

FCF 238 X100 B (23-121)

- NOTES:
1. ATMOSPHERIC PRESSURE OF 14.7 PSIA WAS USED IN CALCULATIONS.
  2. WATER FLOWS ARE SHOWN IN GPM, STEAM FLOWS IN 1000 LB/HR.
  3. THE MAXIMUM POOL WATER TEMPERATURE FOR CONTINUOUS SYSTEM OPERATION WILL NOT EXCEED 140°F. HOWEVER, DUE TO POTENTIAL SHORT TERM OPERATION AT HIGHER TEMPERATURES, PIPING EXPANSION SHALL BE BASED ON 170°F. SHORT TERM OPERATION AT ELEVATED TEMPERATURES HAS BEEN EVALUATED IN CALCULATIONS NEDC 01-029A, B, C AND NEDC 97-044B, C.
  4. THE FOLLOWING ADDITIONAL ACCIDENT OPERATING MODES ARE POSSIBLE:  
 SUCTION FROM CONDENSATE STORAGE, SUPPRESSION POOL AT LOW PRESSURE, REACTOR AT HIGH OR LOW PRESSURE.  
 SUCTION FROM SUPPRESSION POOL, SUPPRESSION POOL AT HIGH PRESSURE, REACTOR AT HIGH OR LOW PRESSURE.  
 THESE POTENTIAL OPERATING MODES DO NOT CONTROL PIPE OR VALVE SIZING OR SPECIFICATION, AND NO DATA IS SHOWN.
  5. THE CONTROLLING MODES FOR LINE SIZING AND ARRANGEMENT ARE:  
 SUCTION FROM COND. STORAGE ———— MODE A  
 SUCTION FROM SUPPRESSION POOL ———— MODE C  
 PUMP DISCHARGE ———— MODE C  
 STEAM SUPPLY ———— MODE B  
 TURBINE EXHAUST ———— MODE A, C & D  
 TEST LINE ———— MODE E  
 COOLING SYSTEM ———— MODE A
  6. THE PRESSURE AT LOCATION (9) IS ESTIMATED FROM PRELIMINARY PUMP DATA.
  7. PUMP MINIMUM FLOW REQUIREMENT MAY OCCUR DURING ANY OPERATING MODE. FLOW REQUIREMENT IS 450 GPM MINIMUM.
  8. THE PRESSURE DROPS ACROSS THE GLAND SEAL CONDENSER AND LUBE OIL COOLER WILL BE 3 PSI EACH.
  9. THIS DRAWING REFLECTS THE AS-BUILT CONFIGURATION PER BURNS & ROE HPCI P & ID, DRAWING #2044, REV 16.

TABLE OF ELEVATION (FEET)

GRADE	903
VESSEL N.W.L.	963
POOL L.W.L.	875
PUMP C.L.	862

MODE A ACCIDENT MODE, SUCTION FROM CONDENSATE STORAGE, REACTOR AT HIGH PRESSURE, SUPPRESSION POOL AT HIGH PRESSURE.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW - SEE NOTE 2	-	4250	4320	4250	4250	-	0	-	159.0	158.5	158.5	-	D	0.5	0.05	1	70	70	50	20	-
PRESSURE - PSIA	14.7	*	280	*	1140	-	-	1135	*	*	51.9	*	-	14.5	14.9	*	75	*	*	*	50
TEMPERATURE °F	100	100	100	100	100	-	-	560	SAT.	SAT.	283	100	-	240	200	200	100	130	130	130	140

MODE B ACCIDENT MODE, SUCTION FROM CONDENSATE STORAGE, REACTOR AT LOW PRESSURE, SUPPRESSION POOL AT HIGH PRESSURE.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW - SEE NOTE 2	-	4250	4320	4250	4250	-	0	-	109.5	109.0	109.0	-	D	0.5	0.05	1	70	70	50	20	-
PRESSURE - PSIA	14.7	*	8.5	*	170	-	-	165	*	*	51.8	*	-	14.5	14.9	*	75	*	*	*	50
TEMPERATURE °F	100	100	100	100	100	-	-	366	SAT.	SAT.	283	100	-	240	200	200	100	130	130	130	140

MODE C ACCIDENT MODE, SUCTION FROM SUPPRESSION POOL, REACTOR AT HIGH PRESSURE, SUPPRESSION POOL AT LOW PRESSURE.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW - SEE NOTE 2	-	4250	4320	4250	4250	-	4250	-	149.0	148.5	148.5	-	O	0.5	0.05	1	70	70	50	20	-
PRESSURE - PSIA	-	*	280	*	1140	17.7	16.5	1135	*	*	16.7	*	-	14.5	14.9	*	75	*	*	*	14.7
TEMPERATURE °F	-	140	140	140	140	140	140	560	SAT.	SAT.	218	140	-	240	200	200	140	170	170	170	140

