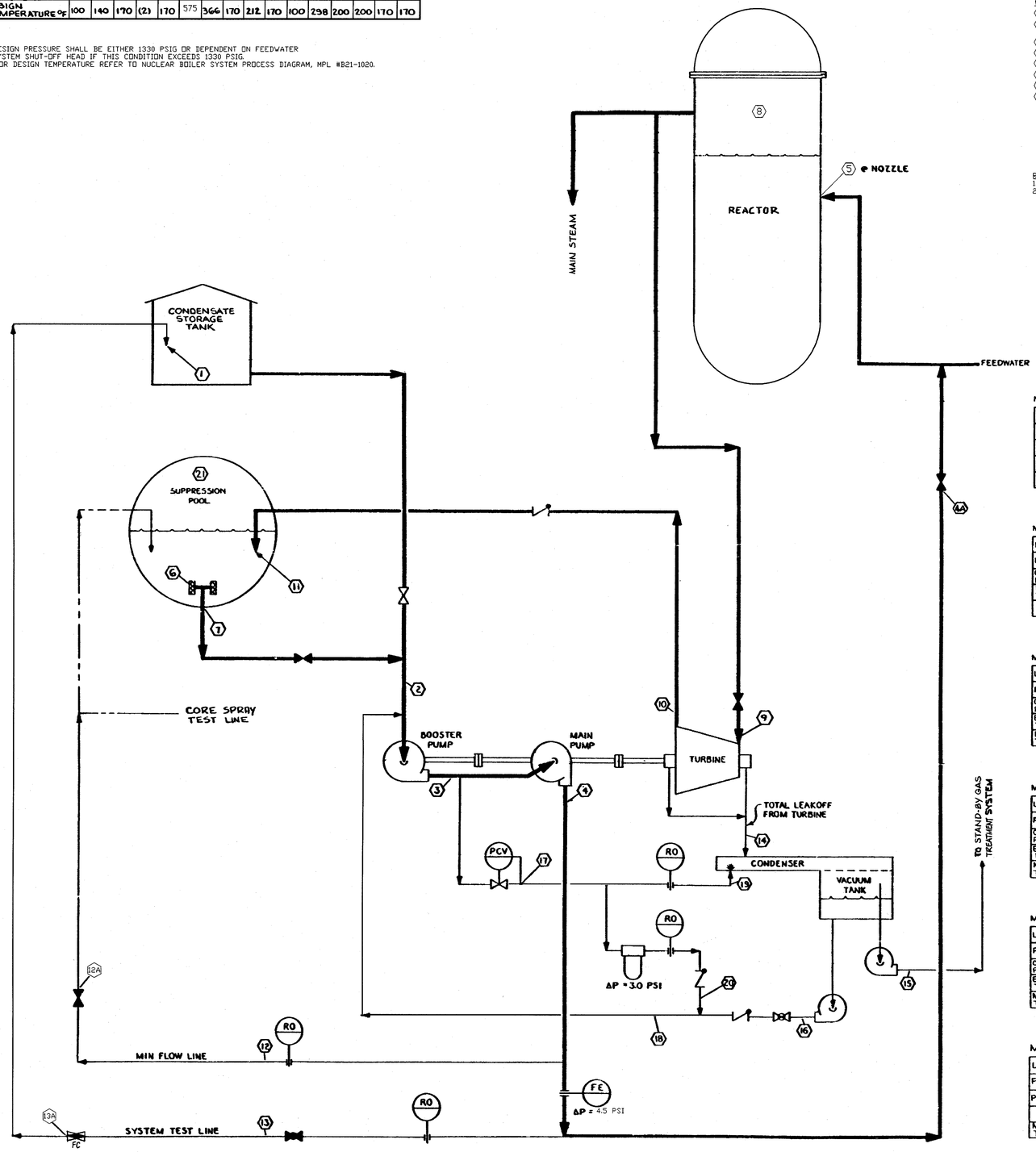
MISCELLANEOUS INFORMATION:
1. DESIGN PRESSURES AND TEMPERATURES GIVEN BELOW ARE FOR INFORMATION ONLY, AND ARE THE BASIS FOR DESIGN OF APED SUPPLIED EQUIPMENT.

