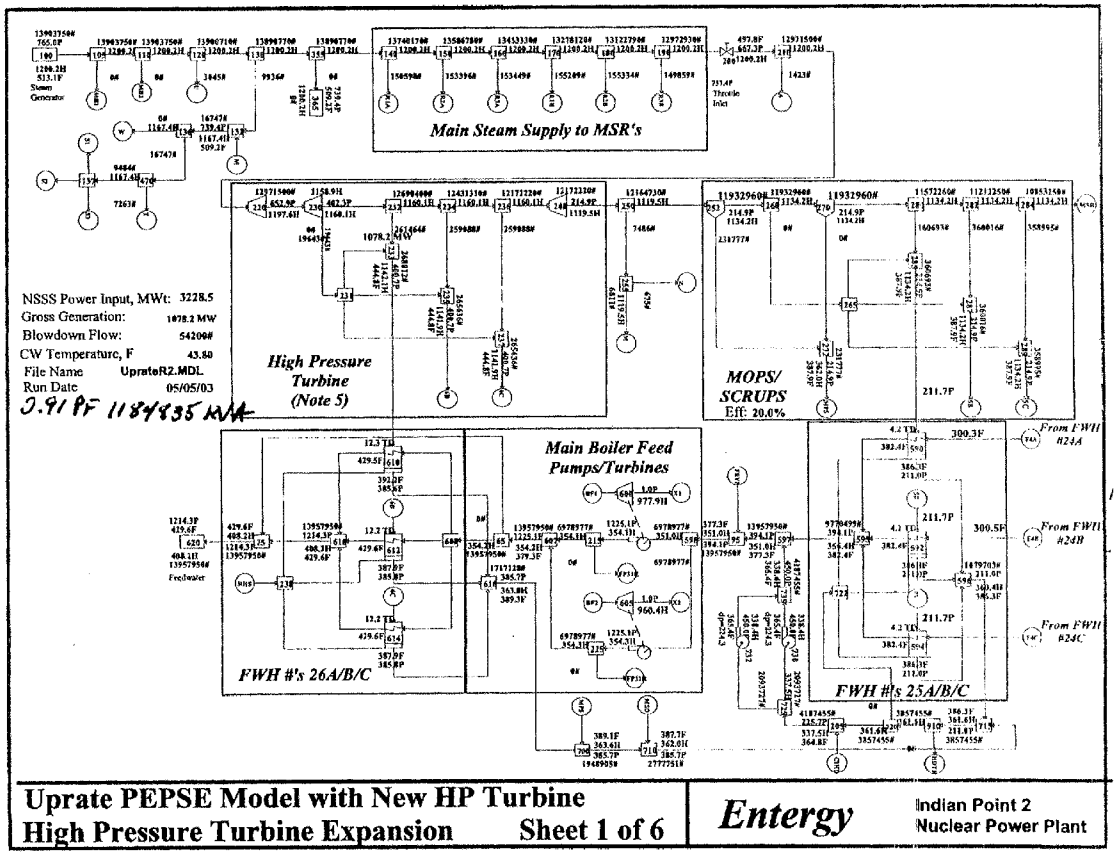
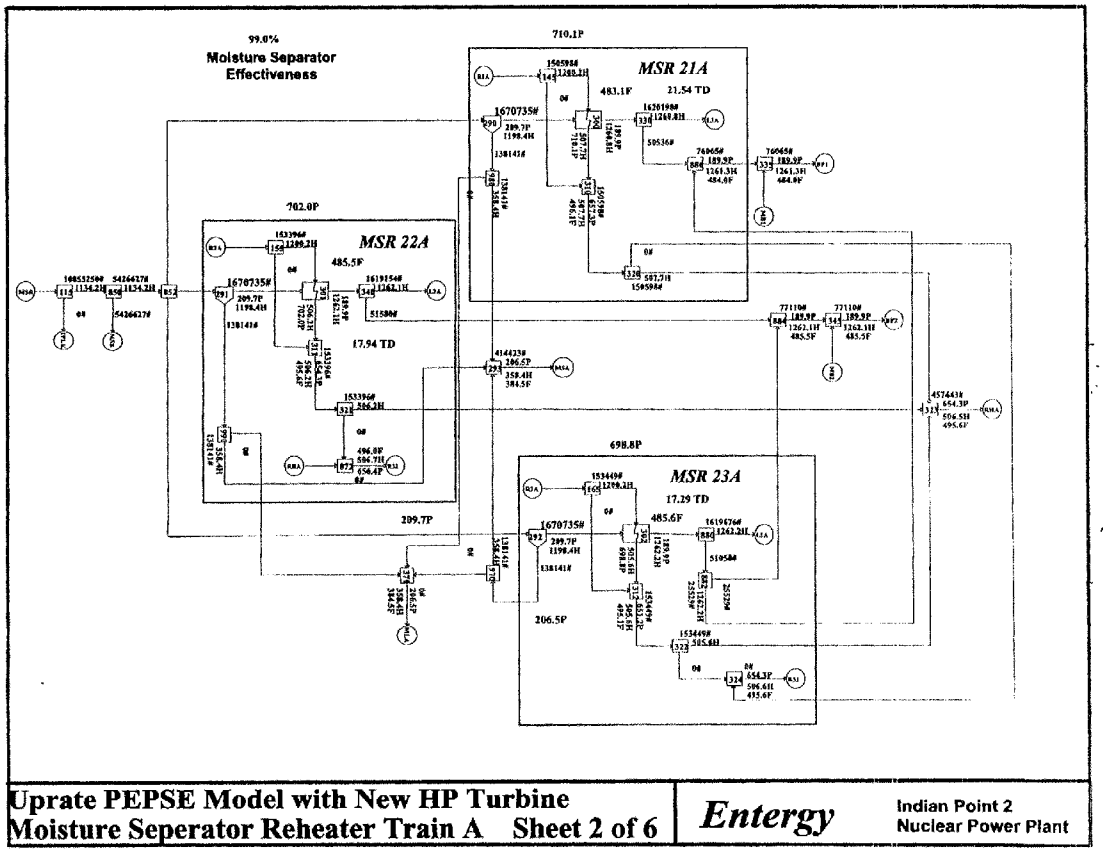


Uprate PEPSE Model with New HP Turbine
High Pressure Turbine Expansion **Sheet 1 of 6**

Entergy Indian Point 2 Nuclear Power Plant

INDIAN POINT UNIT No. 2	
UPRATE PEPSE MODEL WITH NEW HP TURBINE HIGH PRESSURE TURBINE EXPANSION	
UFSAR FIGURE 10.1-1a	REV. No. 21

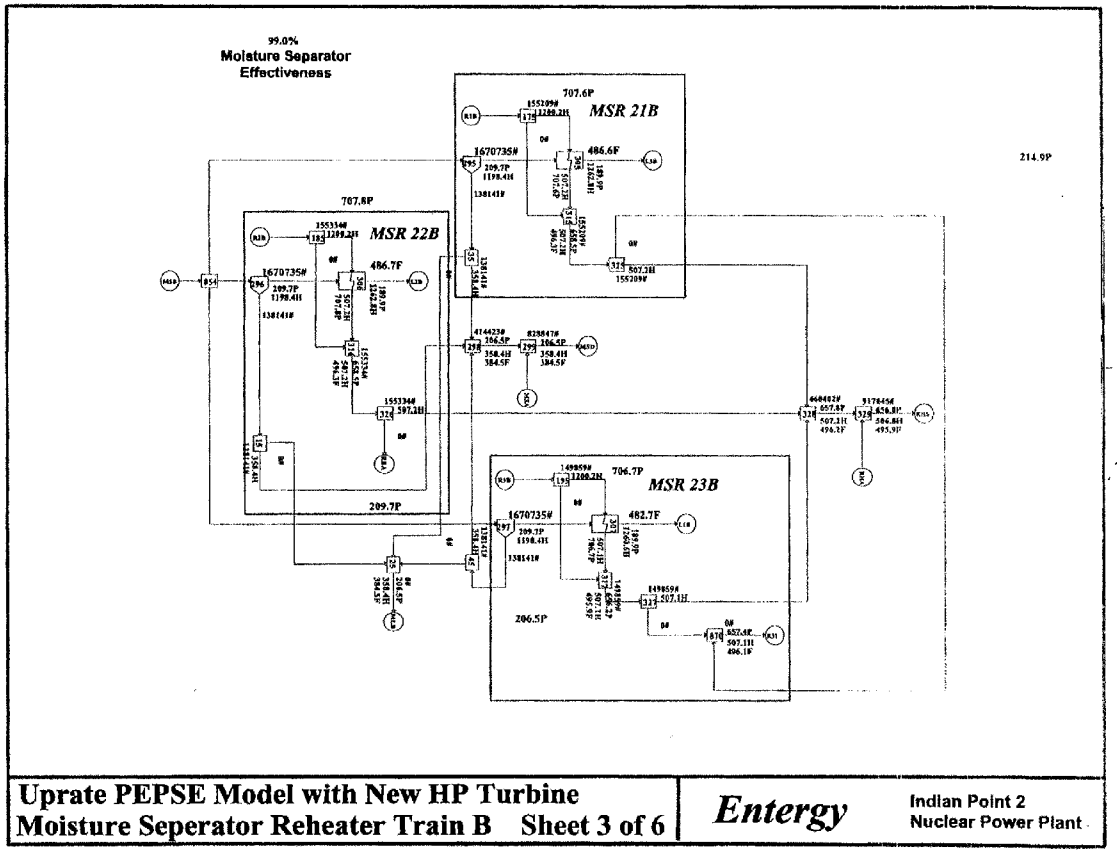


Uprate PEPSE Model with New HP Turbine Moisture Seperator Reheater Train A Sheet 2 of 6

Entergy

Indian Point 2
Nuclear Power Plant

INDIAN POINT UNIT No. 2	
UPRATE PEPSE MODEL WITH NEW HP TURBINE MOISTURE SEPERATOR REHEATER TRAIN A	
UFSAR FIGURE 10.1-1b	REV. No. 21

