

BREAK AREA (ft²)

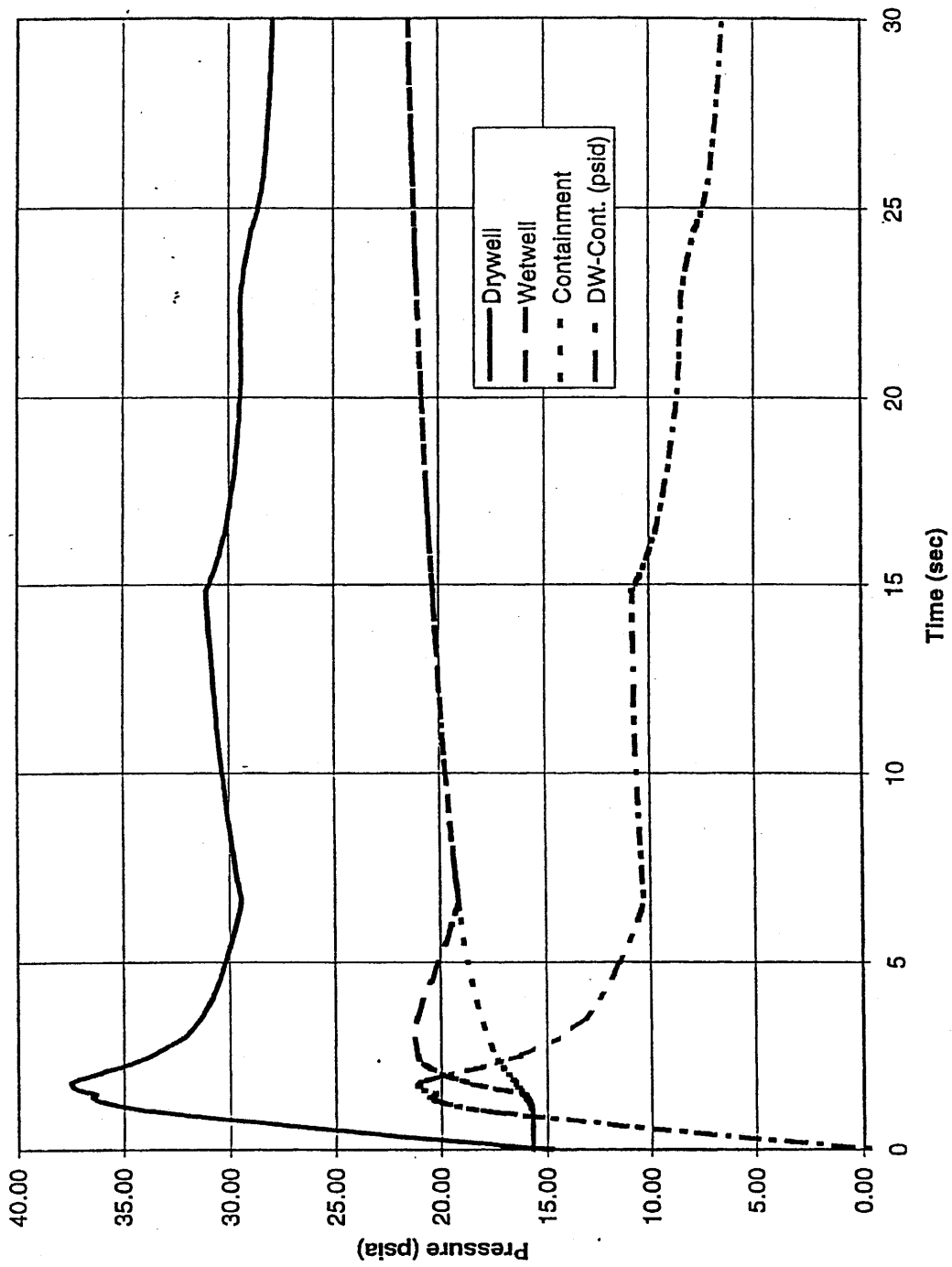
(Rev. 12 1/03)




PERRY NUCLEAR POWER PLANT

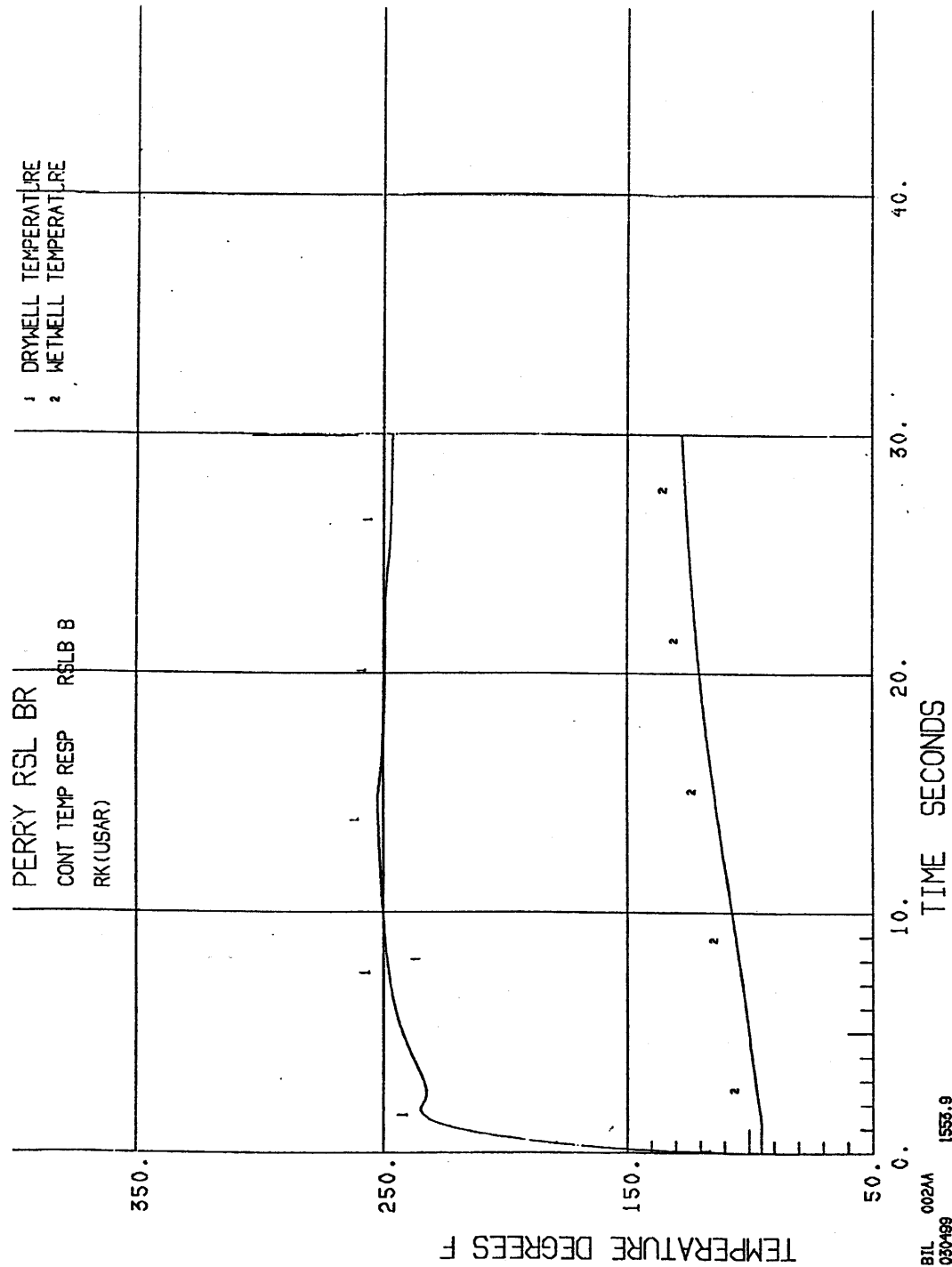
Effective Blowdown Area
for Recirculation Line Break

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	



BIL 002AA 1553.9
030489

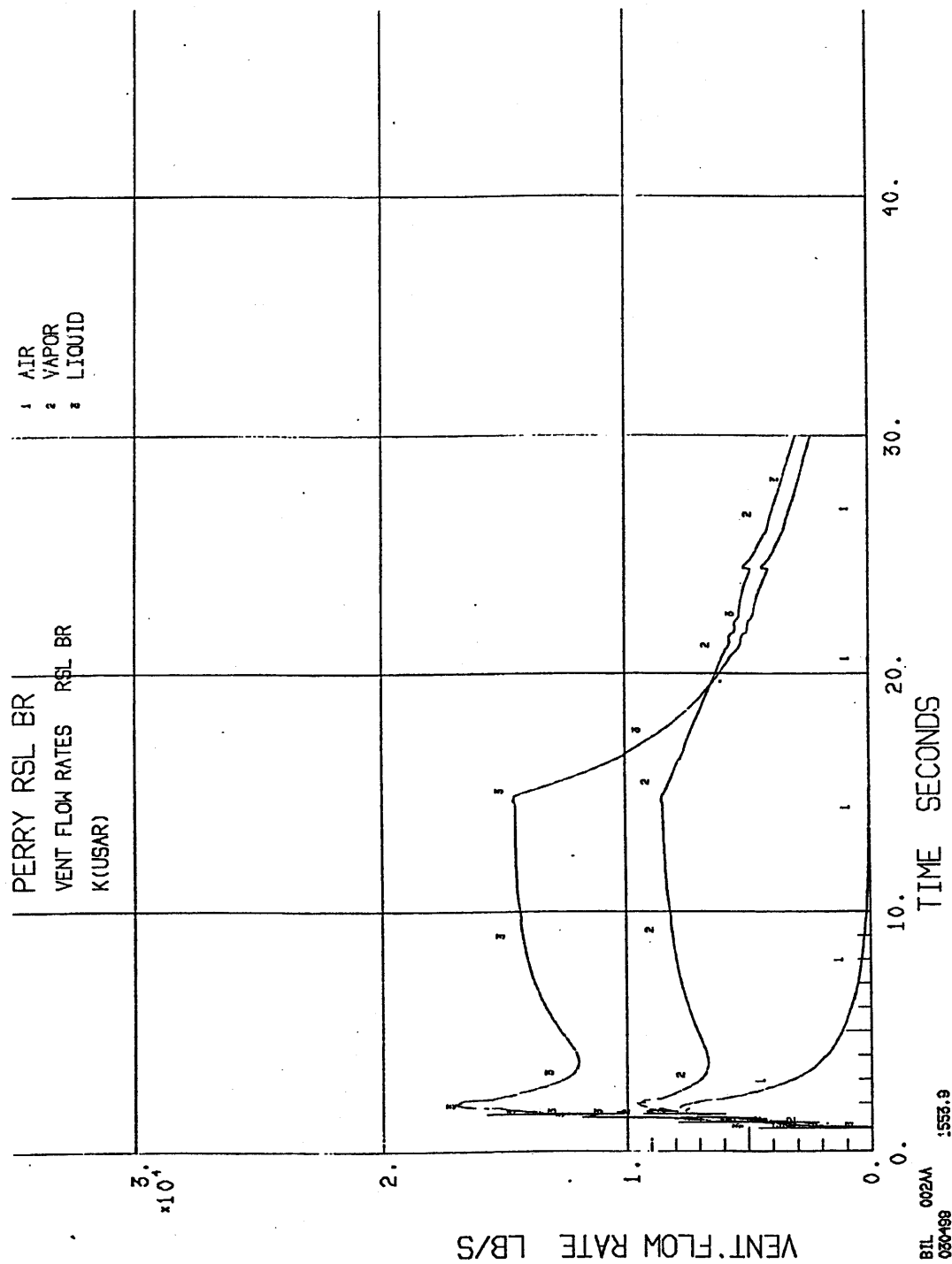
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Short Term Temperature Response
Following a Recirculation
Line Break

Figure 6.2-3



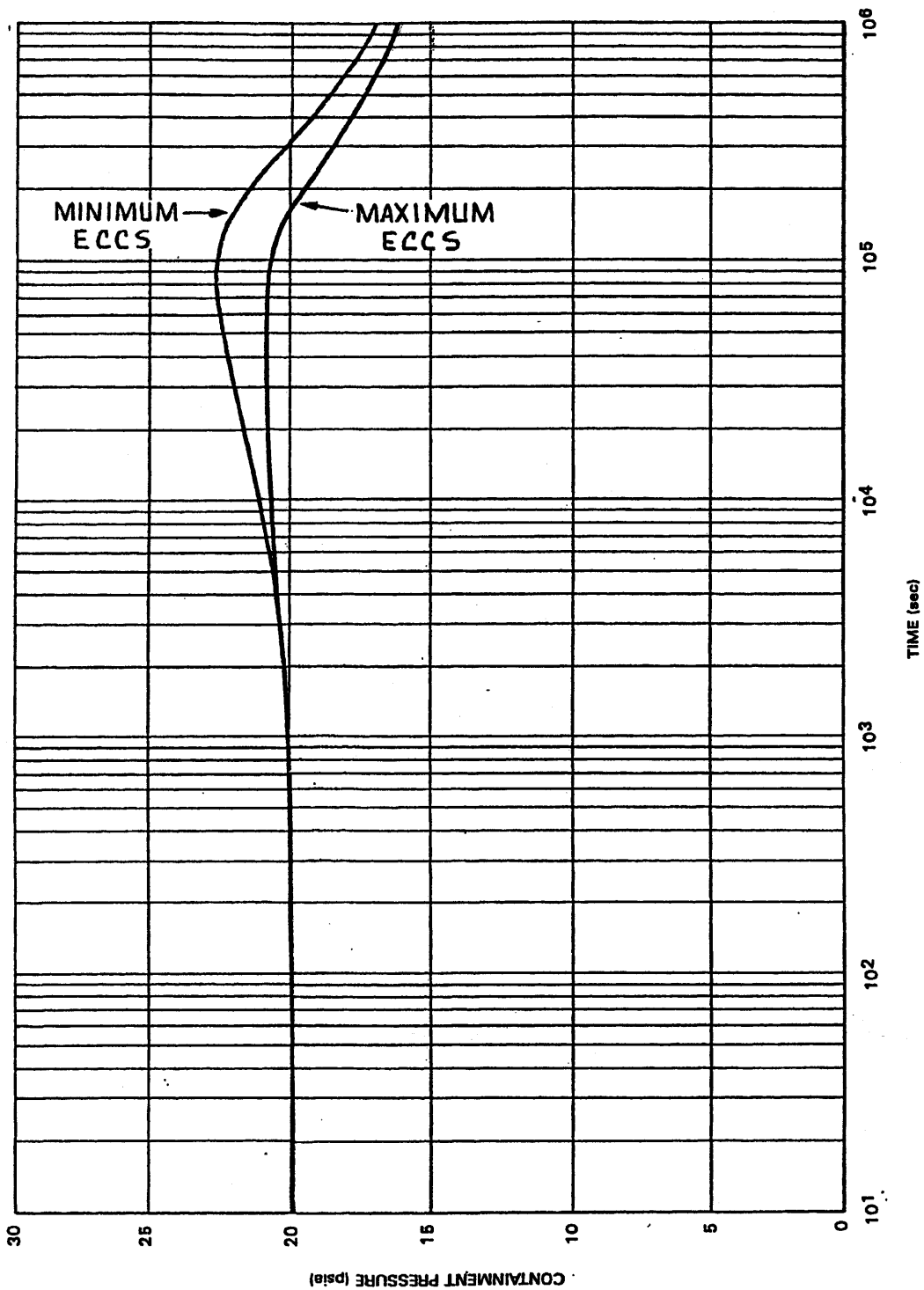
BIL 002A
030-198 :553.9

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PERRY NUCLEAR POWER PLANT

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

Figure 6.2-5



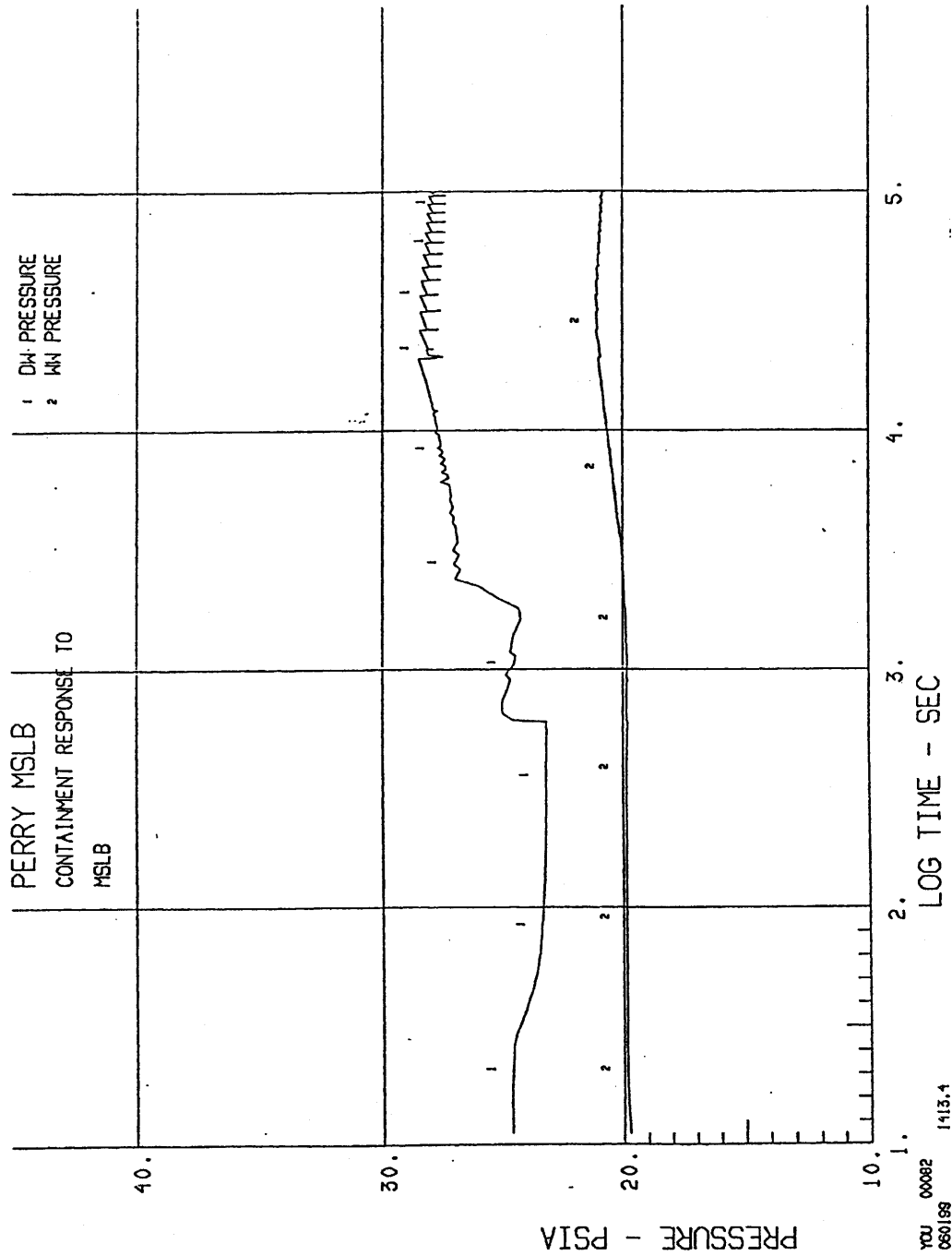
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-6



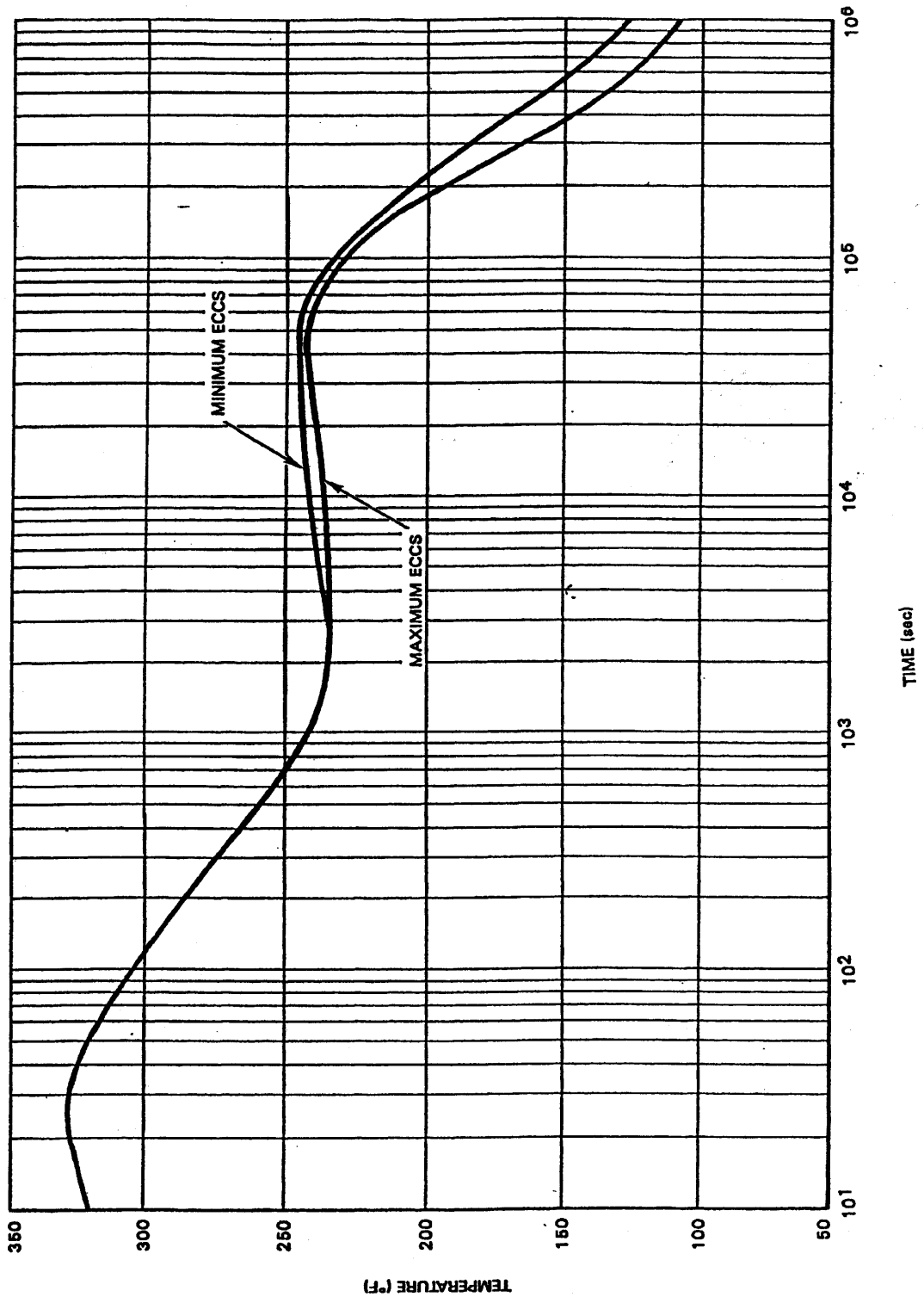
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-6a



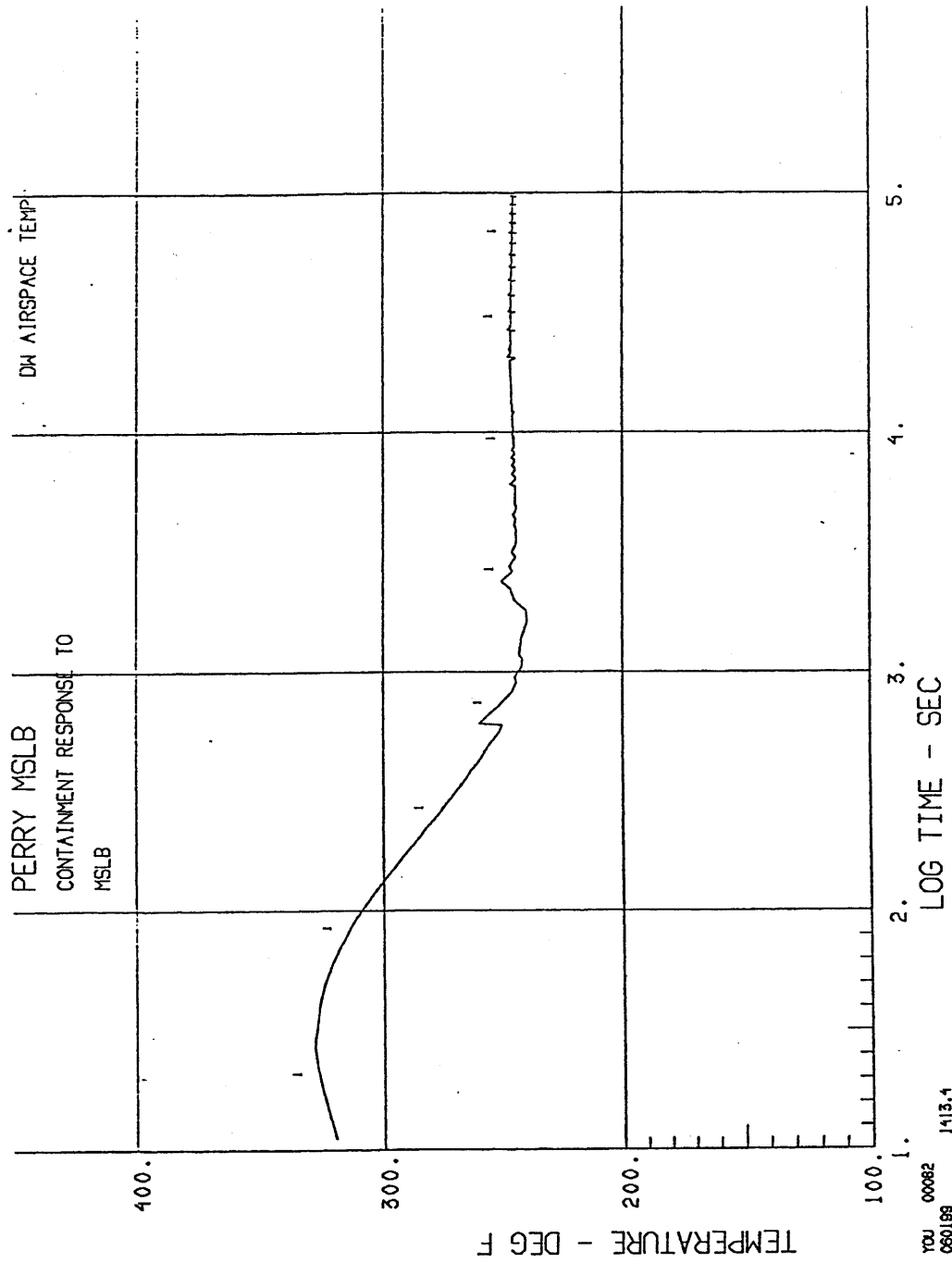
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-7



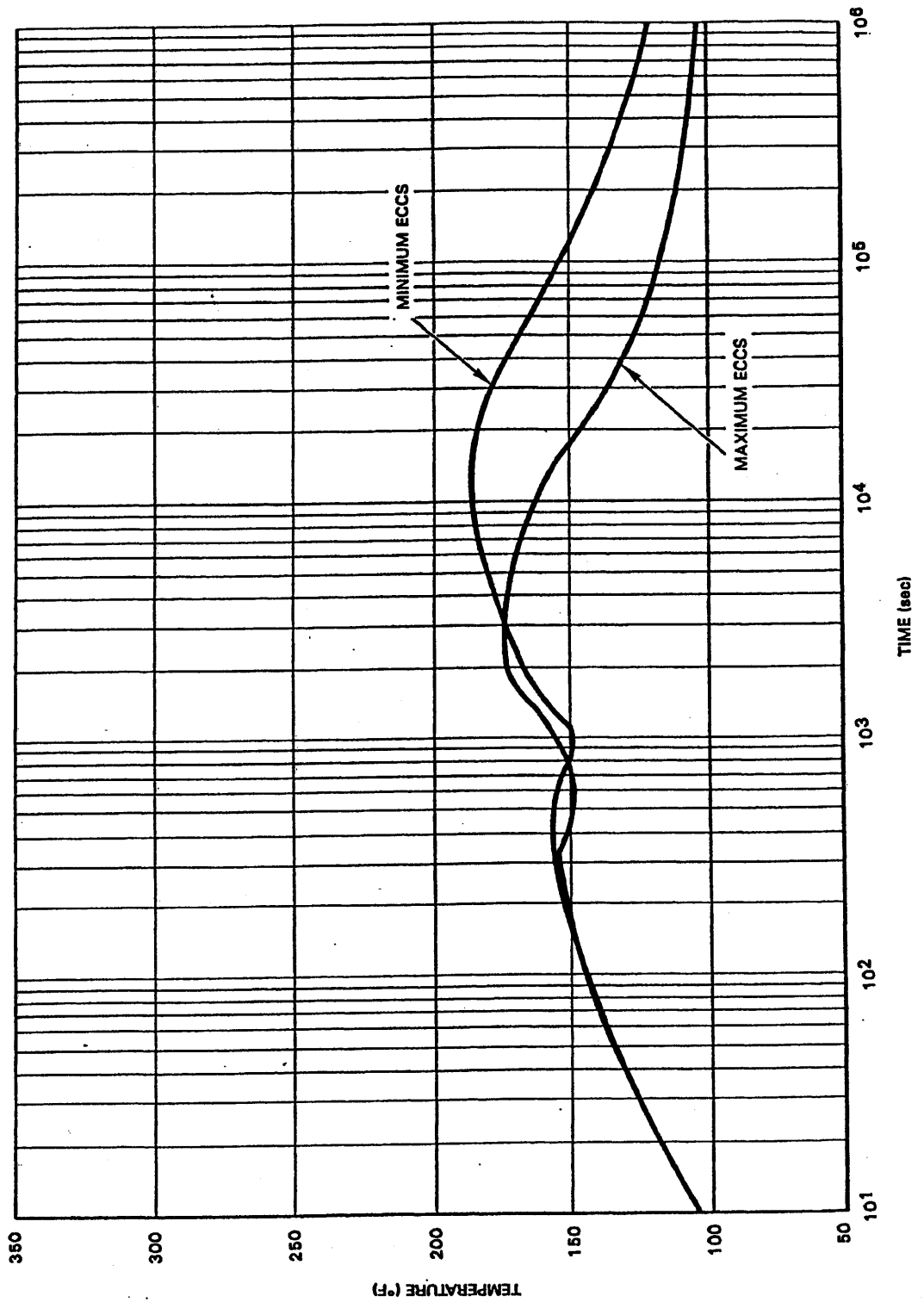
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-7a



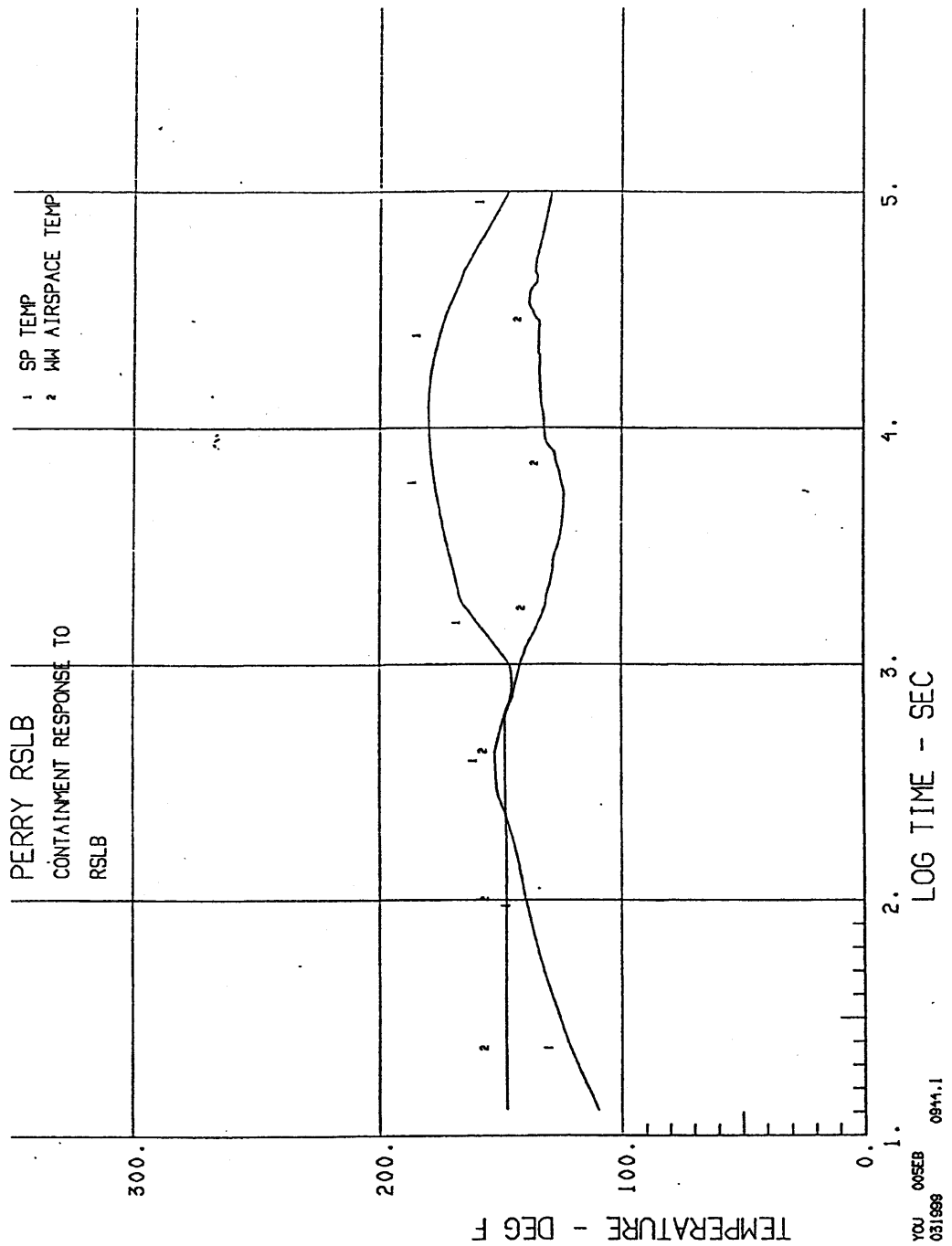
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-8



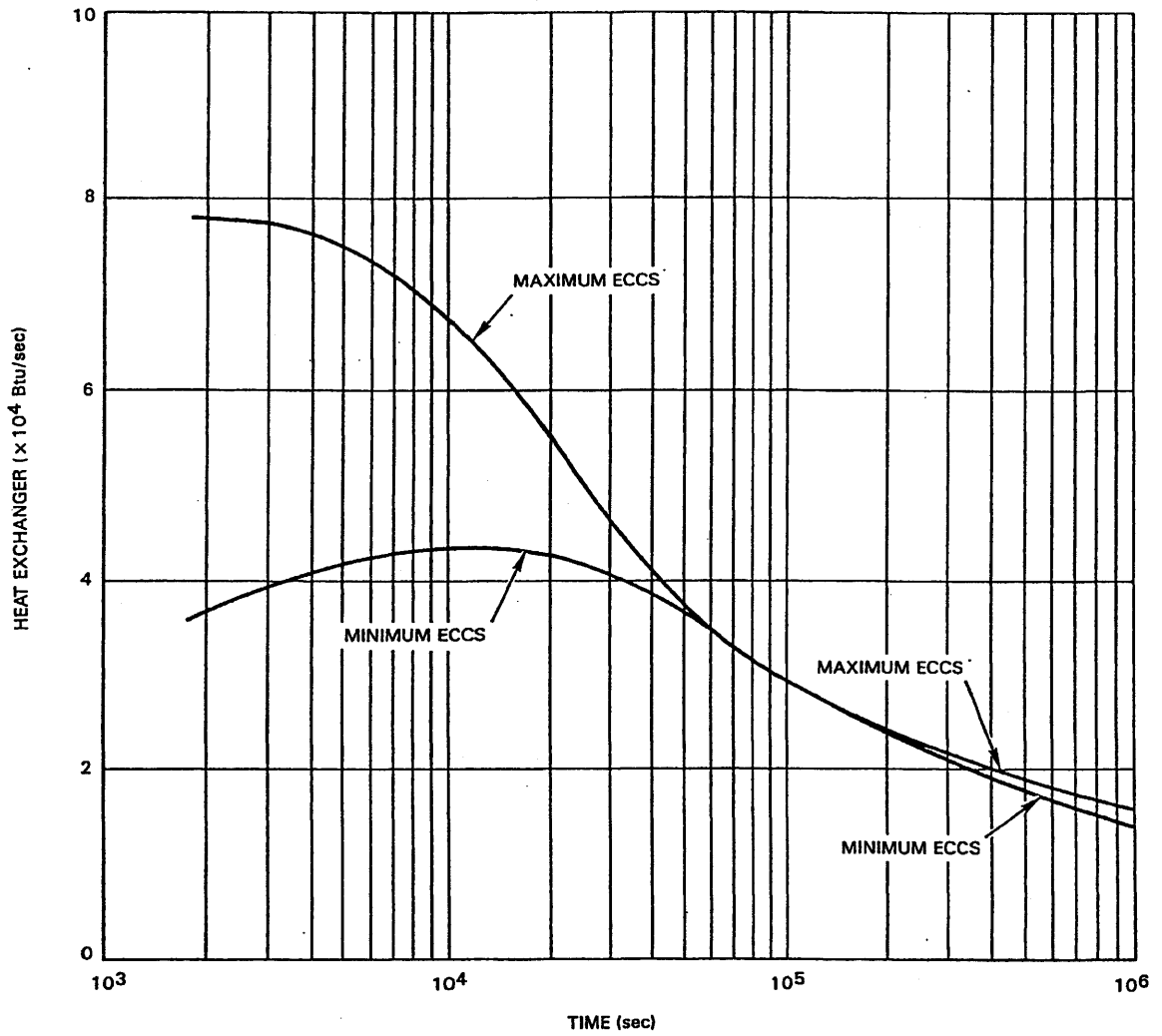
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-8a



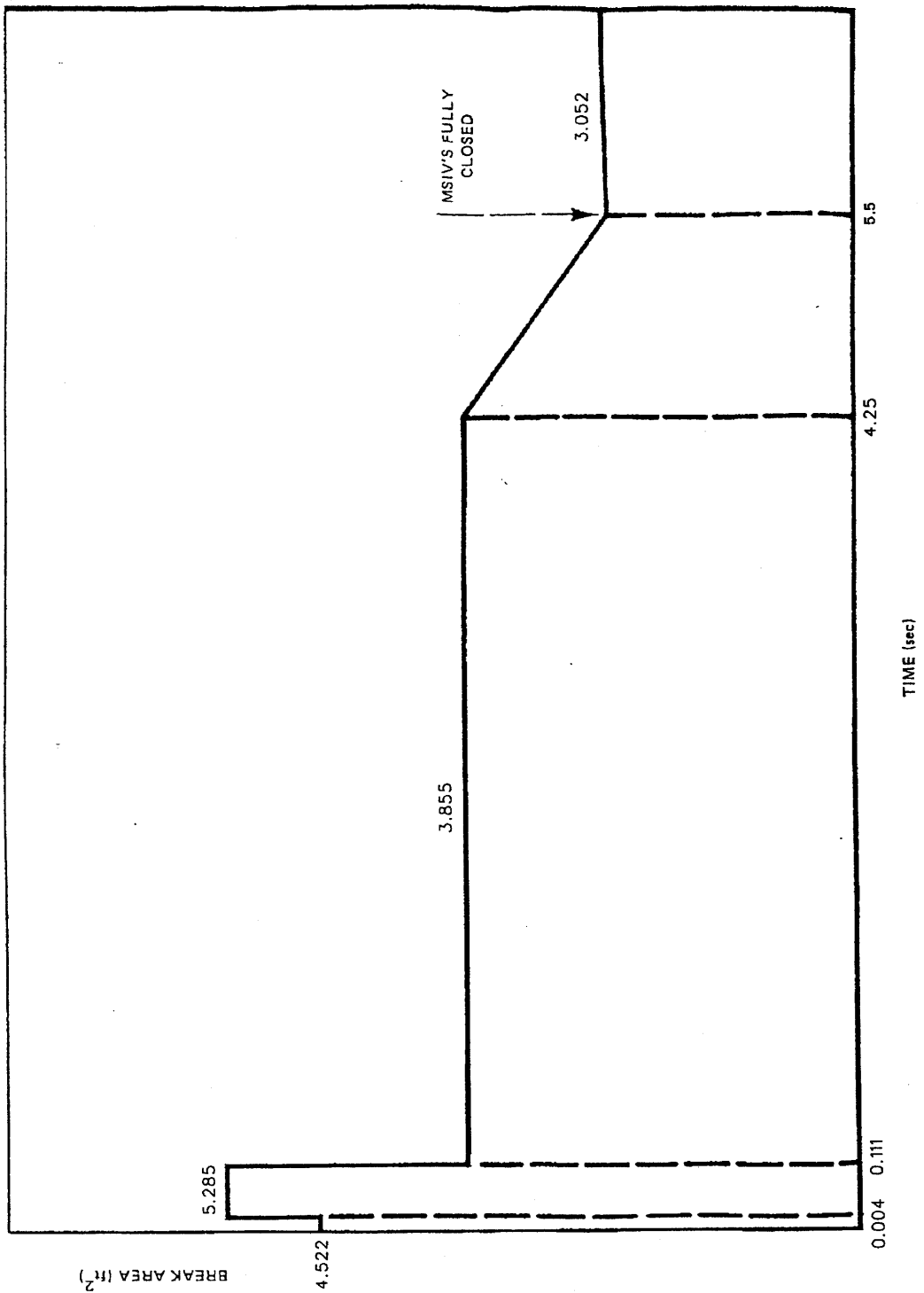
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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


Figure 6.2-9



BREAK AREA (ft²)

TIME (sec)

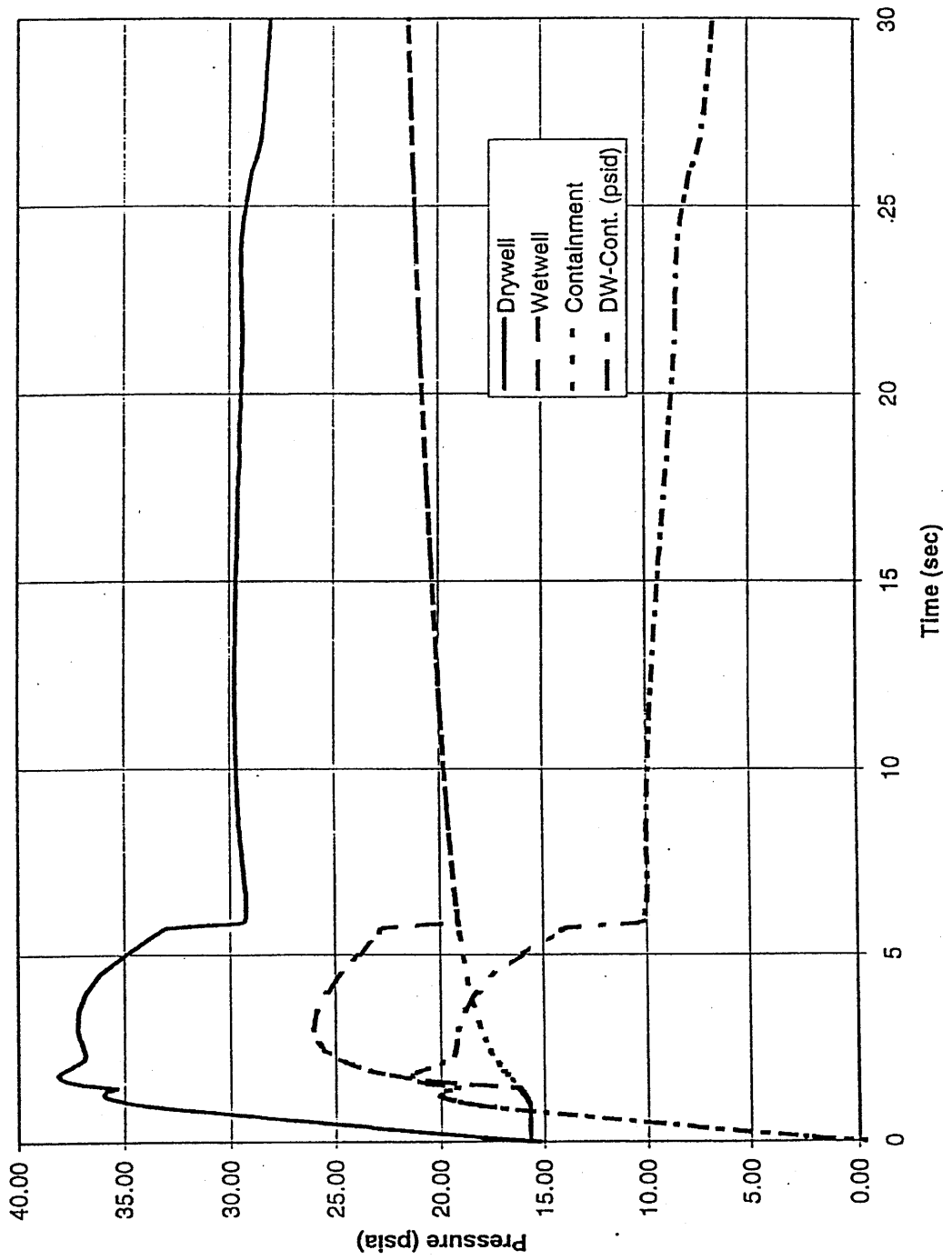
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Effective Blowdown Area for
Main Steam Line Break

Figure 6.2-10



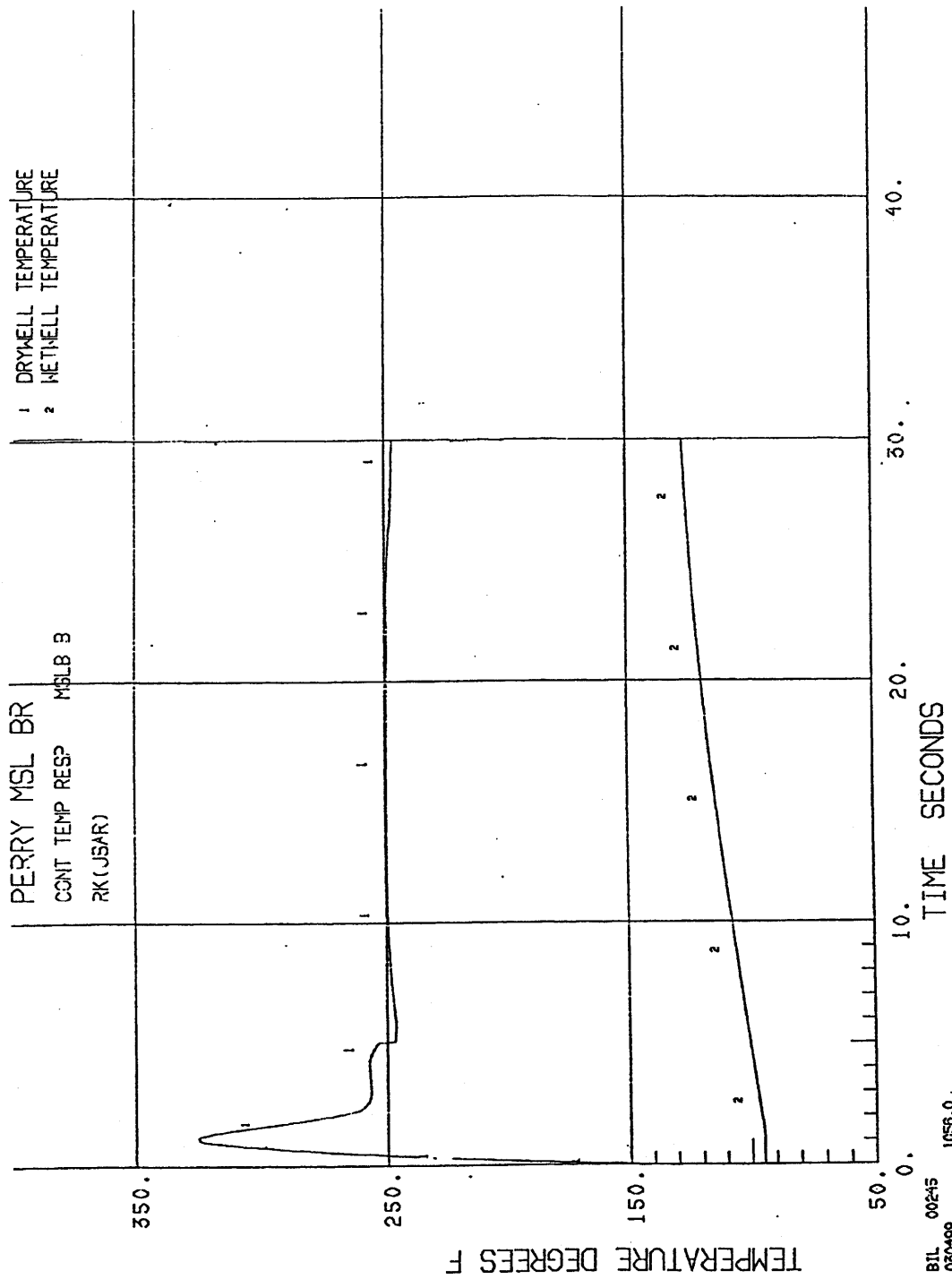
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Short Term Pressure Response
Following a Main Steam
Line Break

Figure 6.2-11



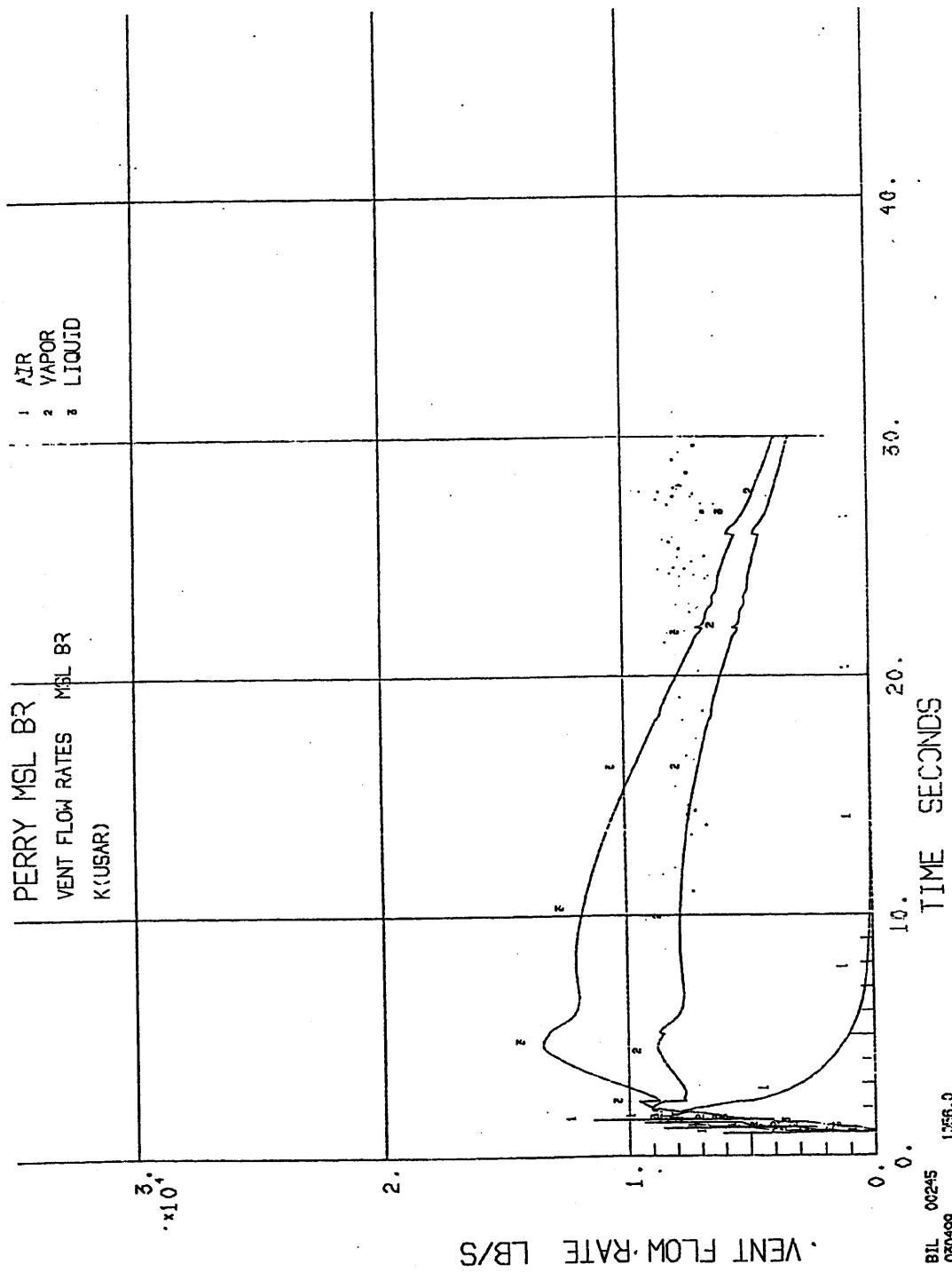
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Short Term Temperature Response
 Following a Main Steam Line Break

Figure 6.2-12



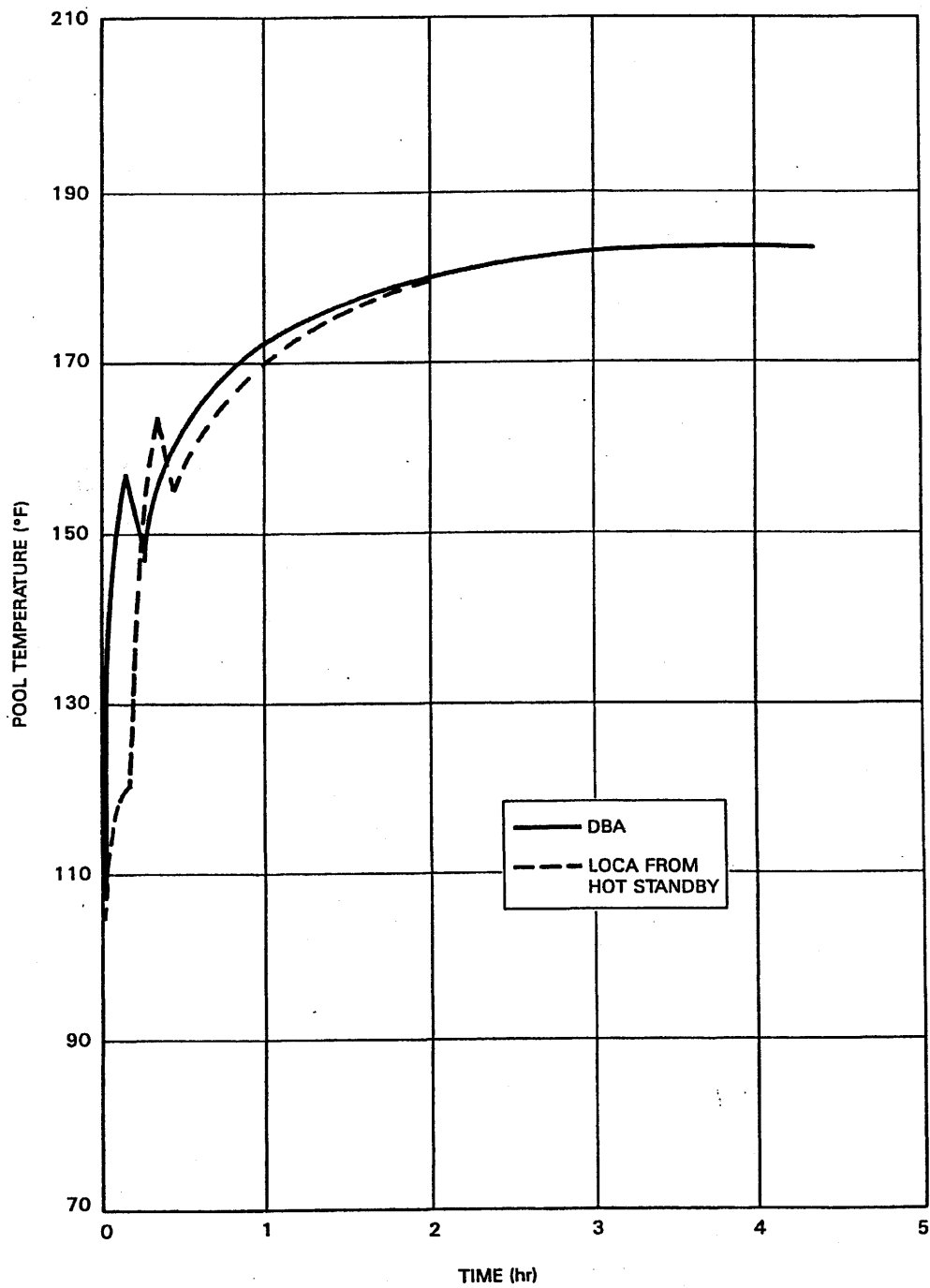
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-14



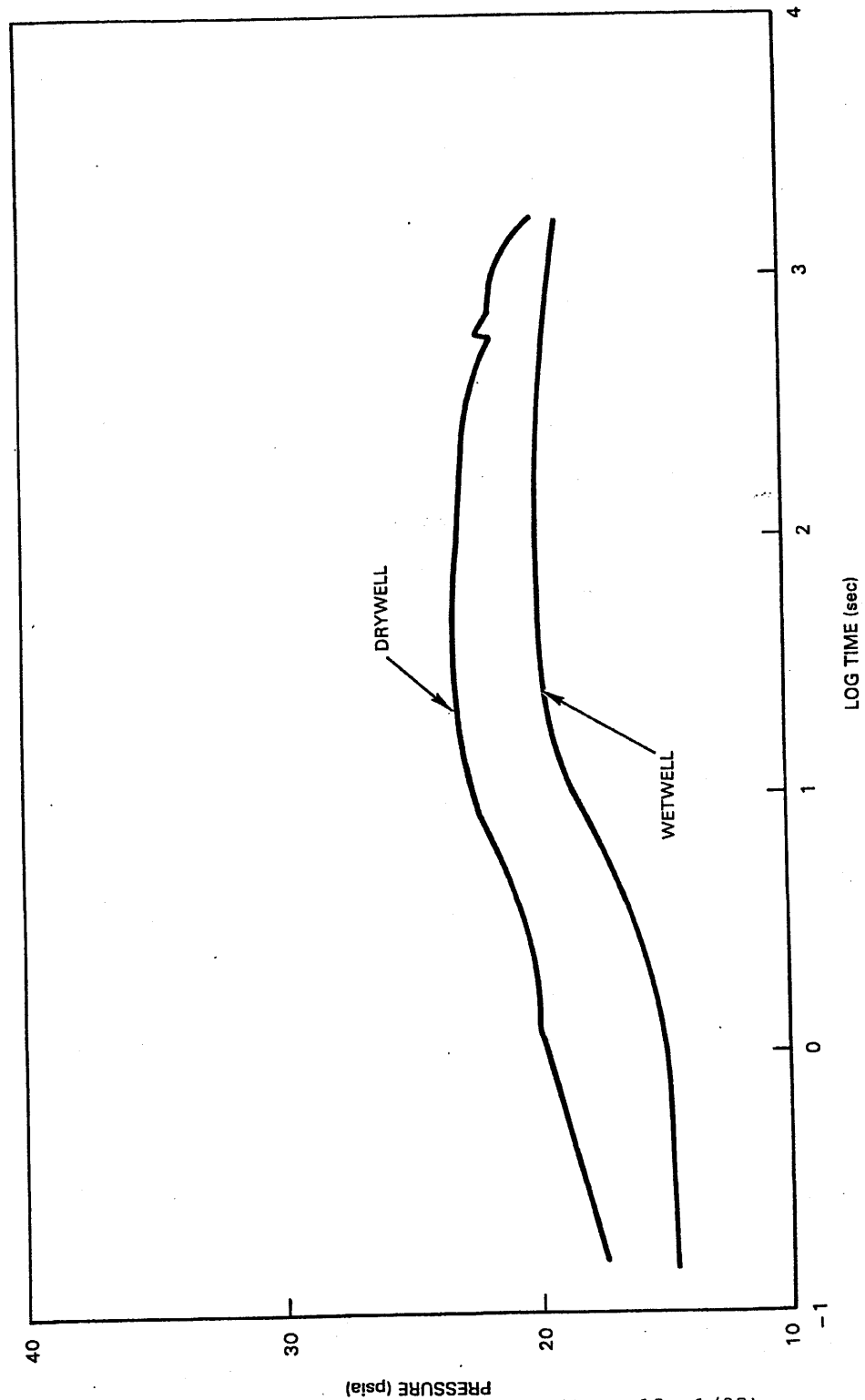
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-15



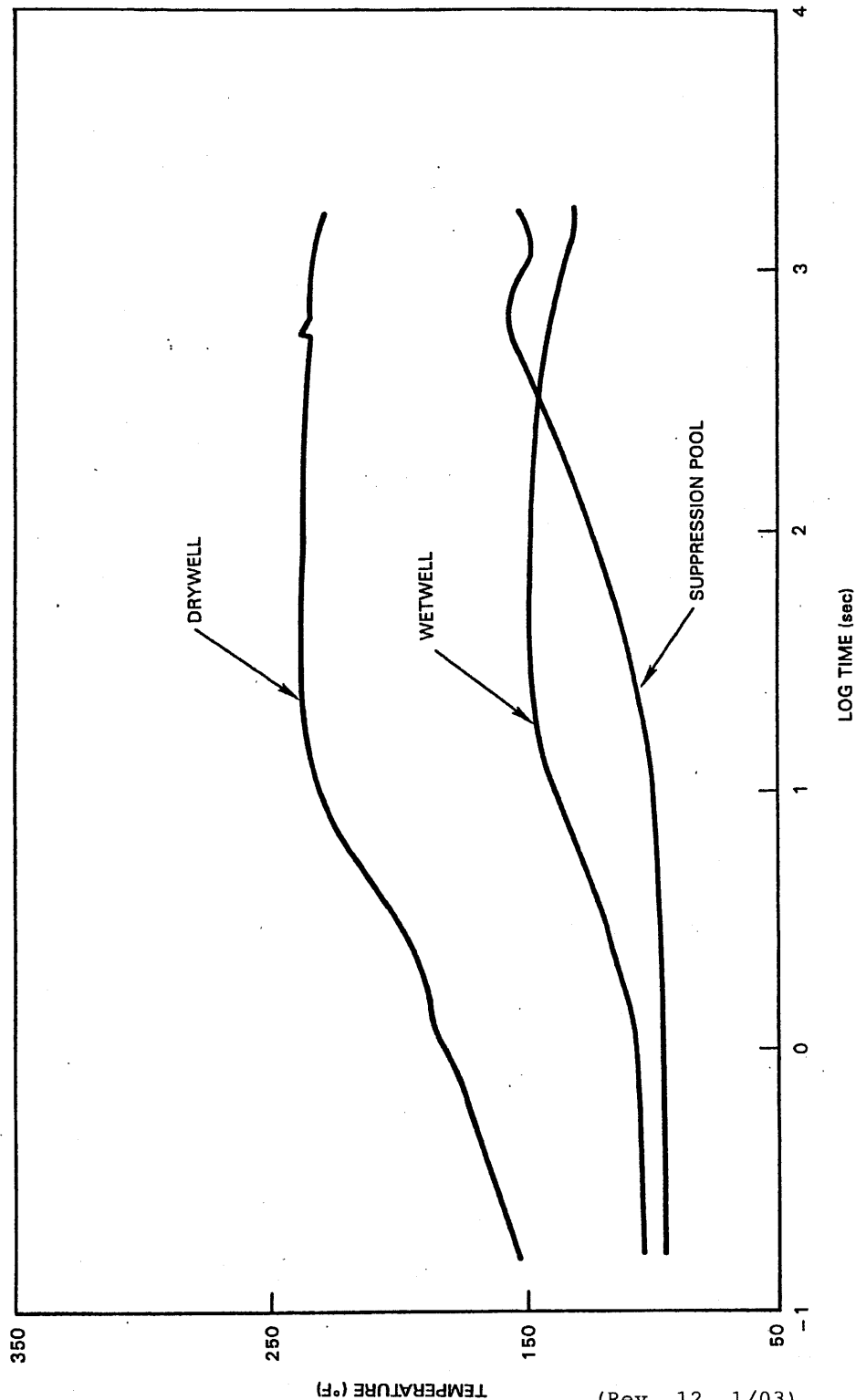
(Rev. 12 1/03)



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



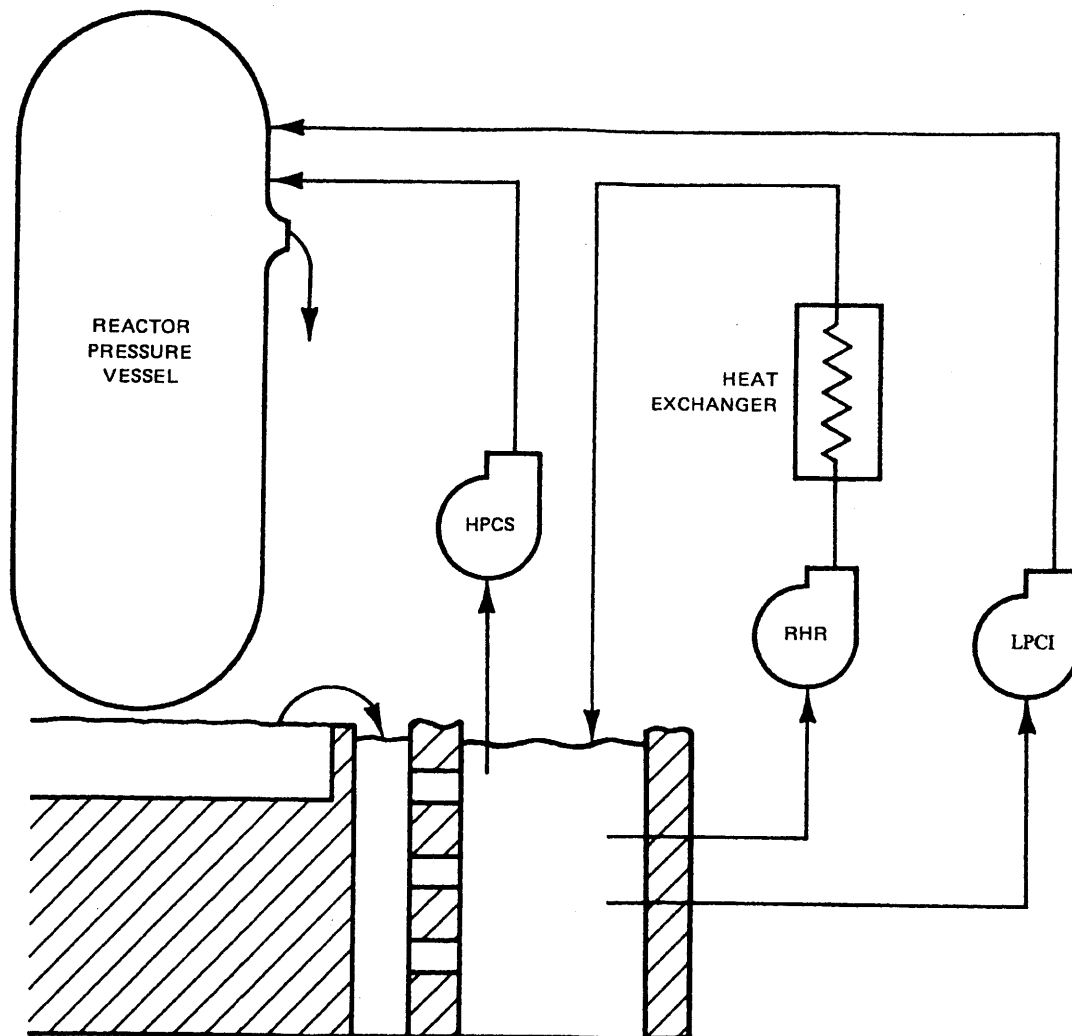
(Rev. 12 1/03)



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



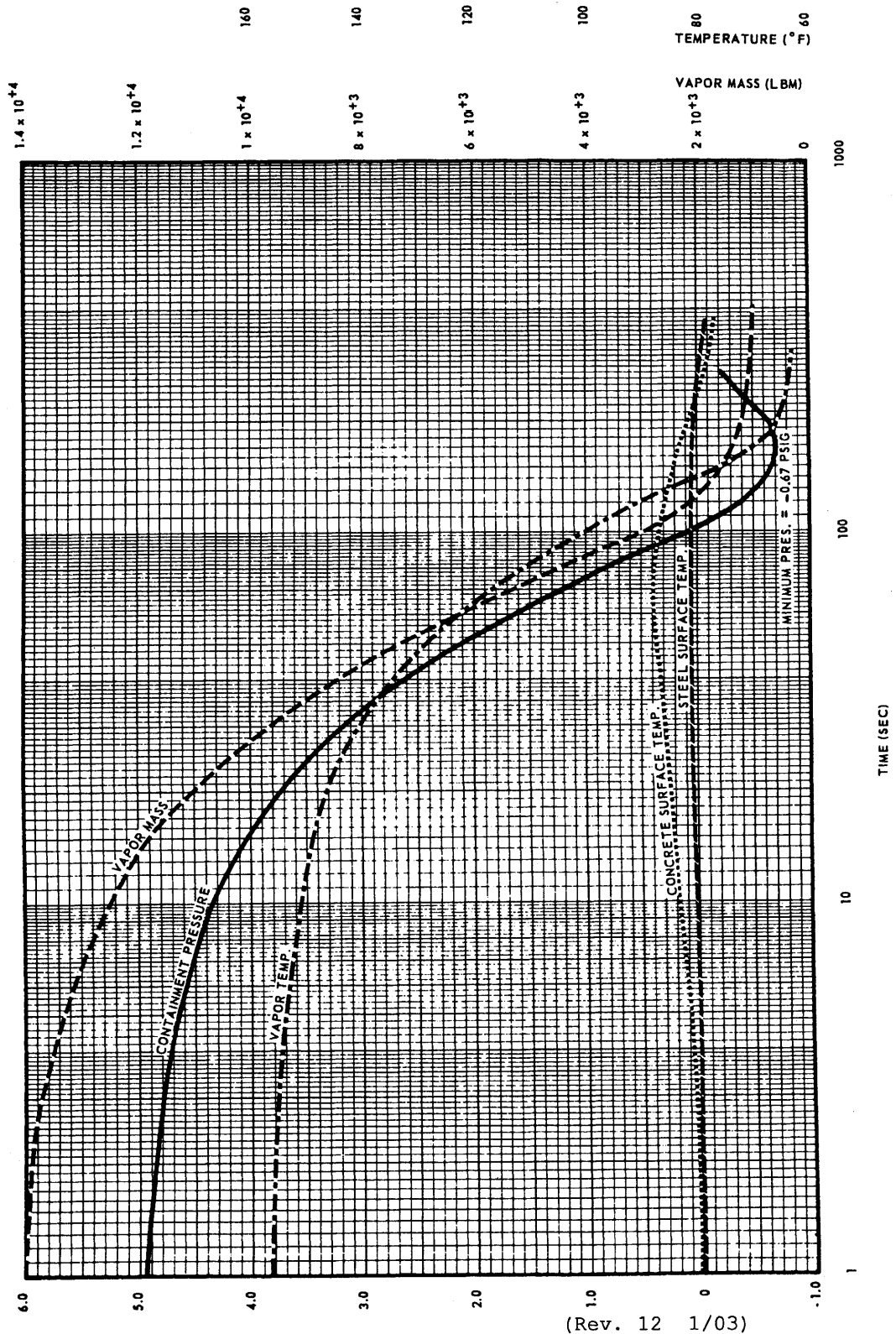
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-18



(Rev. 12 1/03)

