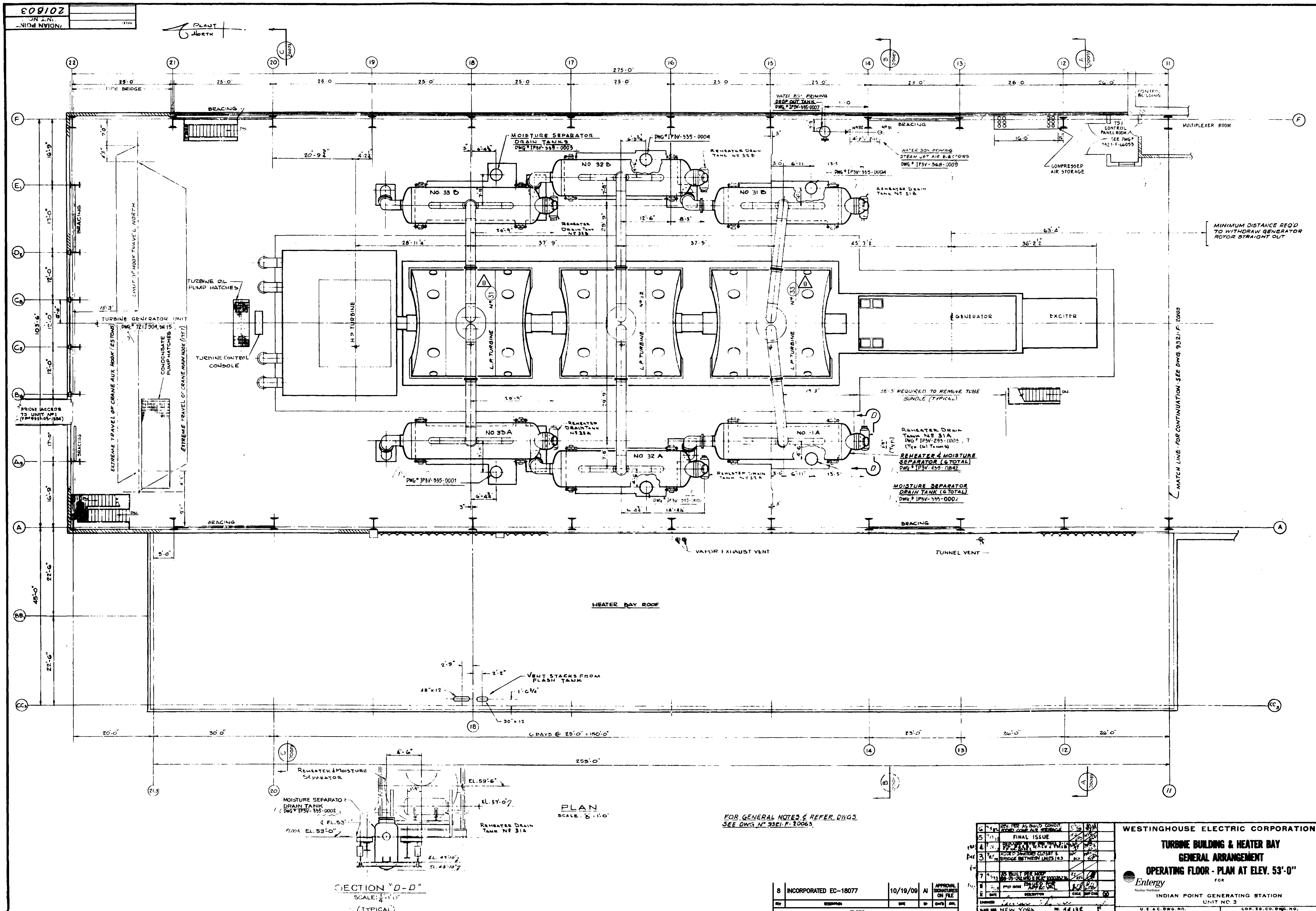
U. E. & C.

9321-F-20043


INDIAN POINT UNIT NO. 201803
PLANT NORTH
275'-0"
MOISTURE SEPARATOR DRAIN TANKS DWG # IP3V-335-0003
DWG # IP3V-335-0004
REHEATER DRAIN TANK Nº 32B
WATER 85% PRIMING DROP OUT TANK DWG # IP3V-335-0007
WATER 30% PRIMING STEAM JET AIR EJECTORS DWG # IP3V-368-0003
COMPRESSED AIR STORAGE
TSI CONTROL PANEL ROOM SEE DWG # 9321-F-66055
CONTROL BUILDING
MULTIPLEXER ROOM
BRACING
NO. 33 B
NO. 32 B
NO. 31 B
REHEATER DRAIN TANK Nº 33B
REHEATER DRAIN TANK Nº 31B
MINIMUM DISTANCE REQ'D TO WITHDRAW GENERATOR ROTOR STRAIGHT OUT
TURBINE OIL PUMP HATCHES
TURBINE GENERATOR UNIT DWG # 7213904 SH 15
TURBINE CONTROL CONSOLE
H.P. TURBINE
L.P. TURBINE
GENERATOR
EXCITER
LIMIT OF HOOK TRAVEL NORTH
CONDENSATE PUMP HATCHES
EXTREME TRAVEL OF CRANE AUX HOOK (25 TONS)
EXTREME TRAVEL OF CRANE MAIN HOOK (75T)
BRIDGE (ACCESS TO UNIT Nº 1) (FP # 9321-05-1384)
28'-3" REQUIRED TO REMOVE TUBE BUNDLE (TYPICAL)
NO. 33A
NO. 32 A
NO. 31A
REHEATER DRAIN TANK Nº 33A
REHEATER DRAIN TANK Nº 32A
REHEATER DRAIN TANK Nº 31A DWG # IP3V-293-0003 (TYP (6) TANKS)
REHEATER & MOISTURE SEPARATOR (6 TOTAL) DWG # IP3V-455-0842
MOISTURE SEPARATOR DRAIN TANK (6 TOTAL) DWG # IP3V-335-0002
DWG # IP3V-335-0001
MATCH LINE - FOR CONTINUATION SEE DWG 9321-F-20063
VAPOR EXHAUST VENT
TUNNEL VENT
HEATER BAY ROOF
VENT STACKS FROM FLASH TANK
6 BAYS @ 25'-0" = 150'-0"
255'-0"
PLAN SCALE: 1/8" = 1'-0"
REHEATER & MOISTURE SEPARATOR
MOISTURE SEPARATOR DRAIN TANK (DWG # IP3V-335-0002)
EL. 59'-6"
EL. 57'-0"
℄ EL. 53'
FLOOR EL. 53'-0"
REHEATER DRAIN TANK Nº 31A
SECTION "D-D" SCALE: 1/4" = 1'-0" (TYPICAL)

FOR GENERAL NOTES & REFER DWGS SEE DWG Nº 9321-F-20065

8	INCORPORATED EC-18077	10/19/09	AI	APPROVAL SIGNATURES ON FILE
REV	DESCRIPTION	DATE	BY	CHK'D / APR.

REV	DATE	DESCRIPTION	ENGR	SUP ENG
6		REV. PER AS BUILD CONDIT. ADDED COMP AIR STORAGE		
5		FINAL ISSUE		
4		[illegible]		
3		ADDED JANITORS CLOSET & BRIDGE BETWEEN UNITS 1 & 3		
7		AS BUILT PER MOD 93-03-012 MTG & PCK 10002827		
2		FIRST ISSUE ISSUED FOR APPROVAL		

ENGINEER
STATE REG. NEW YORK NO. 44132

UNITED ENGINEERS & CONSTRUCTORS INC.