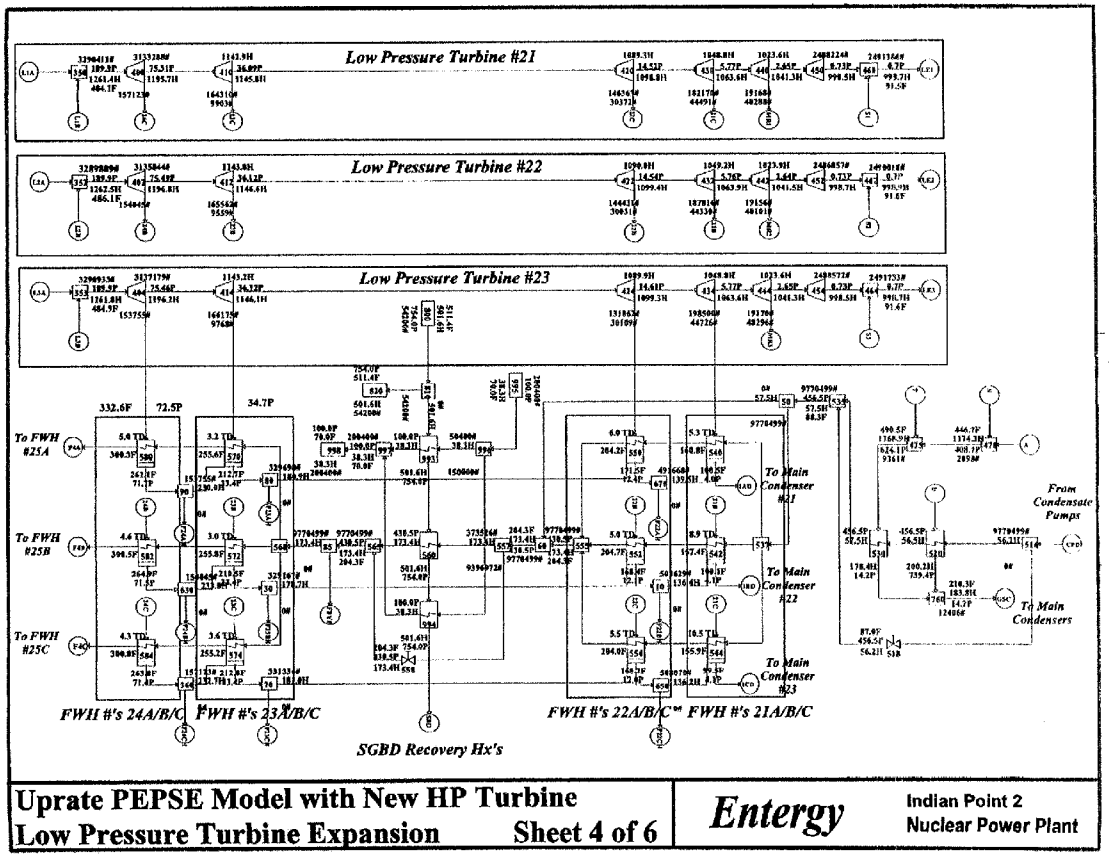


Uprate PEPSE Model with New HP Turbine Moisture Seperator Reheater Train B Sheet 3 of 6

Entergy

Indian Point 2
Nuclear Power Plant

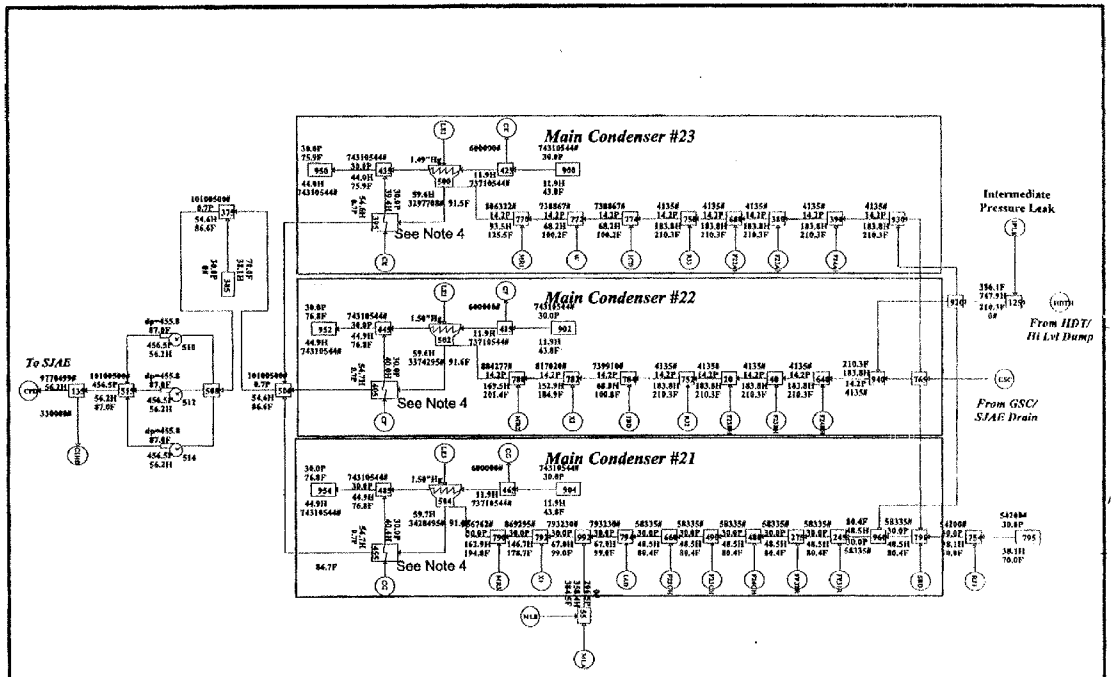
INDIAN POINT UNIT No. 2	
UPRATE PEPSE MODEL WITH NEW HP TURBINE MOISTURE SEPERATOR REHEATER TRAIN B	
UFSAR FIGURE 10.1-1c	REV. No. 21



Uprate PEPSE Model with New HP Turbine
Low Pressure Turbine Expansion **Sheet 4 of 6**

Entergy Indian Point 2 Nuclear Power Plant

INDIAN POINT UNIT No. 2	
UPRATE PEPSE MODEL WITH NEW HP TURBINE LOW PRESSURE TURBINE EXPANSION	
UFSAR FIGURE 10.1-1d	REV. No. 21



Uprate PEPSE Model with New HP Turbine Main Condensers — **Sheet 5 of 6**

Entergy — Indian Point 2 Nuclear Power Plant

INDIAN POINT UNIT No. 2	
UPRATE PEPSE MODEL WITH NEW HP TURBINE MAIN CONDENSERS	
UFSAR FIGURE 10.1-1e	REV. No. 21

CIRCULATING WATER TEMPERATURES
INLET, F: 43.80 OUTLET #21:

NOTES:

1. This model runs Data Sets 1, 6, 5 and 16 in that order. S&W changes are in Data Set 16, or else in the last set where the data are entered.

2. OPVB 12 is the input for Circ Water Inlet Temp. Operations 103-105 set this value for the CW sources.

3. This heat balance should not be used to predict pressures in the condensate and feedwater system. The hydraulic performance has not been tuned to reflect actual plant conditions.

4. Hotwell subcooling is modeled by means of fictitious heat exchangers (Component Numbers 395, 405, 455) in the condensate line at the condenser exit. For the uprate case 5 Deg F subcooling has been assumed

5. New HP turbine is tuned to match turbine parameters per Siemens-Westinghouse heat balance WB-9341

6. The reheaters are modeled using the simplified design mode components of PEPSE 66. In this representation the heat transfer coefficients are fixed at the values established for the Benchmark Tuning Model, representative of pre-uprate performance. The heat transfer coefficients are expected to be somewhat higher after uprate.

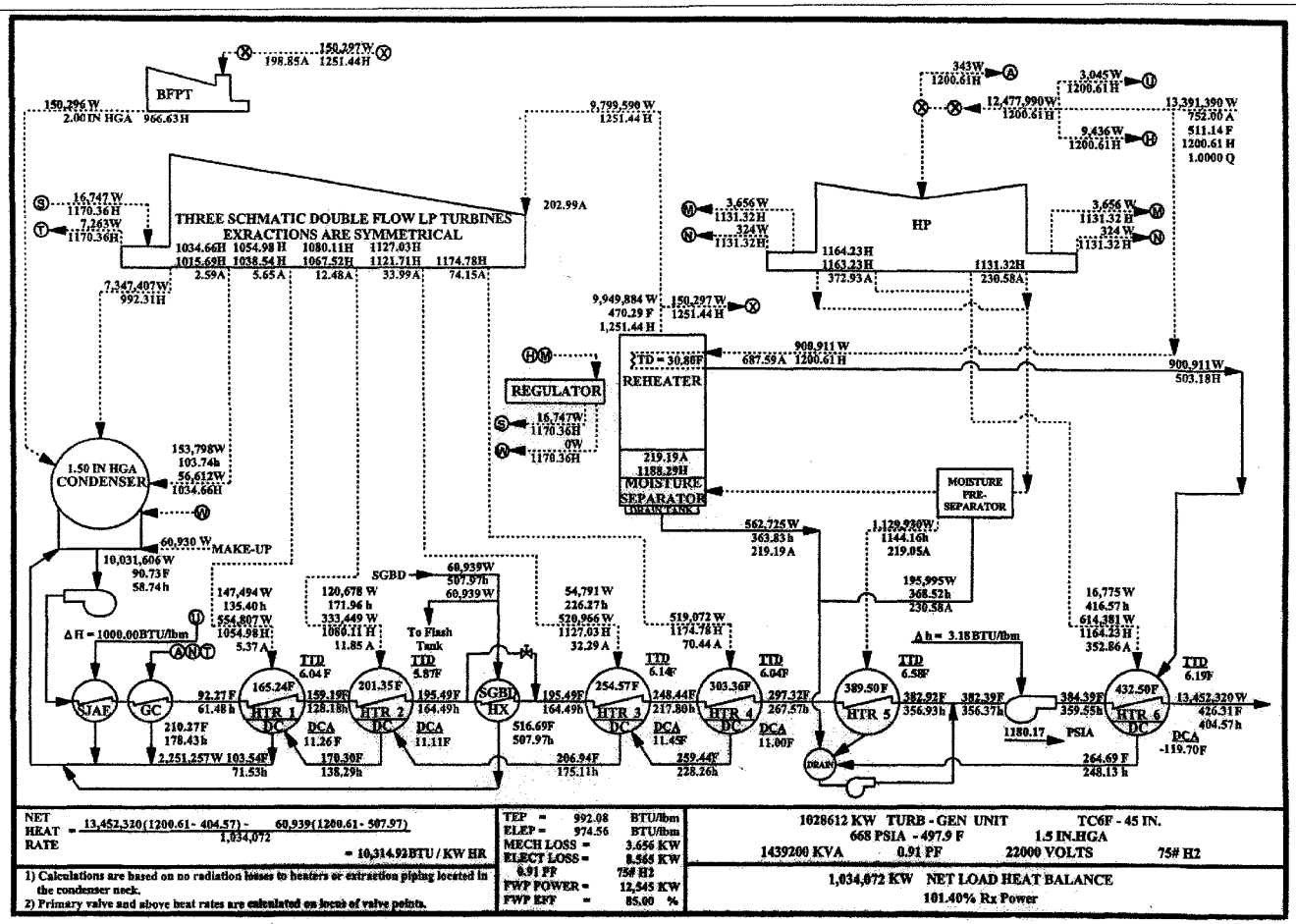
Uprate PEPSE Model with New HP Turbine Notes and Significant Results **Sheet 6 of 6**

