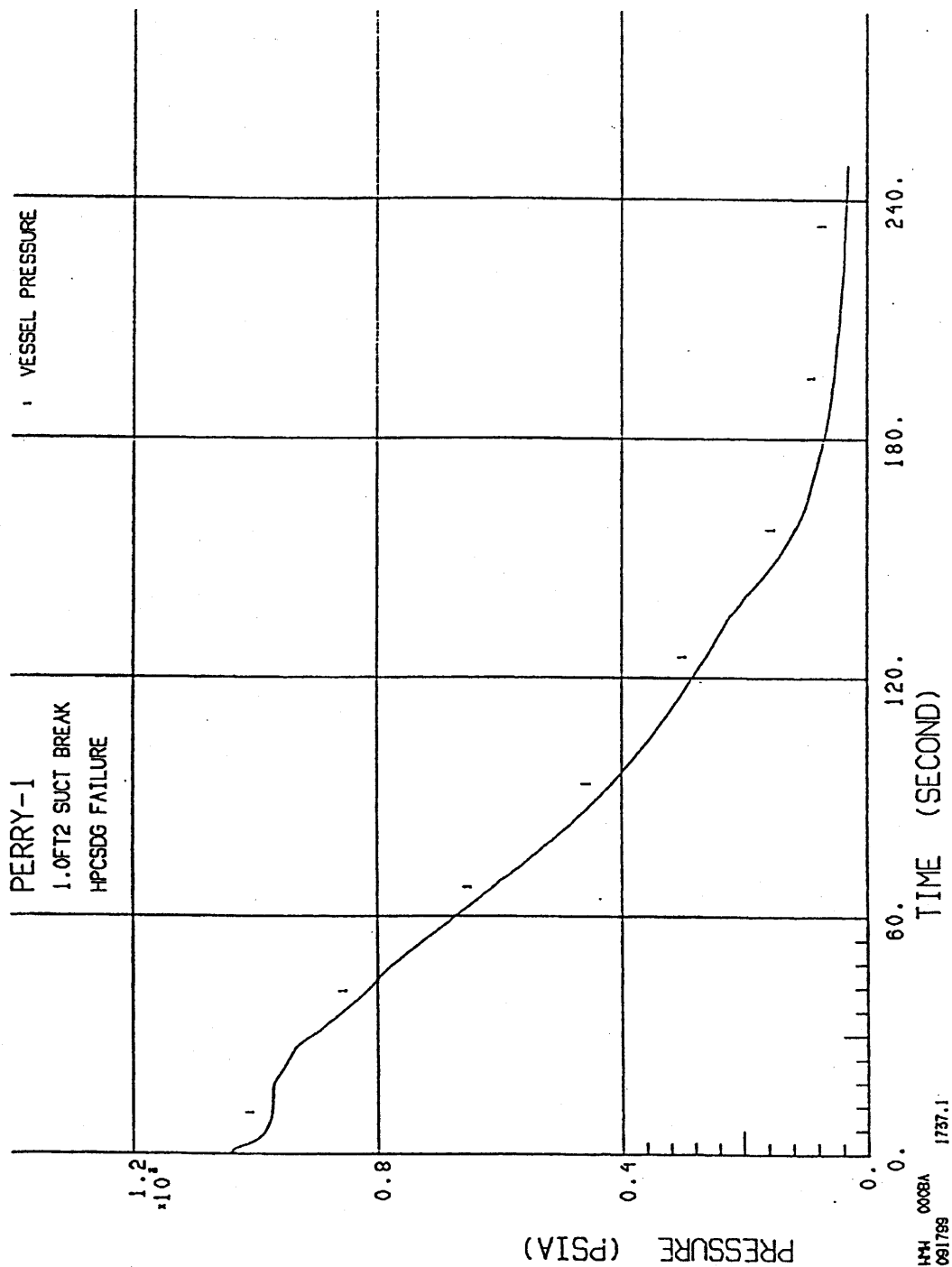
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Water Level in Hot and Average
Channel - 1.0 ft² Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-12 (Sheet 1 of 7)



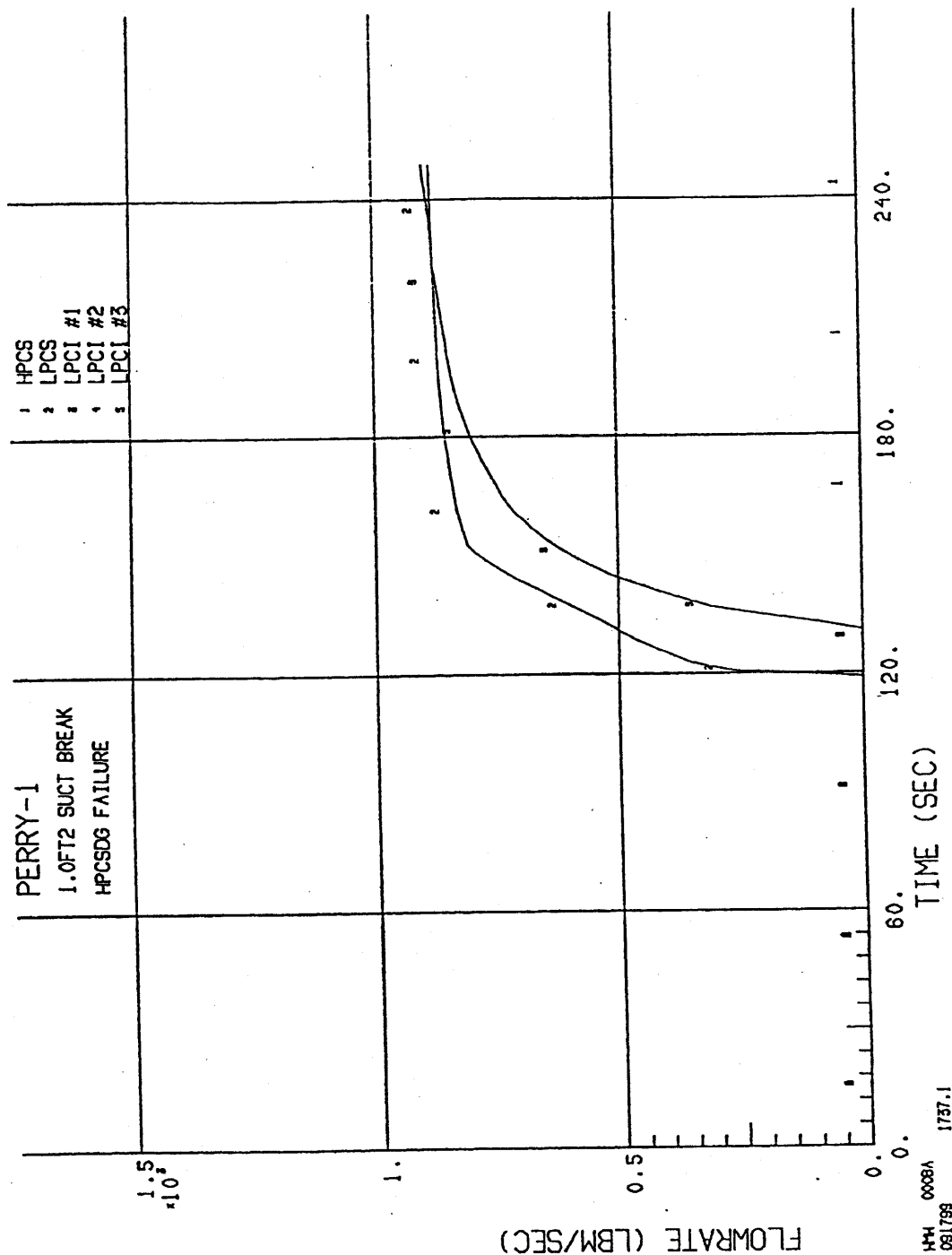
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Vessel Pressure -
1.0 ft² Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-12 (Sheet 2 of 7)



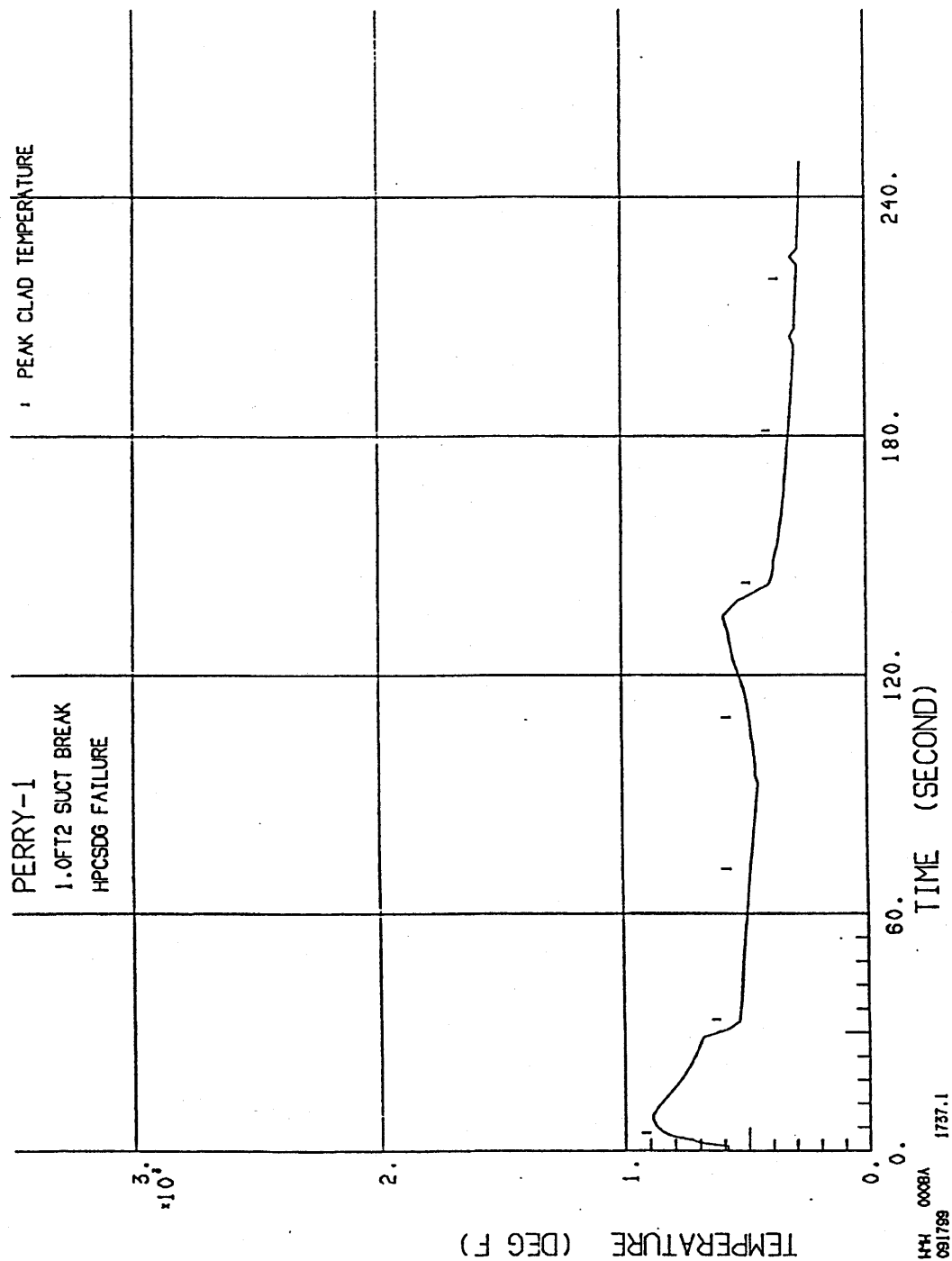
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

ECCS Flow - 1.0 ft² Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-12 (Sheet 5 of 7)



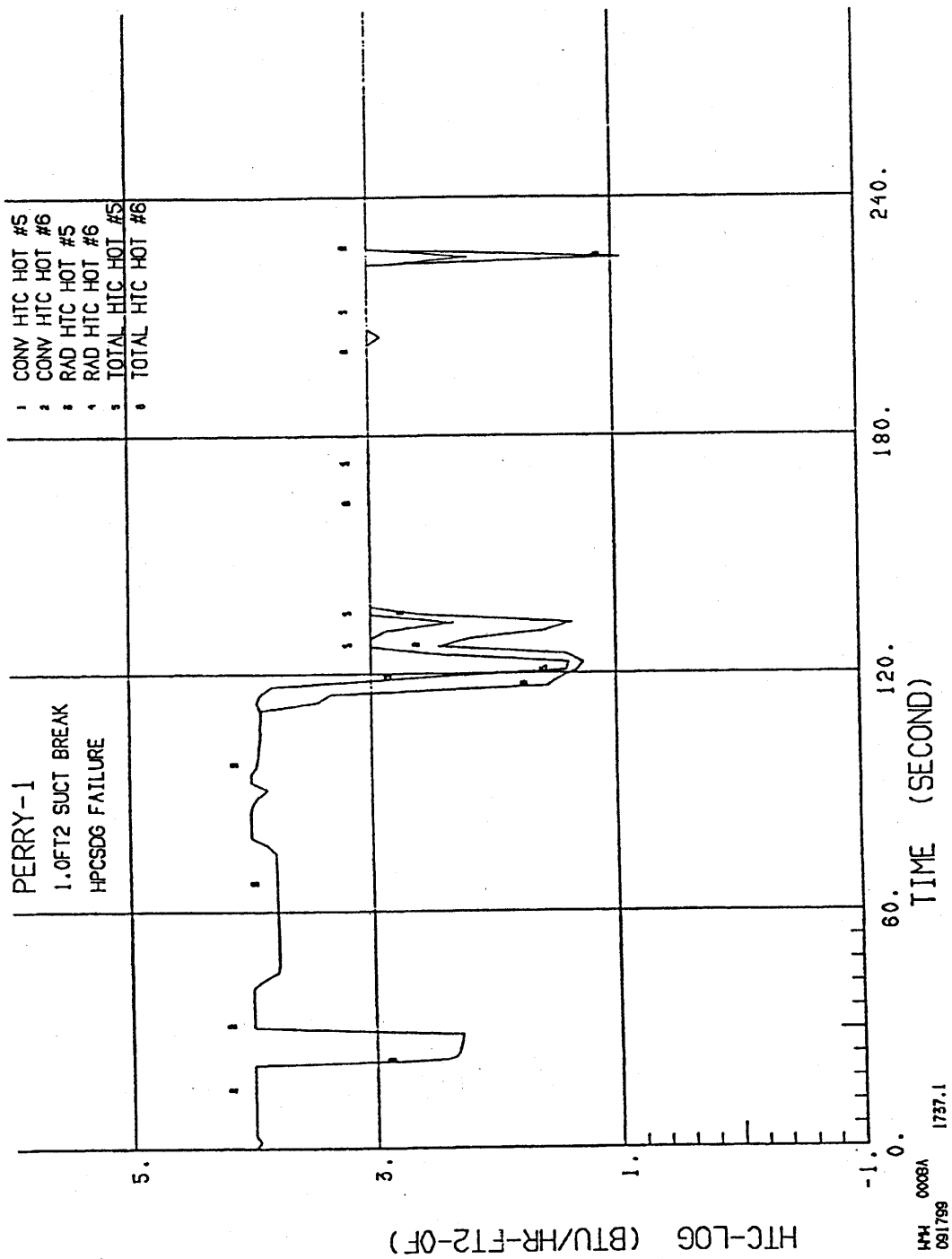
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Peak Cladding Temperature
(GE11) - 1.0 ft² Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-12 (Sheet 6 of 7)



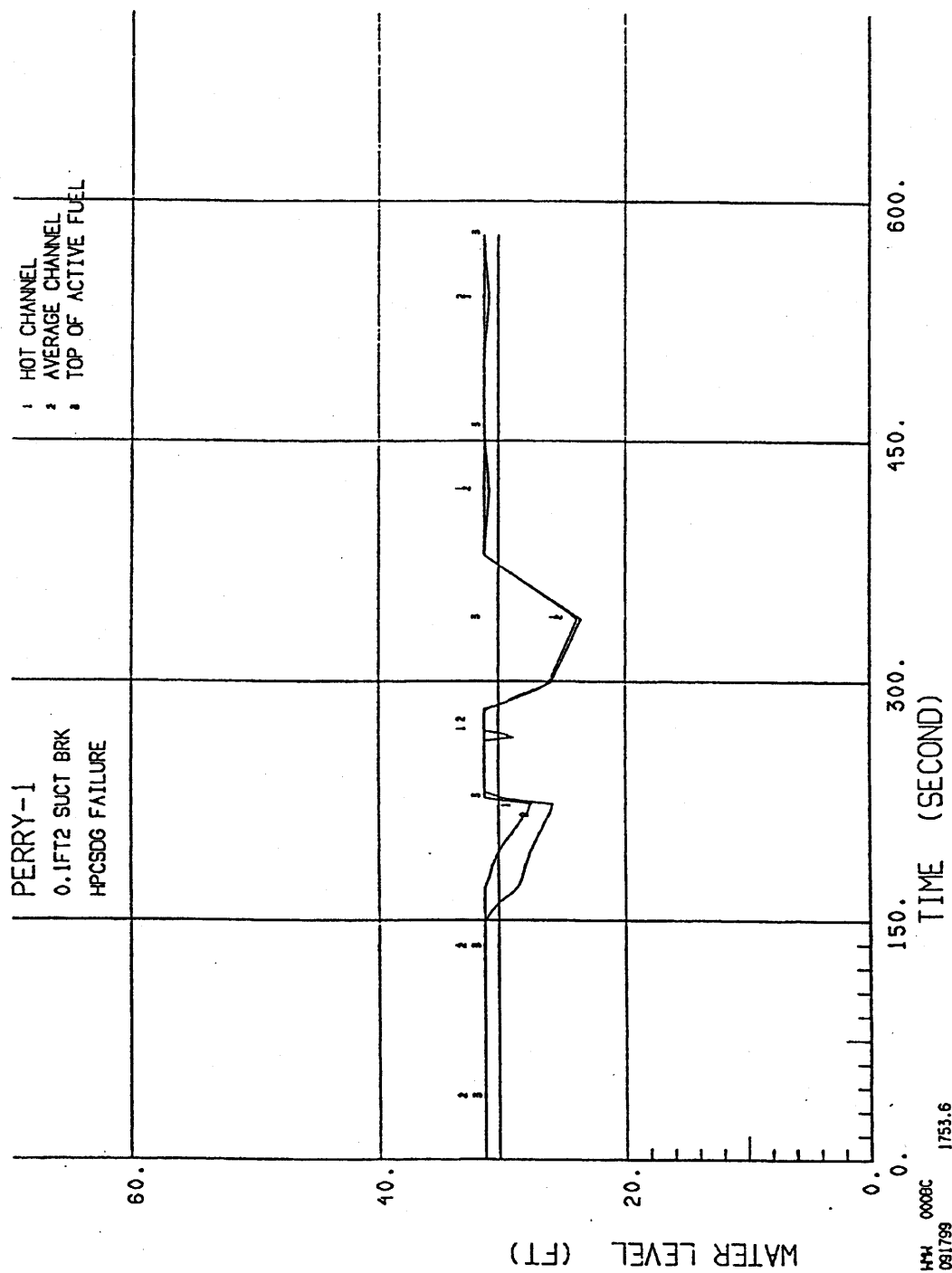
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Heat Transfer Coefficient
(GE11) - 1.0 ft² Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-12 (Sheet 7 of 7)