WESTINGHOUSE ELECTRIC CORPORATION

TURBINE BUILDING & HEATER BAY
GENERAL ARRANGEMENT
OPERATING FLOOR - PLAN AT ELEV. 53'-0"

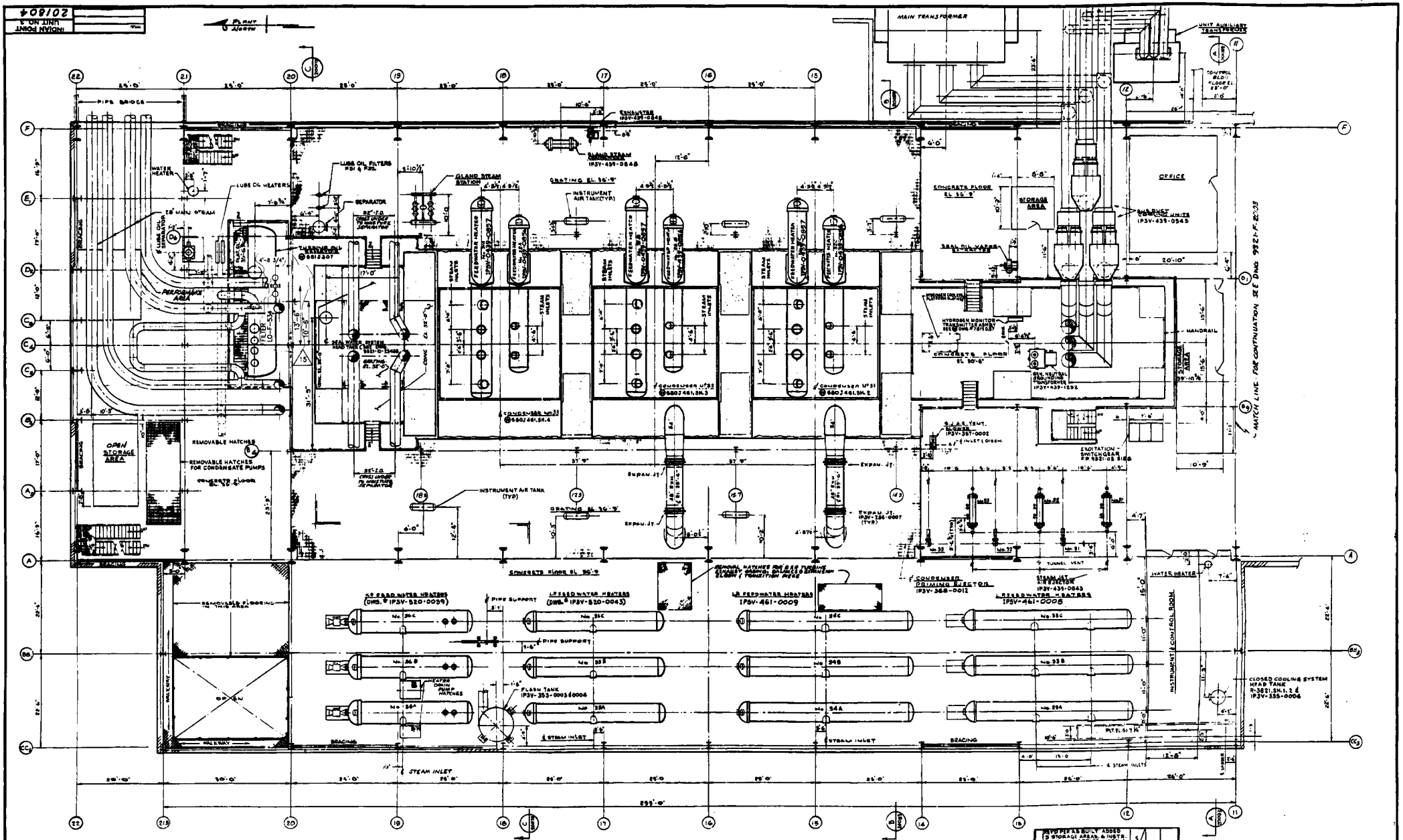
FOR

Entergy Nuclear Northeast

INDIAN POINT GENERATING STATION
UNIT NO. 3

U. E. & C. DWG. NO. 9321-F-20043- 8

CON. ED. CO. DWG. NO. A 201803



7	8-14-68	AS PER AS BUILT ADDED 2 STORAGE AREAS, & INSTR. AIR TANKS; OFFICE, INSTR. & CONT. ROOM, E.W. LEAKRATE TEST; SOUTH 2 WATER HEATERS, LUBE OIL SEPARATOR W/HEATERS AND LUBE OIL FILTER	DS
6	5-14-68	AS PER MAINTENANCE MCC	
5	11-1-67	FINAL ISSUE	
4	10-25-67	ADDED HYDROGEN DRYERS PLATE	
3	9-29-67	ADDED GEN. NEUTRAL GROUNDING TRANSFORMER	
2	9-15-67	REVISED AS PER COMMENTS	
1	8-25-67	REVISED AS PER COMMENTS	
0	8-4-67	ISSUED FOR APPROVAL	

15	11-1-67	AS BUILT	DS
14	10-25-67	AS BUILT PER MOD 68-1-284	
13	9-29-67	AS BUILT PER MOD 68-1-252	
12	9-15-67	AS BUILT PER MOD 68-1-252	
11	8-25-67	AS BUILT PER MOD. 67-03-067 LO	
10	8-4-67	AS BUILT PER MOD. 68-08-08-067 PW	
9	7-31-67	AS BUILT PER MOD # 68-1-075 TW	
8	7-31-67	AS BUILT PER MOD. 68-1-075 CONC. INCORPORATES MOD. 68-1-075 TW	

FOR GENERAL NOTES & REFERENCE DWG. NOS SEE 9321-F-20003

WESTINGHOUSE ELECTRIC CORPORATION

TURBINE BUILDING & HEATER BAY GENERAL ARRANGEMENT MEZZANINE FLOOR - PLAN AT ELEV. 38'-9"

FOR

CONSOLIDATED EDISON COMPANY

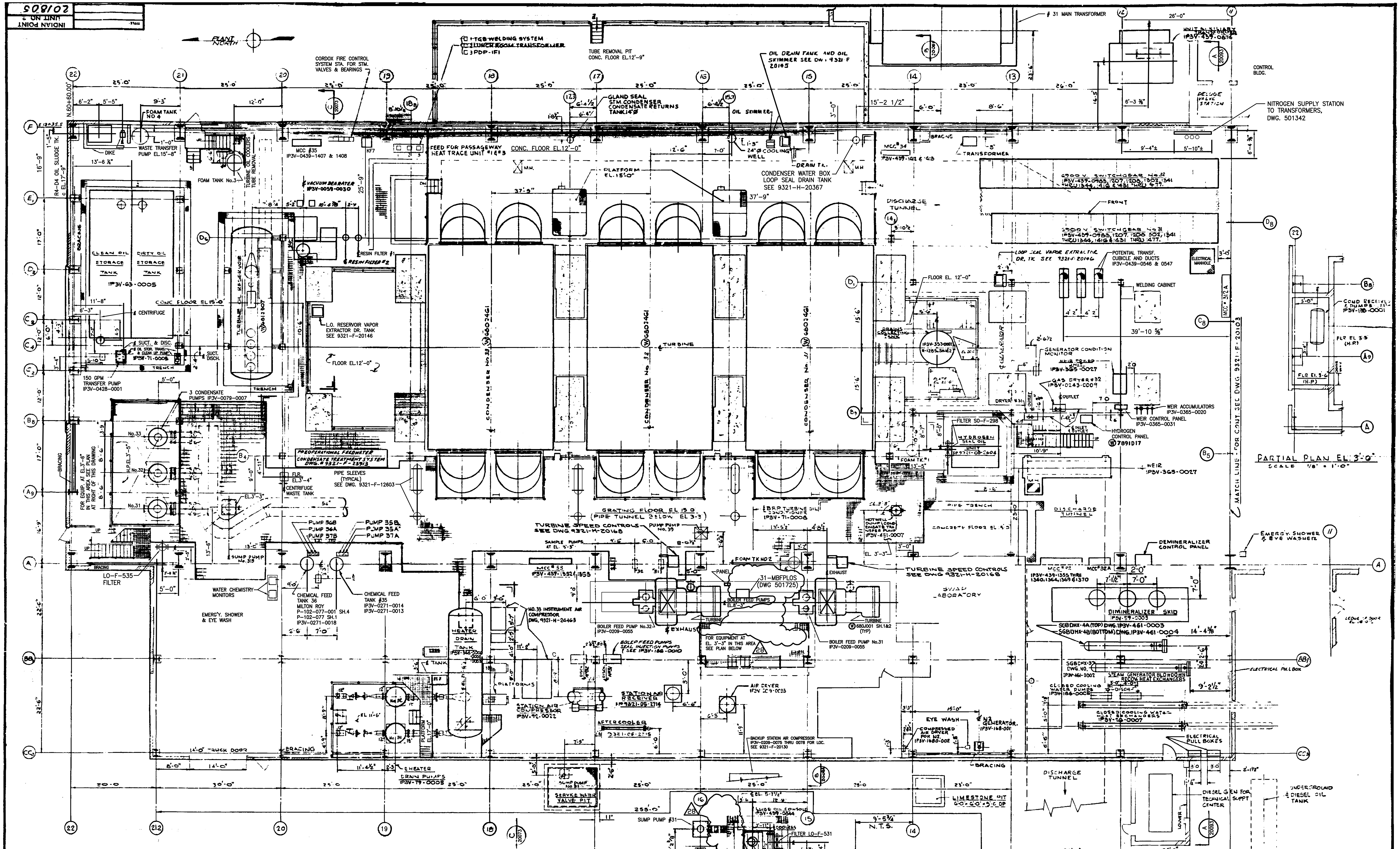
INDIAN POINT GENERATING STATION UNIT NO. 2

U.E.&C. DWG. NO. 9321-F-20053-15

CON. ED. DR. DWG. NO. A 201804

UNITED ENGINEERS & CONSTRUCTORS INC. NEW YORK, PA.