Entergy Indian Point 2 Nuclear Power Plant

INDIAN POINT UNIT No. 2

UPRATE PEPSE MODEL WITH NEW HP TURBINE NOTES AND SIGNIFICANT RESULTS

UFSAR FIGURE 10.1-1f | REV. No. 21



INDIAN POINT UNIT No. 2

UFSAR FIGURE 10.1-7

LOAD HEAT BALANCE DIAGRAM
AT 1,034,072 KWE

UFSAR FIGURE 10.1-7 | REV. No. 19

REV	DESCRIPTION	DATE	BY	APPROVAL SIGNATURES ON FILE CHK'D	APP'D
58	INCORPORATED EC-35662	4/8/12	RM		

REVISION
USE .1 SIZE TEXT ONLY

REHEATER STEAM CONTROL STATION

REHEATER ST'M. CONTROL STATION

STEAM JET AIR EJECTORS

PRIMING EJECTORS

DETAIL A

ARRANGEMENT OF L.P. STM. DUMP TRAP PIPING & FCV CONTROL SCHEMATIC FOR VALVE NO.S SEE L.P. STM. DUMP TABLE BELOW

VALVE NUMBERS FOR L.P. STEAM DUMP PIPING SCHEMATIC (SEE DET. "A")

FCV "A"	FCV-1216	FCV-1217	FCV-1218	FCV-1219	FCV-1210	FCV-1211
"B"	MS-1120	MS-1121	MS-1122	MS-1123	MS-1124	MS-1125
ISOL'VA# (POS.)	SEX-71(1)	SEX-72 (2)	SEX-73 (1)	SEX-74 (1)	SEX-75 (2)	SEX-76 (1)
C	MS-839	MS-815	MS-847	MS-823	MS-855	MS-831
D	MS-848	MS-816	MS-848	MS-824	MS-856	MS-832
E	MS-841	MS-817	MS-849	MS-825	MS-857	MS-833
F	MS-842	MS-818	MS-850	MS-826	MS-858	MS-834
G	MS-843	MS-819	MS-851	MS-827	MS-859	MS-835
H	MS-844	MS-820	MS-852	MS-828	MS-860	MS-836
J	MS-846	MS-822	MS-854	MS-838	MS-862	MS-838
K	MS-845	MS-821	MS-853	MS-829	MS-861	MS-837
L	MS-938	MS-939	MS-940	MS-941	MS-942	MS-943
M	IA-834	IA-835	IA-836	IA-837	IA-838	IA-839
N	IA-1039	IA-1040	IA-1041	IA-1042	IA-1043	IA-1044
SOV "P"	SDV-1206-2	SDV-1207-2	SDV-1208-2	SDV-1209-2	SDV-1210-2	SDV-1211-2
SOV "O"	SDV-1206-1	SDV-1207-1	SDV-1208-1	SDV-1209-1	SDV-1210-1	SDV-1211-1
R	SEX-548	SEX-549	SEX-550	SEX-551	SEX-552	SEX-553
S	MS-1181		MS-1182	MS-1183		MS-1184
T	IA-1920	IA-1921	IA-1922	IA-1923	IA-1924	IA-1925
U	IA-1926	IA-1928	IA-1930	IA-1932	IA-1934	IA-1936
V	IA-1927	IA-1929	IA-1931	IA-1933	IA-1935	IA-1937
W	MST-126	MST-127	MST-128	MST-129	MST-130	MST-131
X	ST-243	ST-244	ST-245	ST-246	ST-247	ST-248
Y	ST-249	ST-250	ST-251	ST-252	ST-253	ST-254
Z	PRV-1206-3	PRV-1207-3	PRV-1208-3	PRV-1209-3	PRV-1210-3	PRV-1211-3
AA	PRV-1206-4	PRV-1207-4	PRV-1208-4	PRV-1209-4	PRV-1210-4	PRV-1211-4

( ) INDICATE ISOLATION VALVE POSITION

NOTE:
THE QUALITY GROUP A,B,C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.

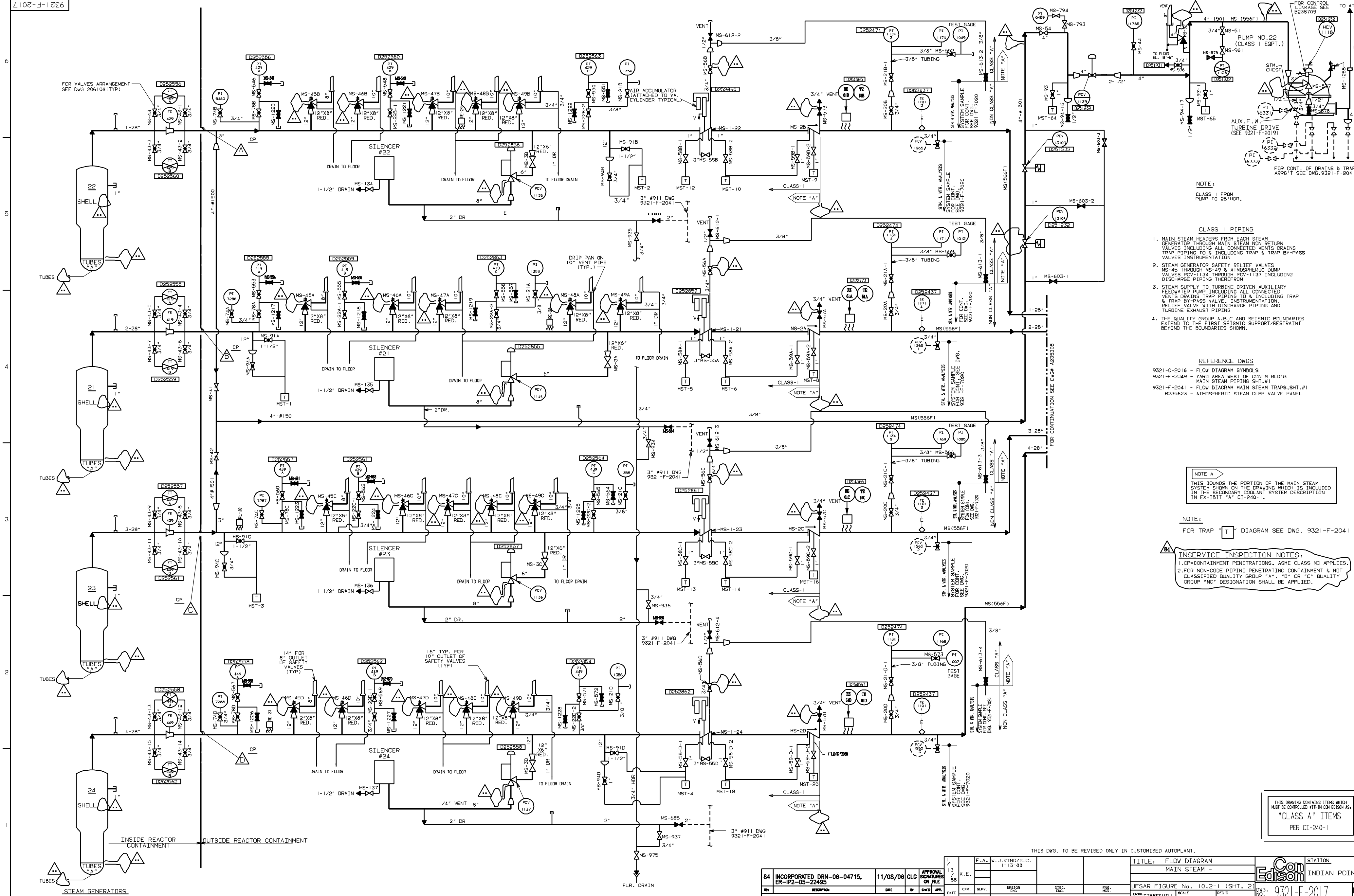
REFERENCE DRAWING
9321-C-2016 FLOW DIAGRAM SYMBOLS
WORK WITH DWGS. A235308 & 9321-F-2017

COMPUTER GENERATED DRAWING NOT TO BE HAND REVISED

REVISION SIGNATURES

REV	PROJECT ENGINEER
58	

DWG. NO. 227780-58
Entergy
DWG. TYPE: FLOW DIAG.
DWG. BY: A.
LOCATION: INDIAN POINT 2
TITLE: FLOW DIAGRAM
MAIN STEAM
UFSAR FIG. NO. 10.2-1 (SHT. 1)
– APPROVALS –
ENGINEERING MANAGER:
PROJECT ENGINEER: F.A.
DESIGNER: W.J.KING 2/12/88
DRAWN BY: GIBBS&HILL
SCALE:
DISCIPLINE CODE: MY



NOTE:

CLASS I FROM PUMP TO 28' HDR.

CLASS I PIPING

1. MAIN STEAM HEADERS FROM EACH STEAM GENERATOR THROUGH MAIN STEAM NON RETURN VALVES INCLUDING ALL CONNECTED VENTS DRAINS TRAP PIPING TO & INCLUDING TRAP & TRAP BY-PASS VALVES INSTRUMENTATION
2. STEAM GENERATOR SAFETY RELIEF VALVES MS-45 THROUGH MS-49 & ATMOSPHERIC DUMP VALVES PCV-1134 THROUGH PCV-1137 INCLUDING DISCHARGE PIPING THEREFROM
3. STEAM SUPPLY TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP INCLUDING ALL CONNECTED VENTS DRAINS TRAP PIPING TO & INCLUDING TRAP & TRAP BY-PASS VALVE. INSTRUMENTATION. RELIEF VALVE WITH DISCHARGE PIPING AND TURBINE EXHAUST PIPING
4. THE QUALITY GROUP A.B.C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.

REFERENCE DWGS

9321-C-2016 - FLOW DIAGRAM SYMBOLS
9321-F-2049 - YARD AREA WEST OF CONTM BLD'G MAIN STEAM PIPING SHT.#1
9321-F-2041 - FLOW DIAGRAM MAIN STEAM TRAPS.SHT.#1
B235623 - ATMOSPHERIC STEAM DUMP VALVE PANEL

NOTE A

THIS BOUNDS THE PORTION OF THE MAIN STEAM SYSTEM SHOWN ON THE DRAWING WHICH IS INCLUDED IN THE SECONDARY COOLANT SYSTEM DESCRIPTION IN EXHIBIT "A" CI-240-1.

NOTE:

FOR TRAP "T" DIAGRAM SEE DWG. 9321-F-2041

84 INSERVICE INSPECTION NOTES:

1. CP=CONTAINMENT PENETRATIONS. ASME CLASS MC APPLIES.
2. FOR NON-CODE PIPING PENETRATING CONTAINMENT & NOT CLASSIFIED QUALITY GROUP "A", "B" OR "C" QUALITY GROUP "MC" DESIGNATION SHALL BE APPLIED.

THIS DRAWING CONTAINS ITEMS WHICH MUST BE CONTROLLED WITHIN CON EDISON AS:
"CLASS A" ITEMS
PER CI-240-1

THIS DWG. TO BE REVISED ONLY IN CUSTOMISED AUTOPLANT.