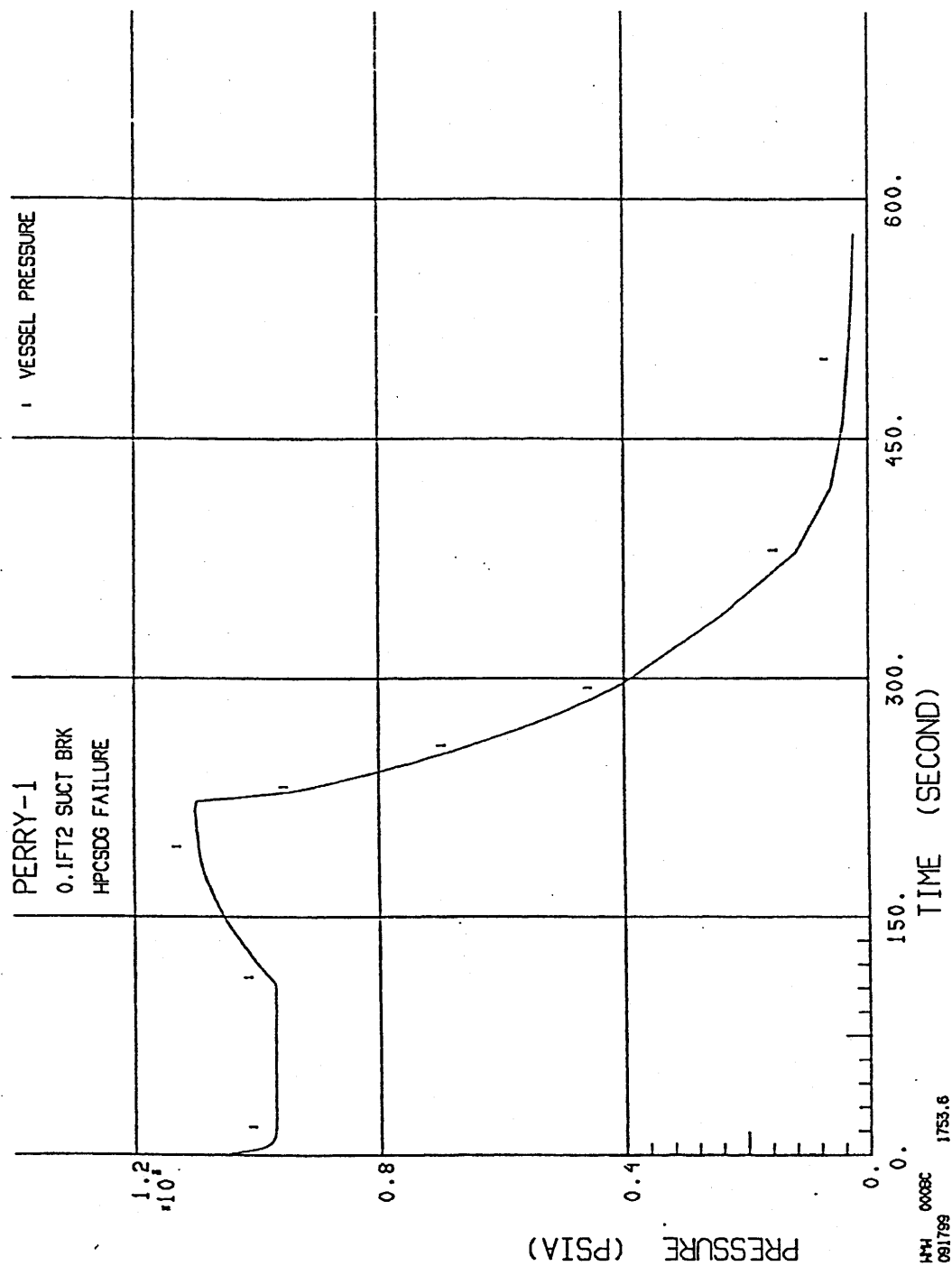
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Water Level in Hot and Average
Channel - 0.1 ft² Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-13 (Sheet 1 of 7)



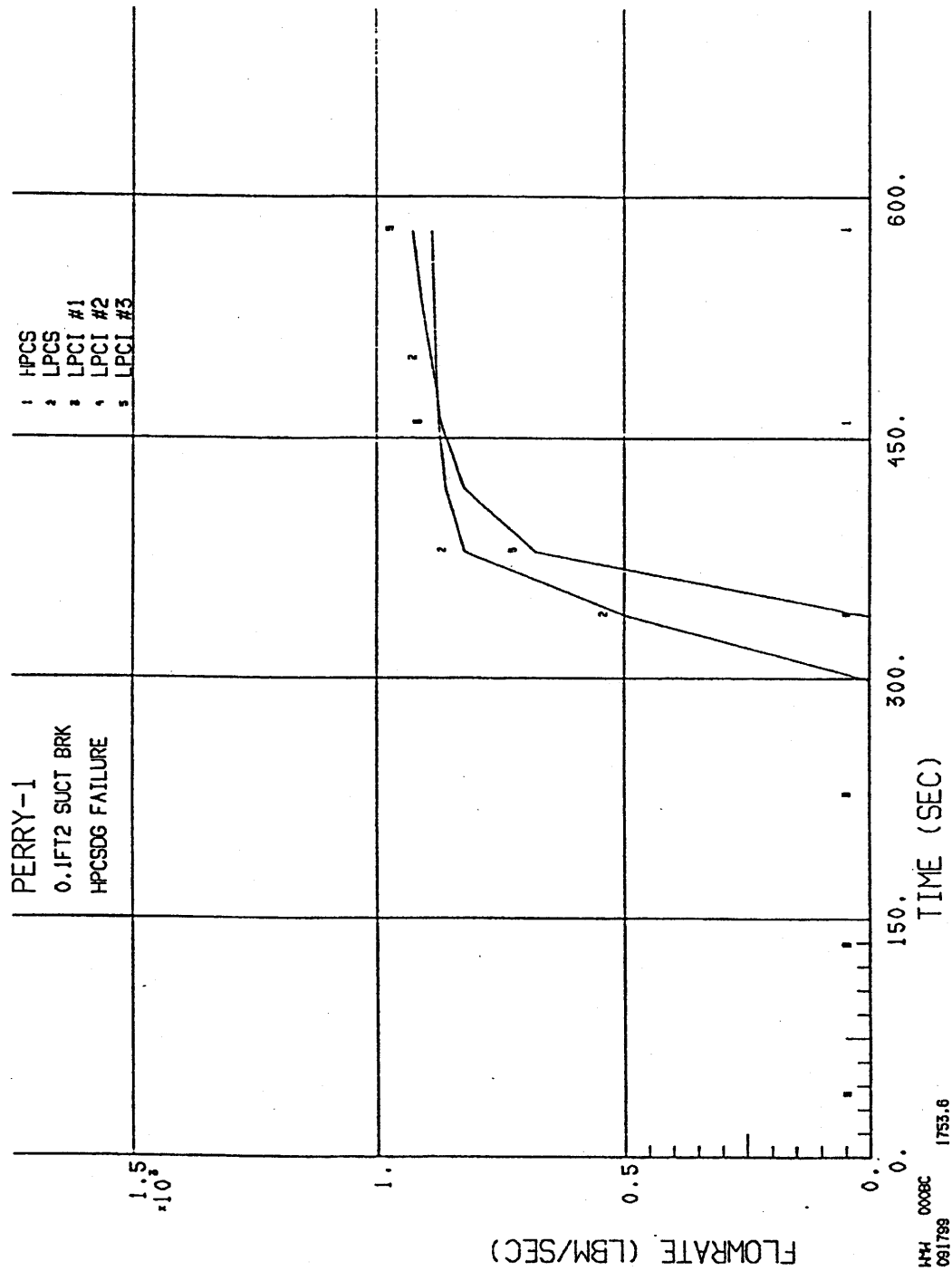
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Vessel Pressure -
0.1 ft² Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available.

Figure 6.3-13 (Sheet 2 of 7)



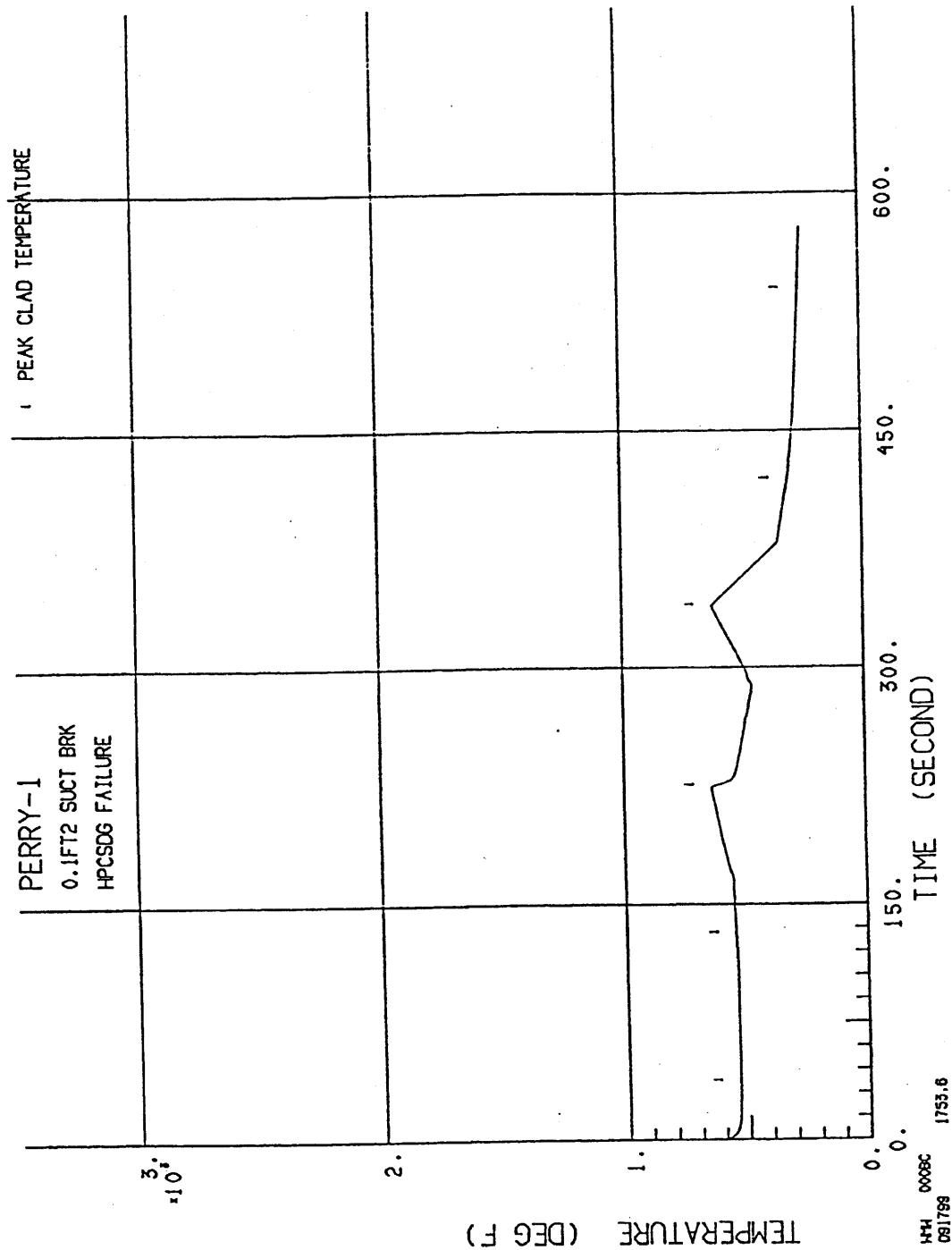
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

ECCS Flow - 0.1 ft² Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-13 (Sheet 5 of 7)



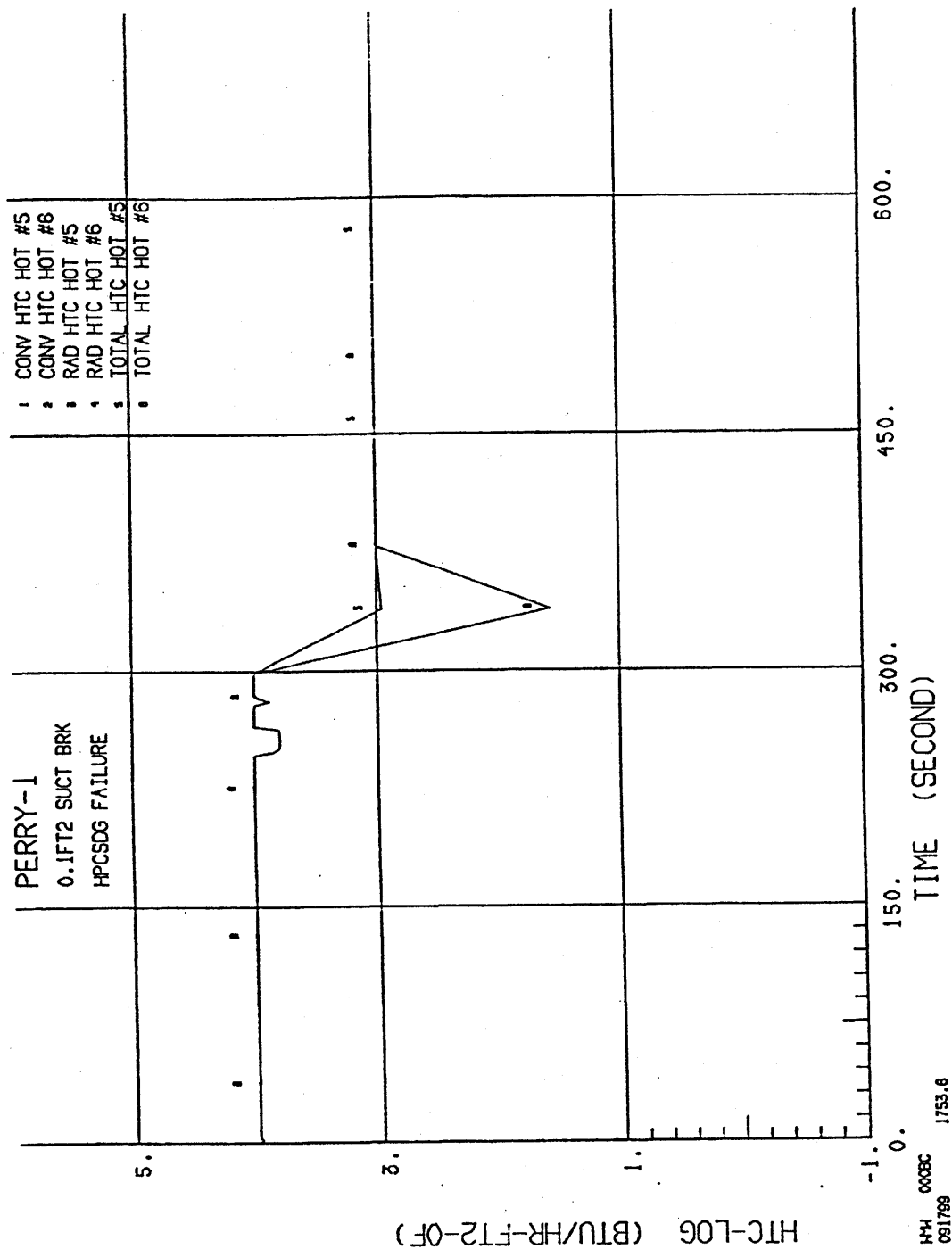
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Peak Cladding Temperature
(GE11) - 0.1 ft² Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-13 (Sheet 6 of 7)



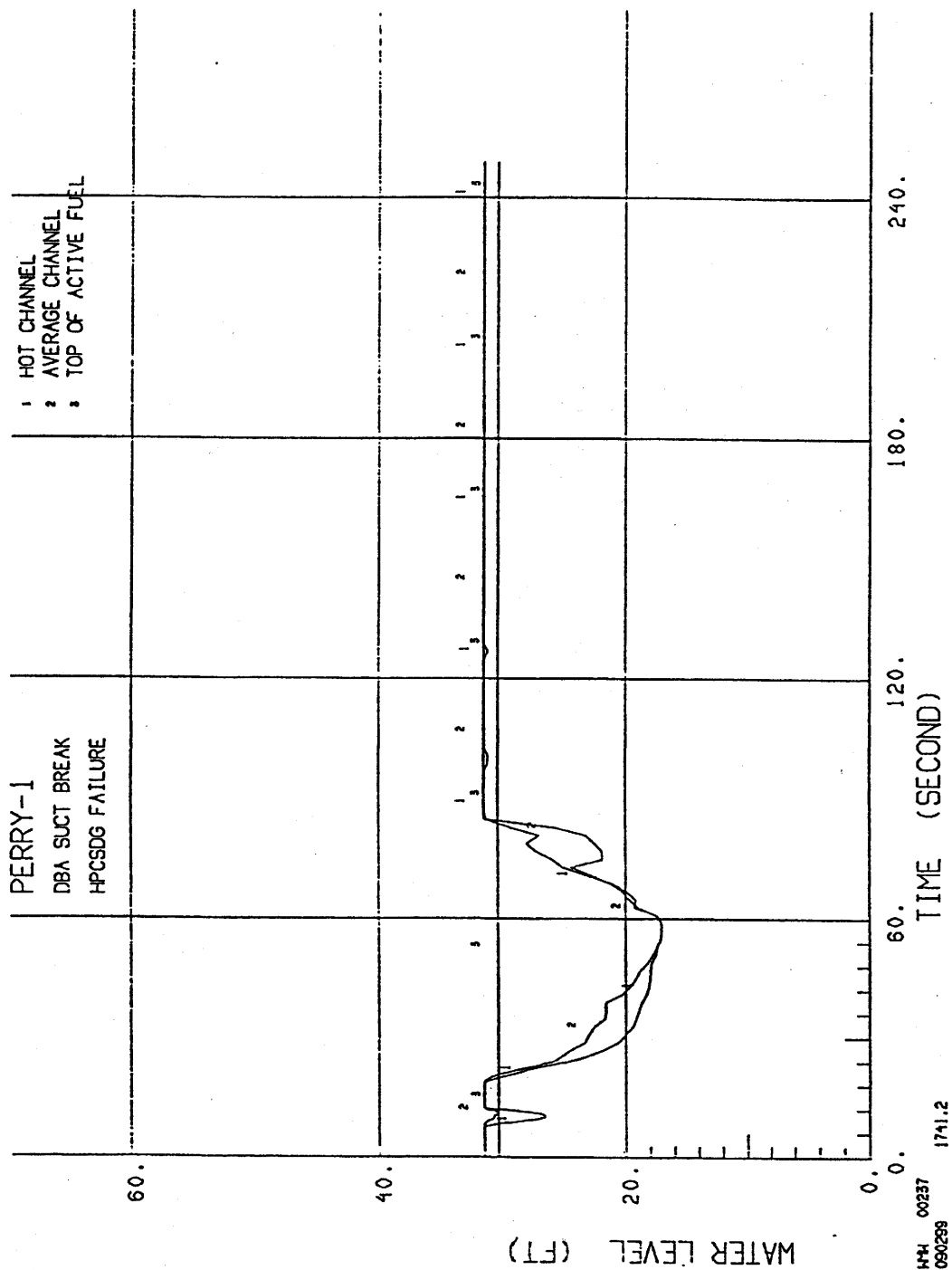
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Heat Transfer Coefficient
(GE11) - 0.1 ft² Suction -
HPCS D/G Failure (Nominal)
LPCS + 3LPCI + ADS Available

Figure 6.3-13 (Sheet 7 of 7)



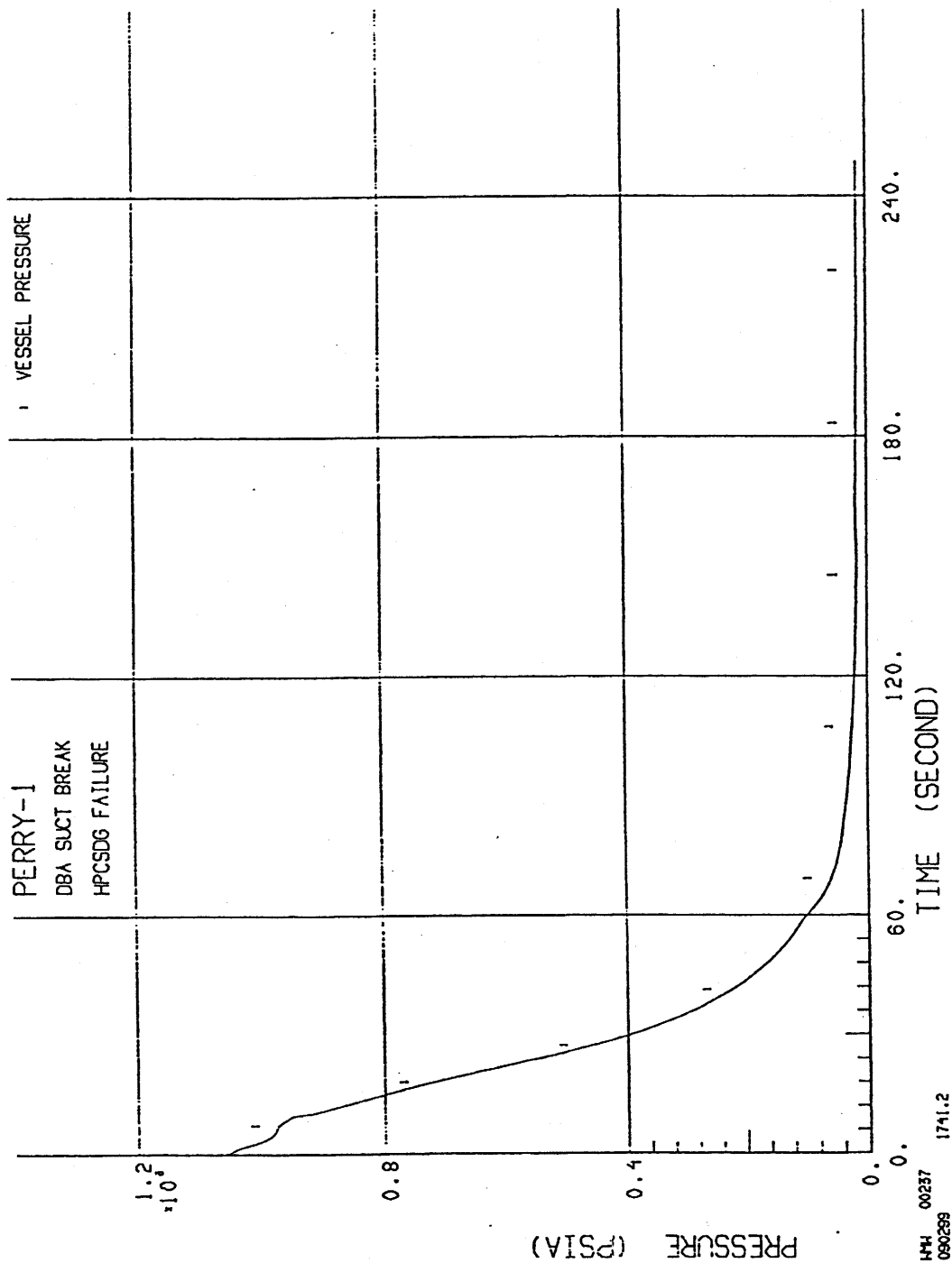
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Water Level in Hot and Average
Channel - DBA Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-14 (Sheet 1 of 11)