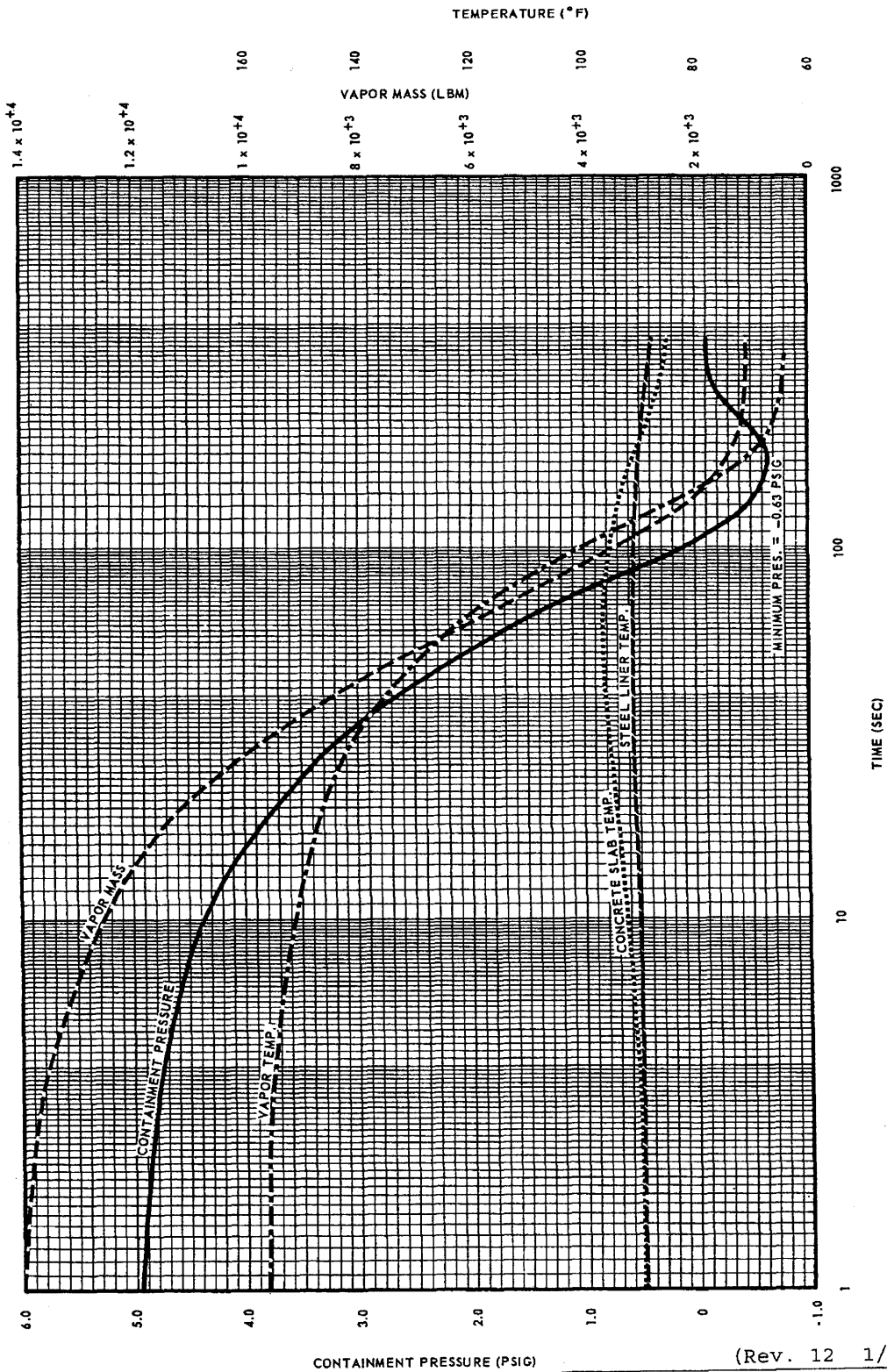
CONTAINMENT PRESSURE (PSIG)



PERRY NUCLEAR POWER PLANT

Containment Vacuum Breaker
 Analysis with Initial Internal
 Surface Temperature 80 $^{\circ}$ F

Figure 6.2-19



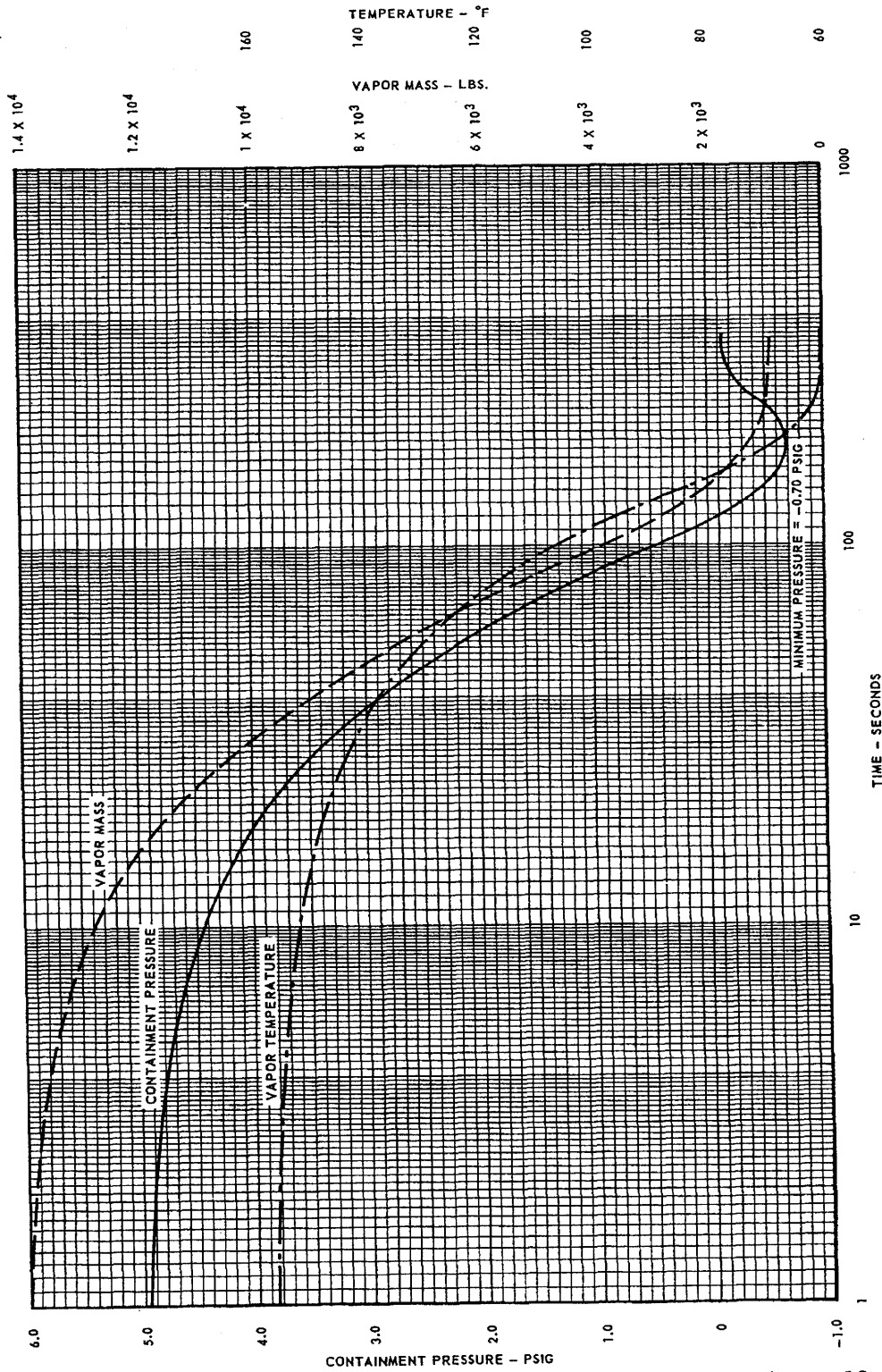
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-20



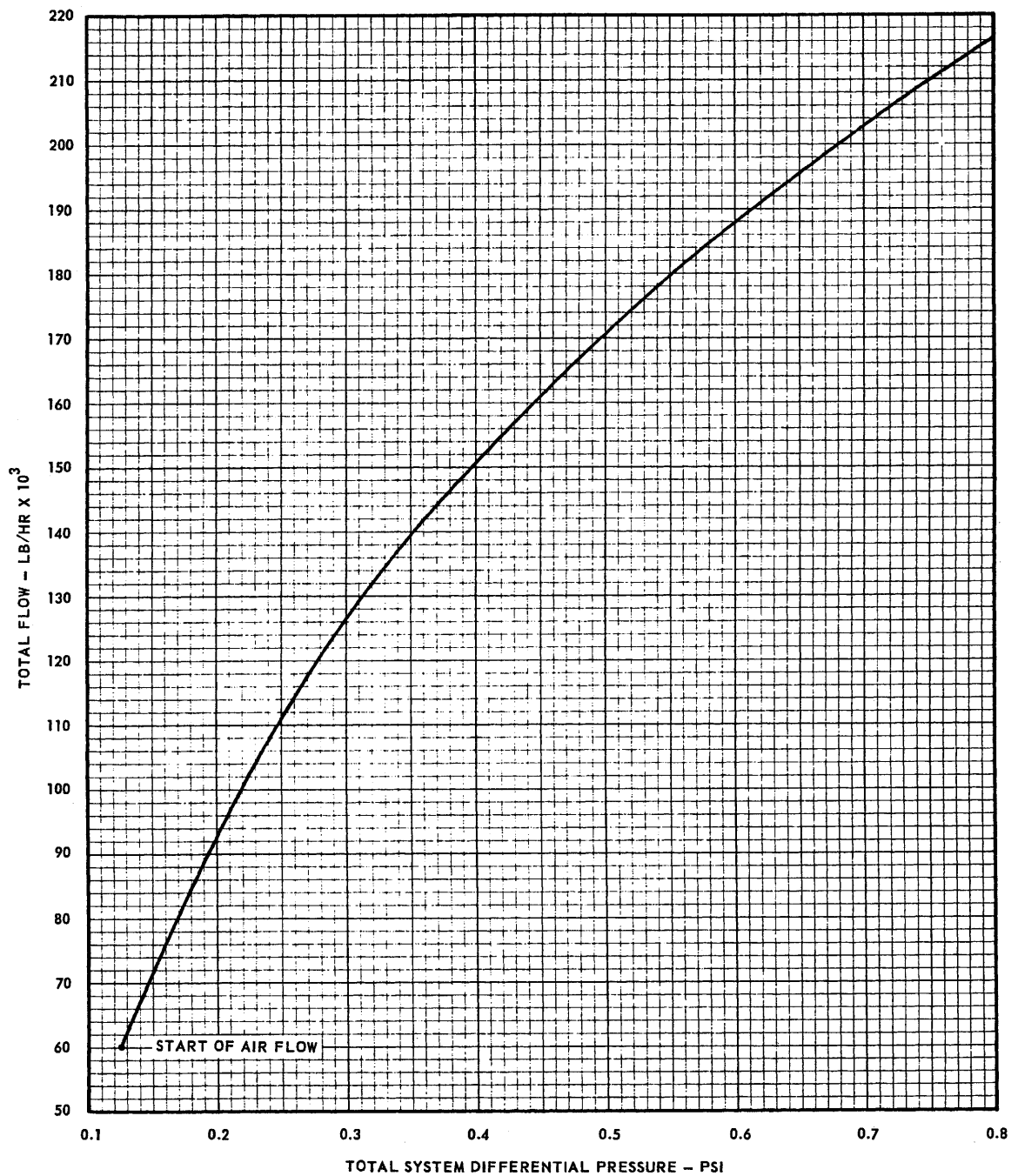
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Containment Pressure Versus
Time - Small Line Break

Figure 6.2-21



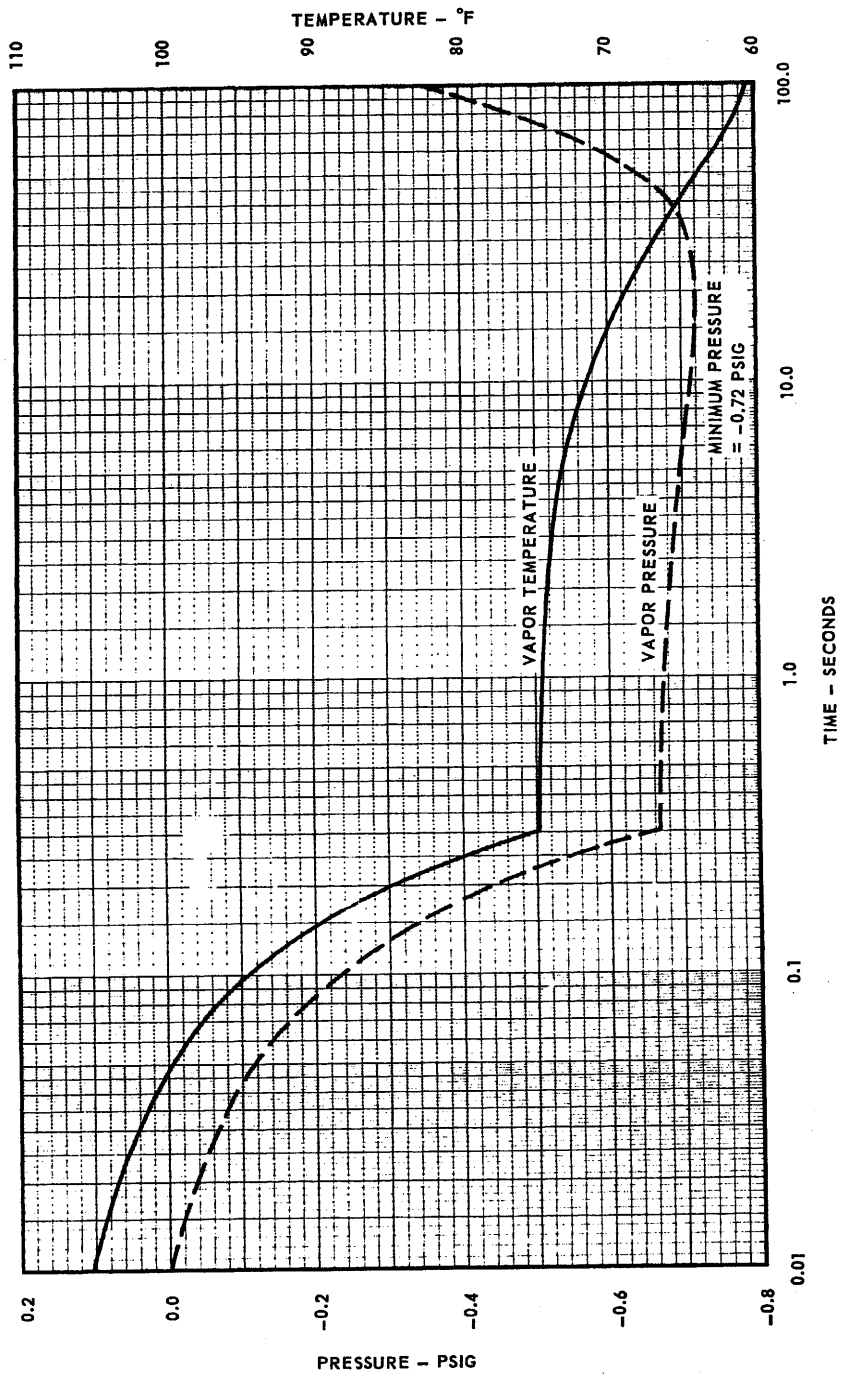
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PERRY NUCLEAR POWER PLANT

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

Figure 6.2-22



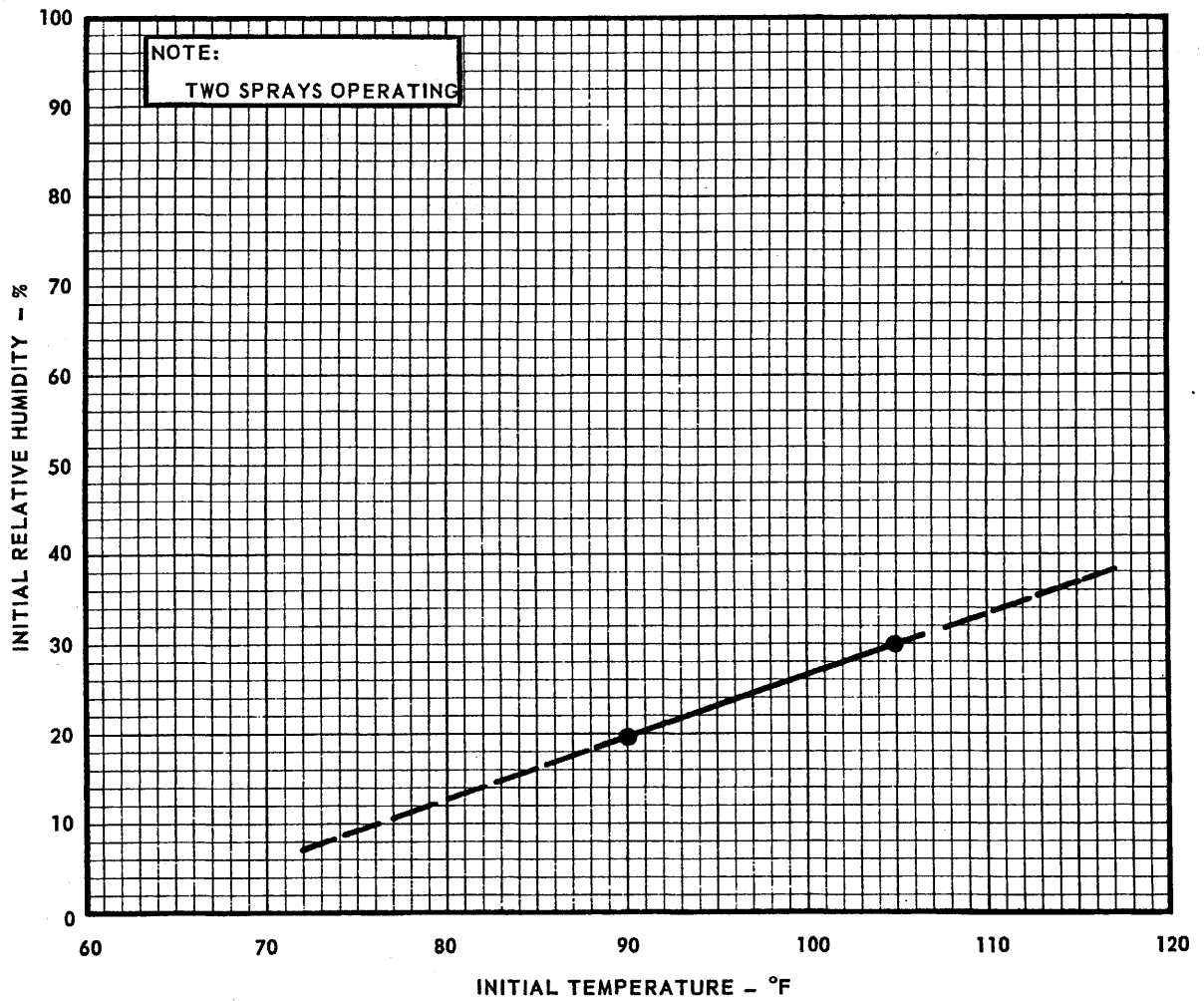
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Containment Pressure Versus Time
 Inadvertent Spray Operation -
 Normal Operation

Figure 6.2-23



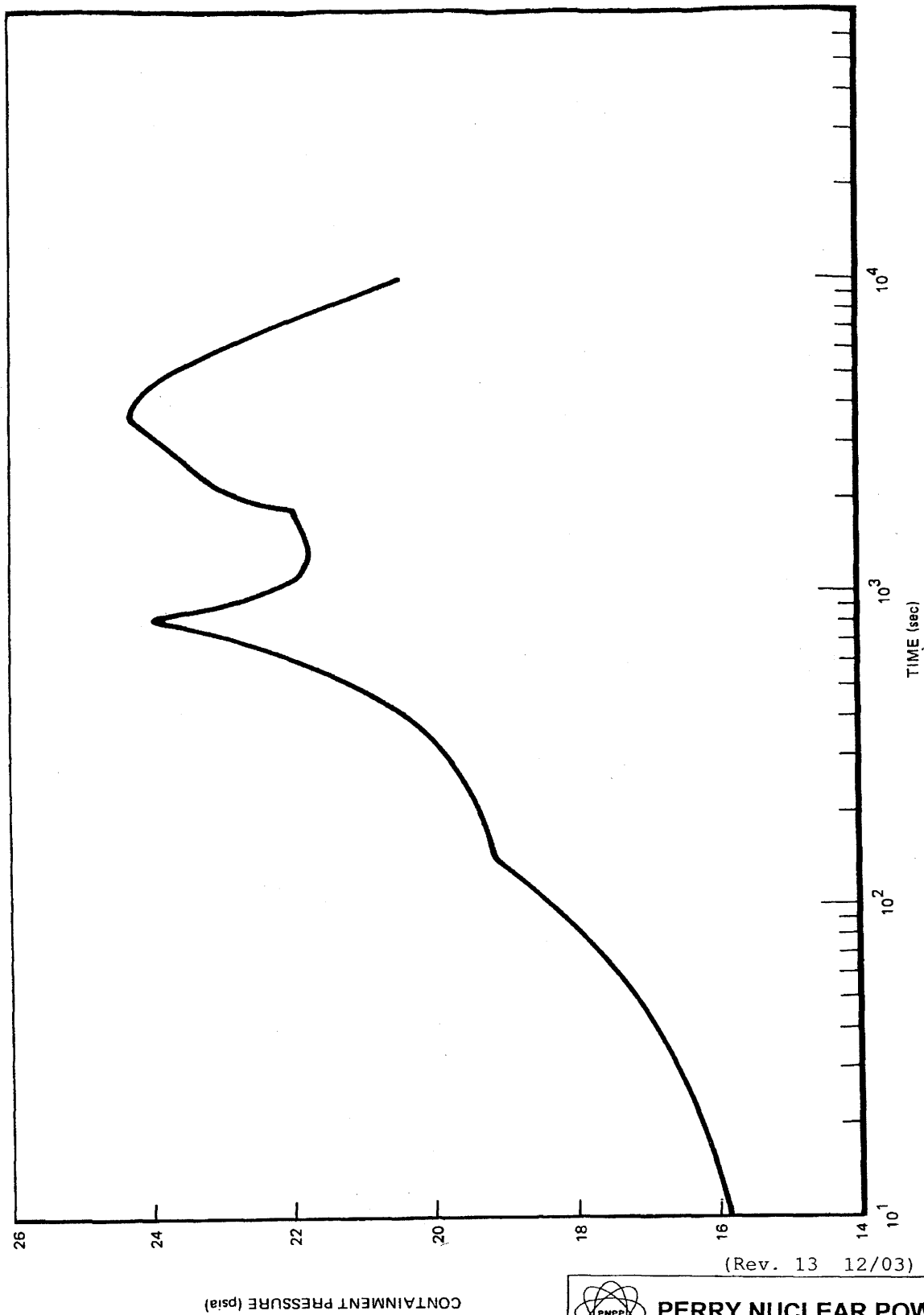
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

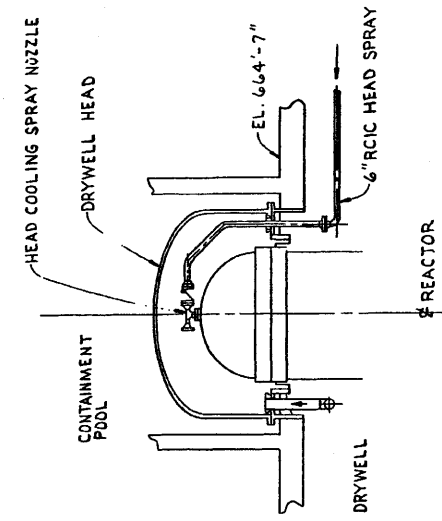
Figure 6.2-24



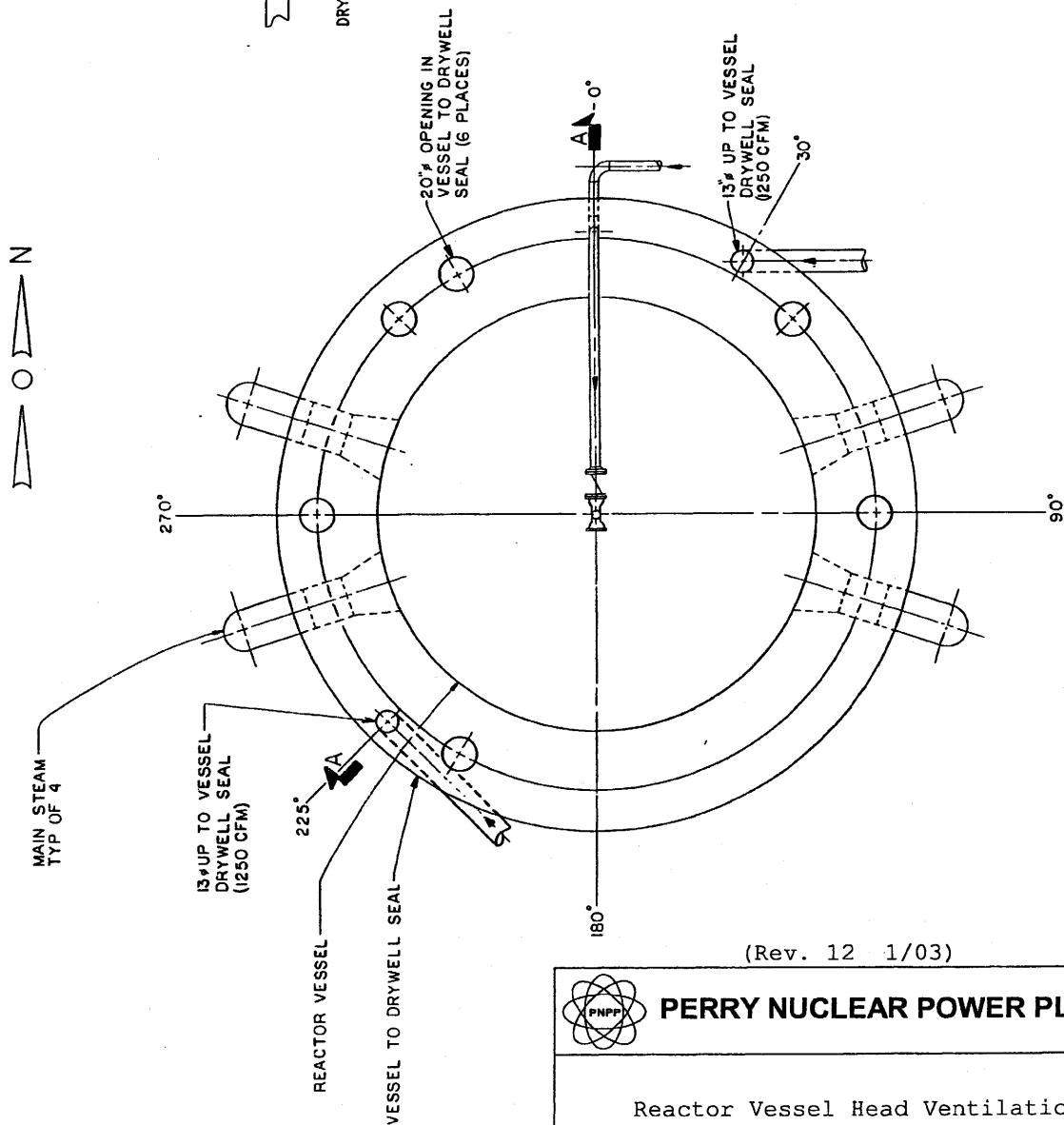
PERRY NUCLEAR POWER PLANT

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




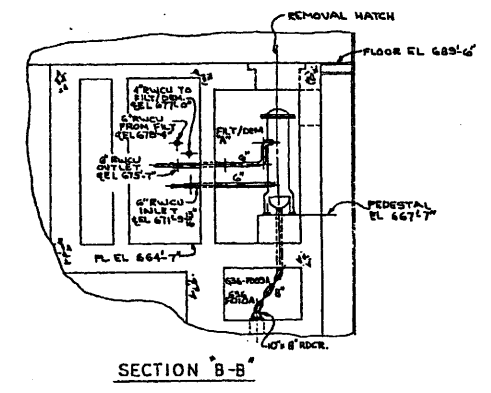
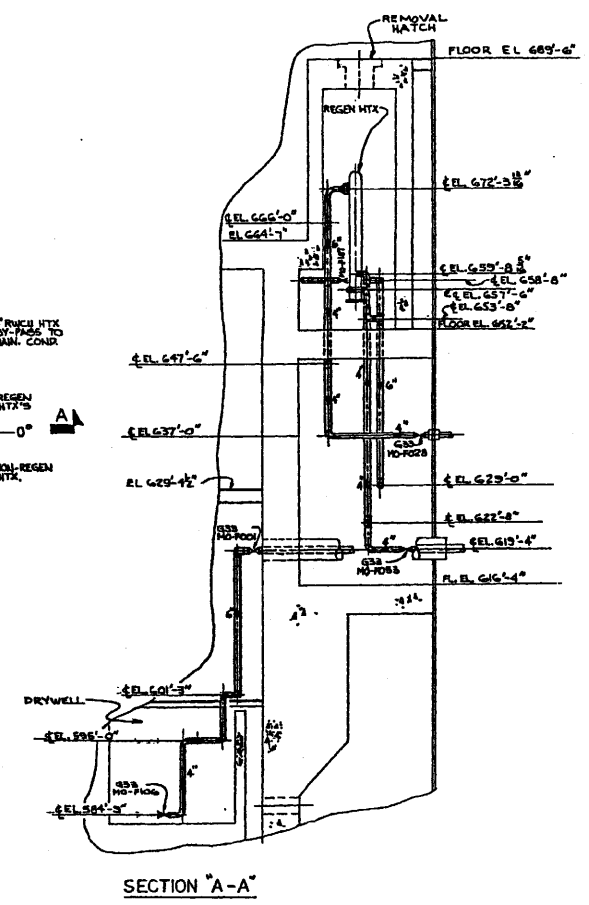
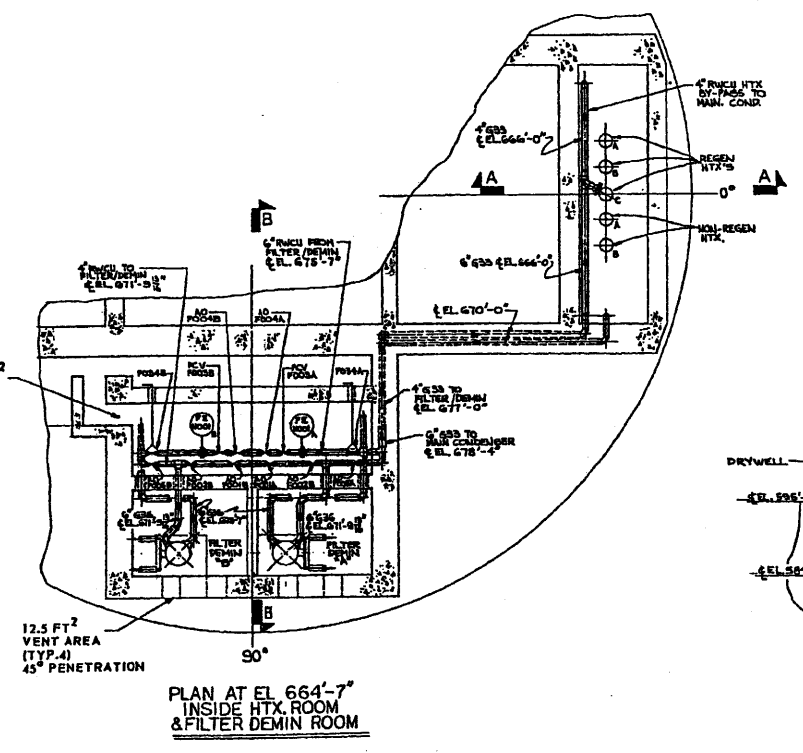
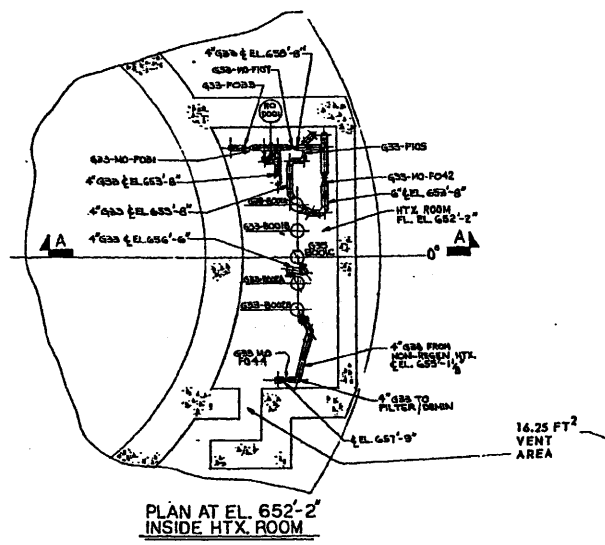
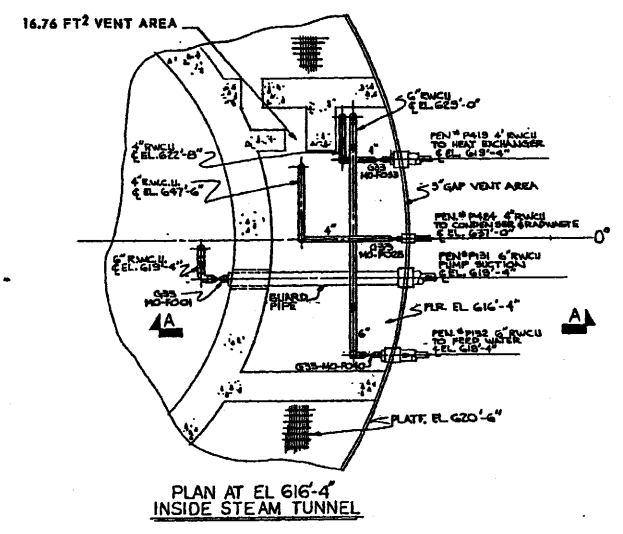
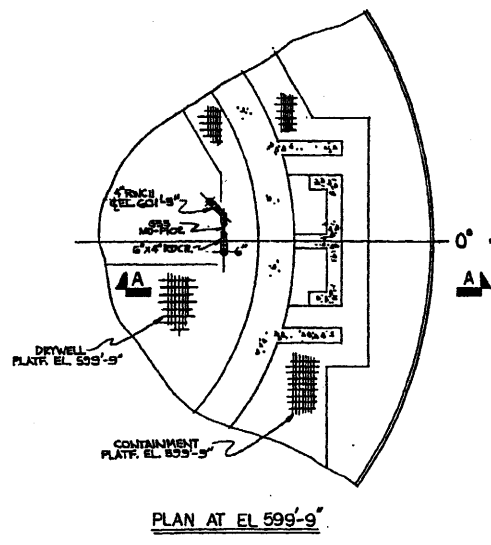
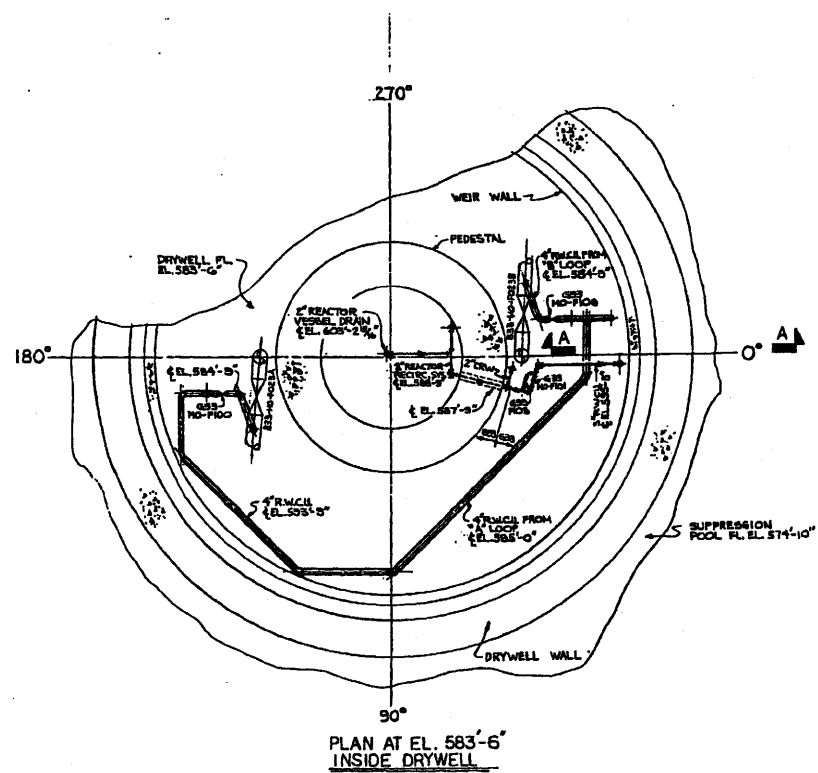
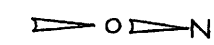
SECTION A-A




PLAN AT EL. 664'-7"

(Rev. 12 1/03)

	PERRY NUCLEAR POWER PLANT
Reactor Vessel Head Ventilation System	
Figure 6.2-26	

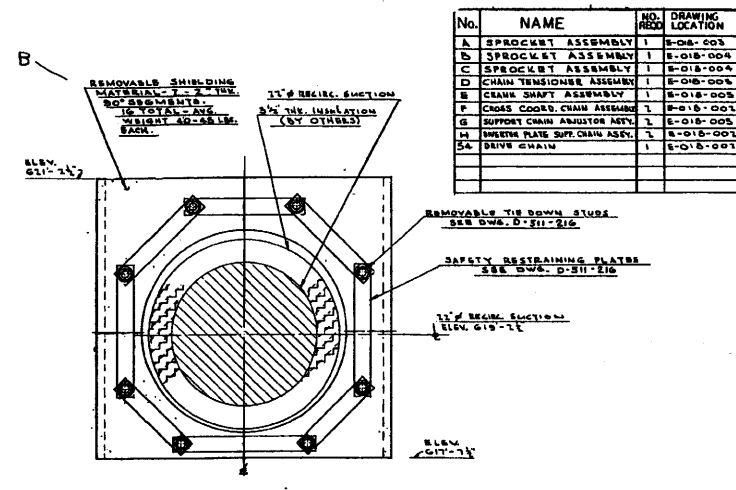
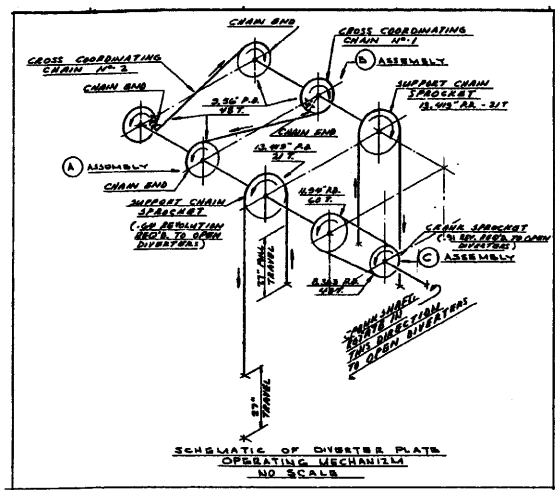
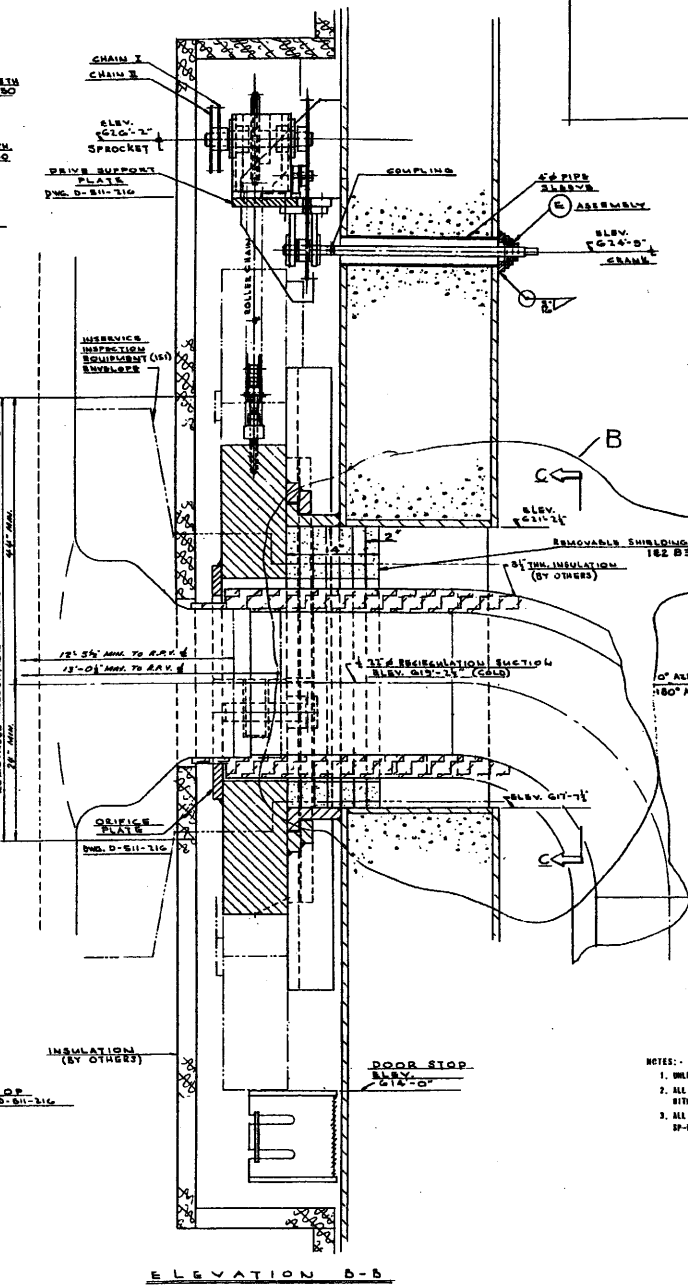
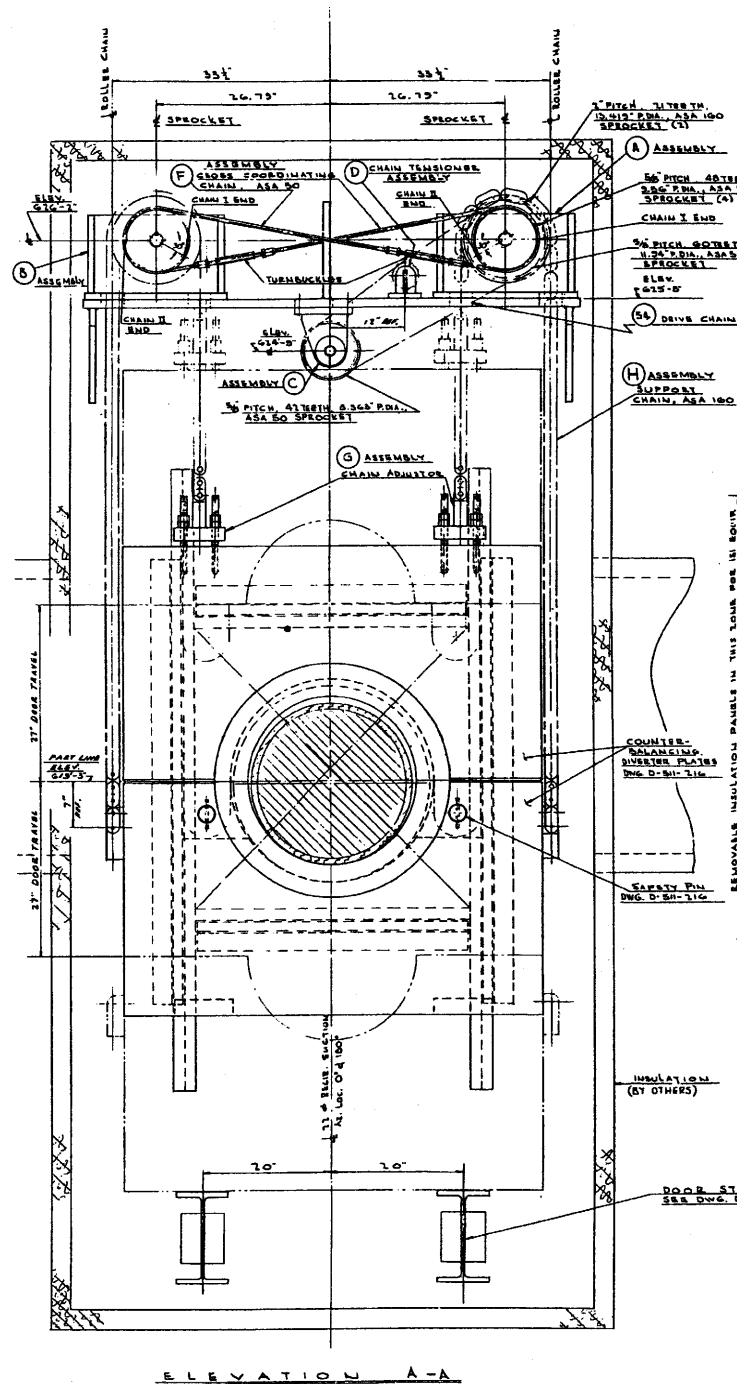


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 **PERRY NUCLEAR POWER PLANT**

RWCU Main Flow Piping Inside
Containment and Drywell

Figure 6.2-27



No.	NAME	NO.	DRAWING LOCATION
A	SPOCKET ASSEMBLY	1	E-018-001
B	SPOCKET ASSEMBLY	1	E-018-004
C	SPOCKET ASSEMBLY	1	E-018-004
D	CHAIN TENSIONER ASSEMBLY	1	E-018-004
E	CHAIN TENSIONER ASSEMBLY	1	E-018-005
F	CHAIN TENSIONER ASSEMBLY	1	E-018-005
G	SUPPORT CHAIN ASSEMBLY	2	E-018-001
H	SUPPORT CHAIN ASSEMBLY	2	E-018-001
SA	DRIVE CHAIN	1	E-018-001

- NOTES:
1. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE IN INCHES.
 2. ALL WORK SHOWN ON THIS DRAWING SHALL BE FABRICATED AND DELIVERED IN ACCORDANCE WITH SPECIFICATION DP-80-4549-00 AND ITS ATTACHMENT SPECIFICATIONS.
 3. ALL WORK SHOWN ON THIS DRAWING SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATION DP-80-4549-00 AND ITS ATTACHMENT SPECIFICATIONS.

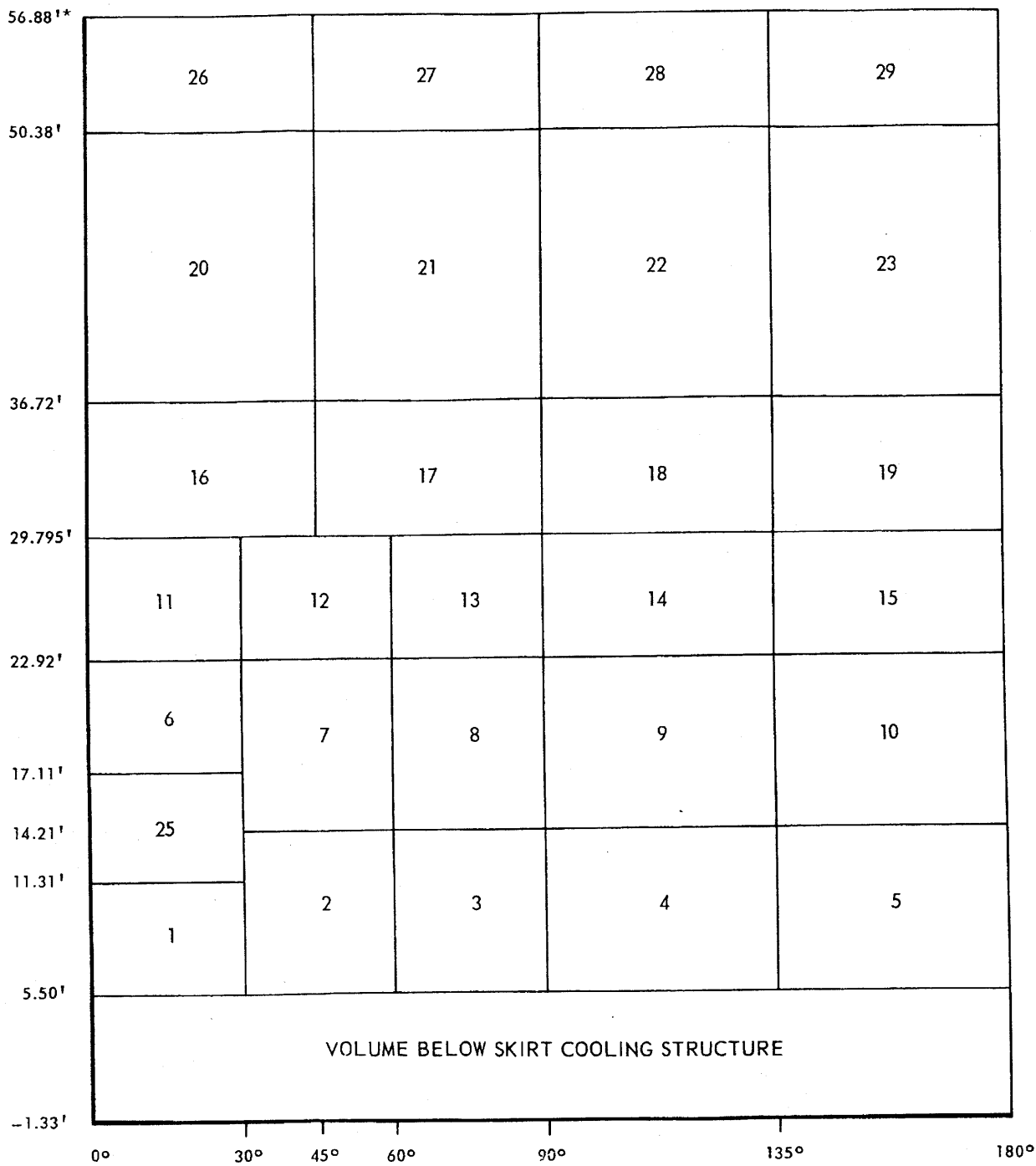
- REFERENCES:
- E-018-002 RECIRCULATION SECTION - FLOW DIVERTER - ASSEMBLY AND DETAILS
 - E-018-003 RECIRCULATION SECTION - FLOW DIVERTER - ASSEMBLY AND DETAILS
 - E-018-004 RECIRCULATION SECTION - FLOW DIVERTER - ASSEMBLY AND DETAILS
 - E-018-005 RECIRCULATION SECTION - FLOW DIVERTER - ASSEMBLY AND DETAILS
 - E-018-006 RECIRCULATION SECTION - FLOW DIVERTER - DETAILS
 - E-018-007 RECIRCULATION SECTION - FLOW DIVERTER - PLAN, SECTIONS AND DETAILS
- NUCLEAR SAFETY RELATED
- TOLERANCES:
- UNLESS OTHERWISE SPECIFIED:
- FINISH: 316
- ALL DIMENSIONS TO BE CHECKED WITHIN ± .001"

(Rev. 12 1/03)

PERRY NUCLEAR POWER PLANT

Recirculation Suction Flow Diverter Arrangement

Figure 6.2-28
(Dwg. E-018-001)



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.

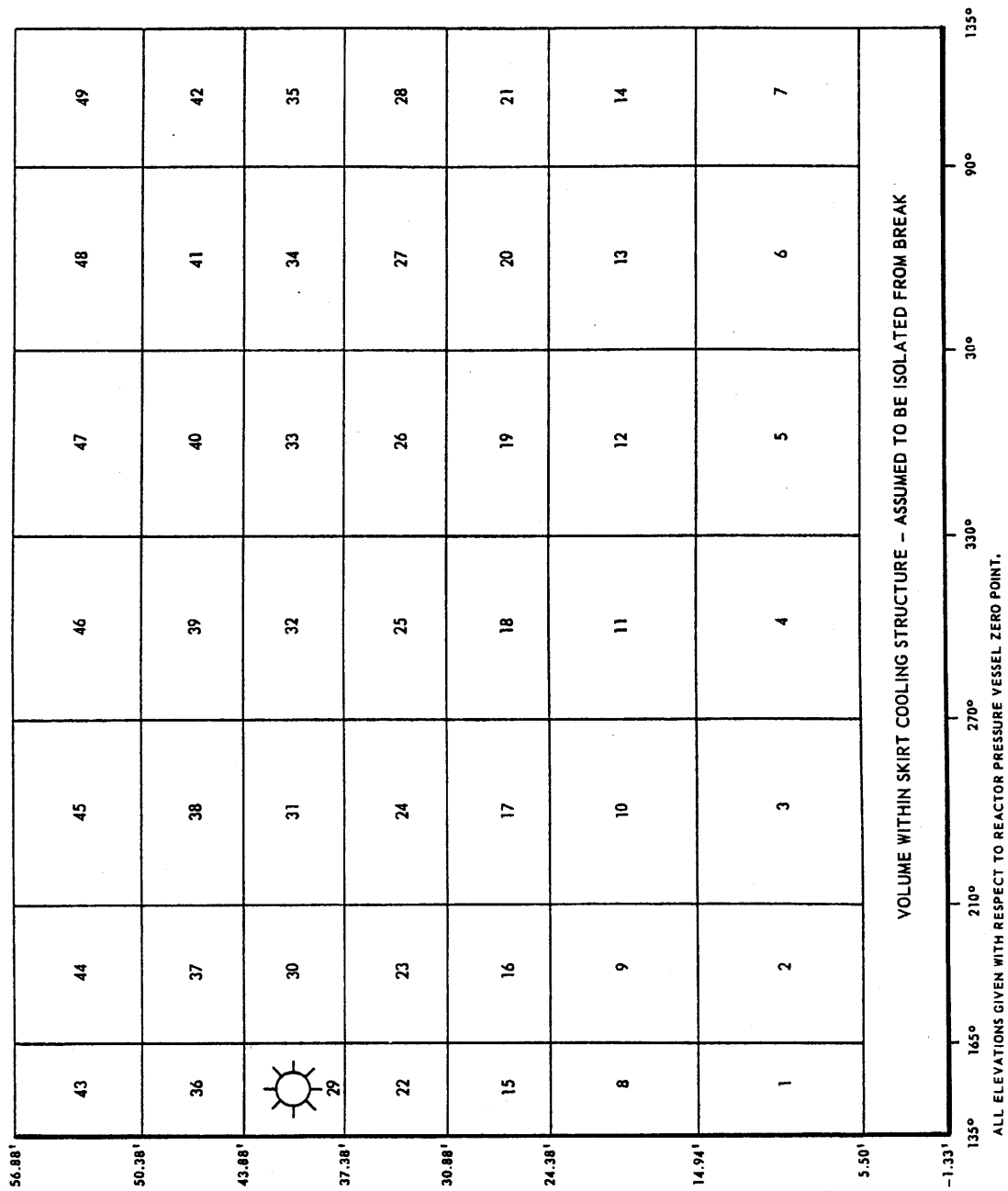
(Rev. 12 1/03)




PERRY NUCLEAR POWER PLANT

Reactor Annulus Nodalization
- Recirculation Line Breaks

Figure 6.2-29

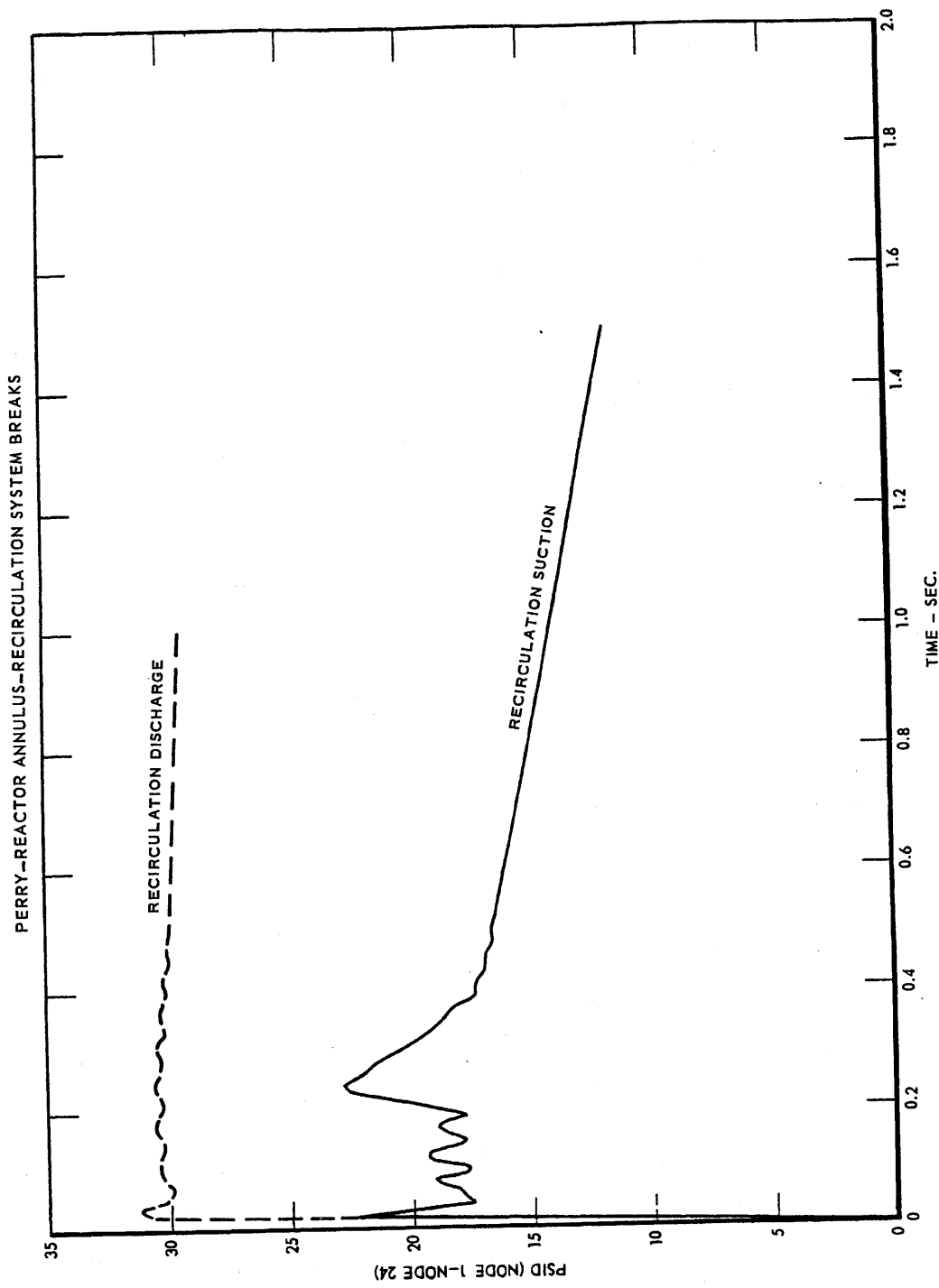


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PERRY NUCLEAR POWER PLANT

Reactor Annulus Nodalization
Feedwater Line Break

Figure 6.2-30



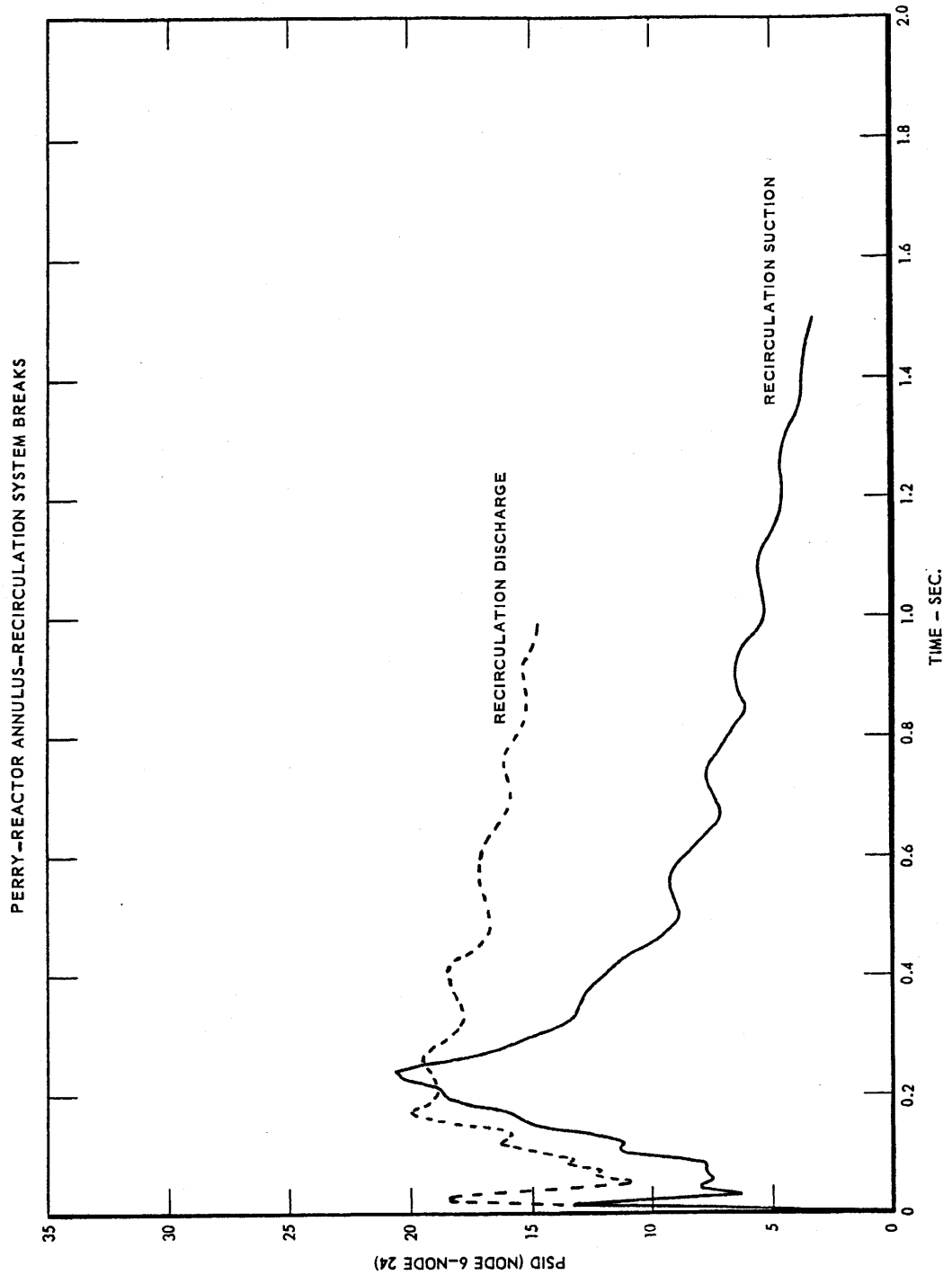
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PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 1 - 24)

Figure 6.2-31



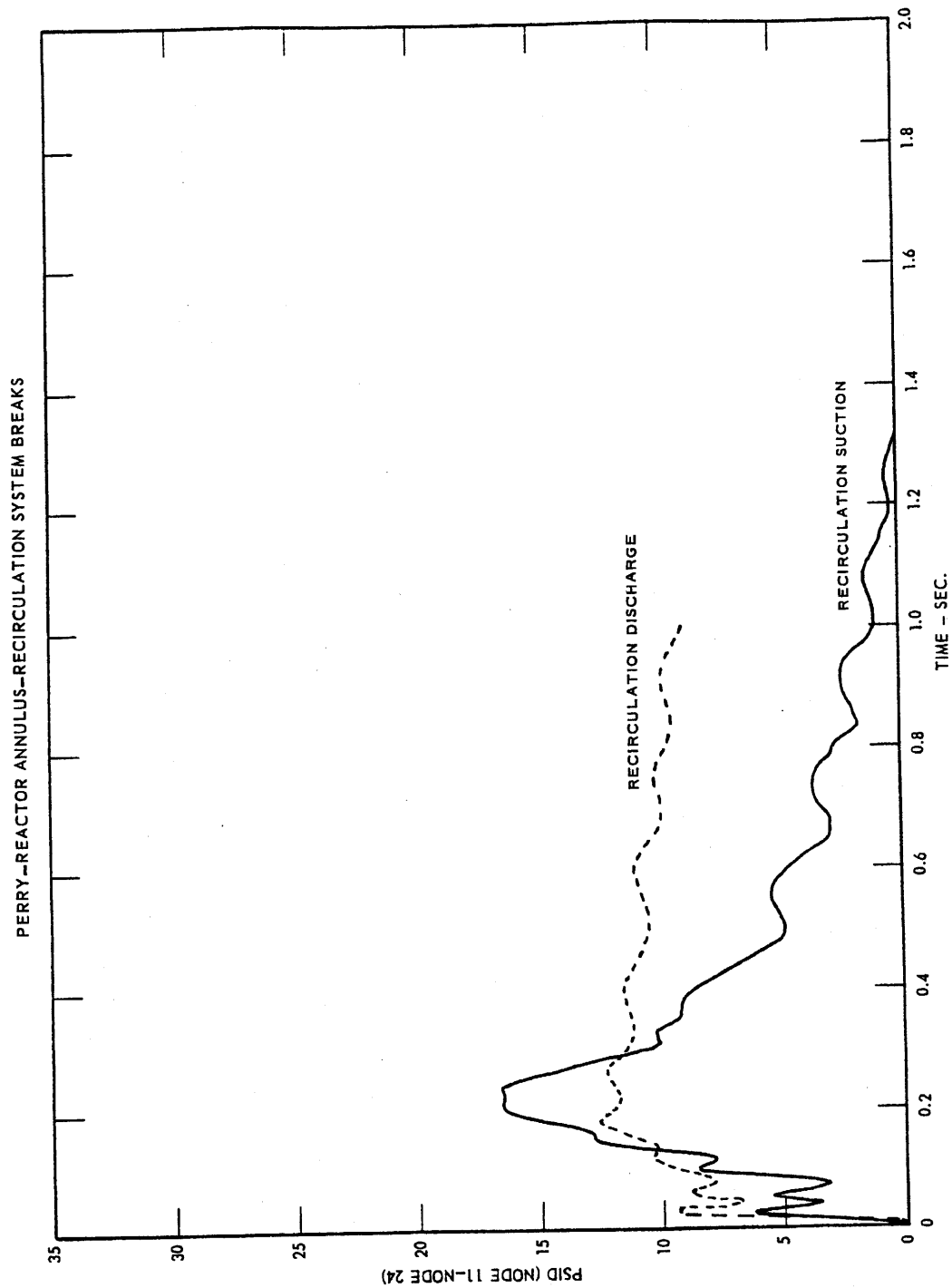
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 6 - 24)

Figure 6.2-32



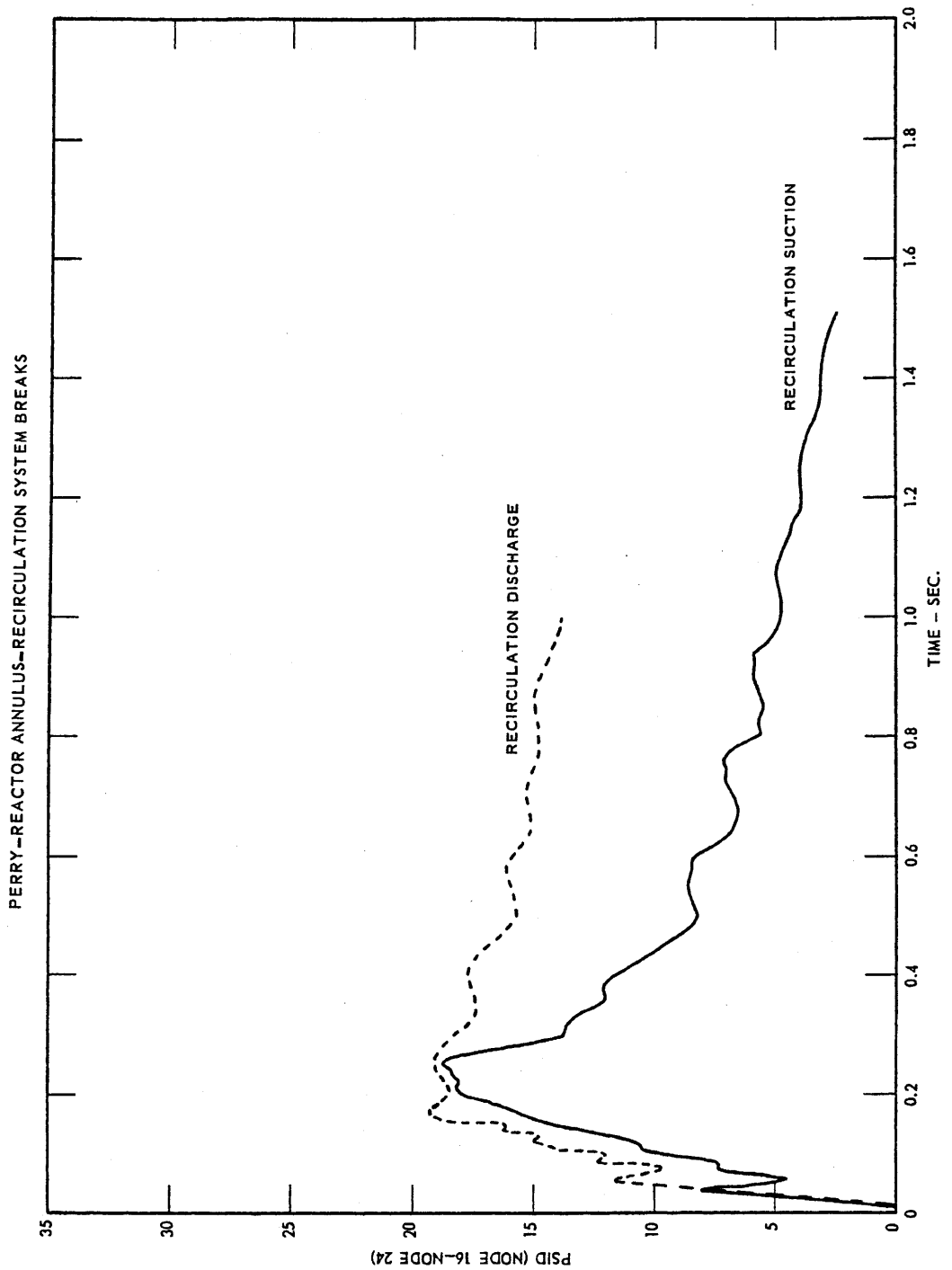
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 11 - 24)

Figure 6.2-33



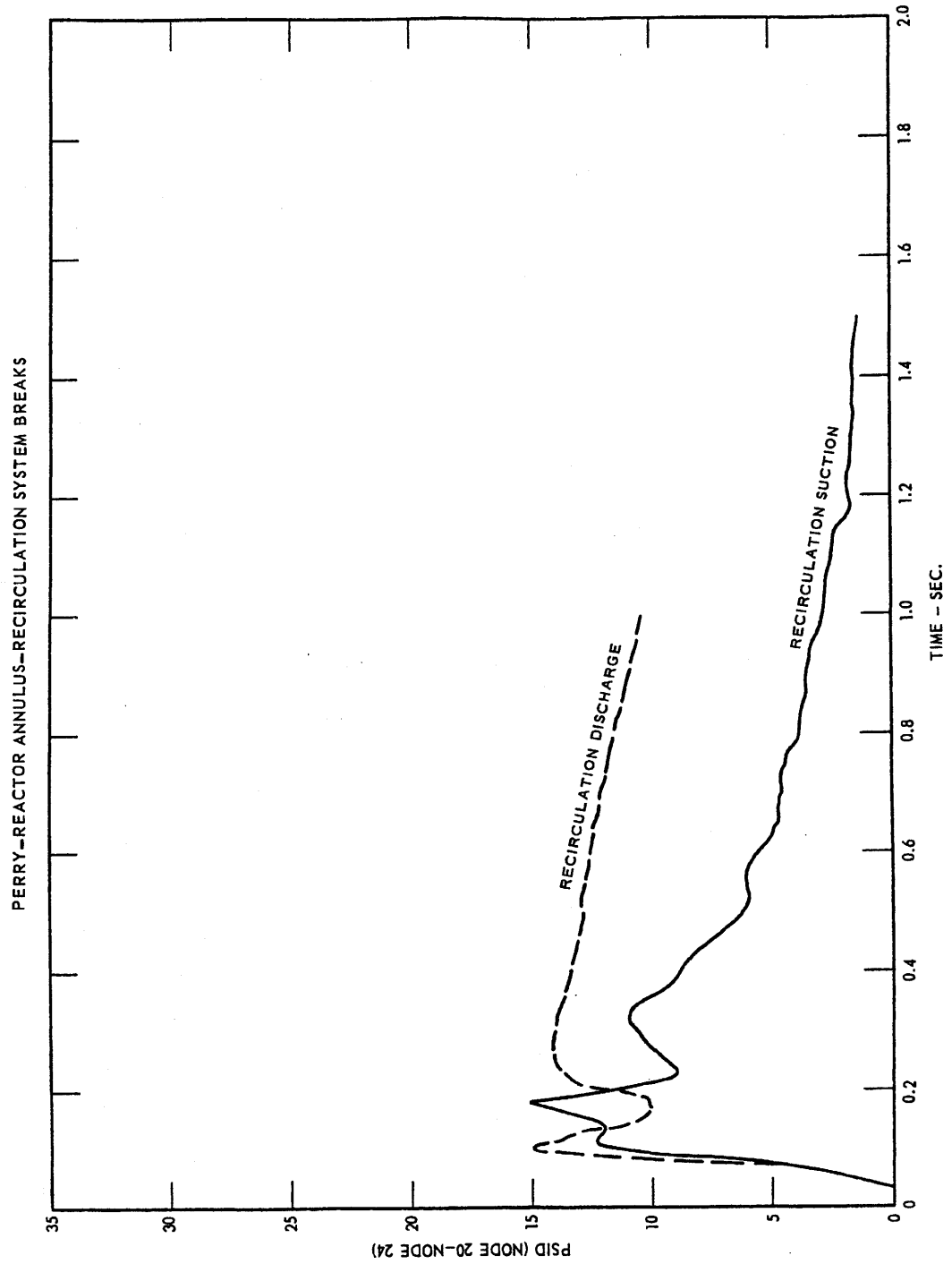
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 16 - 24)

