



PRIMARY MODES

MODE A SYSTEM TEST, SUCTION FROM SUPPRESSION POOL

POSITION	1	2	3	4	5	6	7	8	9	10	12	13	14
FLOW GPM	N/A	6400					6400	0	0	0	0	0	6400
PRESS PSIA	14.7												
TEMP °F	220/40						220/40	AMB				AMB	220/40
MAX PRESS DIFFERENCE-FT		623											

MODE B SYSTEM TEST, SUCTION FROM RESIDUAL HEAT REMOVAL SYSTEM

POSITION	1	2	3	4	5	6	7	8	9	10	12	13	14
FLOW GPM	N/A	6710								6710	6710	6710	0
PRESS PSIA	14.7									14.7			
TEMP °F	N/A	125/40										125/40	AMB
MAX PRESS DIFFERENCE-FT		597											

MODE C PUMP OPERATING ON BYPASS, SUCTION FROM SUPPRESSION POOL

POSITION	1	2	3	4	5	6	7	8	9	10	12	13	14
FLOW GPM	N/A	750	750	750	0	0	0	0	0	0	0	0	750
PRESS PSIA	14.7												
TEMP °F	212/40			212/40									212/40
MAX PRESS DIFFERENCE-FT	1235	725											

MODE D ACCIDENT, SYSTEM INJECTION AT RATED CORE SPRAY (119 PSIG)

POSITION	1	2	3	4	5	6	7	8	9	10
FLOW GPM	N/A	5010								5010
PRESS PSIA	14.7									133.7
TEMP °F	170									170
MAX PRESS DIFFERENCE-FT		695			20					215

MODE F ACCIDENT, SYSTEM OPERATING AT RUNOUT

POSITION	1	2	3	4	5	6	7	8	9	10
FLOW GPM	N/A	6400								6400
PRESS PSIA	14.7									14.7
TEMP °F	212									212
MAX PRESS DIFFERENCE-FT		623								

MODE S SYSTEM ON STANDBY DUTY

POSITION	1	2	3	4	5	6	7	8	9	10	12	13	14
FLOW GPM	N/A	0								0			0
PRESS PSIA	14.7									10.35			
TEMP °F	220/40									120/40			120/40
MAX PRESS DIFFERENCE-FT		0											