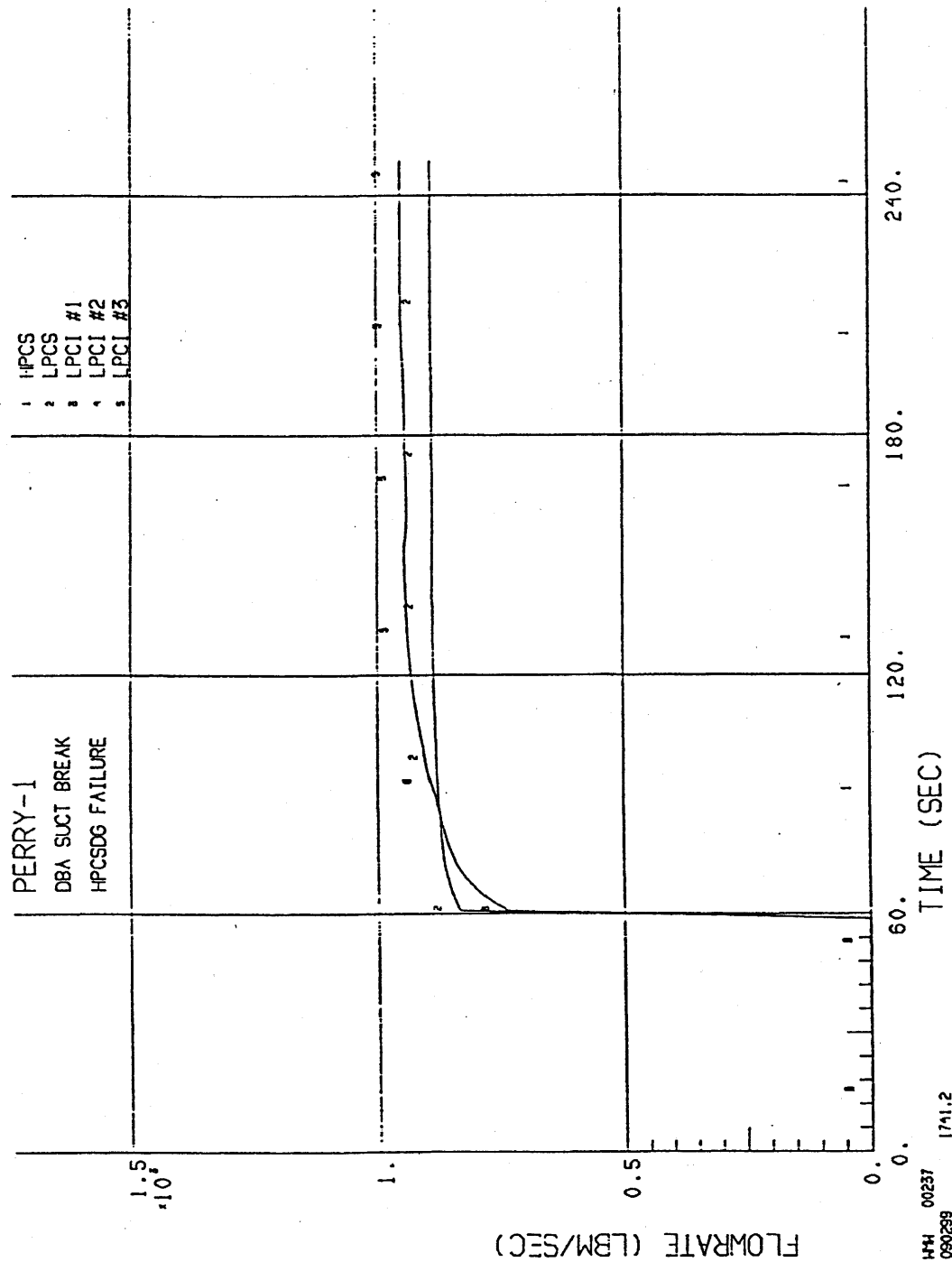
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Vessel Pressure -
DBA Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-14 (Sheet 2 of 11)



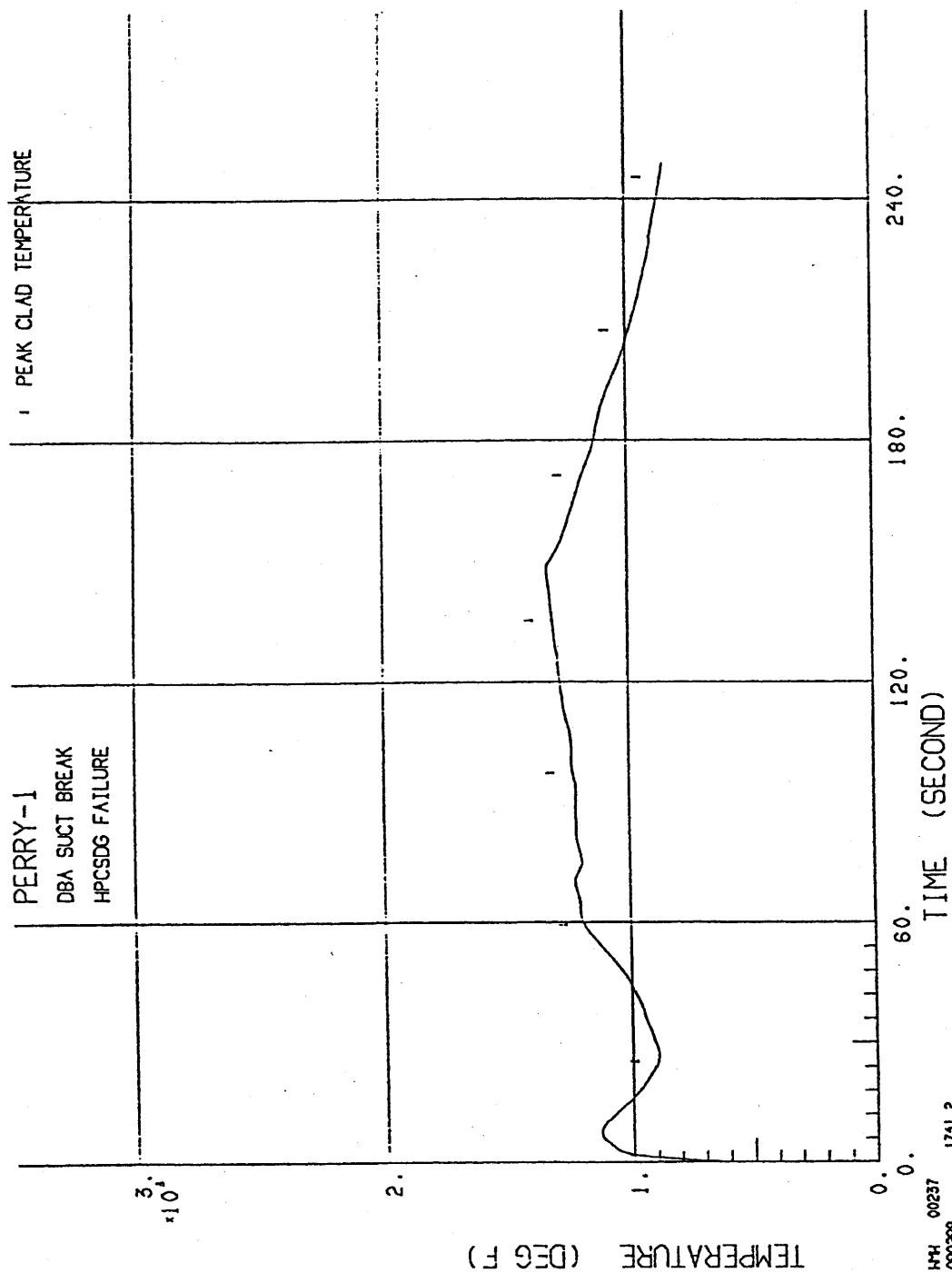
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PERRY NUCLEAR POWER PLANT

ECCS Flow - DBA Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-14 (Sheet 5 of 11)



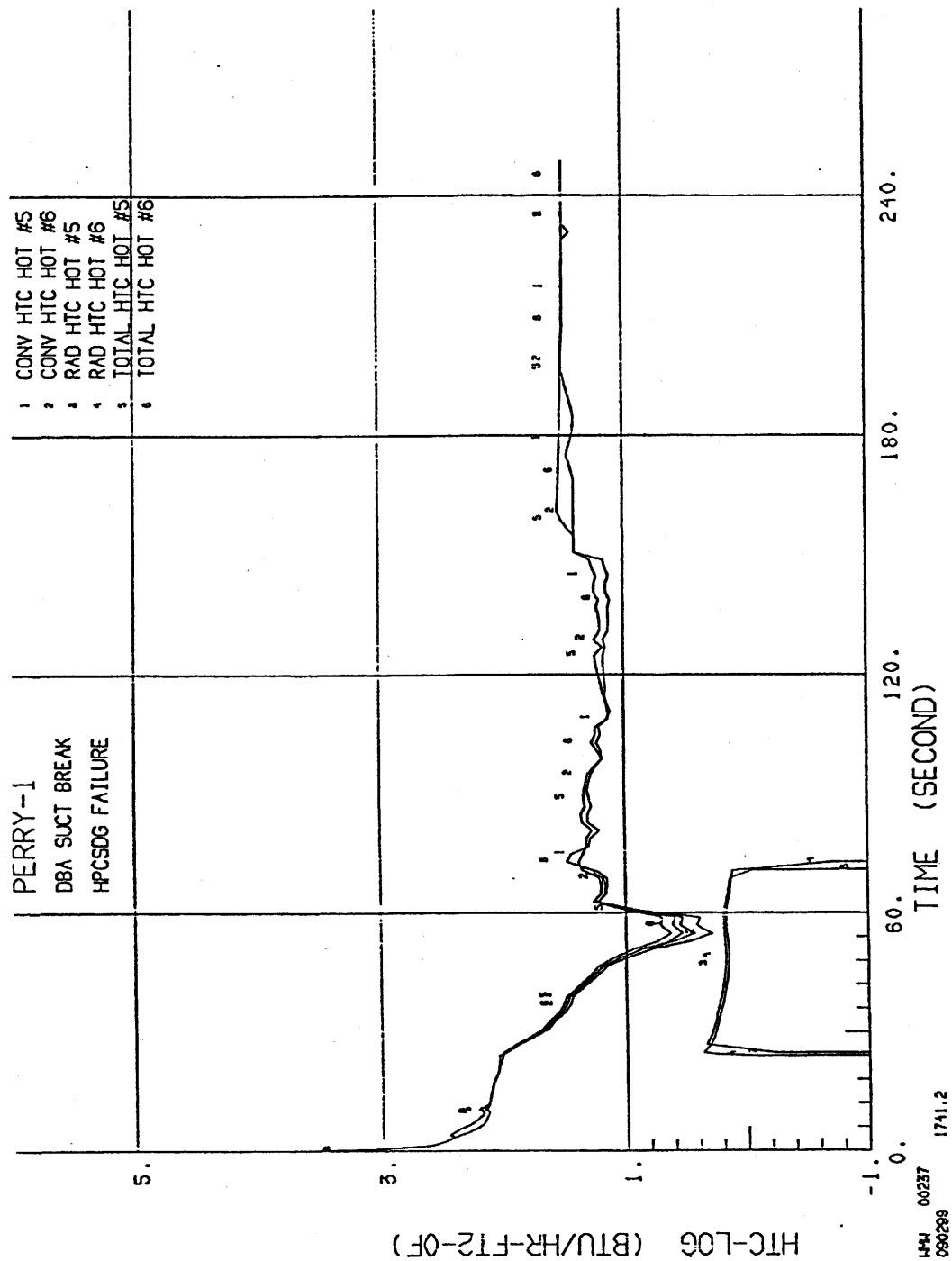
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Peak Cladding Temperature
(GE11) - DBA Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-14 (Sheet 6 of 11)



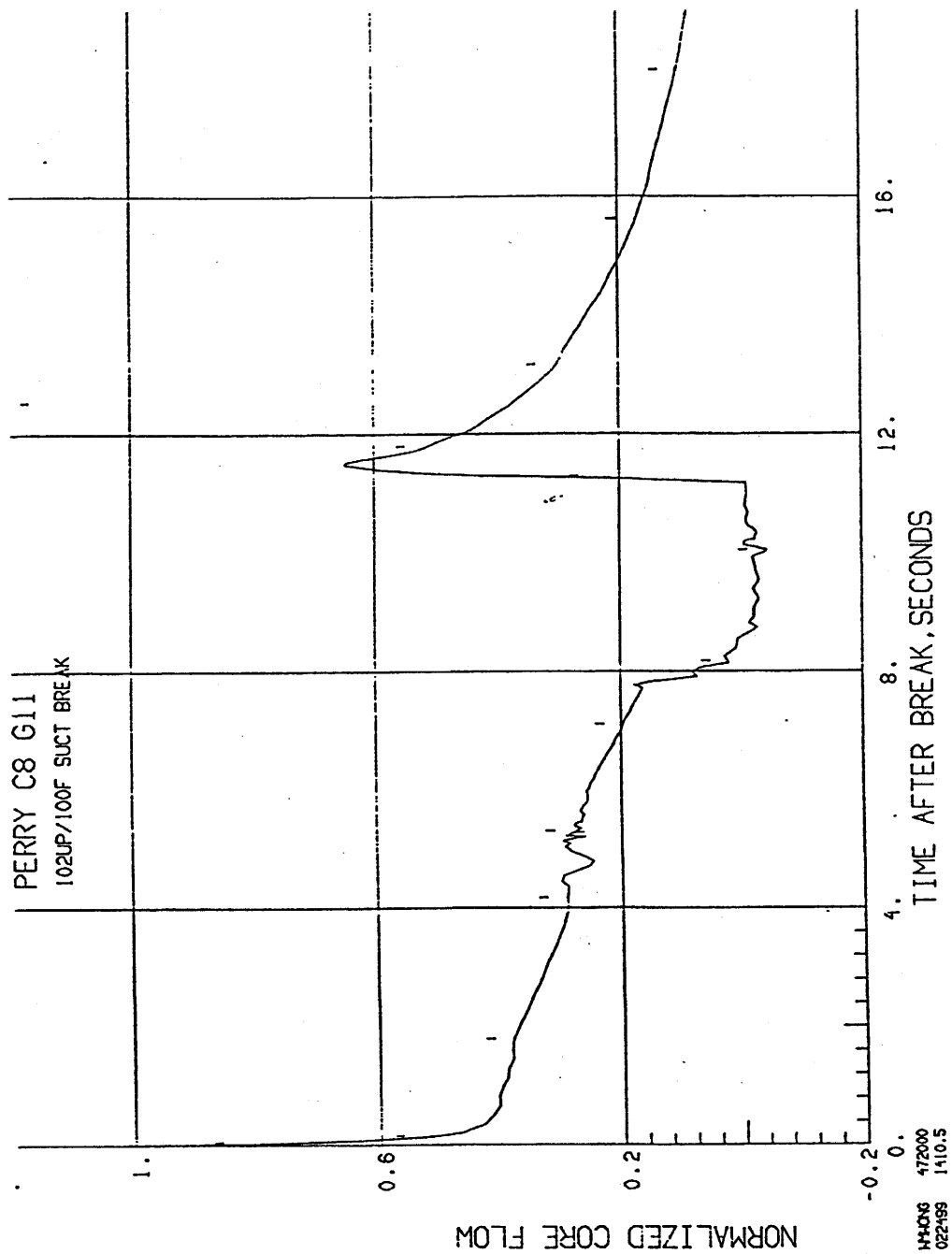
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PERRY NUCLEAR POWER PLANT

Heat Transfer Coefficient
(GE11) - DBA Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-14 (Sheet 7 of 11)



(Rev. 12 1/03)

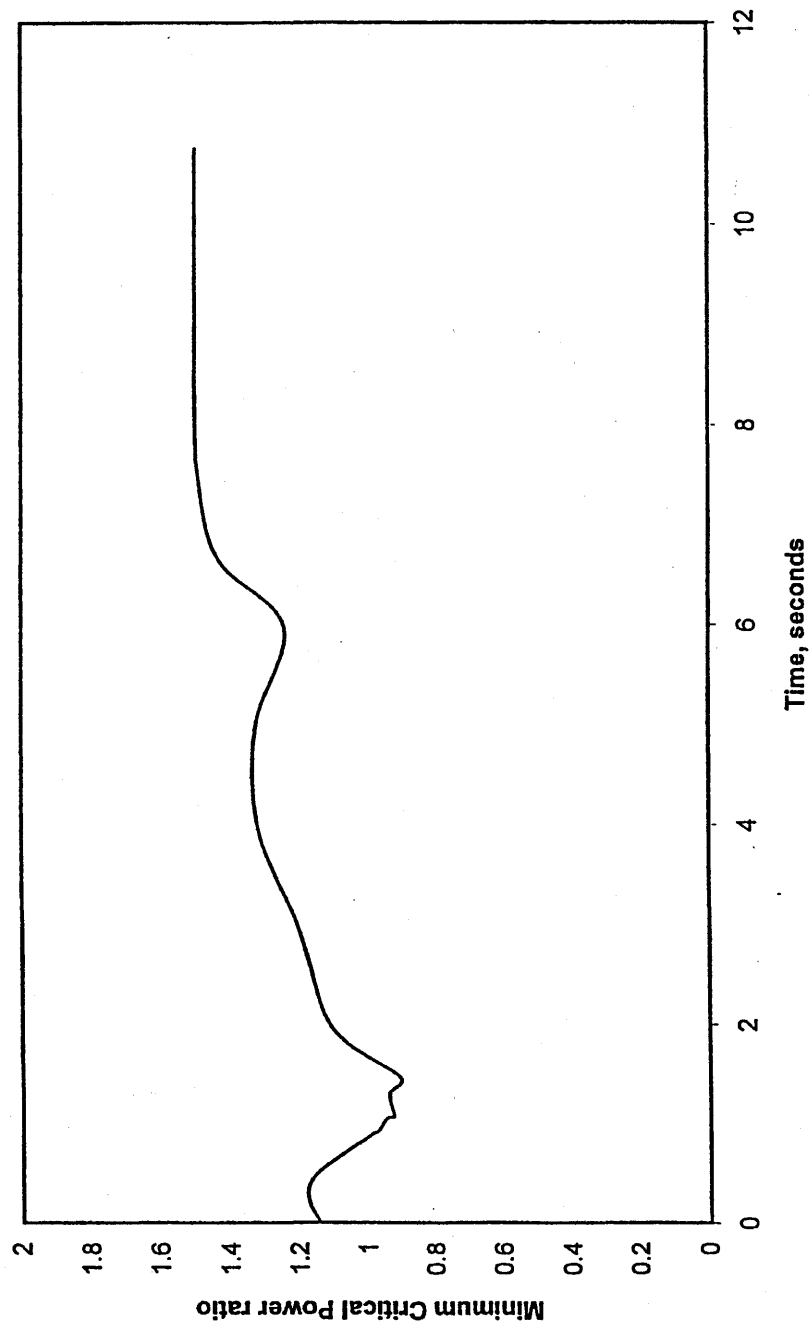


PERRY NUCLEAR POWER PLANT

Core Average Inlet Flow -
DBA Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-14 (Sheet 10 of 11)

MCPR (Appendix K)