Figure 6.2-34



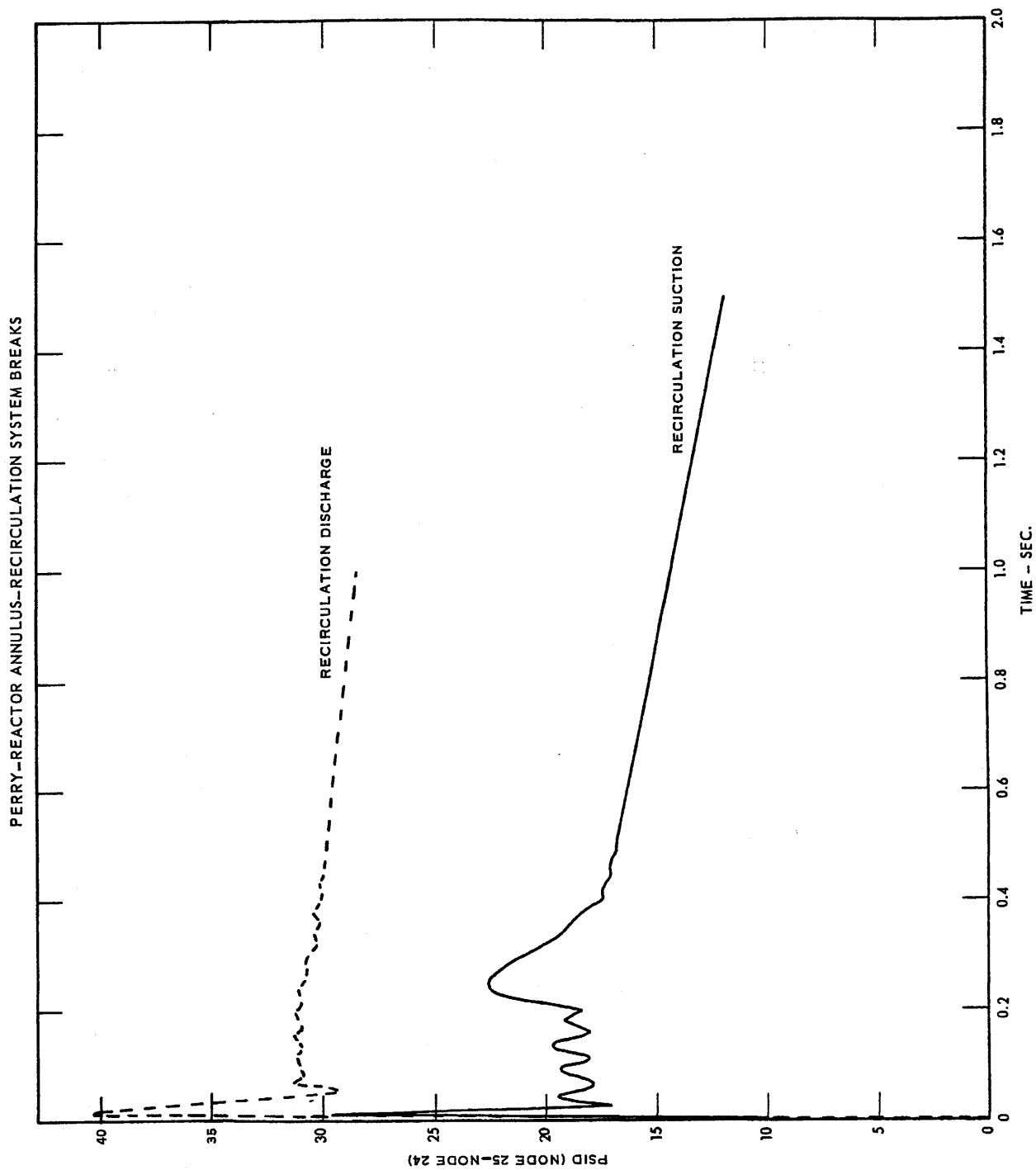
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 20 - 24)

Figure 6.2-35



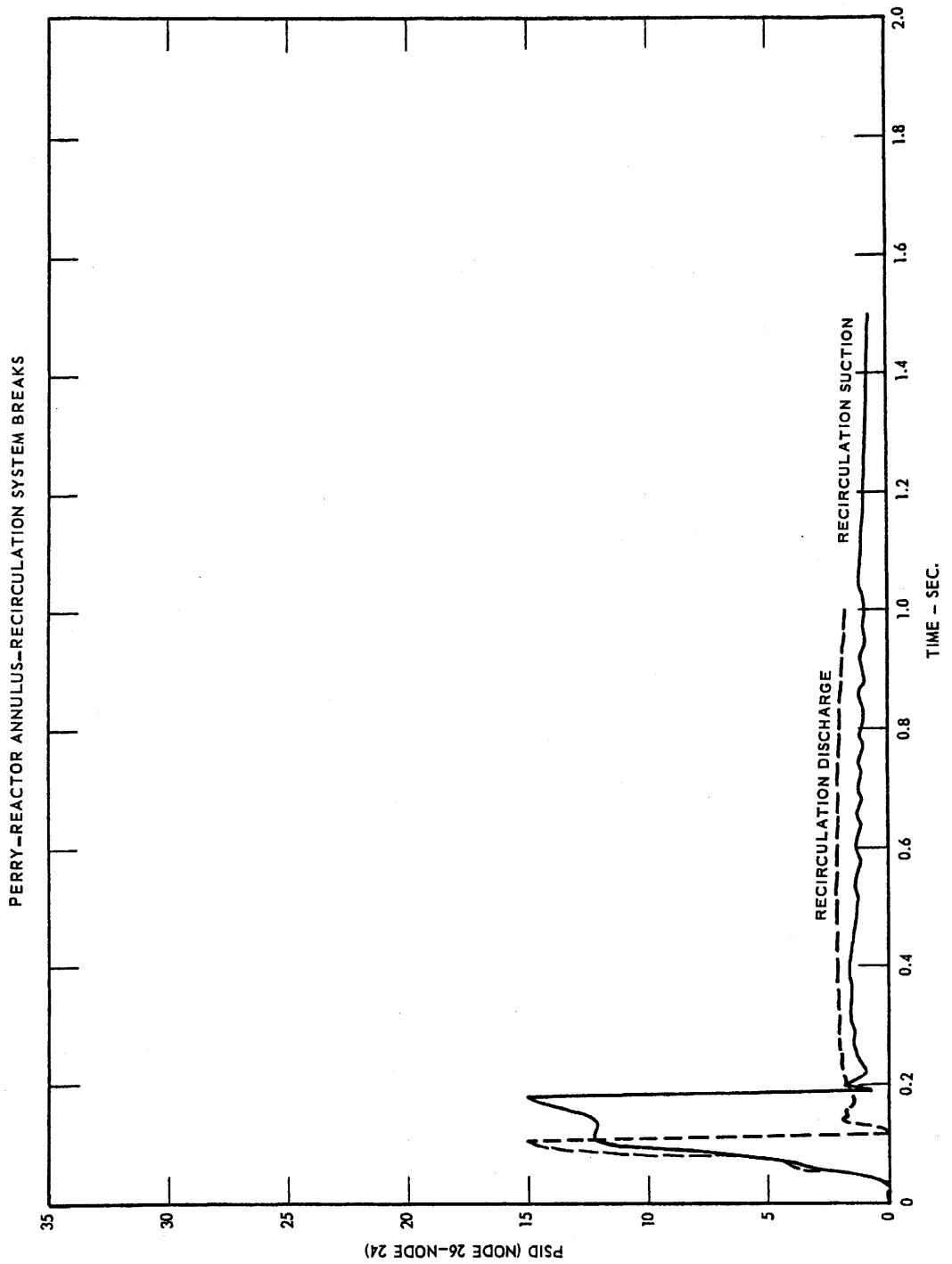
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 25 - 24)

Figure 6.2-36



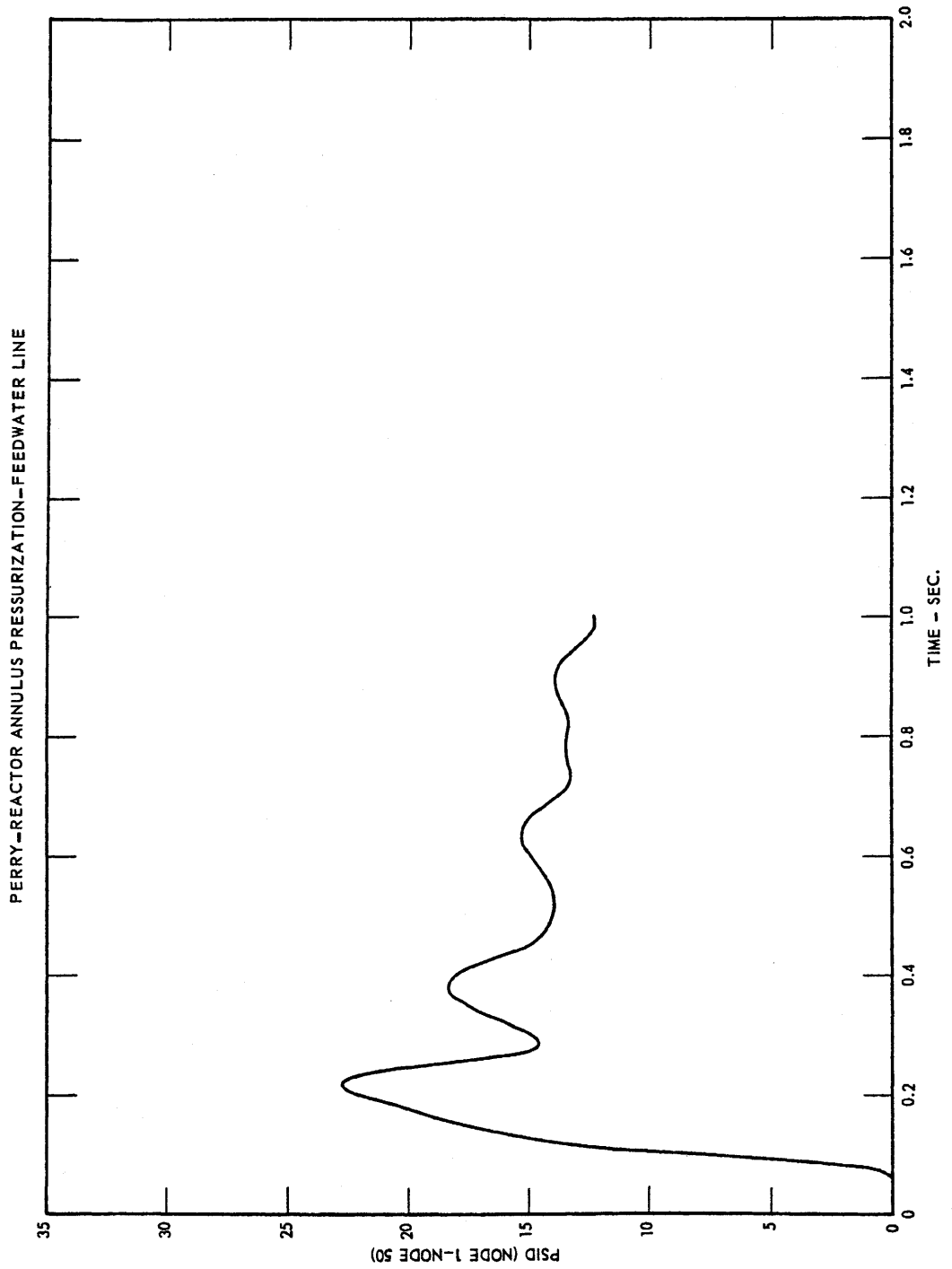
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 26 - 24)

Figure 6.2-37



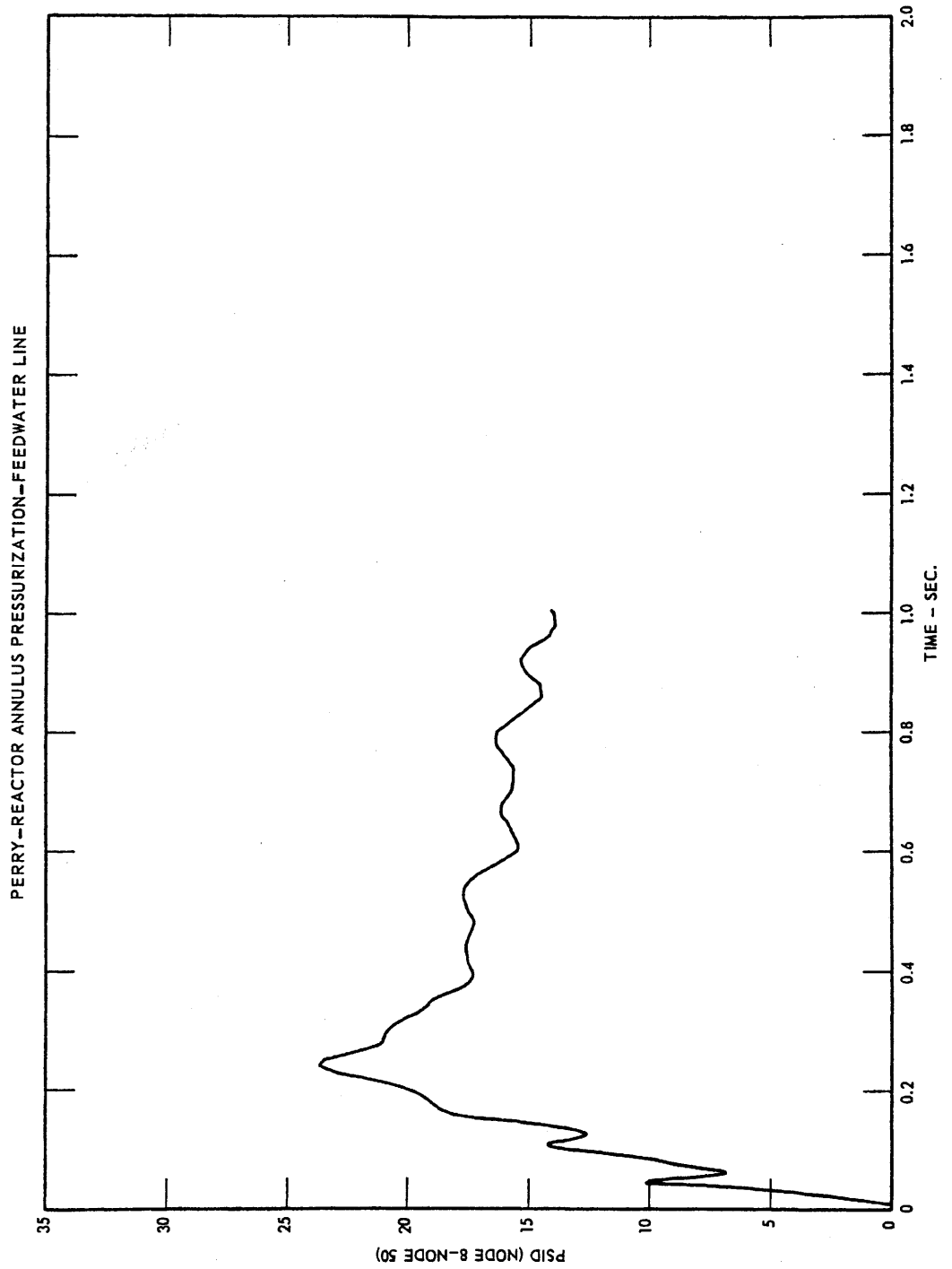
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 1 - 50)

Figure 6.2-38



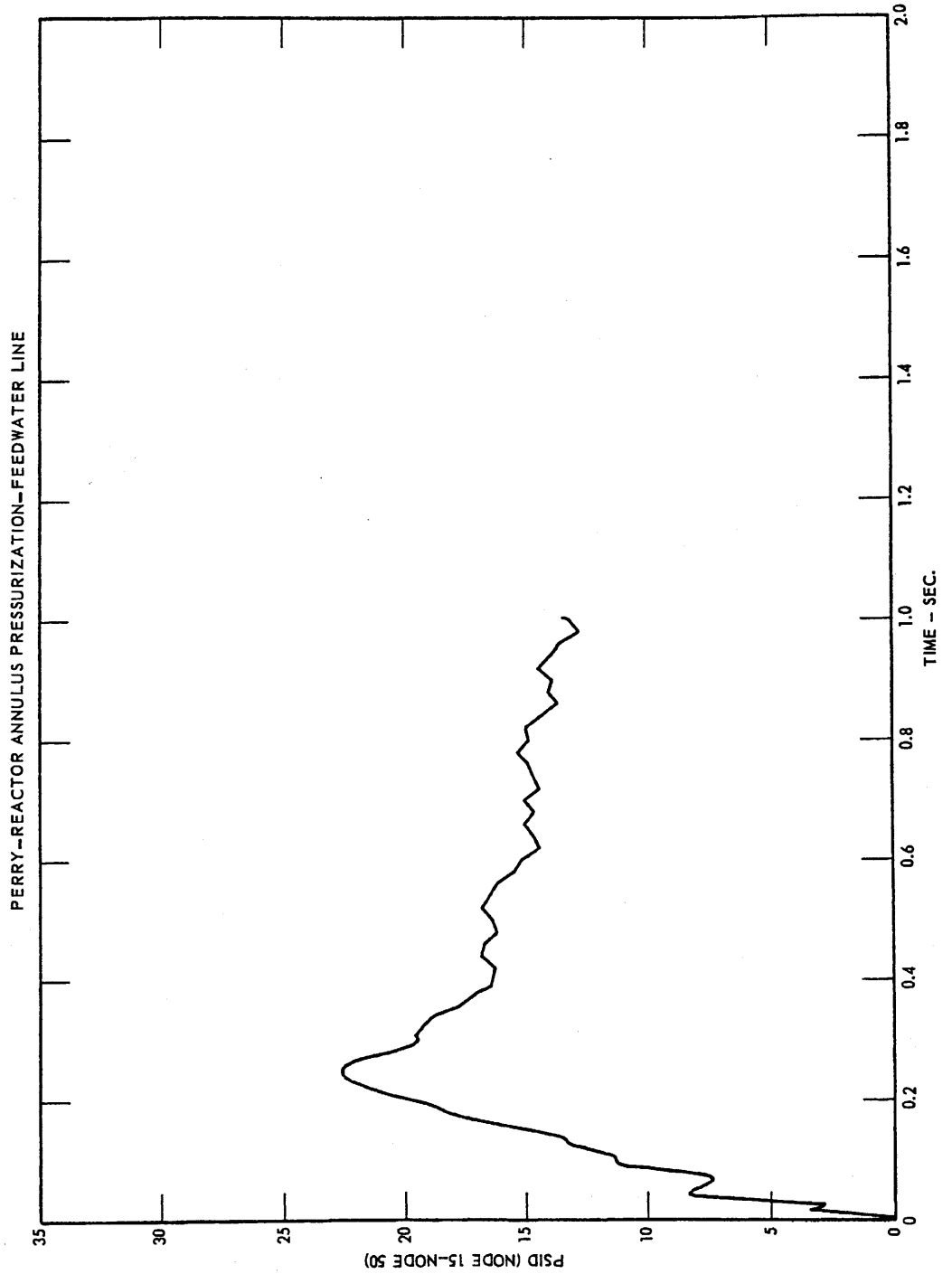
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 8 - 50)

Figure 6.2-39



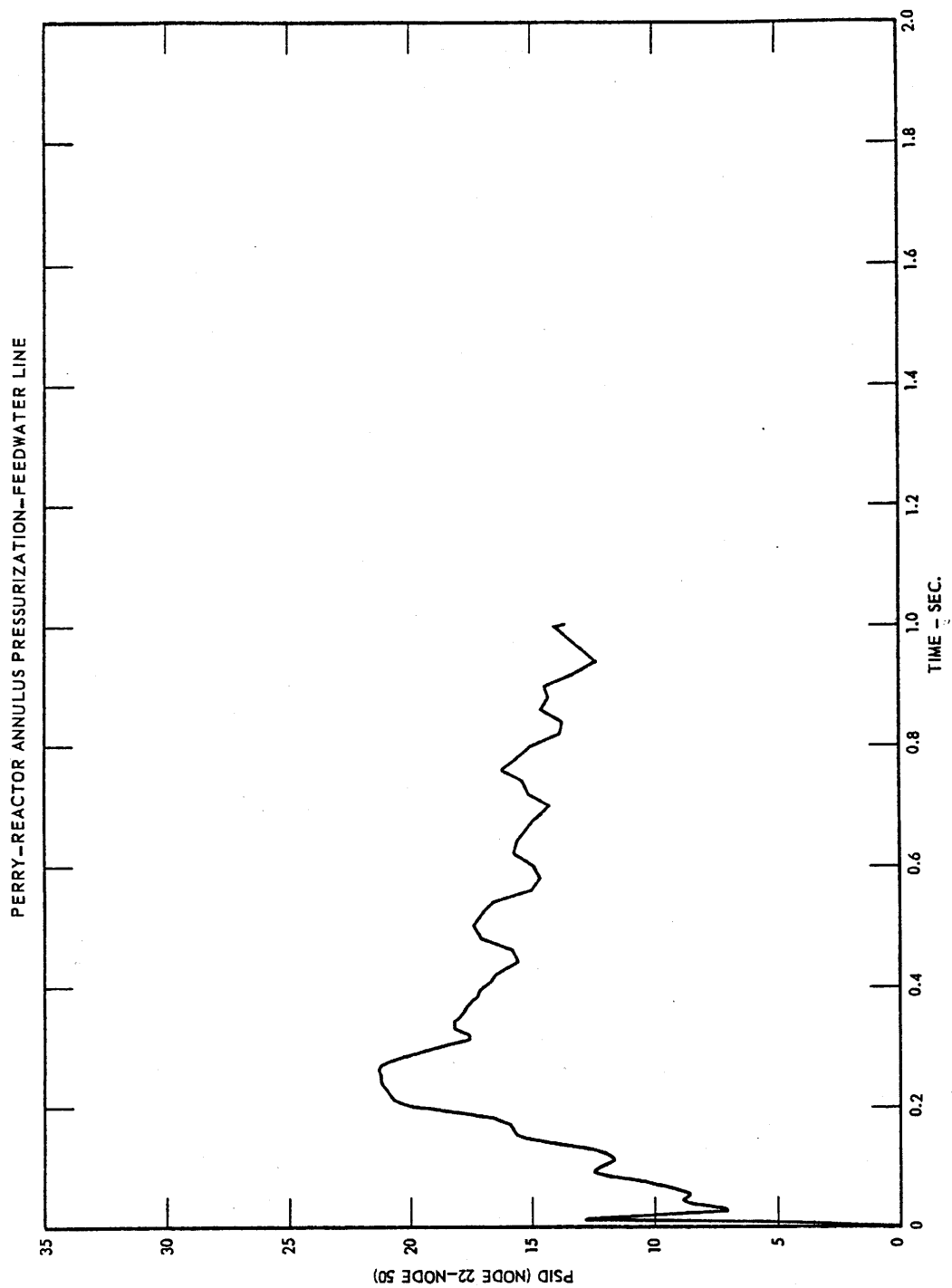
(Rev. 12 1/03)




PERRY NUCLEAR POWER PLANT

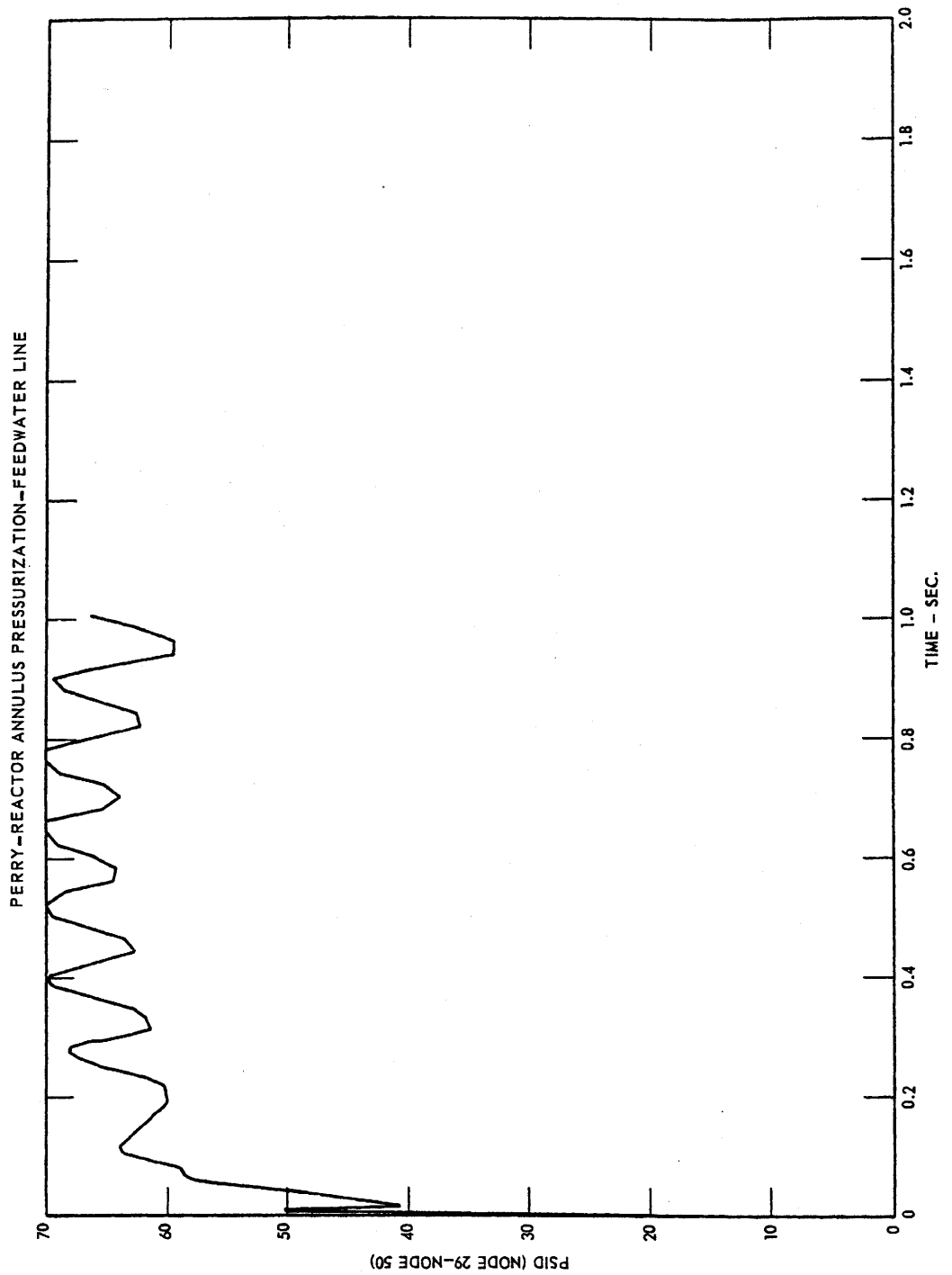
Reactor Annulus Pressure
Differentials (Nodes 15 - 50)

Figure 6.2-40



(Rev. 12 1/03)

	PERRY NUCLEAR POWER PLANT
Reactor Annulus Pressure Differentials (Nodes 22 - 50)	
Figure 6.2-41	



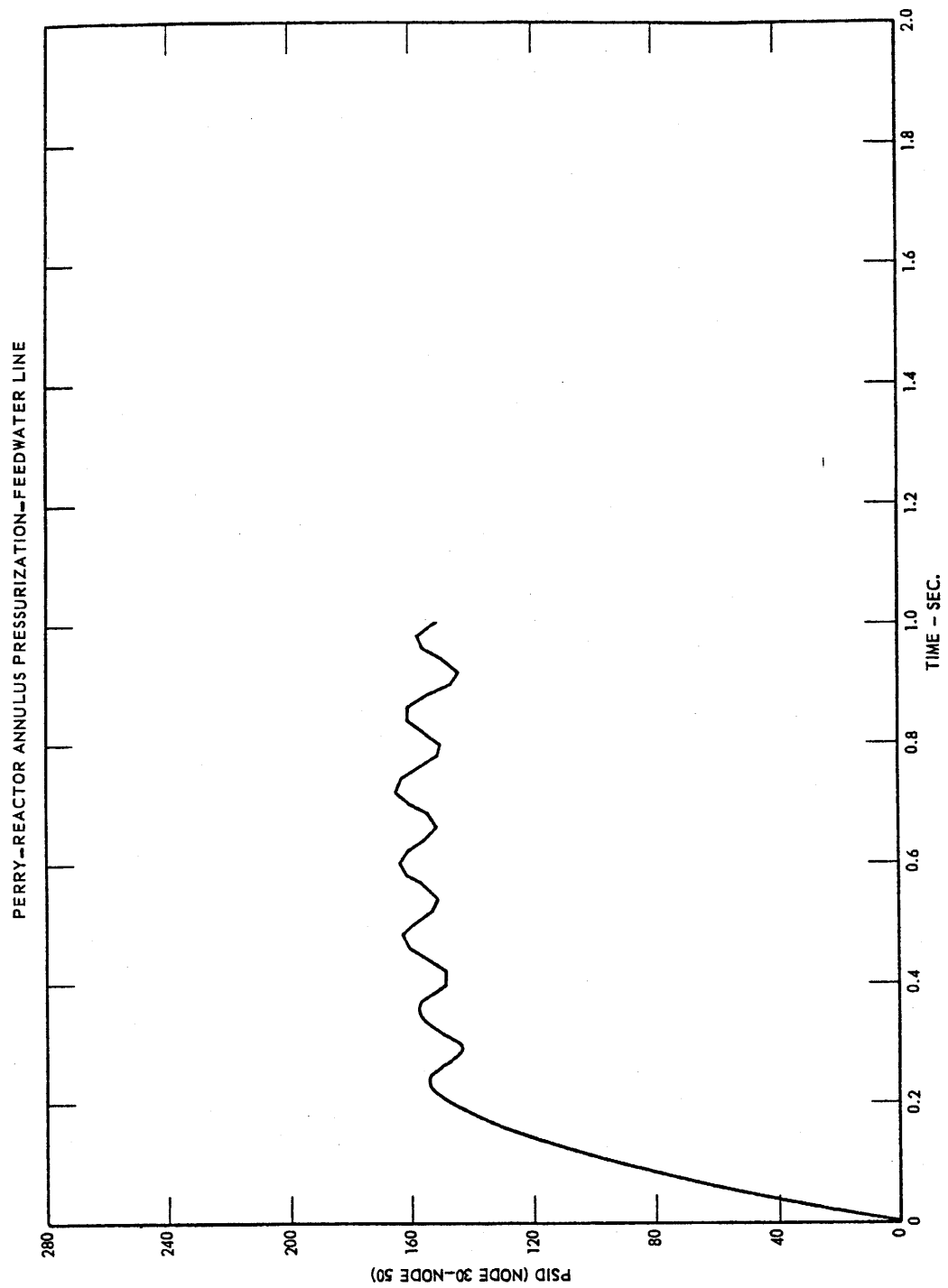
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 29 - 50)

Figure 6.2-42



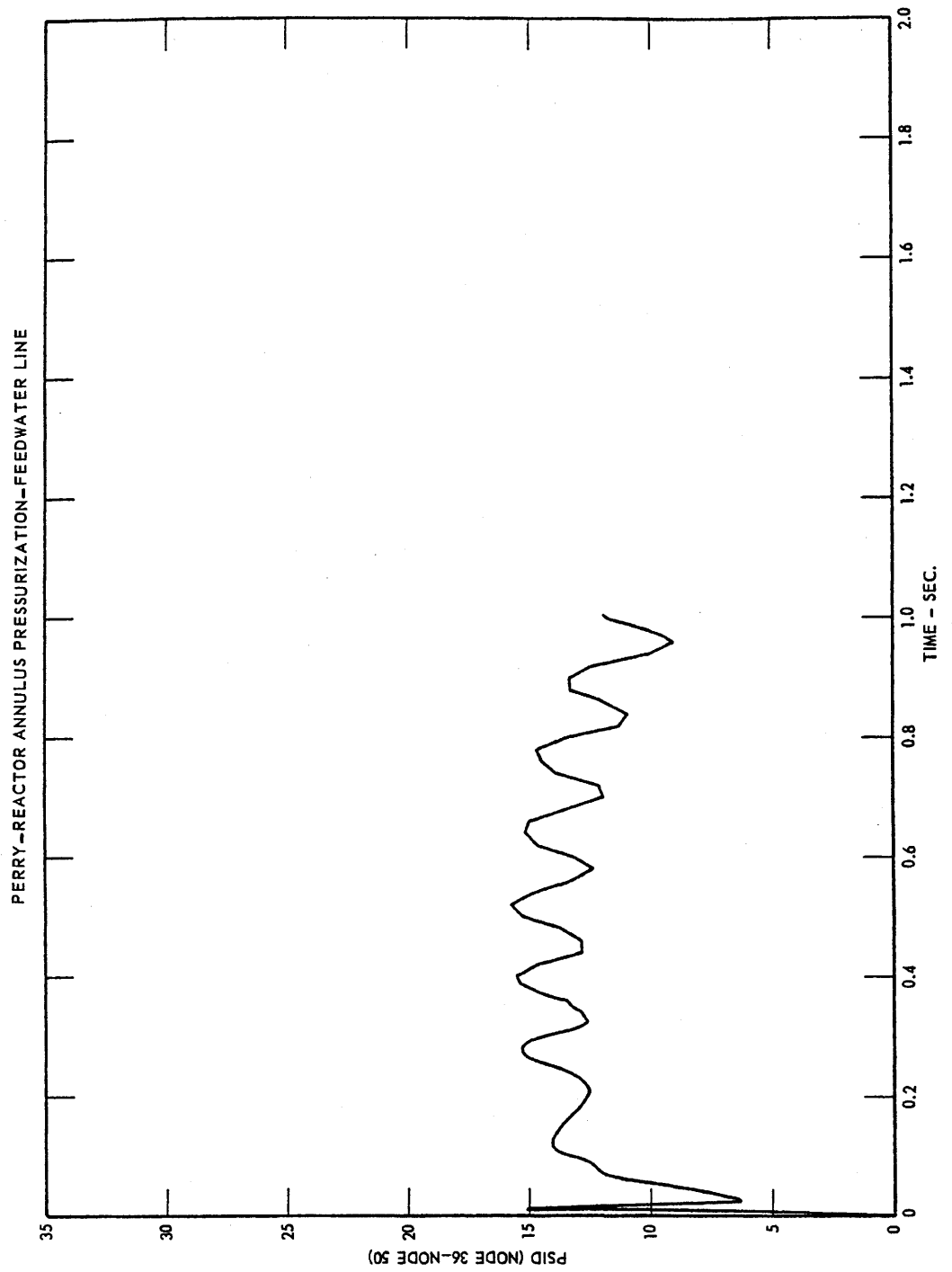
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 30 - 50)

Figure 6.2-43



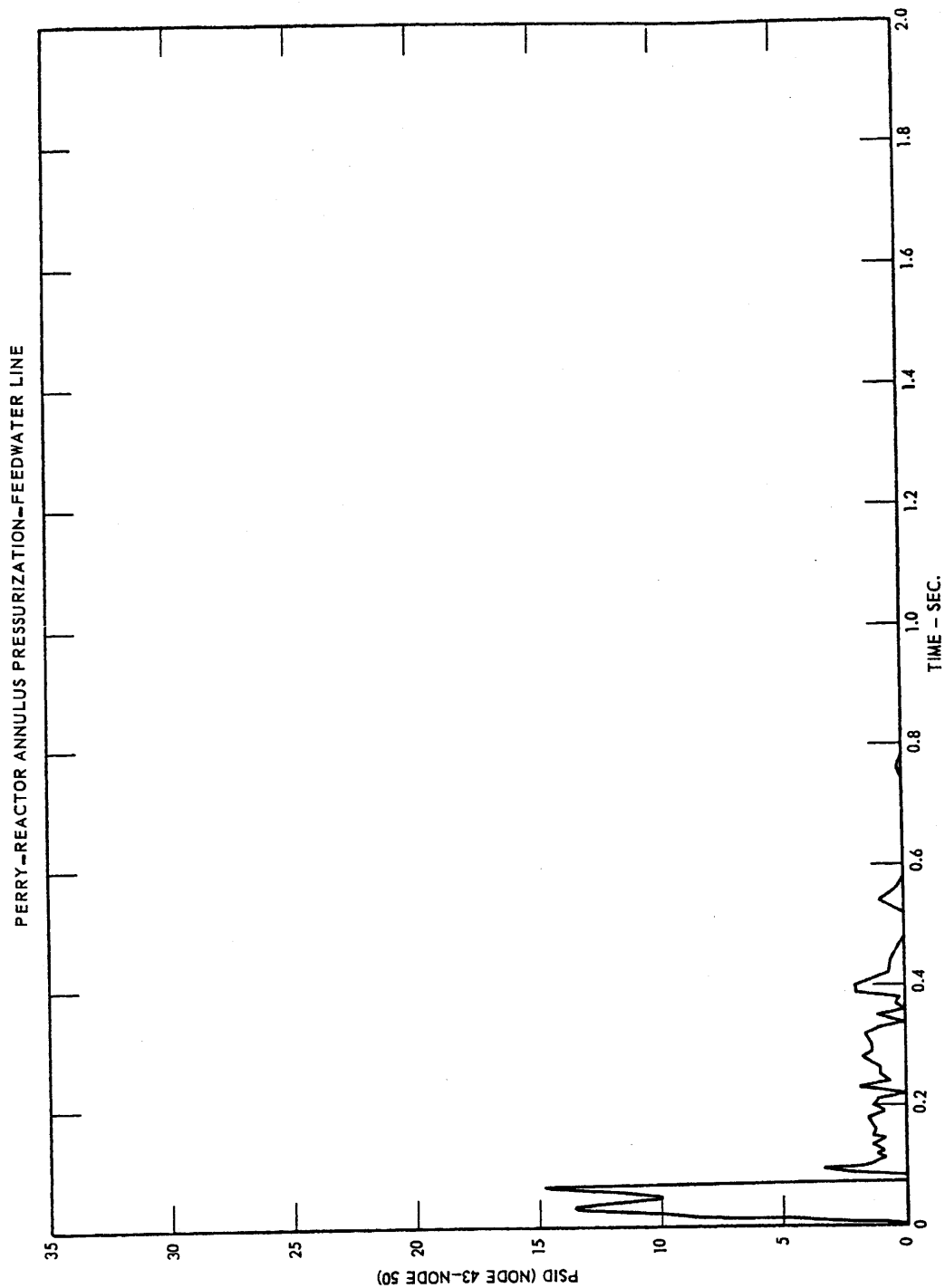
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PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 36 - 50)

Figure 6.2-44



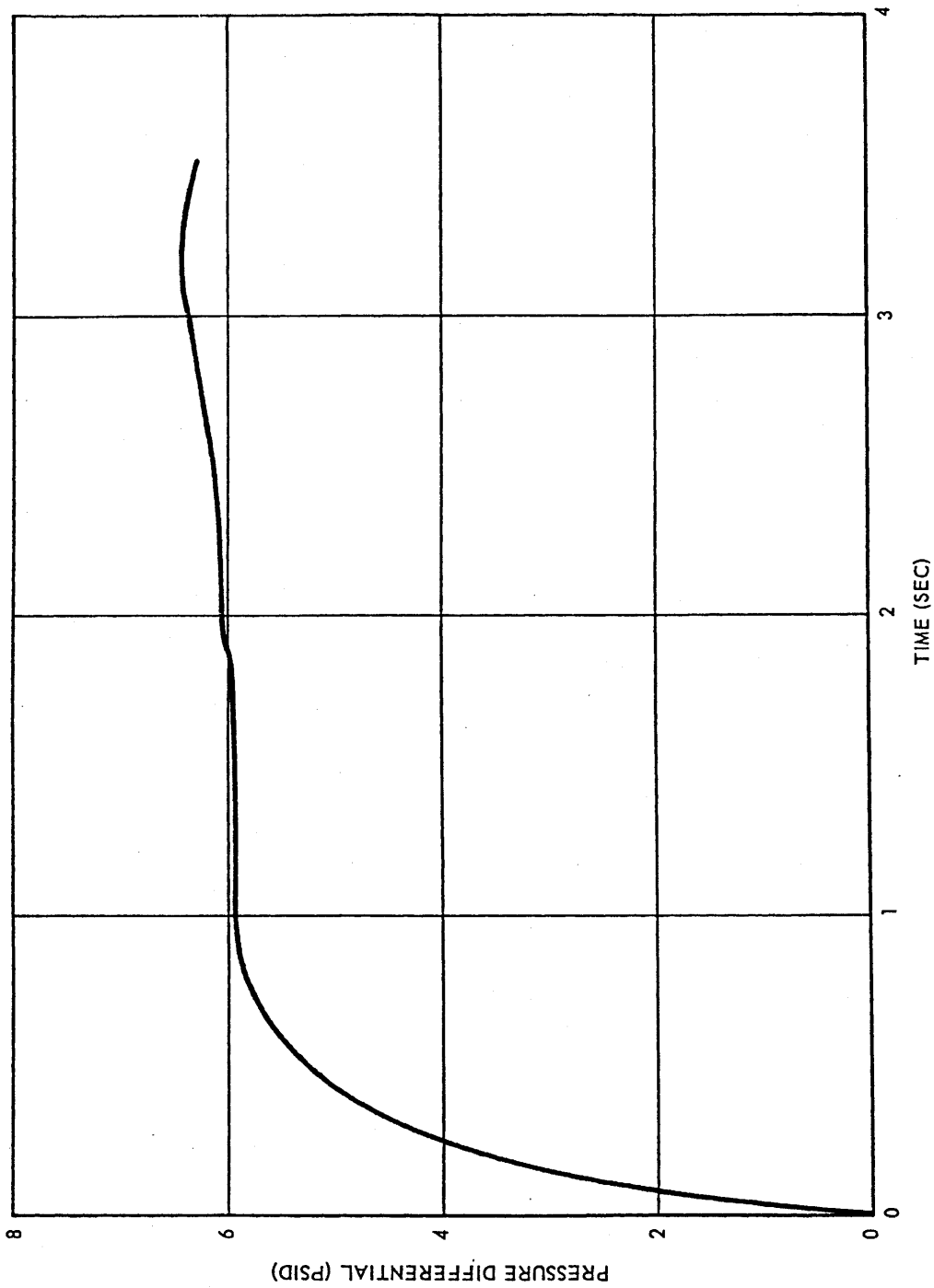
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Reactor Annulus Pressure
Differentials (Nodes 34 - 50)

Figure 6.2-45



(Rev. 12 1/03)

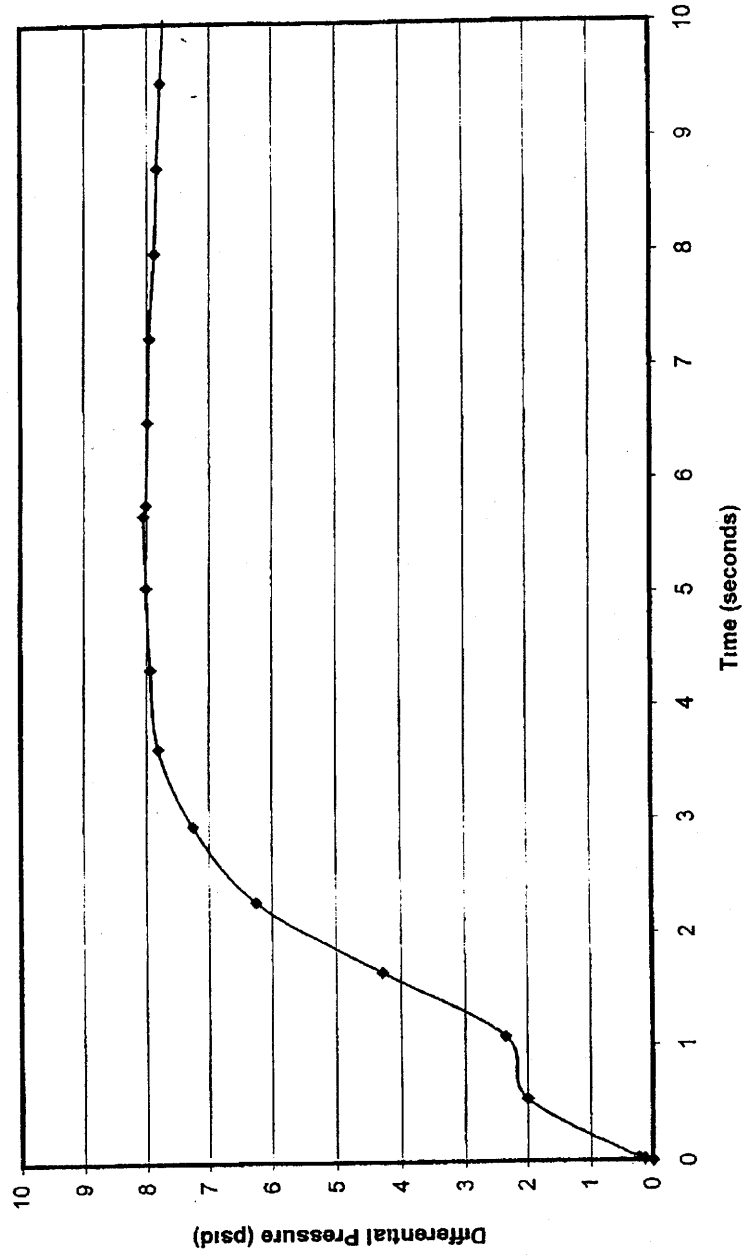


PERRY NUCLEAR POWER PLANT

Drywell Head Pressure
Differential

Figure 6.2-46

RWCU Heat Exchanger Room Pressure Differential



(Rev. 15 10/07)

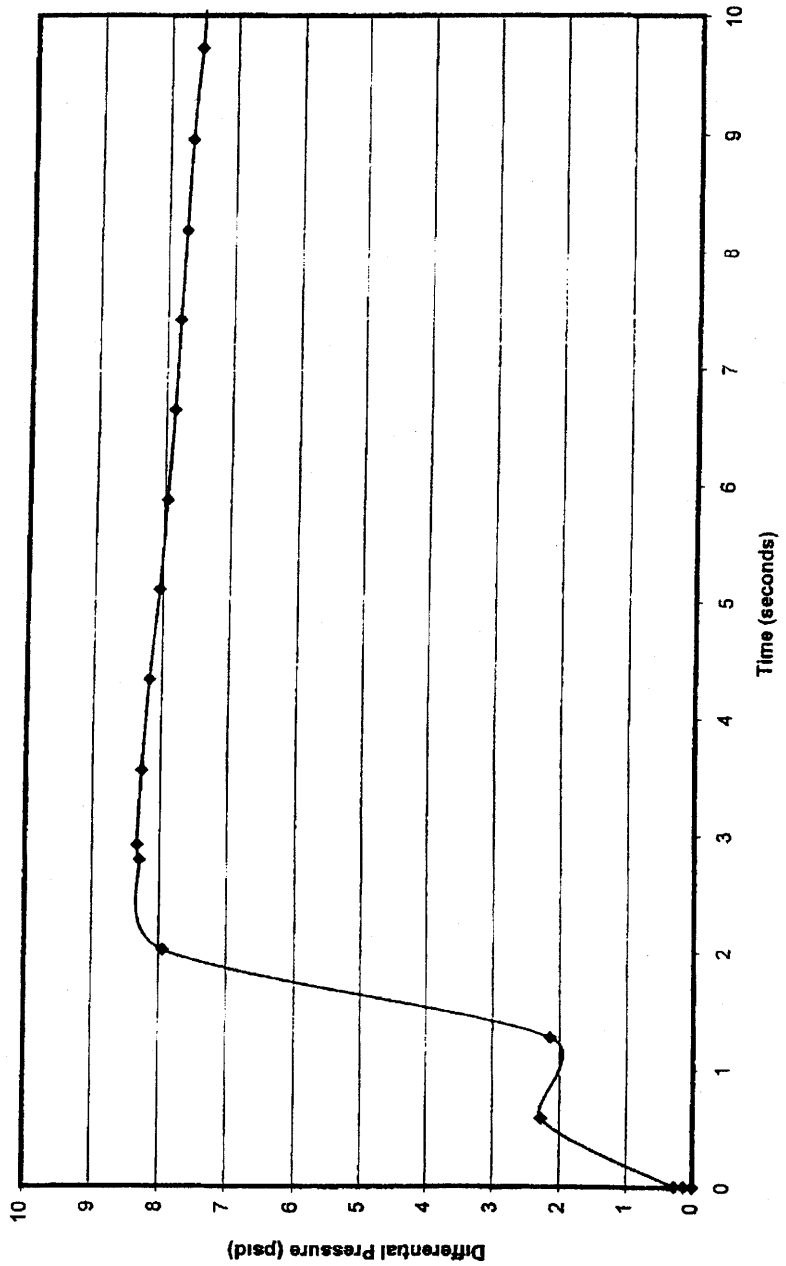


PERRY NUCLEAR POWER PLANT

RWCU Heat Exchanger
Pressure Differential

Figure 6.2-47

RCWU Drain Valve Nest Room Differential Pressure



(Rev. 15 10/07)

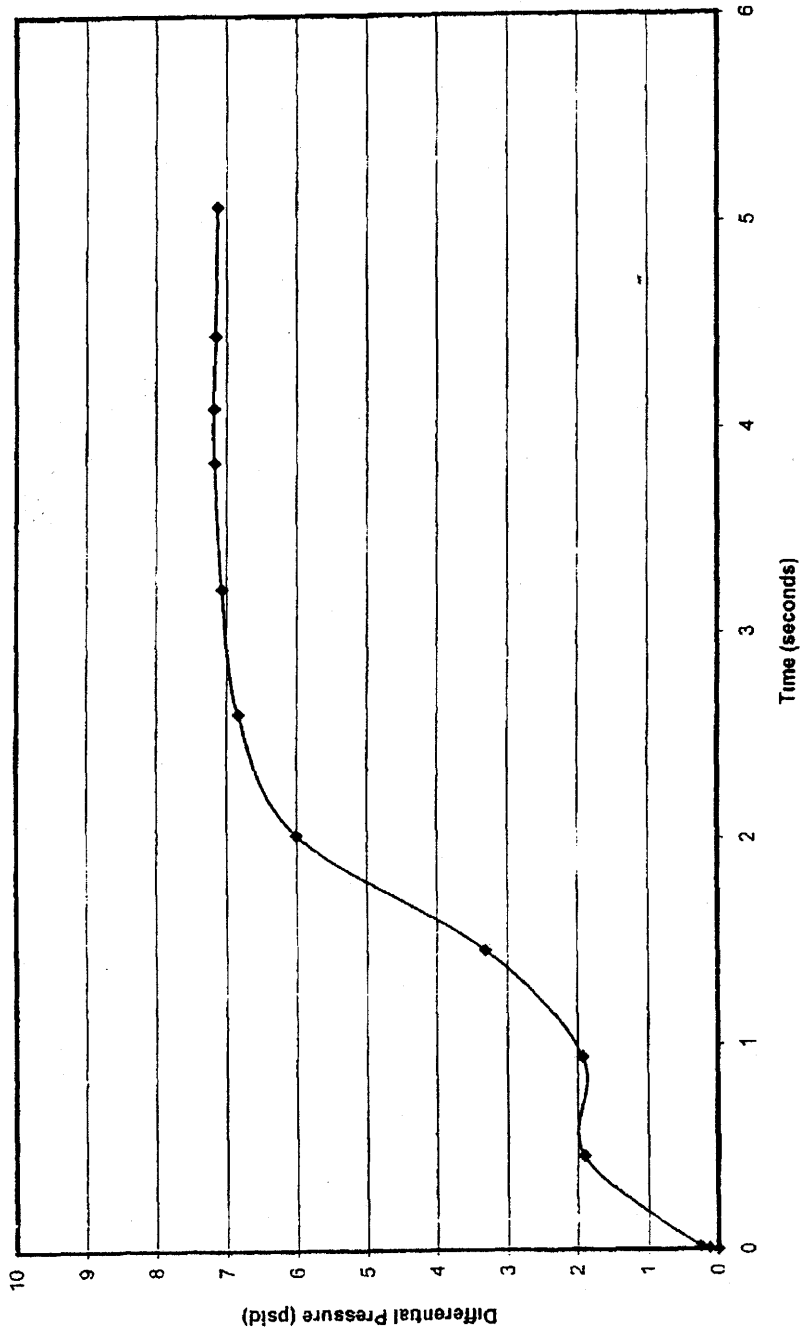


PERRY NUCLEAR POWER PLANT

RCWU Filter Demineralizer
Drain Valve Nest Room Pressure
Differential

Figure 6.2-48

RWCU Filter/Demin Valve Room Pressure Differential



(Rev. 15 10/07)

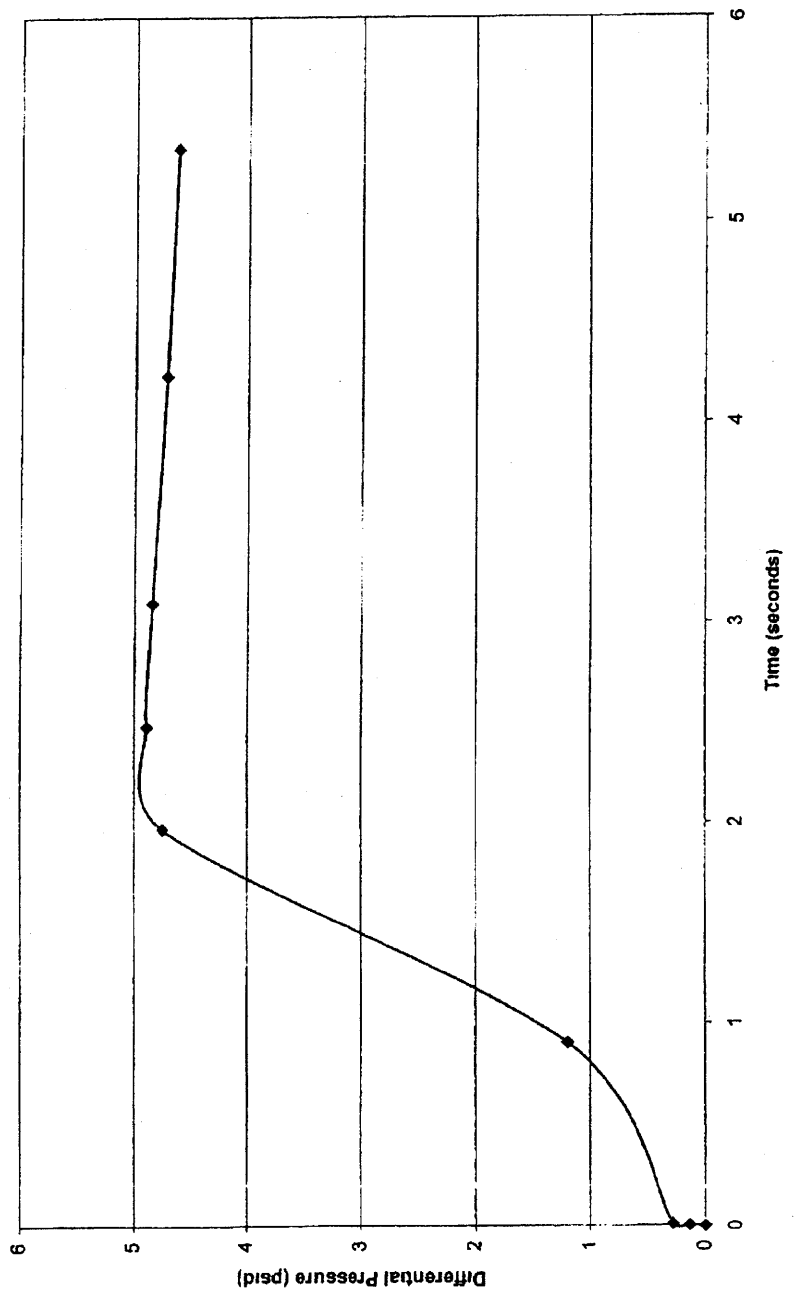


PERRY NUCLEAR POWER PLANT

RWCU Filter Demineralizer
Valve Room Pressure Differential

Figure 6.2-49

RWCU Filter Demineralizer Room Pressure Differential



(Rev. 15 10/07)

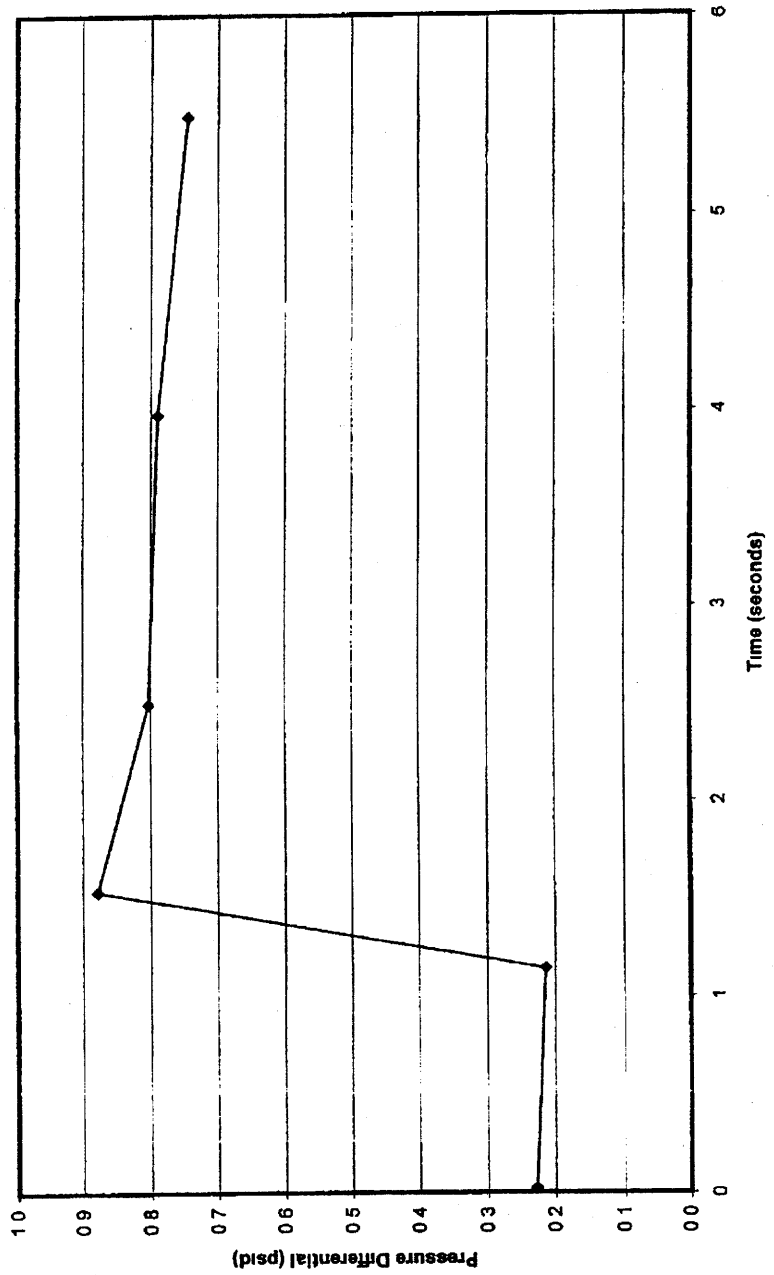


PERRY NUCLEAR POWER PLANT

RWCU Filter Demineralizer Room
Pressure Differential

Figure 6.2-50

Steam Tunnel Pressure Differential



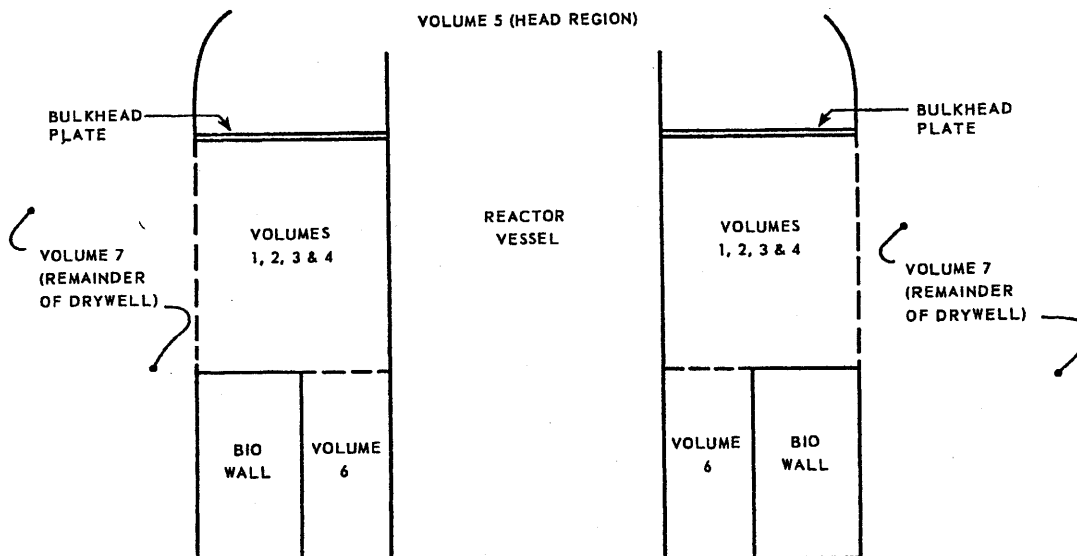
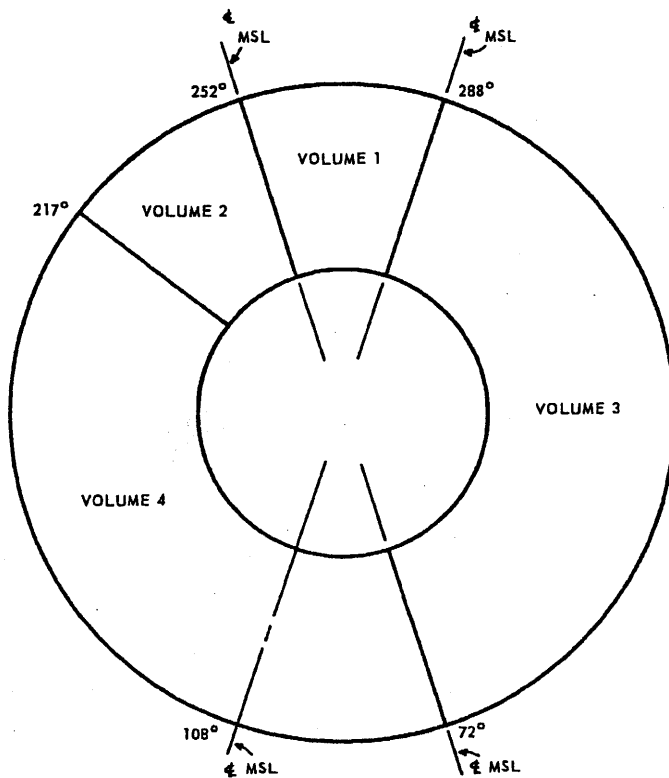
(Rev. 15 10/07)



PERRY NUCLEAR POWER PLANT

Steam Tunnel
Pressure Differential

Figure 6.2-51



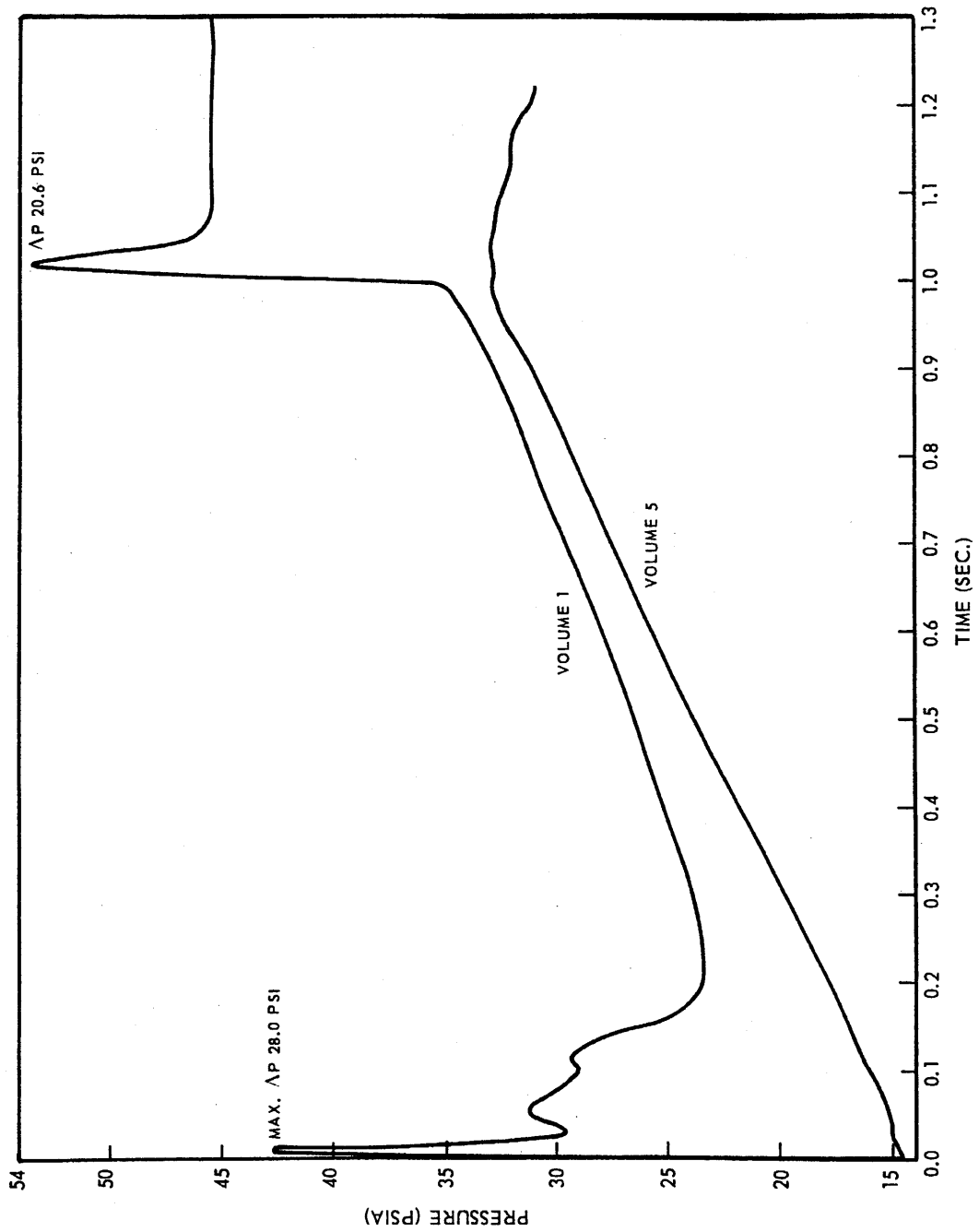
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Drywell Bulkhead ΔP Analysis
"COMPARE" Model

Figure 6.2-51a



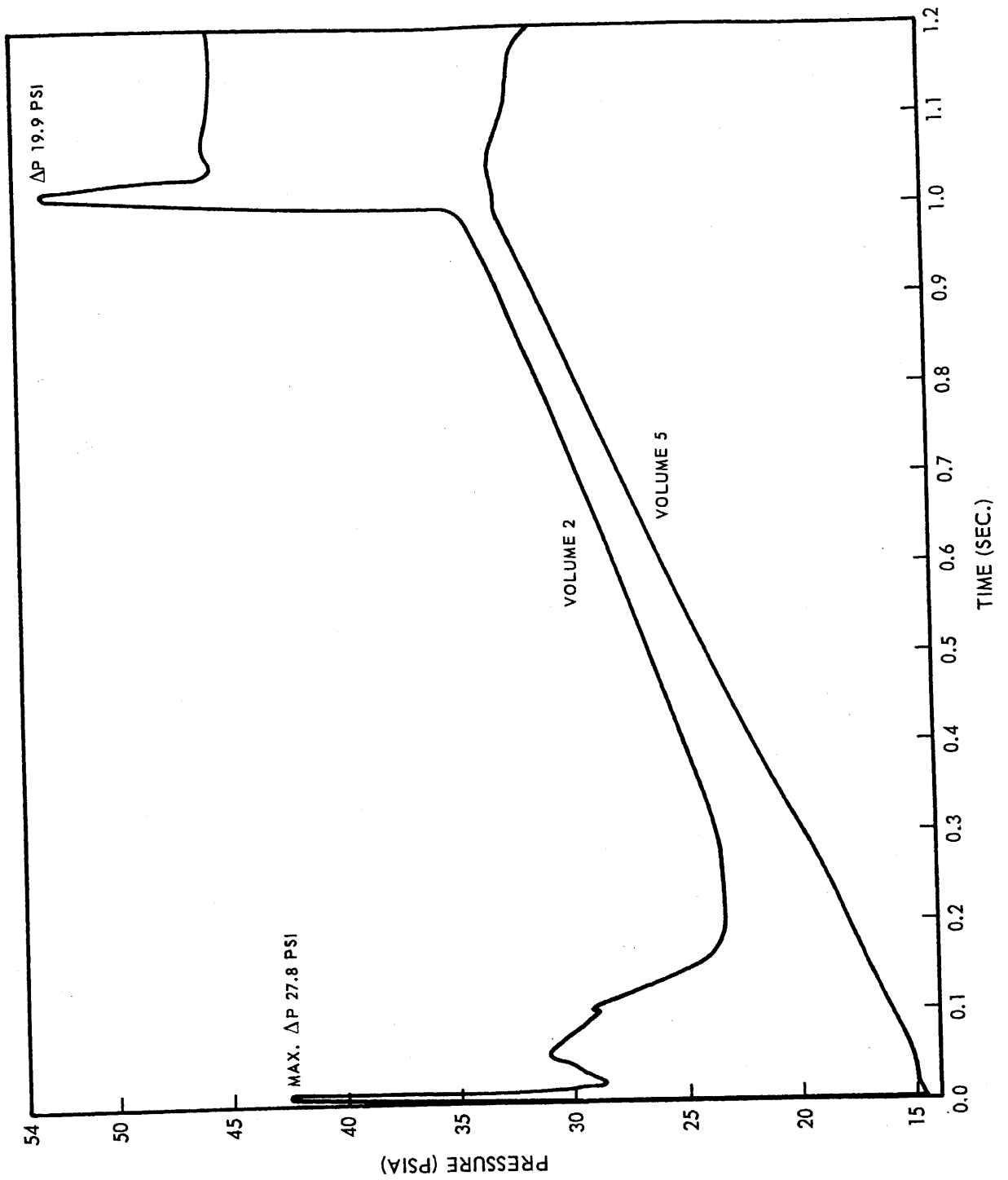
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Pressure Differential Across
Bulkhead Plate Due to MSLB

Figure 6.2-51b



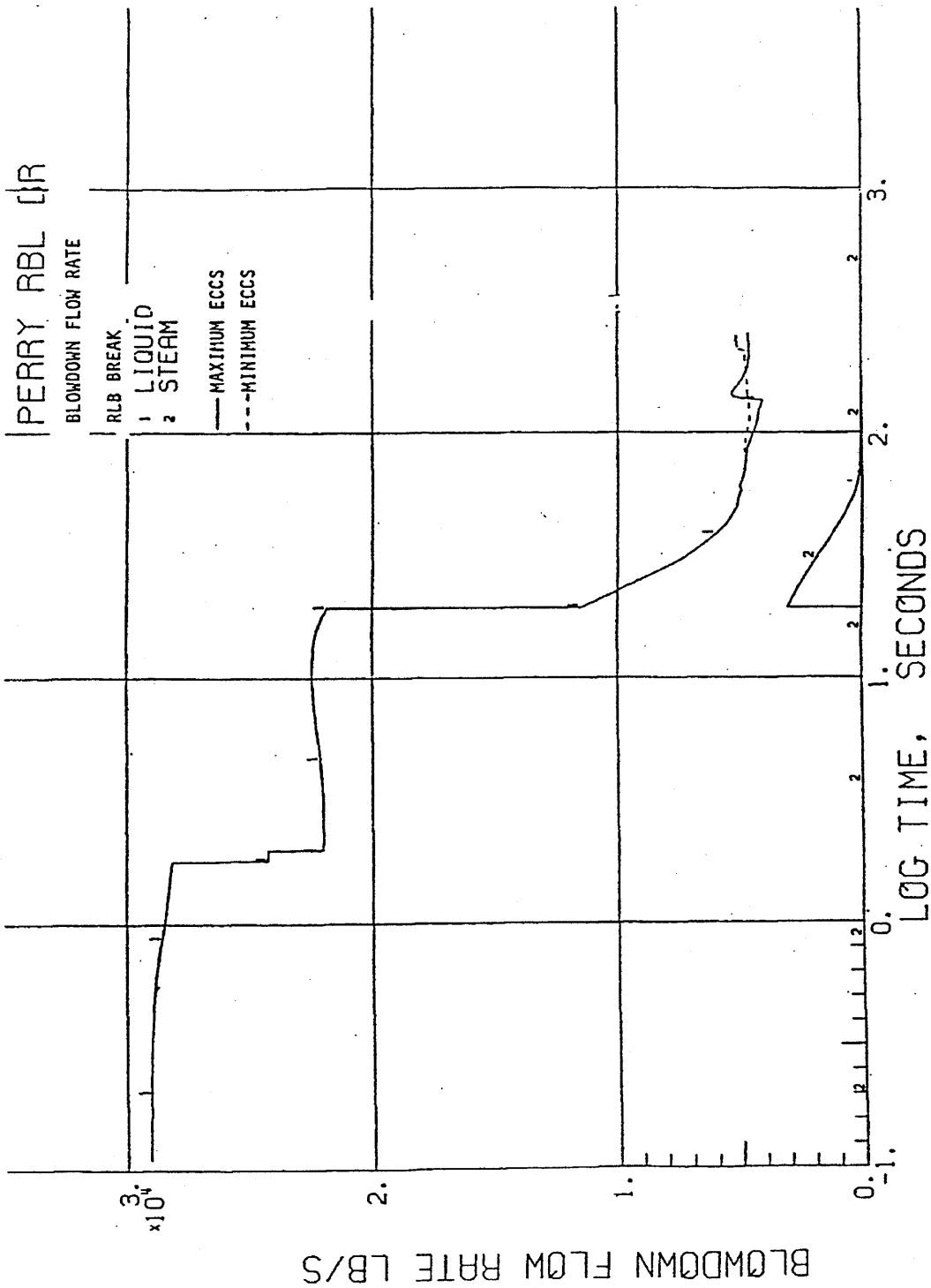
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Pressure Differential Across
Bulkhead Plate Due to MSLB