REV	DESCRIPTION	DATE	BY	CHK'D	APP.
84	INCORPORATED DRN-06-04715, ER-IP2-05-22495	11/08/06	CLG	APPROVAL SIGNATURES ON FILE	

REVISIONS

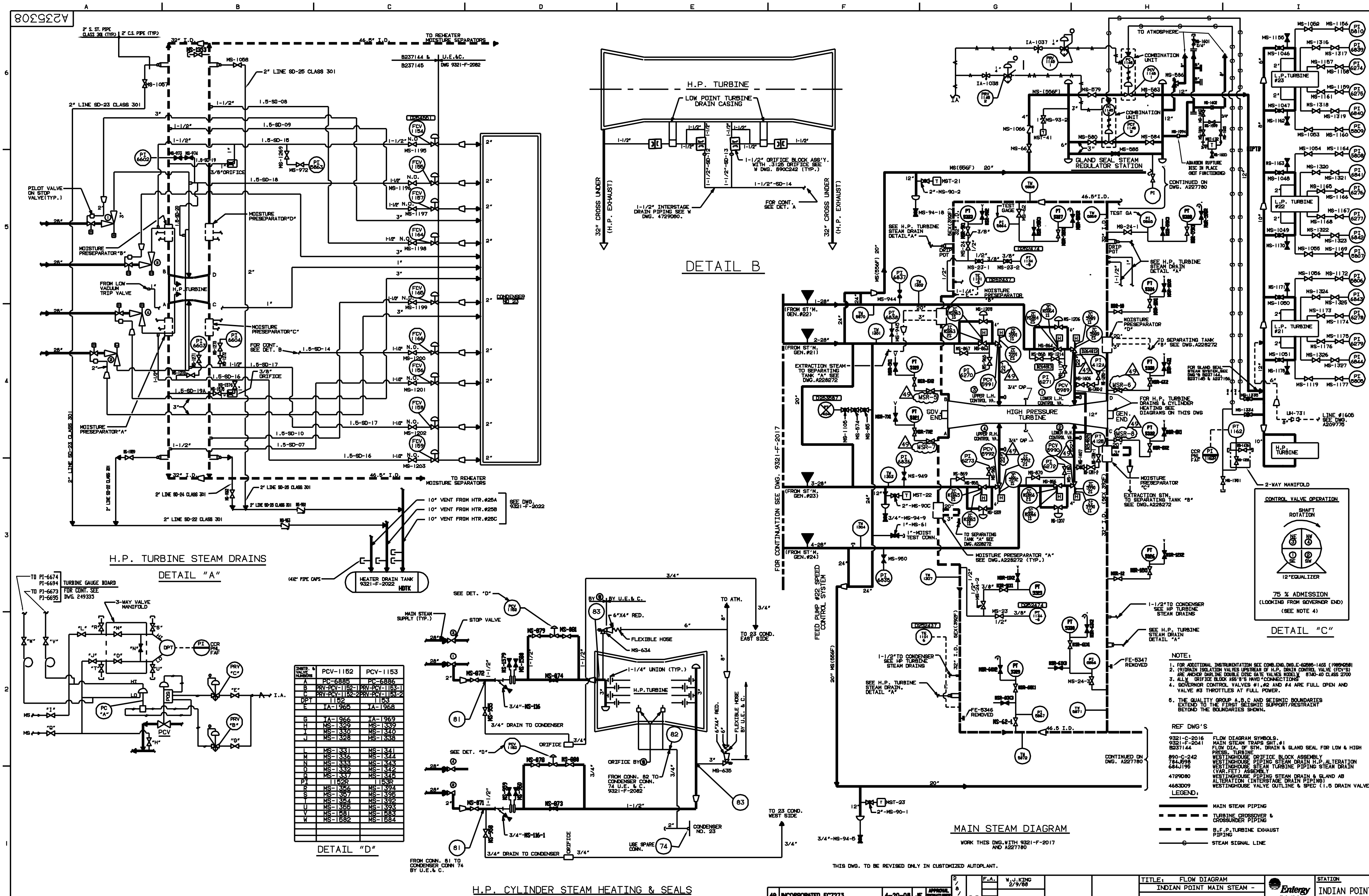
DATE	CKR.	SUPV.	DESIGN ENG	DISC. ENG.	ENG. MGR.
1/13/88	K.E.	F.A.	W.J.KING/G.C. 1-13-88		

REVIEW — APPROVALS

TITLE: FLOW DIAGRAM
MAIN STEAM -
UFSAR FIGURE No. 10.2-1 (SHT. 2)
DRWN. BY GIBBS&HILL SCALE REC'D

Con Edison — STATION: INDIAN POINT

DWG. NO. 9321-F-2017 MY



INSTR. & VALVE NUMBERS	PCV-1152	PCV-1153
A	PC-6885	PC-6886
B	PRV-PCV-1152-1	PRV-PCV-1153-1
C	PRV-PCY-1152-2	PRV-PCV-1153-2
DPT	1152	1153
E	IA-1965	IA-1968
G	IA-1966	IA-1969
H	MS-1329	MS-1339
I	MS-1330	MS-1340
J	MS-1328	MS-1338
L	MS-1331	MS-1341
M	MS-1336	MS-1344
N	MS-1333	MS-1343
O	MS-1332	MS-1342
Q	MS-1337	MS-1345
PI	1152R	1153R
R	MS-1356	MS-1394
S	MS-1357	MS-1395
T	MS-1354	MS-1392
U	MS-1355	MS-1393
V	MS-1581	MS-1583
W	MS-1582	MS-1584

DETAIL "D"

NOTE:

1. FOR ADDITIONAL INSTRUMENTATION SEE COMB.ENG.DWG.E-62585-1403 (1985M258)
2. (9)DRAIN ISOLATION VALVES UPSTREAM OF H.P. DRAIN CONTROL VALVE (FCV'S) ARE ANCHOR DARLINE DOUBLE DISC GATE VALVES MODEL 8740-40 CLASS 2700
3. ALL ORIFICE BLOCK ASS'B'S HAVE 1" CONNECTIONS
4. GOVERNOR CONTROL VALVES #1,#2 AND #4 ARE FULL OPEN AND VALVE #3 THROTTLES AT FULL POWER.
5. THE QUALITY GROUP A,B,C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.

REF DWG'S

9321-C-2016	FLOW DIAGRAM SYMBOLS.
9321-F-2041	MAIN STEAM TRAPS SHT.#1
B237144	FLOW DIA. OF STM. DRAIN & GLAND SEAL FOR LOW & HIGH PRESS. TURBINE
890-C-242	WESTINGHOUSE ORIFICE BLOCK ASSEMBLY
784J598	WESTINGHOUSE PIPING STEAM DRAIN H.P.ALTERATION
684J195	WESTINGHOUSE STEAM TURBINE PIPING STEAM DRAIN (VAR.FET) ASSEMBLY
4729D80	WESTINGHOUSE PIPING STEAM DRAIN & GLAND AB ALTERATION (INTERSTAGE DRAIN PIPING)
4683D09	WESTINGHOUSE VALVE OUTLINE & SPEC (1.5 DRAIN VALVE)

LEGEND:

- MAIN STEAM PIPING
- TURBINE CROSSOVER & CROSSUNDER PIPING
- B.F.P.TURBINE EXHAUST PIPING
- STEAM SIGNAL LINE

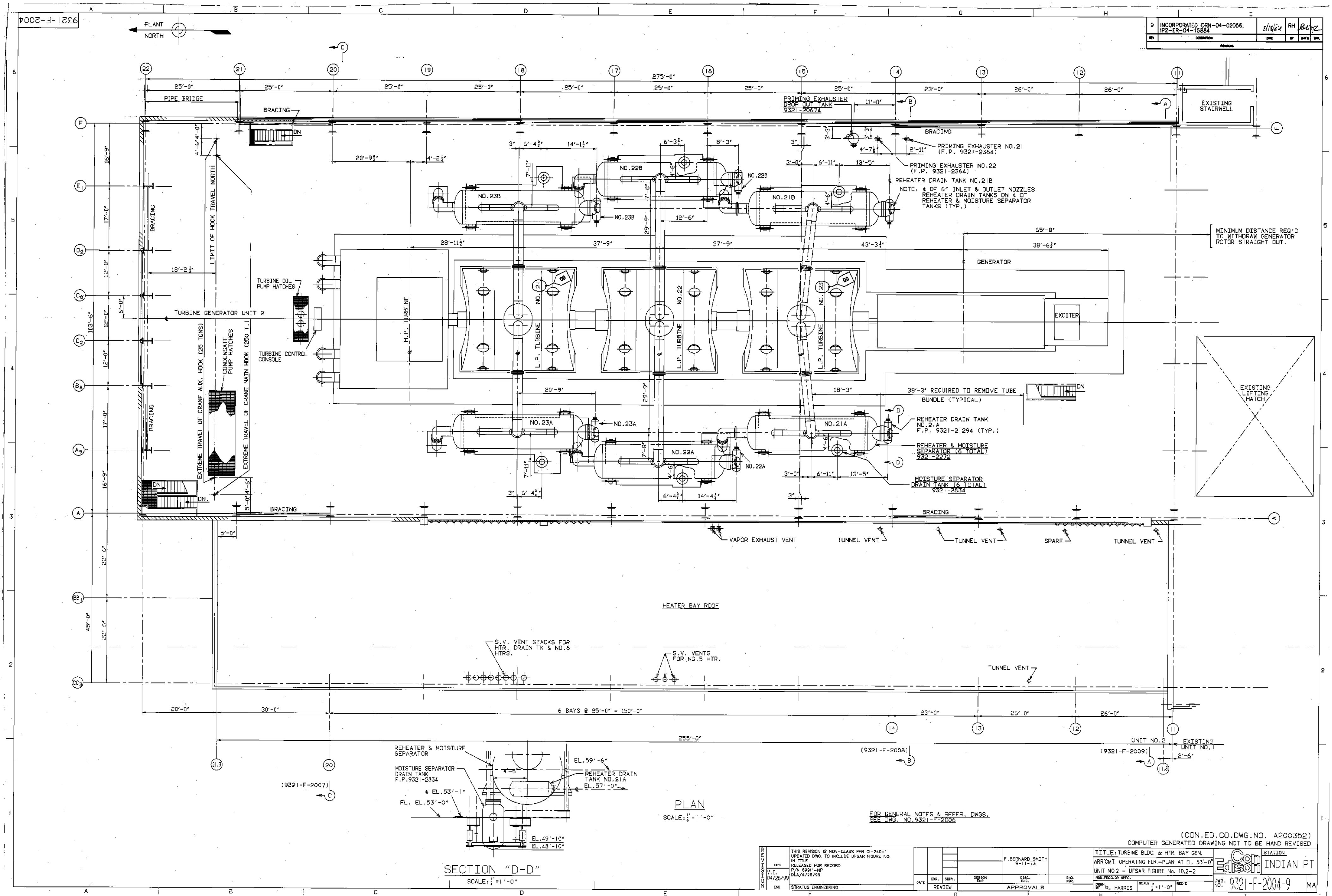
WORK THIS DWG.WITH 9321-F-2017 AND A227780

THIS DWG. TO BE REVISED ONLY IN CUSTOMIZED AUTOPLANT.