LOCATION ⬡	1-2	3-17	4-4A	4A-5	7-2	8-9	10-11	12-12A	12A-6	13-13A	13A-1	14	15	16-2	17-19	17-20
DESIGN PRESSURE-PSIG	125	460	1330	(1)	125	1250	185	1330	125	1330	125	50	75	125	125	125
DESIGN TEMPERATURE °F	100	140	170	(2)	170	575	366	170	212	170	100	298	200	200	170	170

(1) DESIGN PRESSURE SHALL BE EITHER 1330 PSIG OR DEPENDENT ON FEEDWATER SYSTEM SHUT-OFF HEAD IF THIS CONDITION EXCEEDS 1330 PSIG.
(2) FOR DESIGN TEMPERATURE REFER TO NUCLEAR BOILER SYSTEM PROCESS DIAGRAM, MPL #B21-1020.



✱ - THE PRESSURE AT THIS LOCATION DEPENDS UPON PIPING ARRANGEMENTS; AND MAY BE VARIED WITHIN THE FOLLOWING LIMITS.

LOCATION
- ② — MINIMUM NPSH AT PUMP SUCTION = 21 FEET
- ②TO④ — MAXIMUM PRESSURE RISE = 2915 FEET @ HIGH PRESS. MODE = 525 FEET @ LOW PRESS MODE
- ⑨ — 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 & ⑳ — SUFFICIENT PRESSURE TO RETURN TO PUMP SUCTION DURING OPERATION.

REFERENCES:
1. NUCLEAR BOILER. PD -----B21-1020
2. DELETED

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.
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 & B
   SUCTION FROM SUPPRESSION POOL ---MODE C & D
   PUMP DISCHARGE ------------------MODE C & D
   STEAM SUPPLY --------------------MODE A & B
   TURBINE EXHAUST -----------------MODE A, C & D
   TEST LINE -----------------------MODE E
   COOLING SYSTEM ------------------MODE A
6. THE PRESSURE AT LOCATION ③ IS ESTIMATED FROM PRELIMINARY PUMP DATA.
7. PUMP MINIMUM FLOW REQUIREMENT MAY OCCUR DURING ANY OPERATING MODE. FLOW REQUIREMENT IS 500 GPM MINIMUM, DURING MODE A.

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

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	—	5000	5070	5000	5000	—	0	—	210	209.5	209.5	—	0	0.5	0.05	20*	70	70	20	50	—
OPERATING PRESSURE - PSIA	14.7	✱	280	✱	1140	—	—	1135	✱	✱	51.9	✱	—	14.5	14.9	✱	75	✱	45	✱	50
EXPECTED TEMPERATURE °F	100	100	100	100	100	—	—	565	SAT	SAT	283	100	—	240	200	200	100	130	130	130	140
MAX/MIN TEMPERATURE °F	100/40	100/40	100/40	100/40	100/40	—	—	565/70	560/70	250/70	250/70	100/40	—	250/40	120/40	120/40	100/40	130/40	130/40	130/40	170/40

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

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	—	5000	5070	5000	5000	—	0	—	116.5	116.0	116.0	—	0	0.5	0.05	20*	70	70	20	50	—
OPERATING PRESSURE - PSIA	14.7	✱	85	✱	170	—	—	165	✱	✱	51.8	✱	—	14.5	14.9	✱	75	✱	45	✱	50
EXPECTED TEMPERATURE °F	100	100	100	100	100	—	—	366	SAT	SAT	283	100	—	240	200	200	100	130	130	130	140
MAX/MIN TEMPERATURE °F	100/40	100/40	100/40	100/40	100/40	—	—	366/70	366/70	250/70	250/70	100/40	—	250/40	120/40	120/40	100/40	130/40	130/40	130/40	170/40