TYPE B



REFERENCE DRAWINGS

UE &C DWG No	DESCRIPTION
9321-F-20043	OPERATING FLOOR PLAN @ 53'-0"
9321-F-20053	MEZZANINE FLOOR PLAN @ 36-3"
9321-F-20073	CROSS SECTION "C-C"
9321-F-20083	CROSS SECTION "B-B"
9321-F-20093	CROSS SECTION "A-A"
9321-F-20103	2 BAY EXTENSION PLAN & ELEVATION
9321-F-40183	HEATING - PI M.

NO.	DATE	DESCRIPTION
24	1-2-03	AS BUILT PER DCP 01-3-066
23	7-19-01	AS BUILT PER MMP 96-3-290
22	3-29-99	AS BUILT PER DC #96-3-122
21	5-4-98	AS BUILT PER DCR #100144737

ISSUE/REVISIONS

REV	DESCRIPTION	DATE	BY
28	INCORPORATED EC-6829	05/07/09	DM

APPROVAL SIGNATURES ON FILE

20	9-27-95	AS BUILT PER DCR 100121467
19	9-1-93	AS-BUILT PER MOD No 93-3-262 SA, 91-03-199H2, 92-03-224 MT6., 93-03-006 IA, 93-03-030 LO & DCR NO. 100028276 87-3-057 MBFP
18	9-20-93	AS BUILT PER MOD. NO. 86-03-005 H1 & DCR 100028276
17	4-4-91	AS BUILT PER PLANT WALKDOWN
	6-5-69	FIRST ISSUE — ISSUED FOR APPROVAL
16	3-7-91	AS BUILT PER MOD. NO. 86-03-126 IA
15	1-25-90	AS BUILT PER MOD #86-03-081SG
14	11-17-88	AS-BUILT PER MOD# 86-03-034 FE & WORK REQUEST# 0743
13	7-30-87	ACCORD MOD PER #82-03-012 MOD, 82-03-098 COND & 82-03-99, 82-03-41 CHEM & 83-03-005
12	1-21-82	AS PER AS BUILT CONDITIONS
11	11-6-81	REVD PER LINE WALK
10	8-20-81	AS PER MAINTENANCE MOD
9	11-17-75	FINAL ISSUE
8	4-15-75	REV. CHEM FEED TANK NO'S
7	2-26-73	ADDED DIMENSION & F.P. REFERENCE NUMBERS

STATE OF NEW YORK No. 44132

UNITED ENGINEERS & CONSTRUCTORS INC.

WESTINGHOUSE ELECTRIC CORPORATION

TURBINE BUILDING & HEATER BAY GENERAL ARRANGEMENT GROUND FLOOR - PLAN AT ELEV. 15'-0"

FOR

ENTERGY NUCLEAR NORTHEAST
INDIAN POINT GENERATING STATION
UNIT NO. 3

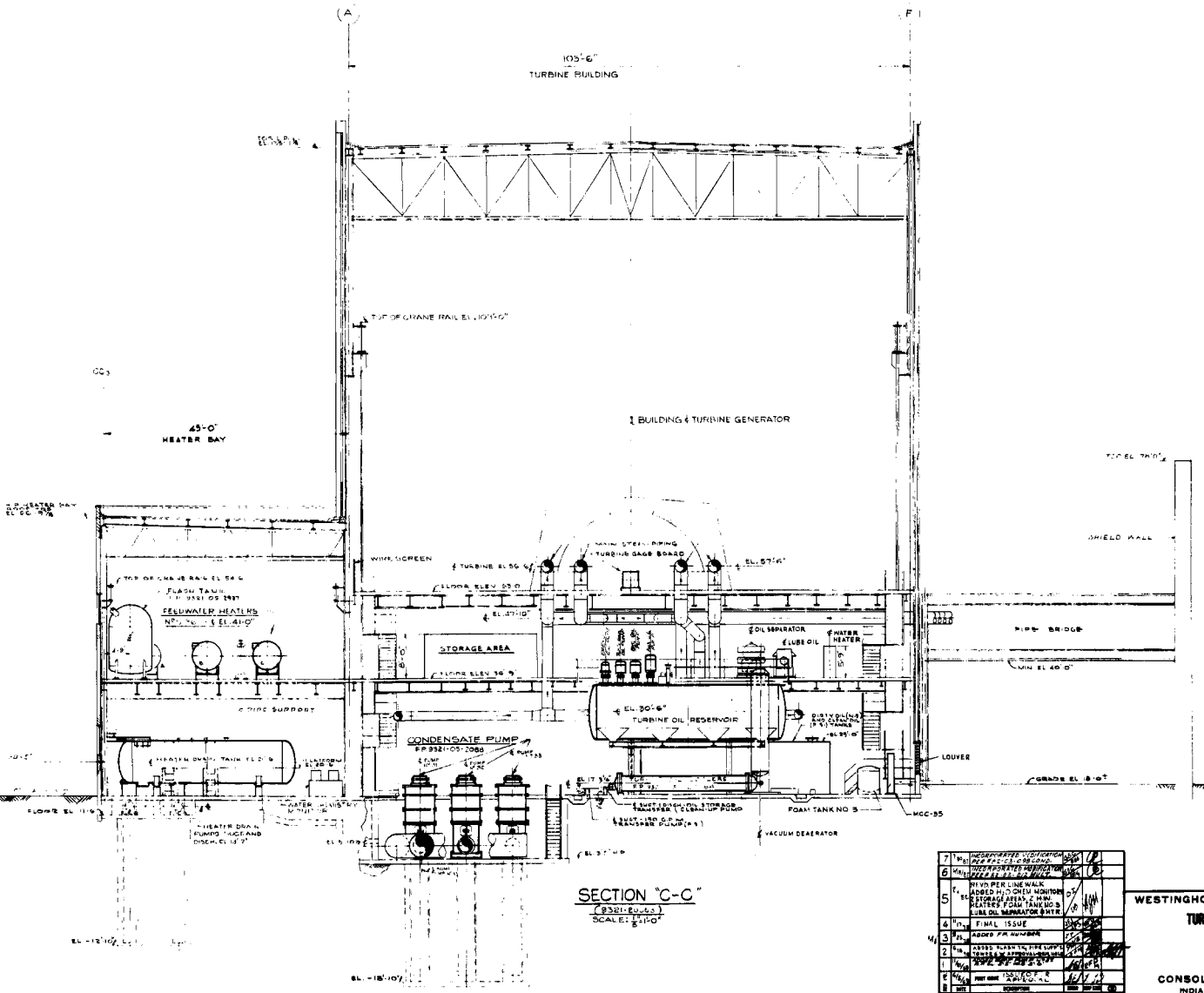
U.E.&C. DWG. NO. 9321-F-20063-28

CON. ED. CO. DWG. A 201805

TYPE "B" DWG.

U.E. & C. 9321-F-20073

INDIAN POINT UNIT NO. 3 201606



SECTION "C-C"
(9321-E-0063)
SCALE: 1/8"=1'-0"

7	[illegible]	INCORPORATED VERIFICATION DEFICIENCIES	[illegible]
6	[illegible]	INCORPORATED REVISION [illegible]	[illegible]
5	[illegible]	REVD PER LINE WALK ADDED H2O2 ON MONITORS STORAGE AREA, 2 MIN HEATERS FOAM TANK NO 3 LUBE OIL SEPARATOR & HTR	[illegible]
4	[illegible]	FINAL ISSUE	[illegible]
3	[illegible]	ADDED P.R. NUMBER	[illegible]
2	[illegible]	ADDED FLASH TK, PIPE SUPP'S, TENSILE & MATERIAL SPECIMEN	[illegible]
1	[illegible]	[illegible]	[illegible]
E	[illegible]	ISSUED FOR C.P. & [illegible]	[illegible]
B	[illegible]	ISSUED FOR C.P. & [illegible]	[illegible]
NO.	DATE	DESCRIPTION	DRWN CHK'D APP'D

DRAWING NEW YORK [illegible]
UNITED ENGINEERS & CONSTRUCTORS INC.