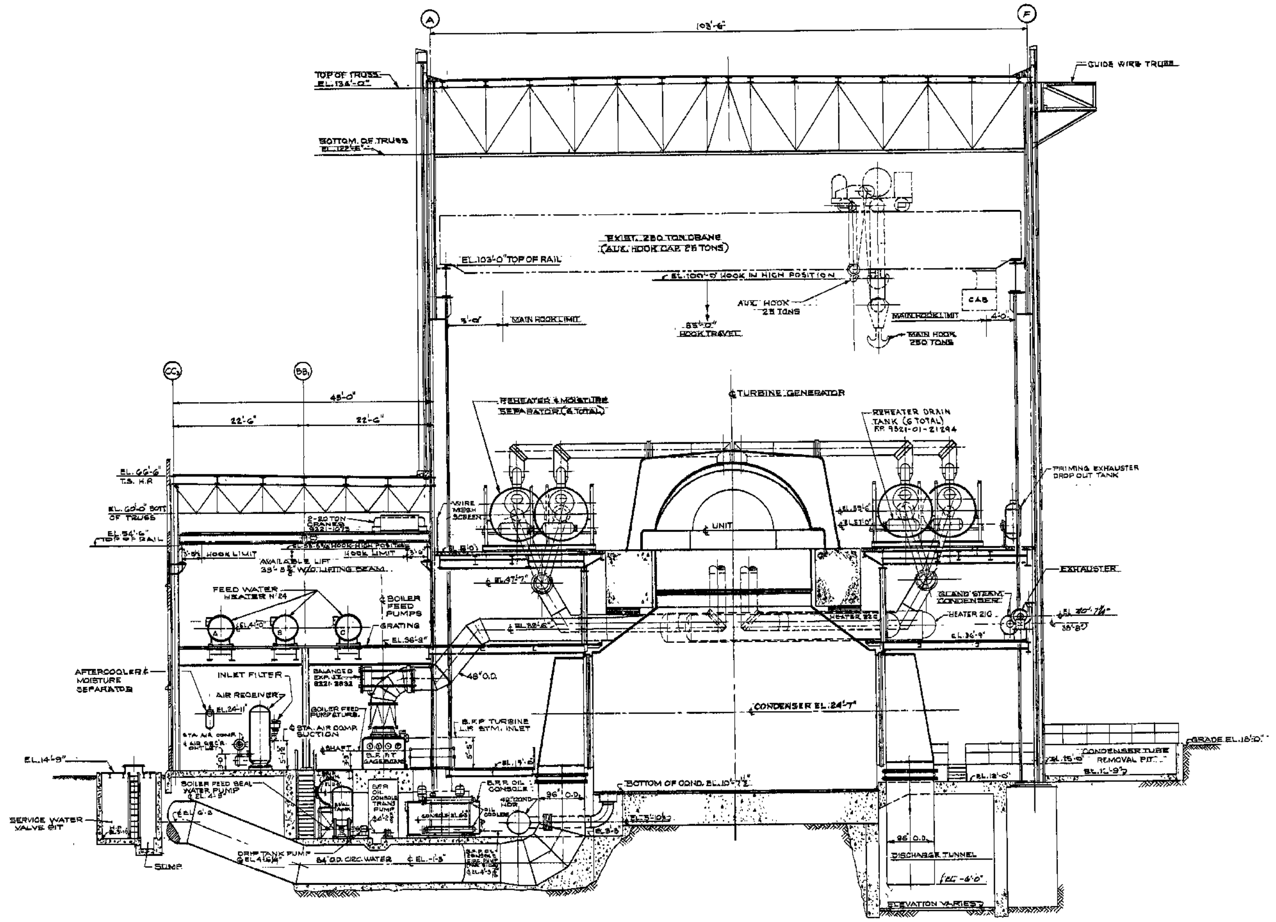
REV	DESCRIPTION	DATE	BY	APPROVAL SIGNATURES ON FILE
49	INCORPORATED EC7273	4-20-08	JF	

DATE: 2/8/88 — D.P. — F.A. — W.J.KING 2/9/88 — REVIEW — APPROVALS

TITLE: FLOW DIAGRAM
INDIAN POINT MAIN STEAM -
UFSAR FIGURE No. 10.2-1 (SHT. 3)
DRWN. BY K.EYNOLD — SCALE NONE
Entergy
STATION: INDIAN POINT
DWG. NO. A235308-49 MY


9321-F-2004
PLANT NORTH
9 INCORPORATED DRN-04-02056, IP2-ER-04-15884 8/18/04 RH
275'-0"
PIPE BRIDGE
BRACING
PRIMING EXHAUSTER DROP OUT TANK 9321-20674
EXISTING STAIRWELL
PRIMING EXHAUSTER NO.21 (F.P. 9321-2364)
PRIMING EXHAUSTER NO.22 (F.P. 9321-2364)
REHEATER DRAIN TANK NO.21B
NOTE: ℄ OF 6" INLET & OUTLET NOZZLES REHEATER DRAIN TANKS ON ℄ OF REHEATER & MOISTURE SEPARATOR TANKS (TYP.)
NO.23B
NO.22B
NO.21B
MINIMUM DISTANCE REQ'D TO WITHDRAW GENERATOR ROTOR STRAIGHT OUT.
LIMIT OF HOOK TRAVEL NORTH
TURBINE OIL PUMP HATCHES
GENERATOR
TURBINE GENERATOR UNIT 2
H.P. TURBINE
NO.21 L.P. TURBINE
NO.22 L.P. TURBINE
NO.23 L.P. TURBINE
EXCITER
TURBINE CONTROL CONSOLE
CONDENSATE PUMP HATCHES
EXTREME TRAVEL OF CRANE AUX. HOOK (25 TONS)
EXTREME TRAVEL OF CRANE MAIN HOOK (250 T.)
EXISTING LIFTING HATCH
38'-3" REQUIRED TO REMOVE TUBE BUNDLE (TYPICAL)
REHEATER DRAIN TANK NO.21A F.P. 9321-21294 (TYP.)
REHEATER & MOISTURE SEPARATOR (6 TOTAL) 9321-2272
MOISTURE SEPARATOR DRAIN TANK (6 TOTAL) 9321-2834
NO.23A
NO.22A
NO.21A
VAPOR EXHAUST VENT
TUNNEL VENT
SPARE
HEATER BAY ROOF
S.V. VENT STACKS FOR HTR. DRAIN TK & NO.5 HTRS.
S.V. VENTS FOR NO.5 HTR.
6 BAYS @ 25'-0" = 150'-0"
255'-0"
UNIT NO.2
EXISTING UNIT NO.1
(9321-F-2008)
(9321-F-2009)
(9321-F-2007)
REHEATER & MOISTURE SEPARATOR
MOISTURE SEPARATOR DRAIN TANK F.P.9321-2834
EL.59'-6"
REHEATER DRAIN TANK NO.21A
EL.57'-0"
℄ EL.53'-1"
FL. EL.53'-0"
EL.49'-10"
EL.48'-10"
SECTION "D-D"
SCALE: 1/4"=1'-0"
PLAN
SCALE: 1/8"=1'-0"
FOR GENERAL NOTES & REFER. DWGS. SEE DWG. NO.9321-F-2006
(CON.ED.CO.DWG.NO. A200352)
COMPUTER GENERATED DRAWING NOT TO BE HAND REVISED
THIS REVISION IS NON-CLASS PER CI-240-1 UPDATED DWG. TO INCLUDE UFSAR FIGURE NO. IN TITLE
RELEASED FOR RECORD P/N 69991-NP DLA/4/26/99
V.T. 04/26/99
STRATUS ENGINEERING
F.BERNARD SMITH 9-11-73
REVIEW
APPROVALS
TITLE: TURBINE BLDG. & HTR. BAY GEN. ARR'GMT. OPERATING FLR.-PLAN AT EL. 53'-0"
UNIT NO.2 - UFSAR FIGURE No. 10.2-2
R. HARRIS
Con Edison
STATION INDIAN PT
DWG. NO. 9321-F-2004-9

3/8/2004 6:37:34 PM 9321-2008-0-7.dwg



103'-6"
TOP OF TRUSS EL. 134'-0"
BOTTOM OF TRUSS
GUIDE WIRE TRUSS
EXIST. 250 TON CRANE (AUX. HOOK CAP. 25 TONS)
EL. 103'-0" TOP OF RAIL
EL. 100'-0" HOOK IN HIGH POSITION
AUX. HOOK 25 TONS
MAIN HOOK LIMIT
65'-0" HOOK TRAVEL
CAB
MAIN HOOK 250 TONS
℄ TURBINE GENERATOR
REHEATER & MOISTURE SEPARATOR (6 TOTAL)
REHEATER DRAIN TANK (6 TOTAL)
PRIMING EXHAUSTER DROP OUT TANK
45'-0"
22'-6"
22'-6"
EL. 66'-6" T.S. H.R.
EL. 60'-0" BOTT OF TRUSS
EL. 54'-6" TOP OF RAIL
HOOK LIMIT
AVAILABLE LIFT
FEED WATER HEATER No. 24
BOILER FEED PUMPS
GRATING
EXHAUSTER
GLAND STEAM CONDENSER
HEATER 21C
AFTERCOOLER & MOISTURE SEPARATOR
INLET FILTER
AIR RECEIVER
48" O.D.
CONDENSER EL. 24'-7"
B.F.P. TURBINE L.P. STM. INLET
GRADE EL. 15'-0"
CONDENSER TUBE REMOVAL PIT
EL. 14'-9"
SERVICE WATER VALVE PIT
SUMP
BOILER FEED SEAL WATER PUMP
BOTTOM OF COND. EL. 10'-7 1/2"
96" O.D.
DISCHARGE TUNNEL
84" O.D. CIRC. WATER
ELEVATION VARIES

SECTION "B-B"
9321-F-2004
SCALE: 1/8"=1'-0"

V.I. 4/26/99	07

THIS REVISION IS NON-CLASS PER CI-240-1
UPDATED DRAWING TO INCLUDE UFSAR FIGURE No. IN TITLE
P/N 69911-NP
RELEASED FOR RECORD DLA/4/26/99