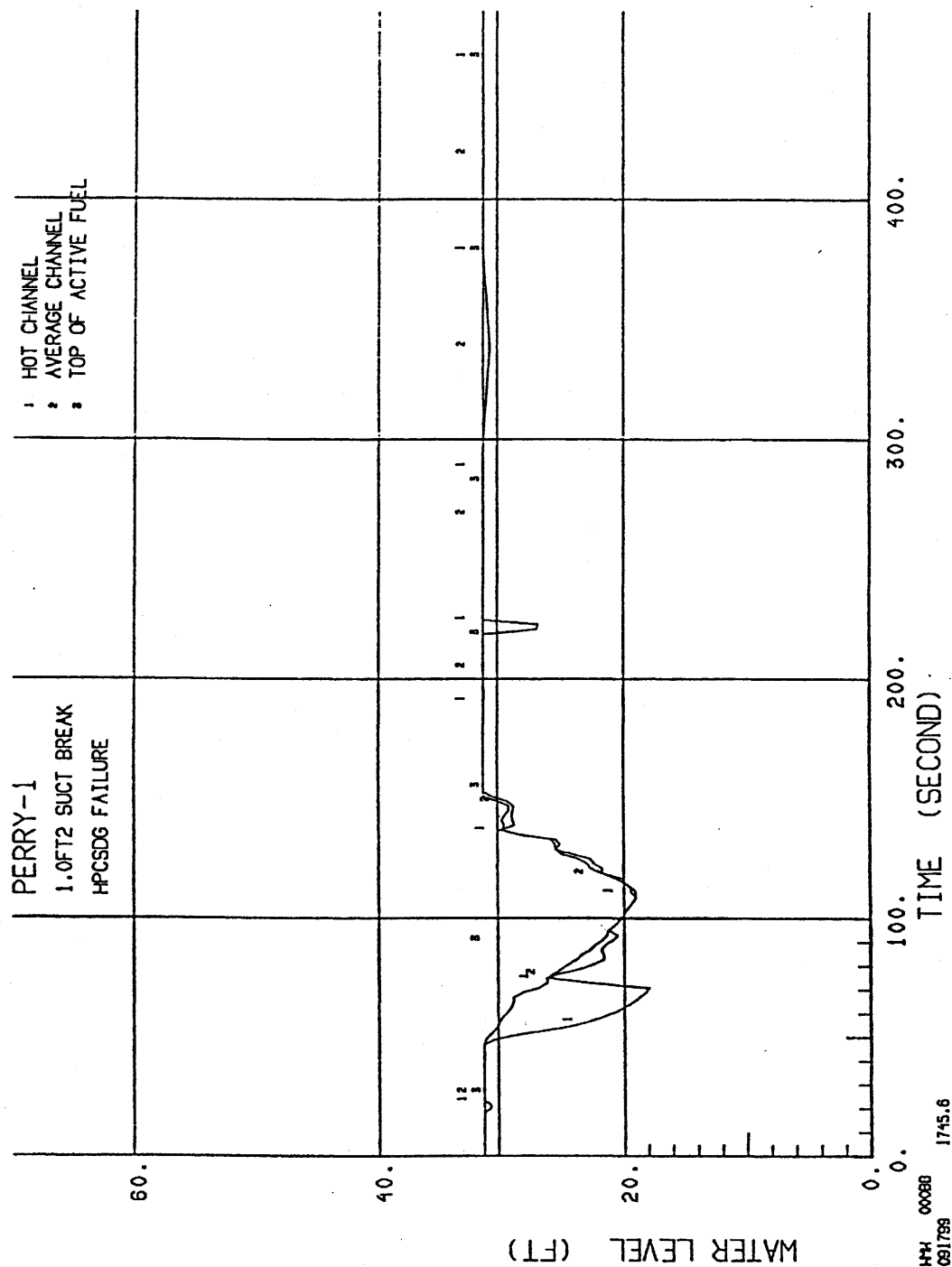
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PERRY NUCLEAR POWER PLANT

Minimum Critical Power Ratio -
 DBA Suction -
 HPCS D/G Failure (Appendix K)
 LPCS + 3LPCI + ADS Available

Figure 6.3-14 (Sheet 11 of 11)



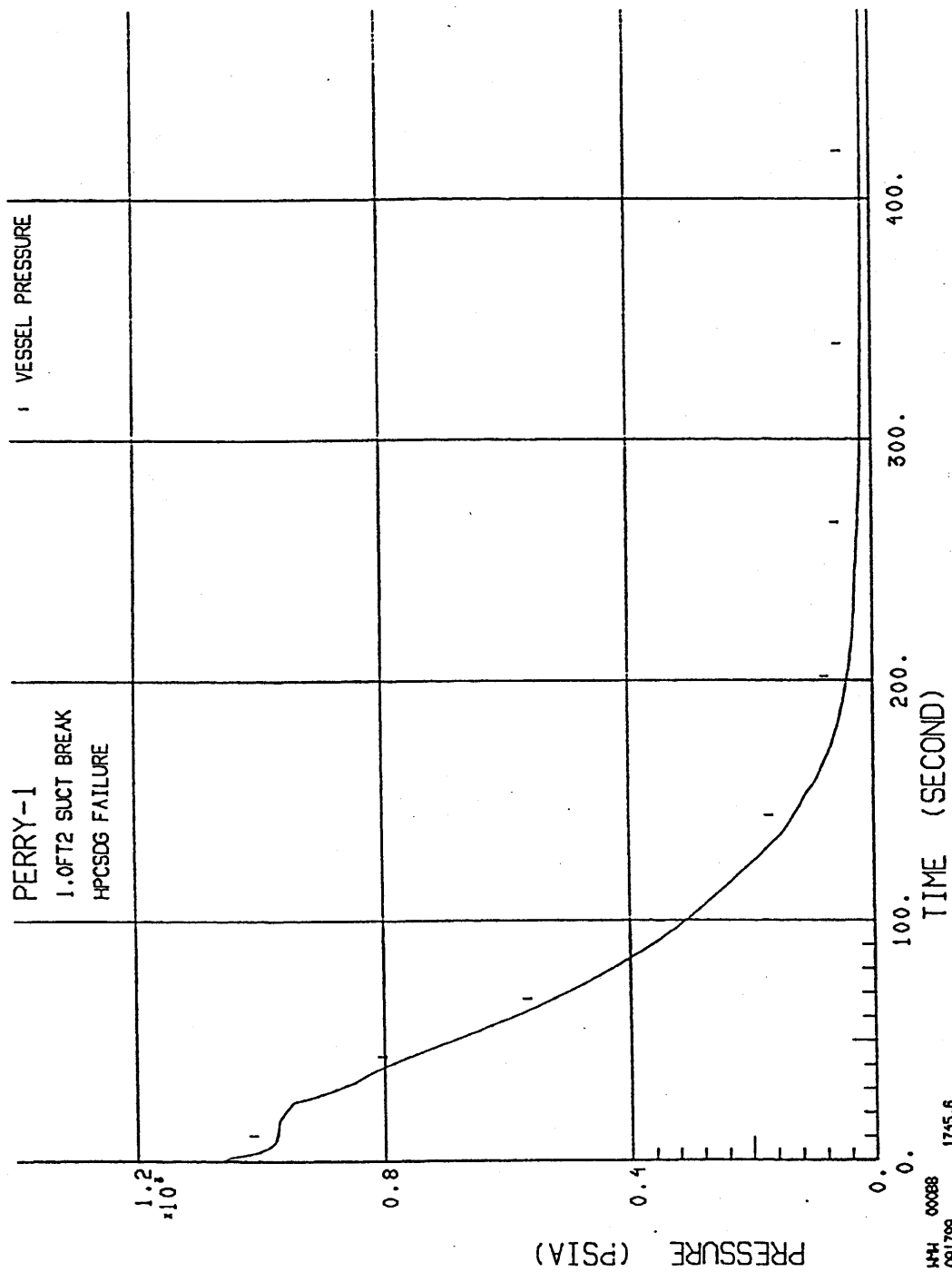
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Water Level in Hot and Average
Channel - 1.0 ft² Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-15 (Sheet 1 of 7)



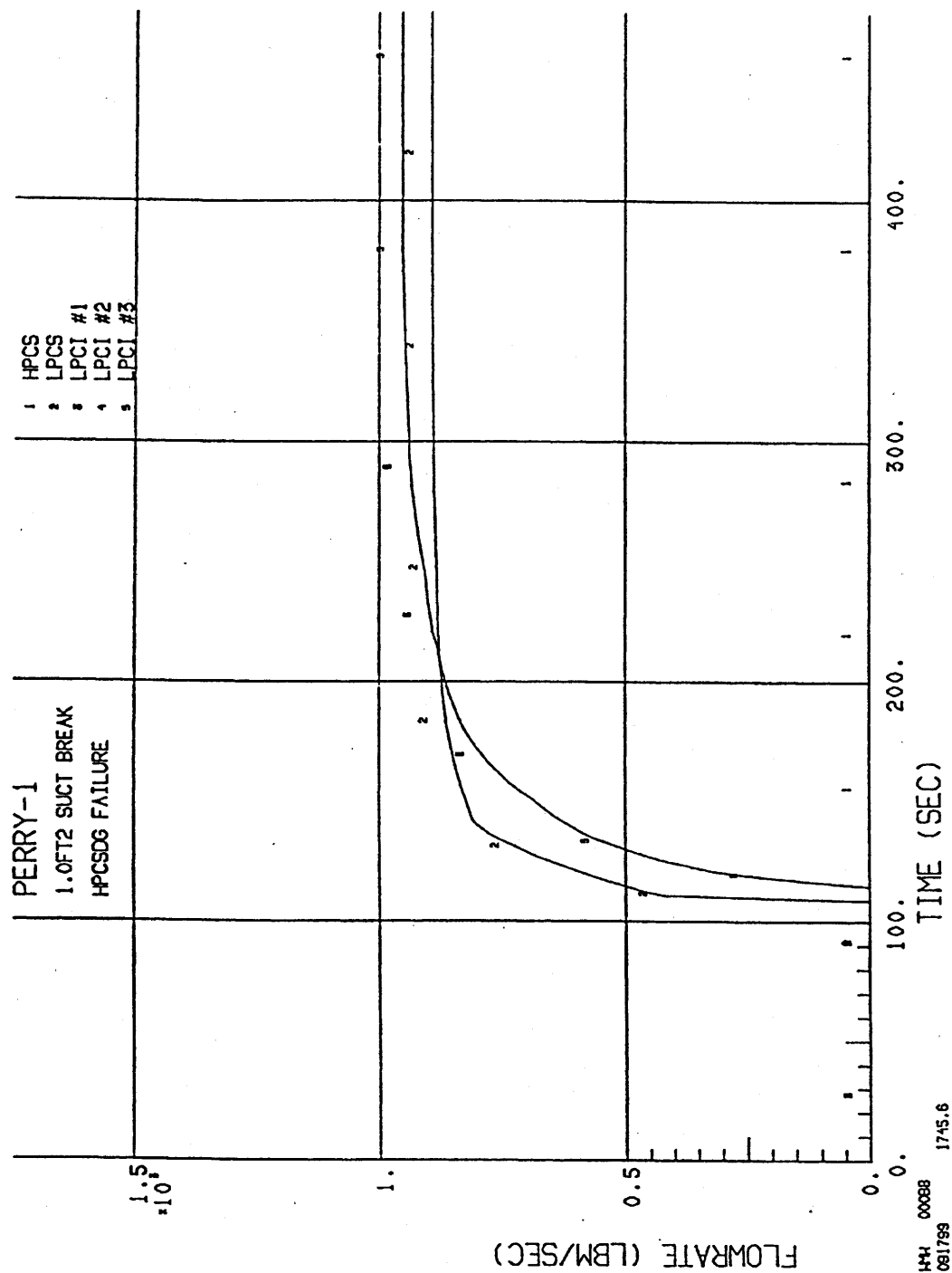
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Vessel Pressure -
1.0 ft² Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-15 (Sheet 2 of 7)



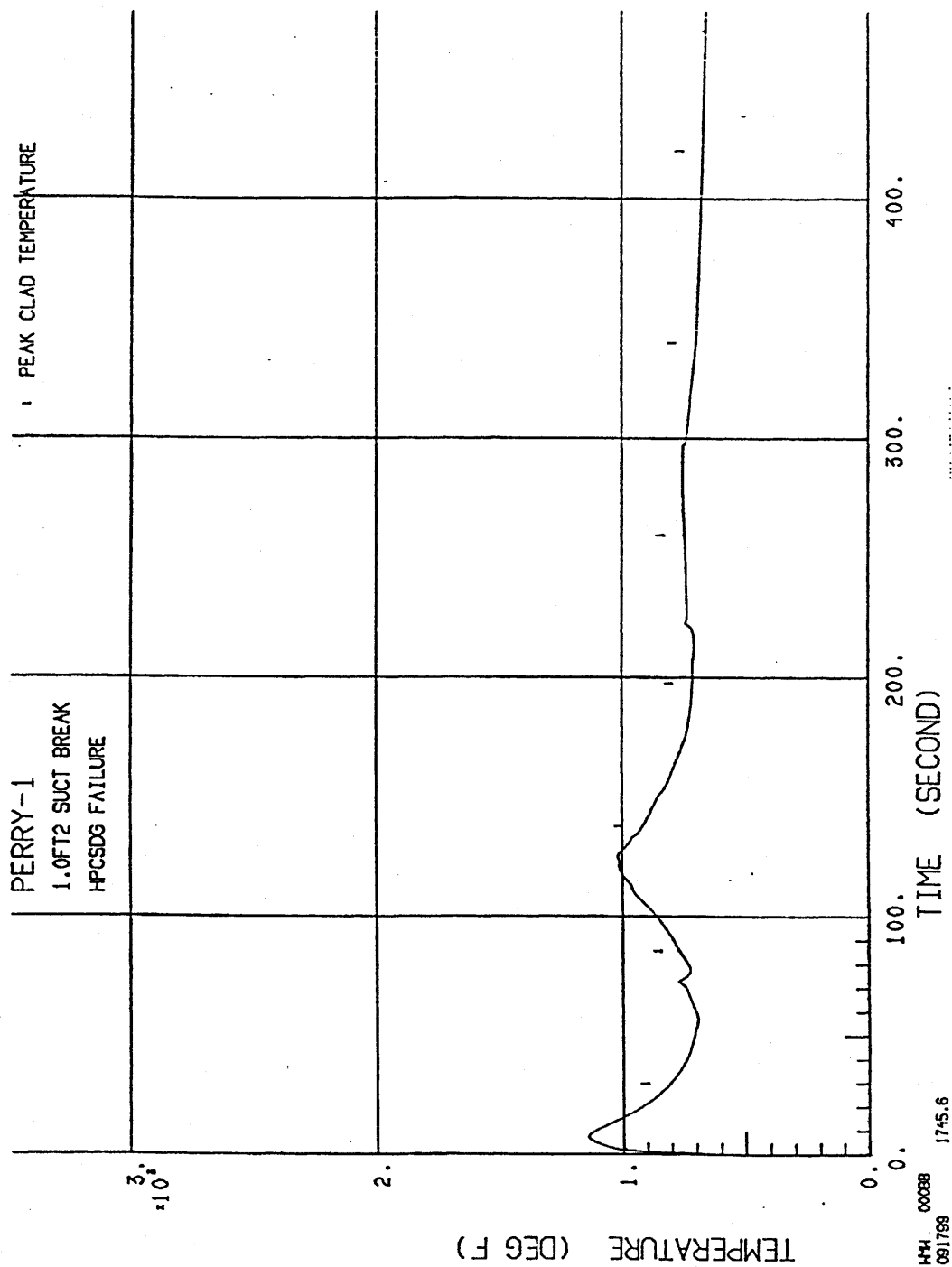
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

ECCS Flow - 1.0 ft² Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-15 (Sheet 5 of 7)



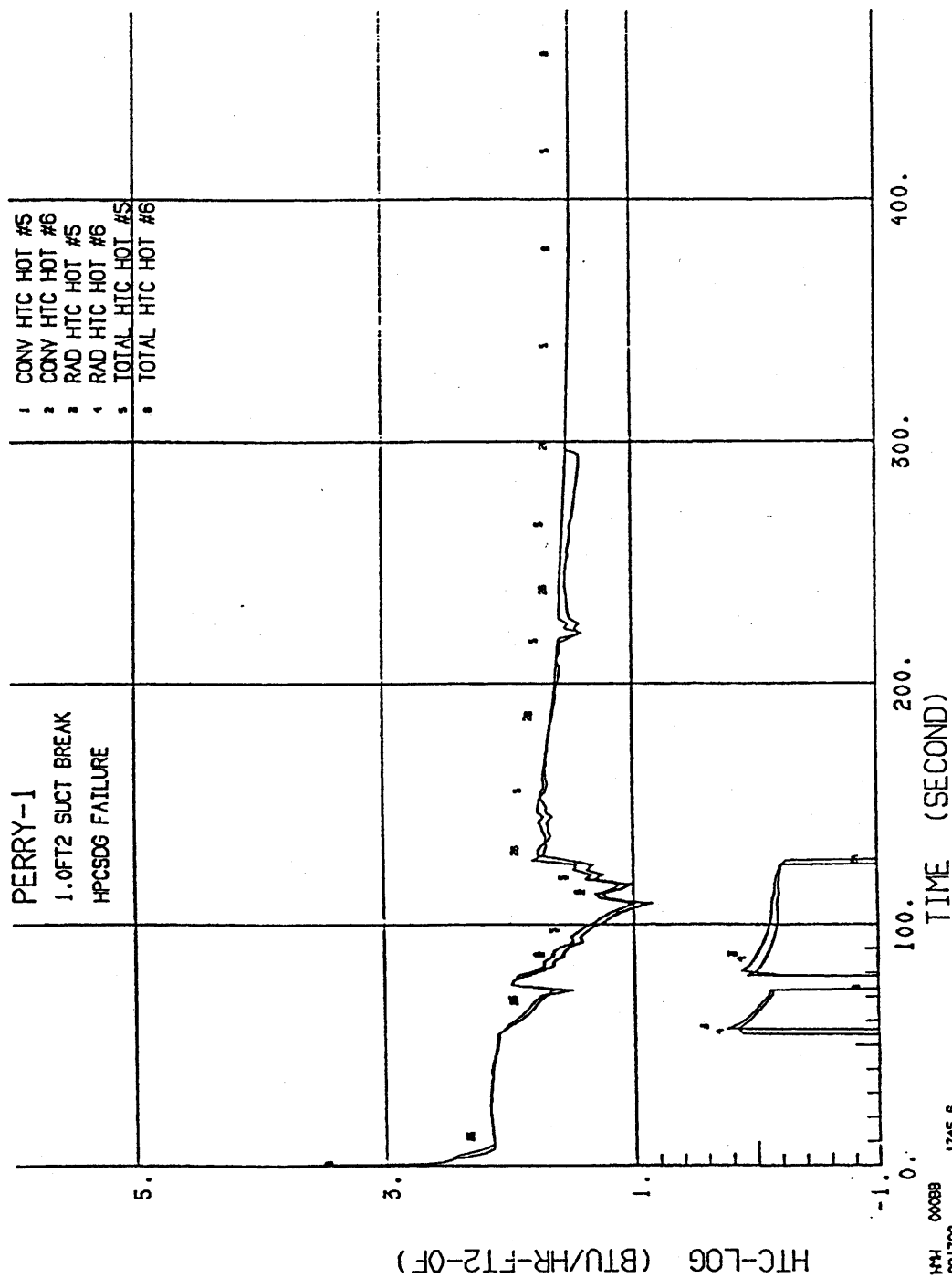
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PERRY NUCLEAR POWER PLANT

Peak Cladding Temperature
(GE11) - 1.0 ft² Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-15 (Sheet 6 of 7)



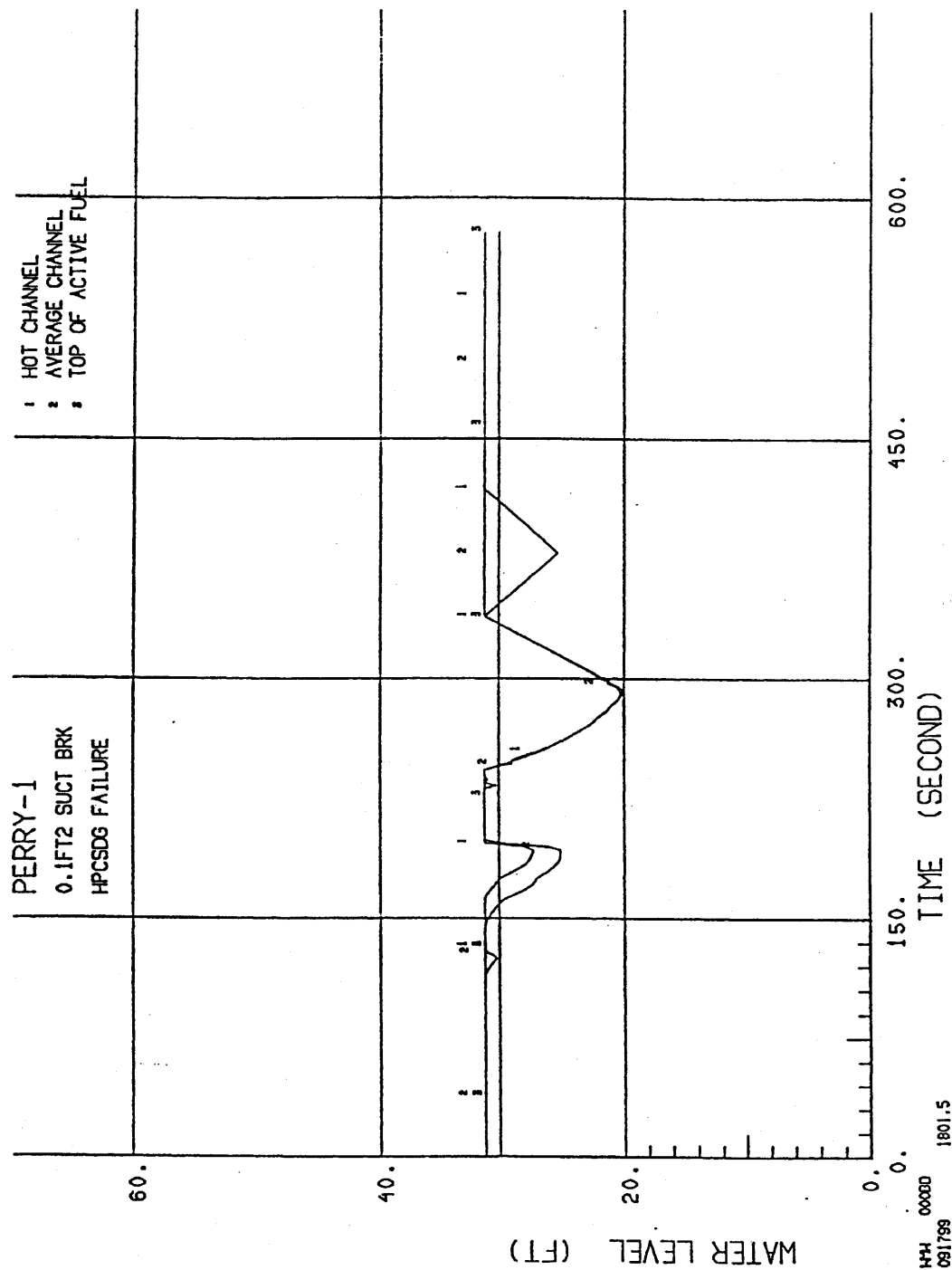
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PERRY NUCLEAR POWER PLANT