WESTINGHOUSE ELECTRIC CORPORATION

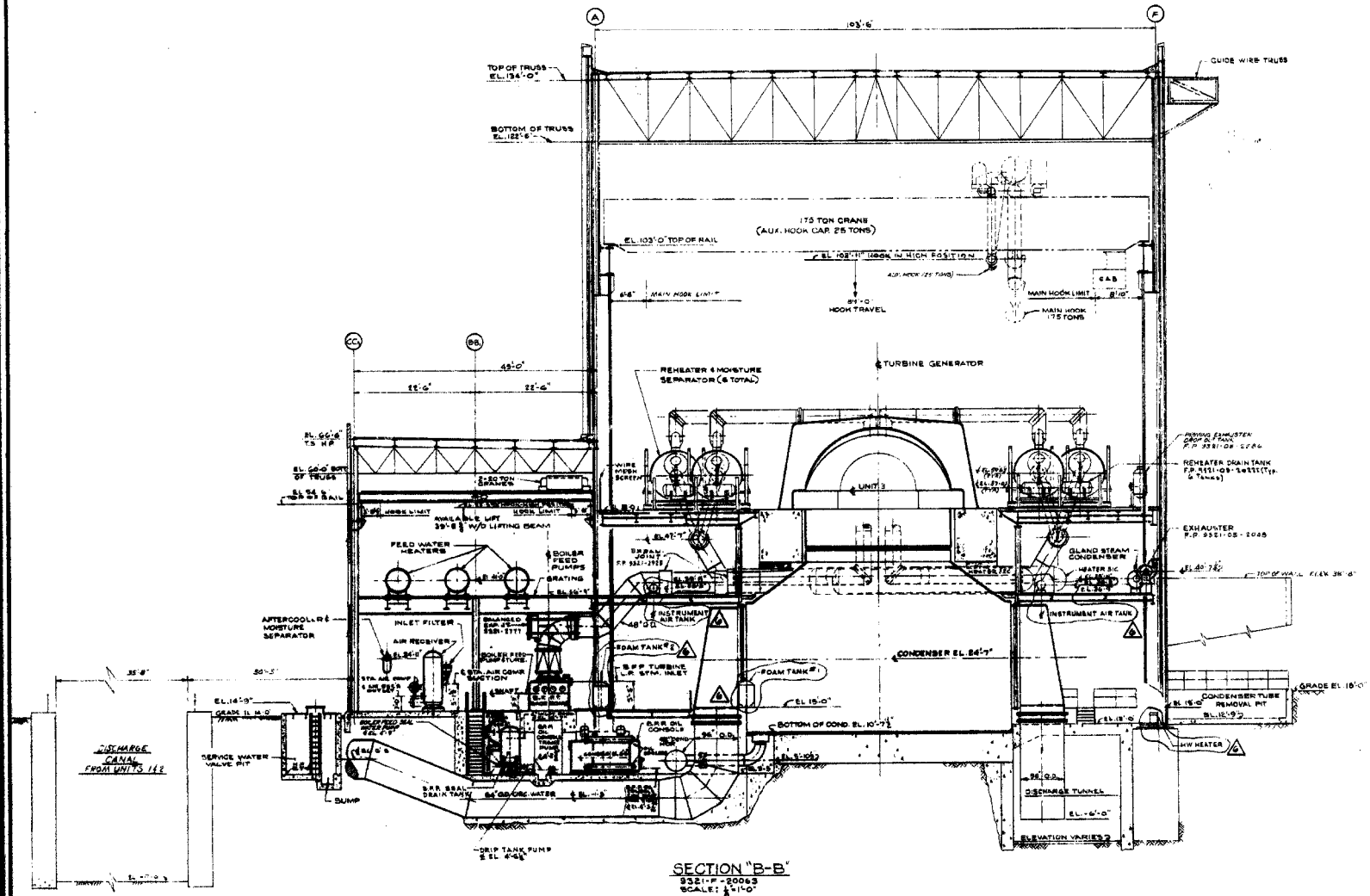
TURBINE BUILDING & HEATER BAY
GENERAL ARRANGEMENT
CROSS SECTION

FOR

CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 3

U.E. & C. DWG. NO. 9321-F-20073-7

CON. ED. CO. DWG. NO. A 201606



SECTION "B-B"
9321-F-20063
SCALE: 1/8"=1'-0"

6	12.5	REVISED AS PER AS BUILT CONDITIONS, ADD ROLL TRAYS, NOT WIRE MESH & INST. AIR TANKS.	DT	1/19
5	11.19	FINAL ISSUE		5/69
4	5.16			1/69
3	12.6			10/68
2	11.18			7/68
1	10.18			5/68
0	9.20	ISSUED FOR APPROVAL		4/68

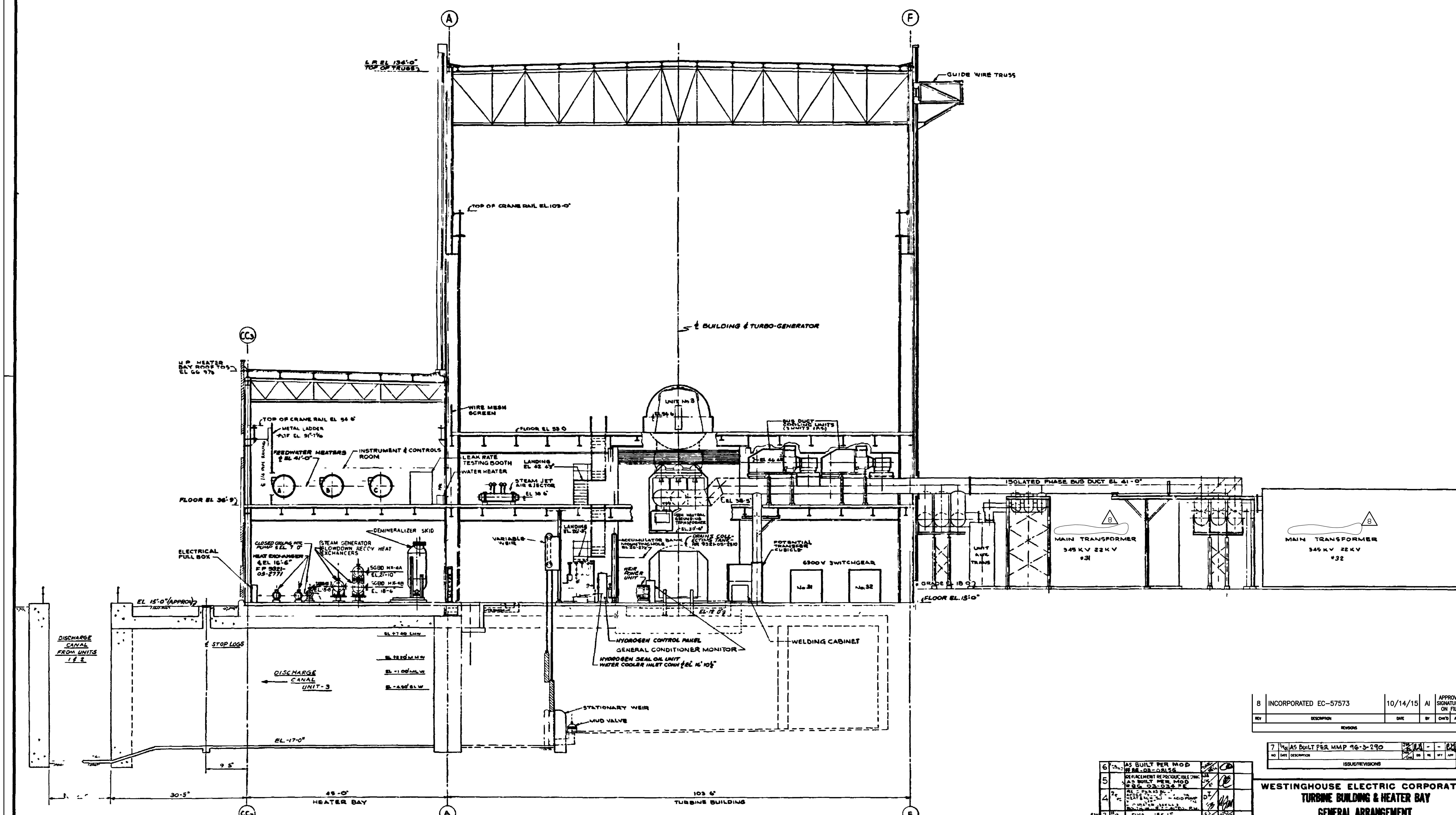
NEW YORK EL 44138

UNITED ENGINEERS & CONSTRUCTORS INC.

WESTINGHOUSE ELECTRIC CORPORATION
TURBINE BUILDING & HEATER BAY
GENERAL ARRANGEMENT
CROSS SECTION
FOR
CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO 3

U.S.E.E.-DWG. NO. 9321-F-20063-6

SER. NO. DWG. NO. A 201867



SECTION "A"-"A"
(LOOKING NORTH)
(9321-F-20063)

SCALE ⅛" = 1'-0"

REV	DESCRIPTION	DATE	BY	CHK'D	APP.
8	INCORPORATED EC-57573	10/14/15	AI	APPROVAL SIGNATURES ON FILE	

REVISIONS

NO	DATE	DESCRIPTION	DWN/CHK	DS	RE	VFY	APP
7	7/19/01	AS BUILT PER MMP 96-3-290			-	-	

ISSUE/REVISIONS

REV	DATE	DESCRIPTION	ENGR	SUP ENG	
6		AS BUILT PER MOD #86-03-08156			
5		REPLACEMENT REPRODUCIBLE DWG AS BUILT PER MOD #86-03-034 FE			
4		[illegible]			
3	11/17/75	FINAL ISSUE			
2	5/22/71	ADDED GEN NEUTRAL GROUNDING TRANSFORMER			
1	6/18/70	RELEASED WITH W APPROVAL			
0		ISSUED FOR APPROVAL			

ENGINEER
STATE NEW YORK 44 32

UNITED ENGINEERS & CONSTRUCTORS INC.