STRATUS ENGINEERING

07

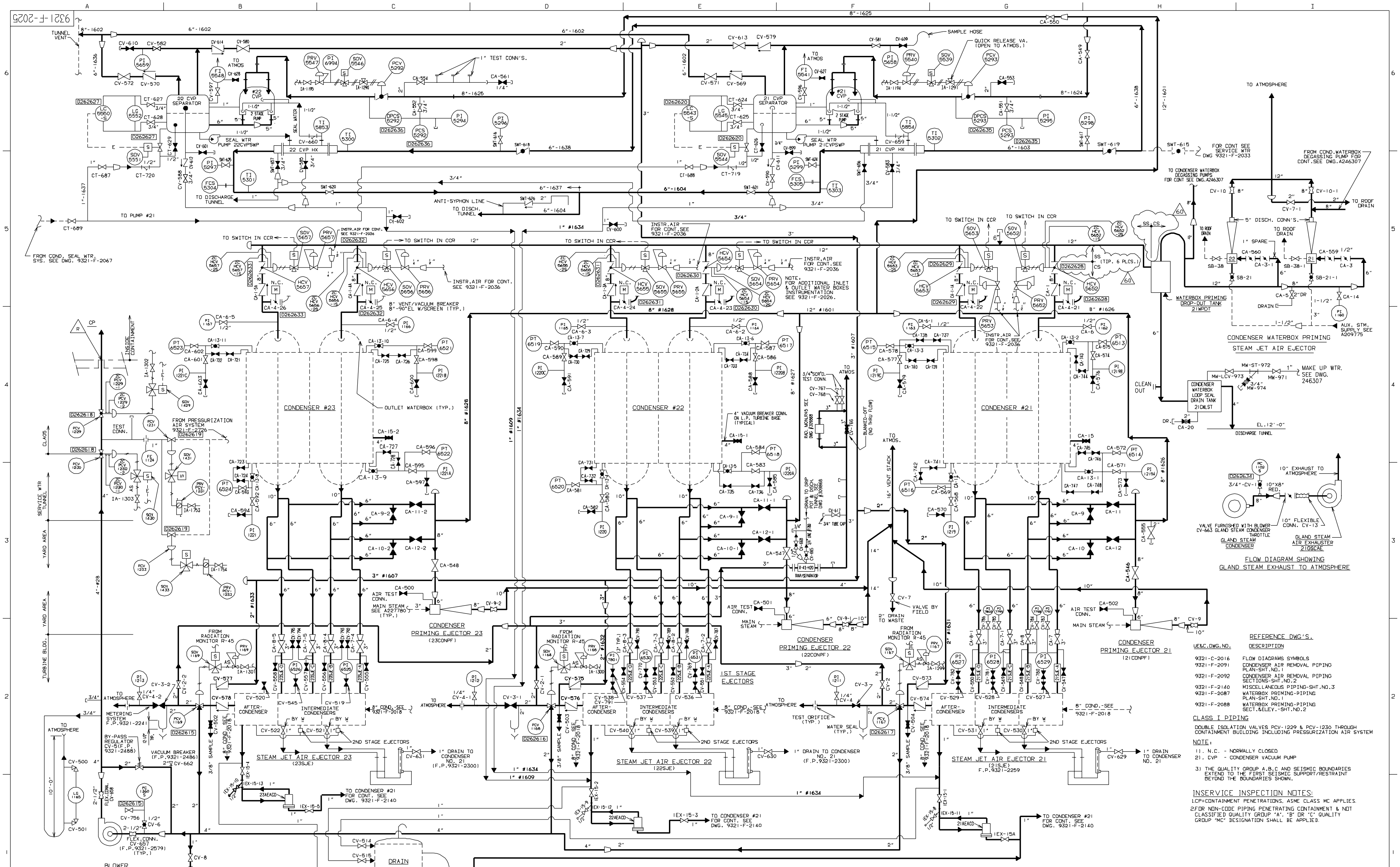
WESTINGHOUSE ELECTRIC CORPORATION

TURBINE BUILDING & HEATER BAY
GENERAL ARRANGEMENT CROSS SECTION
UFSAR FIGURE No. 10.2-3

FOR
CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 2

MA

U.E.&C. DWG. NO.	CON. ED. CO. DWG. NO.
9321-F-2008-7	200356



CONDENSER #23
CONDENSER #22
CONDENSER #21
CONDENSER PRIMING EJECTOR 23
CONDENSER PRIMING EJECTOR 22
CONDENSER PRIMING EJECTOR 21
STEAM JET AIR EJECTOR 23
STEAM JET AIR EJECTOR 22
STEAM JET AIR EJECTOR 21
1ST STAGE EJECTORS
2ND STAGE EJECTORS
INTERMEDIATE CONDENSERS
AFTER-CONDENSER
22 CVP SEPARATOR
21 CVP SEPARATOR
22 CVP HX
21 CVP HX
SEAL WTR PUMP 22CVPSWP
SEAL WTR PUMP 21CVPSWP
TUNNEL VENT
TO PUMP #21
TO DISCHARGE TUNNEL
ANTI-SYPHON LINE
TO DISCH. TUNNEL
TO SWITCH IN CCR
INSTR.AIR FOR CONT. SEE 9321-F-2036
OUTLET WATERBOX (TYP.)
8" VENT/VACUUM BREAKER 8"-90°EL W/SCREEN (TYP.)
FROM PRESSURIZATION AIR SYSTEM 9321-F-2726
FROM RADIATION MONITOR R-45
TO ATMOSPHERE
METERING SYSTEM F.P.9321-2241
BY-PASS REGULATOR CV-5(F.P. 9321-2488)
VACUUM BREAKER (F.P.9321-2486)
FLEX.CONN. CV-657 (F.P.9321-2579) (TYP.)
BLOWER AEDB (F.P.9321-2485)
DRAIN TANK AEDDT
DISCHARGE CANAL
TO CONDENSER #21 FOR CONT. SEE DWG. 9321-F-2140
1" DRAIN TO CONDENSER NO. 21 (F.P.9321-2300)
8" COND.-SEE 9321-F-2018
6" VENT STACK
TO ATMOS.
2" DRAIN TO WASTE
VALVE BY FIELD
TEST ORIFICE (TYP.)
WATER SEAL (TYP.)
MAIN STEAM
AIR TEST CONN.
TO ATMOSPHERE
FROM COND. WATERBOX DEGASSING PUMP FOR CONT. SEE DWG. A246307
TO CONDENSER WATERBOX DEGASSING PUMPS FOR CONT SEE DWG. A246307
FOR CONT SEE SERVICE WTR DWG 9321-F-2033
TO ROOF DRAIN
WATERBOX PRIMING DROP-OUT TANK 21WPDT
CONDENSER WATERBOX LOOP SEAL DRAIN TANK 21CWLST
MAKE UP WTR. SEE DWG. 246307
AUX. STM. SUPPLY SEE A209775
DISCHARGE TUNNEL
EL.12'-0"
CONDENSER WATERBOX PRIMING
STEAM JET AIR EJECTOR
10" EXHAUST TO ATMOSPHERE
10"X8" RED.
10" FLEXIBLE CONN. CV-13
VALVE FURNISHED WITH BLOWER CV-663 GLAND STEAM CONDENSER THROTTLE
GLAND STEAM CONDENSER
GLAND STEAM AIR EXHAUSTER 21GSCAE
FLOW DIAGRAM SHOWING GLAND STEAM EXHAUST TO ATMOSPHERE
INSIDE CONTAINMENT
SERVICE WTR TUNNEL
YARD AREA
TURBINE BLDG.
9321-F-2025

REFERENCE DWG'S.

UE&C.DWG.NO.	DESCRIPTION
9321-C-2016	FLOW DIAGRAMS SYMBOLS
9321-F-2091	CONDENSER AIR REMOVAL PIPING PLAN-SHT.NO.1
9321-F-2092	CONDENSER AIR REMOVAL PIPING SECTIONS-SHT.NO.2
9321-F-2140	MISCELLANEOUS PIPING-SHT.NO.3
9321-F-2087	WATERBOX PRIMING-PIPING PLAN-SHT.NO.1
9321-F-2088	WATERBOX PRIMING-PIPING SECT.&ELEV.-SHT.NO.2

CLASS I PIPING

DOUBLE ISOLATION VALVES PCV-1229 & PCV-1230 THROUGH CONTAINMENT BUILDING INCLUDING PRESSURIZATION AIR SYSTEM

NOTE:

1). N.C. - NORMALLY CLOSED
2). CVP - CONDENSER VACUUM PUMP
3) THE QUALITY GROUP A,B,C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.

INSERVICE INSPECTION NOTES:

1LCP=CONTAINMENT PENETRATIONS, ASME CLASS MC APPLIES.
2FOR NON-CODE PIPING PENETRATING CONTAINMENT & NOT CLASSIFIED QUALITY GROUP "A", "B" OR "C" QUALITY GROUP "MC" DESIGNATION SHALL BE APPLIED.