Heat Transfer Coefficient
(GE11) - 1.0 ft² Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-15 (Sheet 7 of 7)



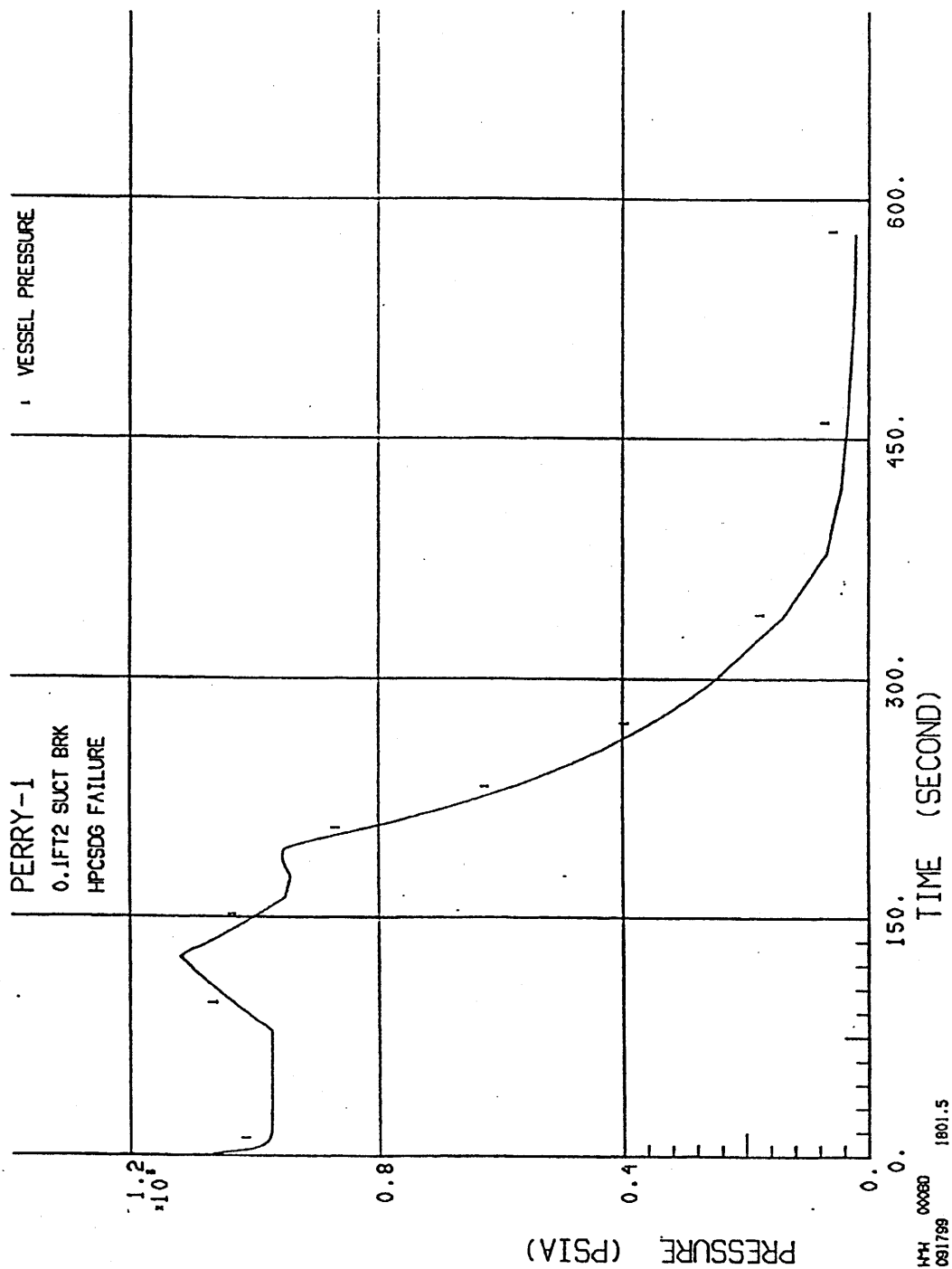
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PERRY NUCLEAR POWER PLANT

Water Level in Hot and Average
Channel - 0.1 ft² Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-16 (Sheet 1 of 7)



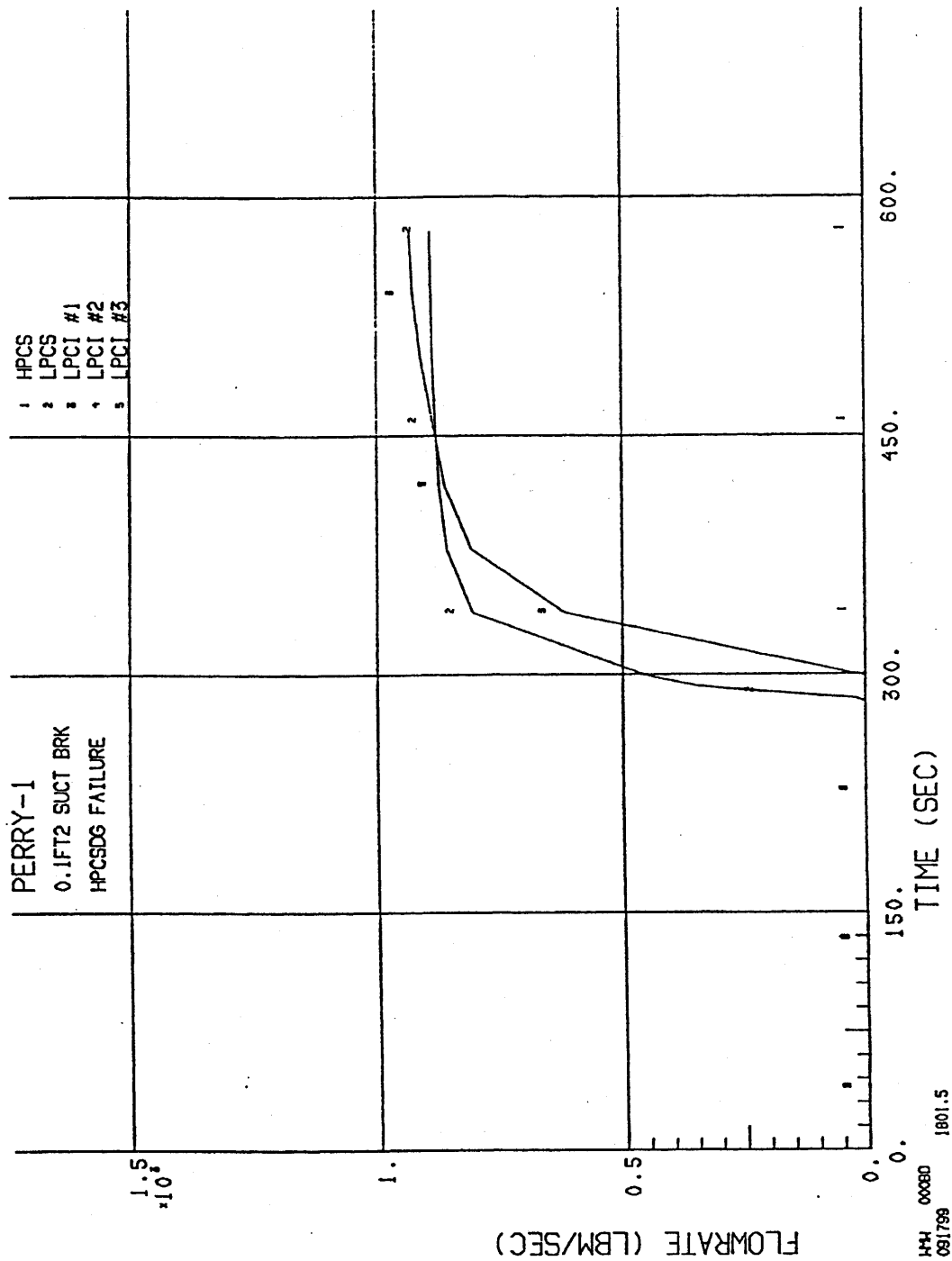
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PERRY NUCLEAR POWER PLANT

Reactor Vessel Pressure -
 0.1 ft² Suction -
 HPCS D/G Failure (Appendix K)
 LPCS + 3LPCI + ADS Available

Figure 6.3-16 (Sheet 2 of 7)



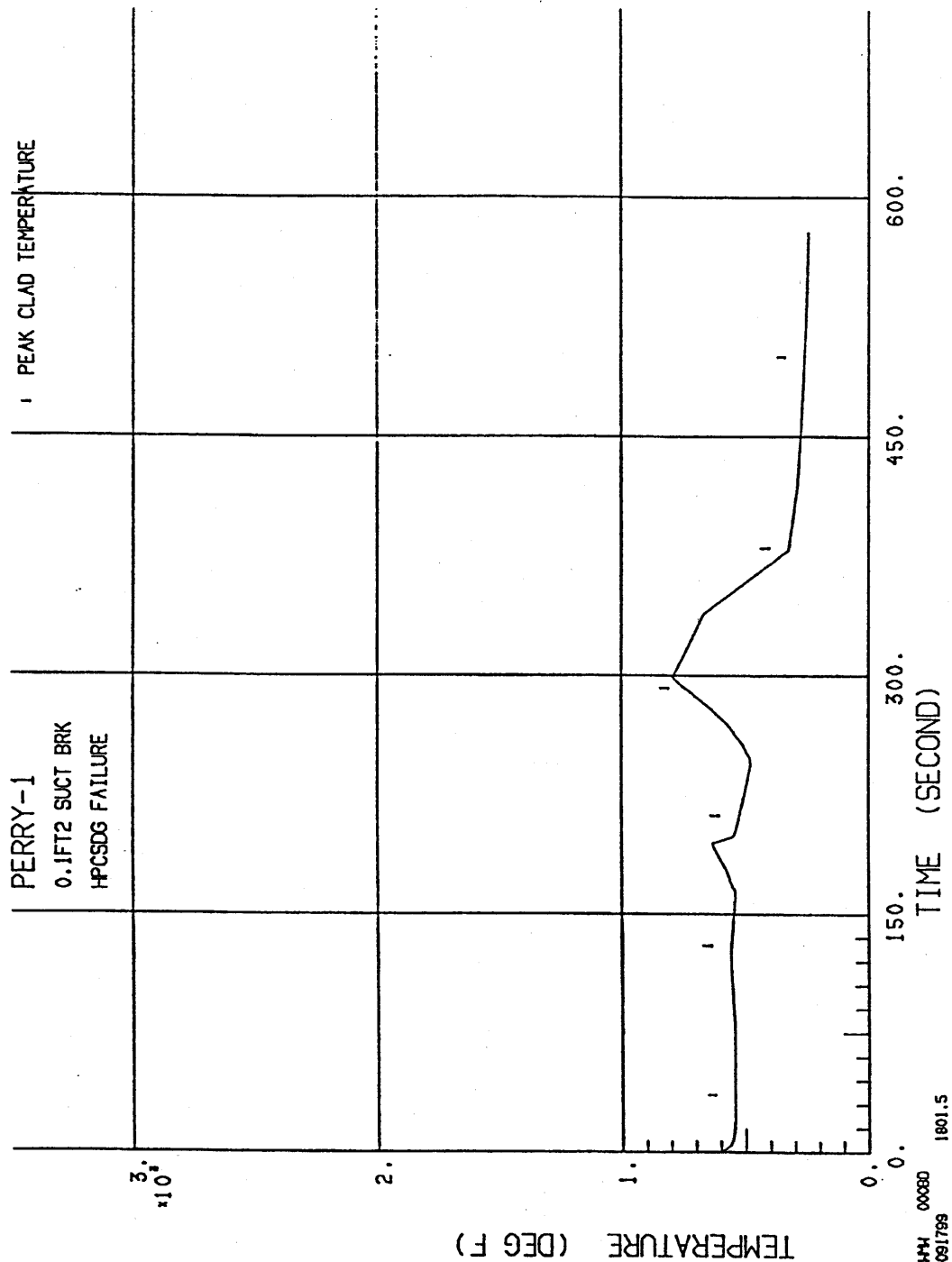
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PERRY NUCLEAR POWER PLANT

ECCS Flow - 0.1 ft² Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-16 (Sheet 5 of 7)



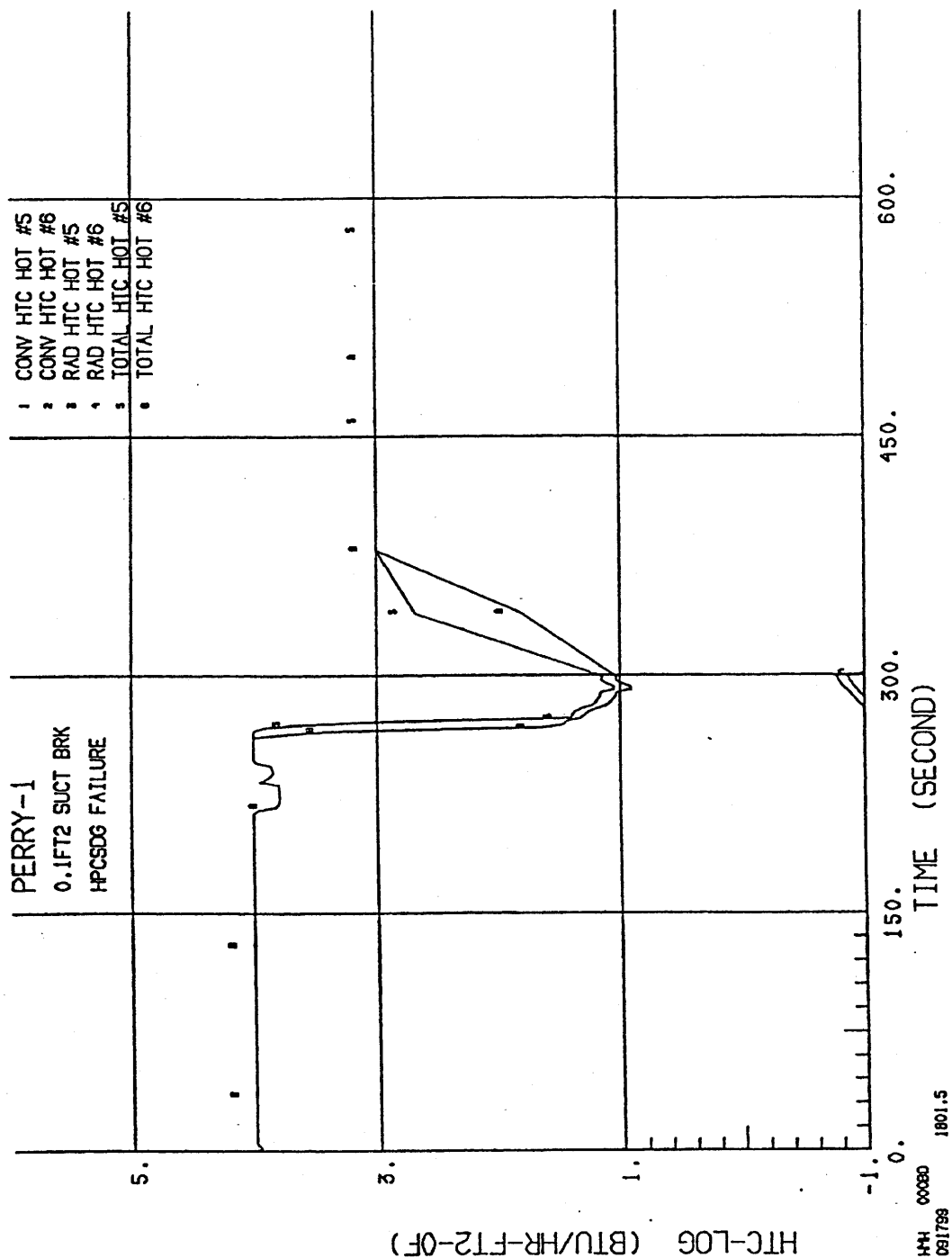
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PERRY NUCLEAR POWER PLANT

Peak Cladding Temperature
(GE11) - 0.1 ft² Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-16 (Sheet 6 of 7)



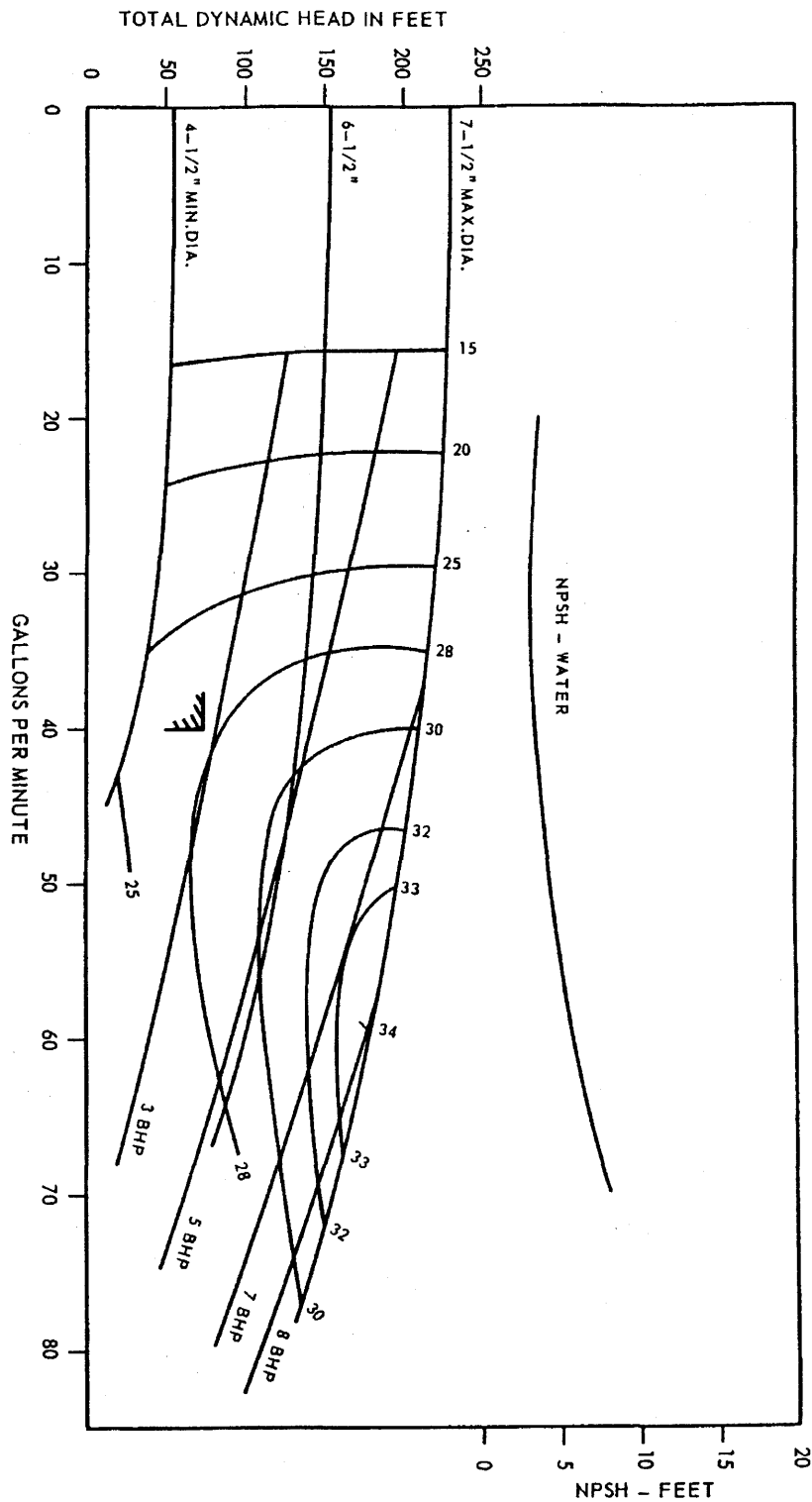
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PERRY NUCLEAR POWER PLANT