Figure 6.2-51c



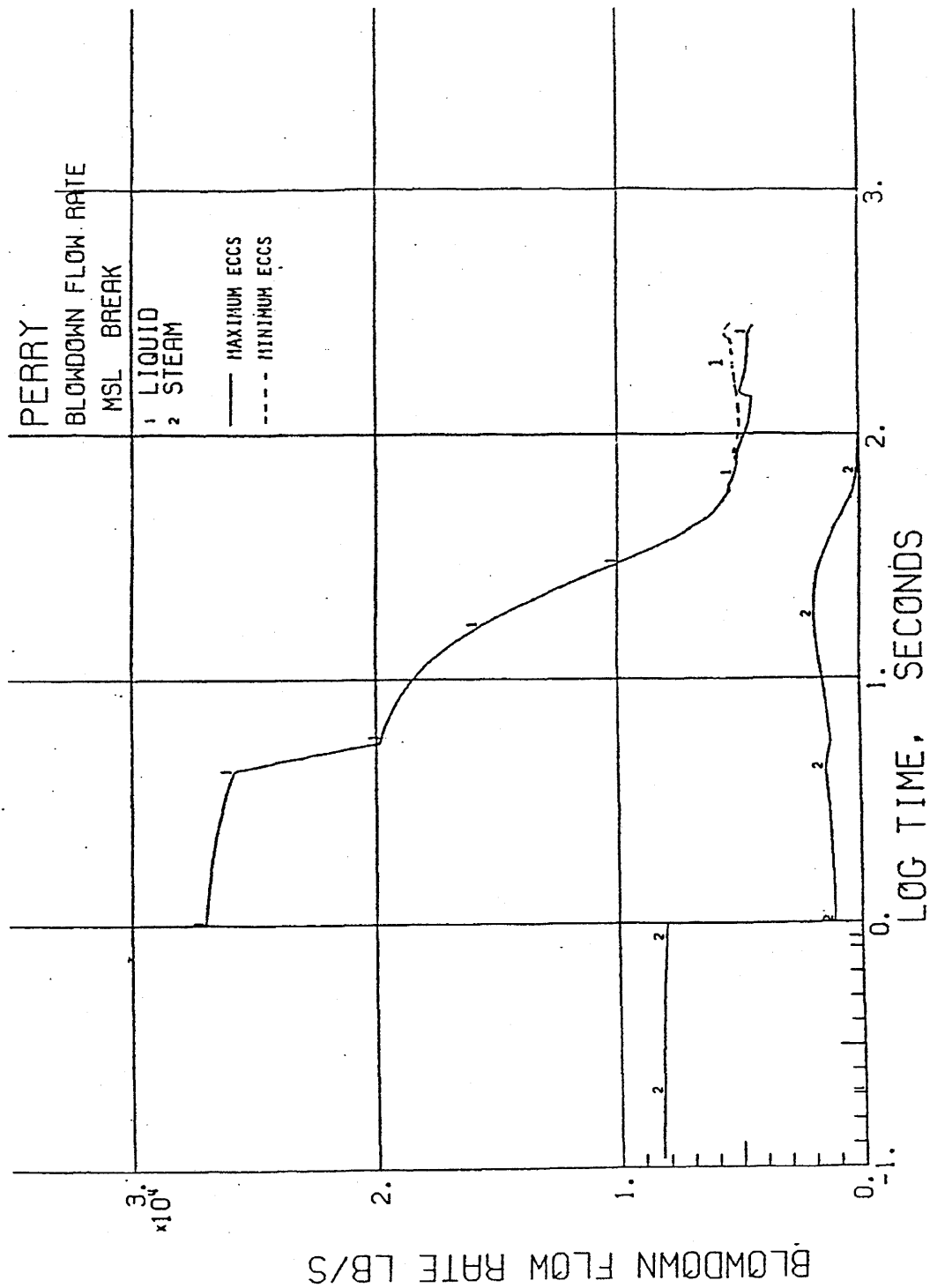
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-52



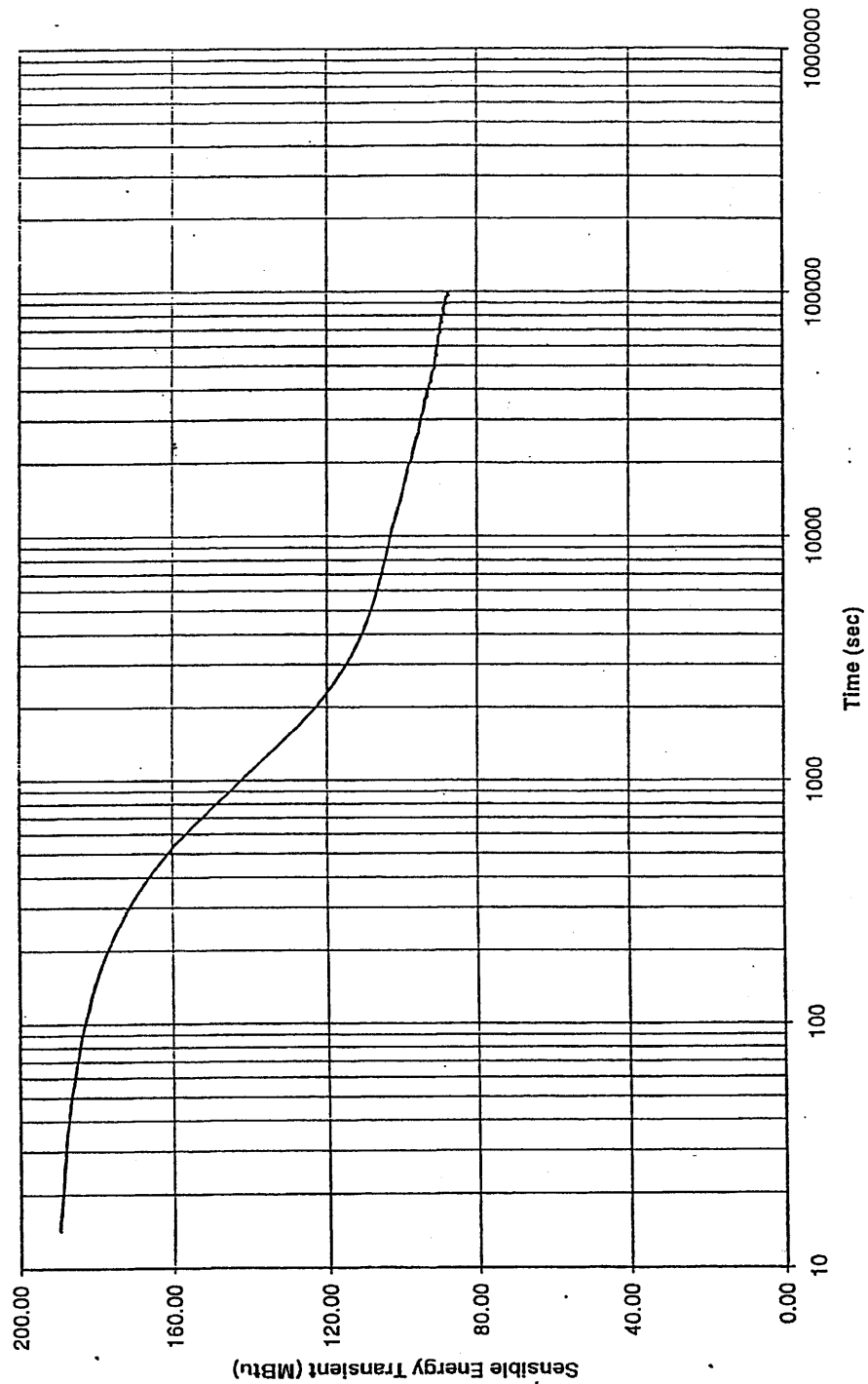
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-53



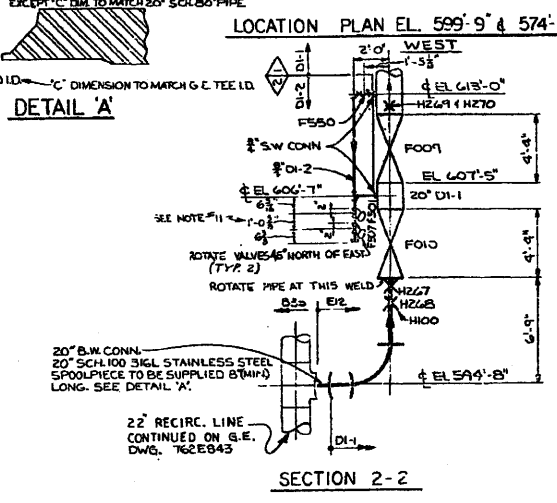
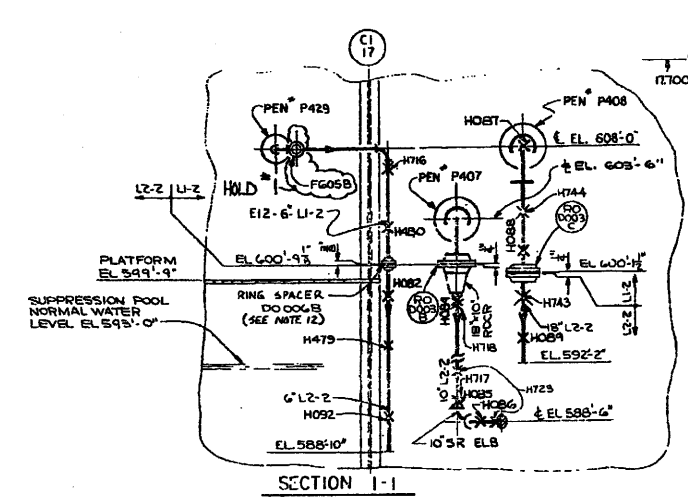
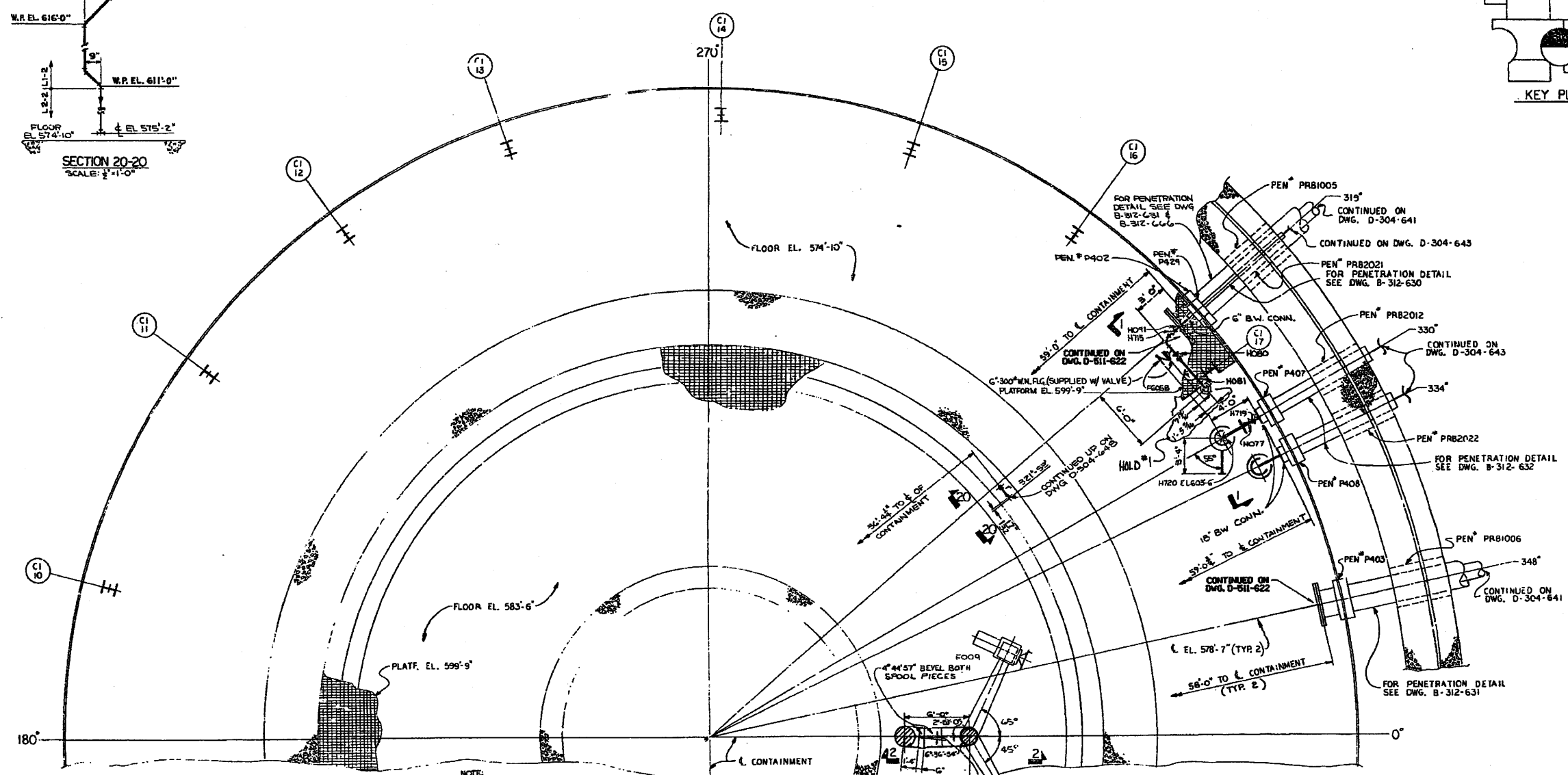
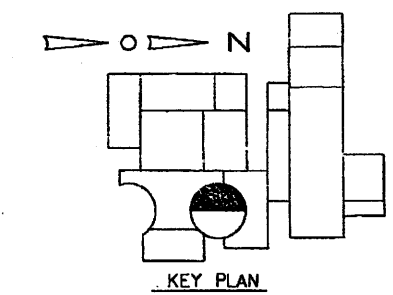
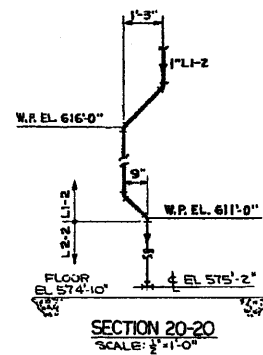
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-54



- NOTES:**
1. ALL PIPING IS SAFETY CLASS AS INDICATED.
 2. PIPING IS BEHIND CATEGORY 1.
 3. FOR PIPE MATERIAL, SEE SPECIFICATION SP-327-3544-00 SAFETY CLASS, AND SP-308-3544-00 NON-SAFETY CLASS, LINE CLASS AS INDICATED.
 4. FOR INSULATION, SEE SPECIFICATION SP-302-3544-00.
 5. FOR WELD END DETAILS, SEE SPECIFICATION SP-302-3544-00 NON-SAFETY CLASS.
 6. ALL WELD AND GASKET VALVES TO HAVE T.O.E. (TYPED) ONE END OF THE OUTLET END WITH ONE.
 7. SHALL PIPING FOR BRANCH, SHIPLE AND INTERMEDIATE CONNECTION LINES TO BE SHOWN DIMENSIONALLY, DURING INSTALLATION OF VALVES AND OTHER APPENDICES. CONTRACTOR MUST PROVIDE CLEARANCE FOR INSULATION.
 8. NO ALLOWANCE FOR WELD GAPS.
 9. THIS DRAWING TO BE WORKED IN CONJUNCTION WITH DWG. D-304-647 AND D-304-650 RESIDUAL HEAT REMOVAL SYSTEM.
 10. ALL VALVES HAVE PREFIX ELS, UNLESS NOTED.
 11. ALL BUTT WELDS ON PIPE WITH AN INSIDE DIAMETER OF 3.06 OR LARGER SHALL BE VOLUNTARILY IN SERVICE INSPECTED AND REWORK SURFACE FINISHES IN ACCORDANCE WITH SPECIFICATION SP-327-3544-00 FOR SHOP WELDS AND SP-304-3544-00 FOR FIELD WELDS.
 12. FILLER WELDS TO BE IN ACCORDANCE WITH FIGURE 10-3073-2 40-3 40-180 RHT50 TO BE 3/16 WITH LEMON LBS ALONG PIPE.
 13. RING SPACERS CHECKED AND FOUND TO BE PLACED CORRECTLY DURING PERIODIC SYSTEM TESTING. SINGLE SPACERS TO BE STORED BETWEEN TESTS.

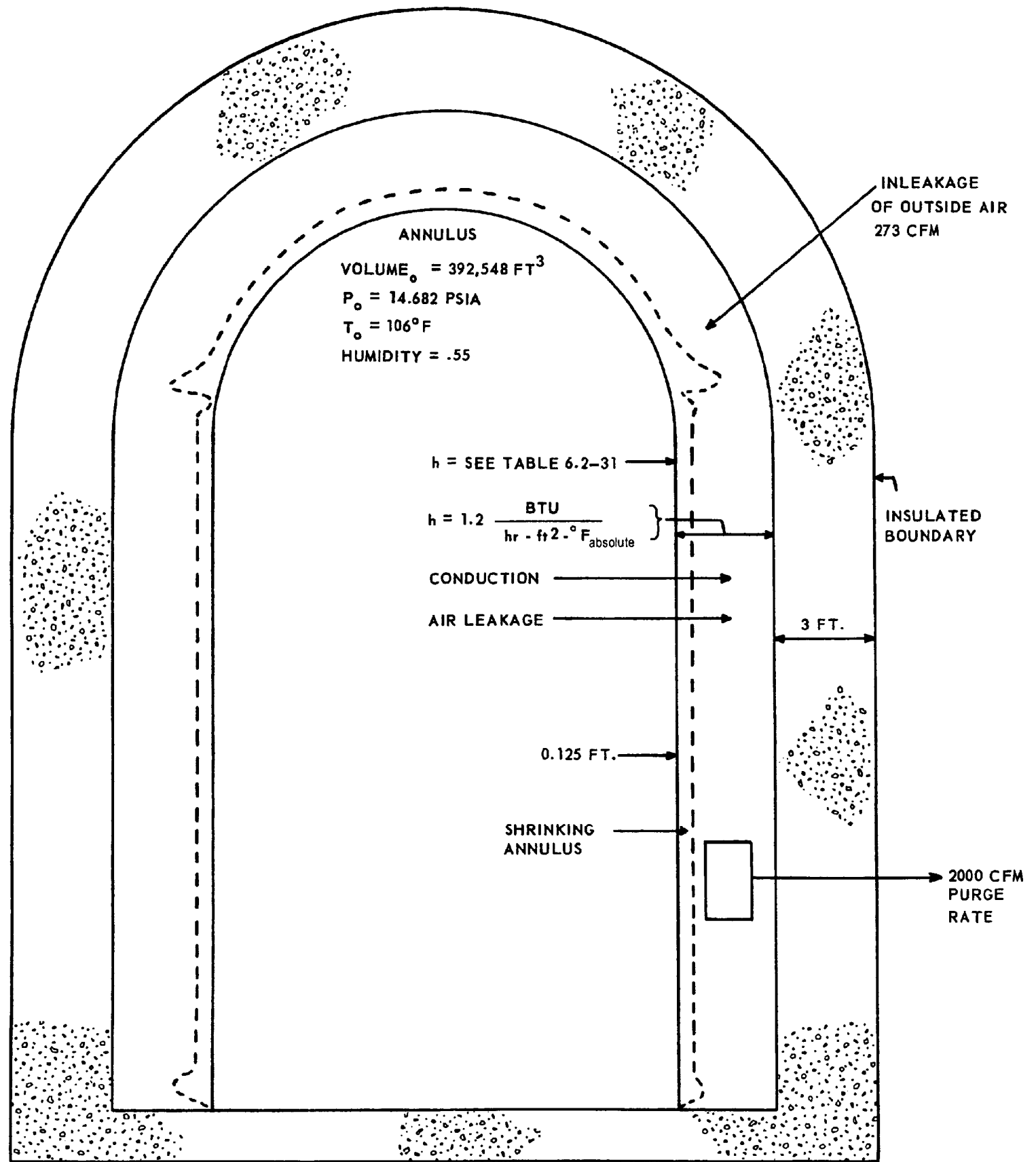
- REFERENCES:**
- D-302-641 RESIDUAL HEAT REMOVAL SYSTEM - FLOW DIAGRAM
 - D-302-642 RESIDUAL HEAT REMOVAL SYSTEM - FLOW DIAGRAM
 - D-302-643 RESIDUAL HEAT REMOVAL SYSTEM - FLOW DIAGRAM

(Rev. 12 1/03)

PERRY NUCLEAR POWER PLANT

Residual Heat Removal System
Plan and Section - West

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

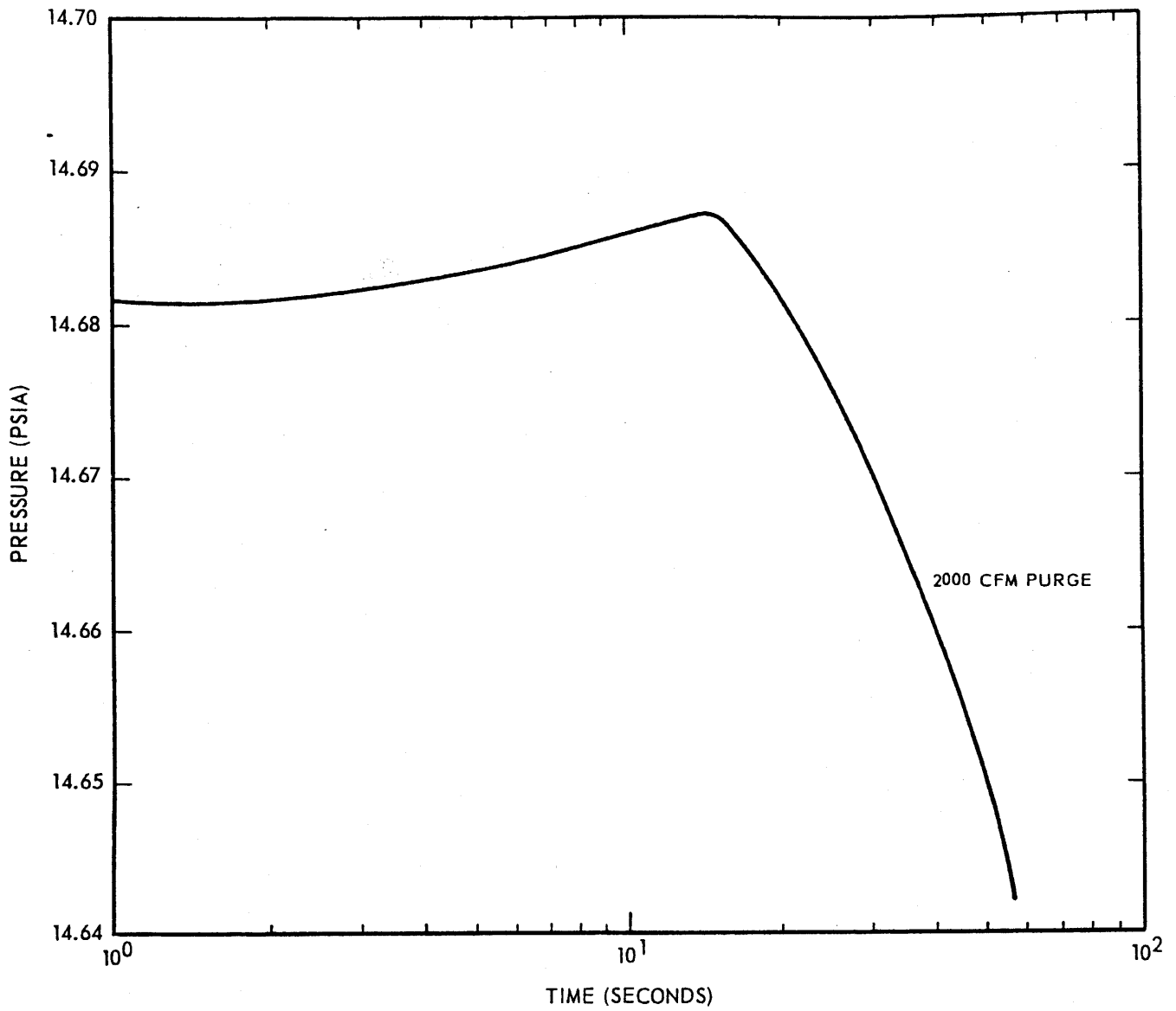


(REV. 20 10/2017)

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

MODEL USED IN CONTEMPT

FIGURE 6.2-57



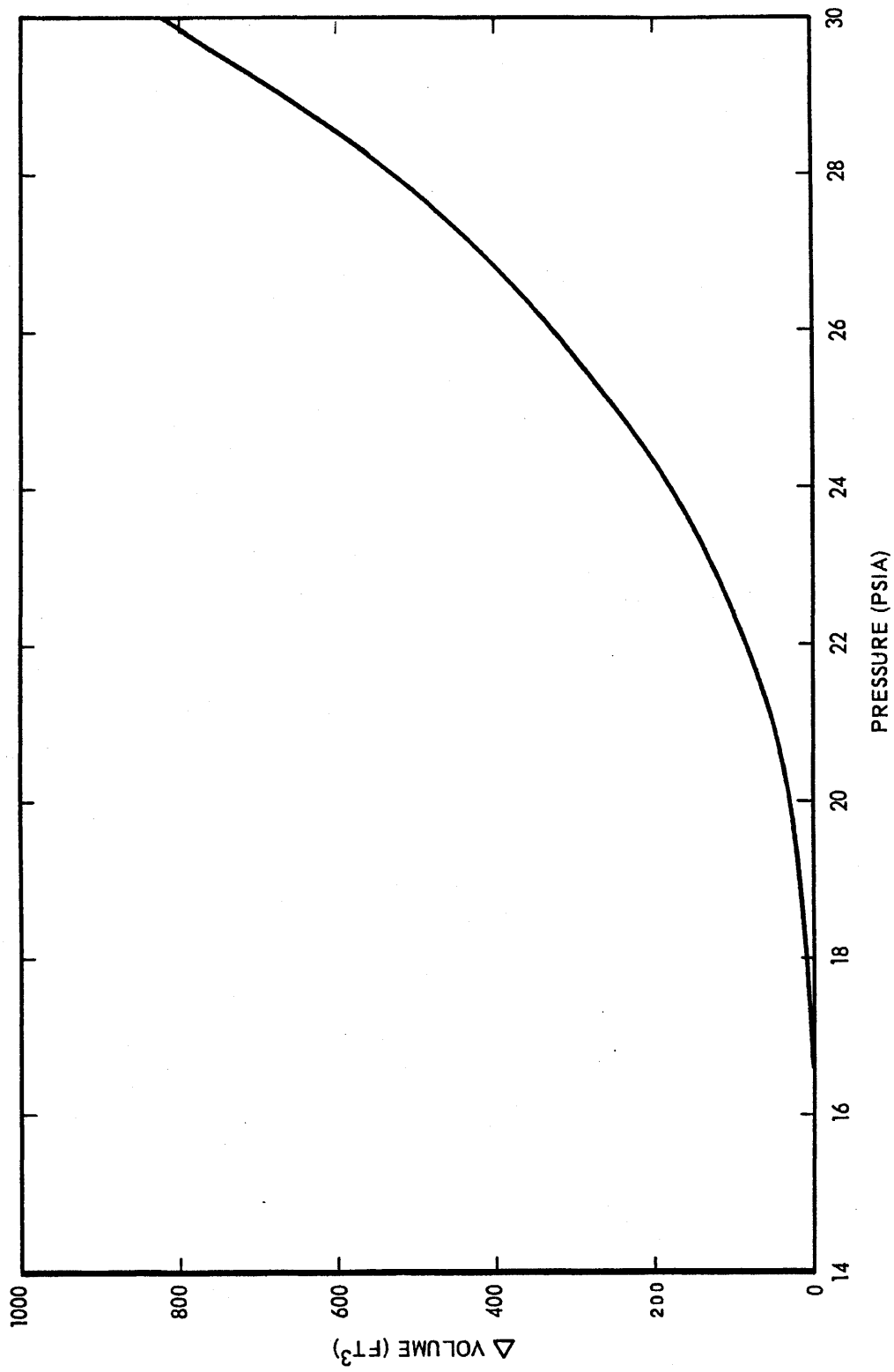
(Rev. 12 1/03)




PERRY NUCLEAR POWER PLANT

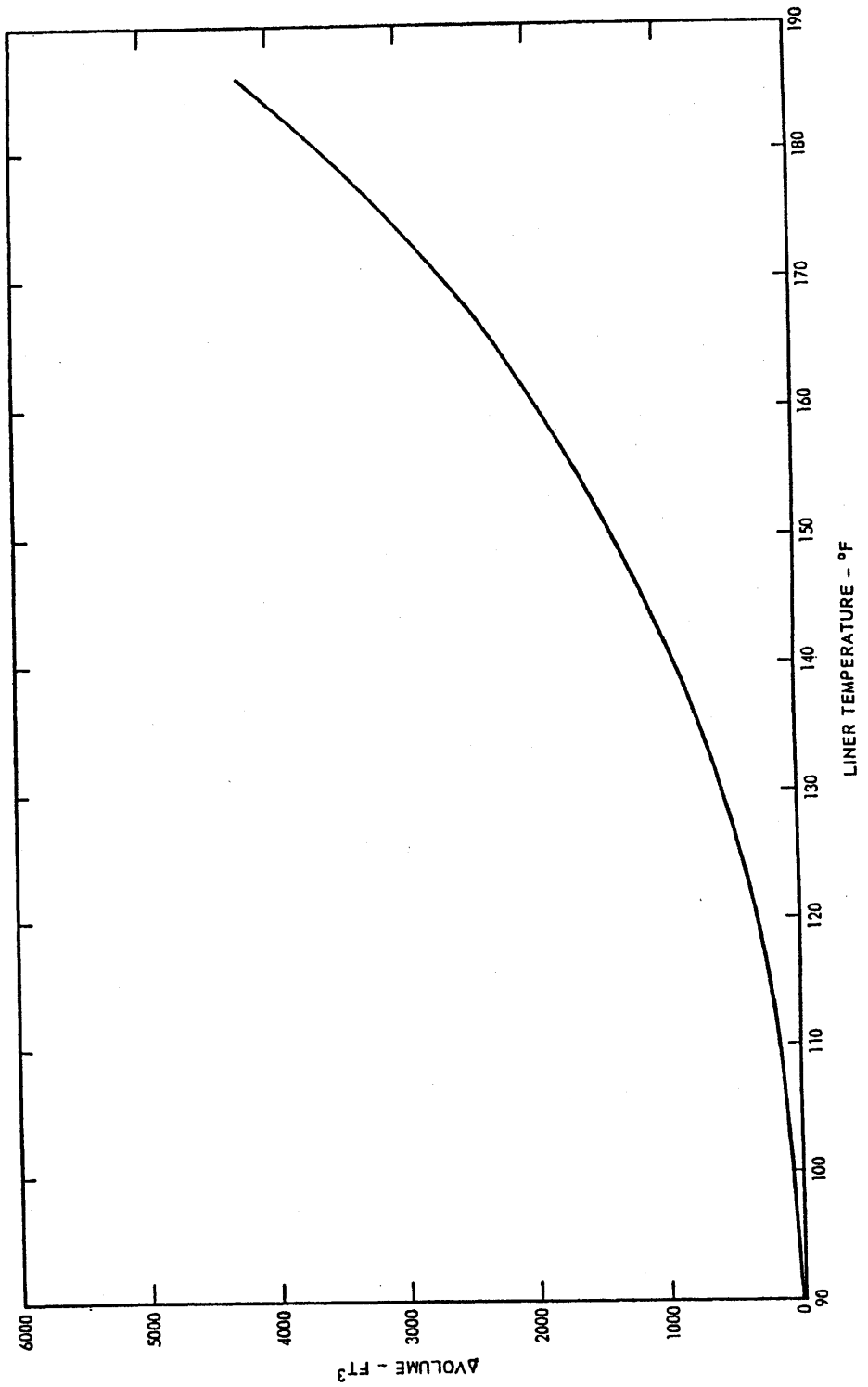
Annulus Pressure Following
DBA LOCA Versus Time

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	



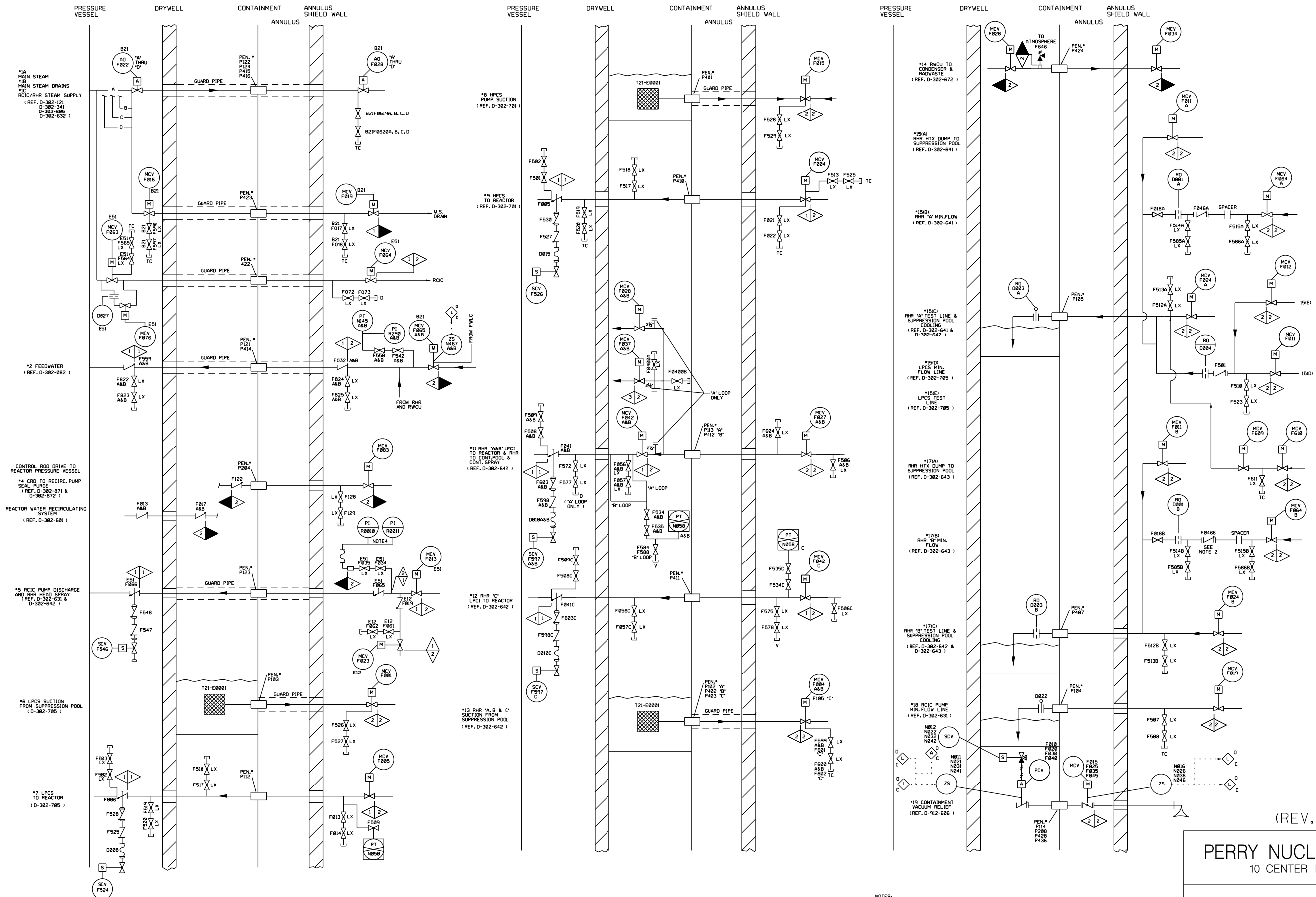
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-59b



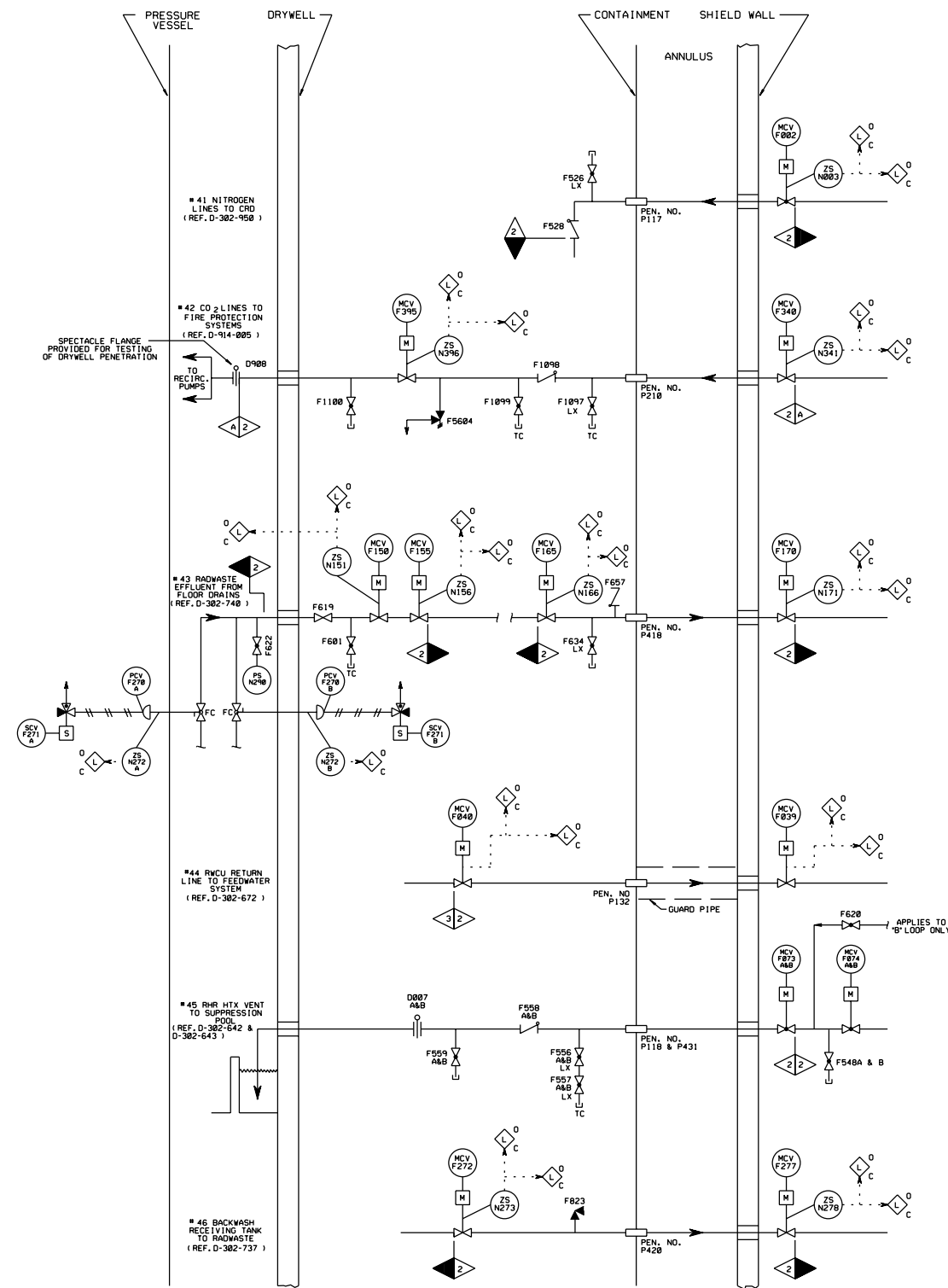
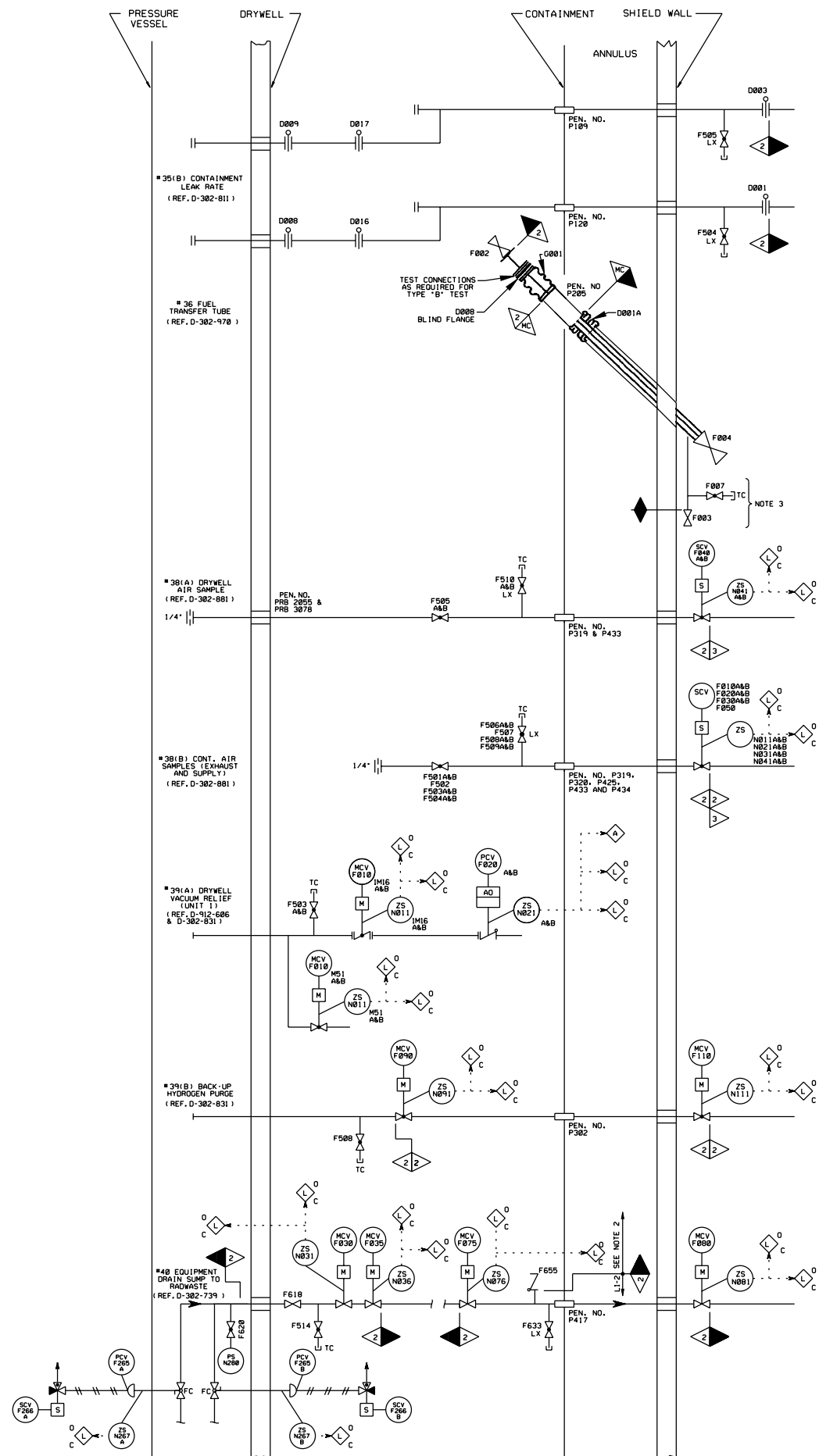
(REV. 21 10/2019)

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:
1. TC - LEAK RATE TEST CONNECTION FOR ISOLATION VALVES.
 2. CHECK VALVE INTERNALS REMOVED FROM IE12F046B (VALVE FUNCTIONS AS STRAIGHT PIPE).
 3. VALVES IB21F067A,B,C,D DE-ENERGIZED, LOCKED CLOSED.
 4. THE SENSING LINE FOR PRESSURE INDICATORS IE51R0010 AND IE51R0011 IS REMOVABLE SO THE TEST APPENDAGE CAN BE USED FOR LEAK TESTING THE CONTAINMENT ISOLATION VALVES.



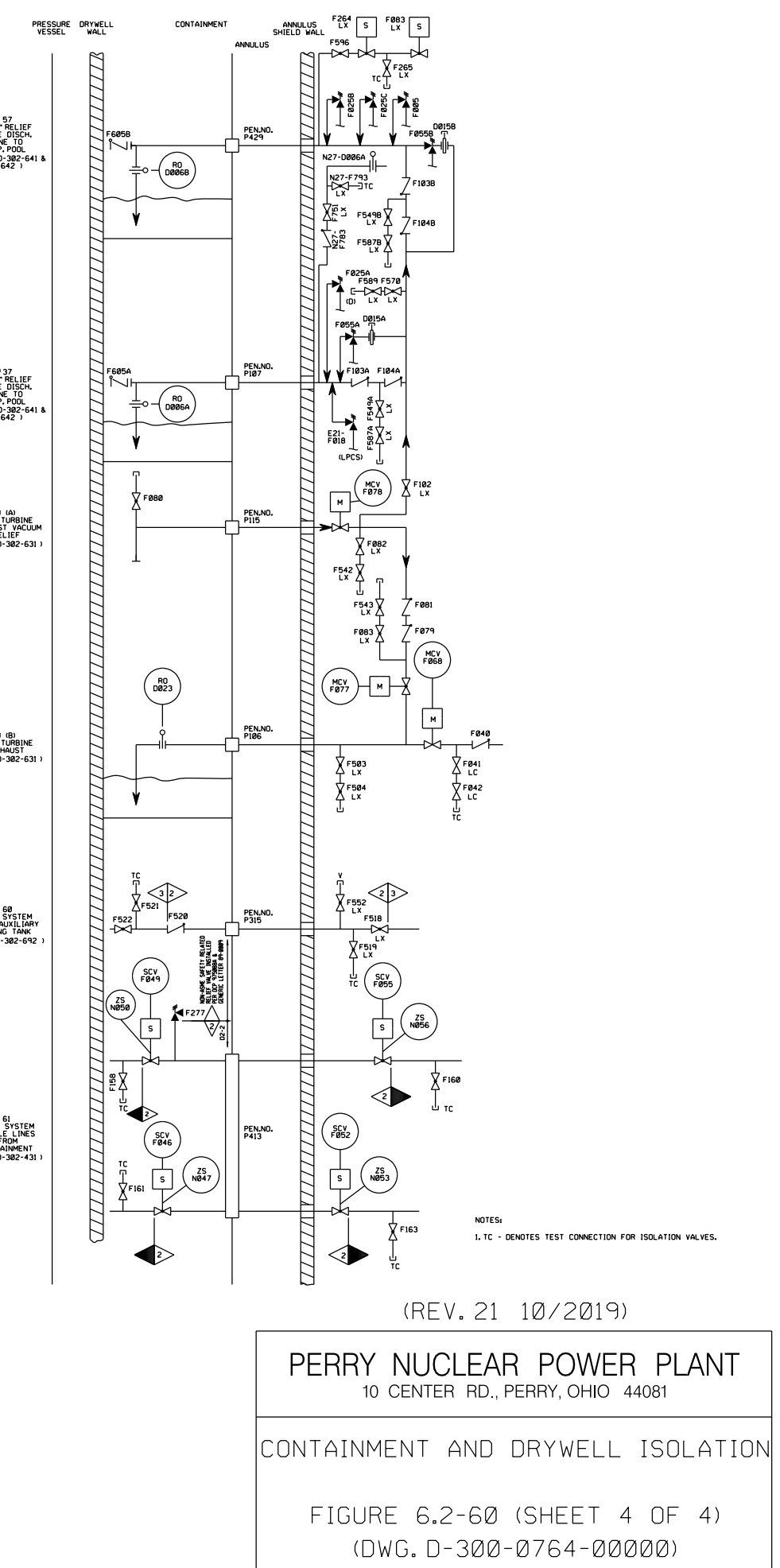
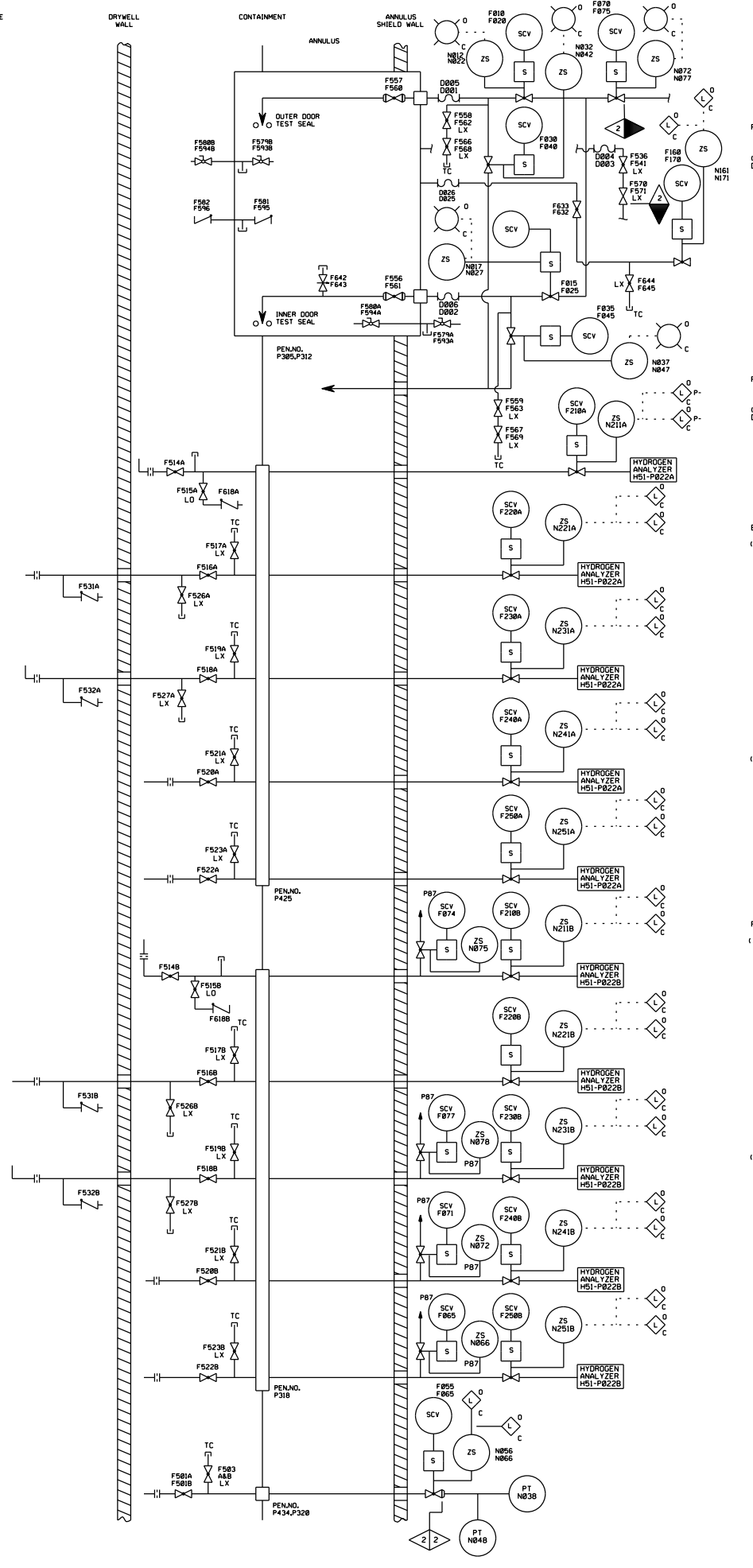
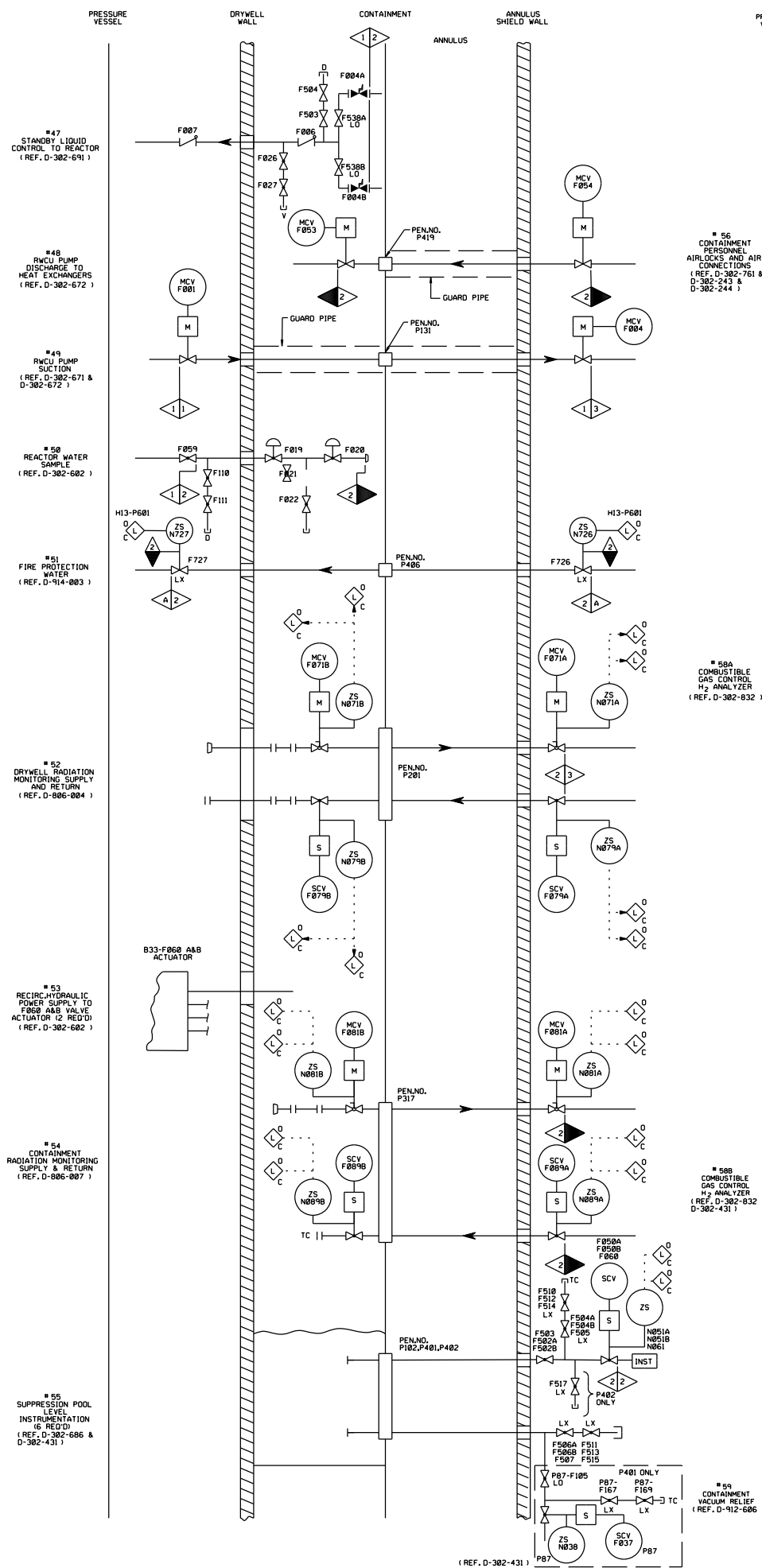
- NOTES:
1. TC - LEAK RATE TEST CONNECTION FOR ISOLATION VALVES.
 2. NON-ASME SAFETY RELATED CHECK VALVES INSTALLED PER DCR 97-5084 AND GENERIC LETTER 89-09.
 3. TREATED AS CONTAINMENT ISOLATION VALVE WHEN ITS BLIND FLANGE IS REMOVED IN MODES 1, 2 OR 3.

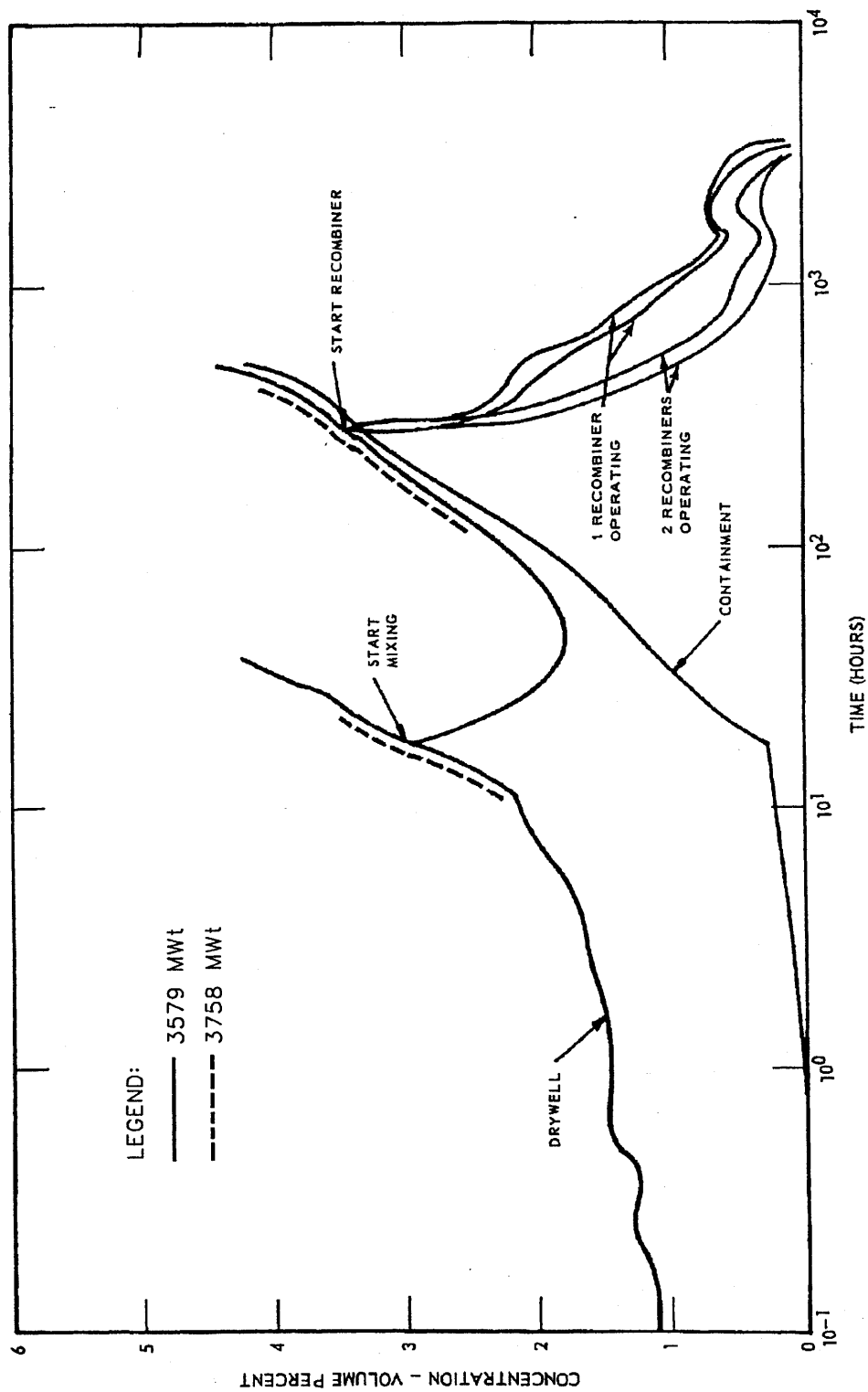
(Rev. 18 10/13)

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

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

(DWG. 300-0763-00000)





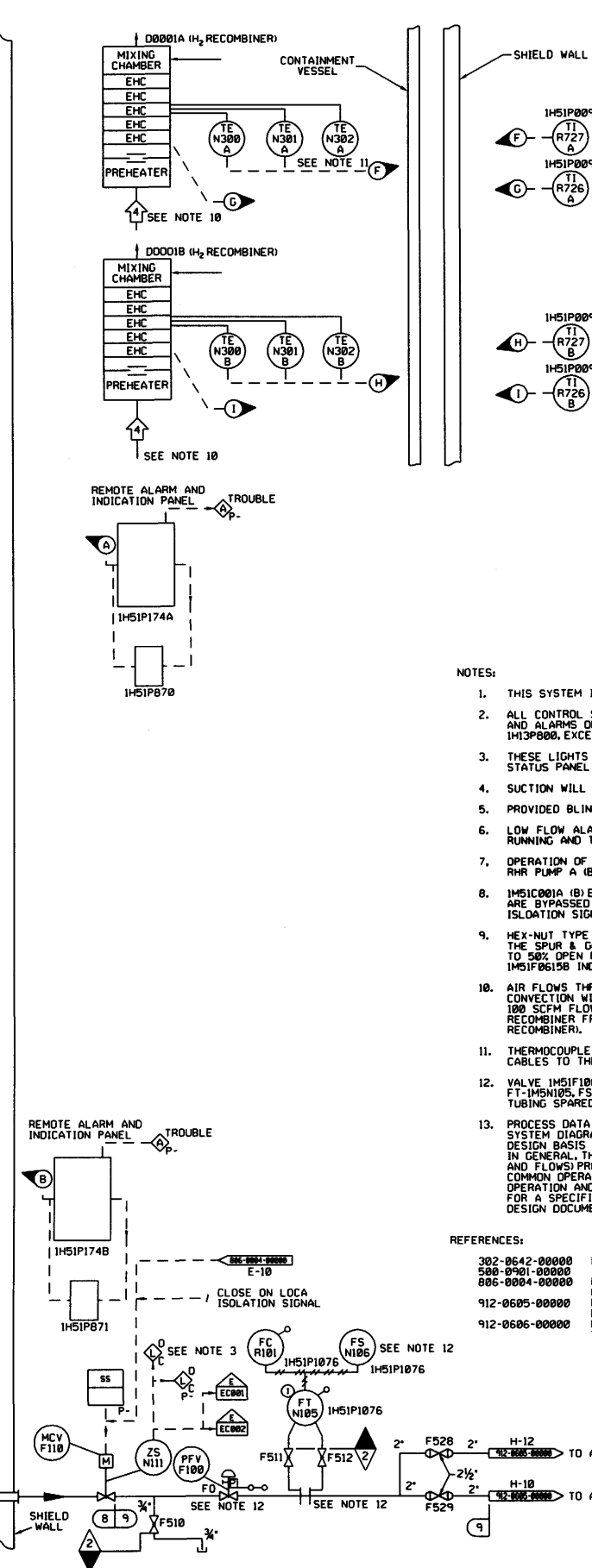
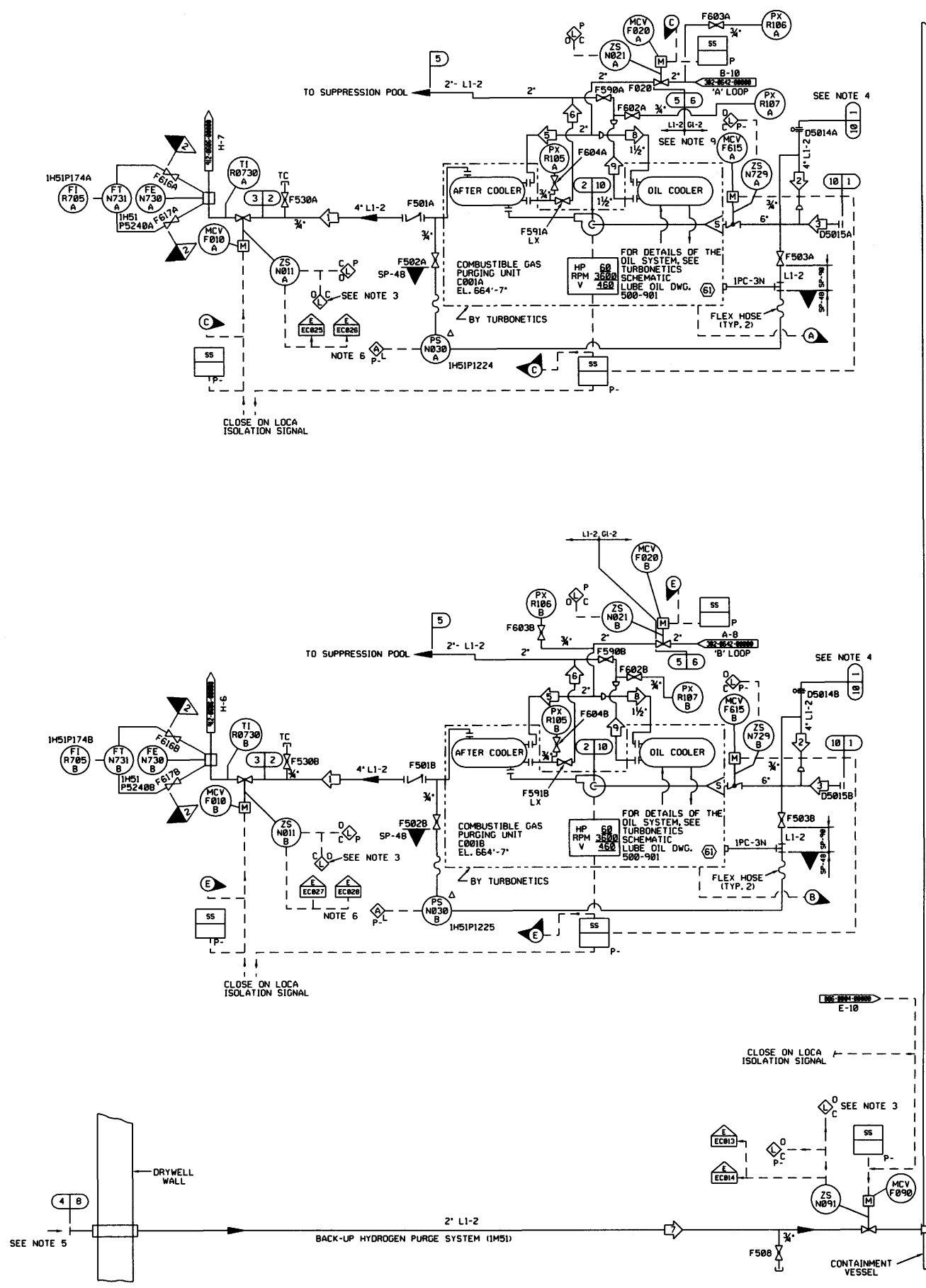
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Hydrogen Concentration Versus Time

Figure 6.2-61 ...



OPERATING CONDITIONS
SEE NOTE 13

#	INCHES H ₂ O (ABS)	SCFM	°F	BY	REMARKS
1	845	500	236	DJL	RELIEF LINE
2	645	235	185	DJL	
3	645	265	185	DJL	
7	537	78	175	JEN	
4	-	100	-	PJR	
* WATER					
	PSIG	GPM	°F	BY	REMARKS
5	7	-	140	ETO	MINIMUM PRESSURE
6	-	-	151	ETO	
8	7	17	140	ETO	
9	2	17	151	ETO	

* AFTERCOOLERS ARE ISOLATED VIA CLOSURE OF IMS1F591A (B)

DESIGN DATA

#	NORMAL		UPSET		#	BY	CHGD	REMARKS	REV
	INCHES H ₂ O (ABS)	°F	INCHES H ₂ O (ABS)	°F					
1	407	90	740	185	LOCA	JET	KSE		
2	576	175	877	238	LOCA	JET	KSE		
3	565	175	1238	330	LOCA	JET	KSE		
4	537	175	1238	330	LOCA	JET	KSE		
8	537	175	1238	330	LOCA	JET	KSE		
9	406	212	1210	330	LOCA	JET	KSE		
10**	389	90	719	185	LOCA	JET	KSE		
	PSIG	°F	PSIG	°F	TIME				
5	125	212	160	212	LOCA	JET	KSE		
6	125	212	125	212	LOCA	JET	KSE		

* DESIGN CONDITIONS ARE LOCATED IN THE UPSET DESIGN DATA COLUMN
** DUAL DESIGN CONDITIONS. MINIMUM PRESSURE (VACUUM) AT NORMAL CONDITIONS, MAXIMUM PRESSURE AT UPSET CONDITIONS.