COMPUTER GENERATED DRAWING NOT TO BE HAND REVISED

REV	DESCRIPTION	DATE	BY	CHK'D	APP.
60	INCORPORATED EC-30546	07/08/11	DM		APPROVAL SIGNATURES ON FILE

W.S. 6/3/87 — F.A. W.J.KING 6/3/87

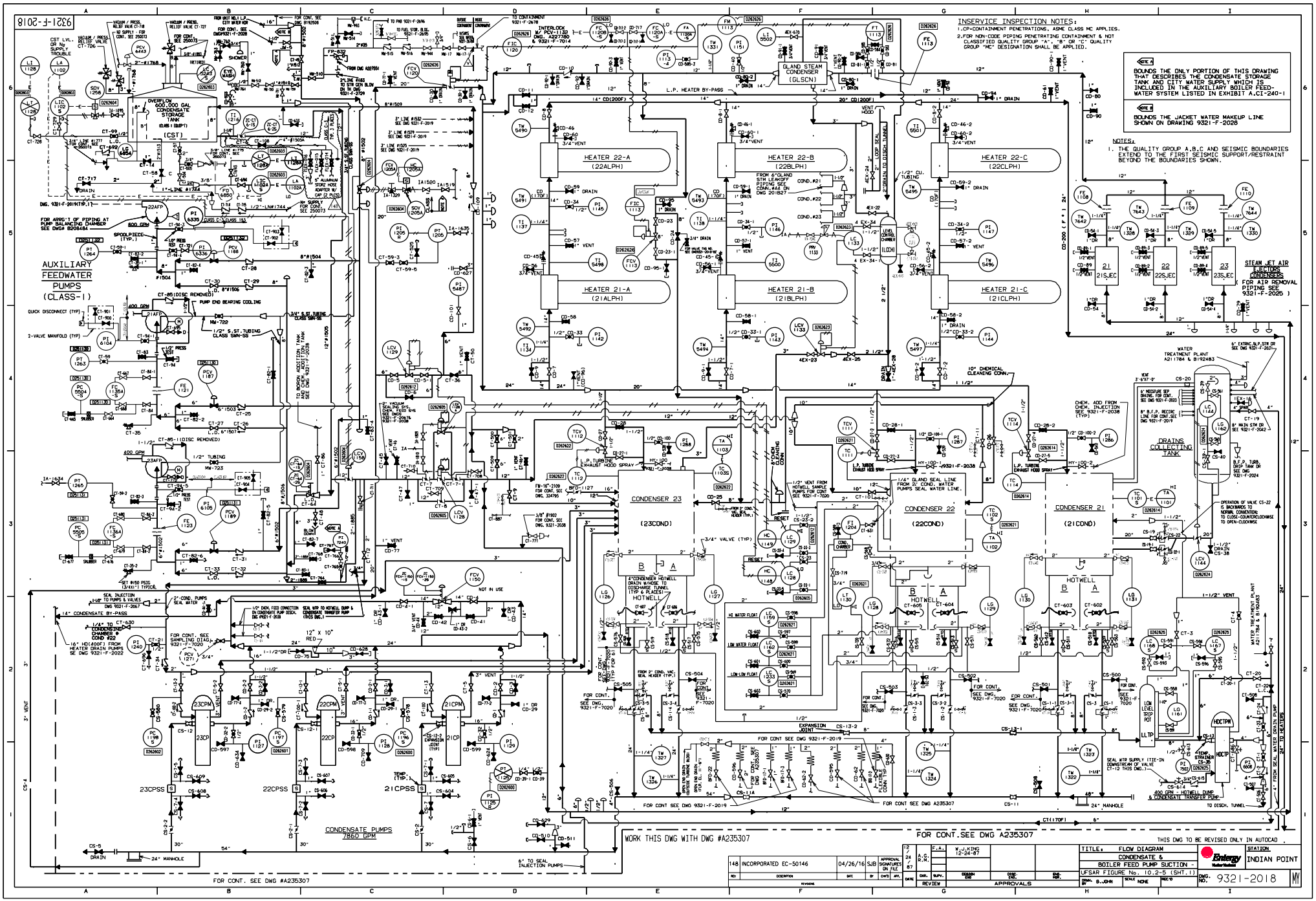
REVIEW — APPROVALS

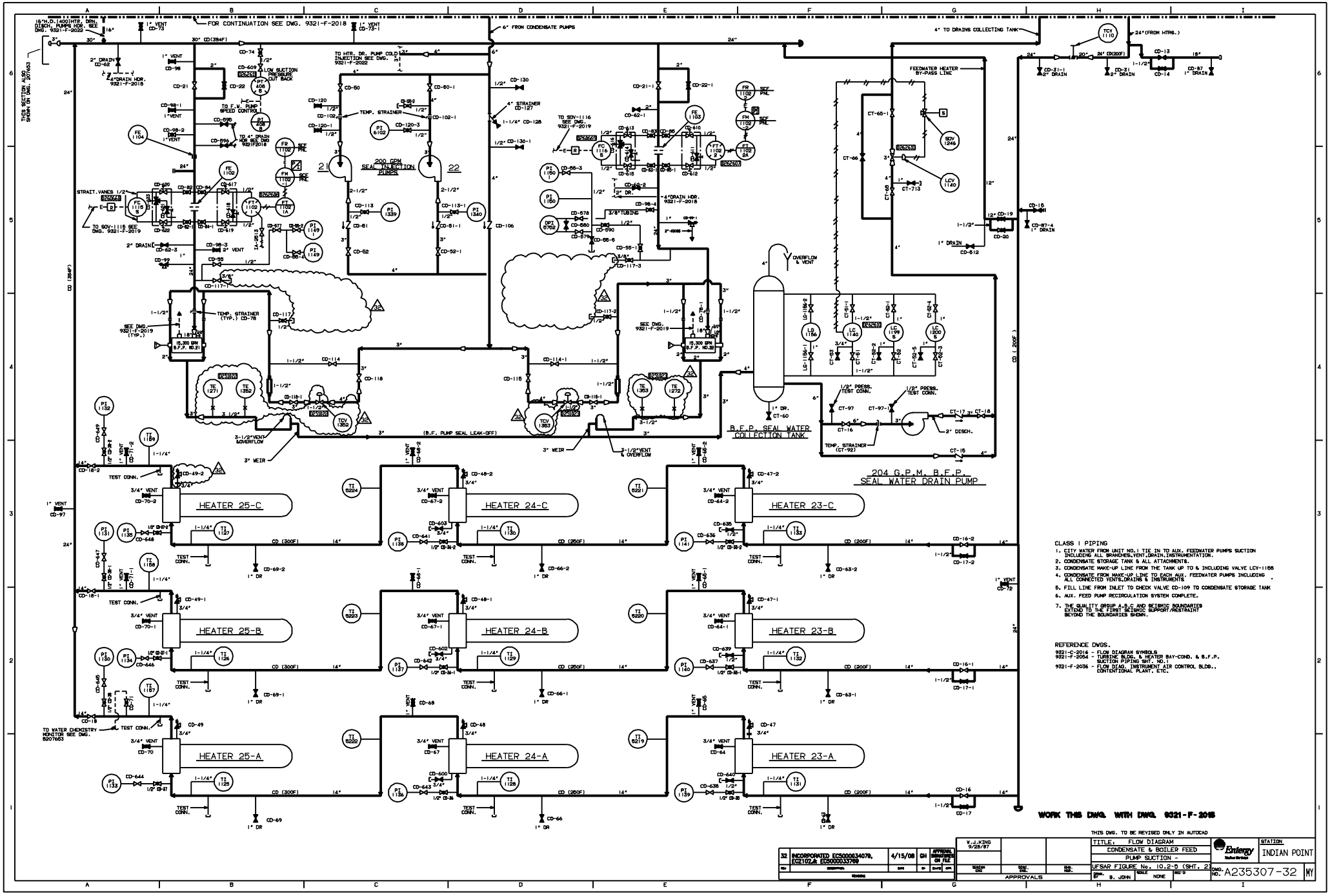
TITLE: FLOW DIAGRAM
CONDENSER AIR REMOVAL AND WATERBOX PRIMING (UFSAR FIG NO. 10.2-4)