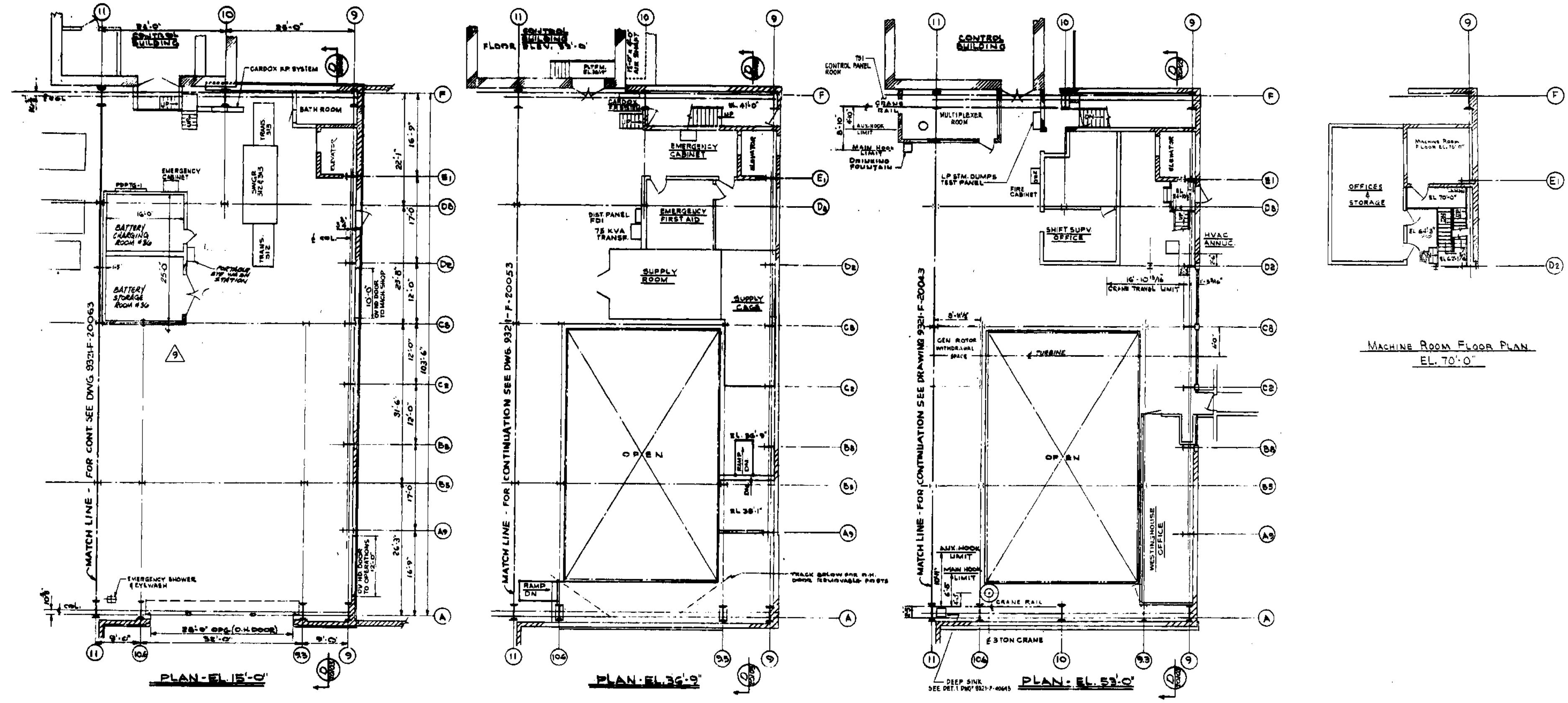
WESTINGHOUSE ELECTRIC CORPORATION
TURBINE BUILDING & HEATER BAY
GENERAL ARRANGEMENT
CROSS SECTION
FOR
Entergy
Nuclear Northeast
INDIAN POINT GENERATING STATION
UNIT NO 3

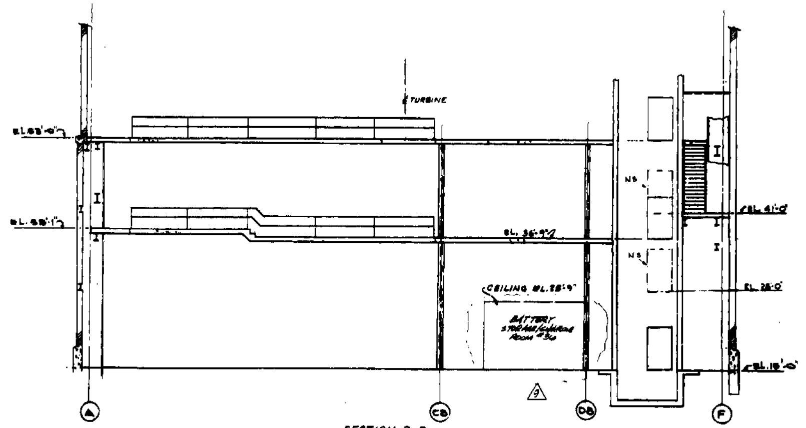
U E & C DWG NO 9321-F-20093- 8

CON ED CO DWG. NO. A 201808

DRAWING NUMBER

9321-F-20103





SECTION D-D
SEE DWG. 9321-F-20103

SCALE 1/8" = 1'-0"

6	6-5-82	REV'D PER LINE WALK	
5		FINAL ISSUE	
9		[illegible]	
8		[illegible]	
7		[illegible]	
		ISSUED FOR APPROVAL	

NEW YORK

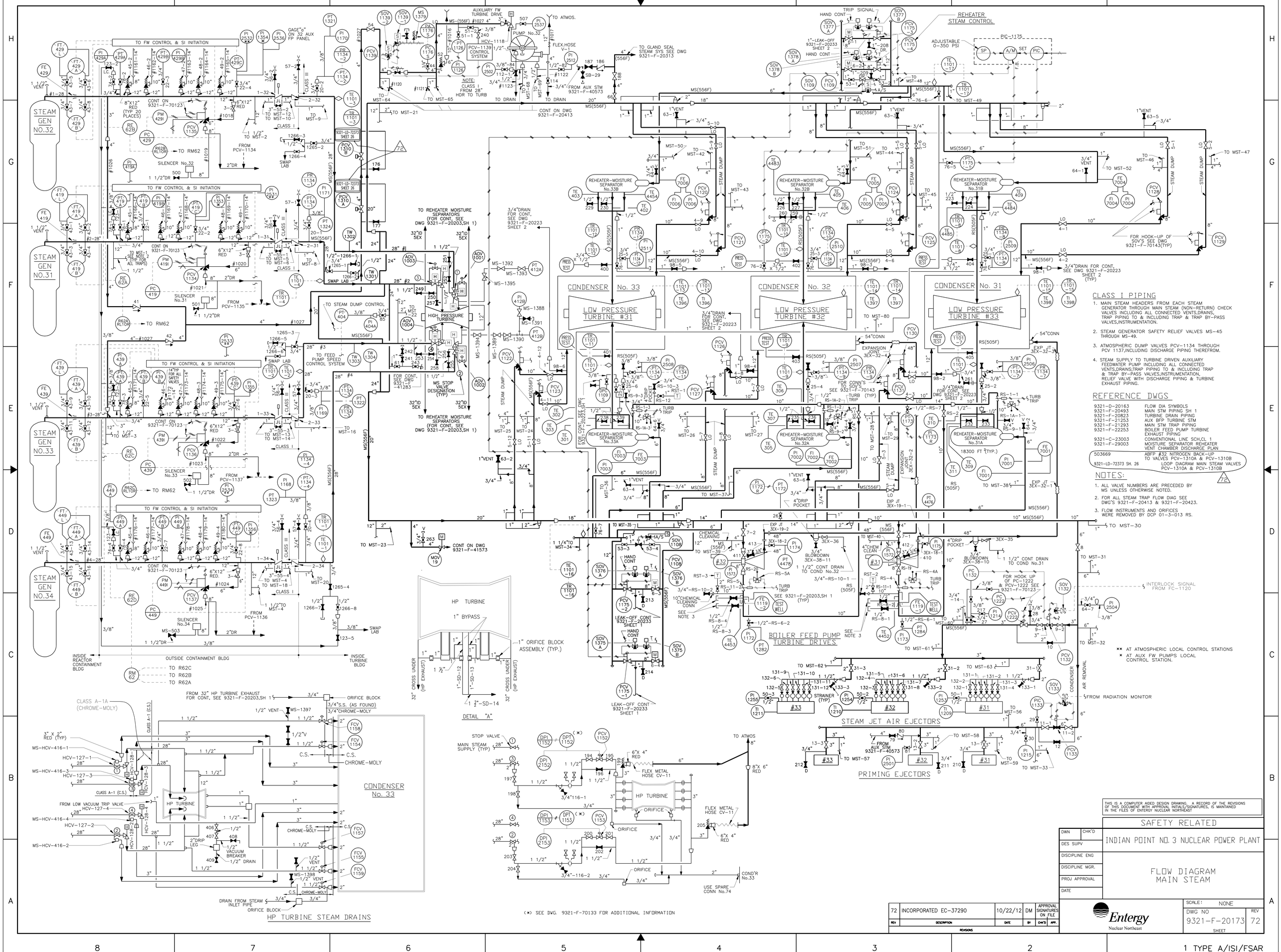
UNITED ENGINEERS & CONSTRUCTORS INC.