TEST CONDITIONS

#	INCHES H ₂ O (ABS)	SCFM	°F	BY	REMARKS
1	565	500	153	JET	
2	389	235	90	DJL	
3	389	265	90	DJL	

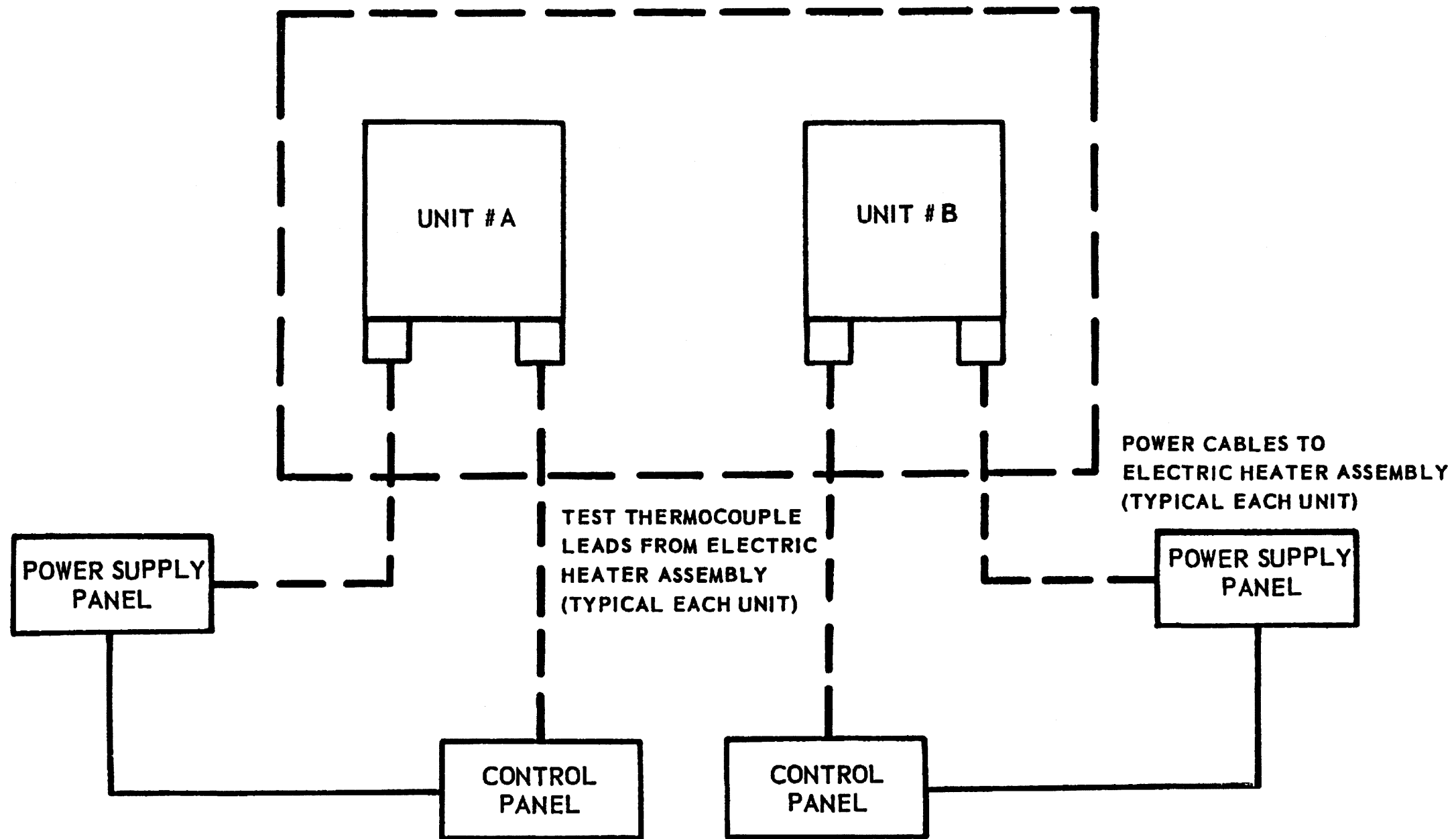
- NOTES:
- THIS SYSTEM IS SAFETY CLASS 2.
 - ALL CONTROL SWITCHES, STATUS LIGHTS, VALVE POSITION LIGHTS, AND ALARMS ON MAIN CONTROL BOARD ARE LOCATED ON PANEL IH3P000, EXCEPT WHERE NOTED.
 - THESE LIGHTS ARE LOCATED ON THE CONTAINMENT/DRYWELL ISOLATION STATUS PANEL IH3P601.
 - SUCTION WILL BE TAKEN FROM CONTAINMENT DOME.
 - PROVIDED BLIND FLANGE FOR LEAK TEST.
 - LOW FLOW ALARM IS INTERLOCKED WITH IMS1C001A (B) RUNNING AND TIME DELAY.
 - OPERATION OF IMS1C001A (B) IS INTERLOCKED WITH RHR PUMP A (B) EQUIPMENT AND IE12F028A (B) OPEN.
 - IMS1C001A (B) EQUIPMENT PROTECTION INTERLOCKS ARE BYPASSED ON OPERATION WITH A CONTAINMENT ISOLATION SIGNAL PRESENT.
 - HEX-NUT TYPE STOPS SHALL BE ADJUSTED ON THE SPUR & GEAR ATTACHMENT TO ACHIEVE A 40% TO 50% OPEN POSITION WHEN MCV-IMS1F0615A AND IMS1F0615B INDICATE CLOSE.
 - AIR FLOWS THROUGH RECOMBINER BY NATURAL CONVECTION THROUGH ORIFICE PLATE SIZED TO MAINTAIN 100 SCFM FLOW RATE. INLET AIR IS DRAWN INTO RECOMBINER FROM 66' ELEV. (GENERAL AREA OF H RECOMBINER).
 - THERMOCOUPLE IMS1N0302A SCRAPPED IN PLACE. CABLES TO THERMOCOUPLE SPARED IN PLACE. SEE DCN 00798.
 - VALVE IMS1F100 PLACED IN THE FAIL OPEN POSITION. FT-IMS1N105, FS-IMS1N106, FC-IMS1R101 AND ASSOCIATED TUBING SPARED IN PLACE PER DCP 900207.
 - 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:
- 302-0642-00000 RESIDUAL HEAT REMOVAL E-12
 - 500-0701-00000 TUBING DETAIL AIR MONITOR
 - 806-0004-00000 PLANT RADIATION MONITORING D17, K670, K700, K760
 - 912-0605-00000 REACTOR BUILDING ANNULUS EXHAUST GAS TREATMENT M15
 - 912-0606-00000 DRYWELL AND CONTAINMENT VACUUM RELIEF, M16 AND M17

(REV. 19 10/2015)

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

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

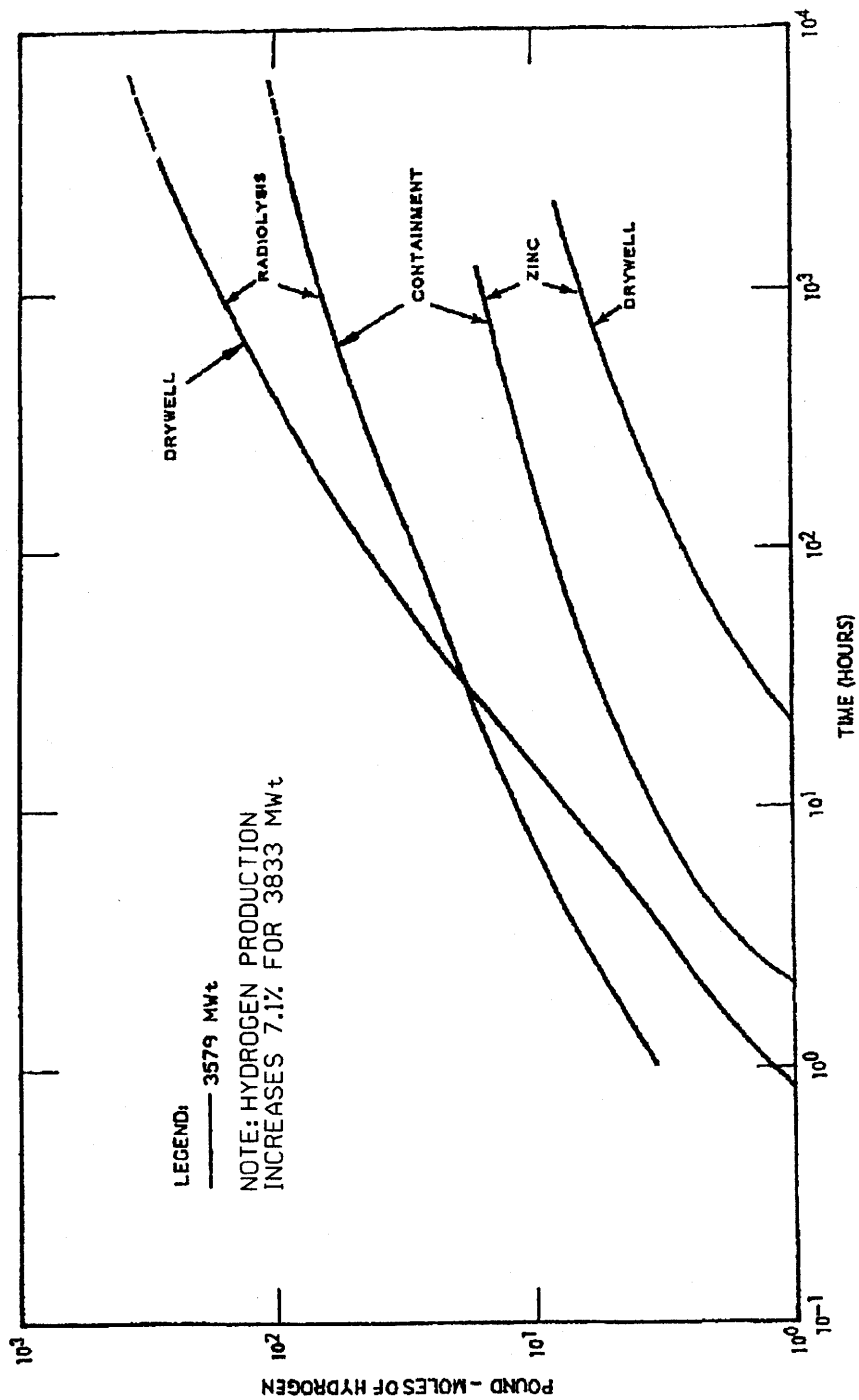


(REV. 19 10/2015)

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

HYDROGEN
RECOMBINER SYSTEM

FIGURE 6.2-63



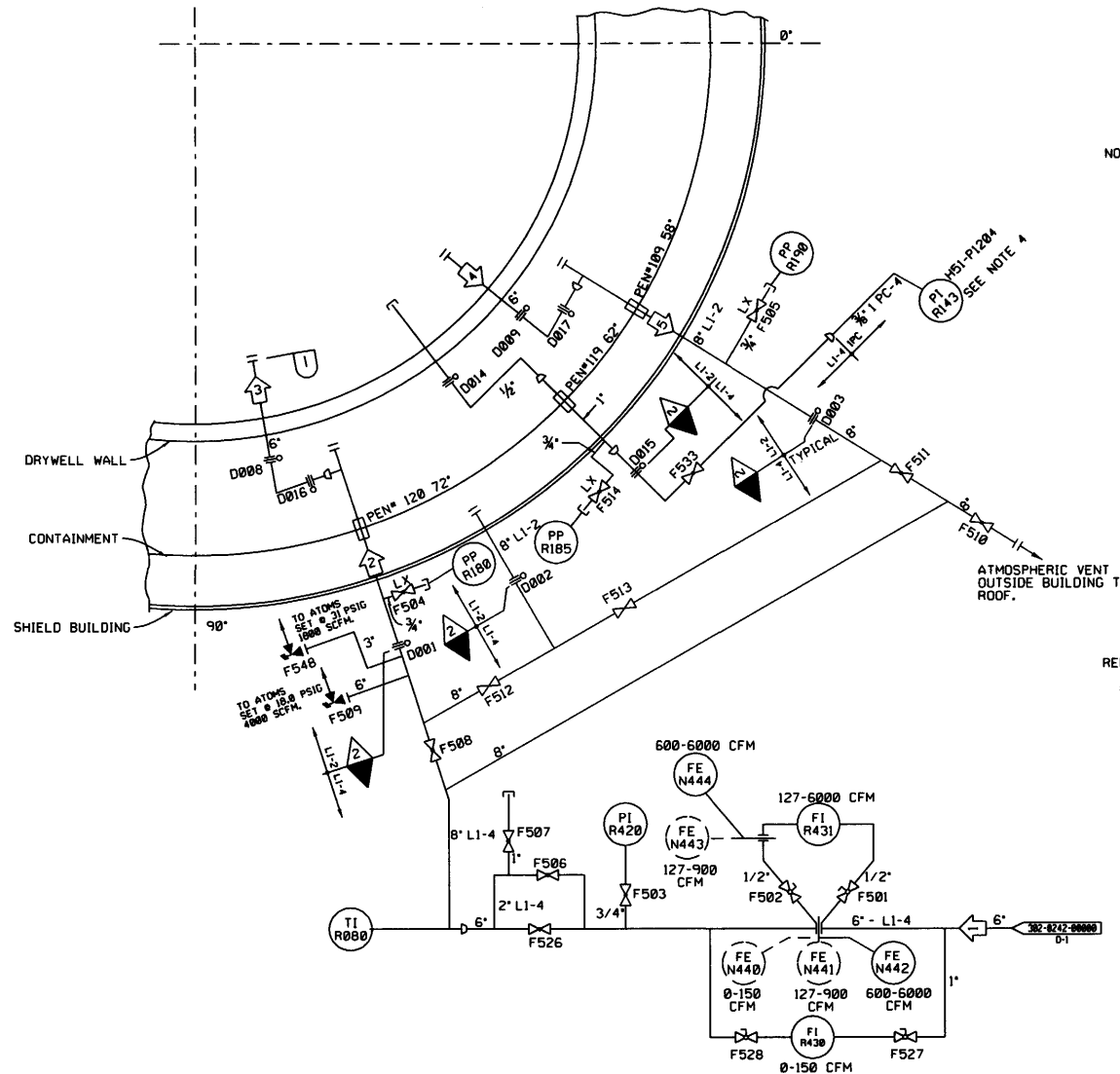
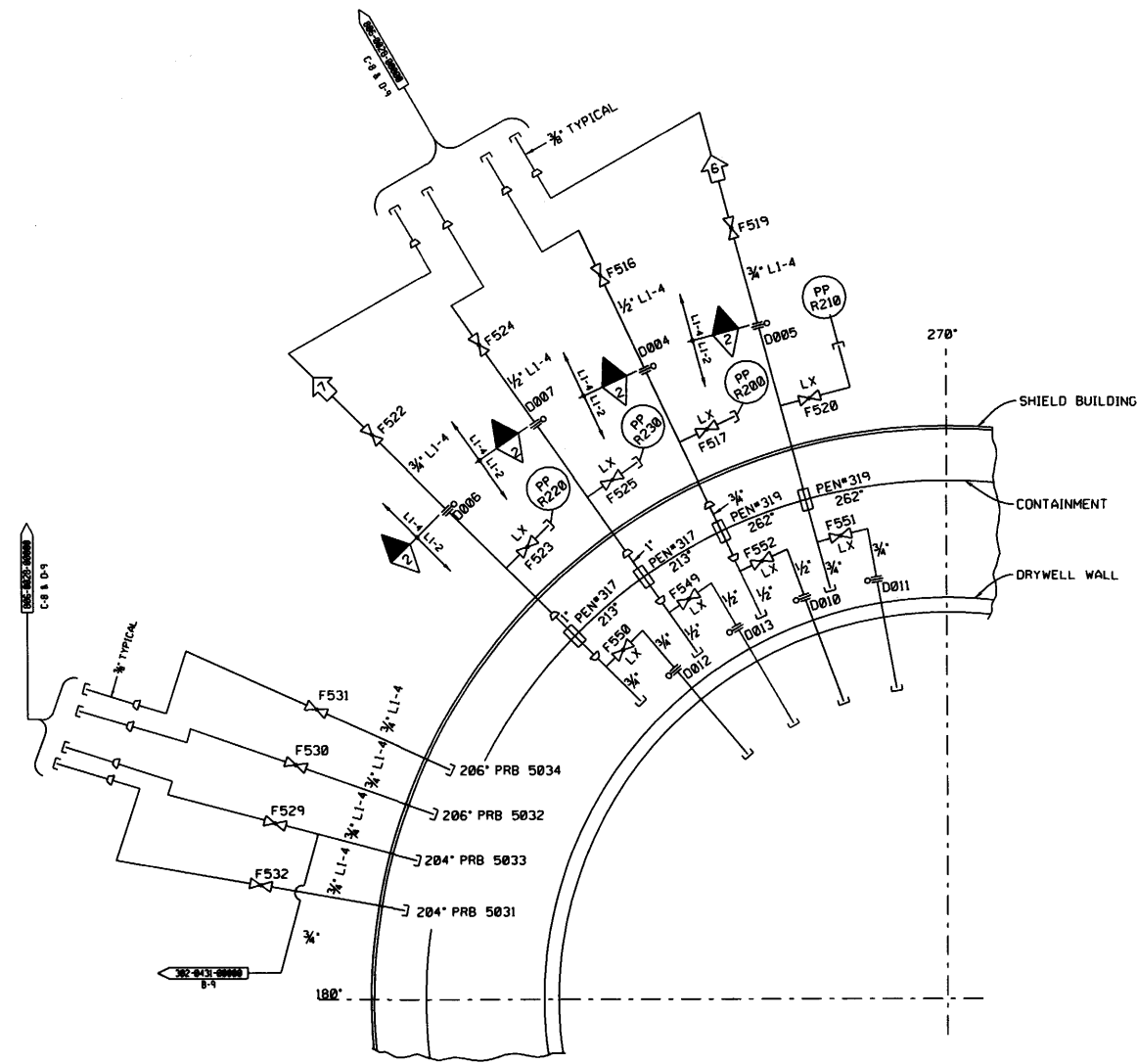
(Rev. 15 10/07)



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	
2	15	2100	90	DAK	MAX	
3		0		DAK		
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	-	-	-	-	-	
3	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 PSIG	UPSET PSIG	TIME	BY	REMARKS	REV
1	150	110	-	-	AEH/JPA	

NOTES:

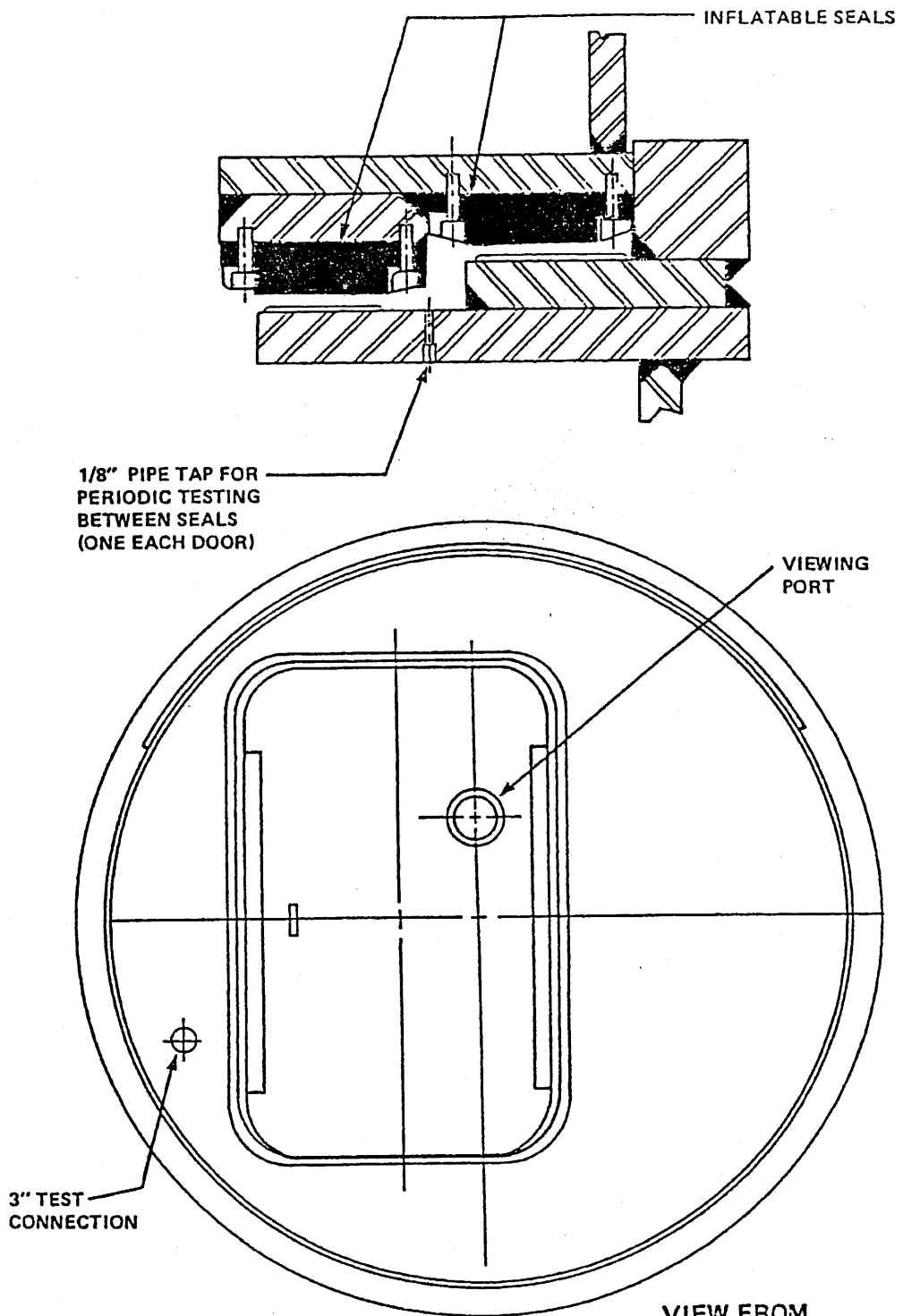
- PRIOR TO REACTOR OPERATION:
 - SPECTACLE FLANGES SHALL BE CLOSED ON ALL DRYWELL TEST LINES AND OUTBOARD SIDE OF ALL CONTAINMENT PENETRATIONS.
 - BLIND FLANGES SHALL BE INSTALLED ON INBOARD SIDE OF CONTAINMENT PENETRATIONS.
- WHEN THE LEAK RATE TEST SYSTEM IS USED TO PERFORM DRYWELL PRESSURIZATION THE LINES PENETRATING CONTAINMENT WILL BE CLOSED WITH BLIND FLANGES ON THE INTERIOR SIDE OF THE CONTAINMENT.
- FOR CONTINUATION OF THIS SYSTEM, REFER TO 352-0811-0000 (CONTAINMENT INTEGRATED LEAK RATE TEST SYSTEM - UNIT 2).
- PI R143 TO BE WALL MOUNTED NEAR F506 AND F526.
- 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)



**VIEW FROM
OUTSIDE CONTAINMENT**

(Rev. 12 1/03)



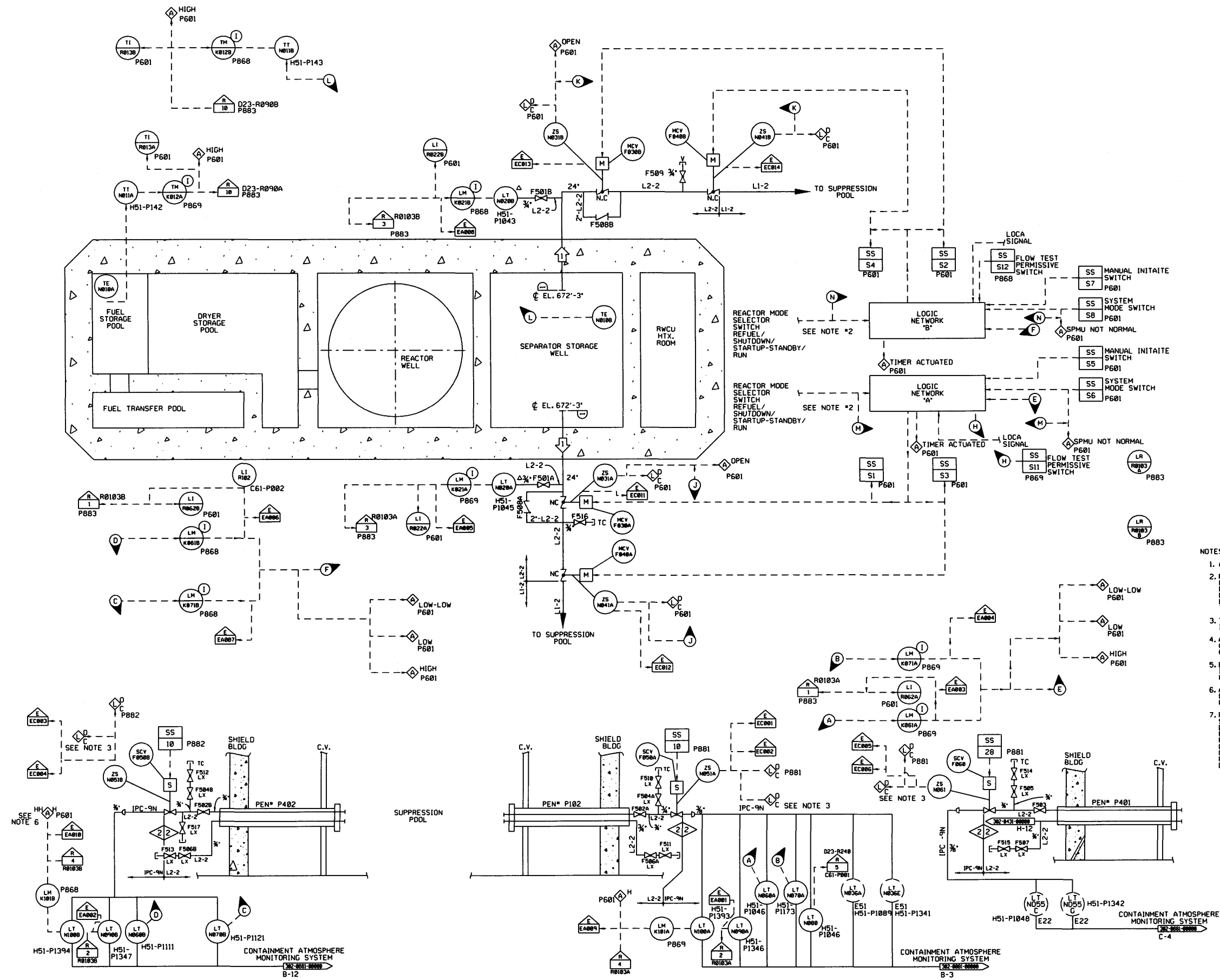
PERRY NUCLEAR POWER PLANT

Details of Personnel Lock
for Periodic Testing

Figure 6.2-66

OPERATING DATA						
SEE NOTE 7						
ID	OPM	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 MCV'S 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 H13-P681.
 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 MCV'S 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.

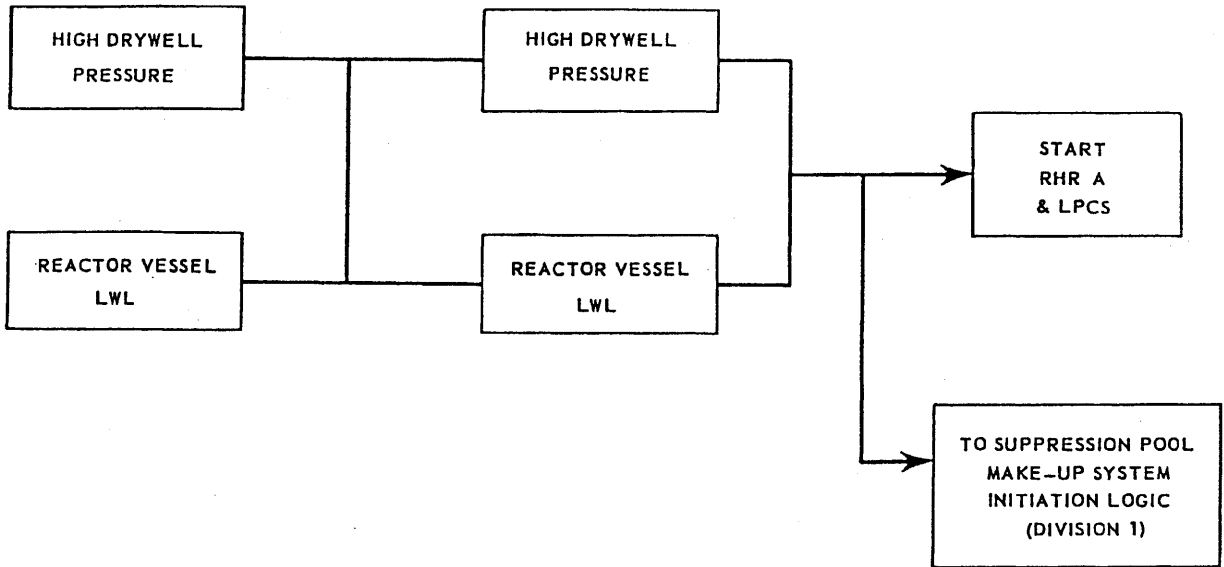
- REFERENCES:
- 302-0881-00000 CONTAINMENT ATMOSPHERE MONITORING SYSTEM D23
 - 302-0431-00000 POST ACCIDENT SAMPLING SYSTEM P87

(REV. 19 10/2015)

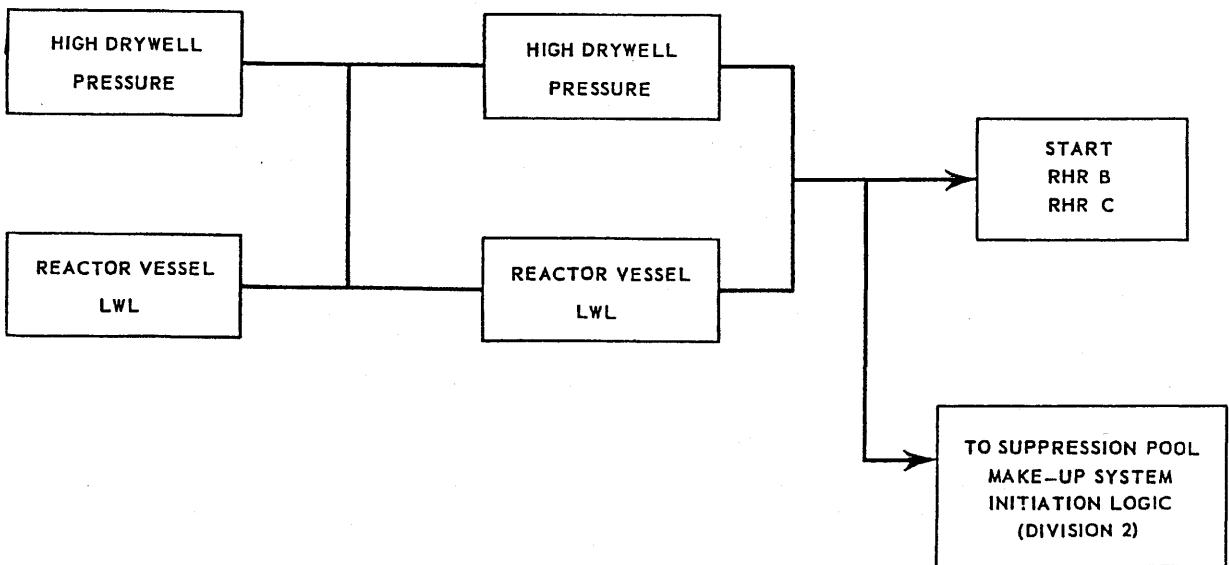
PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

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

DIVISION 1



DIVISION 2



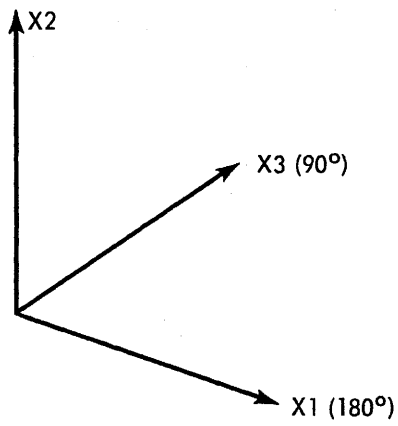
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

LOCA Signal Used in Initiation
Logic of Suppression Pool
Makeup System

Figure 6.2-68



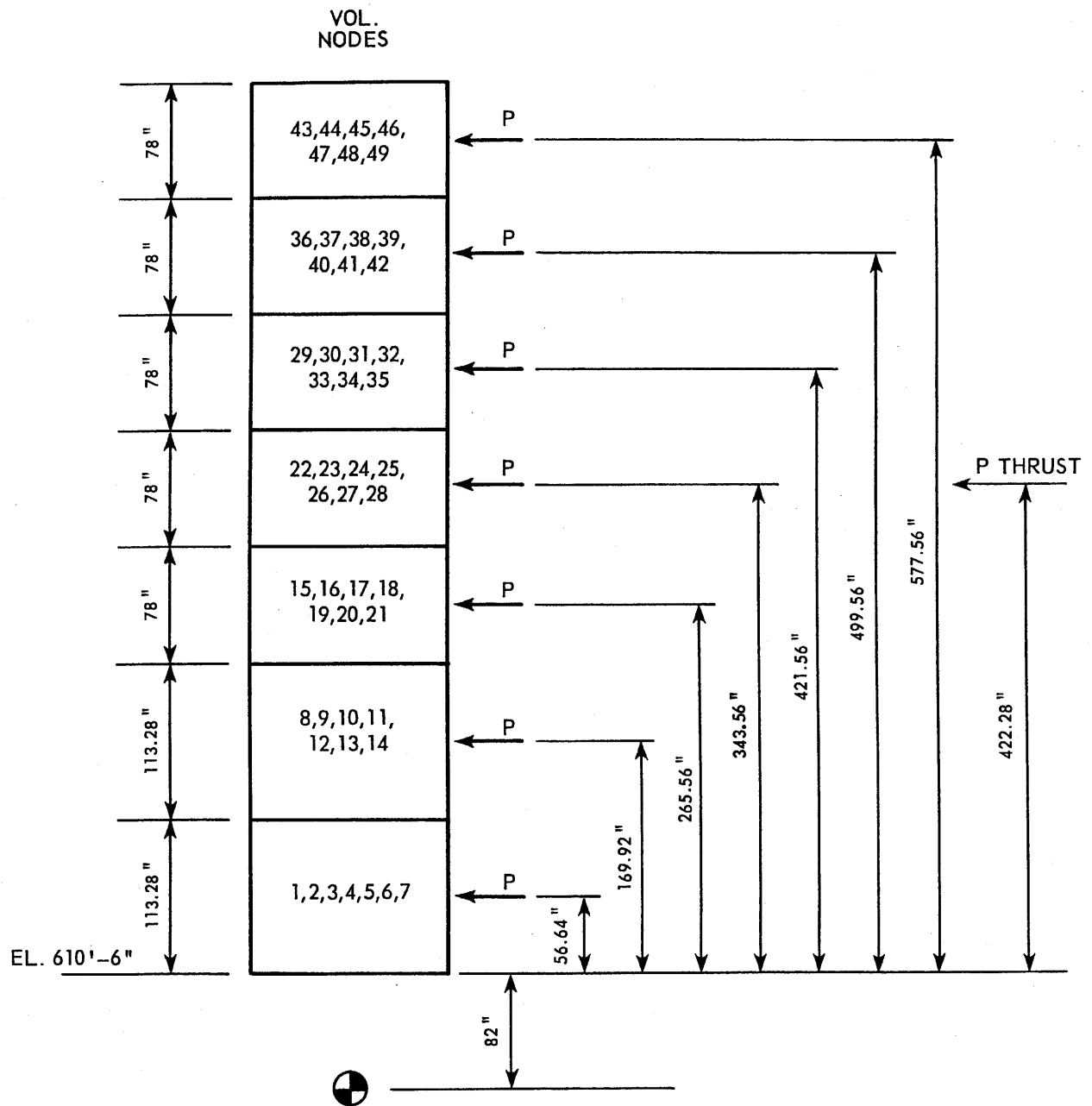
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.2-70



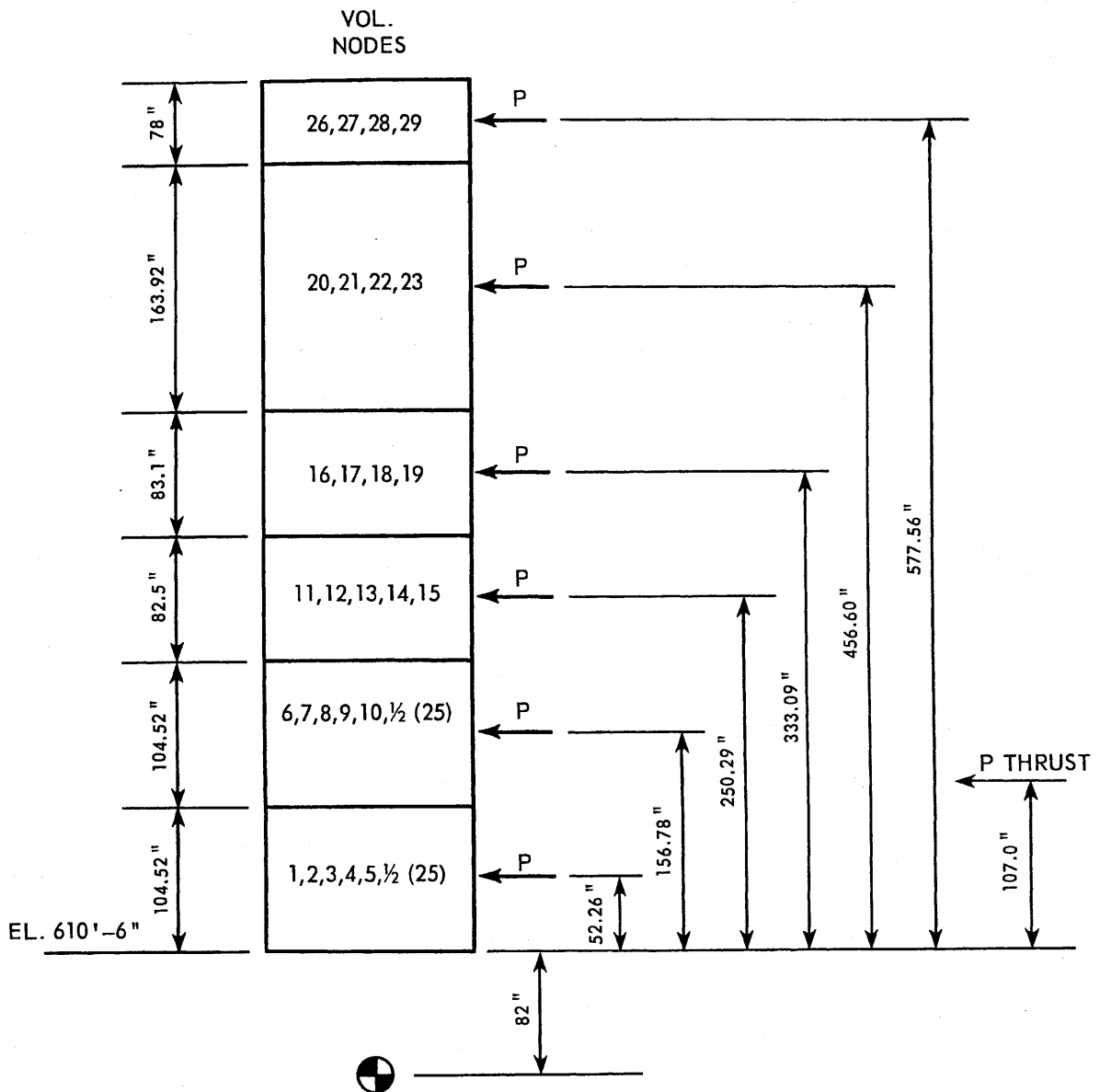
(Rev. 12 1/03)



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

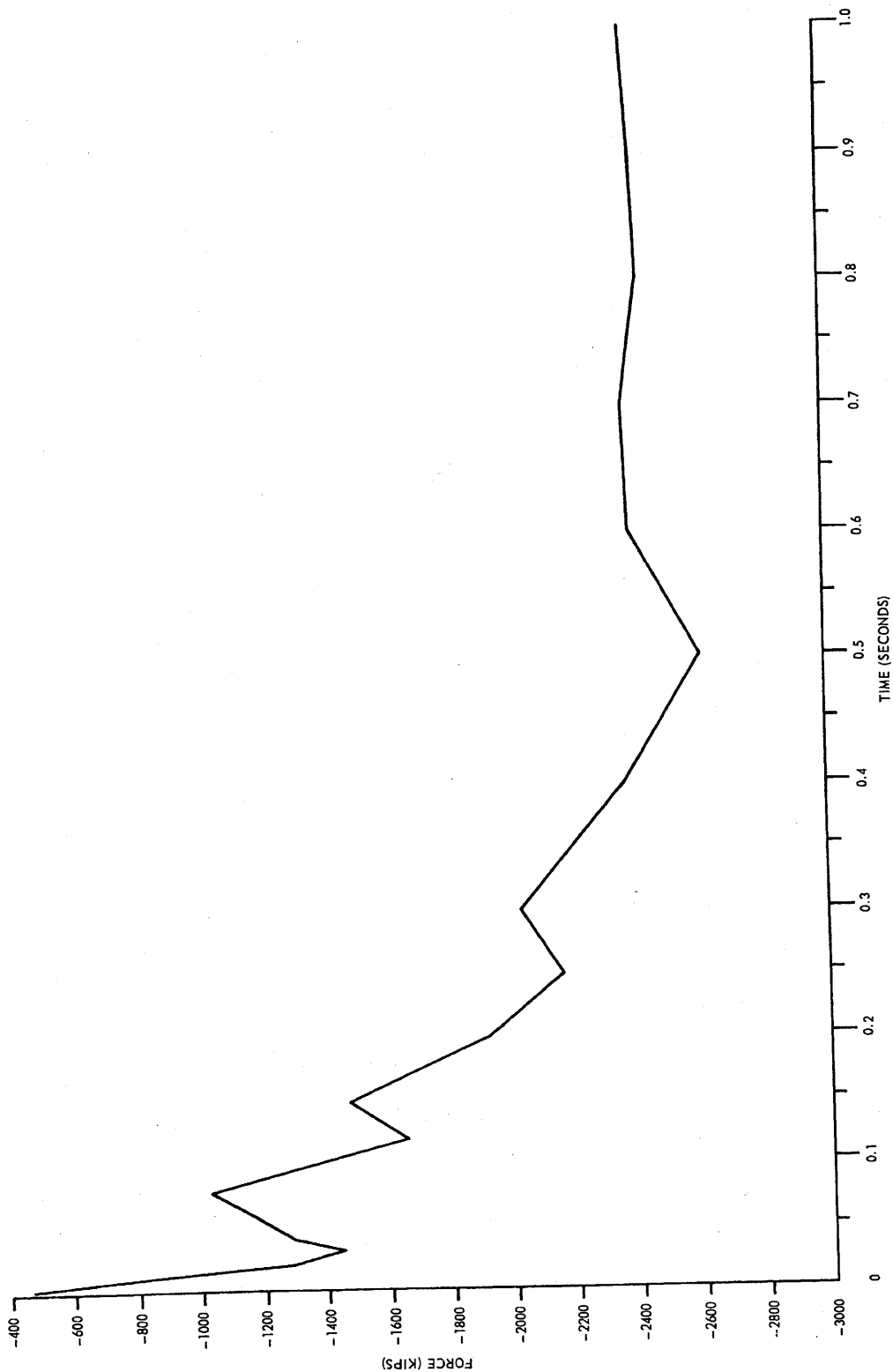
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Resultant Bio-Wall Forces and
Moments Due to Annulus
Pressurization

Figure 6.2-73 ...



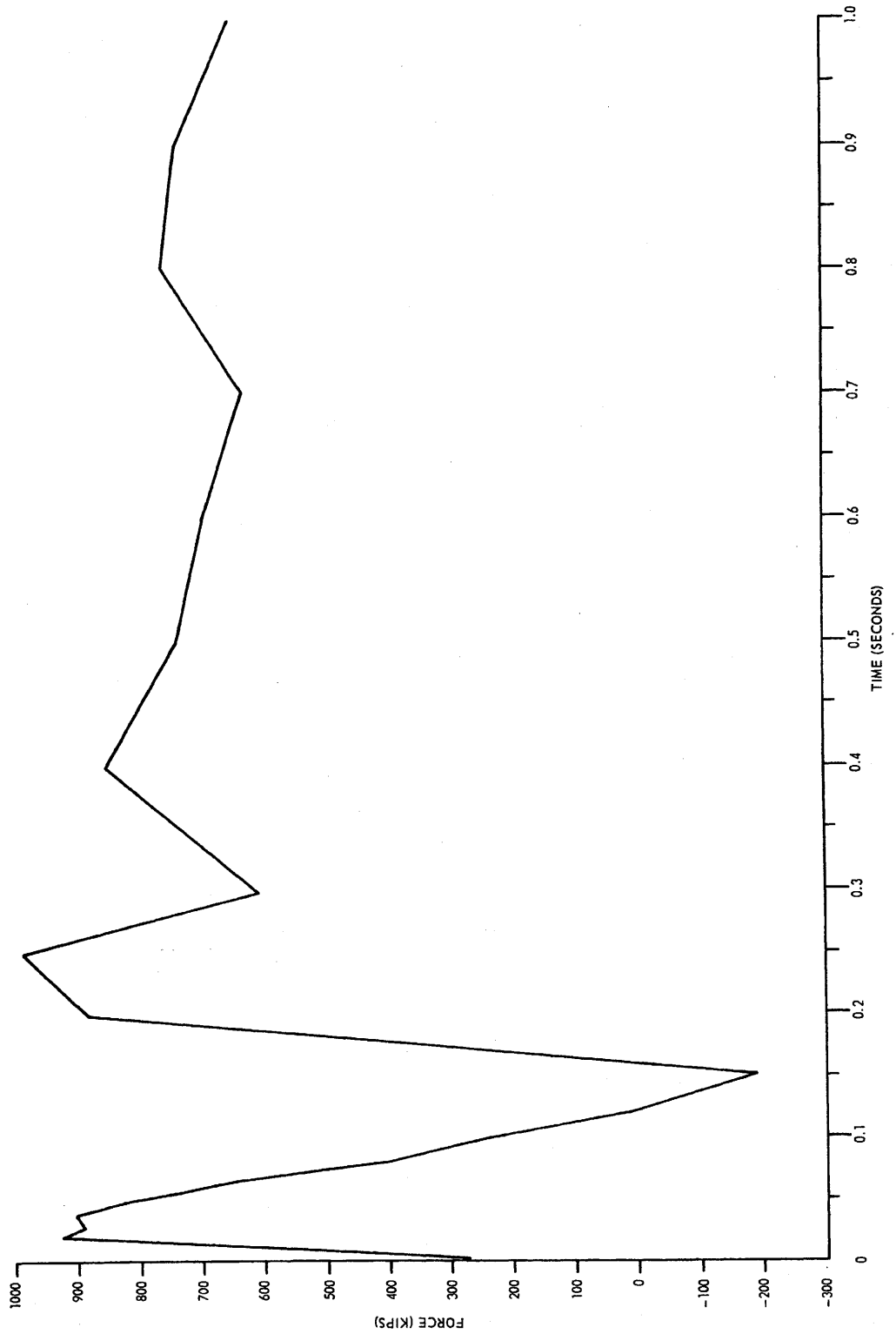
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Feedwater Line Break Force X1
Bio-Shield Wall

Figure 6.2-74



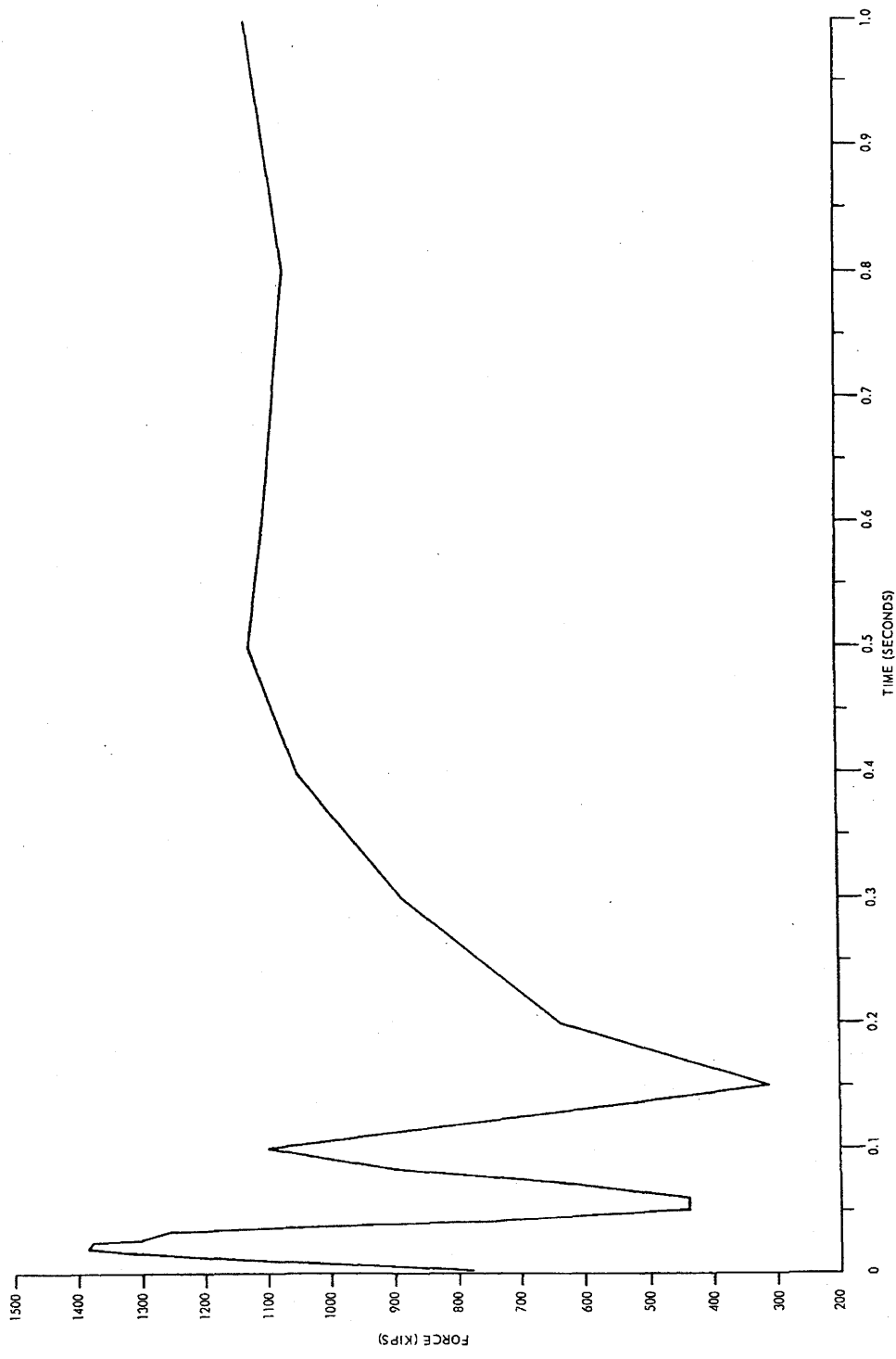
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Feedwater Line Breaks Force X3
Bio-Shield Wall

Figure 6.2-75



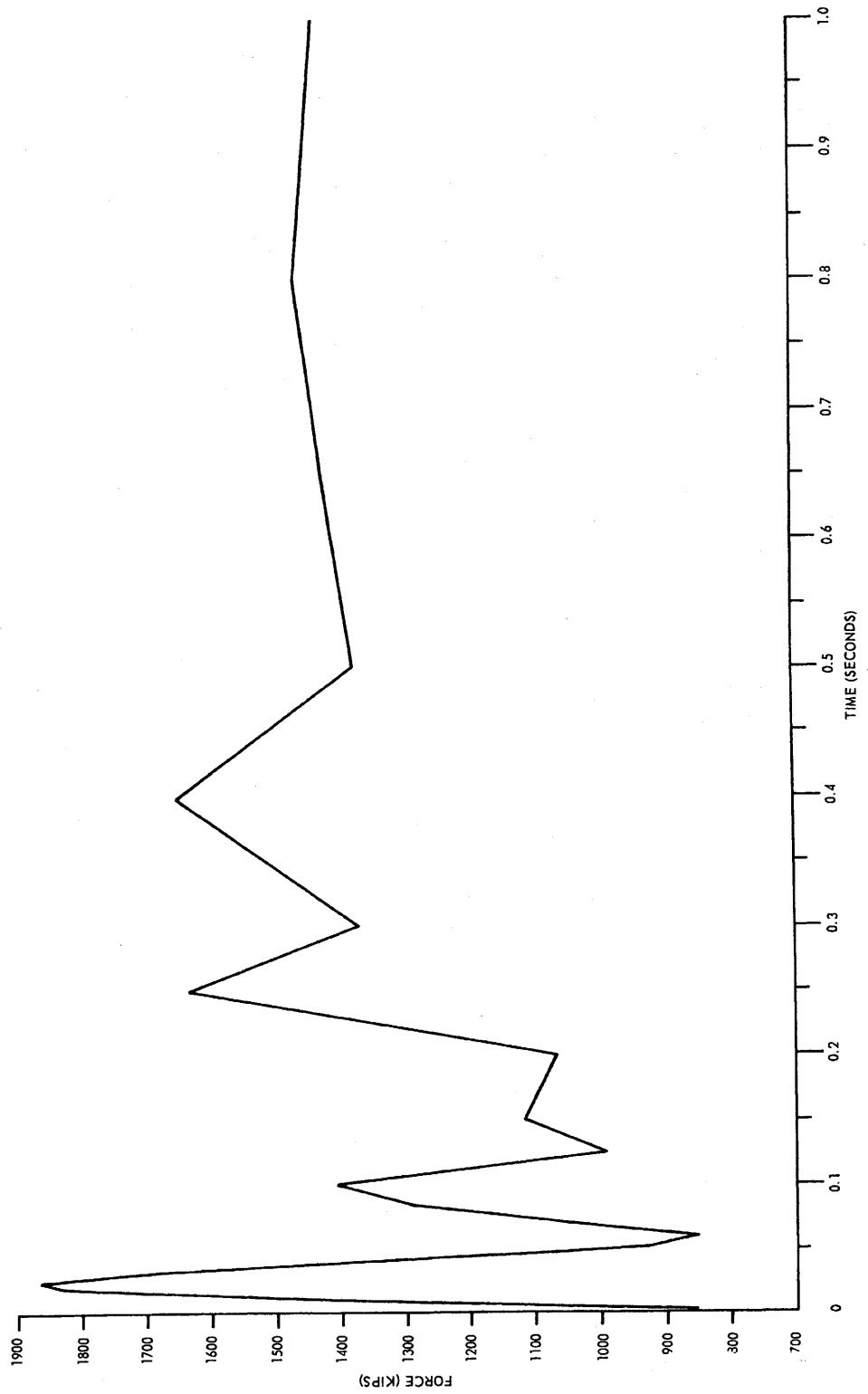
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Recirculation Suction Line Break
Force X1 Bio-Shield Wall

Figure 6.2-76



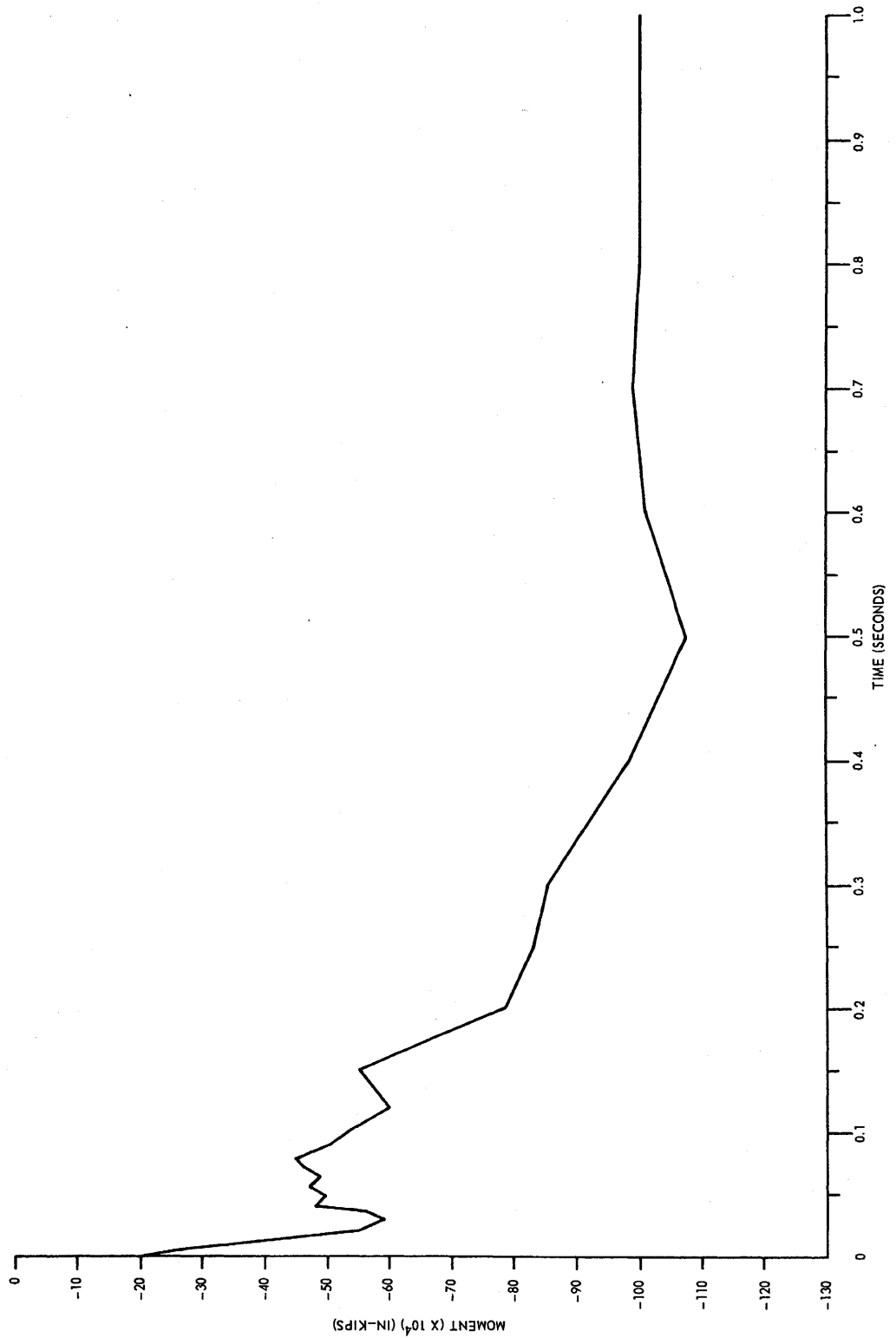
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Recirculation Discharge Line Break
Force X3 Bio-Shield Wall

Figure 6.2-77



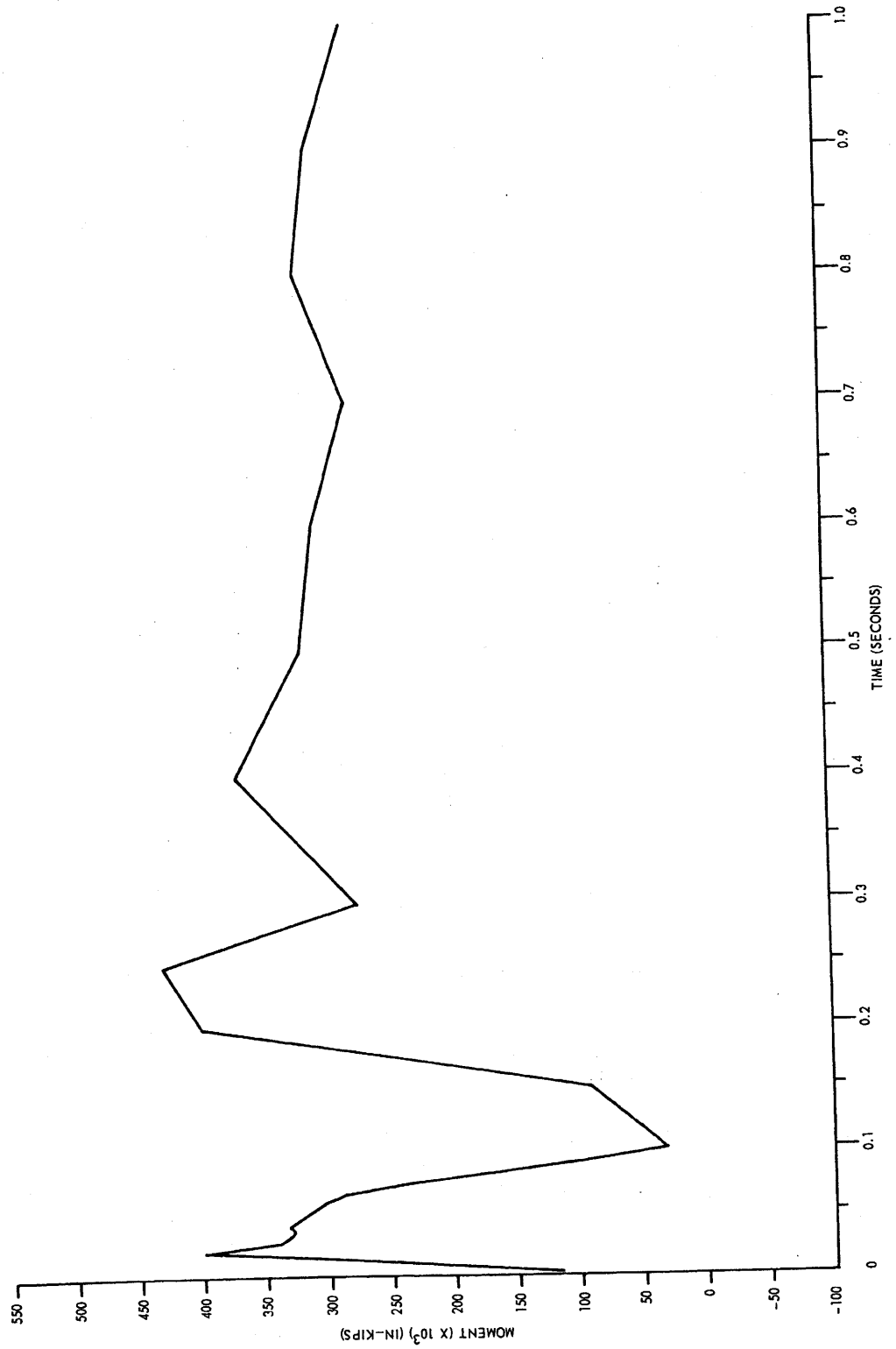
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Feedwater Line Break Moment X1
Bio-Shield Wall

Figure 6.2-78



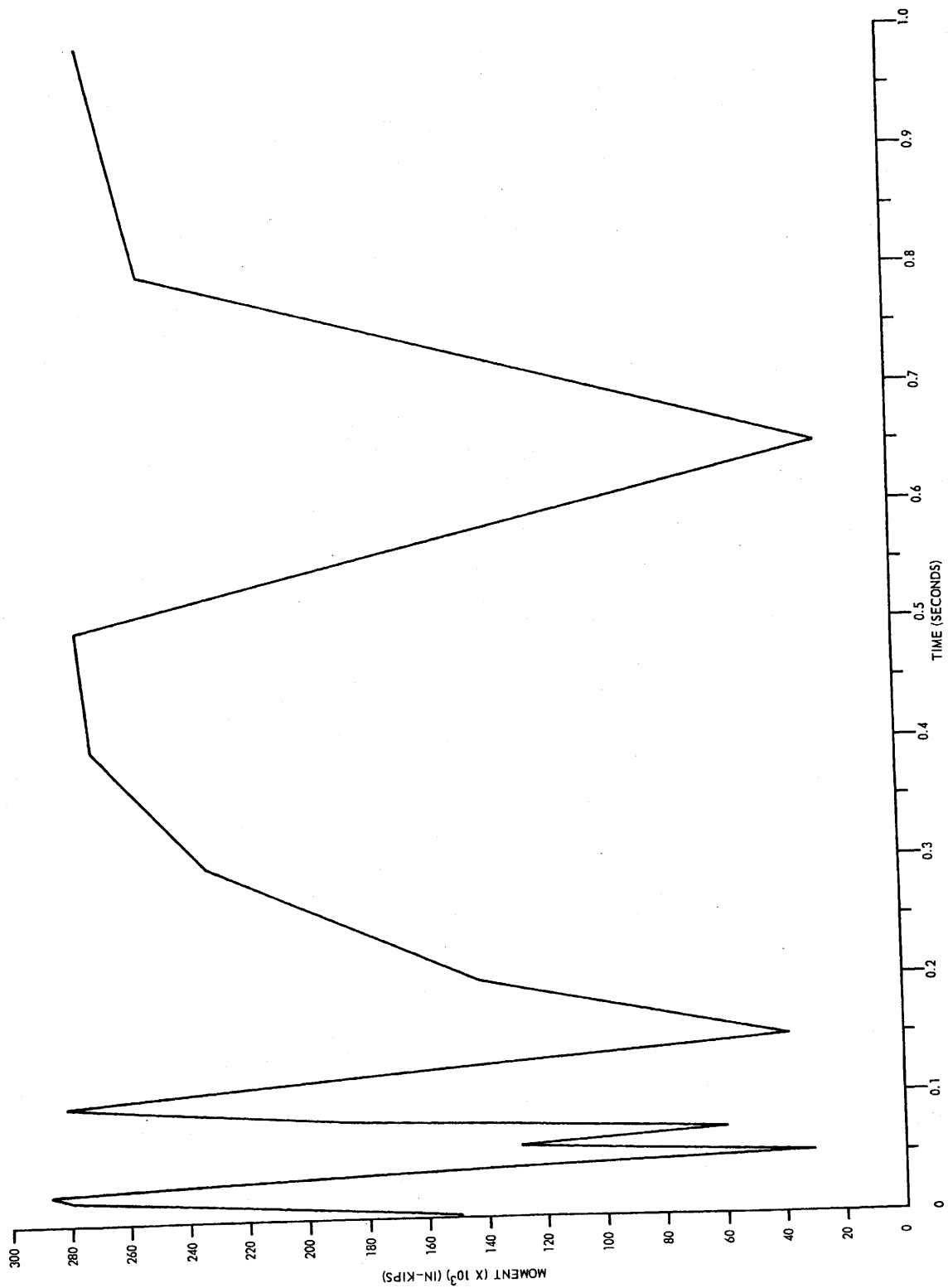
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Feedwater Line Break Moment X3
Bio-Shield Wall

Figure 6.2-79



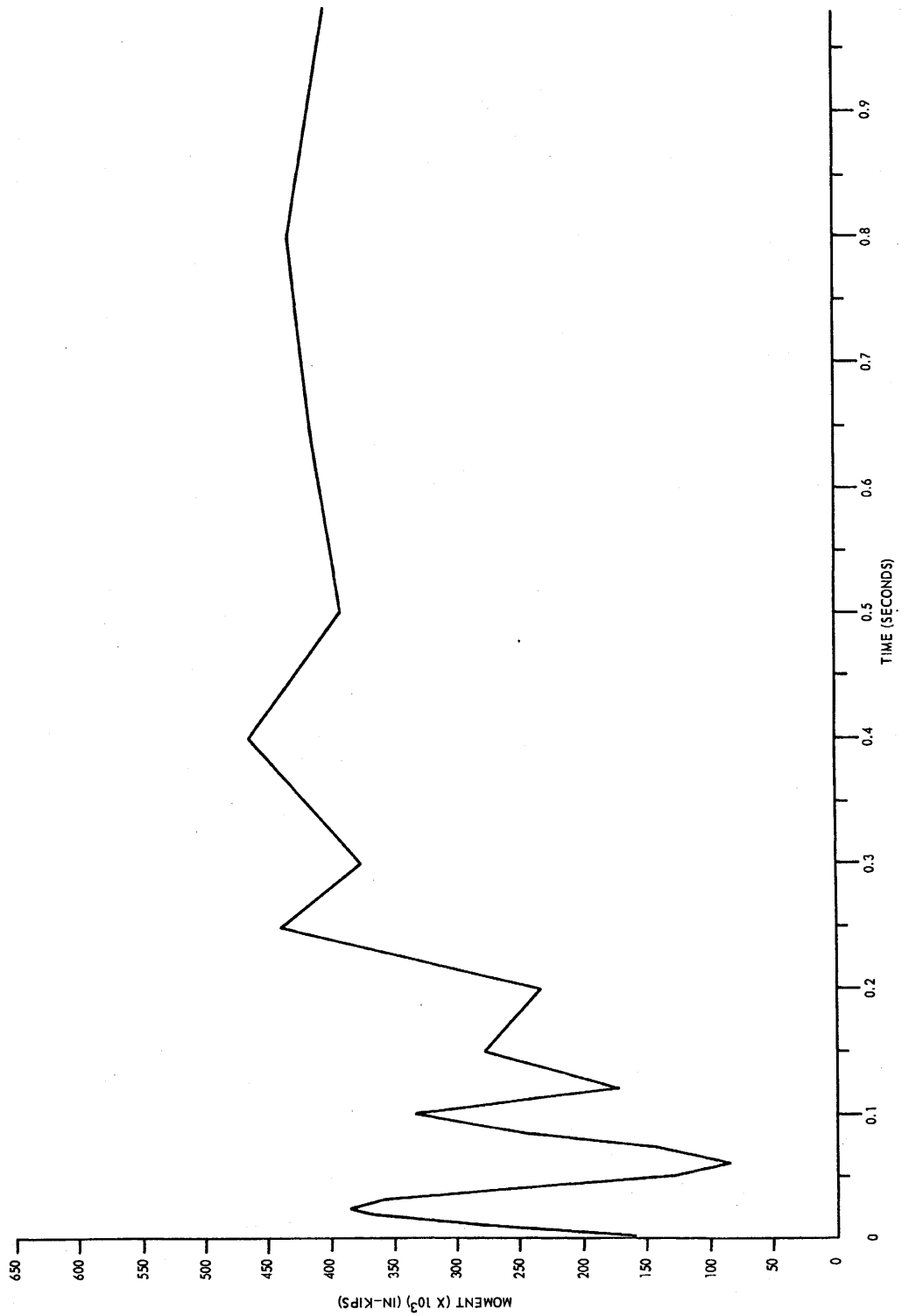
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Recirculation Suction Line Break
Moment At X3 Bio-Shield Wall

Figure 6.2-80



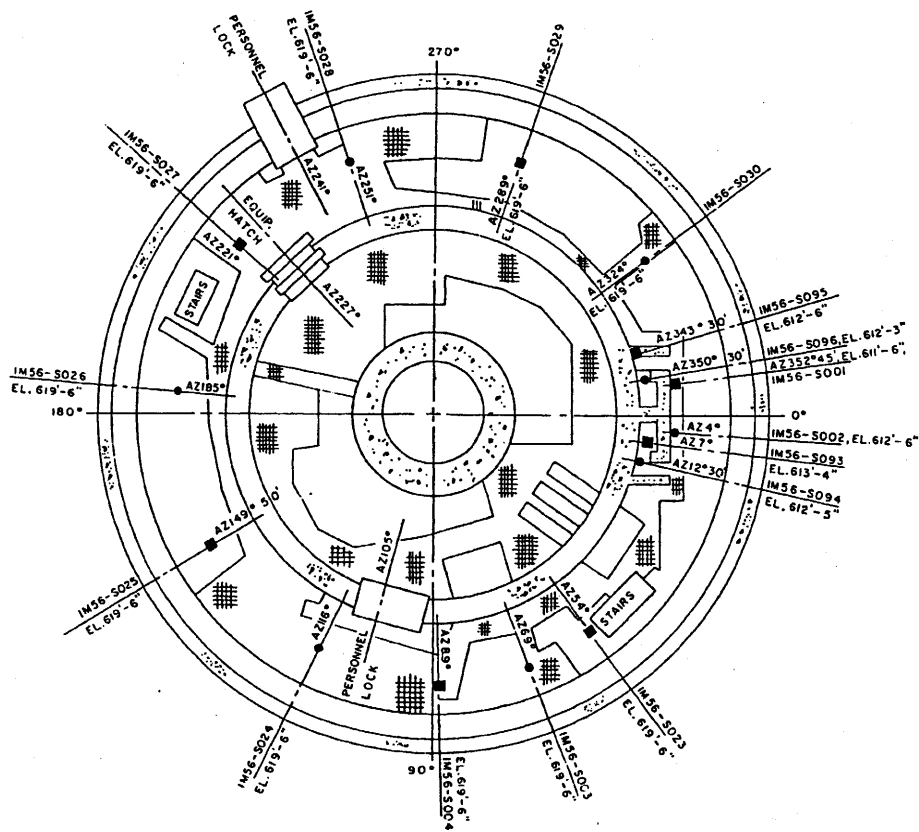
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Recirculation Discharge Line Break
Moment At X1 Bio-Shield Wall

Figure 6.2-81



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

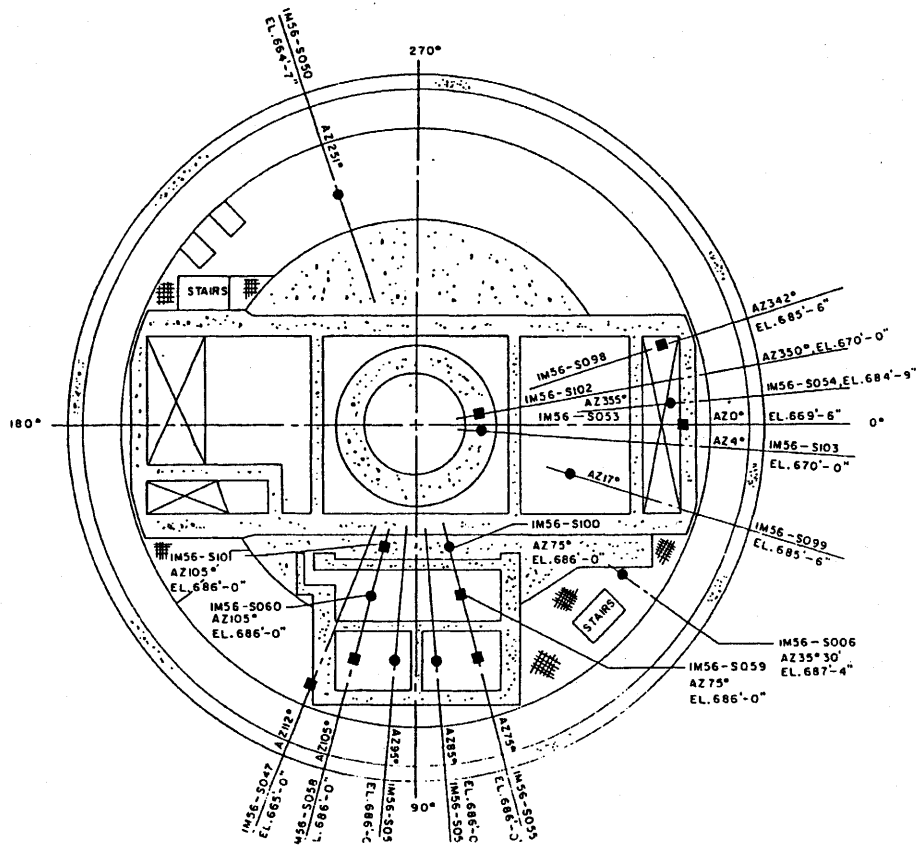
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Essential Equipment Location
 Plan El. 599'-9"

Figure 6.2-82 (Sheet 1 of 5)



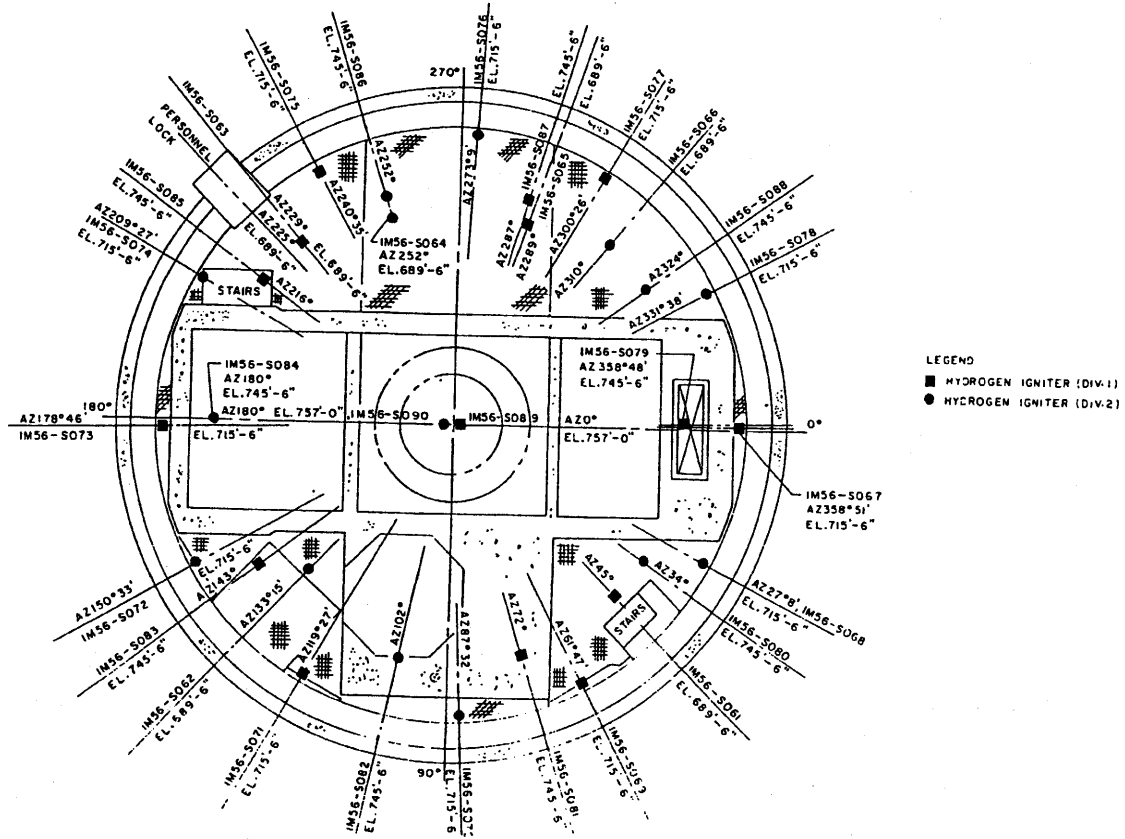
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Essential Equipment Location
Plan El. 664'-7"

Figure 6.2-82 (Sheet 4 of 5)