EIS IDENT: 12 LPCS SYSTEM
 795E833
 PROCESS DIAGRAM
 LOW PRESSURE CORE SPRAY SYSTEM
 MPL NO. E21-1020

- NOTES:**
- ALL EMPTY PRESSURE DATA BLANKS CAN BE FILLED IN BY OTHERS BASED ON ACTUAL ARRANGEMENTS OR EQUIVALENT HYDRAULIC DATA SUBMITTED TO GE.
 - INDICATES MAXIMUM AND MINIMUM VALUE OF PARAMETER FOR THE MODE SPECIFIED.
 - ELEVATIONS ARE NOT INCLUDED IN OP VALUES GIVEN. ELEVATIONS SHALL BE INCLUDED WHEN DETERMINING FINAL VALUES FOR EMPTY DATA BLANKS.
 - THE BYPASS FLOW SPECIFIED IN MODE C IS APPROXIMATED AND WILL BE SPECIFIED BY THE PUMP VENDOR.
 - IN MODE F, AT THE FLOW SPECIFIED, THE NET POSITIVE SUCTION HEAD (NPSH) AVAILABLE AT A REFERENCE LOCATION 2 FEET ABOVE THE PUMP MOUNTING FLANGE MUST EQUAL OR EXCEED 5 FEET. THE NPSH AVAILABLE AT THE PUMP SUCTION NOZZLE MUST EQUAL THIS VALUE PLUS THE DIFFERENCE IN ELEVATION BETWEEN THE REFERENCE LOCATION AND THE CENTERLINE OF THE PUMP SUCTION NOZZLE.
 - IN MODE B, THE NPSH AVAILABLE MUST EQUAL THE VALUE SPECIFIED IN NOTE 5 PLUS 30 FT.
 - THE AIR BETWEEN LOCATIONS 15 AND 16 WILL BE DETERMINED IN PRE-OPERATIONAL TEST. THE AIR WILL BE ADJUSTED SUCH THAT:
 - (A) THE FLOW SPECIFIED FOR MODE D IS EQUALLED OR EXCEEDED AT 128 PSIG DIFFERENTIAL PRESSURE BETWEEN THE REACTOR VESSEL AND THE SUPPRESSION POOL AIR VOLUME.
 - (B) THE FLOWS SPECIFIED FOR MODE B AND MODE F ARE NOT EXCEEDED.
 - (C) THE FLOW IN MODES B AND F IS LESS THAN OR EQUAL TO THE MAXIMUM FLOW THAT THE PUMP HAS BEEN TESTED TO BY THE PUMP SUPPLIER.
 - (D) THE FLOW IS LESS THAN OR EQUAL TO A VALUE THAT ASSURES ADEQUATE NPSH TO THE PUMP FOR MODES B AND F AS DETERMINED FROM THE PUMP NPSH PERFORMANCE TEST DATA.
 - (E) THE FLOW IN MODES B AND F IS LESS THAN OR EQUAL TO THE MAXIMUM ALLOWABLE PUMP FLOW RATE SPECIFIED IN THE PUMP INSTRUCTION MANUAL IF ANY UPPER LIMIT IS SPECIFIED.
 - 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 THE PIPING DESIGNER SHALL MEET THE PROCESS DIAGRAM HYDRAULIC REQUIREMENT.
 - THE DIFFERENCE IN ELEVATION BETWEEN THE MINIMUM SUPPRESSION POOL WATER LEVEL FOLLOWING LOCA & POOL PUMP DOWN AND THE CORE SPRAY SPARGER SHALL NOT EXCEED 60 FT.
 - IT IS RECOMMENDED THAT THIS ORIFICE BE INSTALLED IF IT IS REQUIRED TO LIMIT FLOW IN MODE A TO THE VALUE SPECIFIED OR TO THE MAXIMUM FLOW PERMITTED BY NOTE 7C, 7D, (MODE F ONLY) AND 7E.

VALVE POSITION TABLE

CONDITION	VALVE NO.				
	FO01	FO05	FO07	FO12	FO11
MODE A	O	C	O	P	C
MODE B	C	O	O	C	C
MODE C	O	C	O	C	O
MODE D	O	O	O	C	C
MODE F	O	O	O	C	C
MODE S	O	C	O	C	O

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

TABLE II LIMITING LINE LOSS

MODE	FLOW PATH	COMMENT
F	1-5-15-2	NOTE 5
D	3-1-5-6-15-16-8-6.5-9-10	
A	7-7.5-14	
C	4-4.5-14	
B	12-13	NOTE 6

MISCELLANEOUS INFORMATION (NOTE 8)

POSITION	1,5	2	3	4	5,6	7	8	8.5	9	4,5	4,7	7.5	14	12	13
DESIGN TEMP (°F)	212				212		500	575		212		212			212
DESIGN PRESS (PSIG)	100				600		1250			600	100	600	100		100
ESTIMATED LINE SIZES (IN)	20				12		10			4		10			16

MAIN CORE SPRAY LINE TO REACTOR BYPASS LINE TEST LINE RHR LINE

SUPPLEMENTAL DOCUMENTS UNDER THE FOLLOWING IDENTITIES ARE TO BE USED IN CONJUNCTION WITH THIS DRAWING:

	REFERENCE DESIGNATION
1. RESIDUAL HEAT REMOVAL SYS P&ID	E2-100
2. PIPING & INSTRUMENT SYMBOLS	A42-100

TI APERTURE CARD

REVISIONS

NO.	DATE	BY	DESCRIPTION
0	DMC-59	DR	
1		ISZA	

795E833
 SAN JOSE
 CHK BY: A.B. ROGUE 13 IDS
 12/16/68

8412200026

PDR RIDS