WESTINGHOUSE ELECTRIC CORPORATION

TURBINE BUILDING - TWO BAY EXTENSION
GENERAL ARRANGEMENT
PLANS & ELEVATION
FOR
CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 2

U.E.& C. DWG. NO. 9321-F-20103-9

CON. ED. CO. DWG. NO. A 201809


STEAM GEN NO.32
STEAM GEN NO.31
STEAM GEN NO.33
STEAM GEN NO.34
CONDENSER No. 33
CONDENSER No. 32
CONDENSER No. 31
LOW PRESSURE TURBINE #31
LOW PRESSURE TURBINE #32
LOW PRESSURE TURBINE #33
HIGH PRESSURE TURBINE
TO FW CONTROL & SI INITIATION
REHEATER STEAM CONTROL
REHEATER-MOISTURE SEPARATOR No.33B
REHEATER-MOISTURE SEPARATOR No.32B
REHEATER-MOISTURE SEPARATOR No.31B
REHEATER-MOISTURE SEPARATOR No.33A
REHEATER-MOISTURE SEPARATOR No.32A
REHEATER-MOISTURE SEPARATOR No.31A
BOILER FEED PUMP TURBINE DRIVES
STEAM JET AIR EJECTORS
PRIMING EJECTORS
HP TURBINE STEAM DRAINS
CLASS I PIPING
1. MAIN STEAM HEADERS FROM EACH STEAM GENERATOR THROUGH MAIN STEAM (NON-RETURN) CHECK 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.
3. ATMOSPHERIC DUMP VALVES PCV-1134 THROUGH PCV 1137,INCLUDING DISCHARGE PIPING THEREFROM.
4. STEAM SUPPLY TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP INCLUDING ALL CONNECTED VENTS,DRAINS,TRAP PIPING TO & INCLUDING TRAP & TRAP BY-PASS VALVES,INSTRUMENTATION, RELIEF VALVE WITH DISCHARGE PIPING & TURBINE EXHAUST PIPING.
REFERENCE DWGS
9321-D-20163 FLOW DIA SYMBOLS
9321-F-20493 MAIN STM PIPING SH 1
9321-F-20823 TURBINE DRAIN PIPING
9321-F-21253 AUX BFP TURBINE STM
9321-F-21293 MAIN STM TRAP PIPING
9321-F-22253 BOILER FEED PUMP TURBINE EXHAUST PIPING
9321-C-23003 CONVENTIONAL LINE SCH,CL 1
9321-F-29003 MOISTURE SEPARATOR REHEATER VENT CHAMBER DISCHARGE PLAN
503669 ABFP #32 NITROGEN BACK-UP TO VALVES PCV-1310A & PCV-1310B
9321-LD-72373 SH. 26 LOOP DIAGRAM MAIN STEAM VALVES PCV-1310A & PCV-1310B
NOTES:
1. ALL VALVE NUMBERS ARE PRECEDED BY MS UNLESS OTHERWISE NOTED.
2. FOR ALL STEAM TRAP FLOW DIAG SEE DWG'S 9321-F-20413 & 9321-F-20423.
3. FLOW INSTRUMENTS AND ORIFICES WERE REMOVED BY DCP 01-3-013 RS.
** AT ATMOSPHERIC LOCAL CONTROL STATIONS
* AT AUX FW PUMPS LOCAL CONTROL STATION.
(*) SEE DWG. 9321-F-70133 FOR ADDITIONAL INFORMATION
THIS IS A COMPUTER AIDED DESIGN DRAWING. A RECORD OF THE REVISIONS OF THIS DOCUMENT WITH APPROVAL INITIALS/SIGNATURES, IS MAINTAINED IN THE FILES OF ENTERGY NUCLEAR NORTHEAST
SAFETY RELATED
INDIAN POINT NO. 3 NUCLEAR POWER PLANT
FLOW DIAGRAM MAIN STEAM
72 INCORPORATED EC-37290 10/22/12 DM
Entergy Nuclear Northeast
SCALE: NONE
DWG NO 9321-F-20173 REV 72
SHEET
1 TYPE A/ISI/FSAR

NOTES:

1. FOR NOTES & REFERENCE DWGS SEE DWG.9321-F-20183,SH.2.
2. TEMP. STRAINERS WERE INSTALLED FOR INITIAL SYSTEM FLUSH, SCREENS HAVE BEEN REMOVED PER MWR 93-10011 & 93-10012
3. DISCS OF THESE CHECK VALVES WERE REMOVED. (ZONES E-7 & F-7)

NOTE: FC-1135S,FC-1136S SET TO OPEN AUX.FEED PUMPS RECIRC.VALVES FCV-1121, FCV-1123 AT DECREASING FC-1135AS, FC-1136AS ARE SET TO CLOSE RECIRC. VALVES AT INCREASING AND TO ALARM AT DECREASING.

AUXILIARY FEEDWATER PUMPS (CLASS-1)

CONDENSATE PUMPS 7860 GPM

VACUUM DEGASIFIER SYSTEM

HOUSE SERVICE BOILER BUILDING

MAKE-UP WATER RESIN FILTERS

STEAM JET AIR EJECTORS CONDENSERS

CONDENSER NO.33

CONDENSER NO.32

CONDENSER NO.31

HOTWELL

DRAIN COLLECTING TANK #31

400 GPM HOTWELL DUMP & CONDENSATE TRANSFER PUMP

65	INCORPORATED EC-65840	11/22/16	AR
REV	DESCRIPTION	DATE	BY

REVISIONS

APPROVAL SIGNATURES ON FILE

DWN MG | CHK'D

DES SUPV

DISCIPLINE ENG

DISCIPLINE MGR.