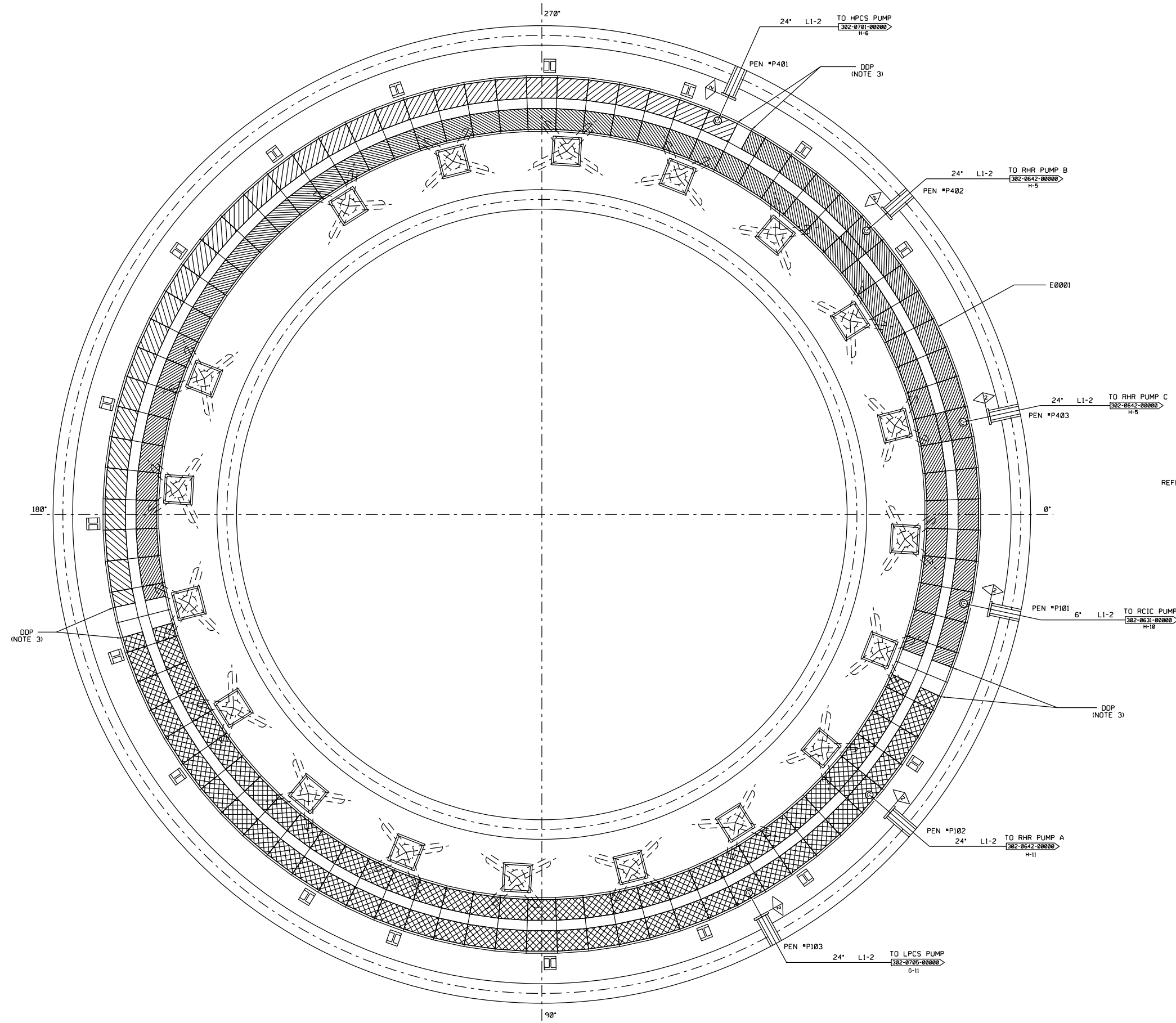
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Essential Equipment Location
Plan El. 689'-6"

Figure 6.2-82 (Sheet 5 of 5)

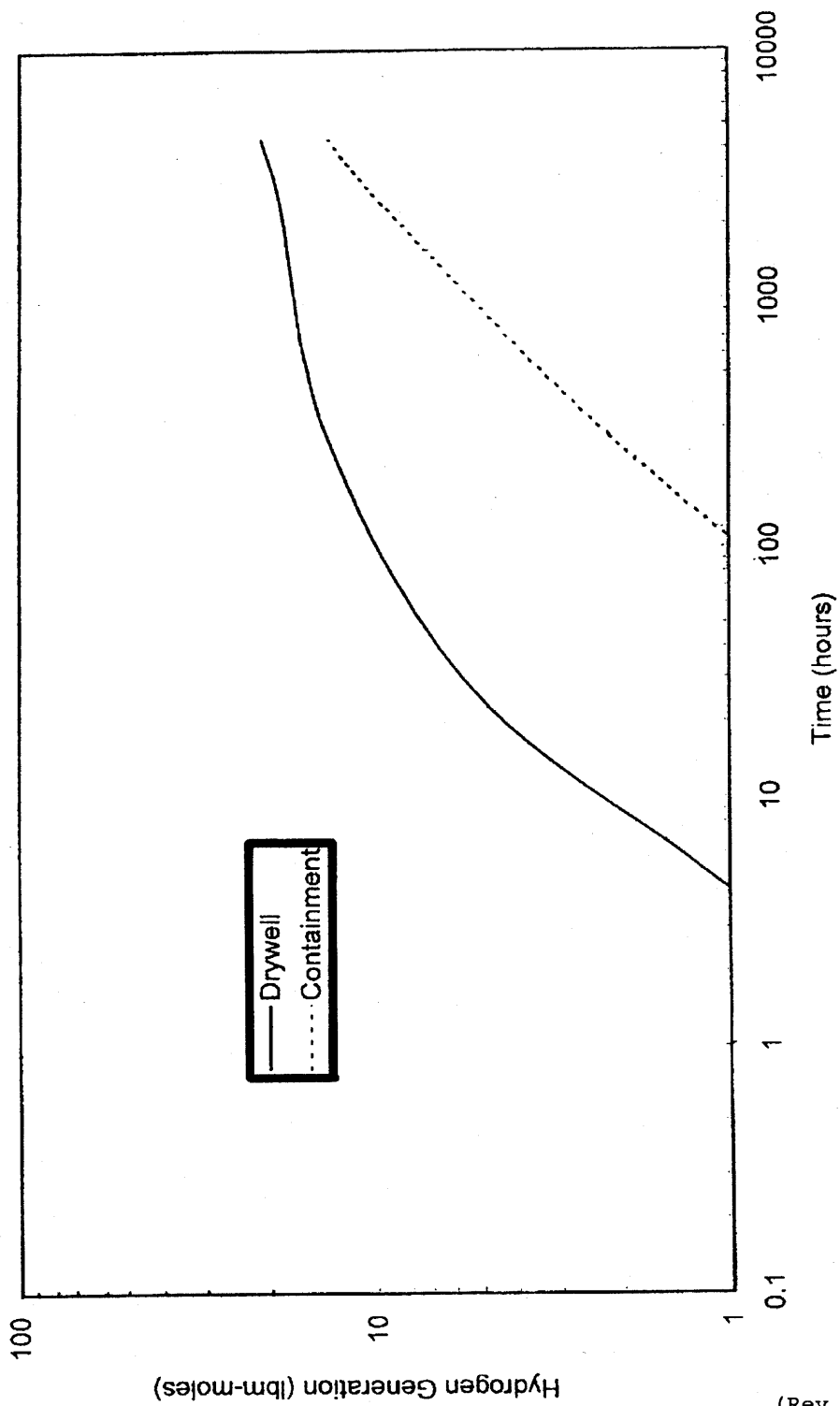


- NOTES:
1. ALL EQUIPMENT IS PREFIXED BY T21, UNLESS NOTED OTHERWISE.
 2. STRAINER IS SAFETY RELATED, NON-ASME INSTALLED VIA DCP 960042.
 3. DDP = DIVISION DIVIDER PLATE
 4. DIVISIONS ARE DEFINED AS FOLLOWS:
- ▨ - DIV. 1
 - ▩ - DIV. 2
 - ▧ - DIV. 3

- 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>



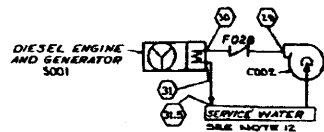
(Rev. 15 10/07)



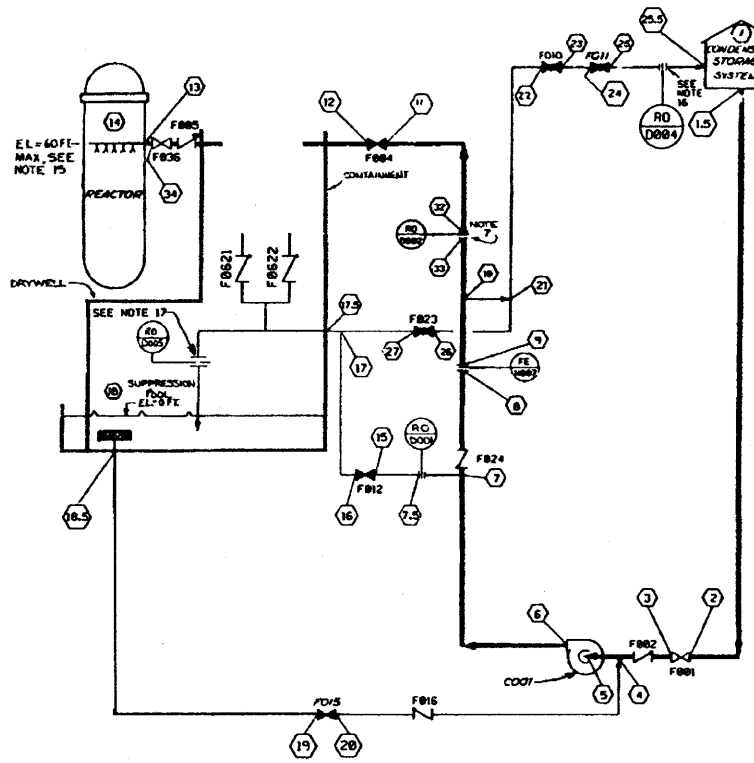
PERRY NUCLEAR POWER PLANT

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

Figure 6.2-84



PRIMARY MODES



MODE A ACCIDENT OR R/C 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	N/A
PRESS PSIA	14.7												116.1	
TEMP °F	AMB	190											190	AMB
VAL PRESS DIFFERENCE FT													281.5	

MODE B ACCIDENT, REACTOR AT HIGH PRESSURE, SUCTION FROM SUPPRESSION POOL

POSITION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
FLOW GPM	550											550	550		
PRESS PSIA	14.7											116.2	14.7		
TEMP °F	190											190	190		AMB
VAL PRESS DIFFERENCE FT												2.915			

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

POSITION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
FLOW GPM	610											610	610	610	
PRESS PSIA	14.7											116.2	14.7		
TEMP °F	190											190	190		AMB
VAL PRESS DIFFERENCE FT												2.915			

MODE C.C. ACCIDENT OR R/C BACKUP, REACTOR AT HIGH PRESSURE (SEE NOTE 17) SUCTION FROM SUPPRESSION POOL

POSITION	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
FLOW GPM	N/A	117															610
PRESS PSIA	14.7																121.5
TEMP °F	AMB	190															190
VAL PRESS DIFFERENCE FT																	1.4

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	N/A
PRESS PSIA	14.7												116.2	
TEMP °F	AMB	190											190	AMB
VAL PRESS DIFFERENCE FT													2.915	

MODE F ACCIDENT, SYSTEM OPERATING AT RUNOUT, SUCTION FROM SUPPRESSION POOL

POSITION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
FLOW GPM	7800											7800	7800		
PRESS PSIA	14.7											116.2	14.7		
TEMP °F	190											190	190		AMB
VAL PRESS DIFFERENCE FT												2.915			

MODE G SYSTEM TEST, SUCTION FROM SUPPRESSION POOL

POSITION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
FLOW GPM	7800											7800	7800		
PRESS PSIA	14.7											116.2	14.7		
TEMP °F	190											190	190		AMB
VAL PRESS DIFFERENCE FT												2.915			

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	N/A
PRESS PSIA	14.7												116.2	
TEMP °F	AMB	190											190	AMB
VAL PRESS DIFFERENCE FT													2.915	

TABLE I
VALVE POSITION TABLE

VALVE	F01	F02	F03	F04	F05	F06	F07	F08	F09	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24	F05B
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	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	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	C
MODE C.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	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	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	C
MODE G	C	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 H	O	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	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	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	610											610	N/A
PRESS PSIA	14.7												116.2	
TEMP °F	AMB	190											190	AMB
VAL PRESS DIFFERENCE FT													2.915	

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	610											610	N/A
PRESS PSIA	14.7												116.2	
TEMP °F	AMB	190											190	AMB
VAL PRESS DIFFERENCE FT													2.915	

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	15	2	4	4.5	4	5	6	11	12	13	13	16	17	10	27	17.5	21	25	25.5	30	31	31.5		
DESIGN TEMP (°F)	140	212															212	212						
DESIGN PRESS (PSIA)	100																157.5	100						
ESTIMATED LINE SIZE (IN)	16																4	12						
LINE	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION	CONDENSATE STORAGE SUCTION

• 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 EQUALLED 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 VALUES 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 25 AND 30 IS EQUAL TO THE TEMPERATURE RANGE OF THE SERVICE WATER AVAILABLE TO THE HPDS 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 HPDS 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 610 GPM IN MODE H WHEN VALVES FB10 AND FB11 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 FB23 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-FB12) OPEN.
- THE FLOW SPECIFIED FOR MODE CC MUST BE EQUALLED 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

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	---	178	40									178	40
MAX. PRESSURE DROP FEET													

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

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													

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

MODE B-1 SEE NOTE 20

POSITION	1	2 _B	3 _B	4 _B	5 _B	6 _B	10 _B	19 _B	9 _B	18 _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																		

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	18 _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																	

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.
2. --- INDICATES THE DATA IS NOT SIGNIFICANT.
3. 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.
4. ΔH VALUES FOR EQUIPMENT WITHIN GE SCOPE ARE AS NOTED.
5. ELEVATIONS ARE NOT INCLUDED IN ΔP VALUES GIVEN. ELEVATIONS SHALL BE INCLUDED WHEN DETERMINING FINAL VALUES FOR THE EMPTY DATA BLANKS.
6. [Symbol] INDICATES MAXIMUM (X) AND MINIMUM (Y) VALUES FOR THE MODE SPECIFIED.
7. DASHED LINES INDICATE FLOW DOES NOT PASS THRU THESE POINTS. SOLID LINES INDICATE FLOW DOES PASS THRU THESE POINTS.
8. 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 222°F. THE NPSH AVAILABLE IN MODES B-1 & B-2 AT A REFERENCE LOCATION 3 FEET ABOVE THE PUMP MOUNTING FLANGE MUST EQUAL OR EXCEED 4 FEET ASSUMING SATURATION TEMPERATURES OF 212°F AND 205°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.
9. 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 STANDARD DRAWINGS, FOR NOZZLE SIZES ON GE SUPPLIED EQUIPMENT.
10. FUEL POOL CONNECTIONS MUST PROVIDE ADEQUATE NPSH TO AVOID PUMP CAVITATION AND AT THE SAME TIME PROVIDE FOR GREATER THAN MINIMUM PUMP FLOW.
11. TABLE 1 INDICATES VALVE POSITION DURING VARIOUS MODES OF OPERATION.
12. *Deleted*
13. TYPICAL VALUES FOR MAX. SUPPRESSION POOL TEMP SHOWN. FINAL TEMPERATURE DEPENDS ON INITIAL POOL WATER TEMPERATURE & POOL WATER VOLUME.
14. WATER FLOWS ARE IN GPM.
15. MAXIMUM SOH 700 FEET.
16. SERVICE WATER CROSS-TIE SHALL BE SIZED TO FLOW 300 GPM AND ENOUGH HEAD TO FLOOD THE CONTAINMENT.
17. 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.
18. SEE REFERENCE 5 FOR SUPPLEMENTAL FLOWS ENTERING DOWNSTREAM OF E12-F05C DURING NORMAL PLANT OPERATIONS.
19. FLOW SHOWN IS A MAXIMUM. ACTUAL FLOW WILL BE INDICATED LATER FOR EACH PROJECT.
20. MAXIMUM SHELL SIDE FLOW RATE IS 7000 GPM.
21. FLOW SHOWN AT POSITION 71 DOES NOT INCLUDE FLOW FROM FUEL POOL COOLING AND CLEANUP SYSTEMS.
22. SEE SYSTEM DATA SHEET FOR SUGGESTED VALVE SIZING.
23. SUCTION TEMPERATURE AND PRESSURE ARE FOR LOOPS A&B ONLY. LOOP C CONDITIONS ARE 0 PSIG VESSEL PRESSURE 125°F.
24. THE INLET PRESSURE SHALL BE GREATER THAN 60 PSIA TO MINIMIZE THE POSSIBILITY OF FLOW INDUCE VIBRATION.
25. FOR LOOPS A AND B, MODE 6 MAY BE ELIMINATED FROM DESIGN CONSIDERATION DURING SHUTDOWN COOLING IF PDV - FLOW IS ELECTRICALLY DISABLED. WHEN SHUTDOWN COOLING IS INITIATED IN THE A+B LOOP, ONLY ONE VALVE SHOULD BE DISCLOSED AT ANY GIVEN TIME. CUSTOMER ESTABLISHED DESIGN ALTERNATE TO GE STANDARD.
26. REFER TO DSP-E12-J-4549-04, TABLE 1, MODE J, NOTE 5 FOR OPERATING PARAMETERS IN THE SHUTDOWN COOLING TENDER LEAK-OFF LINE PIPING DURING NORMAL OPERATION.
27. THE RHR STEAM CONDENSING MODE IS NO LONGER USED AT THE PERRY NUCLEAR POWER PLANT (REF: GEN-4128161-11).
28. THE DIAPHRAGM ACTUATOR, BONNET, YOKER, VALVE STEM AND PLUG HAVE BEEN REMOVED FROM VALVES F608A & F608B AND REPLACED WITH A BLIND BONNET. VALVE FUNCTIONS AS STRAIGHT PIPE.
29. FOR CORRESPONDING ESW OPERATING DATA REFER TO PAID 302-8773-00000. 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, 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
- RV PRESS - REACTION VESSEL PRESSURE
- SGH - SHUTOFF HEAD
- TDH - TOTAL DYNAMIC HEAD

REFERENCE DOCUMENTS

1. RCIC SYSTEM PROCESS DIAGRAM
2. RCIC SYSTEM DESIGN SPEC DATA
3. LOW PRESSURE CORE SPRAY SYSTEM PD
4. NUCLEAR BOILER SYSTEM PROCESS DIAGRAM
5. REACTOR WATER CLEANUP SYSTEM PD

MPL ITEM NO.

- E51-1020
- B33-4010
- E21-1020
- B21-1020
- B33-1030


SUPPORTING DOCUMENTS

- 1. PIPING & INSTRUMENT SYMBOLS A42-1010

MODES:

- A-1 LOW PRESSURE COOLANT INJECTION (LPCI) RECIRCULATION LINE BREAK IN EITHER SIDE AND THREE PUMPS OPERATING, ONE STRAINER 50% PLUGGED.
- A-2 LOW PRESSURE COOLANT INJECTION (LPCI) RECIRCULATION LINE BREAK IN EITHER SIDE AND THREE PUMPS OPERATING, ONE STRAINER 50% PLUGGED, VESSEL PRESSURE=9 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 5 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.

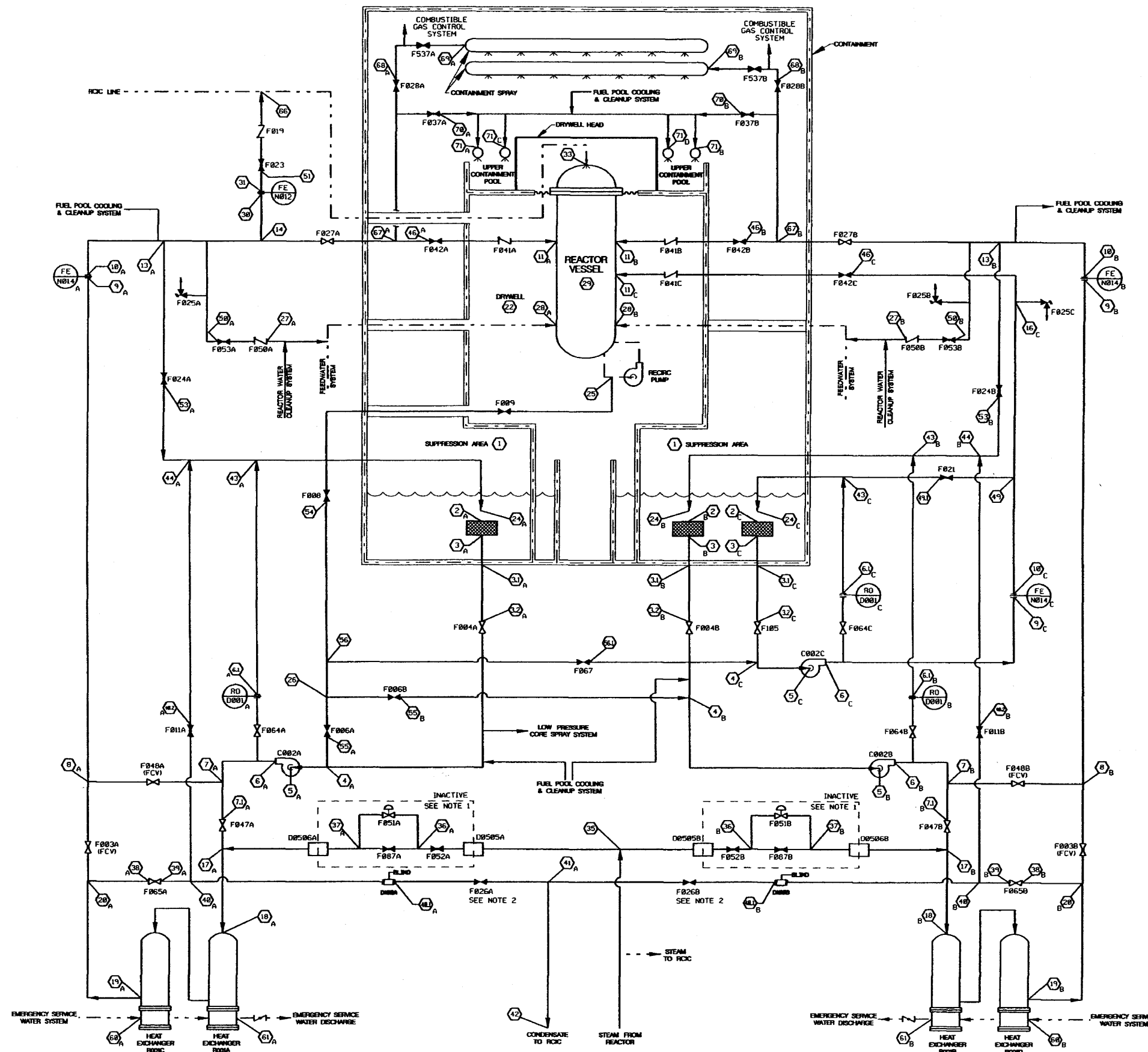
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PERRY NUCLEAR POWER PLANT

Residual Heat Removal System
Process Diagram

Figure 6.3-3 (Sheet 1 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 DETERMINATED AT THE MCC COMPARTMENT. THEY ARE REQUIRED TO MAINTAIN THE SEISMIC & STRUCTURAL INTEGRITY OF THE PIPING SYSTEM & TO MAINTAIN A PRESSURE BOUNDARY.

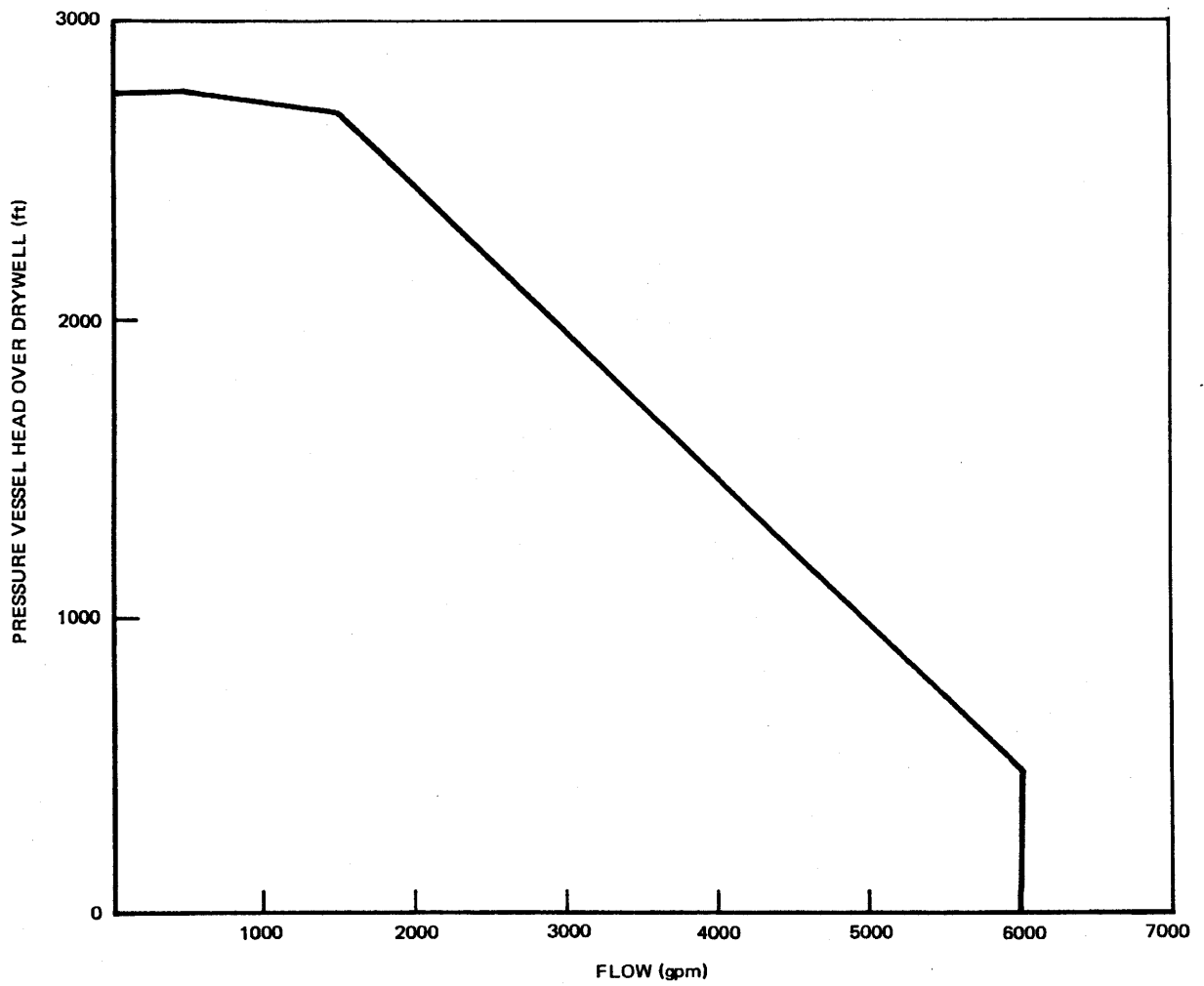
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PERRY NUCLEAR POWER PLANT

Residual Heat Removal System
Process Diagram

Figure 6.3-3 (Sheet 3 of 3)



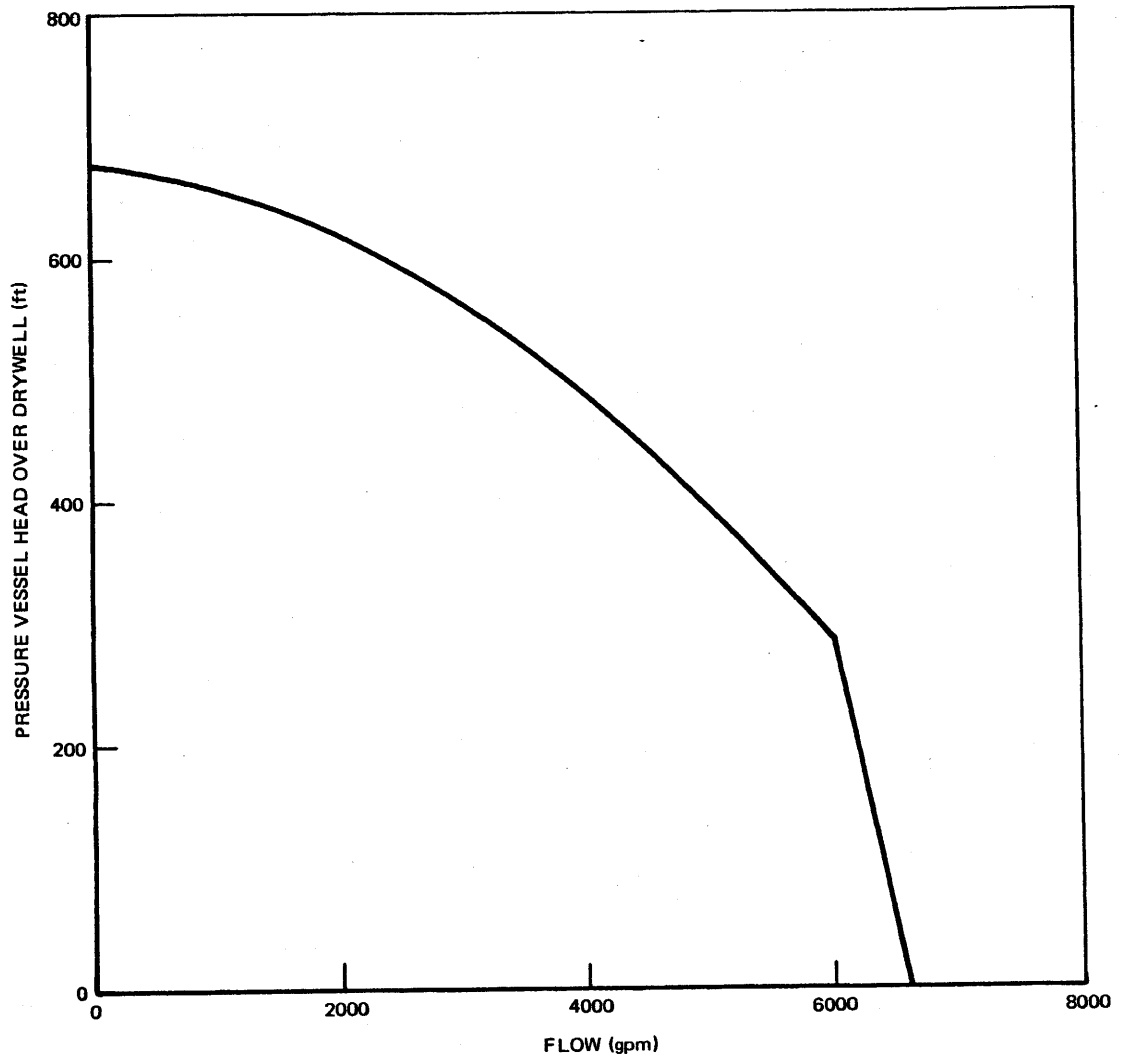
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PERRY NUCLEAR POWER PLANT

Head Versus High Pressure Core
Spray Flow Used in LOCA Analysis

Figure 6.3-4



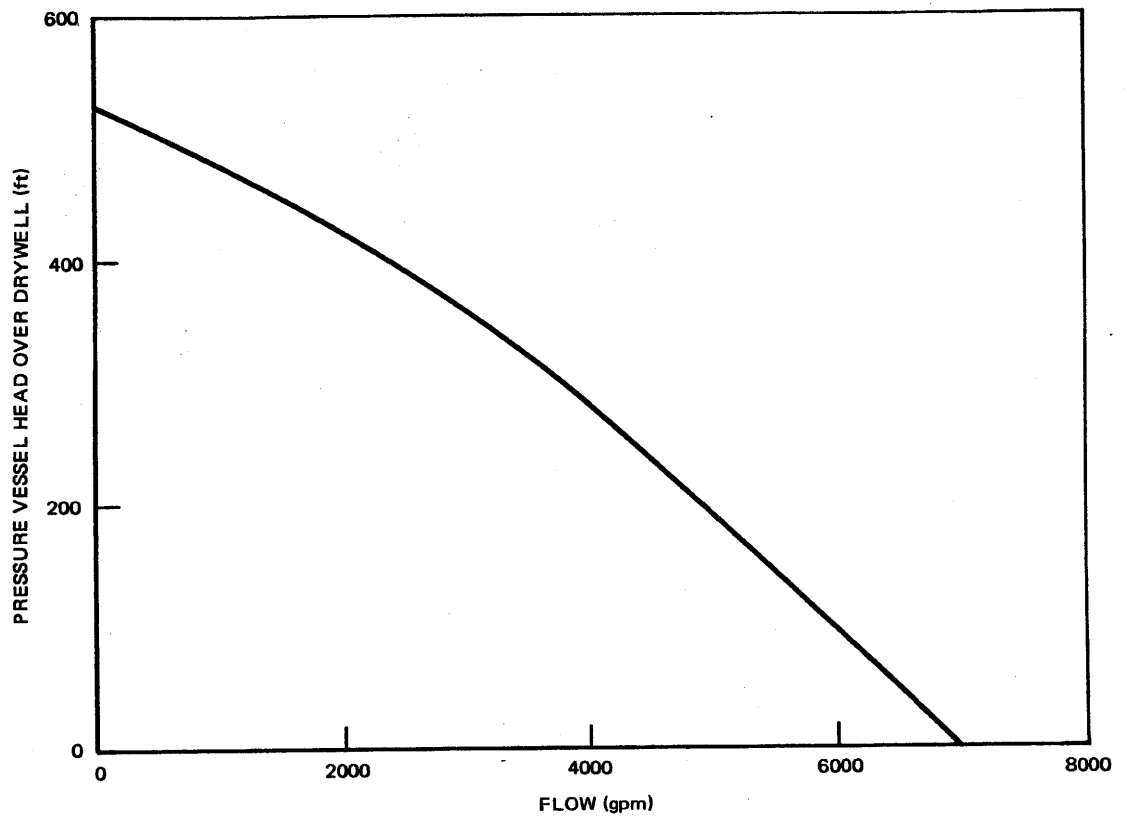
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PERRY NUCLEAR POWER PLANT

Head Versus Low Pressure Core Spray
Flow Used in LOCA Analysis

Figure 6.3-5



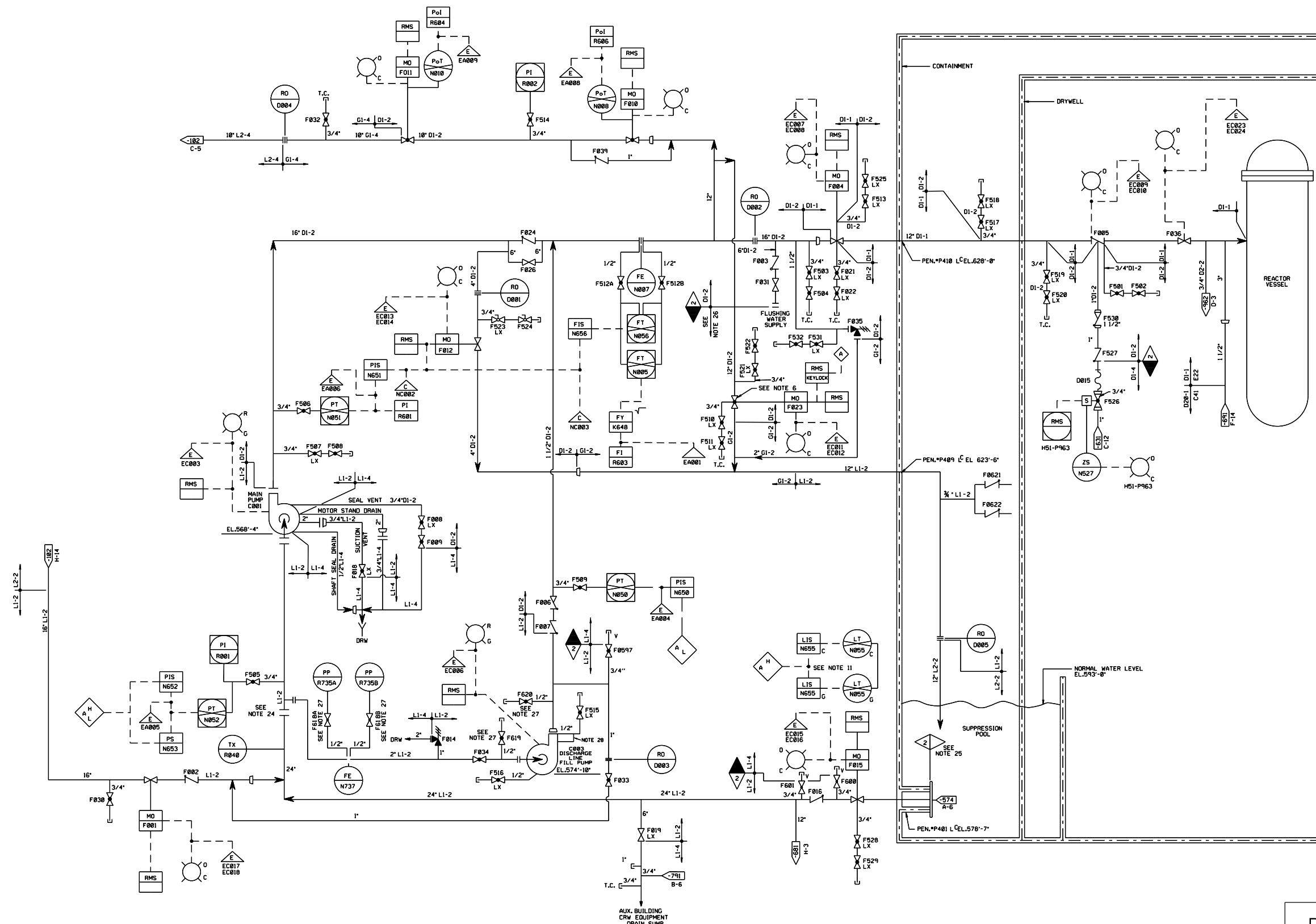
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PERRY NUCLEAR POWER PLANT

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-N654C, LIS-N654G) FOR THE CONDENSATE STORAGE TANK IS SHOWN ON DWG. 302-0102-00000.
 - E22 LEVEL INSTRUMENTATION (LT-N055C, LT-N055G, LIS-N655C, LIS-N655G) IMPULSE LINES FOR THE SUPPRESSION POOL ARE SHOWN ON DWG. 302-0686-00000, 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
 - 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-P001, UNLESS OTHERWISE NOTED.
 - ALL INSTRUMENT LOCATIONS ARE IDENTIFIED ON THE INSTRUMENT INDEX.
 - TEMPORARY STRAINER D013, 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)
 - 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.

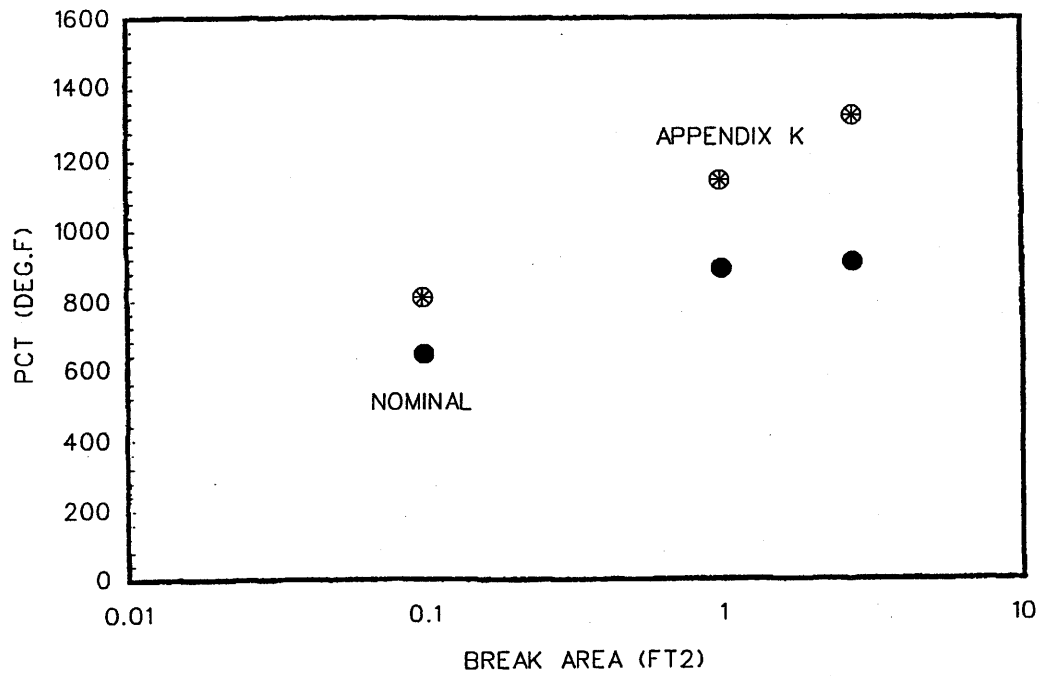
REFERENCE DRAWINGS

302-0681-00000	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
C-91-4030	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

(REV. 22 10/2021)

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

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



NOTE: LIMITING FUEL TYPE IS GE11 FOR CYCLE 8.

LEGEND:

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

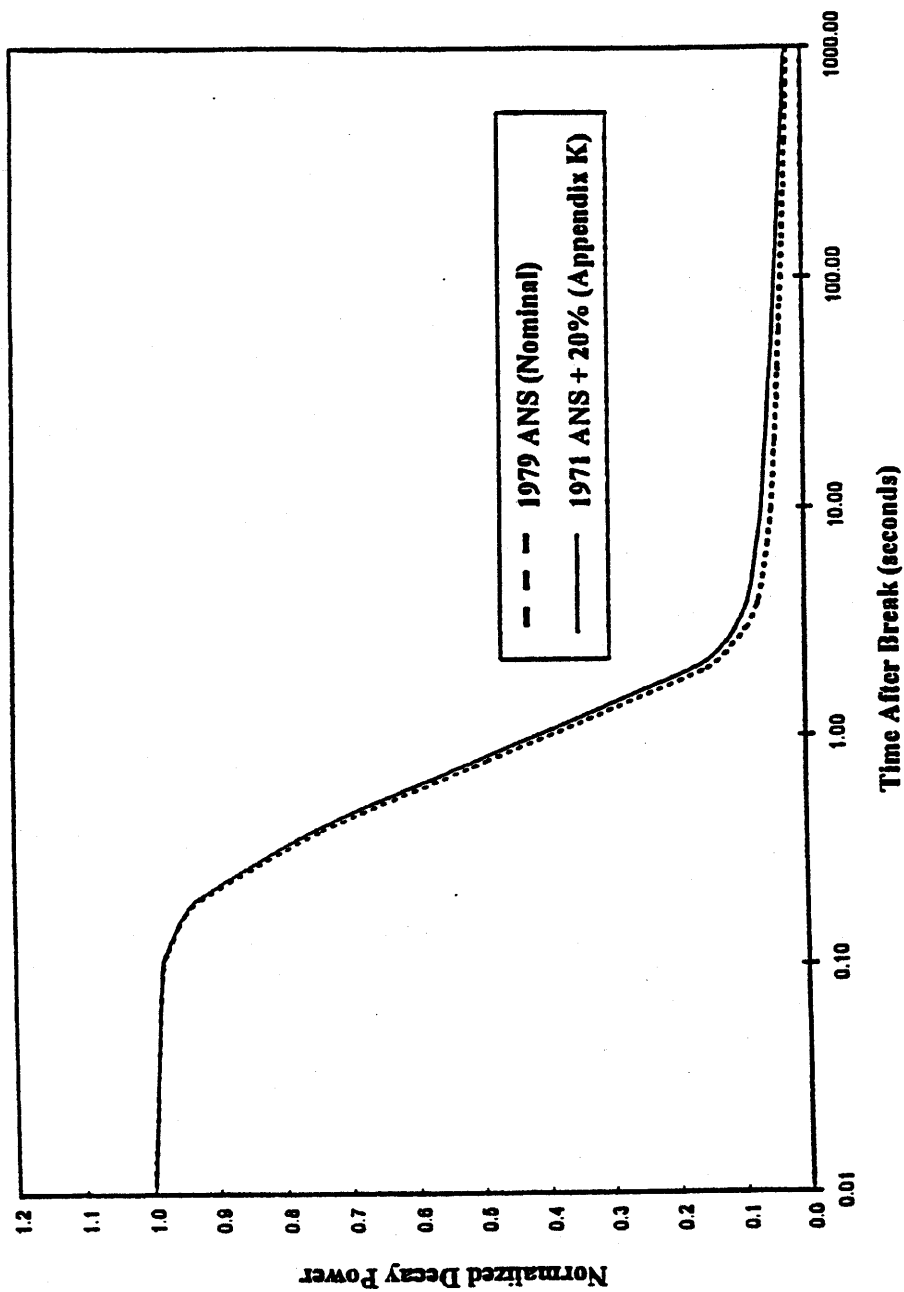
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PERRY NUCLEAR POWER PLANT

Limiting Peak Cladding
Temperature Versus Break Area

Figure 6.3-9



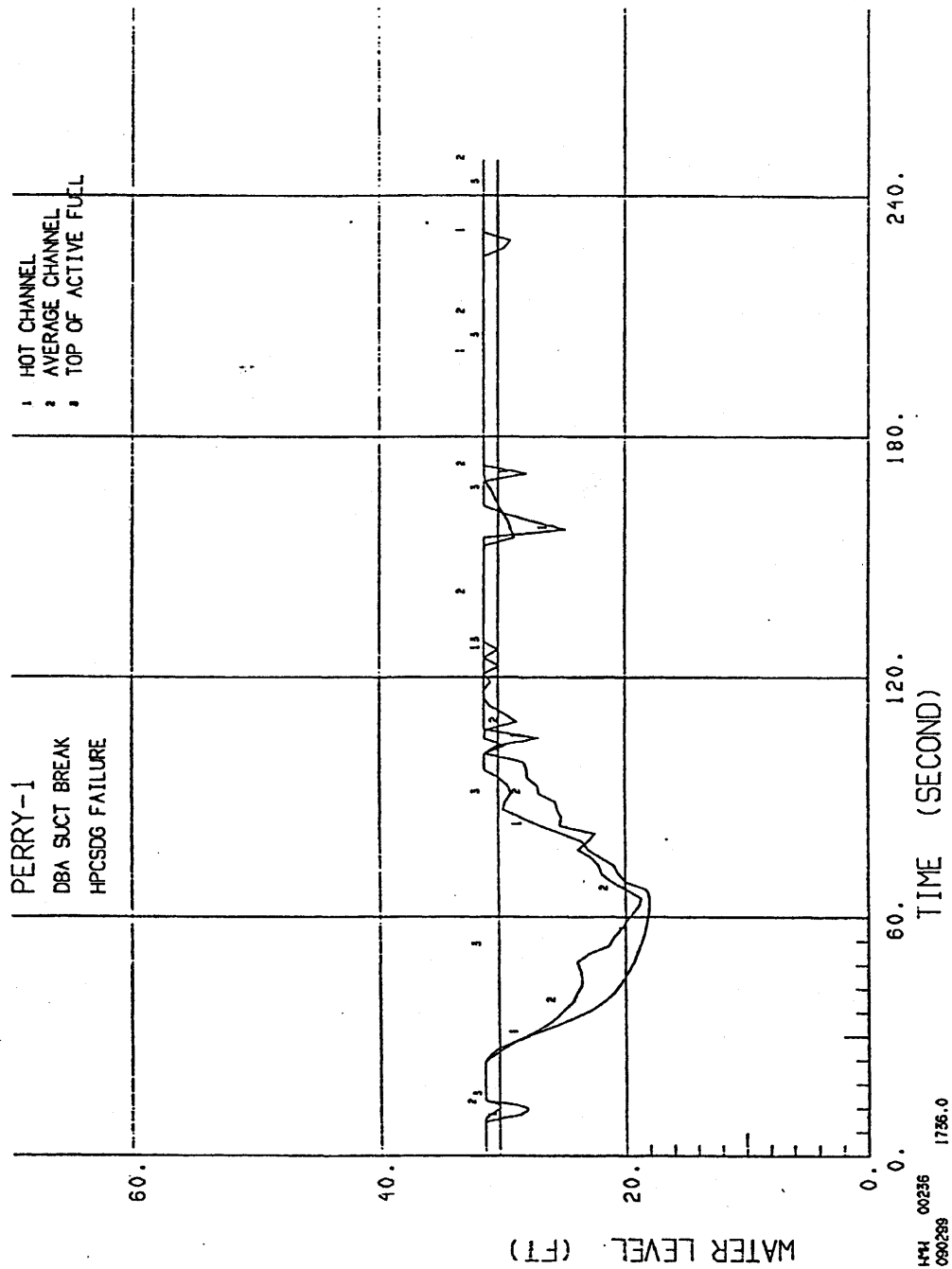
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PERRY NUCLEAR POWER PLANT

Normalized Power Versus Time

Figure 6.3-10



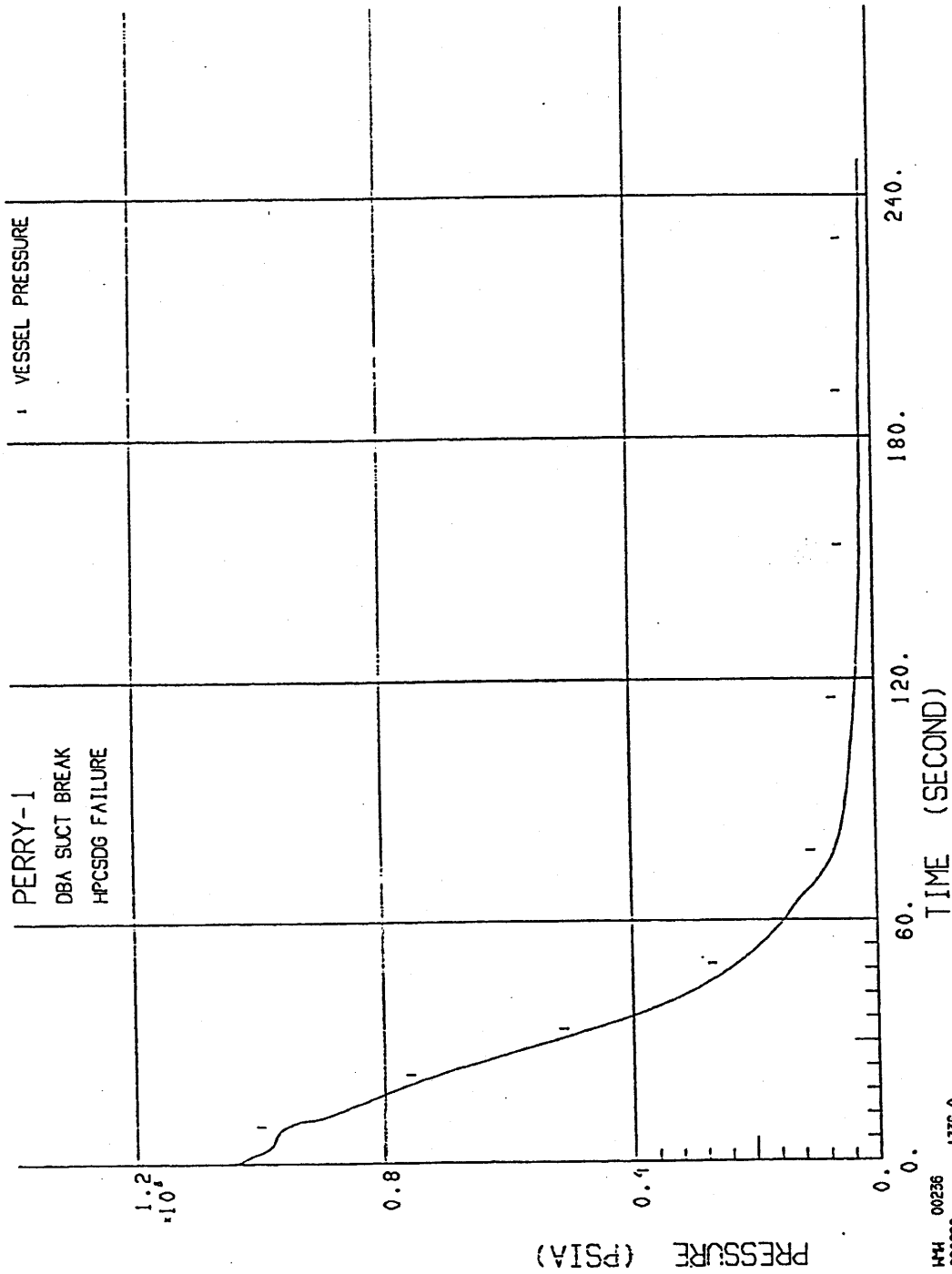
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PERRY NUCLEAR POWER PLANT

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)



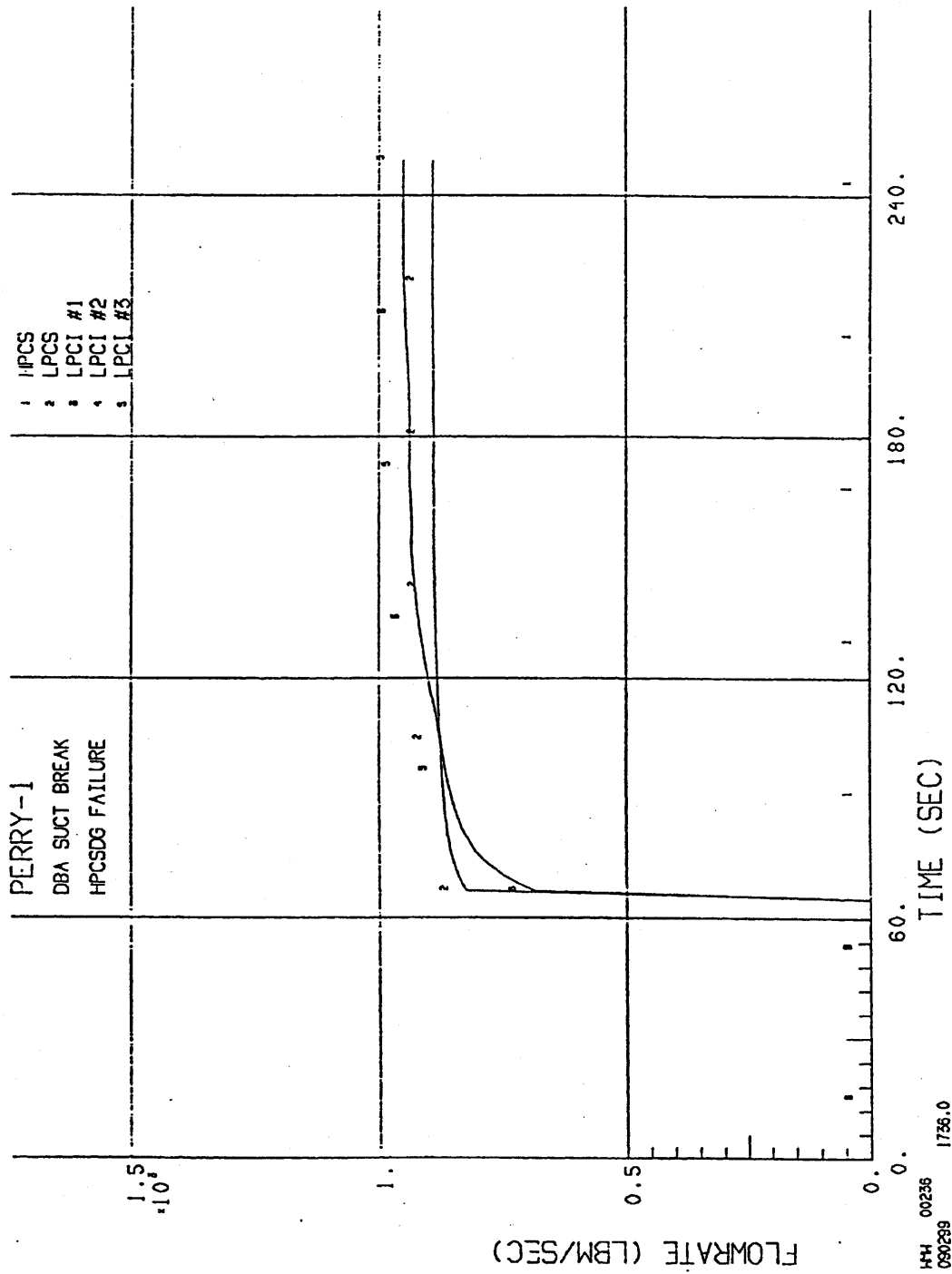
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PERRY NUCLEAR POWER PLANT

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

Figure 6.3-11 (Sheet 2 of 11)



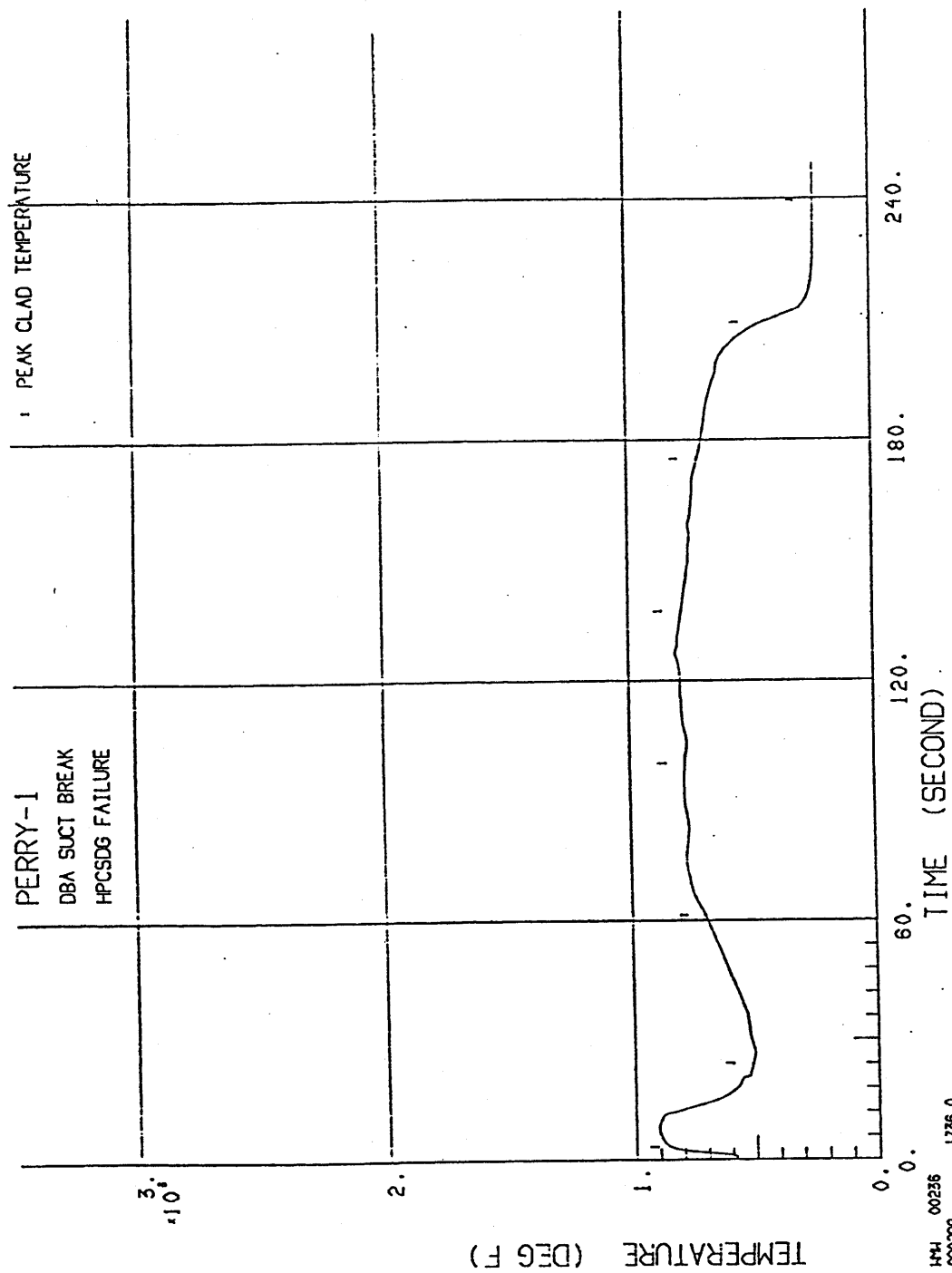
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PERRY NUCLEAR POWER PLANT


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

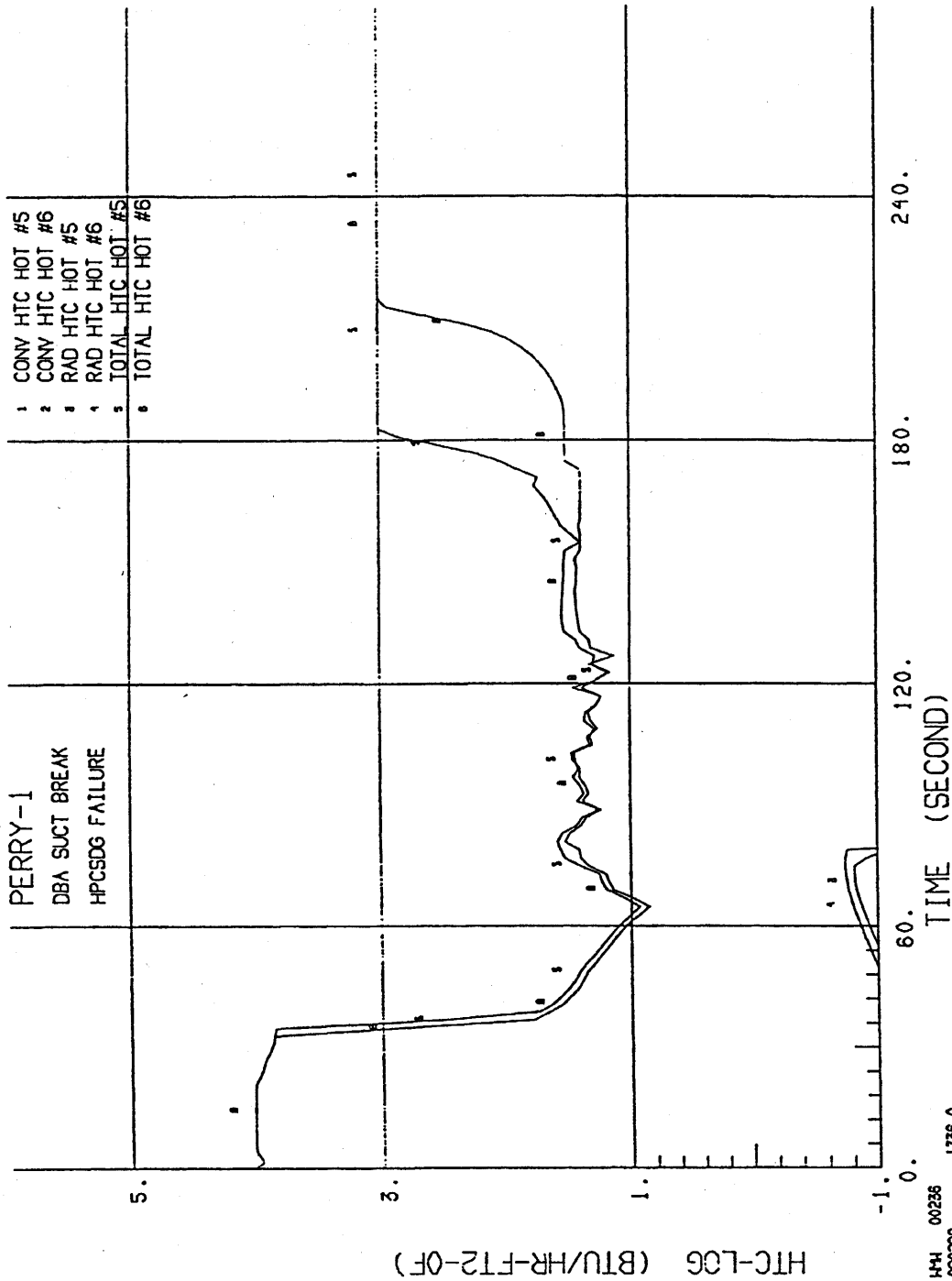
Figure 6.3-11 (Sheet 5 of 11)



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	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)	



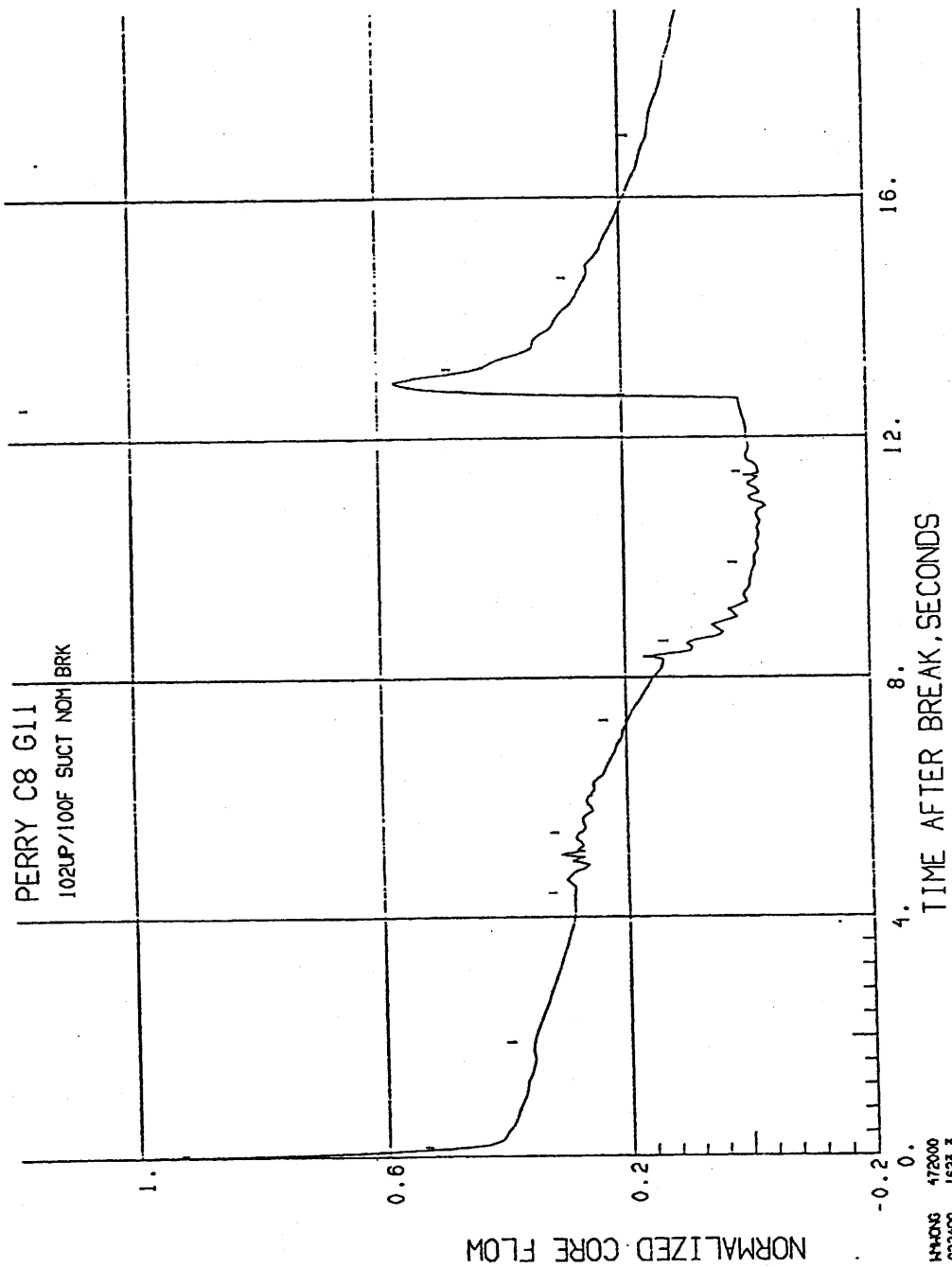
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PERRY NUCLEAR POWER PLANT

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)

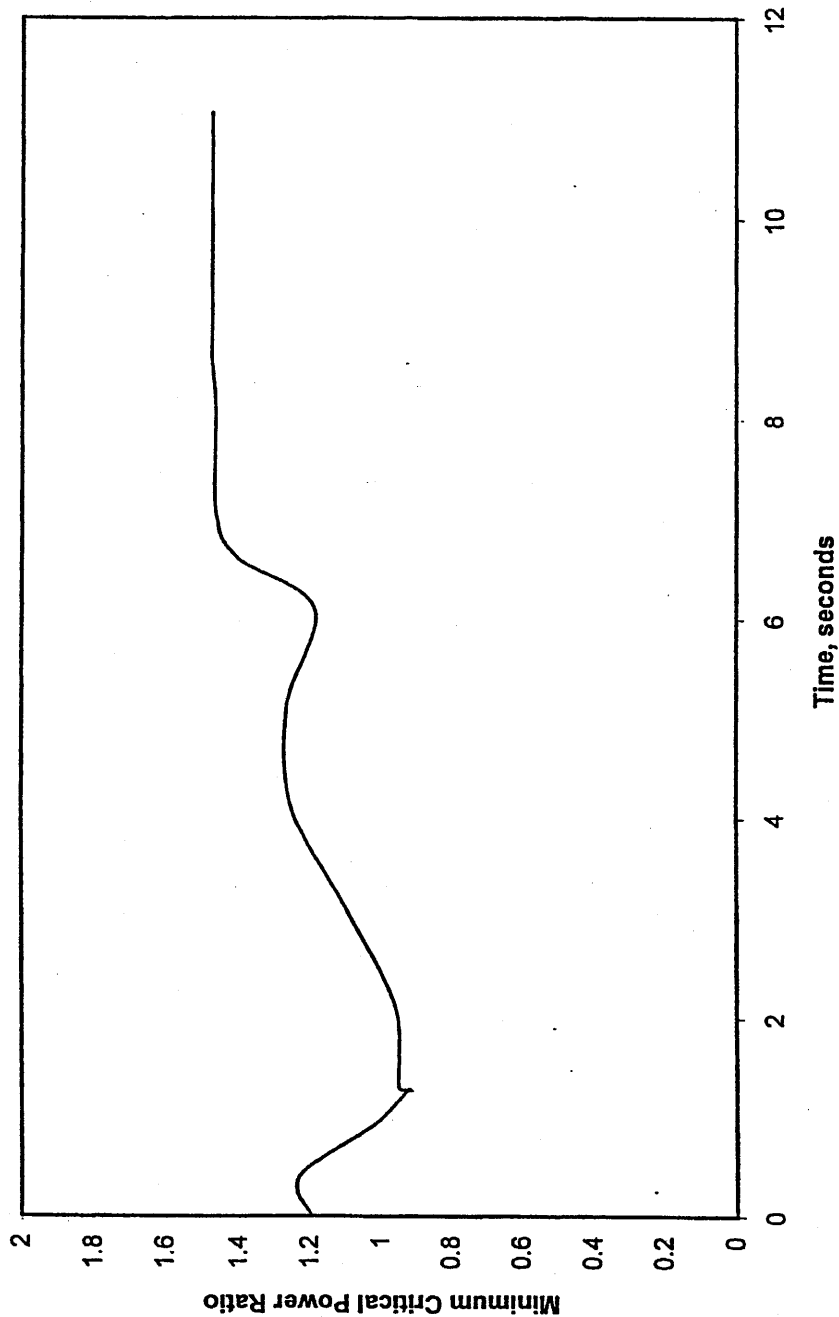


PERRY NUCLEAR POWER PLANT

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

Figure 6.3-11 (Sheet 10 of 11)

M CPR (Nominal)



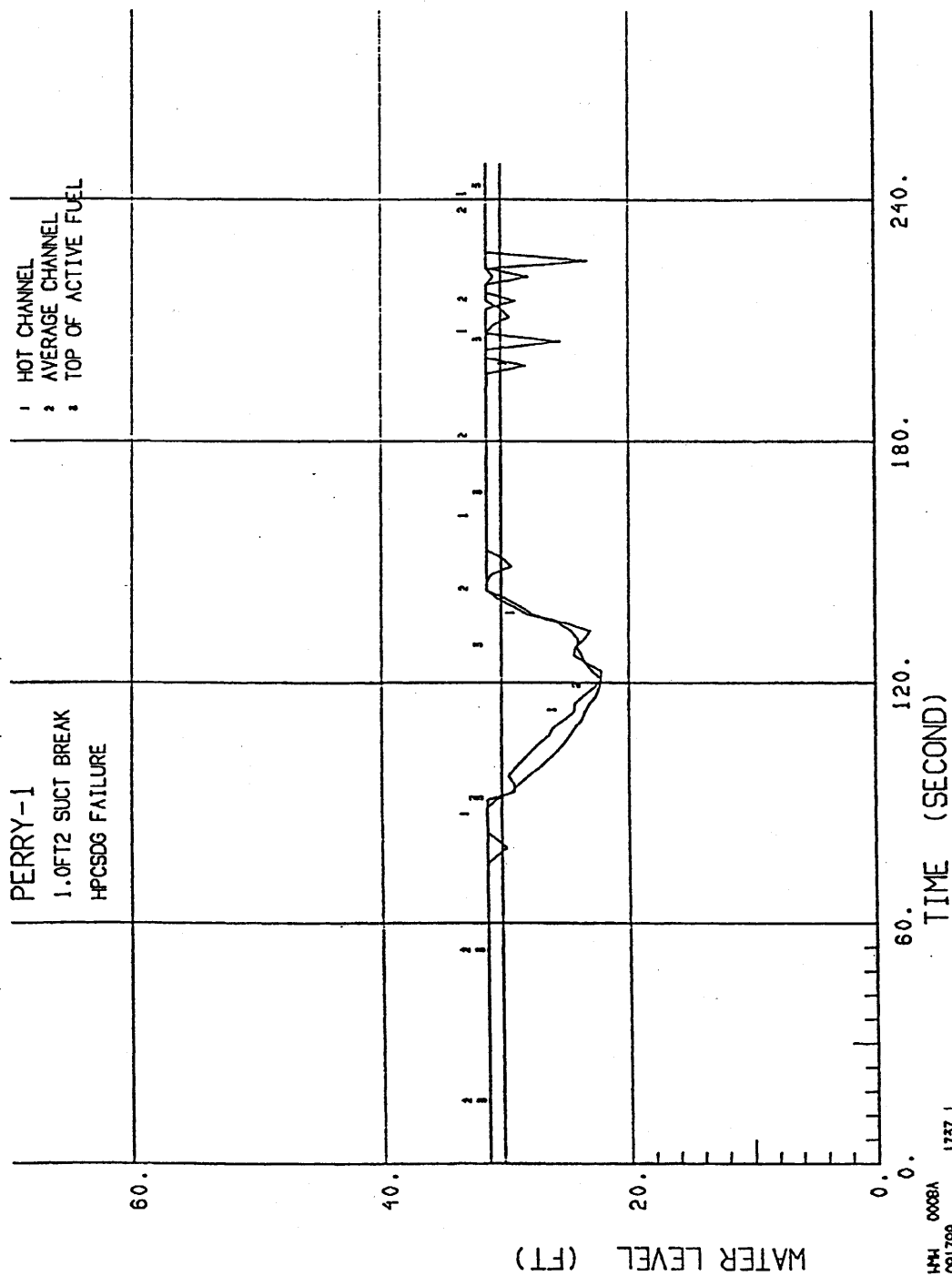
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PERRY NUCLEAR POWER PLANT