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

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	—	5000	5070	5000	5000	—	5000	—	173.5	173	173	—	0	0.5	0.05	20	70	70	20	50	—
OPERATING PRESSURE - PSIA	—	✱	280	✱	1140	19.2	18.0	1135	✱	✱	16.8	✱	—	14.5	14.9	✱	75	✱	45	✱	14.7
EXPECTED TEMPERATURE °F	—	140	140	140	140	140	140	565	560	244	219	140	—	240	200	200	140	170	170	170	140
MAX/MIN TEMPERATURE °F	100/40	170/40	170/40	170/40	170/40	170/40	170/40	565/70	560/70	250/70	250/70	170/40	—	250/40	190/40	190/40	170/40	170/40	170/40	170/40	170/40

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

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	—	5000	5070	5000	5000	—	5000	—	75.0	74.5	74.5	—	0	0.5	0.05	20	70	70	20	50	—
OPERATING PRESSURE - PSIA	—	✱	85	✱	170	19.2	18.0	165	✱	✱	16.6	✱	—	14.5	14.9	✱	75	✱	45	✱	14.7
EXPECTED TEMPERATURE °F	—	140	140	140	140	140	140	366	SAT	SAT	219	140	—	240	200	200	140	170	170	170	140
MAX/MIN TEMPERATURE °F	100/40	170/40	170/40	170/40	170/40	170/40	170/40	366/70	366/70	250/70	250/70	170/40	—	250/40	190/40	190/40	170/40	170/40	170/40	170/40	170/40

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

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	—	5000	5070	5000	0	—	0	—	155	154.5	154.5	—	5000	0.5	0.05	20*	70	70	20	50	—
OPERATING PRESSURE - PSIA	14.7	✱	255	✱	—	—	—	1045	✱	✱	16.7	✱	✱	14.5	14.9	✱	75	✱	45	✱	14.7
EXPECTED TEMPERATURE °F	100	100	100	100	—	—	—	545	SAT	SAT	219	100	100	240	200	200	100	130	130	130	140
MAX/MIN TEMPERATURE °F	100/40	100/40	100/40	100/40	—	—	—	545/70	545/70	250/70	250/70	100/40	100/40	250/40	120/40	120/40	100/40	130/40	130/40	130/40	170/40

MODE S STAND-BY EQUIPMENT NOT OPERATING

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	0	0	0	0	FEEDWATER CONDITIONS	0	0	—	—	0	0	0	0	0	0	0	0	0	0	0	
PRESSURE-PSIA		STATIC HEAD	STATIC HEAD					1000	1000												
MAX/MIN TEMPERATURE °F	AMB	AMB	AMB	AMB		AMB	AMB	560/70	560/70	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB

INTERMITTENT FLOW THRU DRAIN TRAP SYSTEM

6M721-5860
LATEST REVISION F

NUCLEAR SAFETY RELATED

THIS IS A MICROSTATION PRODUCED DRAWING. CHANGES OR REVISIONS MUST BE BROUGHT TO THE ATTENTION OF THE PLANT ENGINEERING DESIGN GROUP TO ENSURE THAT CONFIGURATION CONTROL IS MAINTAINED.

THIS DRAWING WAS REFORMATTED BY MICROSTATION AT REVISION "F". ALL PREVIOUS APPROVAL SIGNATURES ARE ON FILE ON MICROFILM IN DOCUMENT CONTROL.

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OTHER APPROVALS		DATE	

PREPARED BY	DATE	CHECKED BY	DATE
D.STEFFKE	2-26-08	[signature]	3-4-08
APPROVED BY		DATE	
[signature]		3-4-08	

INC.CODE: U

Detroit Edison Fermi 2

TITLE
PROCESS DIAGRAM
HIGH PRESSURE
COOLANT INJECTION SYSTEM

APERTURE CARD TITLE: HPCI SYSTEM UFSAR FIG. 6.3-1

PLANT IDENTIFICATION SYSTEM NUMBER: E4100 — ARMS RECIPIENT #

DOCUMENT TYPE CODE: DDDMEC — NUC OPS FILE NO.: 1801 — DATE ISSUED TO IS: 3-5-08

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