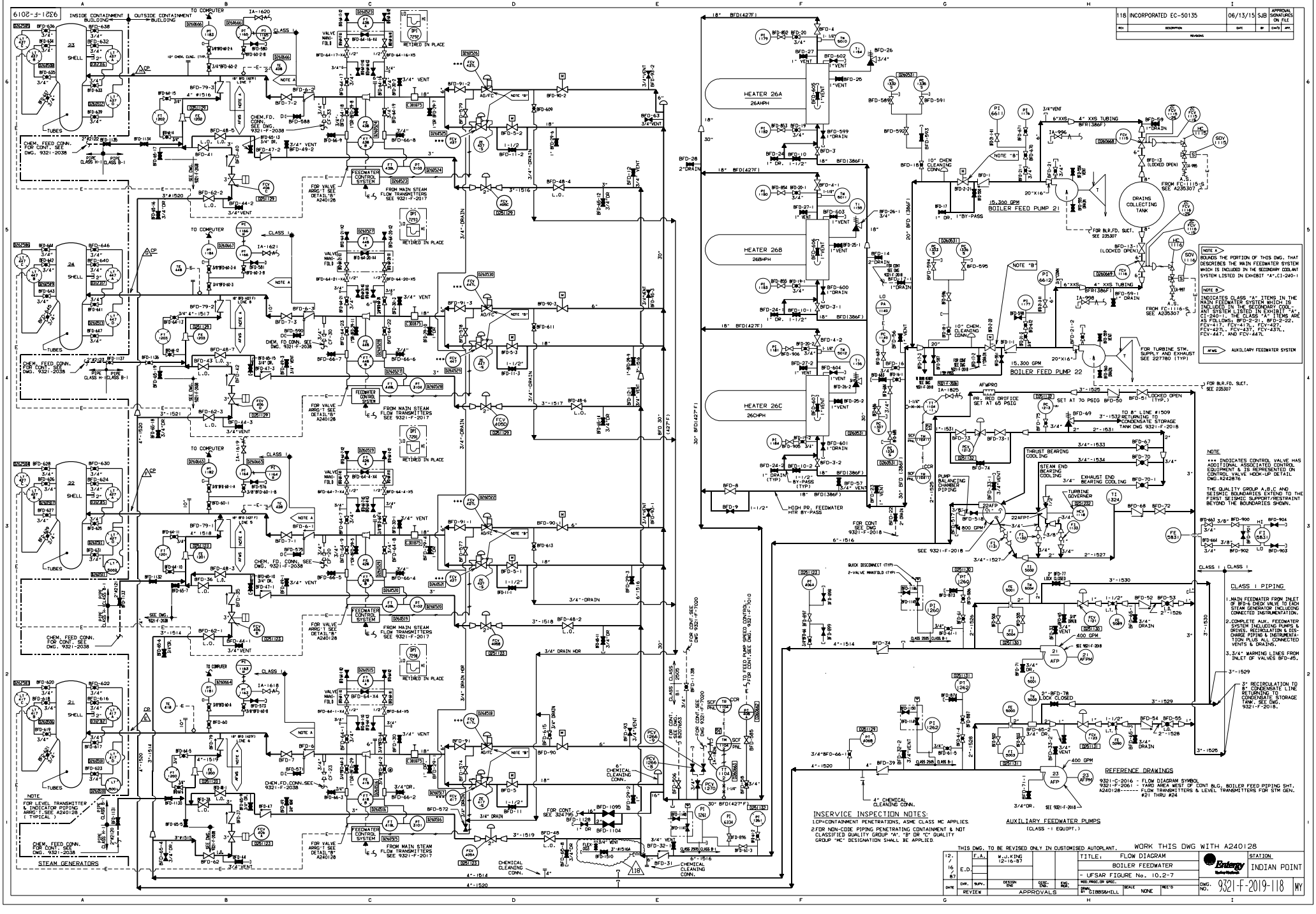
DRAWN BY K. EYMOLD — SCALE NONE

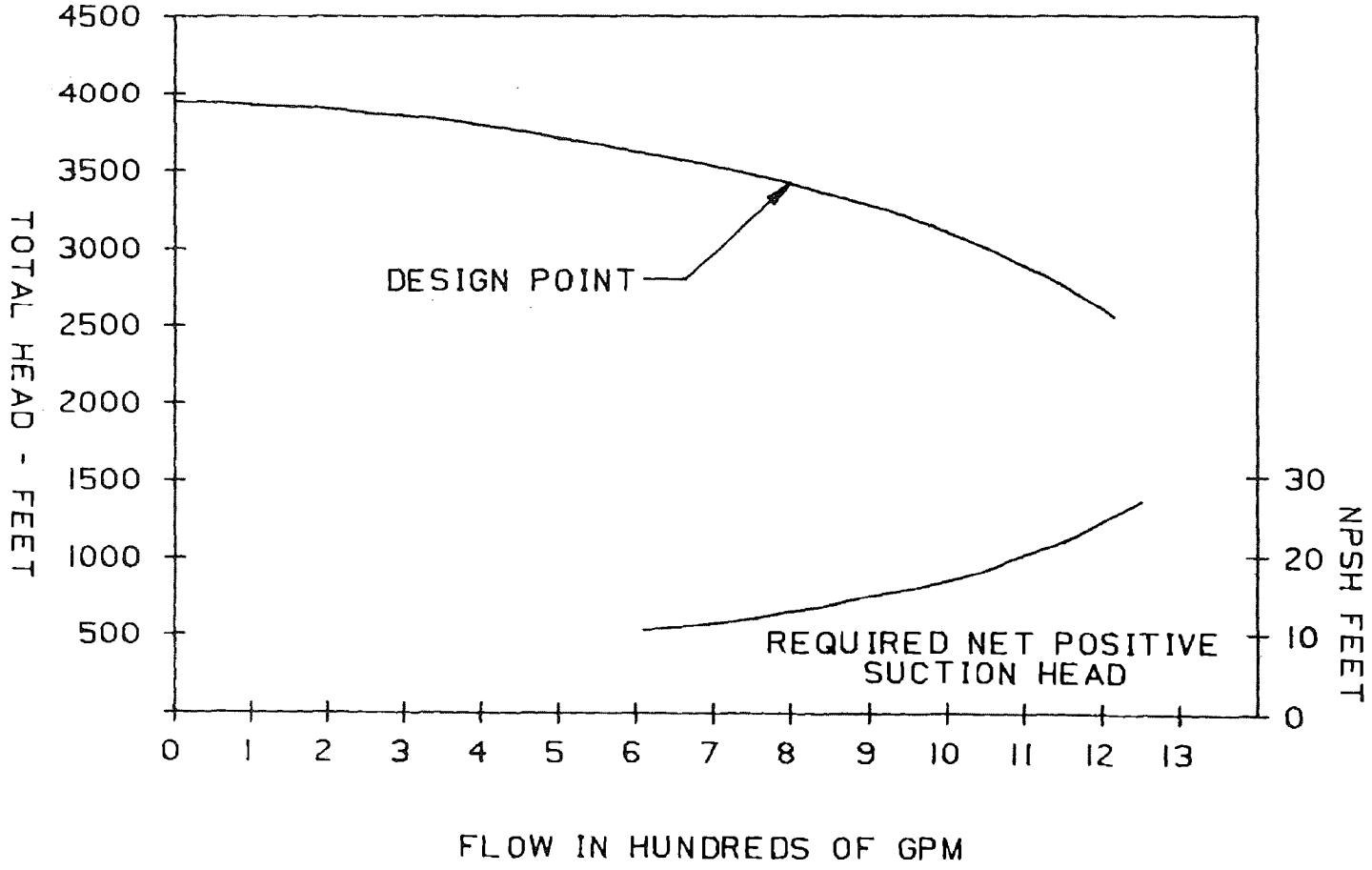
Entergy — STATION: INDIAN POINT

DWG. NO. 9321-F-2025-60 MY

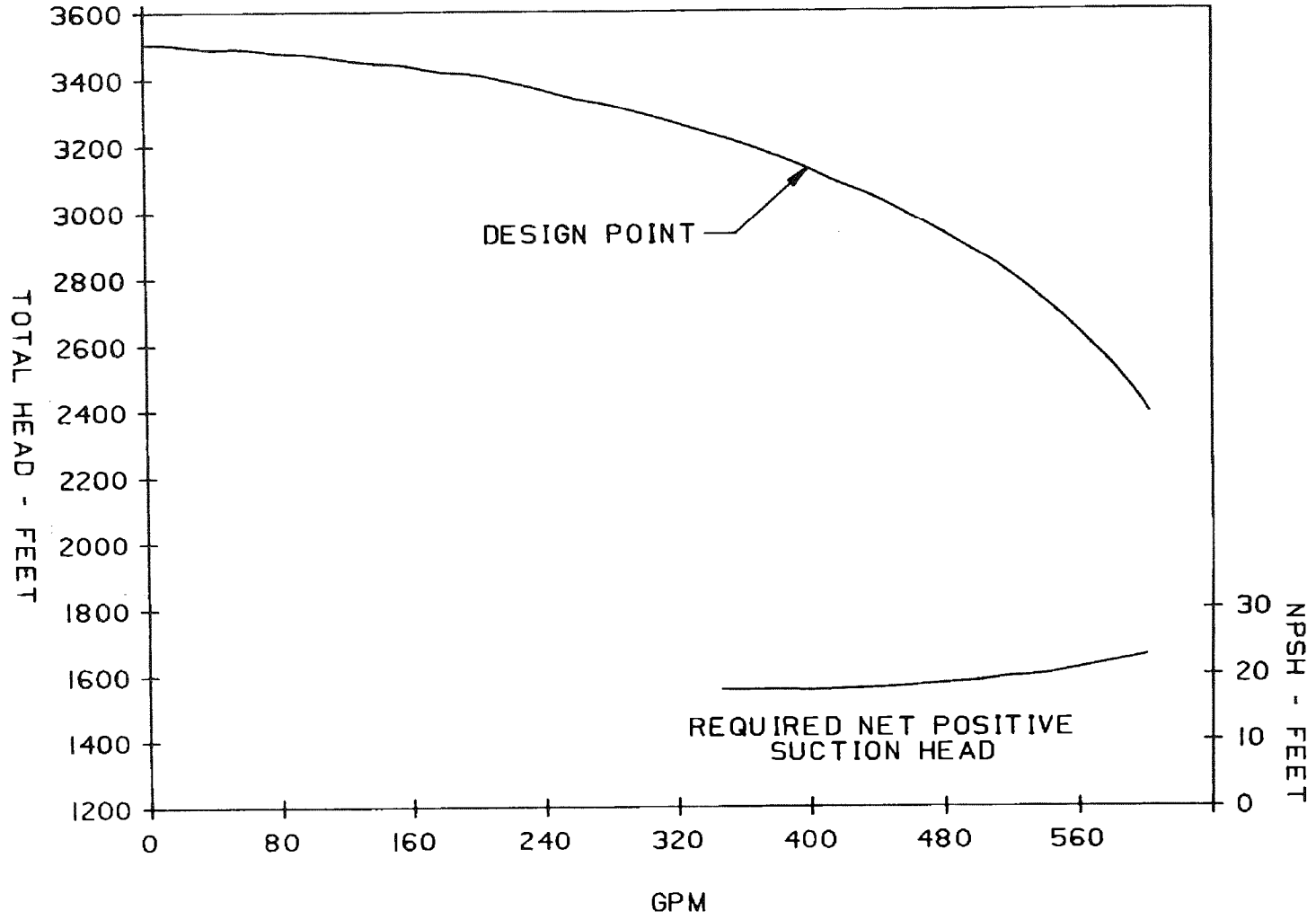

9321-F-2018
INSERVICE INSPECTION NOTES:
1.CP-CONTAINMENT PENETRATIONS, ASME CLASS MC APPLIES.
2.FOR NON-CODE PIPING PENETRATING CONTAINMENT & NOT CLASSIFIED QUALITY GROUP "A", "B" OR "C" QUALITY GROUP "MC" DESIGNATION SHALL BE APPLIED.
NOTE A
BOUNDS THE ONLY PORTION OF THIS DRAWING THAT DESCRIBES THE CONDENSATE STORAGE TANK AND CITY WATER SUPPLY WHICH IS INCLUDED IN THE AUXILIARY BOILER FEED-WATER SYSTEM LISTED IN EXHIBIT A,CI-240-1
NOTE B
BOUNDS THE JACKET WATER MAKEUP LINE SHOWN ON DRAWING 9321-F-2026
NOTES:
1. THE QUALITY GROUP A,B,C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.
AUXILIARY FEEDWATER PUMPS (CLASS-1)
(CST)
OVERFLOW 600,000 GAL CONDENSATE STORAGE TANK
HEATER 22-A (22ALPH)
HEATER 22-B (22BLPH)
HEATER 22-C (22CLPH)
HEATER 21-A (21ALPH)
HEATER 21-B (21BLPH)
HEATER 21-C (21CLPH)
GLAND STEAM CONDENSER (GLSCN)
CONDENSER 23 (23COND)
CONDENSER 22 (22COND)
CONDENSER 21 (21COND)
HOTWELL
STEAM JET AIR EJECTORS CONDENSERS (FOR AIR REMOVAL PIPING SEE 9321-F-2025)
DRAINS COLLECTING TANK
CONDENSATE PUMPS 7860 GPM
WORK THIS DWG WITH DWG #A235307
FOR CONT.SEE DWG A235307
THIS DWG TO BE REVISED ONLY IN AUTOCAD
148 INCORPORATED EC-50146 04/26/16 SJB
TITLE: FLOW DIAGRAM CONDENSATE & BOILER FEED PUMP SUCTION -
UFSAR FIGURE No. 10.2-5 (SHT.1)
STATION: INDIAN POINT
DWG. NO. 9321-2018
APPROVALS
REVIEW


FOR CONTINUATION SEE DWG. 9321-F-2018
6" FROM CONDENSATE PUMPS
4" TO DRAINS COLLECTING TANK
FEEDWATER HEATER BY-PASS LINE
200 GPM SEAL INJECTION PUMPS
21
22
B.F.P. SEAL WATER COLLECTION TANK
204 G.P.M. B.F.P. SEAL WATER DRAIN PUMP
HEATER 25-C
HEATER 24-C
HEATER 23-C
HEATER 25-B
HEATER 24-B
HEATER 23-B
HEATER 25-A
HEATER 24-A
HEATER 23-A
CLASS I PIPING
1. CITY WATER FROM UNIT NO.1 TIE IN TO AUX. FEEDWATER PUMPS SUCTION INCLUDING ALL BRANCHES,VENT,DRAIN,INSTRUMENTATION.
2. CONDENSATE STORAGE TANK & ALL ATTACHMENTS.
3. CONDENSATE MAKE-UP LINE FROM THE TANK UP TO & INCLUDING VALVE LCV-1188
4. CONDENSATE FROM MAKE-UP LINE TO EACH AUX. FEEDWATER PUMPS INCLUDING ALL CONNECTED VENTS,DRAINS & INSTRUMENTS
5. FILL LINE FROM INLET TO CHECK VALVE CD-109 TO CONDENSATE STORAGE TANK
6. AUX. FEED PUMP RECIRCULATION SYSTEM COMPLETE.
7. THE QUALITY GROUP A,B,C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.
REFERENCE DWGS.
9321-C-2016 - FLOW DIAGRAM SYMBOLS
9321-F-2054 - TURBINE BLDG. & HEATER BAY-COND. & B.F.P. SUCTION PIPING SHT. NO.1
9321-F-2036 - FLOW DIAG. INSTRUMENT AIR CONTROL BLDG., CONTENTIONAL PLANT, ETC.
WORK THIS DWG. WITH DWG. 9321-F-2015
THIS DWG. TO BE REVISED ONLY IN AUTOCAD
32 INCORPORATED EC5000034079, EC2102,& EC5000033769 4/15/08 GH
W.J.KING 9/28/87
APPROVALS
TITLE: FLOW DIAGRAM CONDENSATE & BOILER FEED PUMP SUCTION -
UFSAR FIGURE No. 10.2-5 (SHT. 2)
DRWN. B. JOHN
SCALE NONE
STATION INDIAN POINT
DWG. NO. A235307-32 MY


6102-J-1826
INSIDE CONTAINMENT BUILDING
OUTSIDE CONTAINMENT BUILDING
118 INCORPORATED EC-50135 06/13/15 SJB
REVISIONS
STEAM GENERATORS
HEATER 26A 26AHPH
HEATER 26B 26BHPH
HEATER 26C 26CHPH
15,300 GPM BOILER FEED PUMP 21
15,300 GPM BOILER FEED PUMP 22
DRAINS COLLECTING TANK
AUXILIARY FEEDWATER PUMPS
(CLASS - I EQUIPT.)
CLASS I PIPING
REFERENCE DRAWINGS
INSERVICE INSPECTION NOTES:
NOTE A
NOTE B
NOTE
WORK THIS DWG WITH A240128
TITLE: FLOW DIAGRAM
BOILER FEEDWATER
- UFSAR FIGURE No. 10.2-7
STATION
INDIAN POINT
DWG. NO. 9321-F-2019-118 MY



INDIAN POINT UNIT No. 2	
UFSAR FIGURE 10.2-8 STEAM TURBINE-DRIVEN AUXILIARY FEEDWATER PUMP ESTIMATED PERFORMANCE CHARACTERISTICS	
MIC. No. 1999MC3918	REV. No. 17A



INDIAN POINT UNIT No. 2	
UFSAR FIGURE 10.2-9 MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP ESTIMATED PERFORMANCE CHARACTERISTICS	
MIC. No. 1999MC3919	REV. No. 17A