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

Figure 6.3-11 (Sheet 11 of 11)



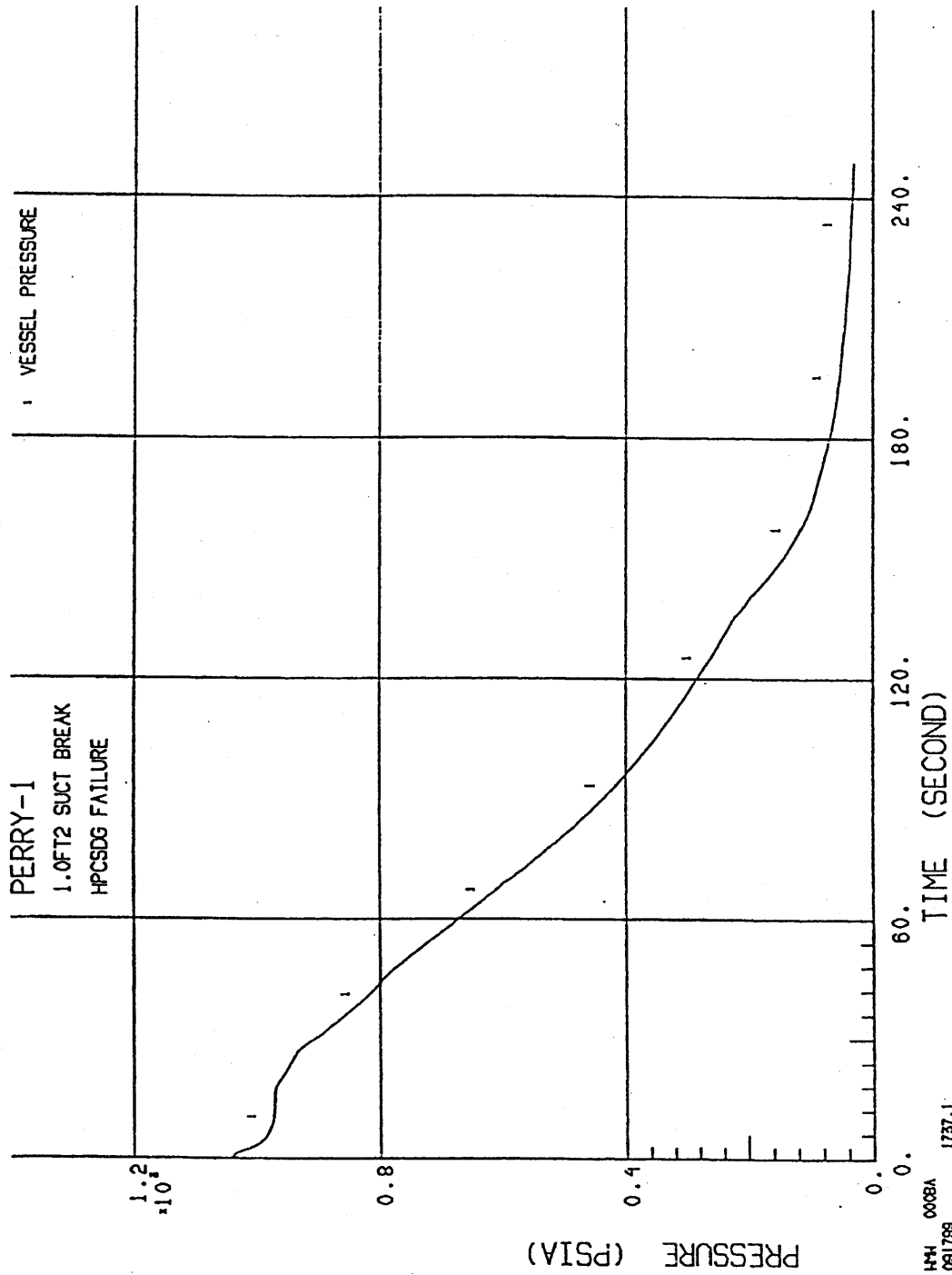
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PERRY NUCLEAR POWER PLANT

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)



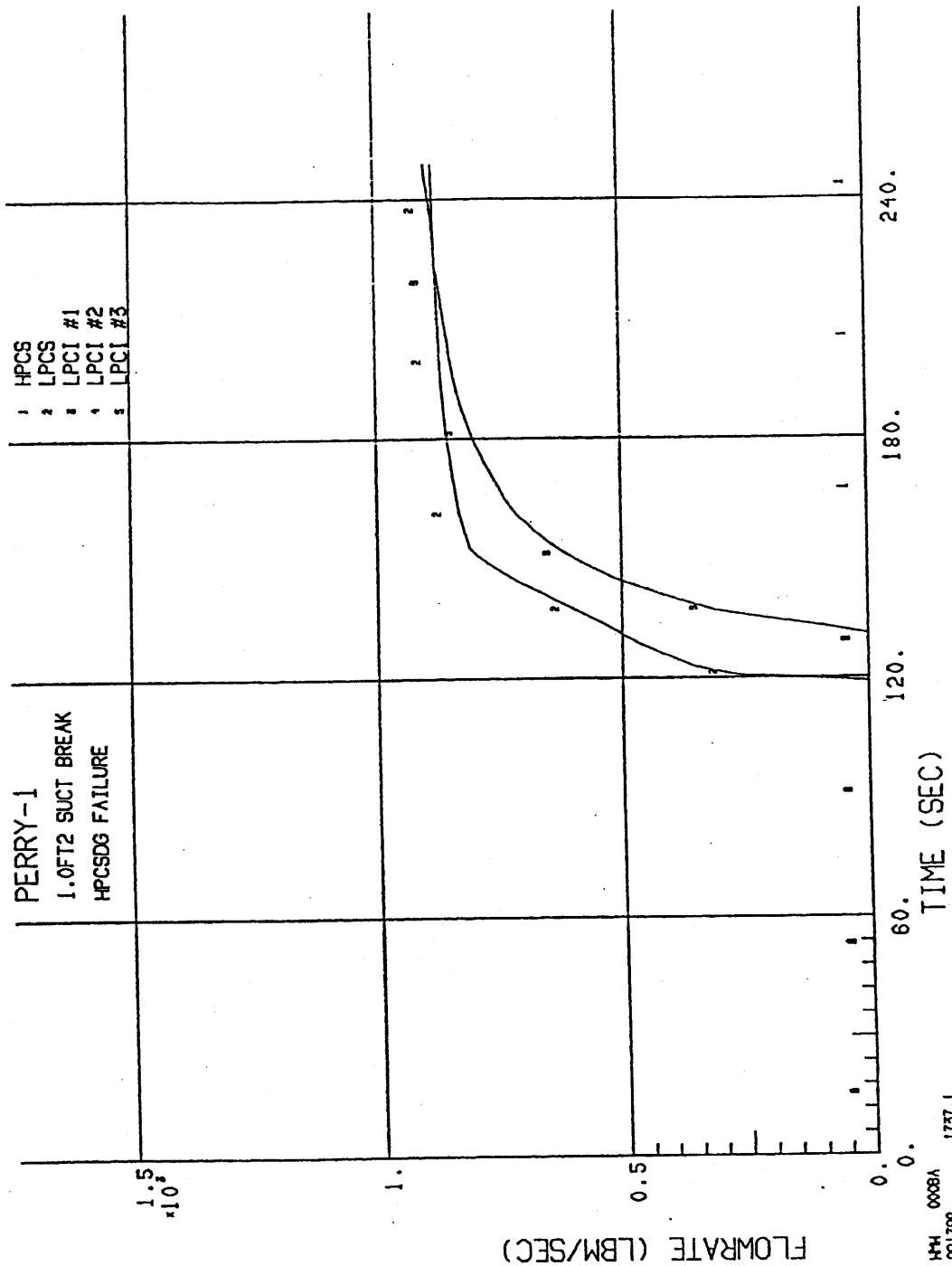
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PERRY NUCLEAR POWER PLANT

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

Figure 6.3-12 (Sheet 2 of 7)



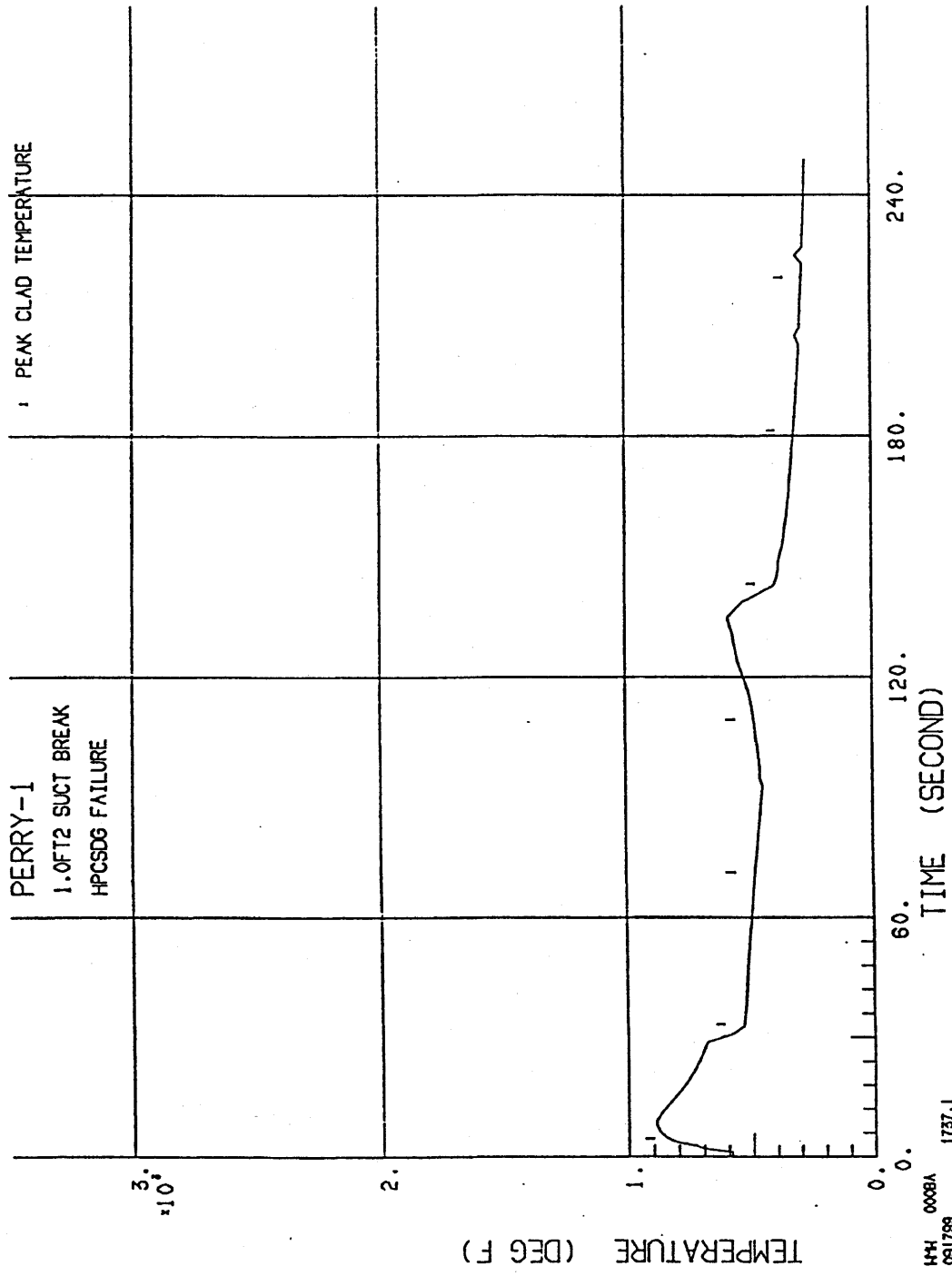
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PERRY NUCLEAR POWER PLANT

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

Figure 6.3-12 (Sheet 5 of 7)



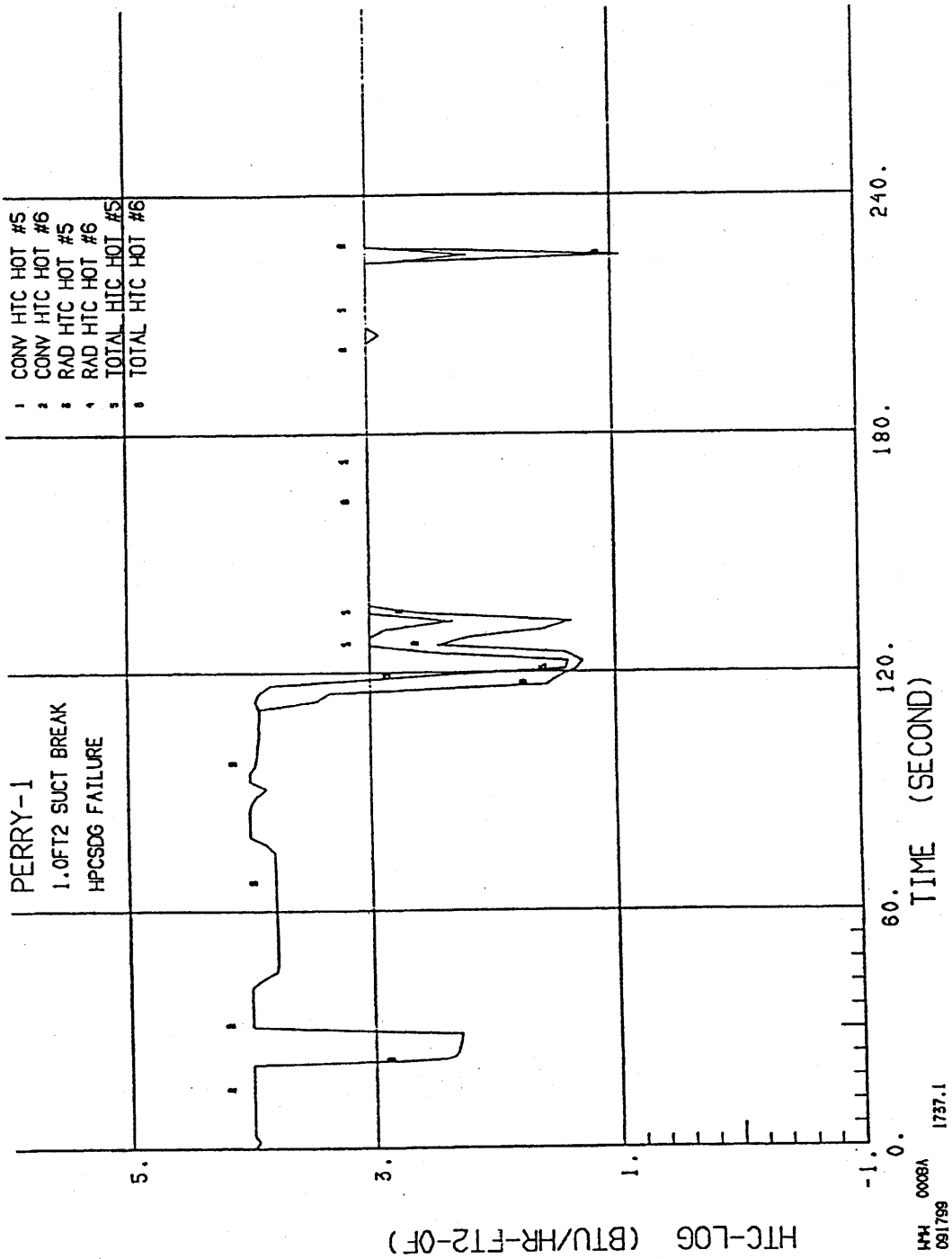
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PERRY NUCLEAR POWER PLANT

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)



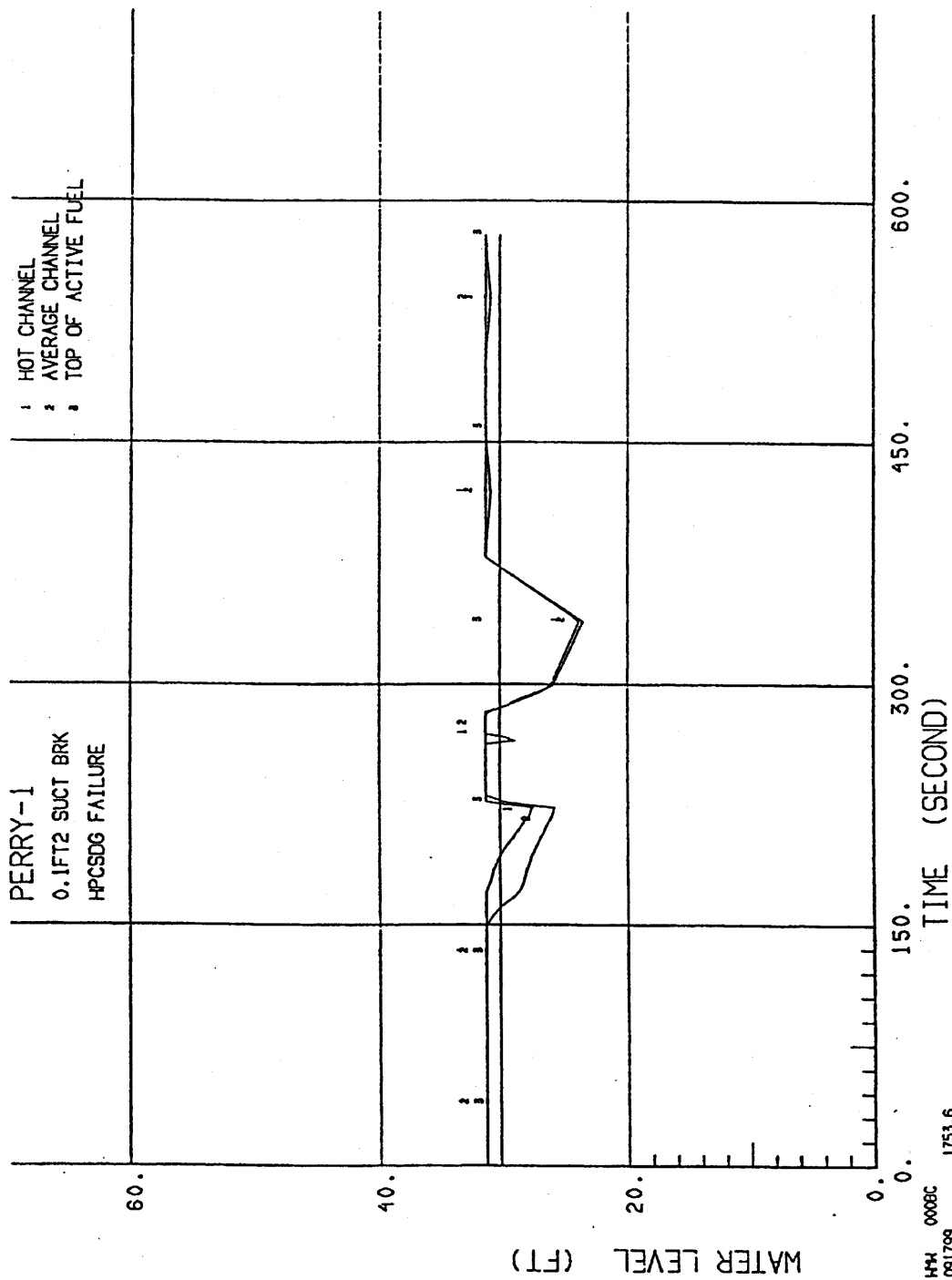
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PERRY NUCLEAR POWER PLANT

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)



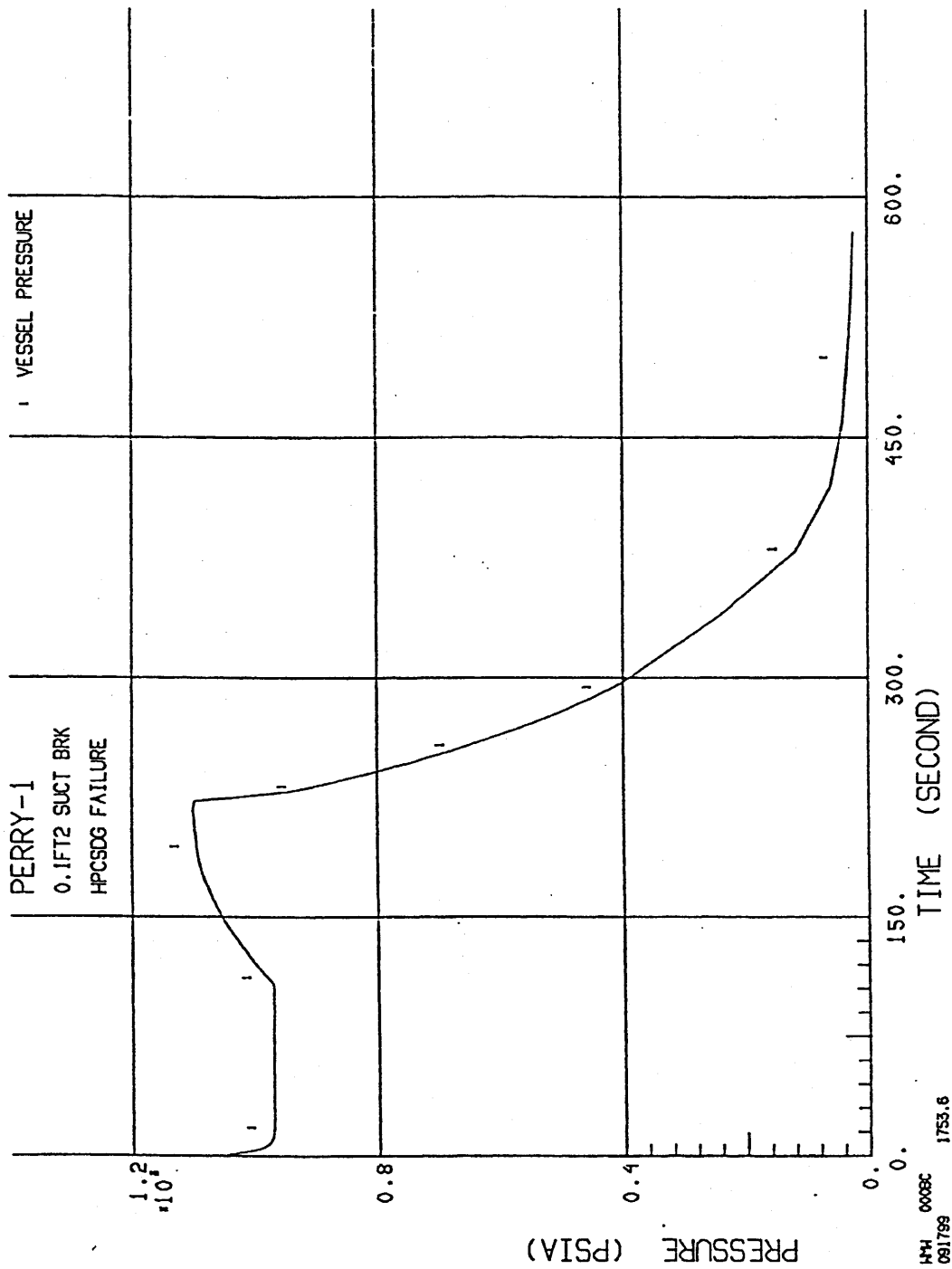
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PERRY NUCLEAR POWER PLANT

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)



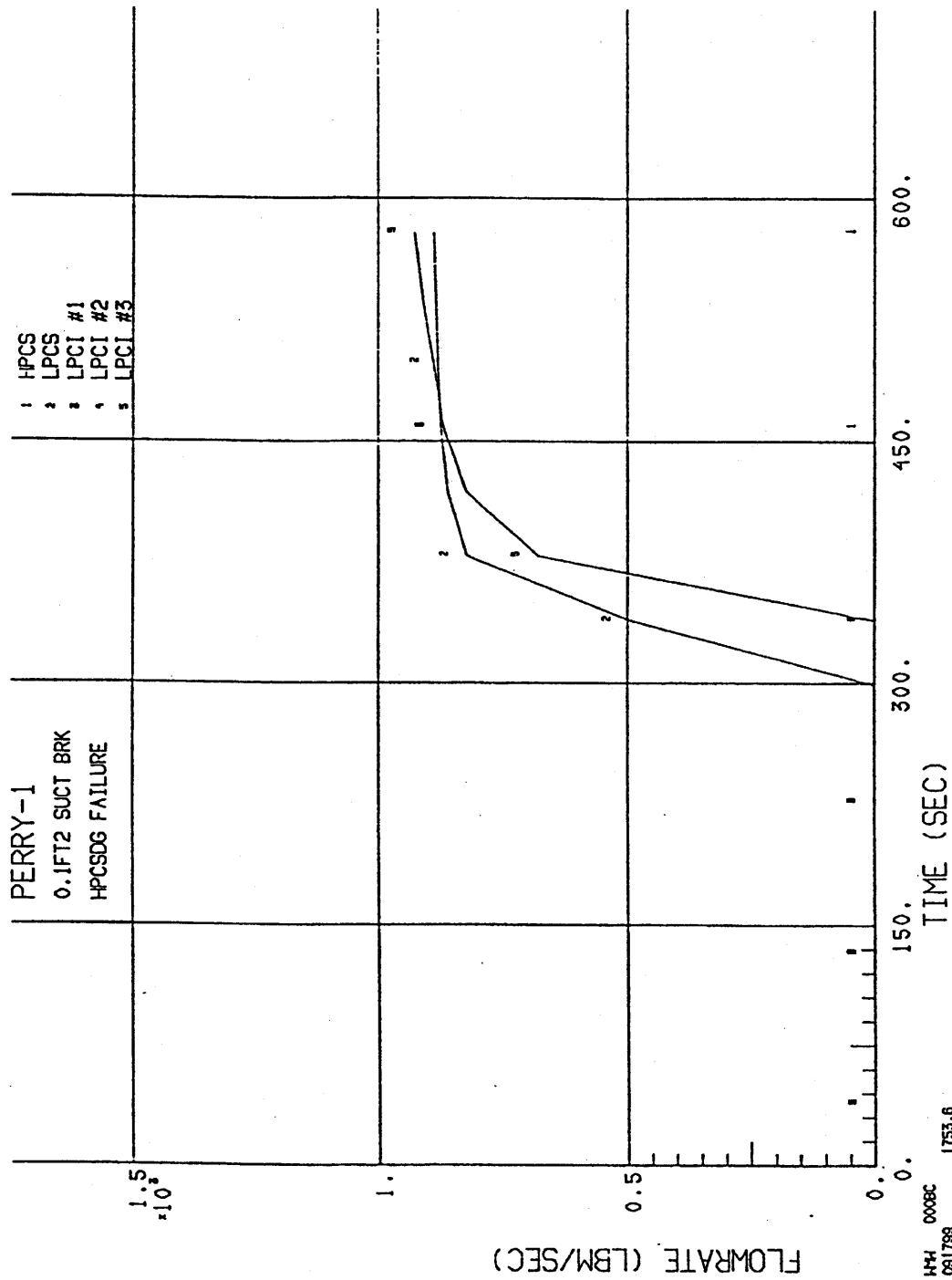
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PERRY NUCLEAR POWER PLANT

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

Figure 6.3-13 (Sheet 2 of 7)



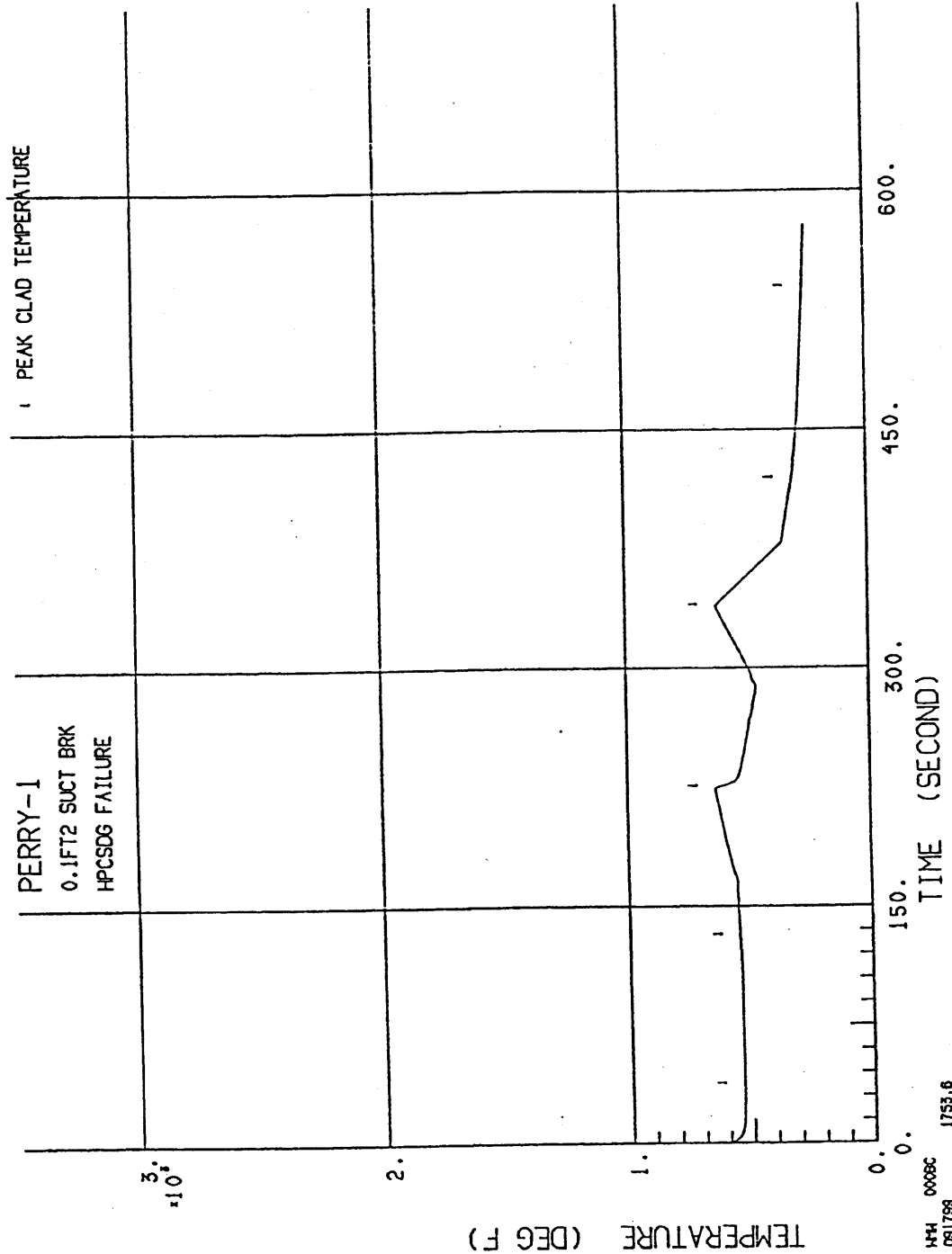
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
PERRY NUCLEAR POWER PLANT

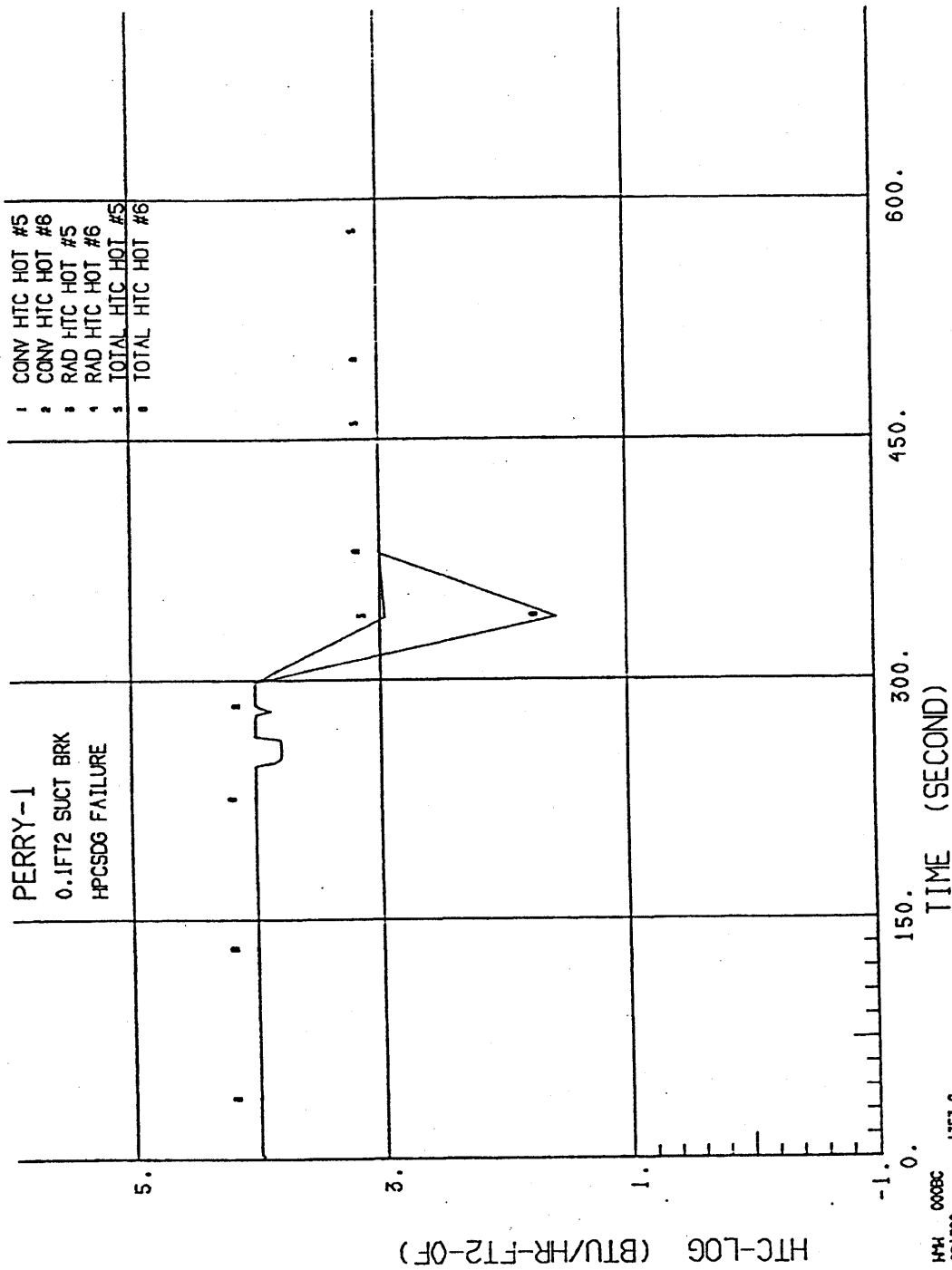
ECCS Flow - 0.1 ft² Suction -
 HPCS D/G Failure (Nominal)
 LPCS + 3LPCI + ADS Available

Figure 6.3-13 (Sheet 5 of 7)




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	PERRY NUCLEAR POWER PLANT
Peak Cladding Temperature (GE11) - 0.1 ft ² Suction - HPCS D/G Failure (Nominal) LPCS + 3LPCI + ADS Available	
Figure 6.3-13 (Sheet 6 of 7)	



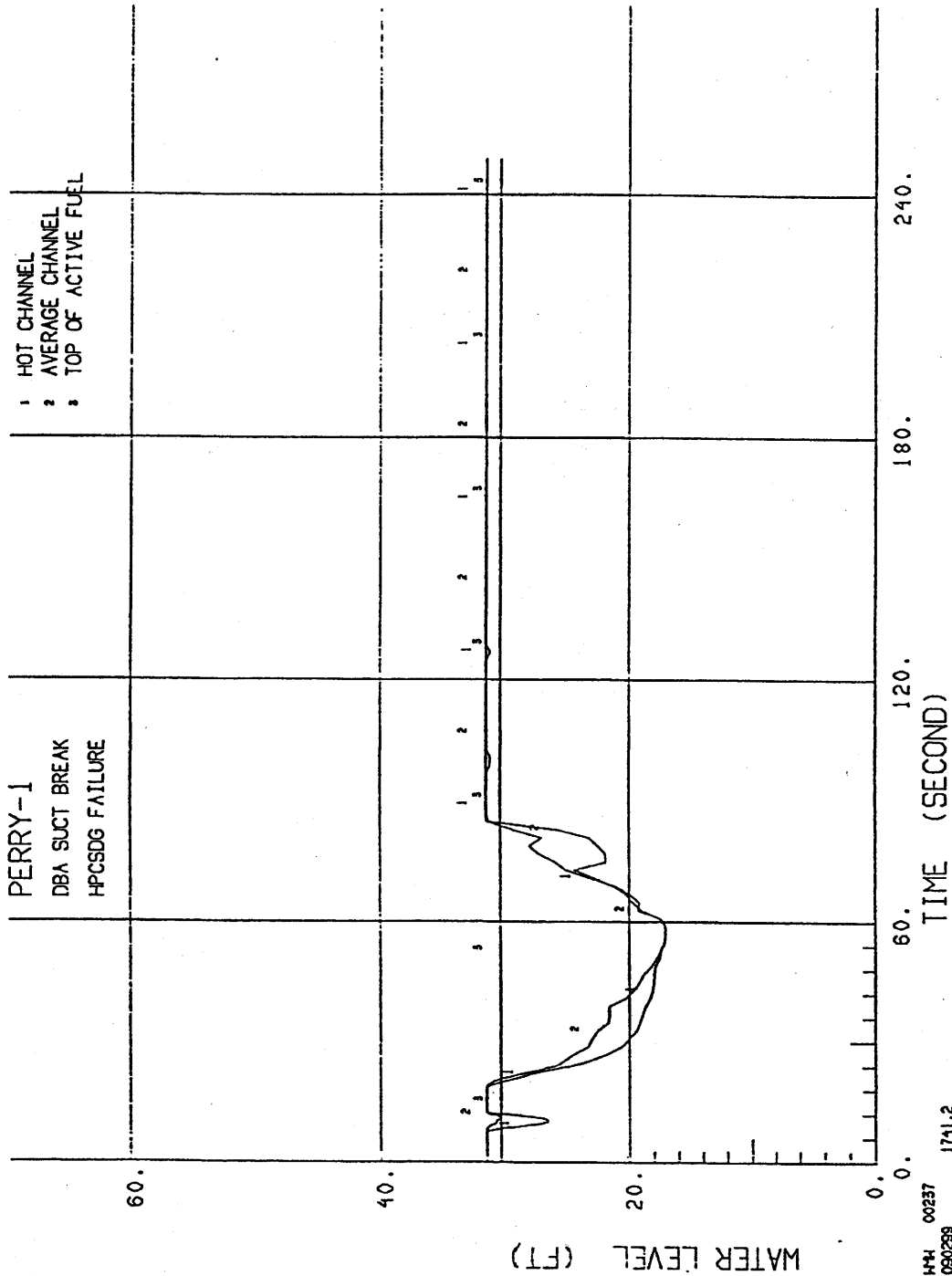
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PERRY NUCLEAR POWER PLANT

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)



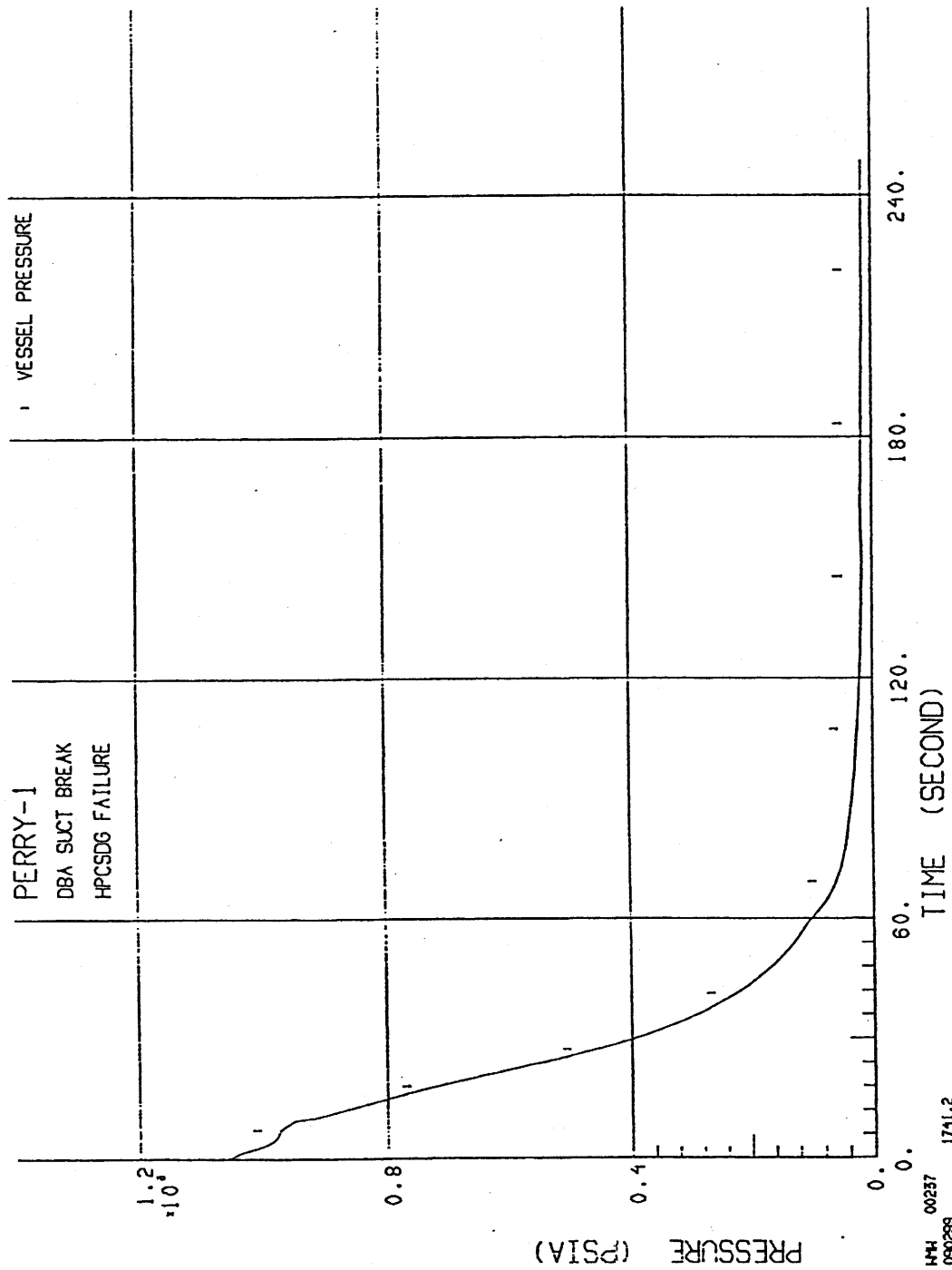
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PERRY NUCLEAR POWER PLANT

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)



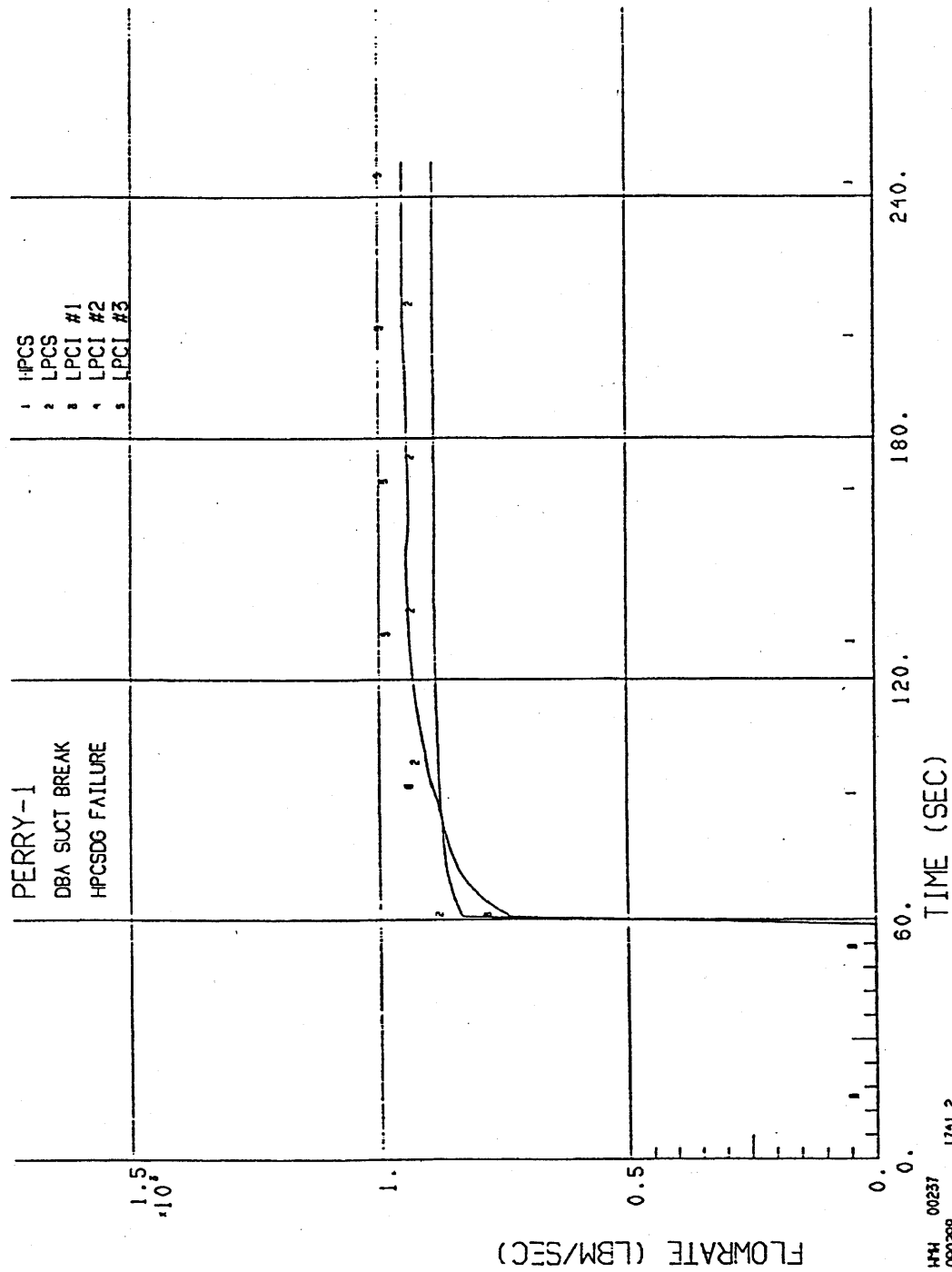
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PERRY NUCLEAR POWER PLANT

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

Figure 6.3-14 (Sheet 2 of 11)



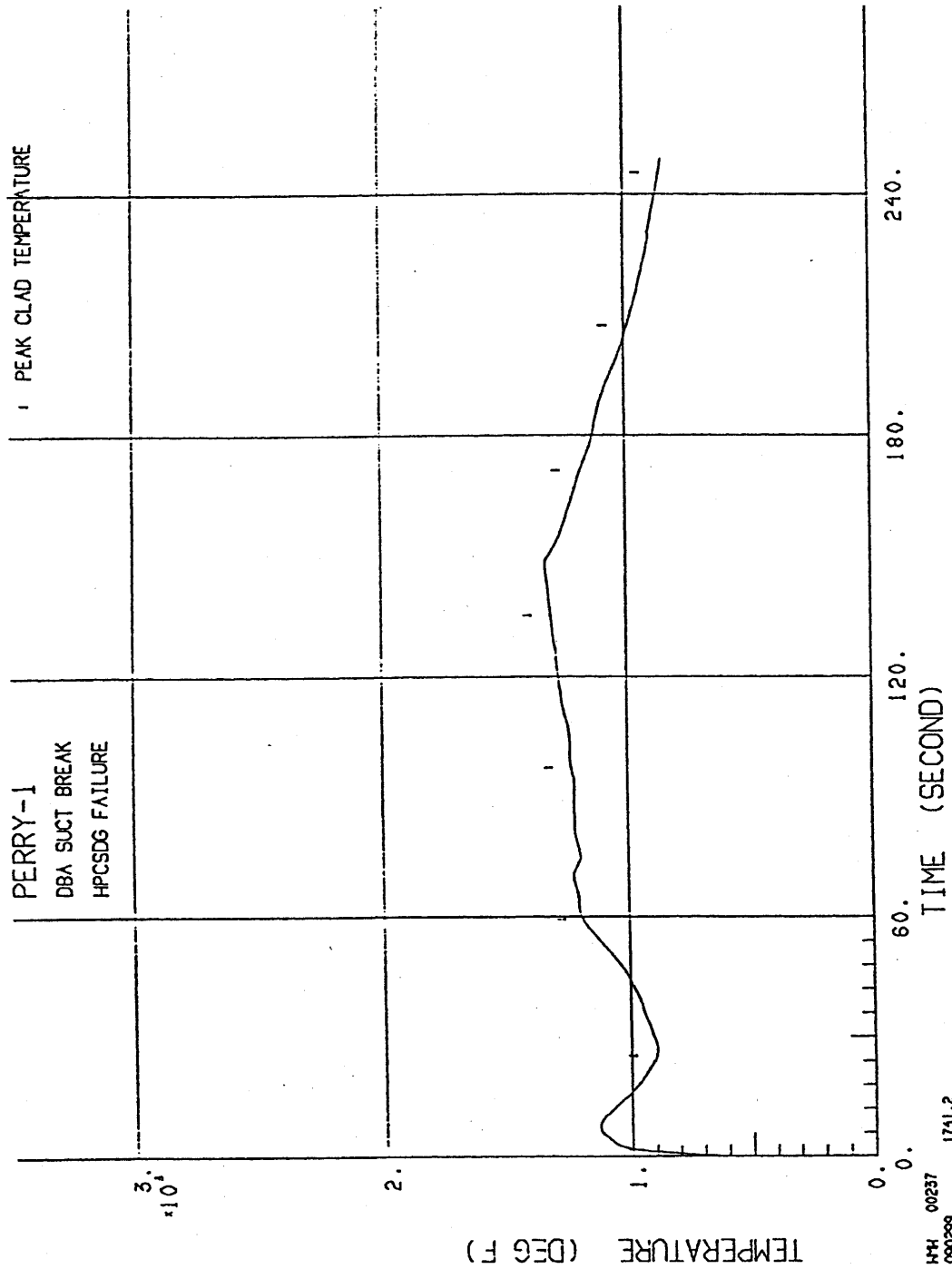
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PERRY NUCLEAR POWER PLANT

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

Figure 6.3-14 (Sheet 5 of 11)



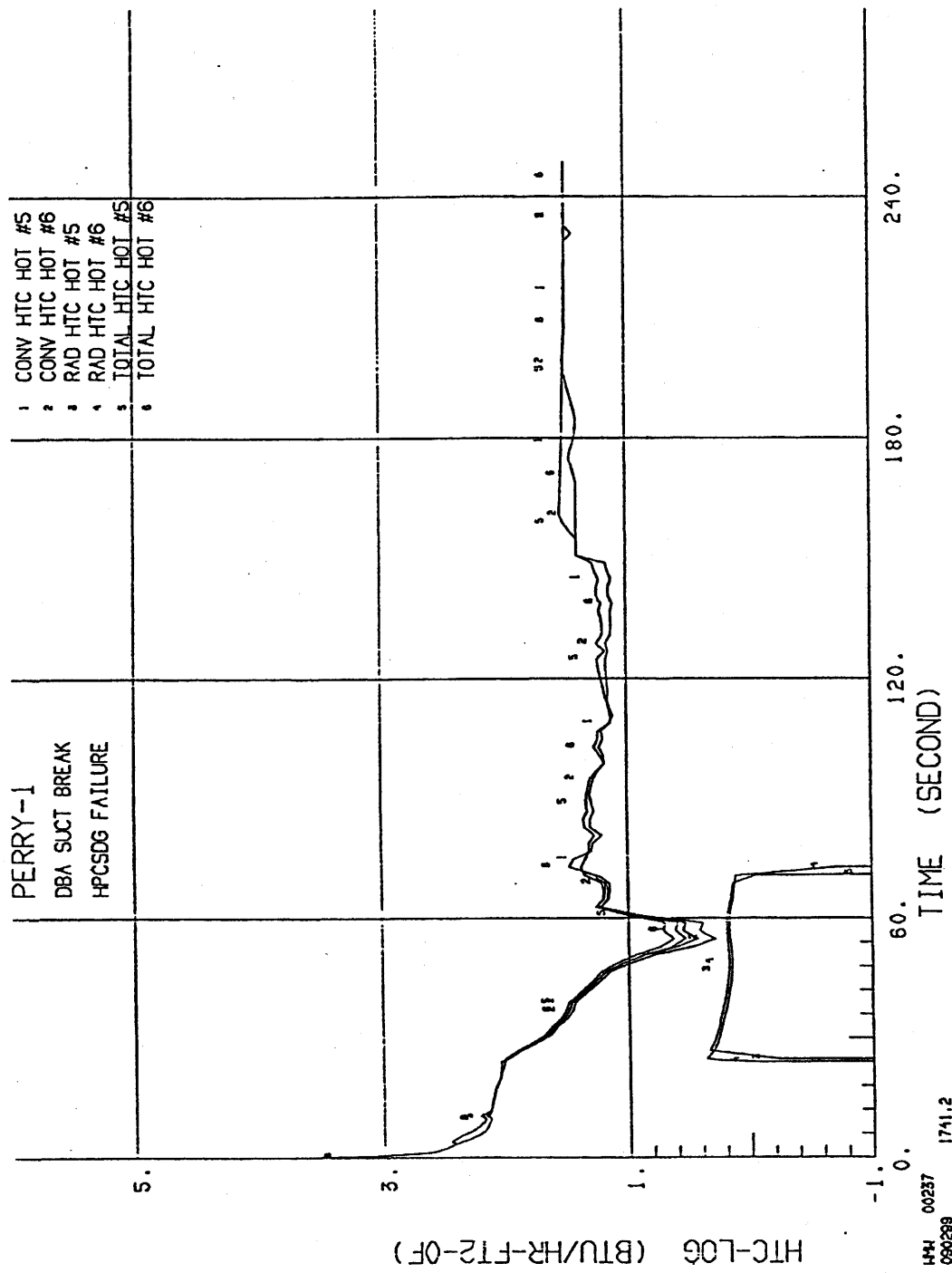
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PERRY NUCLEAR POWER PLANT

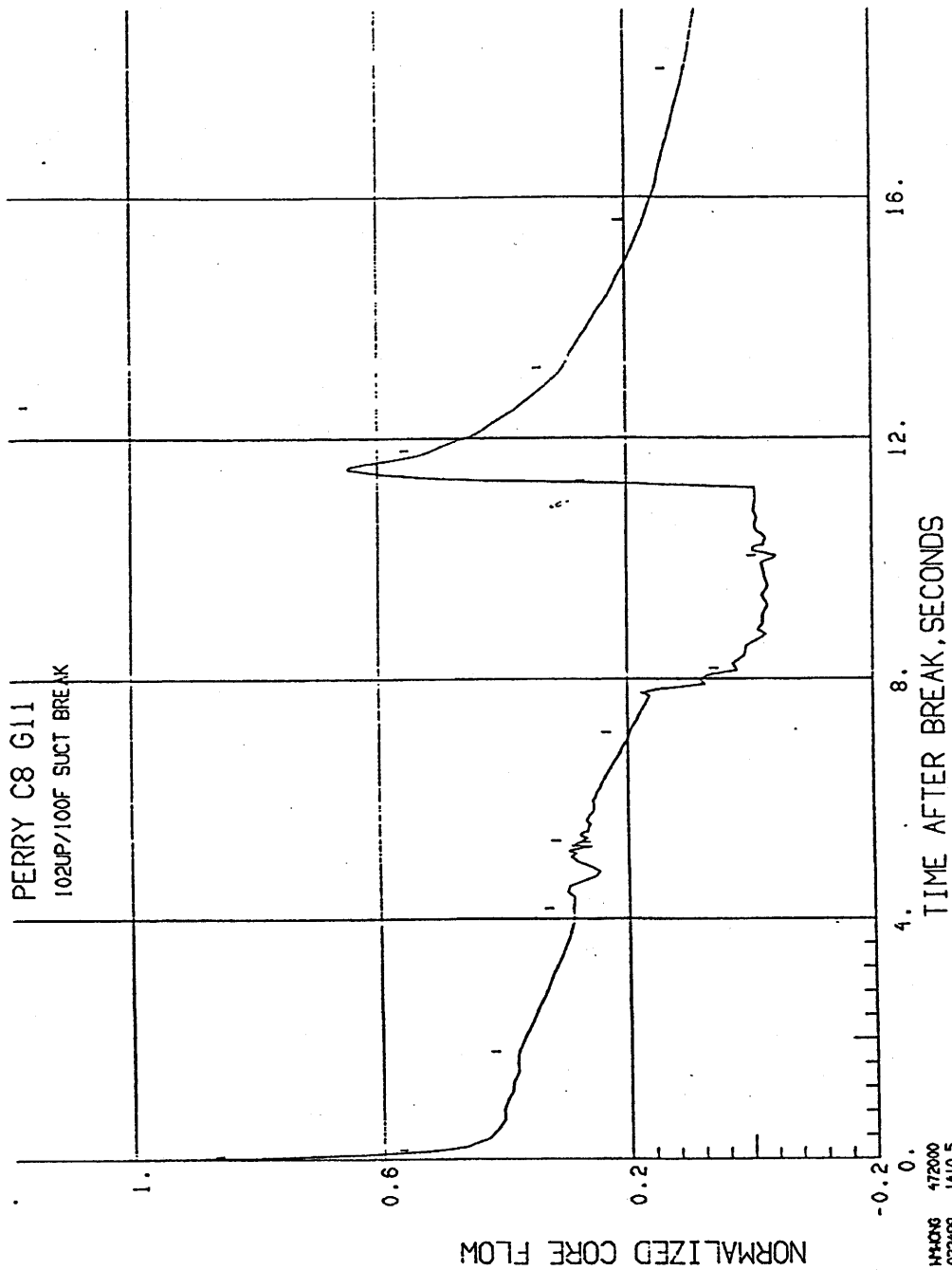
Peak Cladding Temperature
(GE11) - DBA Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-14 (Sheet 6 of 11)



(Rev. 12 1/03)

	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)

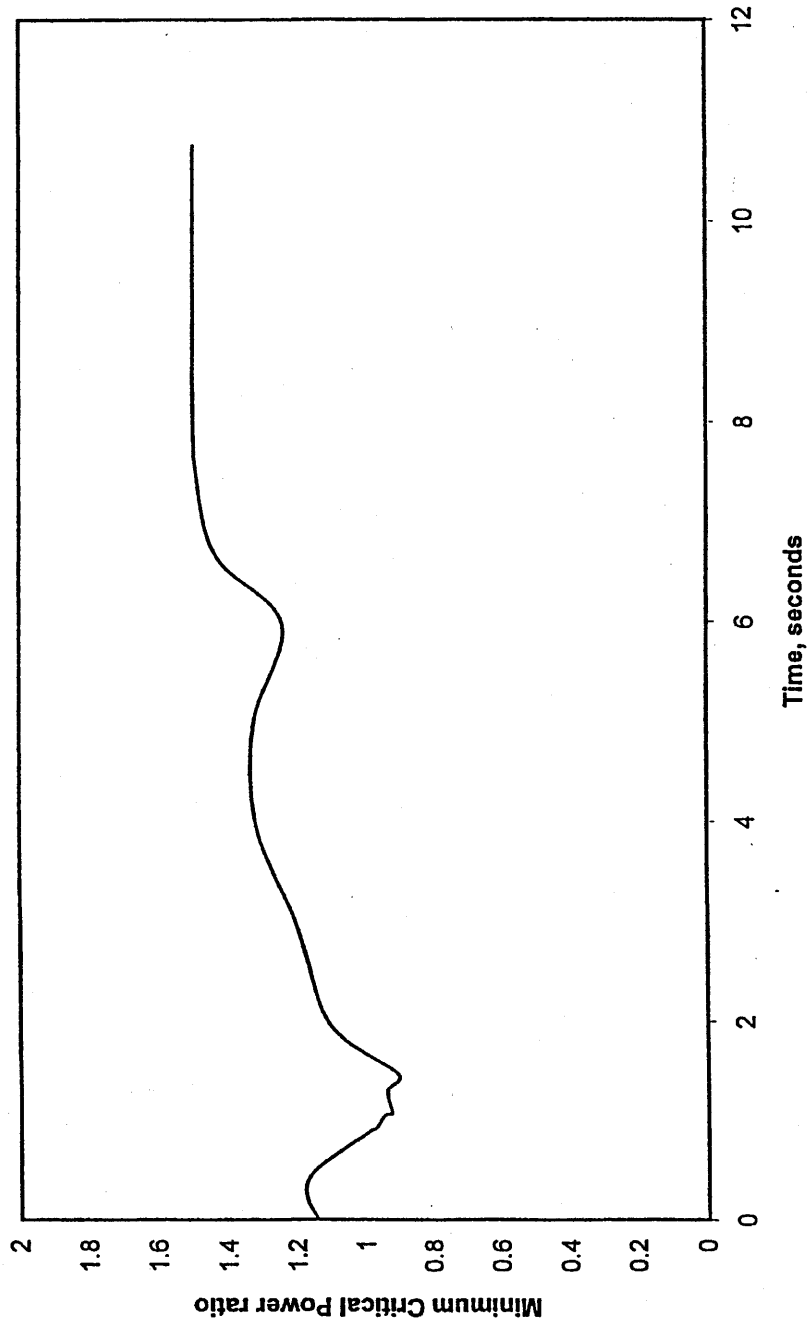


PERRY NUCLEAR POWER PLANT

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

Figure 6.3-14 (Sheet 10 of 11)

M CPR (Appendix K)



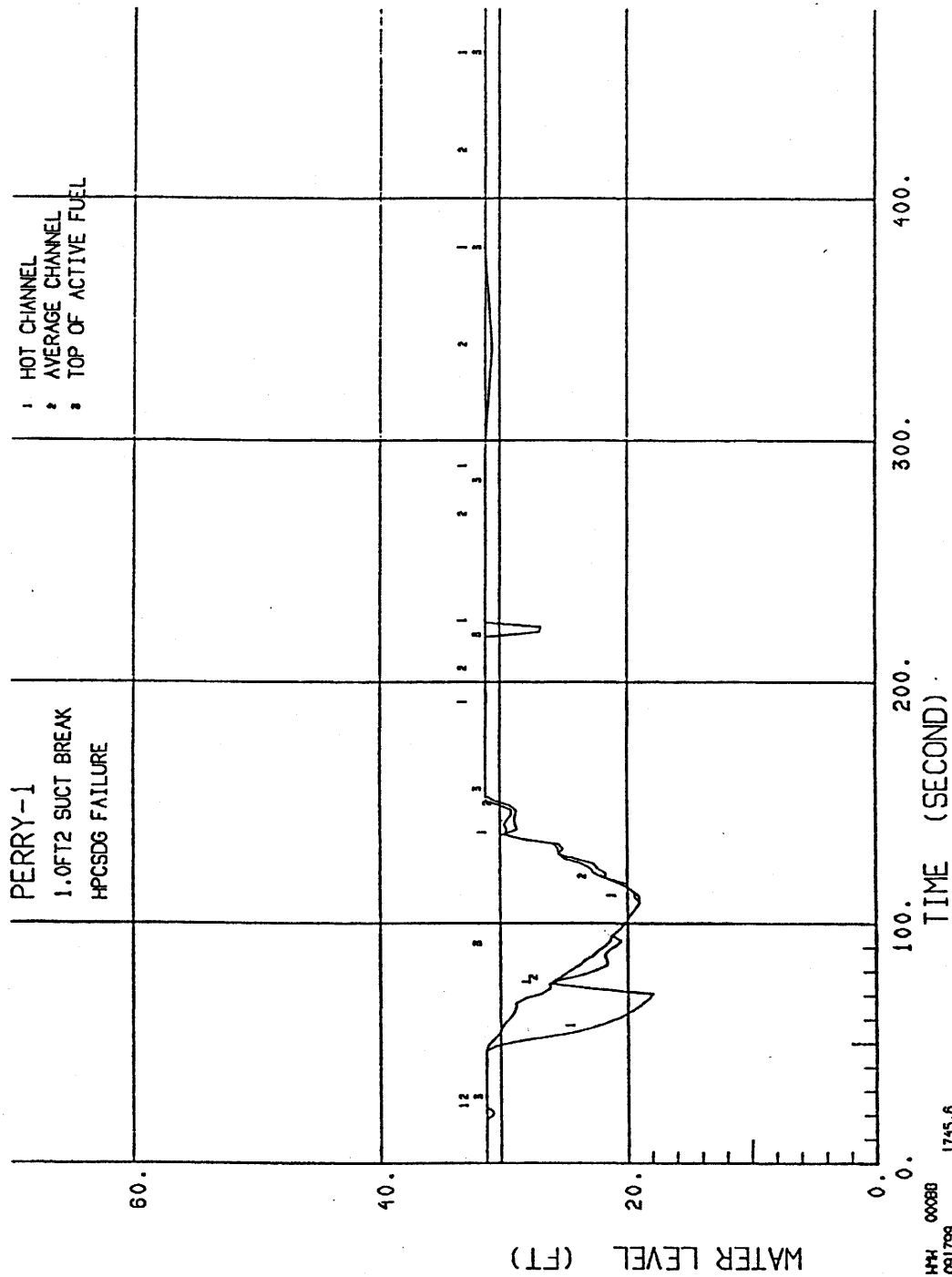
(Rev. 12 1/03)



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)



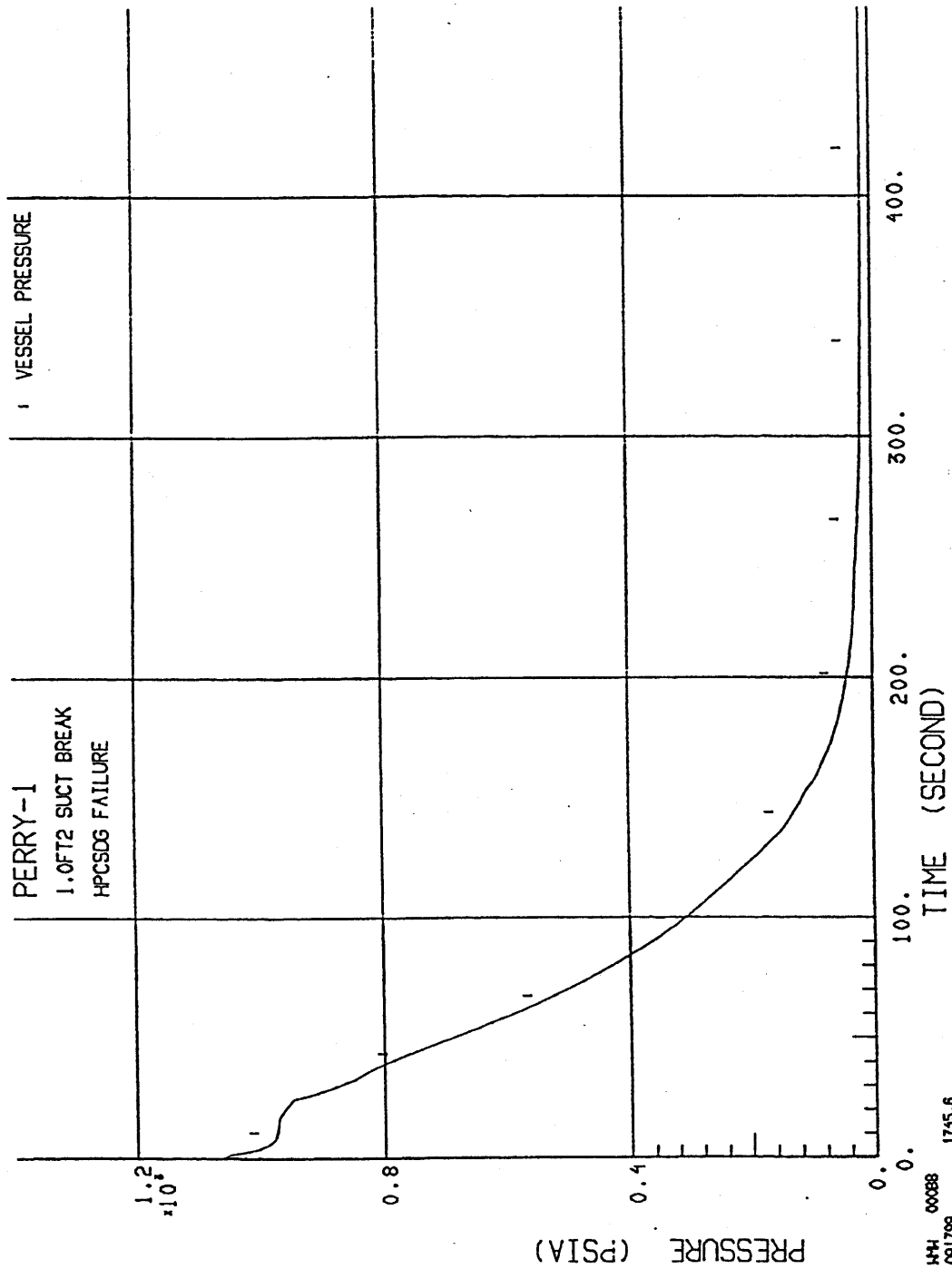
(Rev. 12 1/03)



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)



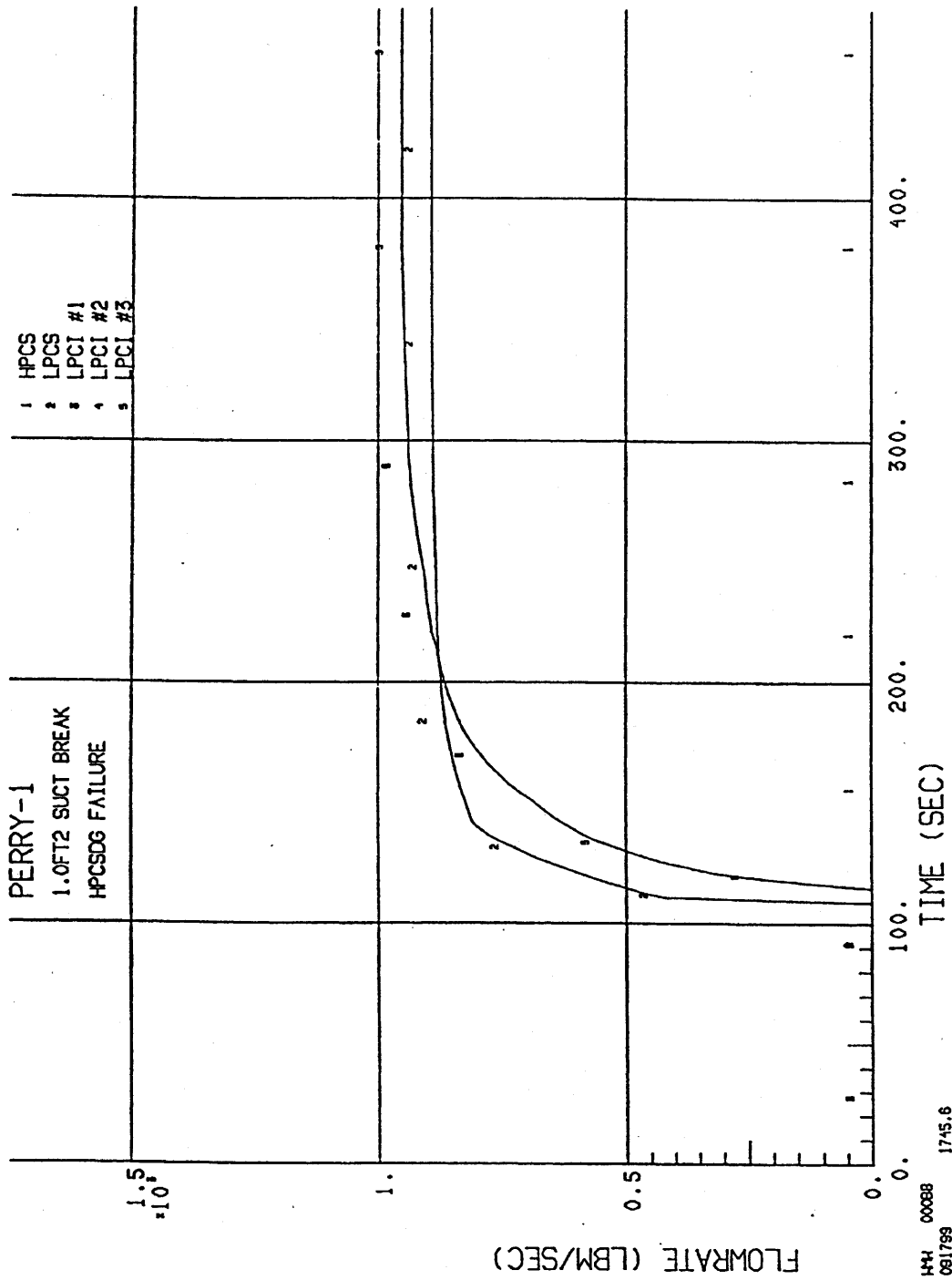
(Rev. 12 1/03)