Heat Transfer Coefficient
(GE11) - 0.1 ft² Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-16 (Sheet 7 of 7)



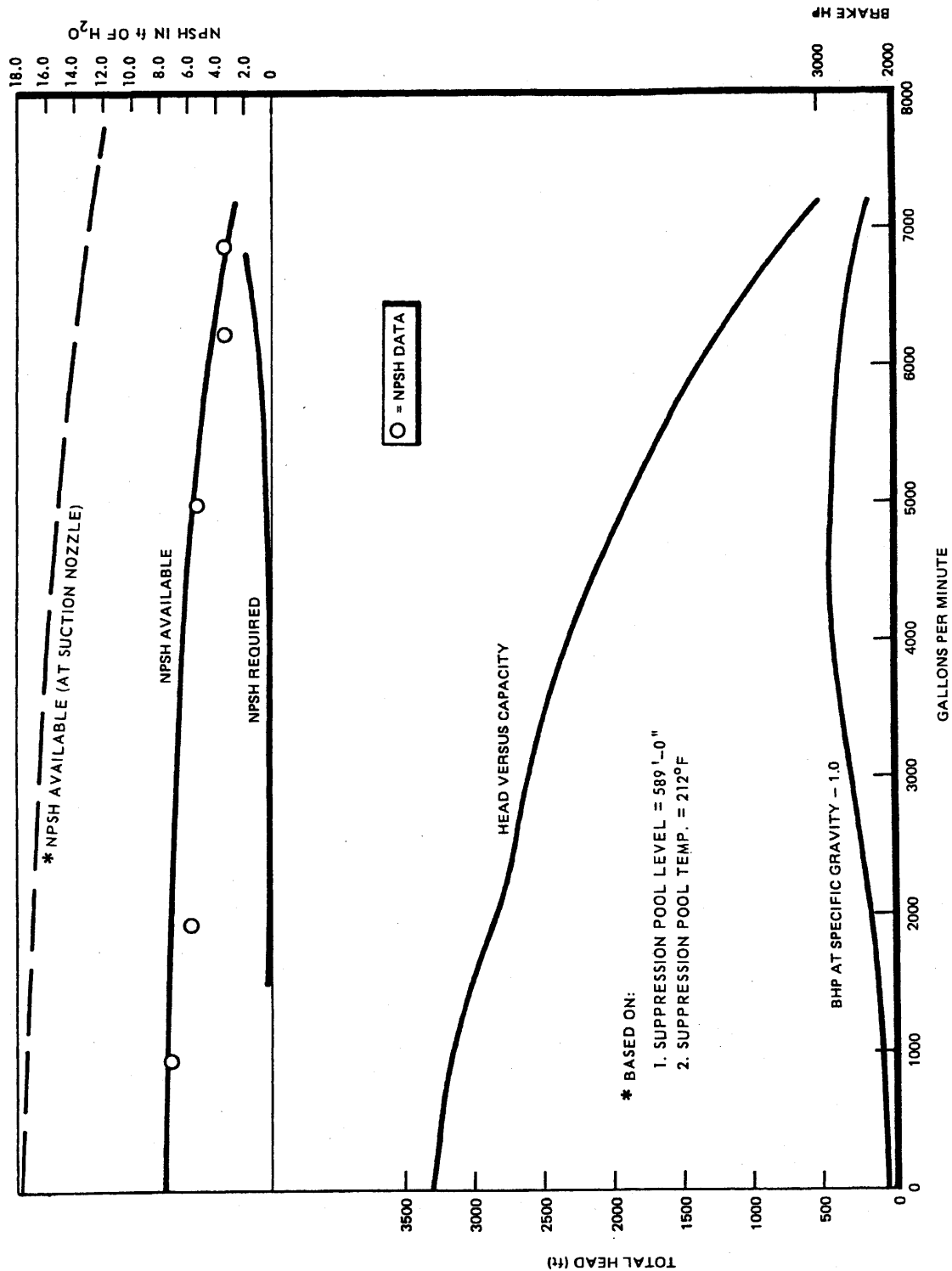
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Jockey Pump Performance Curve

Figure 6.3-74



NOTE:

1. THE NPSH AVAILABLE CURVES IN THIS FIGURE DO NOT REPRESENT THE AVAILABLE NPSH FOR THE HPCS PUMP WITH THE LARGE PASSIVE STRAINER. SEE SECTION 6.3.2.2.1 FOR THE AVAILABLE NPSH WITH THE SUPPRESSION POOL AT 185°F.

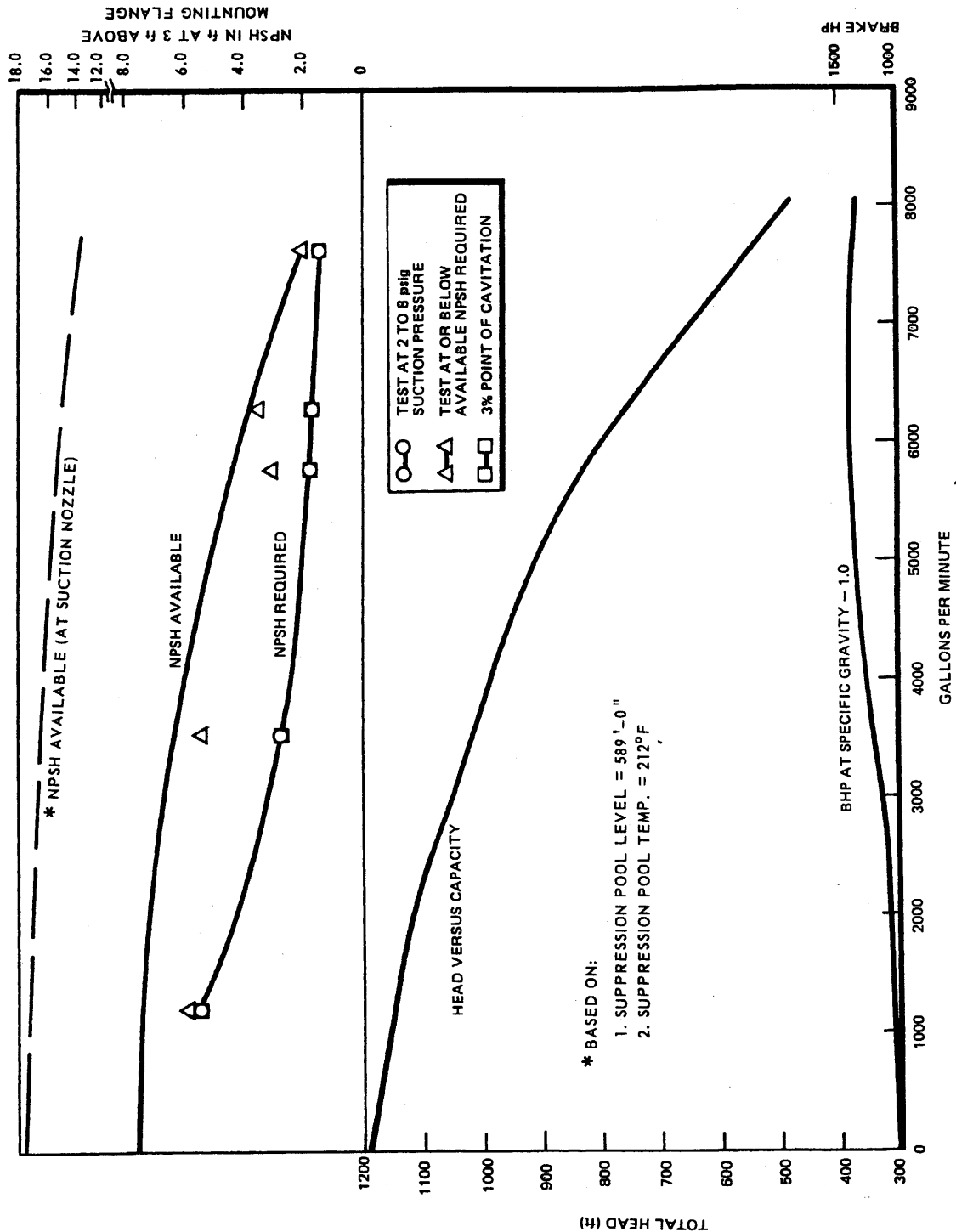
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Pump Curves for
HPCS Pump

Figure 6.3-75...



NOTE:

1. THE NPSH AVAILABLE CURVES IN THIS FIGURE DO NOT REPRESENT THE AVAILABLE NPSH FOR THE LPCS PUMP WITH THE LARGE PASSIVE STRAINER. SEE SECTION 6.3.2.2.3 FOR THE AVAILABLE NPSH WITH THE SUPPRESSION POOL AT 185°F.

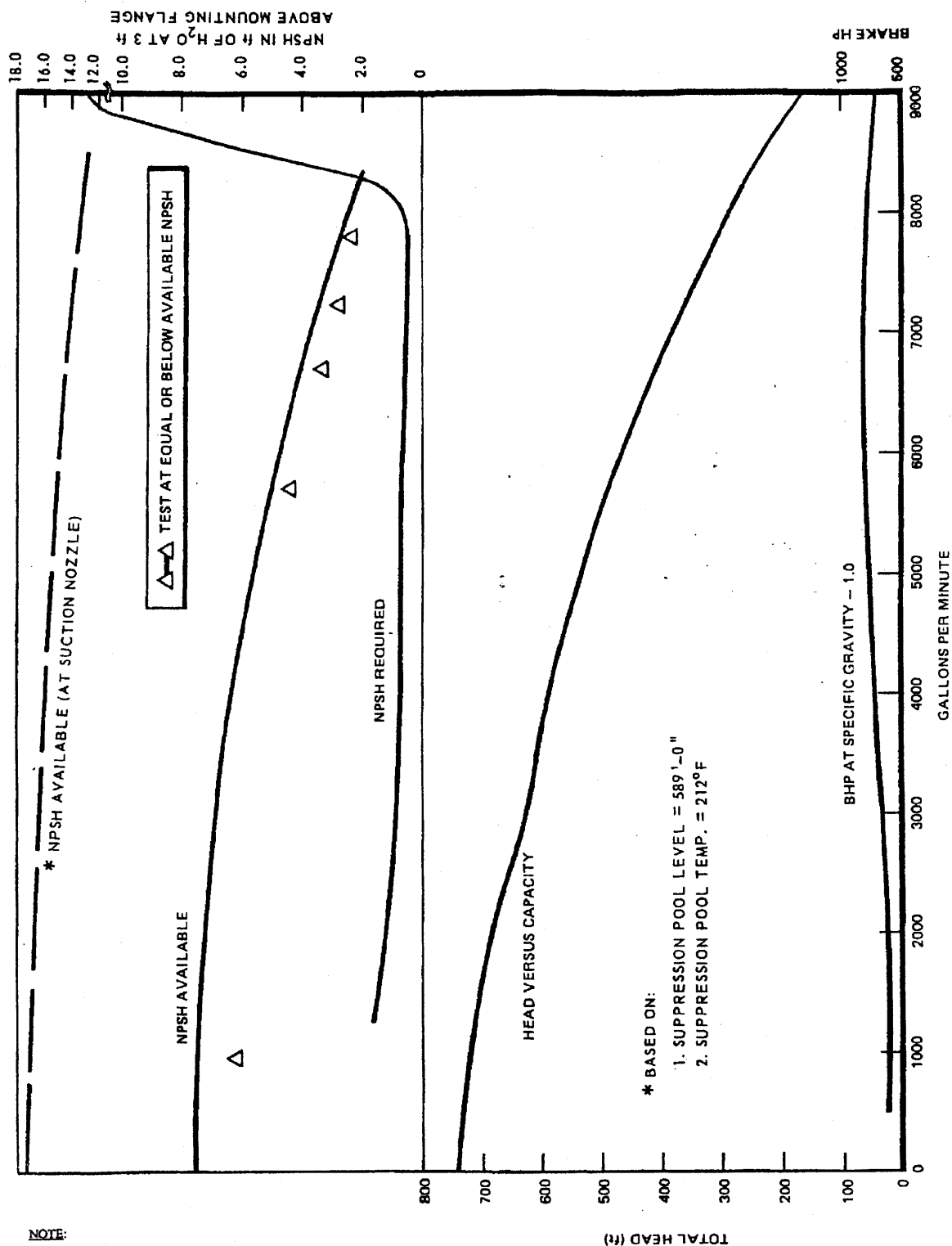
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PERRY NUCLEAR POWER PLANT

Pump Curves for LPCS Pump

Figure 6.3-76



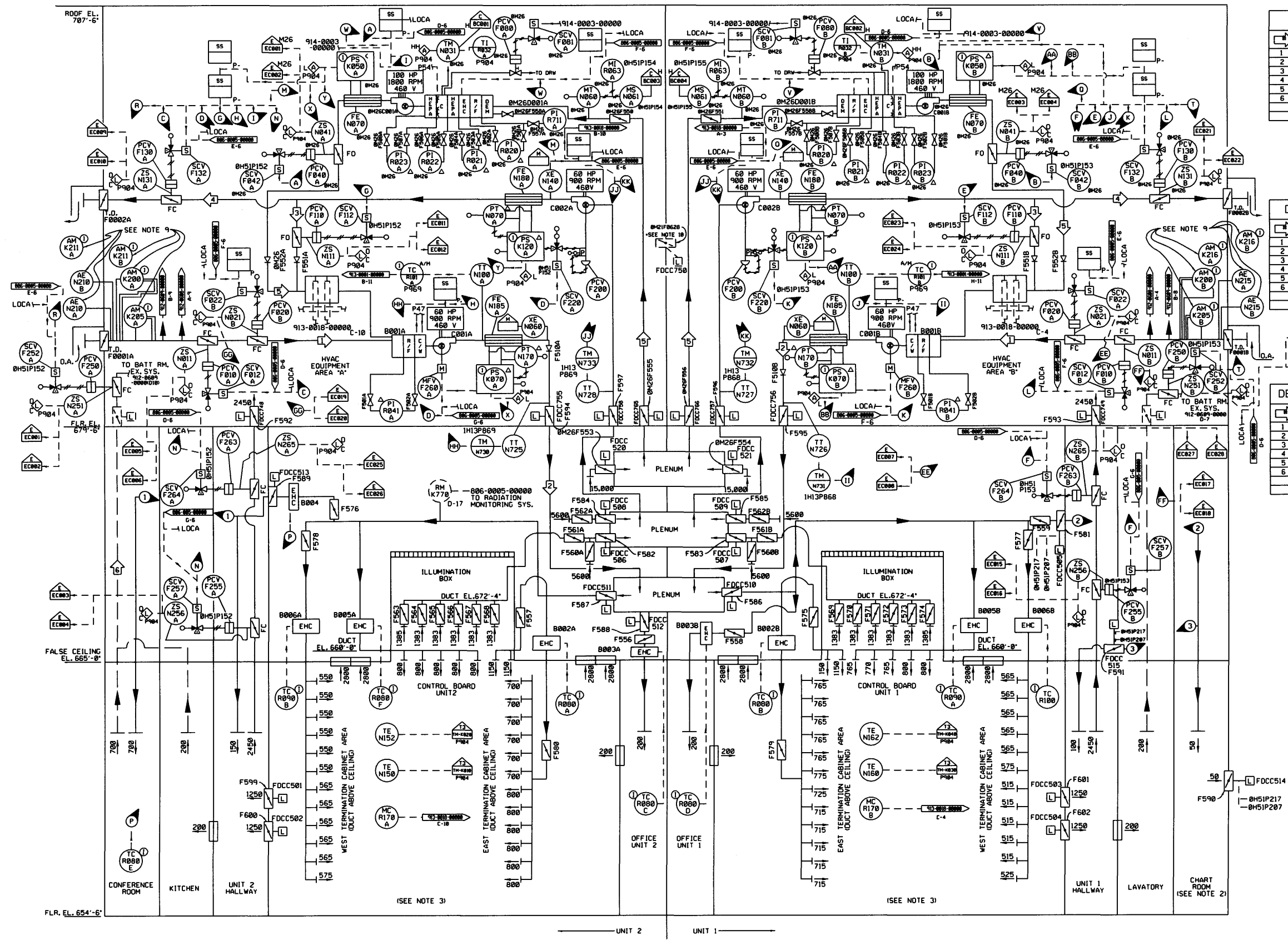
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PERRY NUCLEAR POWER PLANT

Pump Curves for RHR Pump

Figure 6.3-77



DESIGN DATA (NORMAL)				
CFM	BY	REMARKS	REV	
1		6,000		
2		45,000		
3		37,000		
4		0		
5		0		
6		900		

DESIGN DATA (EMERGENCY)				
CFM	BY	REMARKS	REV	
1		0		
2		30,000		
3		0		
4		0		
5		30,000		
6		0		

DESIGN DATA (SMOKE CLEAR)				
CFM	BY	REMARKS	REV	
1		30,000		
2		30,000		
3		0		
4		30,000		
5		0		
6		0		

(REV. 19 10/2015)

PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

CONTROL ROOM HVAC AND
EMERGENCY RECIRCULATION SYSTEMS
FIGURE 6.4-1 (SHEET 1 OF 2)
(DWG. D-912-0610-00000)

NOTES:
1. ALL FANS, SUPPLY PLENUMS, AND EXHAUST PLENUMS ARE FLOOR MOUNTED.
2. CHART ROOM VENTS 50 CFM TO UNIT 1 HALLWAY.
3. ALL DUCTING SHOWN IN THIS AREA ACTUALLY IN FALSE CEILING WITH REGISTERS DOWN TO ROOM.
4. ILLUMINATION BOXES CONTAIN LIGHTING FOR AREA BELOW.
5. INLET VANES FOR FANS 0M26C001A, C001B ARE MANUALLY OPERATED.
6. ALL AIR QUANTITIES ARE IN CFM.
7. ADDITIONAL NOTES AND OPERATING DATA ARE SHOWN ON DWG. 912-0611-00000.

8. FIRE DAMPERS (FDXX-XXX) SHOWN ON THIS DRAWING ARE TO BE ANS SAFETY CLASS NMS AND SEISMIC CATEGORY 1.
9. TOXIC GAS DETECTION EQUIPMENT SPARED IN PLACE.
10. REFER TO DWG. 912-0608-00000 FOR FIRE DAMPER FDC-750 (F628) FLOW VALUES.
11. ALL FUNCTIONAL LOCATIONS ARE PREFIXED BY 0M25 UNLESS OTHERWISE NOTED.
12. ALL PANEL NUMBERS ARE PREFIXED BY 0M13 UNLESS OTHERWISE NOTED.

REFERENCES:
912-0608-00000 CONTROLLED ACCESS AND MISC. EQUIPMENT AREAS-HVAC SYSTEM M21
912-0609-00000 MCC SWITCHGEAR AND MISC. ELECTRICAL EQUIPMENT AREAS -HVAC SYSTEMS AND BATTERY ROOM EXHAUST SYSTEMS M23 AND M24
913-0001-00000 CONTROL COMPLEX CHILLED WATER SYSTEM P47
913-0018-00000 STEAM HUMIDIFICATION SYSTEM M29
914-0003-00000 FIRE SERVICE WATER SYSTEM P54
806-0005-00000 PLANT RADIATION MONITORING SYSTEM DIAGRAM D17
912-0611-00000 MCC SWITCHGEAR AND MISC. ELECTRICAL EQUIPMENT SYSTEMS M23, M24, M25, AND M26

NOTES:-

1. ALL DIFFERENTIAL PRESSURE SWITCH ALARMS ARE INTERLOCKED WITH THE FAN MOTOR STARTER AND PROVIDED WITH TIME DELAY RELAY.
2. ALL CONTROL SWITCHES, FAN STATUS LIGHTS, ALARM INDICATING LIGHTS, AND DAMPER POSITION LIGHTS ARE LOCATED ON THE CORRESPONDING LOCAL PANEL. M21-P177A OR M21-P177B, EXCEPT WHERE NOTED.
3. FAN STATUS LIGHTS, ALARMS, AND TEMPERATURE INDICATORS ARE LOCATED ON THE COMMON HVAC PANEL M13-P004 IN CONTROL ROOM #1.
4. ALL ALARMS FROM THIS SYSTEM ARE ANNUNCIATED AS "COMMON HVAC TROUBLE" ON PANEL M13-P000 IN BOTH CONTROL ROOMS.
5. THE FAN TRAIN SETUP SWITCH WILL START THE 3 FANS WITH A TIME DELAY FOR M23-C001A(B) AND M23-C002A(B) IN ORDER TO START M24-C001A(B) FIRST.
6. WHEN A FAN TRAIN IS SIGNALLED TO START, THE FANS ARE PROVIDED WITH TIME DELAY SO THAT THE DAMPERS WILL BE POSITIONED FIRST, PRIOR TO FAN TRAIN START.
7. ON LOSS OF FAN OPERATION (LOW FLOW OR FAN TRIP) ON ANY OF THE 3 OPERATING FANS (A OR B) THE AIR FLOW MONITOR DEVICE WILL TRIP THE REMAINING FANS IN THE TRAIN AND THE DIFFERENTIAL PRESSURE SWITCH WILL PROVIDE A SIGNAL TO AUTOMATICALLY SWITCH OVER TO THE STAND BY FAN TRAIN (A OR B).
8. THE 2 - POSITION SELECTOR SWITCH WILL POSITION THE DAMPERS AS INDICATED IN THE TABLE BELOW:

SYSTEM	ITEM	RECIRC.	NORMAL	REMARKS
M24	F011A(B)	C	O	
M23	F010A(B)	C	O	
M24	F065A(B)	O	C	
M24	F051A(B)	C	O	SEE NOTE 11

O = OPEN
C = CLOSED

9. DAMPERS ARE POSITIONED ACCORDING TO THE DAMPER OPERATOR SELECTOR SWITCH POSITION ONLY WHEN THE ASSOCIATED FAN TRAIN IS MANUALLY STARTED OR IN STANDBY WITH AUTOMATIC START SIGNAL FROM THE SWITCHOVER NETWORK, OTHERWISE THE DAMPERS ARE IN THE FAIL SAFE POSITION (RECIRCULATION MODE).
10. EACH ROOM (TOTAL OF 23 ROOMS) SERVED BY M23/M24/M27 ARE PROVIDED WITH THE FOLLOWING TEMPERATURE ELEMENTS WHICH TRANSMIT TO THE RILEY MODEL 88 TEMPERATURE MONITORING SYSTEM LOCATED ON PANEL M13-P004.