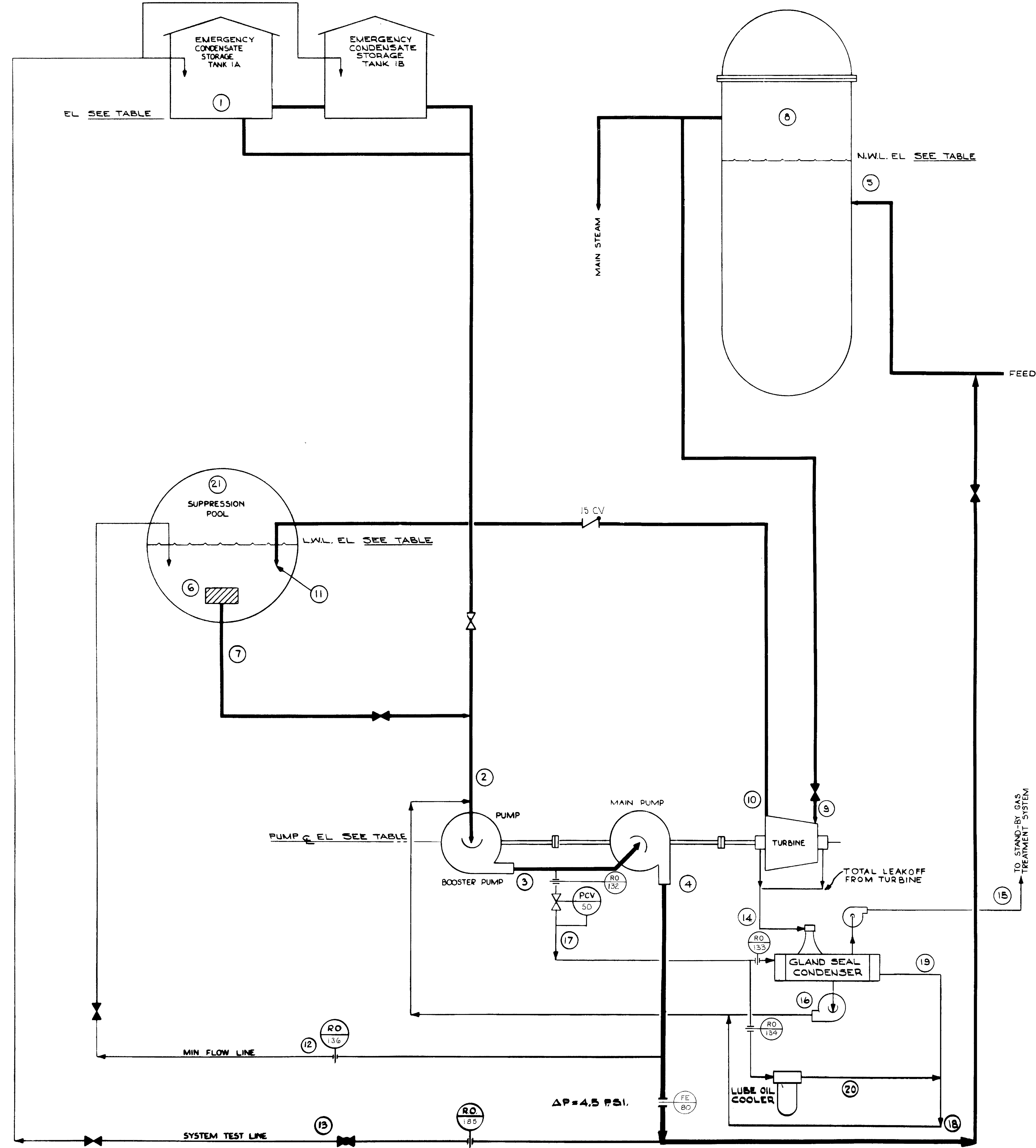
MODE D ACCIDENT MODE, SUCTION FROM SUPPRESSION POOL, REACTOR AT LOW PRESSURE, SUPPRESSION POOL AT LOW PRESSURE.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW - SEE NOTE 2	-	4250	4320	4250	4250	-	4250	-	71.0	70.5	70.5	-	O	0.5	0.05	1	70	70	50	20	-
PRESSURE - PSIA	-	*	8.5	*	170	17.7	16.5	165	*	*	16.6	*	-	14.5	14.9	*	75	*	*	*	14.7
TEMPERATURE °F	-	140	140	140	140	140	140	366	SAT.	SAT.	218	140	-	240	200	200	140	170	170	170	140

MODE E TEST MODE, SUCTION FROM CONDENSATE STORAGE, REACTOR AT HIGH PRESSURE, SUPPRESSION POOL AT LOW PRESSURE.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW - SEE NOTE 2	-	4250	4320	4250	-	0	-	158.0	137.5	137.5	-	4250	0.5	0.05	1	70	70	50	20	-	
PRESSURE - PSIA	14.7	*	255	*	-	-	1000	*	*	25.3	*	*	14.5	14.9	*	75	*	*	*	14.7	
TEMPERATURE °F	100	100	100	100	-	-	545	SAT.	SAT.	218	100	100	240	200	200	100	130	130	130	140	

- \* THE PRESSURE AT THIS LOCATION DEPENDS UPON PIPING ARRANGEMENTS, AND MAY BE VARIED WITHIN THE FOLLOWING LIMITS:
- (2) MINIMUM NPSH AT PUMP SUCTION = 21 FEET
  - (2) TO (2) MAXIMUM PRESSURE RISE = 2800 FEET @ HIGH PRESS MODE = 325 FEET @ LOW PRESS MODE
  - (8) MAXIMUM PRESSURE DROP BETWEEN LOCATIONS (8) AND (9) = 15 PSI.
  - (10) MAXIMUM PRESSURE = 65 PSIA
  - (12) SUFFICIENT PRESSURE TO RETURN TO SUPPRESSION POOL
  - (13) SUFFICIENT PRESSURE TO RETURN TO COND. STORAGE
  - (16) MAXIMUM PRESSURE AVAILABLE = 65 PSIA
  - (18)(19)(20) SUFFICIENT PRESSURE TO RETURN TO PUMP SUCTION DURING OPERATION



FOR PREVIOUS REVISIONS, SEE SUPERSEDED CARDS.

NO.	REVISIONS	DATE
1	ISSUED	02-03-83
2	REVISED	02-07-83