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)



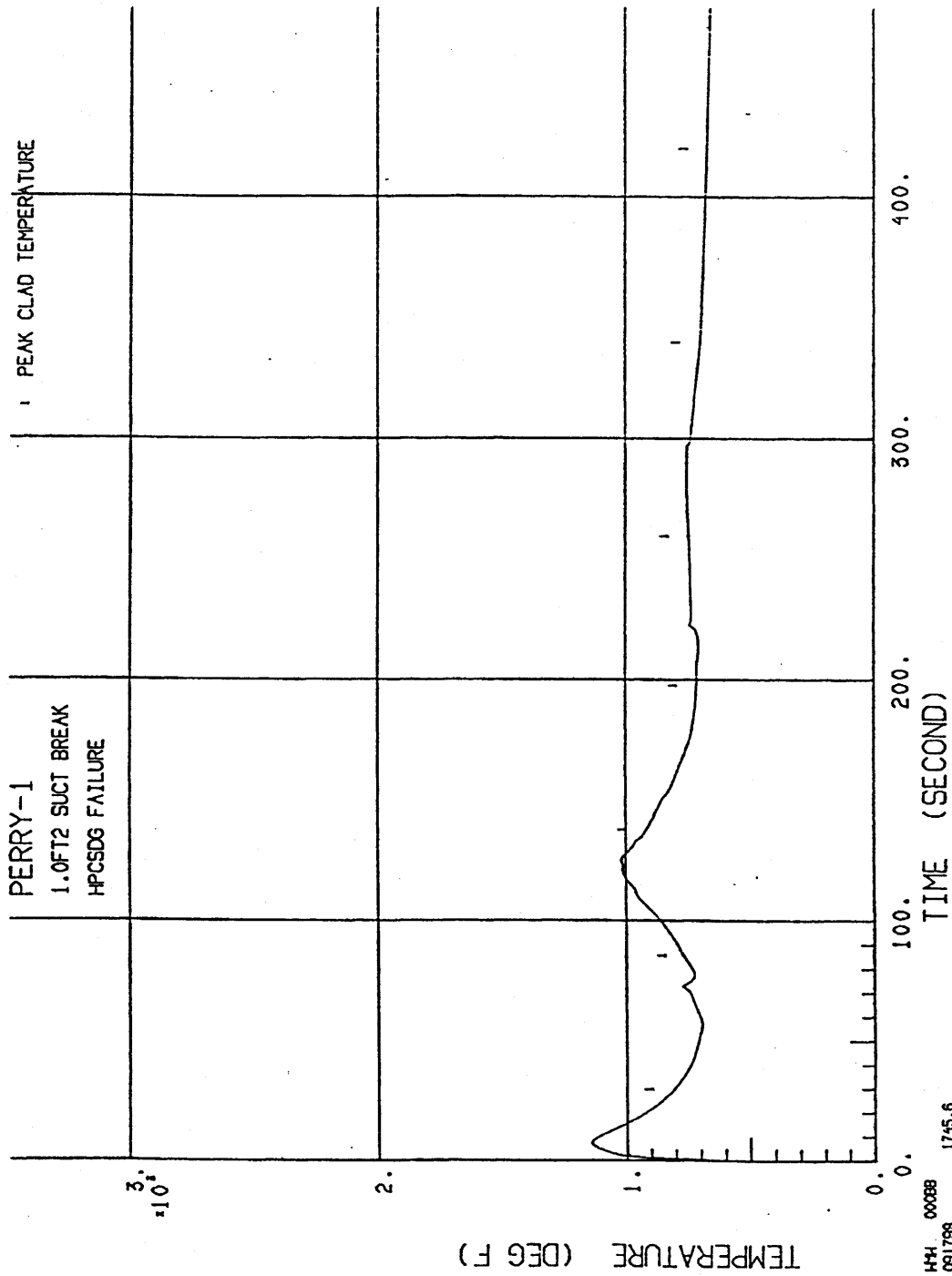
(Rev. 12 1/03)



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)



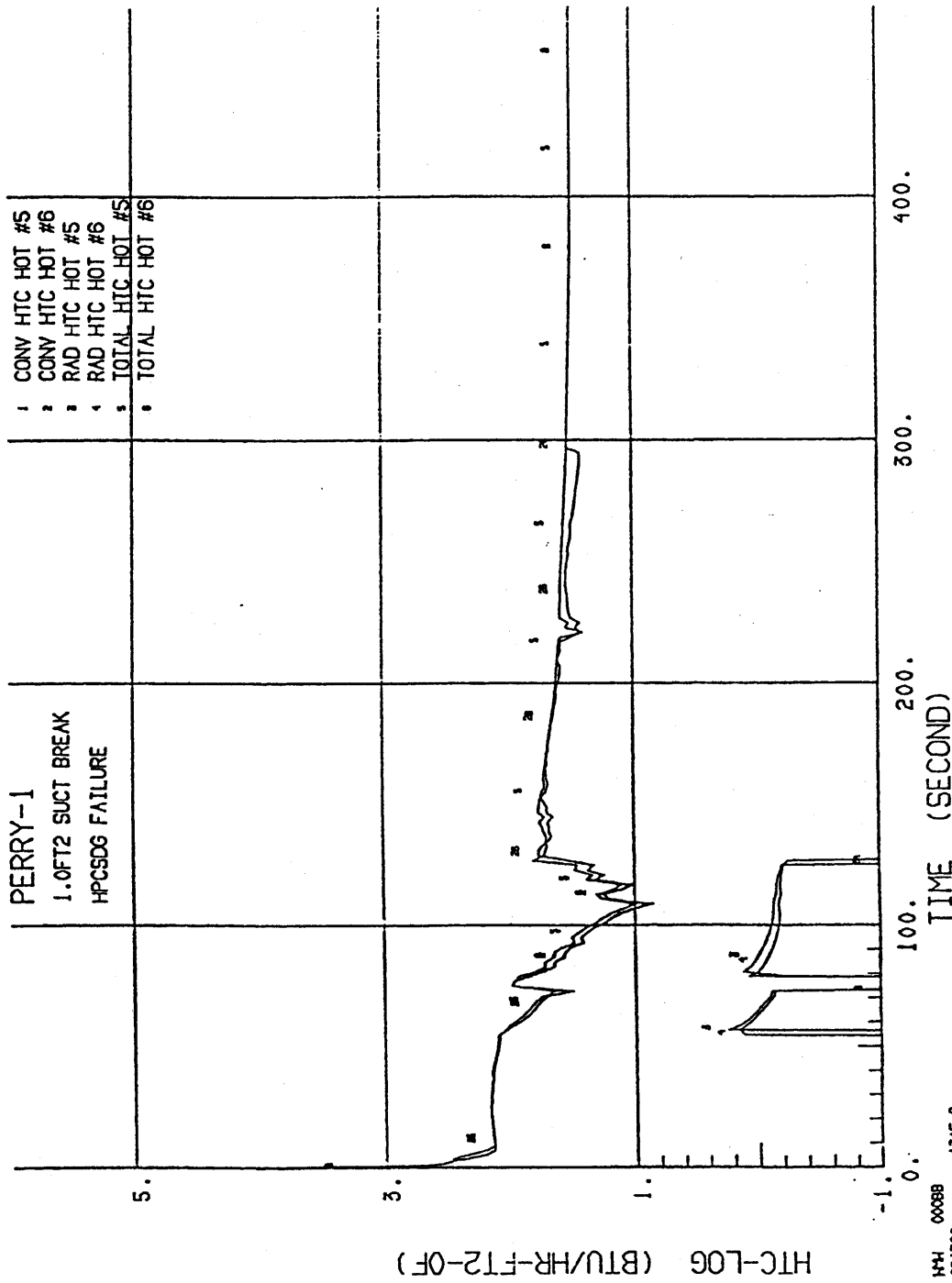
(Rev. 12 1/03)




PERRY NUCLEAR POWER PLANT

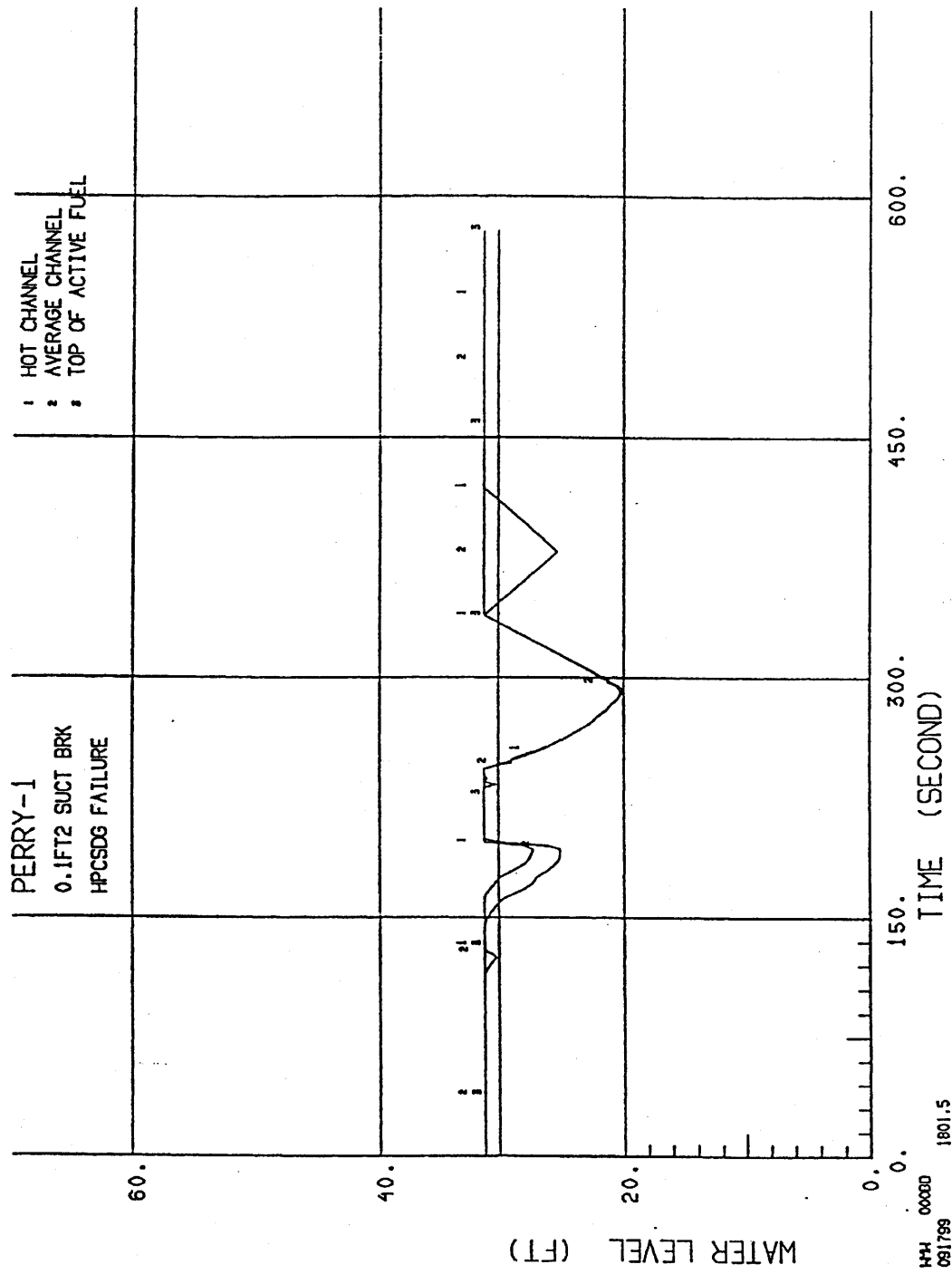
Peak Cladding Temperature
(GE11) - 1.0 ft² Suction -
HPCS D/G Failure (Appendix K)
LPCS + 3LPCI + ADS Available

Figure 6.3-15 (Sheet 6 of 7)



(Rev. 12 1/03)

	PERRY NUCLEAR POWER PLANT
Heat Transfer Coefficient (GE11) - 1.0 ft ² Suction - HPCS D/G Failure (Appendix K) LPCS + 3LPCI + ADS Available	
Figure 6.3-15 (Sheet 7 of 7)	



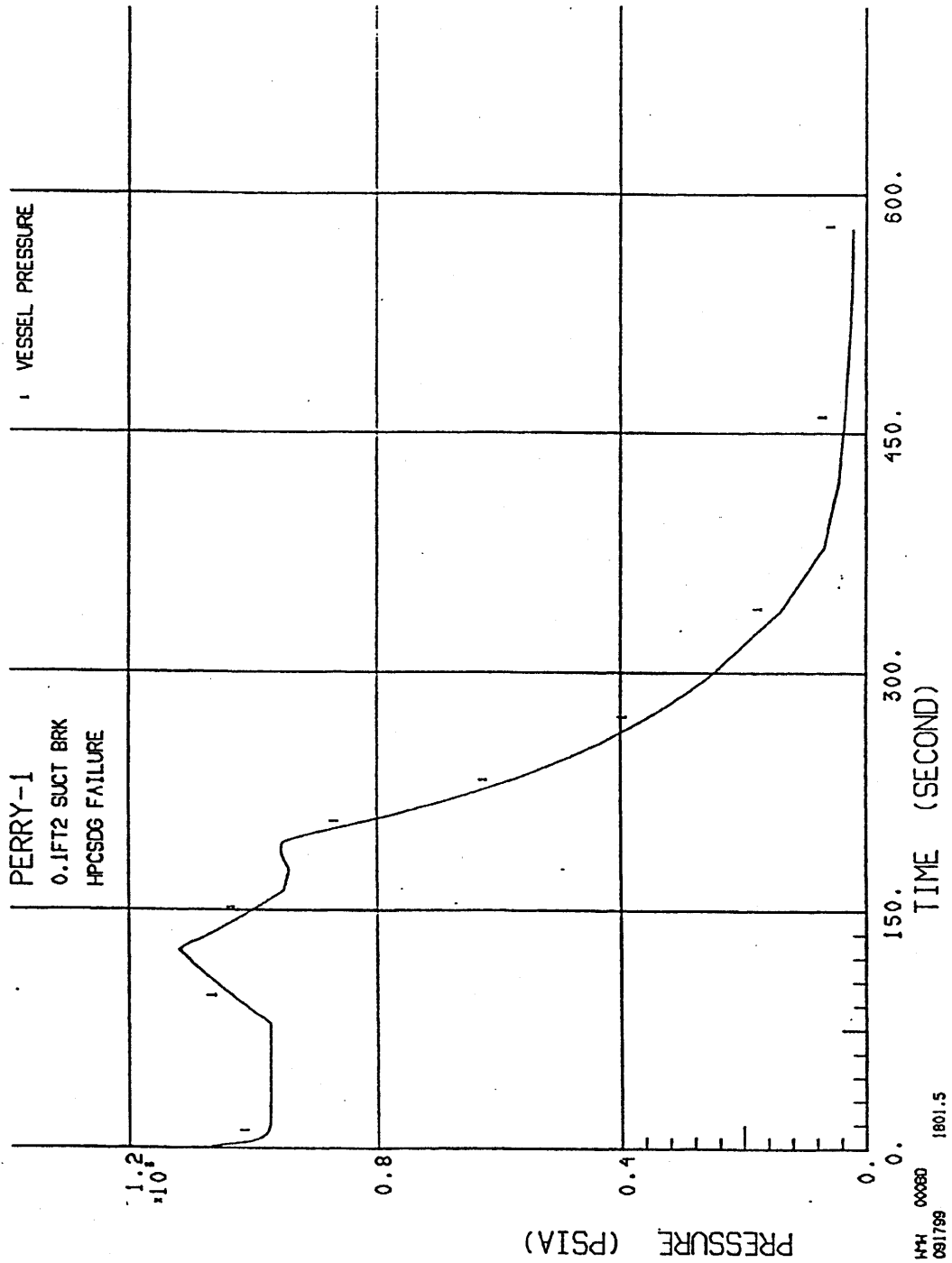
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

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

Figure 6.3-16 (Sheet 1 of 7)



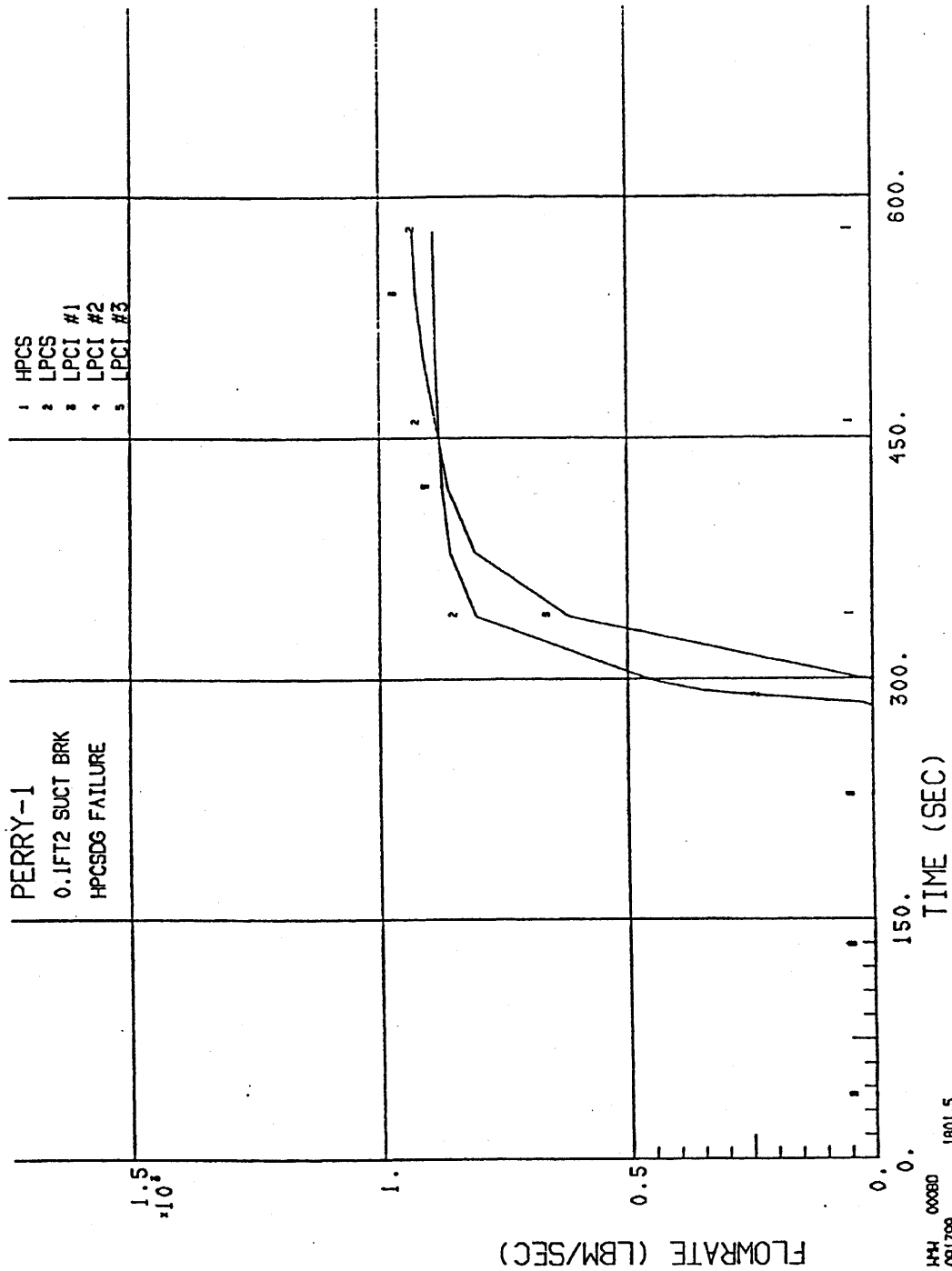
(Rev. 12 1/03)



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)



HH 00080 1801.5
09/1799

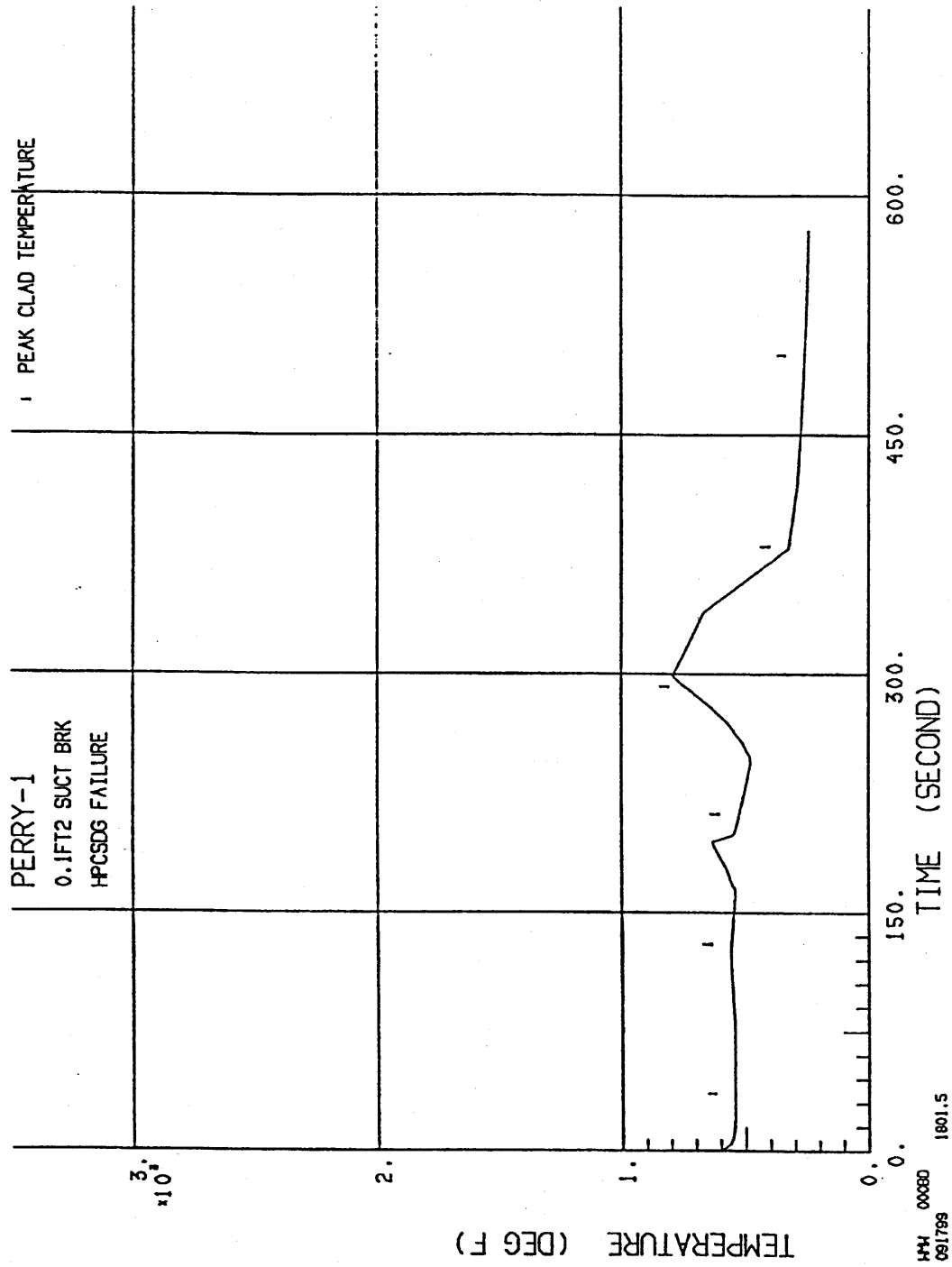
(Rev. 12 1/03)



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)



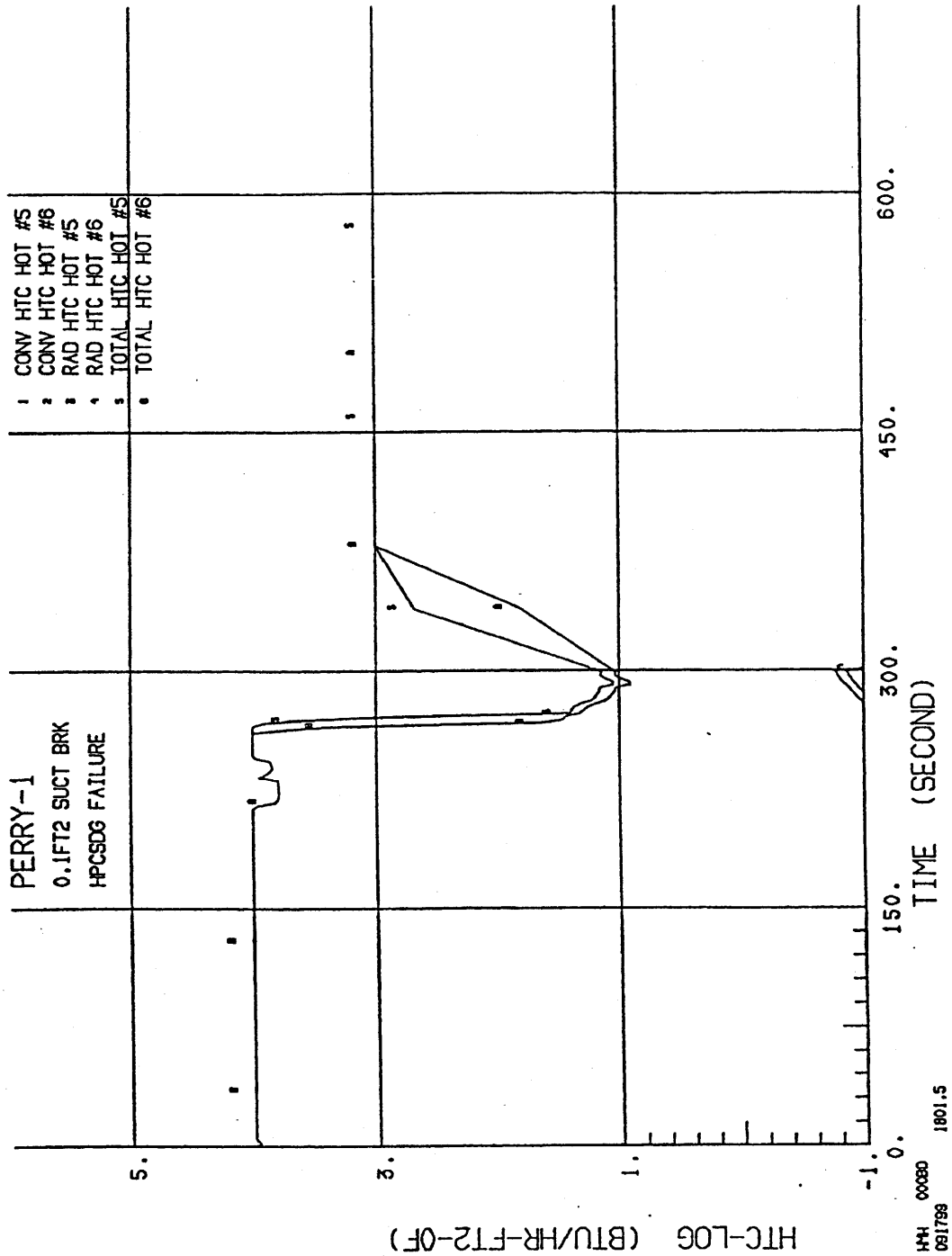
(Rev. 12 1/03)



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)



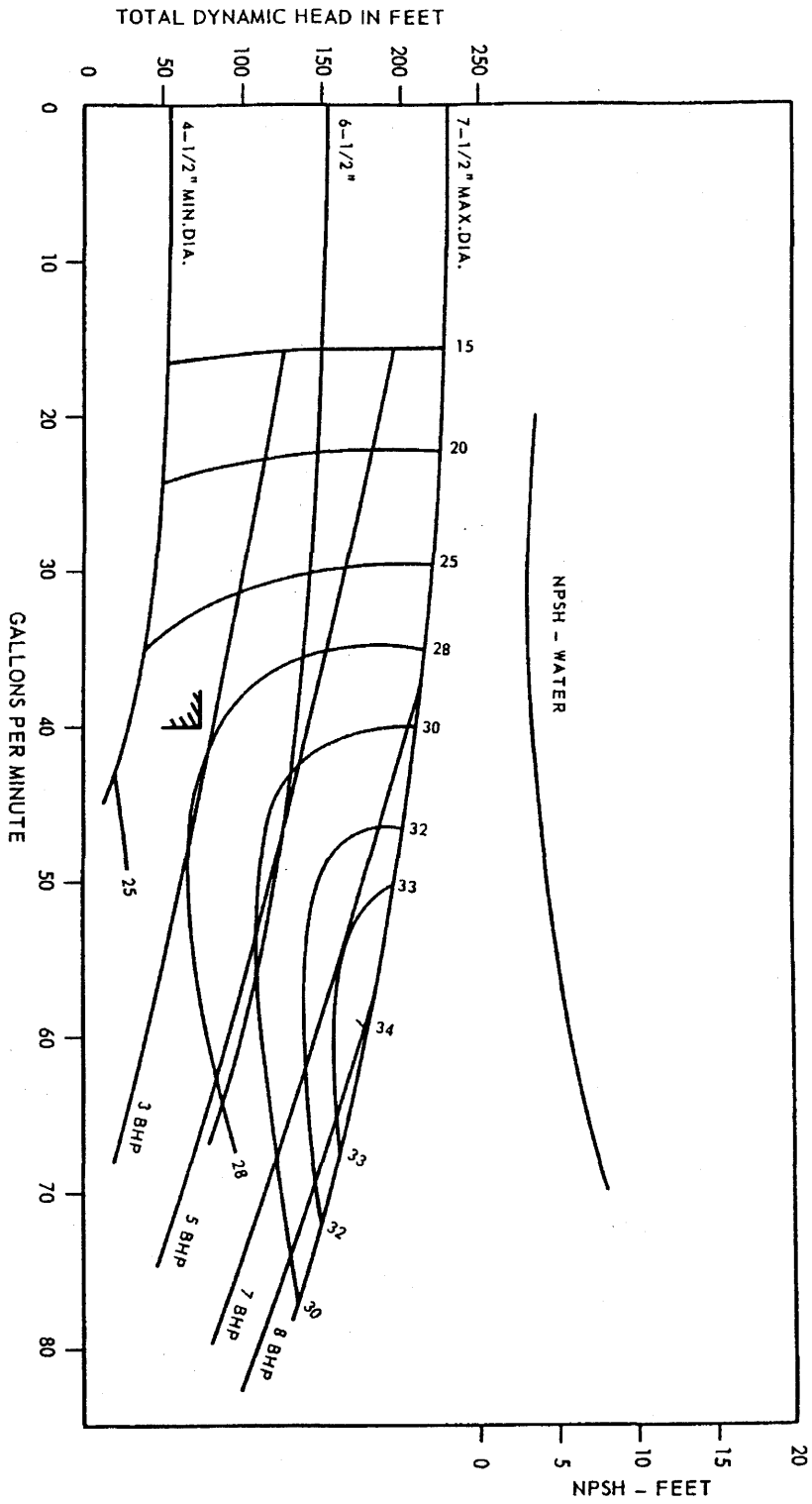
(Rev. 12 1/03)



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)

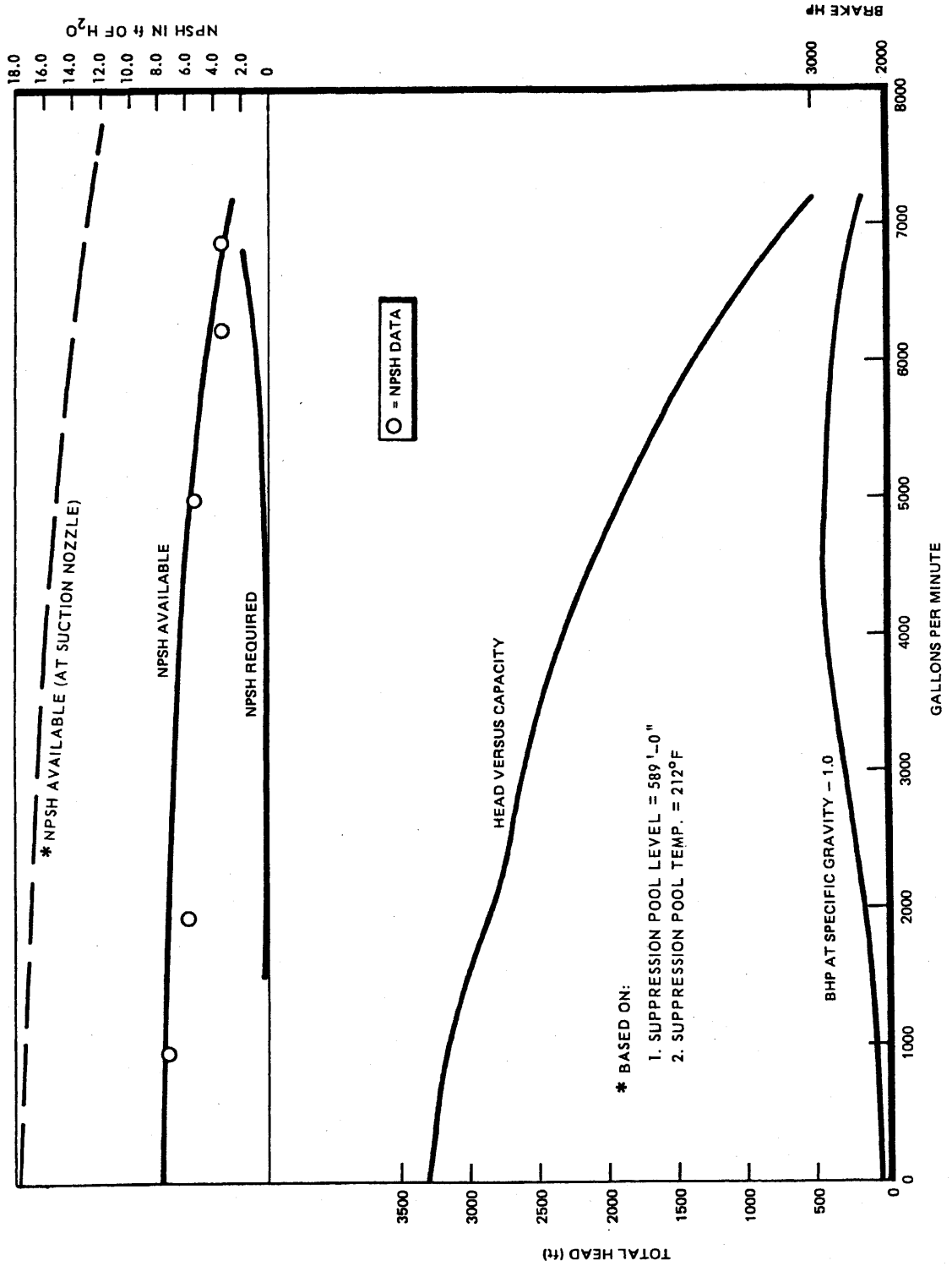


(Rev. 12 1/03)

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.

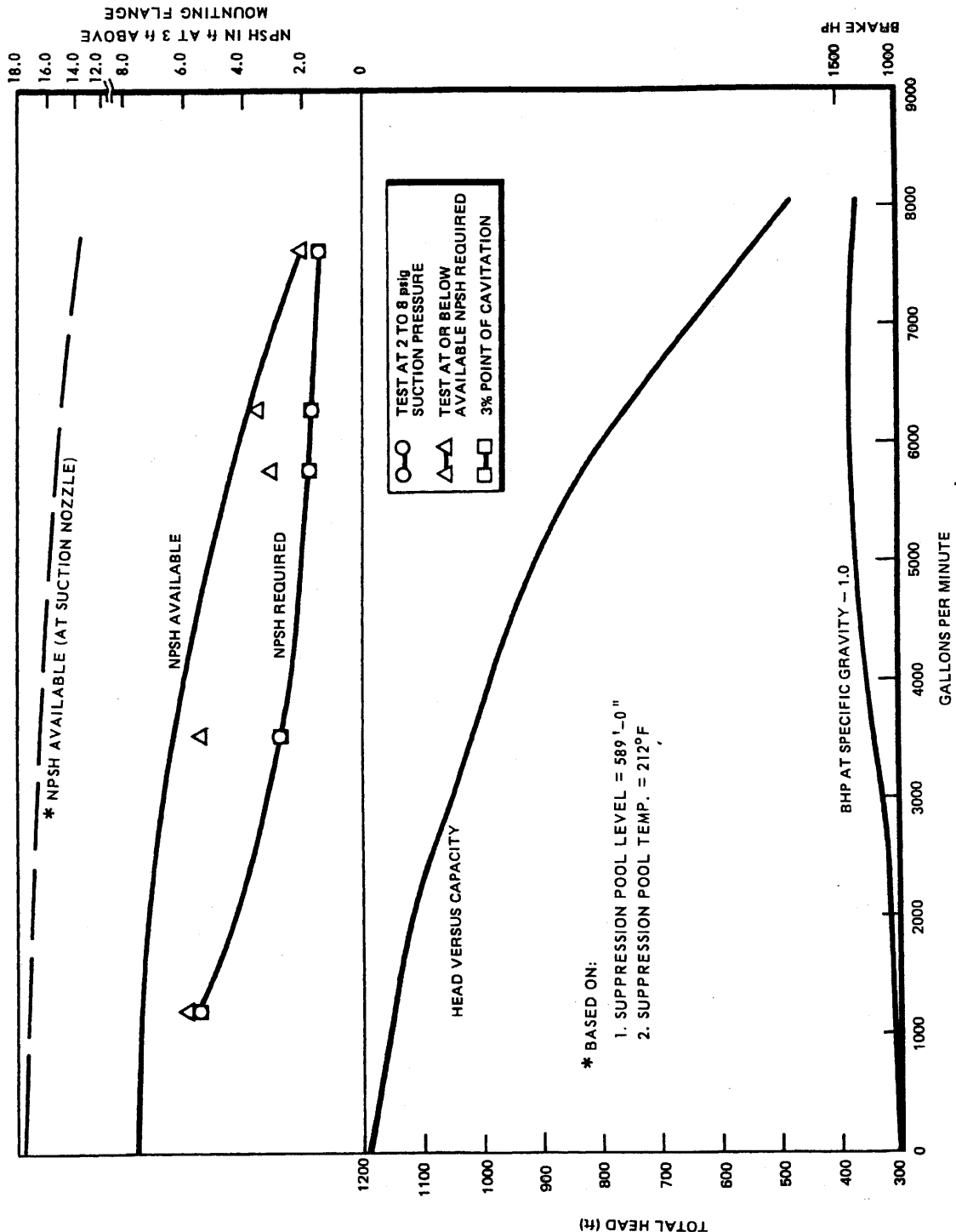
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Pump Curves for
HPCS Pump

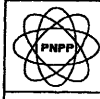
Figure 6.3-75...



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.

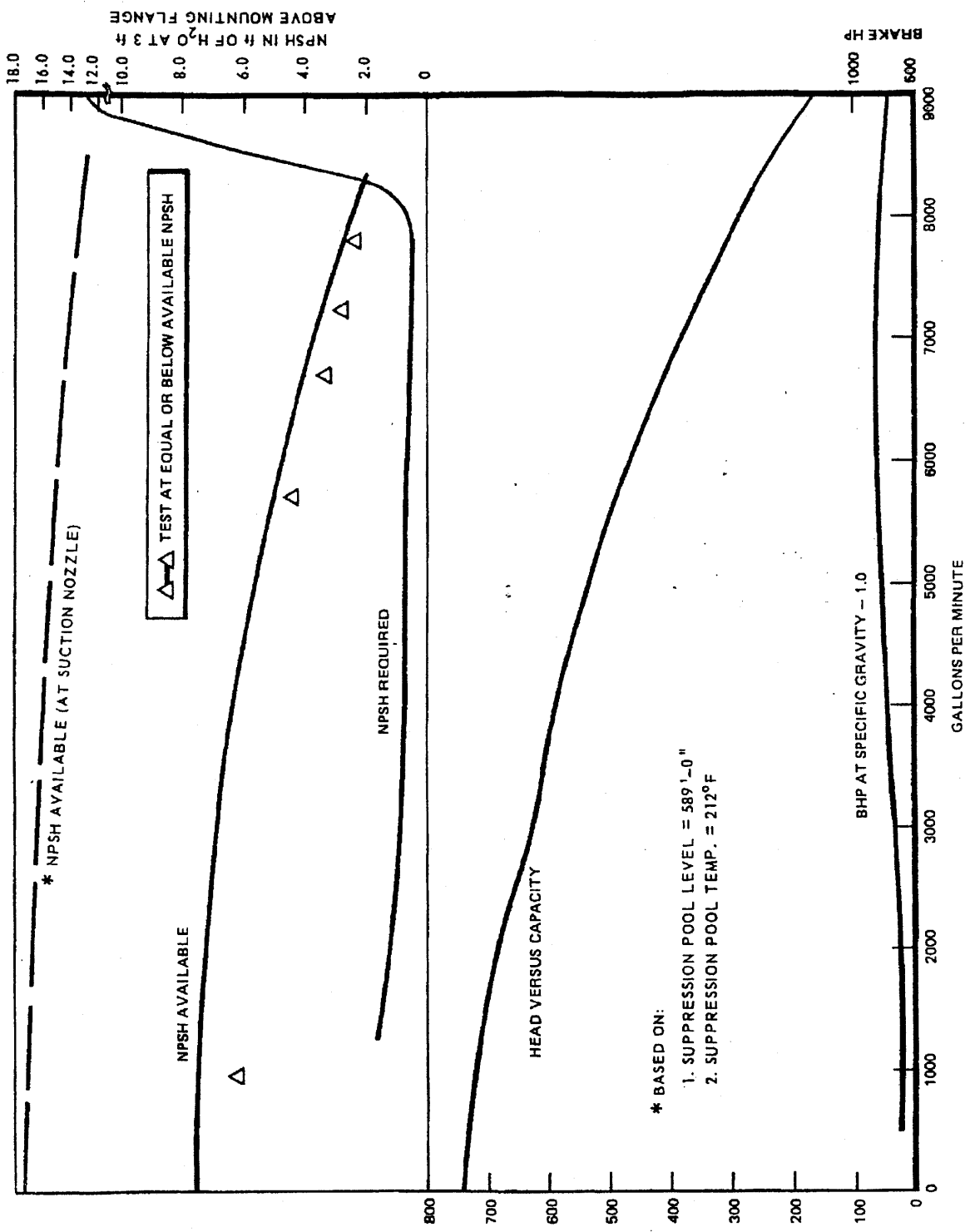
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Pump Curves for LPCS Pump

Figure 6.3-76



NOTE:

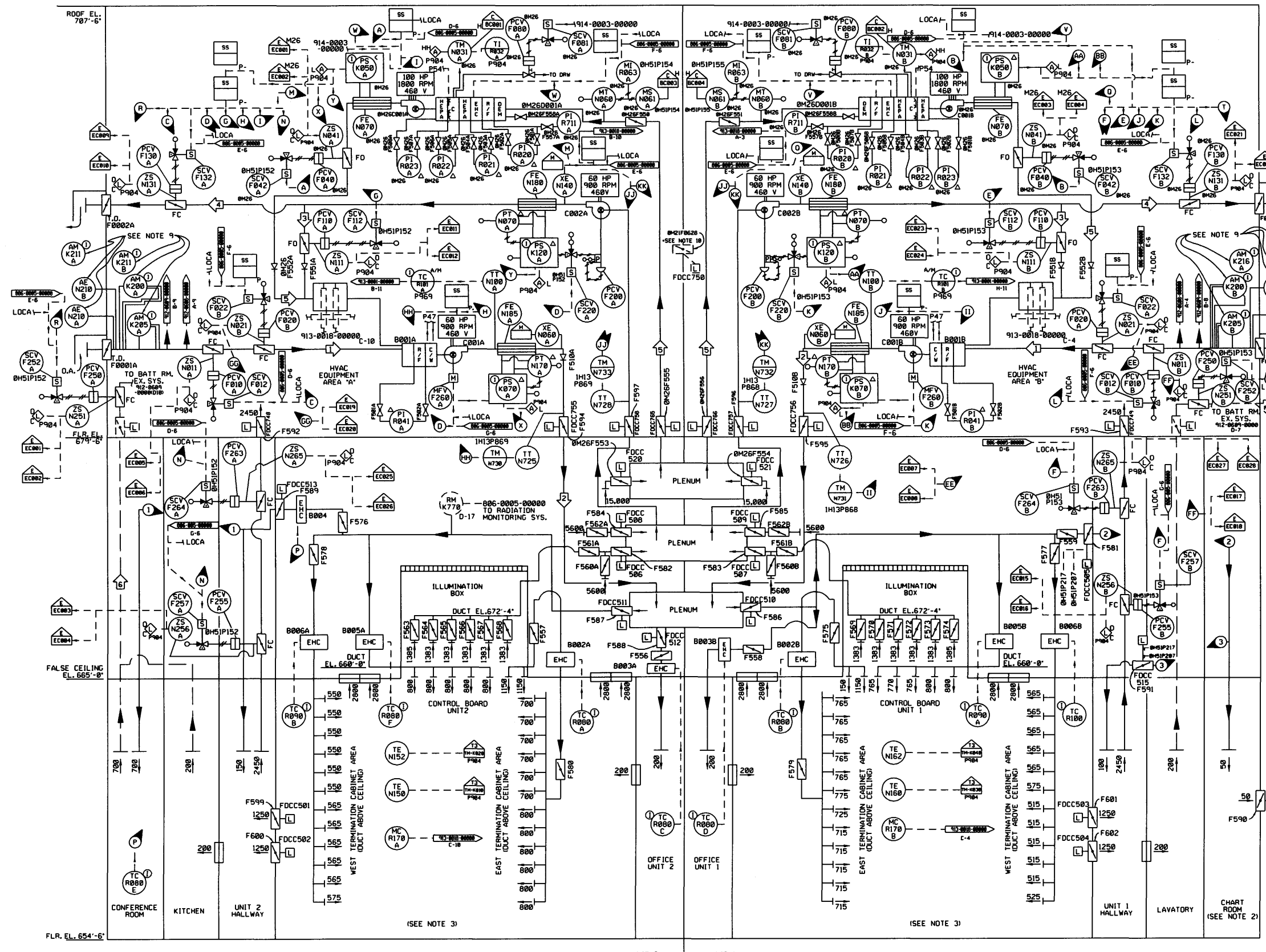
1. THE NPSH AVAILABLE CURVES IN THIS FIGURE DO NOT REPRESENT THE AVAILABLE NPSH FOR THE RHR PUMP WITH THE LARGE PASSIVE STRAINER. SEE SECTION 5.4.7.2.2 FOR THE AVAILABLE NPSH WITH THE SUPPRESSION POOL AT 185°F.

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PERRY NUCLEAR POWER PLANT

Pump Curves for RHR Pump

Figure 6.3-77



DESIGN DATA (NORMAL)

NO.	CFM	BY	REMARKS	REV
1	6,000			
2	45,000			
3	39,000			
4	0			
5	0			
6	900			

DESIGN DATA (EMERGENCY)

NO.	CFM	BY	REMARKS	REV
1	0			
2	30,000			
3	0			
4	0			
5	30,000			
6	0			

DESIGN DATA (SMOKE CLEAR)

NO.	CFM	BY	REMARKS	REV
1	30,000			
2	30,000			
3	0			
4	30,000			
5	0			
6	0			

- 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 FDCC-750 (F528) 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

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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 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 H13-P804 IN CONTROL ROOM #1.
4. ALL ALARMS FROM THIS SYSTEM ARE ANNUNCIATED AS "COMMON HVAC TROUBLE" ON PANEL H13-P800 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 H13-P804.

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	MPCS TRANSFORMER & BATTERY ROOM, UNIT 1
M23-N290-TE	MPCS TRANSFORMER & BATTERY ROOM, UNIT 2
M23-N300-TE	REMOTE SHUTDOWN PANEL ROOM, UNIT 1
M23-N320-TE	MPS MG SET ROOM, DIV. I, UNIT 1
M23-N330-TE	MPS 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 (H13-P804) IN CONTROL ROOM #1.
3. ALL ALARMS FROM THIS SYSTEM ARE ANNUNCIATED AS "COMMON HVAC TROUBLE" ON PANEL H13-P800 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	EMERG. RECIRC.
F130A (B)	O	C		C
F140A (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-C003A (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 F140A(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 SLENOID VALVE (SCV-F220A, B) ENERGIZES TO VENT ACTUATORS (FCV-F200A, B) AND POSITION THE VARIABLE INLET VANES OF FANS (M25-C002A, B) TO REDUCE THE AIR FLOW TO 30,000 CFM.
9. DE-ENERGIZING ACTUATOR (M25-F260A, B) WILL POSITION THE VARIABLE INLET VANES OF FANS (M25-C001A, B) TO REDUCE THE AIR FLOW TO 30,000 CFM.
10. BYPASS AND INOPERABLE STATUS INDICATION IS REQUIRED IN THE CONTROL ROOM.

REFERENCES:


- 912-9609-00000 MCC SWITCHGEAR AND MISCELLANEOUS ELECTRICAL EQUIPMENT, M23, M24
- 912-9610-00000 CONTROL ROOM HVAC AND EMERGENCY RECIRCULATION SYSTEM M25, M26

NOTES:-

1. SEE DRAWINGS 912-9609-00000 AND 912-9610-00000

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 CLOSSES 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.

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PERRY NUCLEAR POWER PLANT

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

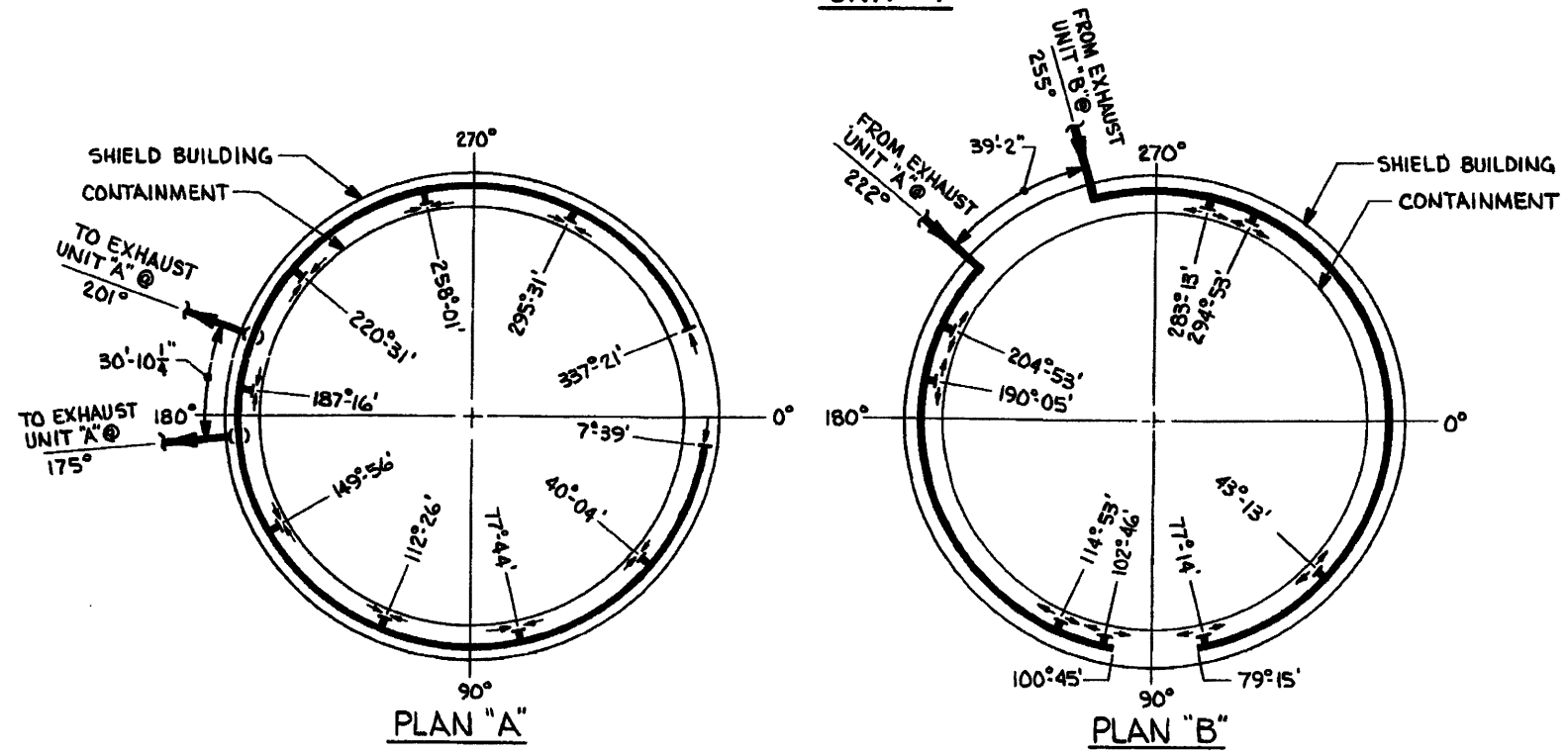
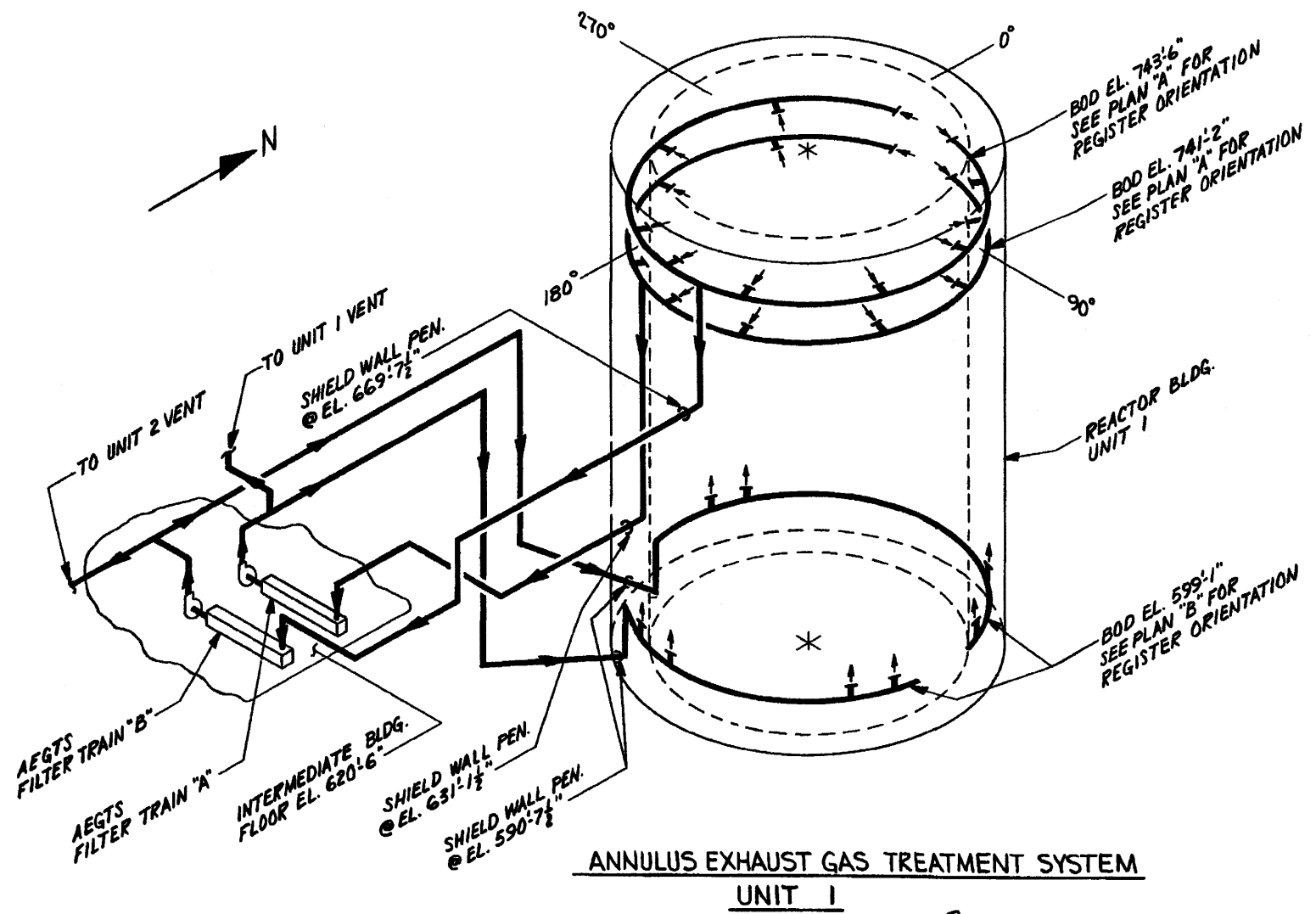
Figure 6.4-1 (Sheet 2 of 2)
 (Dwg. D-912-611)

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-105-0015-00000)



(REV. 19 10/2015)

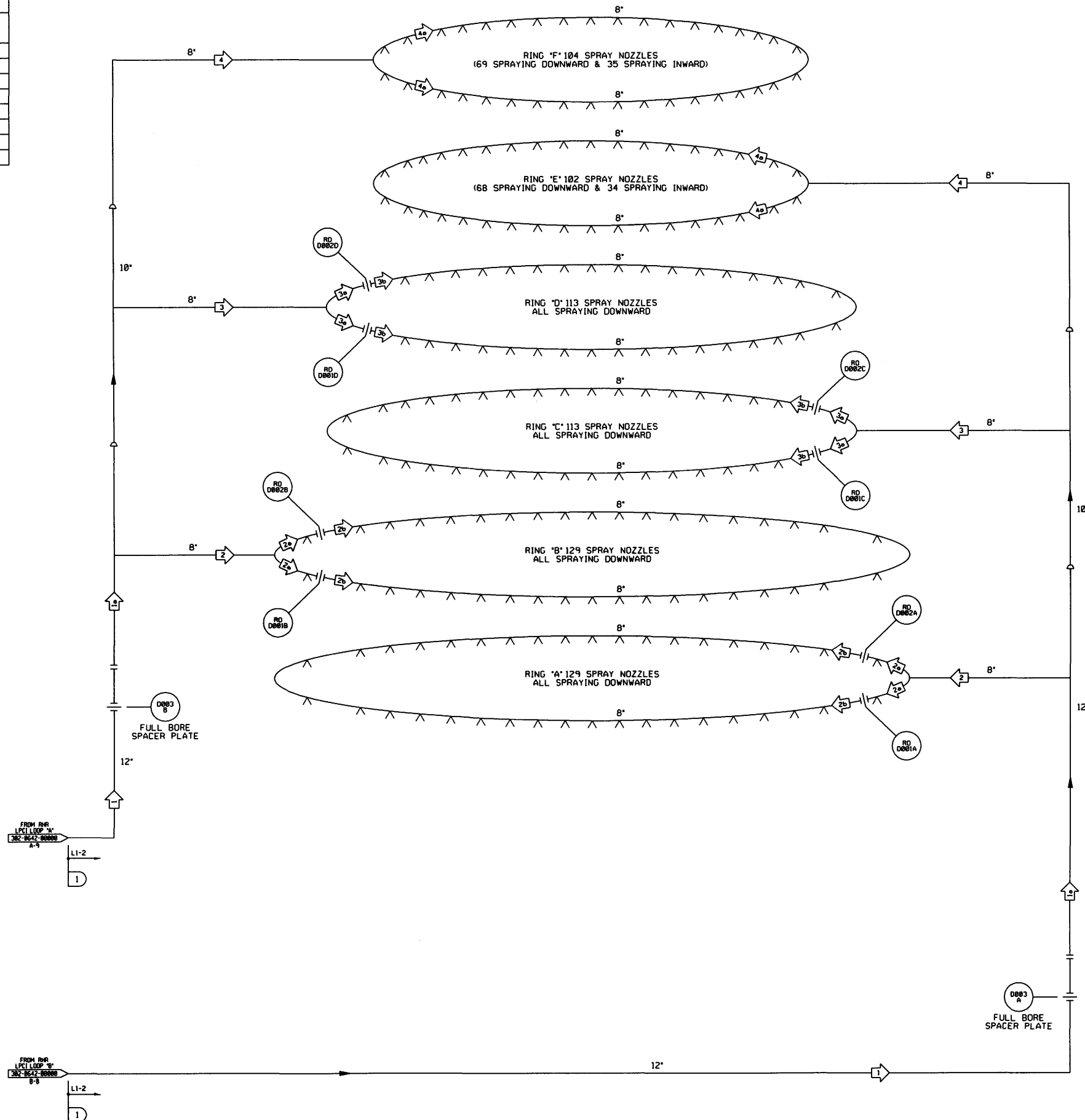
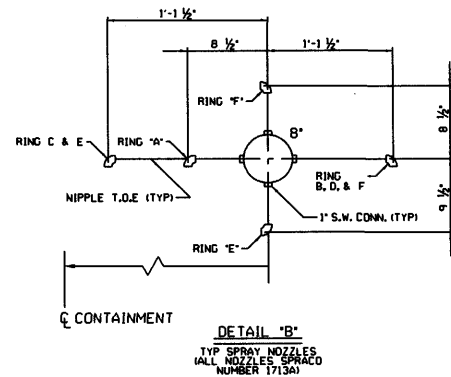
PERRY NUCLEAR POWER PLANT
10 CENTER RD., PERRY, OHIO 44081

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 HEADER.
 ** 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		
4a	60	5250	139.7	CWE		

DESIGN DATA									
#	NORMAL PSIG	F	UPSET PSIG	F	TIME	BY	CHKD	REMARKS	REV
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 (I.G.E.)
 - 302-0642-00000 CONTAINMENT SPRAY SYSTEM E15

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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

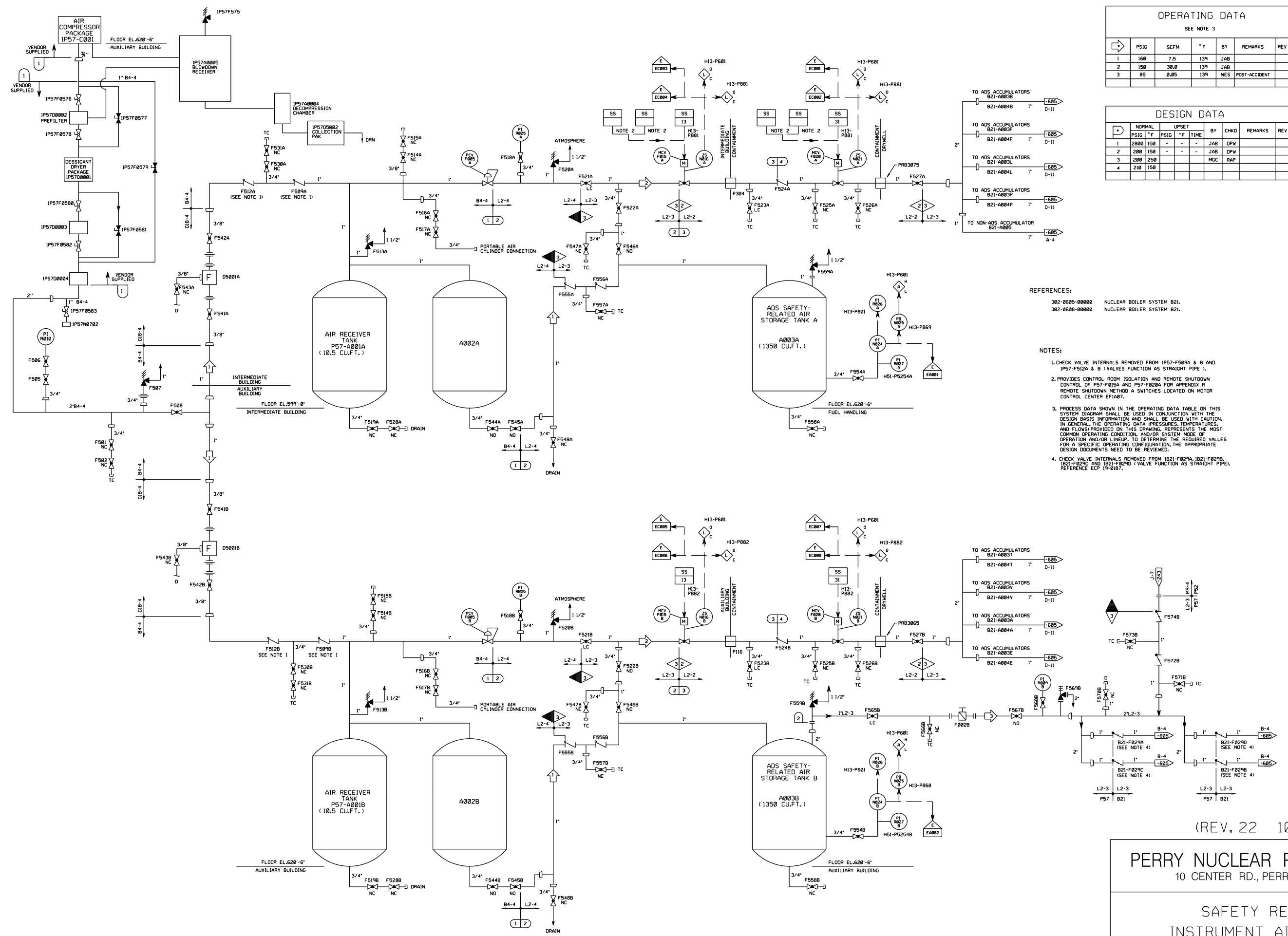
NORMAL	UPSET	BY	CHKD	REMARKS	REV		
PSIG	* F	PSIG	* F	TIME			
1	2000	150	-	-	JAB	DPW	
2	200	150	-	-	JAB	DPW	
3	200	250	-	-	MGC	RAP	
4	210	150	-	-			

REFERENCES:

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

NOTES:

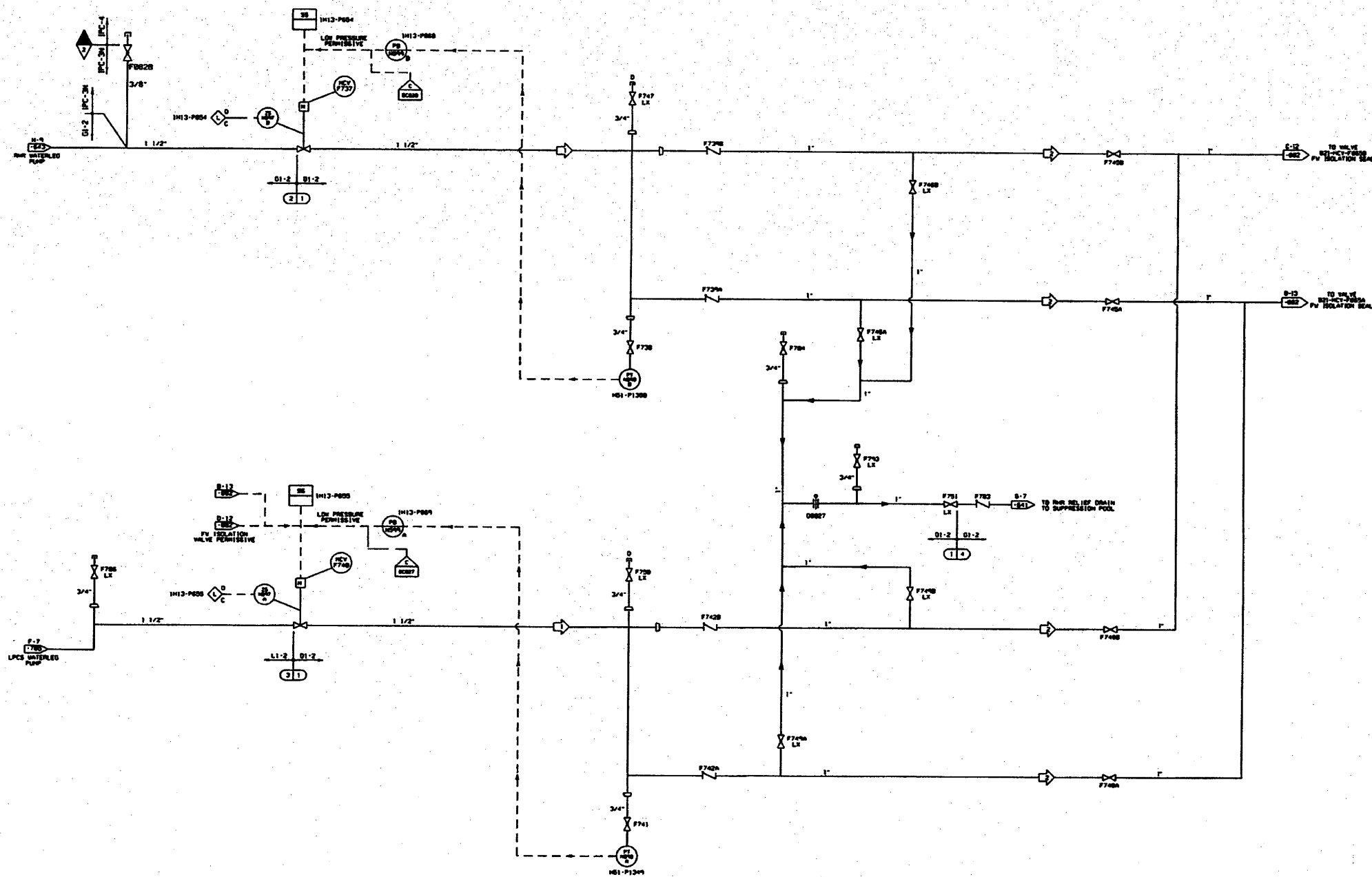
- CHECK VALVE INTERNALS REMOVED FROM IP57-F509A & B AND IP57-F512A & B (VALVES FUNCTION AS STRAIGHT PIPE).
- PROVIDES CONTROL ROOM ISOLATION AND REMOTE SHUTDOWN CONTROL OF P57-FB15A AND P57-FB28A FOR APPENDIX R REMOTE SHUTDOWN METHOD A SWITCHES LOCATED ON MOTOR CONTROL CENTER EPIA07.
- PROCESS DATA SHOWN 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

REV	PSIG	OPN	"F	BY	REMARKS	REV
1	**	**	90	MYS	TEST	0
2	**	**	90	MYS	TEST	0
1	1100	0	420***	MYS	WSP FROM	0
2	1100	0	420***	MYS	WSP FROM	0
1	**	**	100	MYS	POST LOGS	0
2	**	**	100	MYS	POST LOGS	0

DESIGN DATA

REV	PSIG	UPSET	"F	BY	CHKD	REV	
1	1100	1200	425	MYS	ADC	0	
2	1100	1200	425	MYS	ADC	0	
3	100	212	100	212	MYS	ADC	0
4	100	400	50	400	MYS	ADC	0

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

- REFERENCES:**
- 302-0000-00000 FEEDWATER SYSTEM KEY
 - 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 BUSES ARE PREFIXED 1H13- UNLESS OTHERWISE NOTED.
 2. ALL INSTRUMENTS AND CONTROLS ARE PREFIXED 1H13- 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 BY VALVES 1H13-P004 TO FORM A PRESSURE SEAL, PRESSURE REACHES A MAXIMUM OF 30 PSIG AT F720-000. PLUMBING AT OPERATING DATA FROM 1 INCREASES FROM 34 OPN TO 0 OPN AND PLUMBING AT OPERATING DATA FROM 2 DECREASES FROM 7 OPN TO 0 OPN. SEE 002-000 TO CALCULATOR REF-04, REV. 2 AND CALCULATOR REF-05, REV. 2.
 6. PROCESS DATA SHOWN IN THE OPERATING DATA TABLE ON THIS SYSTEM SHOULD BE USED IN CONJUNCTION WITH THE DESIGN BASIS OPERATOR AND SHALL BE USED WITH CARE. IN GENERAL, THE OPERATING DATA OPERATES, TEMPERATURES, AND PLUMBING ON THIS SYSTEM REPRESENTS THE BEST COMMON OPERATING CONDITIONS AND/OR SYSTEM MODE OF OPERATION UNDER LOADS. TO DETERMINE THE REQUIRED VALUES FOR A SPECIFIC OPERATING CONFIGURATION, THE APPROPRIATE DESIGN DOCUMENTS NEED TO BE REVIEWED.
 7. FLOW DIRECTION THE FW HEADER THE PULSES PIPING WILL BE AT POINT 000027.

NUCLEAR SAFETY RELATED

(Rev. 16 10/09)

PERRY NUCLEAR POWER PLANT

Feedwater Leakage Control System
 Figure 6.9-1
 (Dwg. D-302-971)