TEMP. ELEM. NUMBER	ROOM OR AREA LOCATED
M23-N100-TE	DC SWGR ROOM, DIV. I, UNIT 1
M23-N110-TE	DC SWGR ROOM, DIV. II, UNIT 1
M23-N120-TE	DC SWGR ROOM, DIV. I, UNIT 2
M23-N130-TE	DC SWGR ROOM, DIV. II, UNIT 2
M23-N140-TE	BATTERY ROOM, DIV. I, UNIT 1
M23-N150-TE	BATTERY ROOM, DIV. II, UNIT 1
M23-N160-TE	BATTERY ROOM, DIV. I, UNIT 2
M23-N170-TE	BATTERY ROOM, DIV. II, UNIT 2
M23-N180-TE	CABLE SPREADING AREA, DIV. I, UNIT 1
M23-N190-TE	CABLE SPREADING AREA, DIV. II, UNIT 1
M23-N200-TE	CABLE SPREADING AREA, DIV. I, UNIT 2
M23-N210-TE	CABLE SPREADING AREA, DIV. II, UNIT 2
M27-N220-TE	COMPUTER ROOM UNIT 1
M27-N230-TE	COMPUTER ROOM UNIT 2
M23-N240-TE	MCC & SWGR ROOM, DIV. I, UNIT 1
M23-N250-TE	MCC & SWGR ROOM, DIV. II, UNIT 1
M23-N260-TE	MCC & SWGR ROOM, UNIT 2
M23-N270-TE	HAB MCC ROOM, UNIT 2
M23-N280-TE	NPCC TRANSFORMER & BATTERY ROOM, UNIT 1
M23-N290-TE	NPCC TRANSFORMER & BATTERY ROOM, UNIT 2
M23-N300-TE	REMOTE SHUTDOWN PANEL ROOM, UNIT 1
M23-N320-TE	RPS MG SET ROOM, DIV. I, UNIT 1
M23-N330-TE	RPS MG SET ROOM, DIV. II, UNIT 1

11. M24-F051A(B) IS POSITIONED CLOSED WHEN ANY OF THE FOLLOWING IS MET:
A. M25/26 IN SMOKE CLEAR OR EMERG. RECIRC. MANUAL OR AUTO INITIATION
B. M23/M24 MODE SWITCH IN RECIRC.
C. ASSOCIATED FAN TRAIN IS SHUT DOWN

NOTES:-

1. ALL DIFFERENTIAL PRESSURE SWITCH ALARMS ARE INTERLOCKED WITH THE FAN MOTOR STARTER AND PROVIDED WITH TIME DELAY RELAY.
2. ALL CONTROL SWITCHES, STATUS LIGHTS, ALARMS AND TEMPERATURE INDICATORS ARE LOCATED ON THE COMMON HVAC PANEL (M13-P004) IN CONTROL ROOM #1.
3. ALL ALARMS FROM THIS SYSTEM ARE ANNUNCIATED AS "COMMON HVAC TROUBLE" ON PANEL M13-P000 IN BOTH CONTROL ROOMS.
4. THE 3-POSITION MODE SELECT SWITCH WILL POSITION THE DAMPERS AND START AND STOP FANS AS INDICATED IN THE TABLE BELOW:

ITEM	SMOKE CLEAR	NORMAL	REMARKS	EMER. RECIRC.
F130A(B)	O	C		C
F110A(B)	C	O		C
F010A(B)	O	O		C
F250A(B)	C	O	SEE NOTE 12	C
F255A(B)	C	O		C
SCV-F220A(B)	E	DE	SEE NOTE 9	E
M25-C001A(B)	S	S		R
M25-C002A(B)	R	R		R
M25-C002A(B)	R	R		S
M25-F260A(B)	DE	E	SEE NOTE 9	DE
M25-F263A(B)	C	O		C

R = RUN
S = STOP
C = CLOSED
O = OPEN
E = EMERGENCY
DE = DEENERGIZE

5. FANS AND DAMPERS, EXCEPT F10A(B), F250A(B), F255A(B), AND F263A(B), ARE OPERATED ACCORDING TO THE MODE SELECT SWITCH POSITION ONLY WHEN THE ASSOCIATED FAN TRAIN INITIATE SWITCH IS IN THE "ON" POSITION, OTHERWISE THE DAMPERS ARE IN THE FAIL SAFE POSITION.
6. LOSS OF FAN OPERATION (LOW FLOW OR FAN TRIP) ON ANY OF THE OPERATING FAN TRAIN (A OR B) WILL TRIP THE REMAINING FANS. THE STAND BY FAN TRAIN (A OR B) IS MANUALLY STARTED AND WILL OPERATE ACCORDING TO THE MODE SELECT SWITCH POSITION (SEE NOTE 4).
7. LOCA (FROM EITHER REACTOR), HIGH RADIATION, OR LOOP WILL OVERRIDE THE MODE SELECT SWITCH AND OPERATE THE SYSTEM IN THE EMERGENCY RECIRCULATION MODE. BOTH FAN TRAINS WILL RUN.
8. THE BLENDING VALVE (SCV-F220A, B) ENERGIZES TO VENT ACTUATORS (PCV-F200A, B) AND POSITION THE VARIABLE INLET VANES OF FANS (M23-C002A, B) TO REDUCE THE AIR FLOW TO 30,000 CFM.
9. DE-ENERGIZING ACTUATOR (M2V-F200A, B) WILL POSITION THE VARIABLE INLET VANES OF FANS (M23-C001A, B) TO REDUCE THE AIR FLOW TO 30,000 CFM.
10. BYPASS AND INOPERABLE STATUS INDICATION IS REQUIRED IN THE CONTROL ROOM.

REFERENCES:
912-8601-00000 M23, M24
912-8610-00000 M25, M26
MCC SWITCHGEAR AND MISCELLANEOUS ELECTRICAL EQUIPMENT
CONTROL ROOM HVAC AND EMERGENCY RECIRCULATION SYSTEM M25, M26

NOTES:-
1. SEE DRAWINGS 912-8601-00000 AND 912-8610-00000

11. FOR PROPER SYSTEM OPERATION, BOTH A AND B TRAIN MODE SELECT SWITCHES SHOULD BE ADMINISTRATIVELY KEPT IN THE SAME POSITION.
12. M24-F051A(B) OPERATES WITH M25-F260A(B) EXCEPT WHEN M23/24 SYSTEM MODE SWITCH IS IN RECIRC. OR WHEN THE ASSOCIATED M23/24 FAN TRAIN IS SHUTDOWN EITHER OF WHICH CLOSES M24-F051A(B).
13. M25-F020A(B) IS NOT POSITIONED BY THE MODE SWITCH, BUT IS CLOSED BY LOCA, HIGH RADIATION, OR LOOP. M25-F020A(B) HAS AN INDEPENDENT CONTROL SWITCH FOR MANUAL POSITIONING THE DAMPER IN OTHER MODES.

(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Notes and Operating Data for
<Figure 6.4-1> and <Figure 9.4-1>

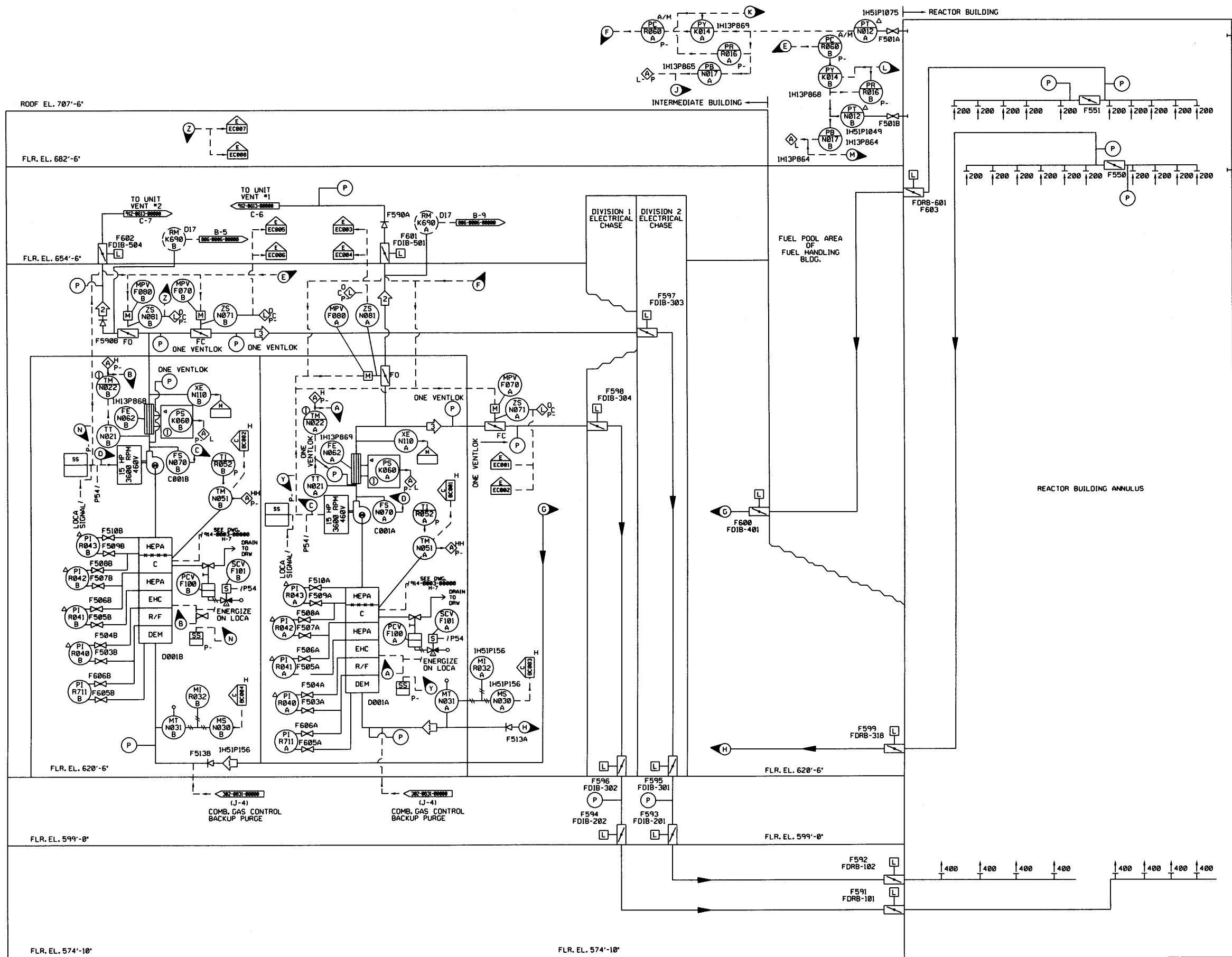
Figure 6.4-1 (Sheet 2 of 2)
(Dwg. D-912-611)

Removed in Accordance with RIS 2015–17

PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

CONTROL ROOM ENVELOPE

FIGURE 6.4-2
(DWG. D-105-0015-000000)



DESIGN DATA				
	CFM	BY	REMARKS	REV.
1	2000			
2	700			
3	1300			
1	1000			
2	1000			
3	1000			
*OPERATING DATA				
	CFM	BY	REMARKS	REV.
1	2162			
2	527			
3	1635			
1	2142			
2	418			
3	1724			

*OPERATING DATA TAKEN AT .4" WG NEGATIVE PRESSURE.

- NOTES:
1. ALL DIFFERENTIAL PRESSURE SWITCH ALARMS ARE INTERLOCKED WITH FAN MOTOR STARTER AND PROVIDED WITH TIME DELAY RELAY.
 2. ALL CONTROL SWITCHES, STATUS LIGHTS, RECORDERS, TEMPERATURE INDICATORS AND ALARMS ARE LOCATED ON THE MAIN PANEL (1H3P860) IN THE CONTROL ROOM, EXCEPT WHERE NOTED.
 3. LOSS OF FAN OPERATION (FAN TRIP OR LOW FLOW) OF THE OPERATING FAN AUTOMATICALLY STARTS THE STANDBY FAN.
 4. BYPASS AND INOPERABLE SYSTEM STATUS INDICATION IS PROVIDED IN THE CONTROL ROOM.
 5. ALL ALARMS FROM THIS SYSTEM WILL BE ANNUNCIATED AS "HAC TROUBLE" ON THE PANEL (1H3P860) IN THE CONTROL ROOM.
 6. MPV-F080A (B) WILL MODULATE TOWARD FULL CLOSE ONLY WHEN DAMPER MPV-F078A (B) IS FULL OPEN.
 7. ALL AIR QUANTITIES ARE IN CFM.
 8. FIRE DAMPERS (FDX-XXX) SHOWN ON THIS DRAWING ARE TO BE AHS SAFETY CLASS MMS AND SEISMIC CATEGORY 1.

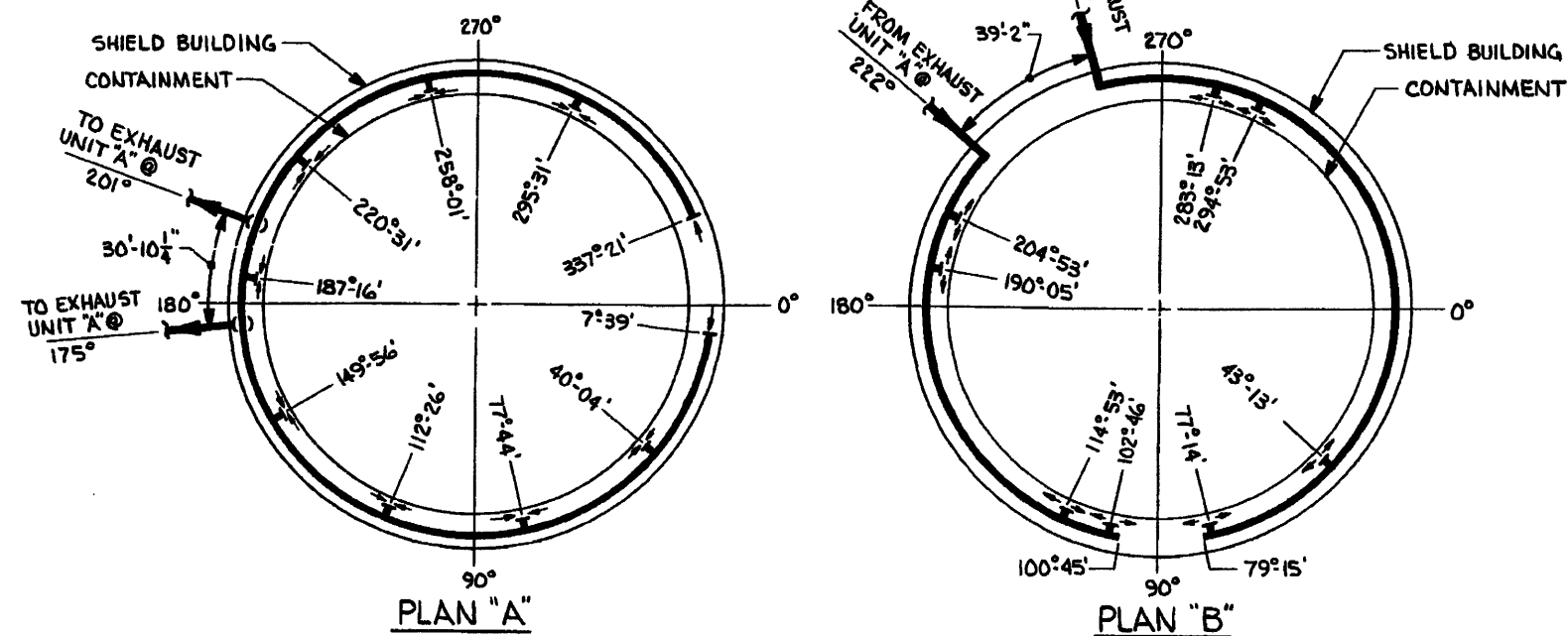
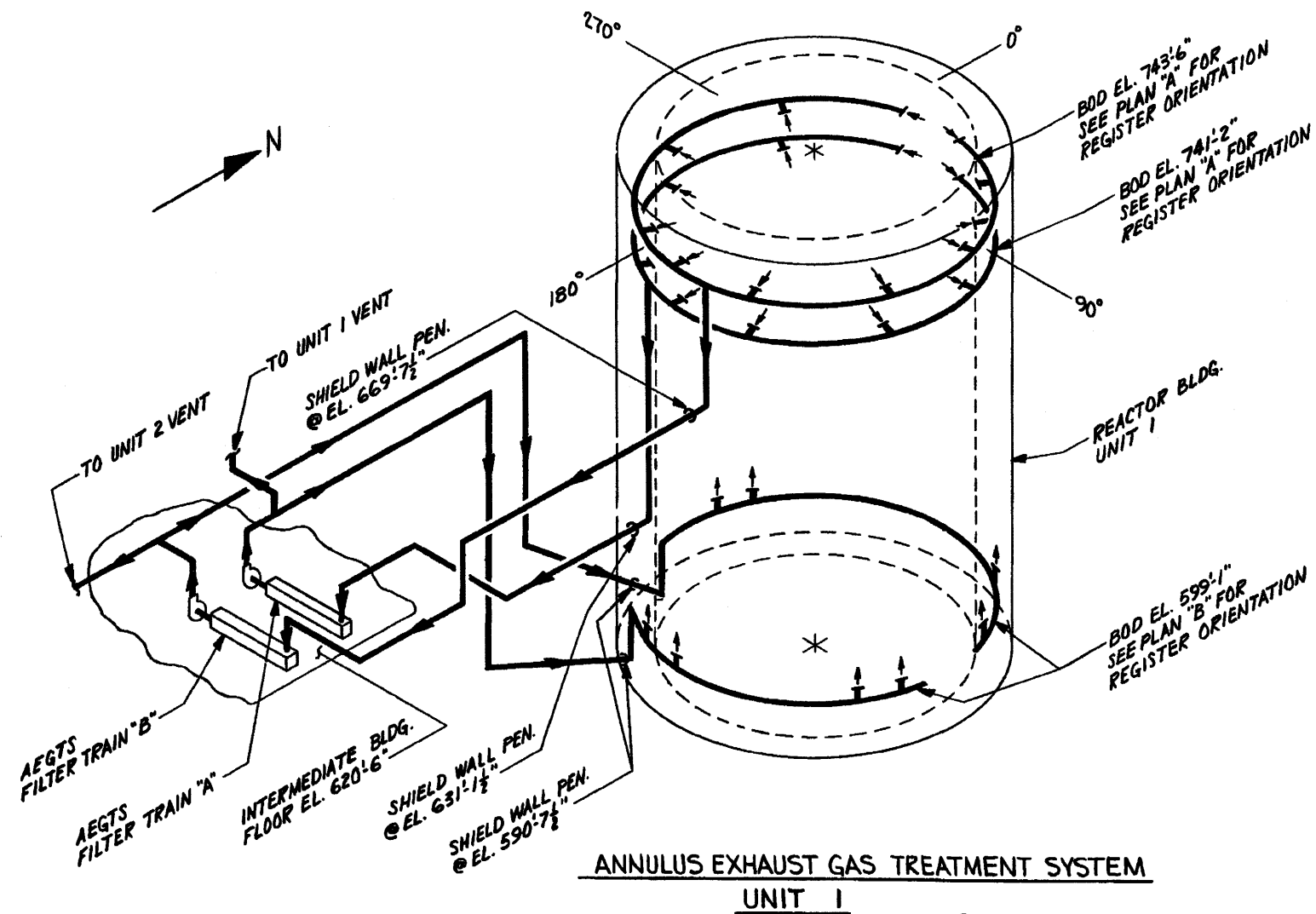
REFERENCES:

- 302-0031-00000 COMBUSTIBLE GAS CONTROL SYSTEM M51
- 914-0003-00000 FIRE SERVICE WATER SYSTEM P54
- 096-0005-00000 RADIATION MONITORING SYSTEM D17
- 912-0613-00000 INTERMEDIATE BUILDING VENTILATION SYSTEM M33

(REV. 19 10/2015)

PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

**ANNULUS EXHAUST
GAS TREATMENT SYSTEM**
FIGURE 6.5-1
(DWG. D-912-0605-00000)



(REV. 19 10/2015)

PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

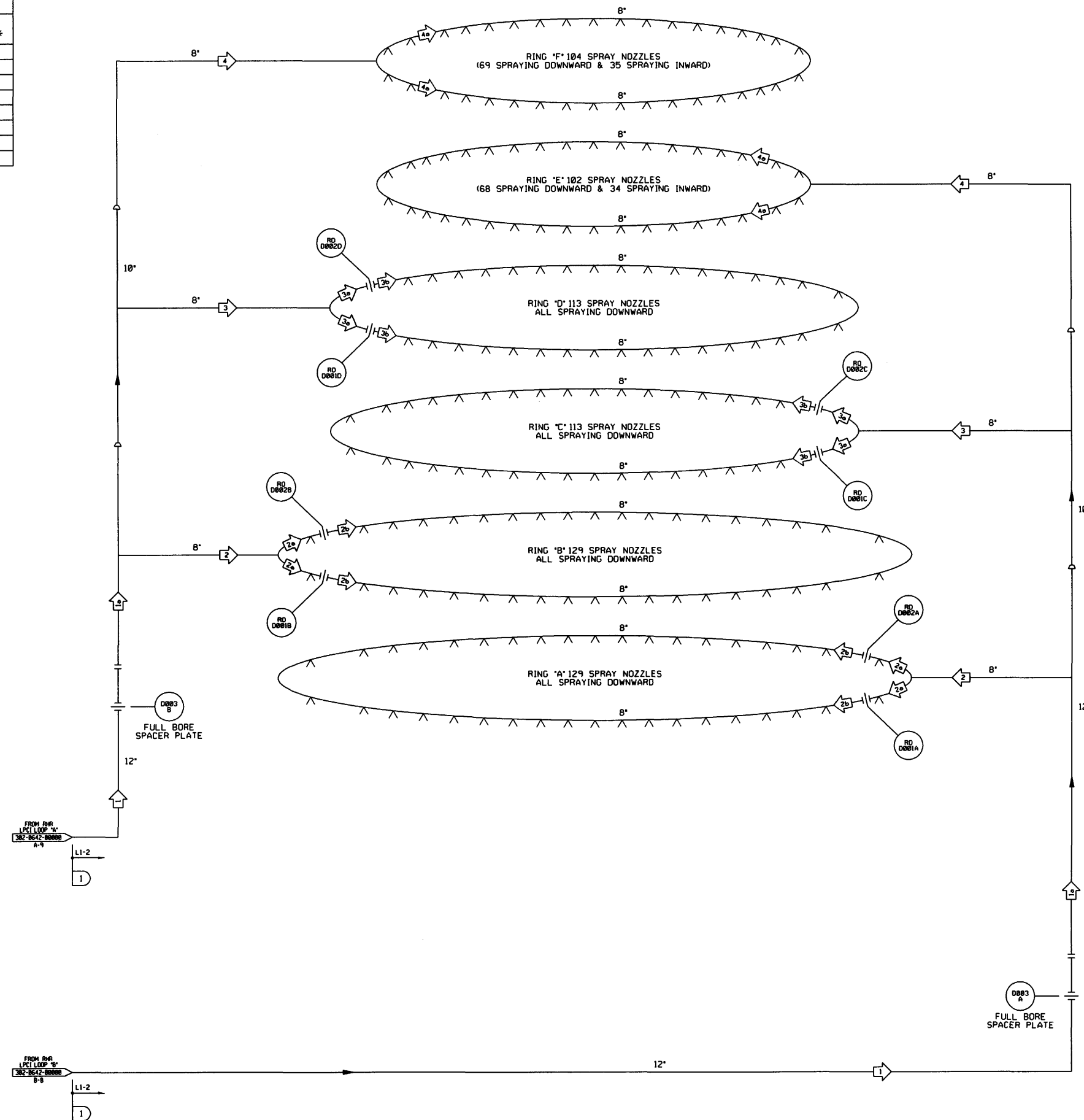
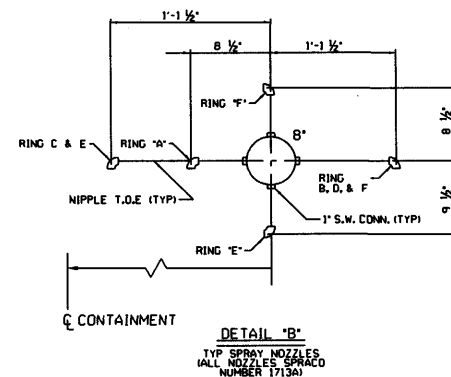
ANNULUS EXHAUST GAS TREATMENT
SYSTEM DISTRIBUTION DUCTWORK

FIGURE 6.5-2

NOZZLE DATA			
RING	NUMBER OF NOZZLES	TYPICAL SPACING BETWEEN NOZZLES	CONNECTION TO RING **
A	129	2' 46" 9.2302"	HORIZONTAL
B	129	2' 46" 9.2302"	HORIZONTAL
C	113	2' 44" 53.1294"	* HORIZONTAL
D	113	2' 44" 53.1294"	* HORIZONTAL
E	68	4' 44" 12.631"	* HORIZONTAL
E	34	9' 28" 25.262"	* VERTICAL
F	69	4' 44" 12.631"	* HORIZONTAL
F	35	9' 28" 25.262"	* VERTICAL

* NOZZLE SPACING IS TYPICAL FOR INDIVIDUAL RINGS. WHERE NECESSARY NOZZLES WERE ELIMINATED AT CONNECTION OF SUPPLY RISER TO RING HEAD.

** SEE DETAIL "B"



OPERATING DATA						
SEE NOTE 2						
#	PSIG	GPM	F	BY	REMARKS	REV
1	130	5250	139.7	CWE		
2	59.5	1963	139.7	CWE		
2a	56.5	981.5	139.7	CWE		
2b	50	981.5	139.7	CWE		
3	54	1734.8	139.7	CWE		
3a	52.12	867.4	139.7	CWE		
3b	50	867.4	139.7	CWE		
4	54	1552.2	139.7	CWE		
4a	50	776.1	139.7	CWE		
1a	60	5250	139.7	CWE		

DESIGN DATA						
#	NORMAL	UPSET	BY	CHKD	REMARKS	REV
	PSIG	F	PSIG	F	TIME	
1	150	212	150	212	-	CWE

NOTES:

- THIS SYSTEM IS SAFETY CLASS 2, SEISMIC CATEGORY 1
- PROCESS DATA SHOWN IN THE OPERATING DATA TABLE ON THIS SYSTEM DIAGRAM SHALL BE USED IN CONJUNCTION WITH THE DESIGN BASIS INFORMATION AND SHALL BE USED WITH CAUTION. IN GENERAL, THE OPERATING DATA (PRESSURES, TEMPERATURES, AND FLOWS) PROVIDED ON THIS DRAWING, REPRESENTS THE MOST COMMON OPERATING CONDITION, AND/OR SYSTEM MODE OF OPERATION AND/OR LINEUP, TO DETERMINE THE REQUIRED VALUES FOR A SPECIFIC OPERATING CONFIGURATION, THE APPROPRIATE DESIGN DOCUMENTS NEED TO BE REVIEWED.

REFERENCES:

- 302-0881-00000 CONTAINMENT ATMOSPHERE MONITORING SYSTEM D23
302-0842-00000 RESIDUAL HEAT REMOVAL SYSTEM E-12 (G.E.)
302-0642-00000 CONTAINMENT SPRAY SYSTEM E15

(REV. 19 10/2015)

PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

CONTAINMENT
SPRAY SYSTEM
FIGURE 6.5-3
(DWG. D-302-0661-00000)

OPERATING DATA

SEE NOTE 3

	PSIG	SCFM	° F	BY	REMARKS	REV
1	150	7.5	139	JAB		
2	150	30.0	139	JAB		
3	85	0.05	139	WES	POST-ACCIDENT	

DESIGN DATA

	NORMAL	UPSET	TIME	BY	CHKD	REMARKS	REV
1	PSIG °F	PSIG °F		JAB	DPW		
2	200 150	- -		JAB	DPW		
3	200 250	- -		MGC	RAP		
4	210 150						

REFERENCES:

302-0605-00000 NUCLEAR BOILER SYSTEM B21.
302-0608-00000 NUCLEAR BOILER SYSTEM B21.

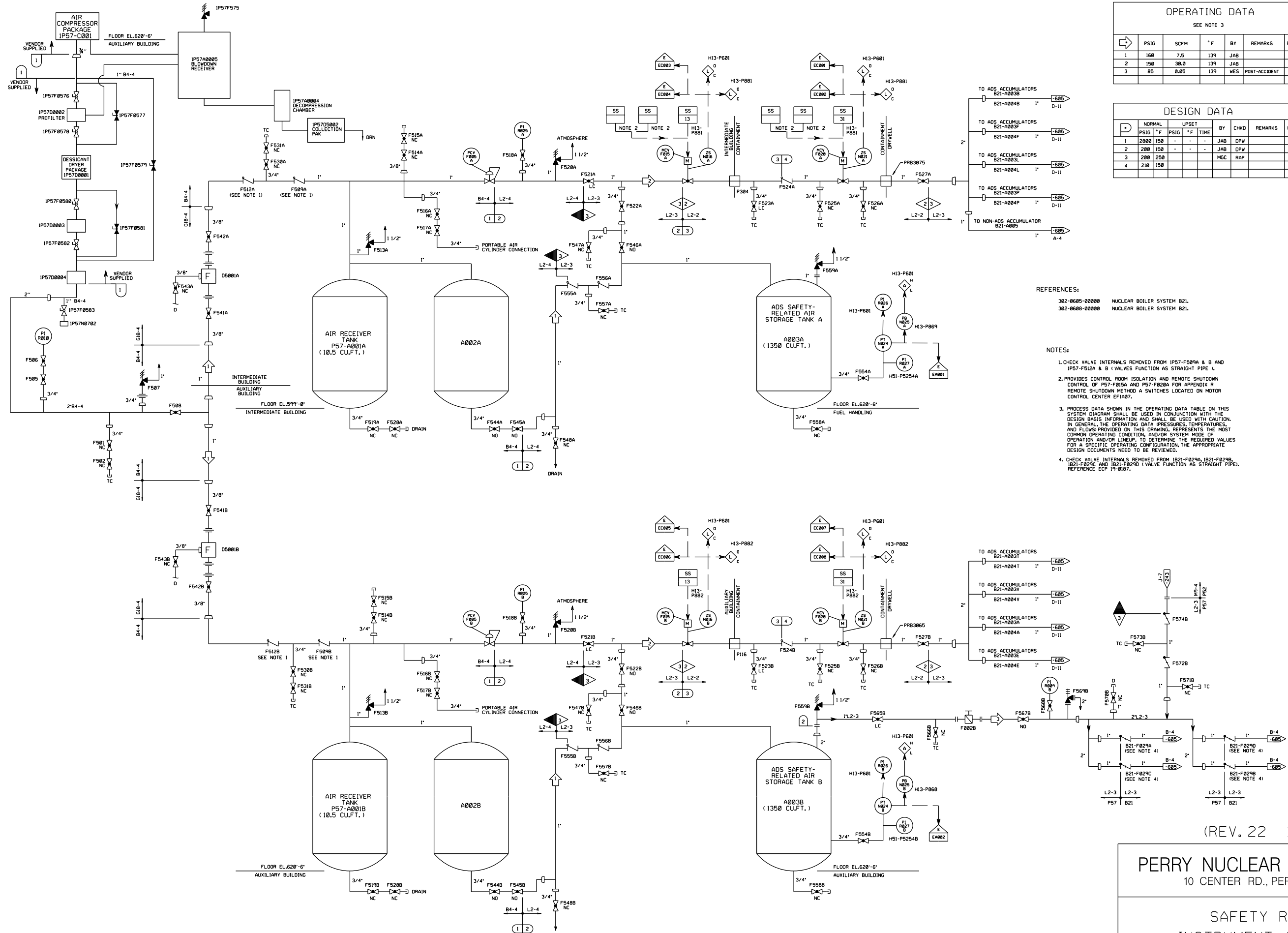
NOTES:

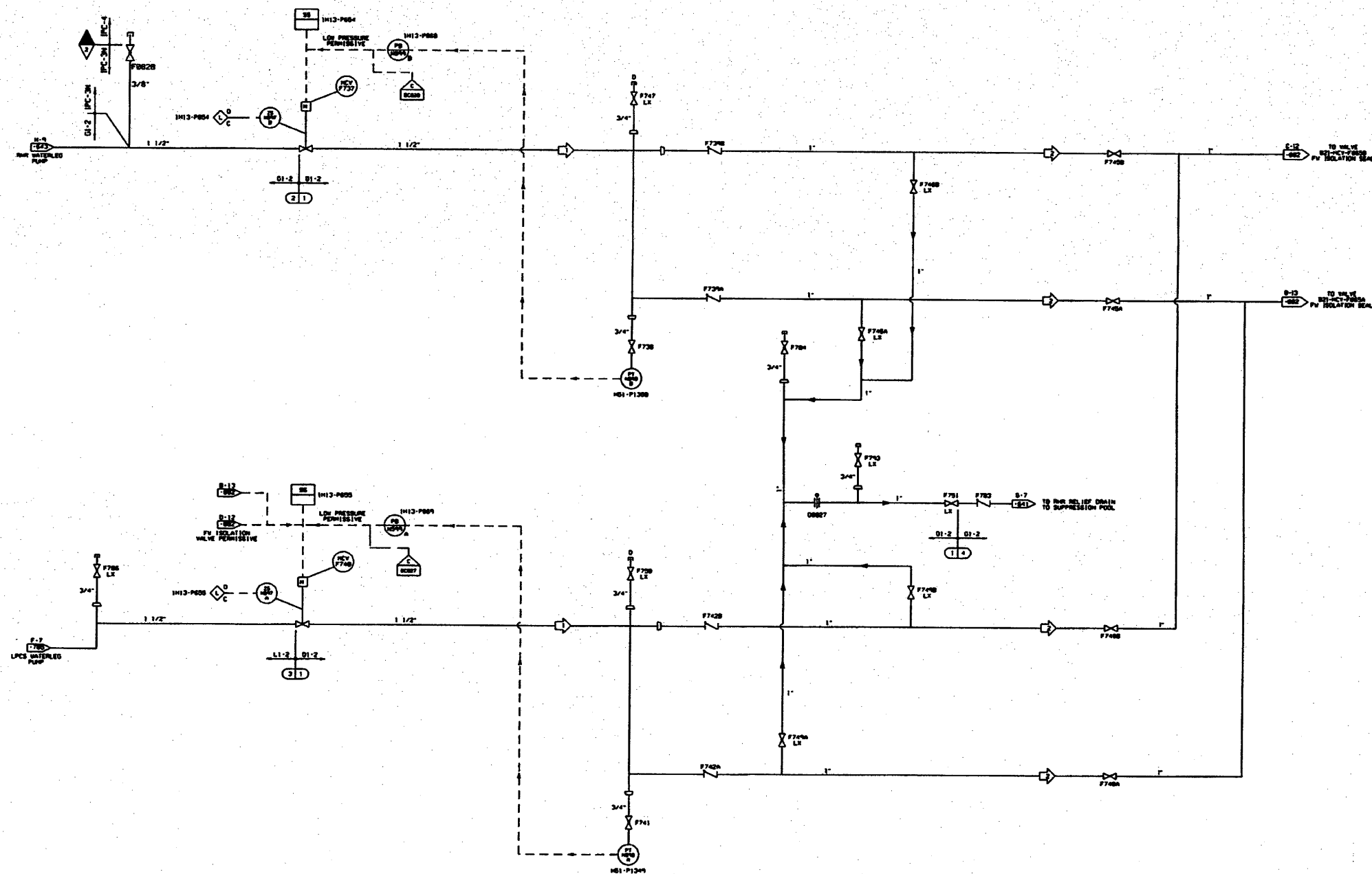
- CHECK VALVE INTERNALS REMOVED FROM IP57-F589A & B AND IP57-F512A & B (VALVES FUNCTION AS STRAIGHT PIPE).
- PROVIDES CONTROL ROOM ISOLATION AND REMOTE SHUTDOWN CONTROL OF P57-F615A AND P57-F620A FOR APPENDIX R. REMOTE SHUTDOWN METHOD A SWITCHES LOCATED ON MOTOR CONTROL CENTER EFA107.
- PROCESS DATA SHOWN IN THE OPERATING DATA TABLE ON THIS SYSTEM DIAGRAM SHALL BE USED IN CONJUNCTION WITH THE DESIGN BASIS INFORMATION AND SHALL BE USED WITH CAUTION. IN GENERAL, THE OPERATING DATA (PRESSURES, TEMPERATURES, AND FLOWS) PROVIDED ON THIS DRAWING, REPRESENTS THE MOST COMMON OPERATING CONDITION AND/OR SYSTEM MODE OF OPERATION AND/OR LINEUP. TO DETERMINE THE REQUIRED VALUES FOR A SPECIFIC OPERATING CONFIGURATION, THE APPROPRIATE DESIGN DOCUMENTS NEED TO BE REVIEWED.
- CHECK VALVE INTERNALS REMOVED FROM 1B21-F029A, 1B21-F029B, 1B21-F029C AND 1B21-F029D (VALVE FUNCTION AS STRAIGHT PIPE). REFERENCE ECP 19-0187.

(REV. 22 10/2021)

PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

SAFETY RELATED
INSTRUMENT AIR SYSTEM
FIGURE 6.8-1
(DWG. D-302-0271-00000)





OPERATING DATA						
SEE NOTE 6						
ID	PSIG	GPM	°F	BY	REMARKS	REV
1	**	**	90	MTS	TEST	0
2	**	**	90	MTS	TEST	0
1	1100	0	425***	MTS	100% POWER	0
2	1100	0	425***	MTS	100% POWER	0
1	**	**	100	MTS	POST LOCA	0
2	**	**	100	MTS	POST LOCA	0

DESIGN DATA						
ID	NOMINAL	UPSET	TIME	BY	CHKD	REV
1	PSIG	PSIG	°F	TIME	MTS	0
2	100	212	100	212	MTS	0
3	100	212	100	212	MTS	0
4	100	400	50	400	MTS	0

* SEE NOTE 4.
 ** SEE NOTE 5.
 *** SEE NOTE 7.

REFERENCES:
 302-0000-00000 FEEDWATER SYSTEM KIT
 302-0042-00000 RESIDUAL HEAT REMOVAL SYSTEM E12
 302-0043-00000 RESIDUAL HEAT REMOVAL SYSTEM E12
 302-0700-00000 LOW PRESSURE CORE SPRAY SYSTEM E21

NOTES:
 1. ALL PANELS AND RACKS ARE PREPARED (H13) UNLESS OTHERWISE NOTED.
 2. ALL INSTRUMENTS AND CONTROLS ARE PREPARED (H13) UNLESS OTHERWISE NOTED.
 3. ALL PIPING IS SAFETY CLASS 2.
 4. THE DATA UNDER THE NORMAL COLUMN ARE THE SYSTEM DESIGN CONDITIONS.
 5. DURING INJECTION TO THE CORE OF VALVES OPENING TO FORM A PRESSURE SEAL, PRESSURE REACHES A MAXIMUM OF 30 PSIG AT P770a. PLANTING AT OPERATING DATA POINT 1 DECREASES FROM 10 GPM TO 0 GPM. PLANTING AT OPERATING DATA POINT 2 DECREASES FROM 7 GPM TO 0 GPM. SEE 002-000 TO CALCULATION REF-01, REV. 2 AND CALCULATION REF-02, REV. 2.
 6. PROCESS DATA SHOWN IN THE OPERATING DATA TABLE ON THIS SYSTEM SHOULD BE USED IN CONJUNCTION WITH THE DESIGN BASIS INFORMATION AND SHALL BE USED WITH CARE. IN GENERAL, THE OPERATING DATA PRESSURES, TEMPERATURES, AND PLANTING RATES ON THIS SYSTEM, REPRESENTS THE MOST COMMON OPERATING CONDITIONS. SYSTEM MODES OF OPERATION SHOULD BE USED TO DETERMINE THE REQUIRED VALUES FOR A SPECIFIC OPERATING CONFIGURATION. THE APPROPRIATE DESIGN DOCUMENTS NEED TO BE REVIEWED.
 7. FLOW RATE FROM THE PU HEADER THE PULSES PIPING WILL BE AT DESIGN OPERATING RATE.

NUCLEAR SAFETY RELATED

(Rev. 16 10/09)



PERRY NUCLEAR POWER PLANT

Feedwater Leakage Control System

Figure 6.9-1

(Dwg. D-302-971)