PROJ APPROVAL

DATE

INDIAN POINT NO.3 NUCLEAR POWER PLANT

FLOW DIAGRAM CONDENSATE & BOILER FEED PUMP SUCTION

Entergy Nuclear Northeast

SCALE: NONE

DWG NO 9321-F-20183 REV 65

SHEET 1

TYPE A/ISI/FSAR/EC

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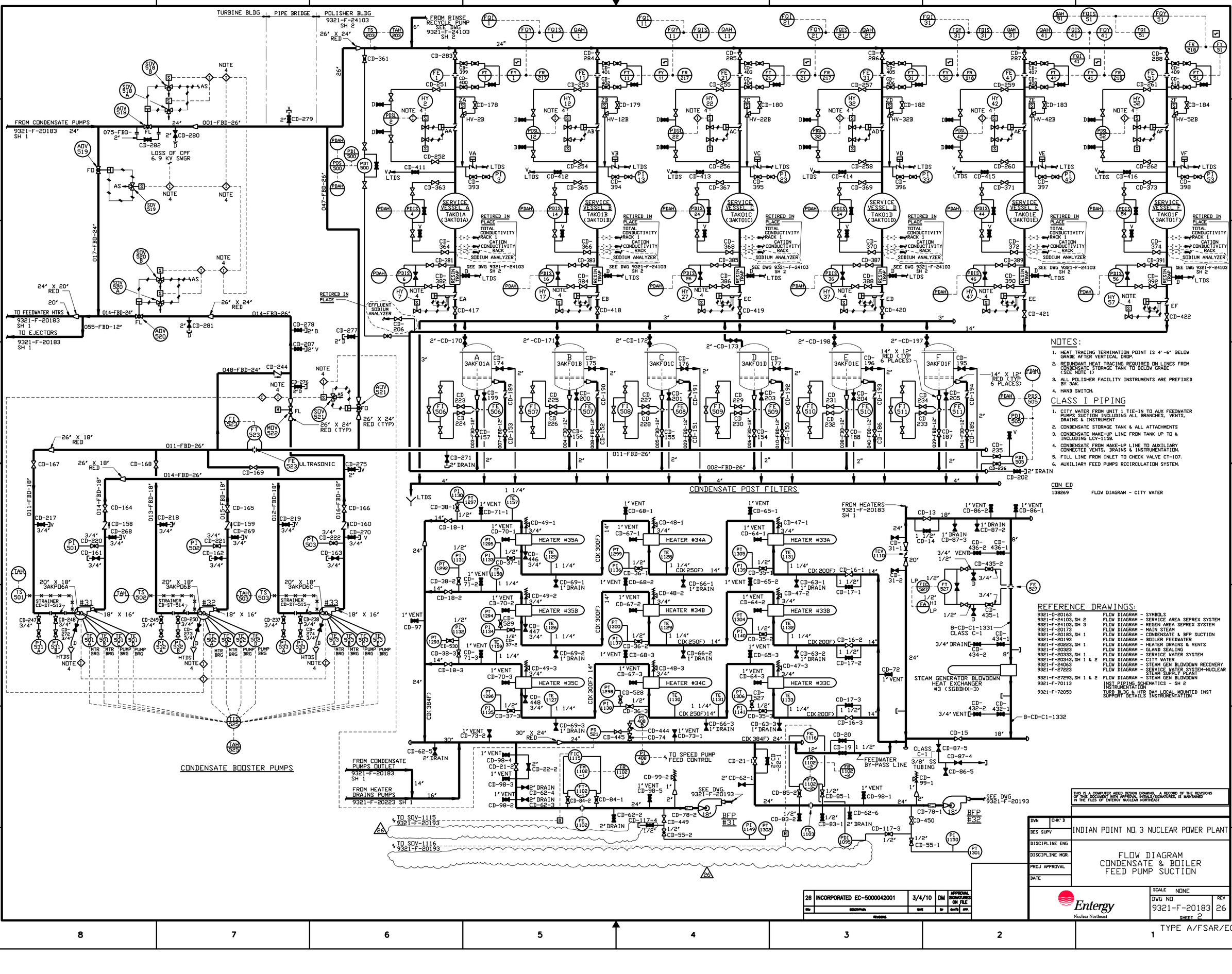


NOTES:

1. HEAT TRACING TERMINATION POINT IS 4'-6" BELOW GRADE AFTER VERTICAL DROP.
2. REDUNDANT HEAT TRACING REQUIRED ON LINES FROM CONDENSATE STORAGE TANK TO BELOW GRADE (SEE NOTE 1)
3. ALL POLISHER FACILITY INSTRUMENTS ARE PREFIXED BY 3AK.
4. HAND SWITCH.

CLASS I PIPING

1. CITY WATER FROM UNIT 1 TIE-IN TO AUX FEEDWATER PUMPS SUCTION INCLUDING ALL BRANCHES, VENTS, DRAINS & INSTRUMENT
2. CONDENSATE STORAGE TANK & ALL ATTACHMENTS
3. CONDENSATE MAKE-UP LINE FROM TANK UP TO & INCLUDING LCV-1158.
4. CONDENSATE FROM MAKE-UP LINE TO AUXILIARY CONNECTED VENTS, DRAINS & INSTRUMENTATION.
5. FILL LINE FROM INLET TO CHECK VALVE CT-107.
6. AUXILIARY FEED PUMPS RECIRCULATION SYSTEM.

CON ED 138269 FLOW DIAGRAM - CITY WATER

REFERENCE DRAWINGS:

9321-D-20163	FLOW DIAGRAM - SYMBOLS
9321-F-24103, SH 2	FLOW DIAGRAM - SERVICE AREA SEPREX SYSTEM
9321-F-24103, SH 3	FLOW DIAGRAM - REGEN AREA SEPREX SYSTEM
9321-F-20173	FLOW DIAGRAM - MAIN STEAM
9321-F-20183, SH 1	FLOW DIAGRAM - CONDENSATE & BFP SUCTION
9321-F-20193	FLOW DIAGRAM - BOILER FEEDWATER
9321-F-20223, SH 1	FLOW DIAGRAM - HEATER DRAINS & VENTS
9321-F-20323	FLOW DIAGRAM - GLAND SEALING
9321-F-20333, SH 1	FLOW DIAGRAM - SERVICE WATER SYSTEM
9321-F-20343, SH 1 & 2	FLOW DIAGRAM - CITY WATER
9321-F-24063	FLOW DIAGRAM - STEAM GEN BLOWDOWN RECOVERY
9321-F-27223	FLOW DIAGRAM - SERVICE WATER SYSTEM-NUCLEAR STEAM SUPPLY PLANT
9321-F-27293, SH 1 & 2	FLOW DIAGRAM - STEAM GEN BLOWDOWN
9321-F-70113	INST PIPING SCHEMATICS - SH 2
9321-F-72053	INSTRUMENTATION TURB BLDG & HTR BAY LOCAL MOUNTED INST SUPPORT DETAILS INSTRUMENTATION

THIS IS A COMPUTER AIDED DESIGN DRAWING. A RECORD OF THE REVISIONS OF THIS DOCUMENT WITH APPROVAL INITIALS/SIGNATURES, IS MAINTAINED IN THE FILES OF ENTERGY NUCLEAR NORTHEAST

28	INCORPORATED EC-5000042001	3/4/10	DM	APPROVAL SIGNATURES ON FILE	
REV	DESCRIPTION	DATE	BY	CHK'D	APP'D

REVISIONS

DVN | CHK'D
DES SUPV
DISCIPLINE ENG
DISCIPLINE MGR.
PROJ APPROVAL
DATE

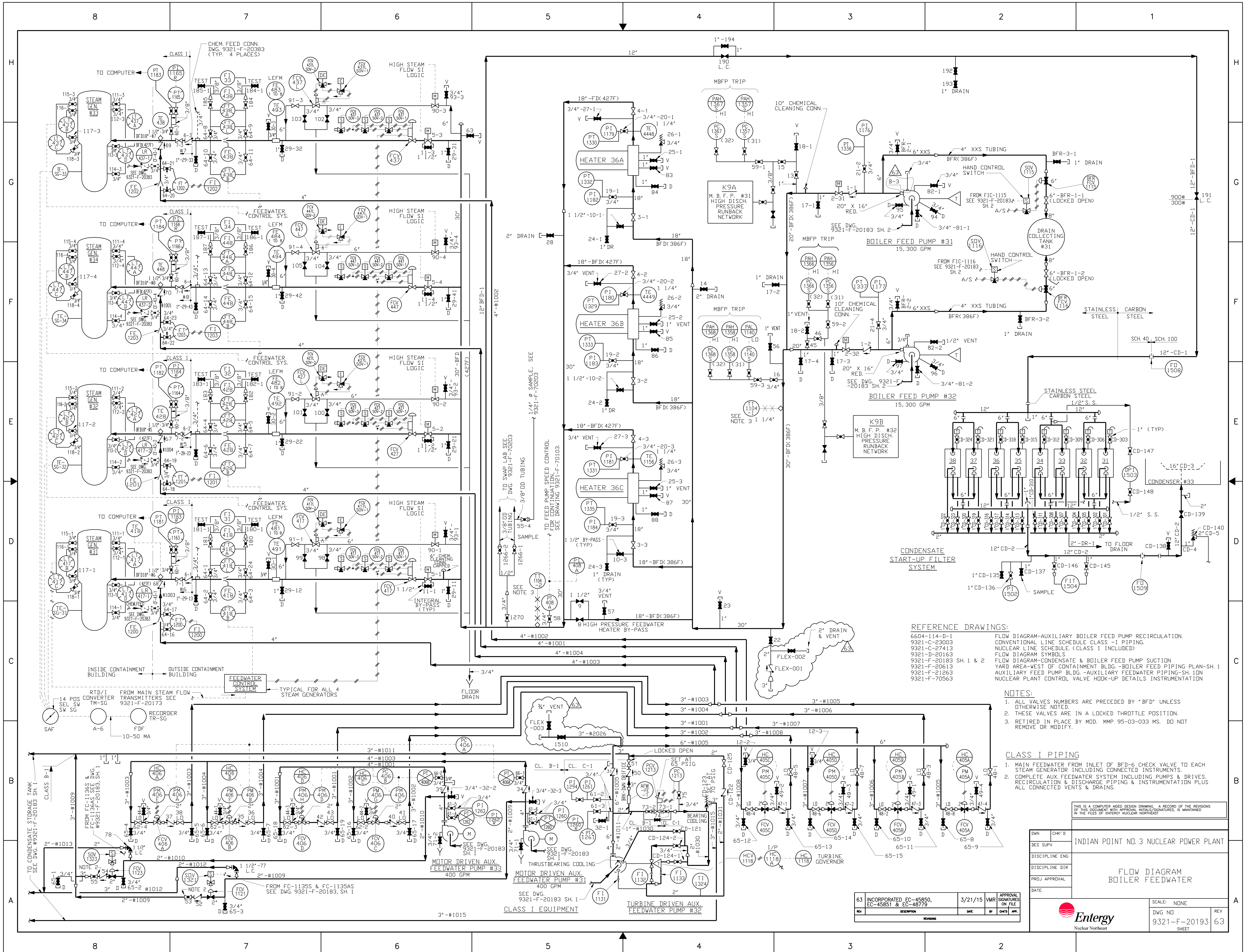
INDIAN POINT NO. 3 NUCLEAR POWER PLANT

FLOW DIAGRAM
CONDENSATE & BOILER
FEED PUMP SUCTION

Entergy Nuclear Northeast

SCALE NONE
DWG NO 9321-F-20183
REV 26
SHEET 2

TYPE A/FSAR/EC



REFERENCE DRAWINGS:

6604-114-D-1	FLOW DIAGRAM-AUXILIARY BOILER FEED PUMP RECIRCULATION.
9321-C-23003	CONVENTIONAL LINE SCHEDULE CLASS -I PIPING.
9321-C-27413	NUCLEAR LINE SCHEDULE.(CLASS I INCLUDED)
9321-D-20163	FLOW DIAGRAM SYMBOLS
9321-F-20183 SH. 1 & 2	FLOW DIAGRAM-CONDENSATE & BOILER FEED PUMP SUCTION
9321-F-20613	YARD AREA-WEST OF CONTAINMENT BLDG.-BOILER FEED PIPING PLAN-SH. 1
9321-F-21263	AUXILIARY FEED PUMP BLDG.-AUXILIARY FEEDWATER PIPING-SH. 1ON
9321-F-70563	NUCLEAR PLANT CONTROL VALVE HOOK-UP DETAILS INSTRUMENTATION

NOTES:

1. ALL VALVES NUMBERS ARE PRECEDED BY "BFD" UNLESS OTHERWISE NOTED.
2. THESE VALVES ARE IN A LOCKED THROTTLE POSITION.
3. RETIRED IN PLACE BY MOD. MMP 95-03-033 MS. DO NOT REMOVE OR MODIFY.

CLASS I PIPING

1. MAIN FEEDWATER FROM INLET OF BFD-6 CHECK VALVE TO EACH STEAM GENERATOR INCLUDING CONNECTED INSTRUMENTS.
2. COMPLETE AUX. FEEDWATER SYSTEM INCLUDING PUMPS & DRIVES. RECIRCULATION & DISCHARGE PIPING & INSTRUMENTATION PLUS ALL CONNECTED VENTS & DRAINS.

REV	DESCRIPTION	DATE	BY	CHK'D	APP.
63	INCORPORATED EC-45850, EC-45851 & EC-48779	3/21/15	VMR	APPROVAL SIGNATURES ON FILE	

REVISIONS

DWN | CHK'D | DES SUPV | DISCIPLINE ENG | DISCIPLINE DIR | PROJ APPROVAL | DATE

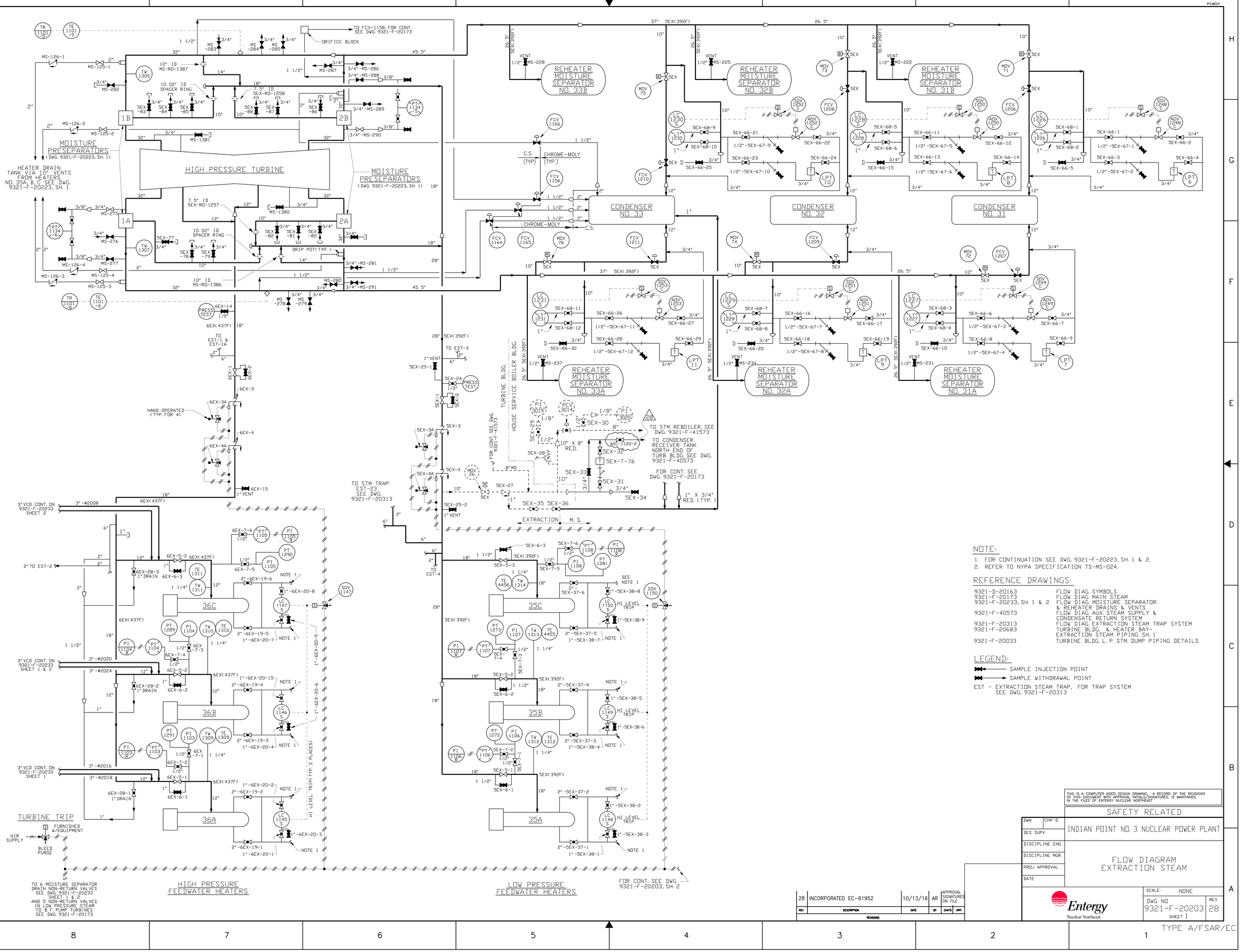
INDIAN POINT NO. 3 NUCLEAR POWER PLANT

FLOW DIAGRAM
BOILER FEEDWATER

Entergy Nuclear Northeast

SCALE: NONE

DWG NO 9321-F-20193 | REV 63 | SHEET



NOTE:

1. FOR CONTINUATION SEE DWG. 9321-F-20223, SH. 1 & 2.
2. REFER TO NYPA SPECIFICATION TS-MS-024.

REFERENCE DRAWINGS:

9321-D-20163	FLOW DIAG. SYMBOLS
9321-F-20173	FLOW DIAG. MAIN STEAM
9321-F-20233, SH. 1 & 2	FLOW DIAG. MOISTURE SEPARATOR & REHEATER DRAINS & VENTS
9321-F-40573	FLOW DIAG. AUX. STEAM SUPPLY & CONDENSATE RETURN SYSTEM
9321-F-20313	FLOW DIAG. EXTRACTION STEAM TRAP SYSTEM
9321-F-20683	TURBINE BLDG. & HEATER BAY-EXTRACTION STEAM PIPING SH. 1
9321-F-20033	TURBINE BLDG. L. P. STM. DUMP PIPING DETAILS

LEGEND:

SAMPLE INJECTION POINT

SAMPLE WITHDRAWAL POINT

EST - EXTRACTION STEAM TRAP, FOR TRAP SYSTEM SEE DWG. 9321-F-20313

REV	DESCRIPTION	DATE	BY	CHK'D	APP.
28	INCORPORATED EC-61952	10/13/16	AR		

REVISIONS

APPROVAL SIGNATURES ON FILE

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SAFETY RELATED

DWN / CHK'D	
DES SUPV	
DISCIPLINE ENG	
DISCIPLINE MGR.	
PROJ APPROVAL	
DATE	

INDIAN POINT NO. 3 NUCLEAR POWER PLANT

FLOW DIAGRAM EXTRACTION STEAM

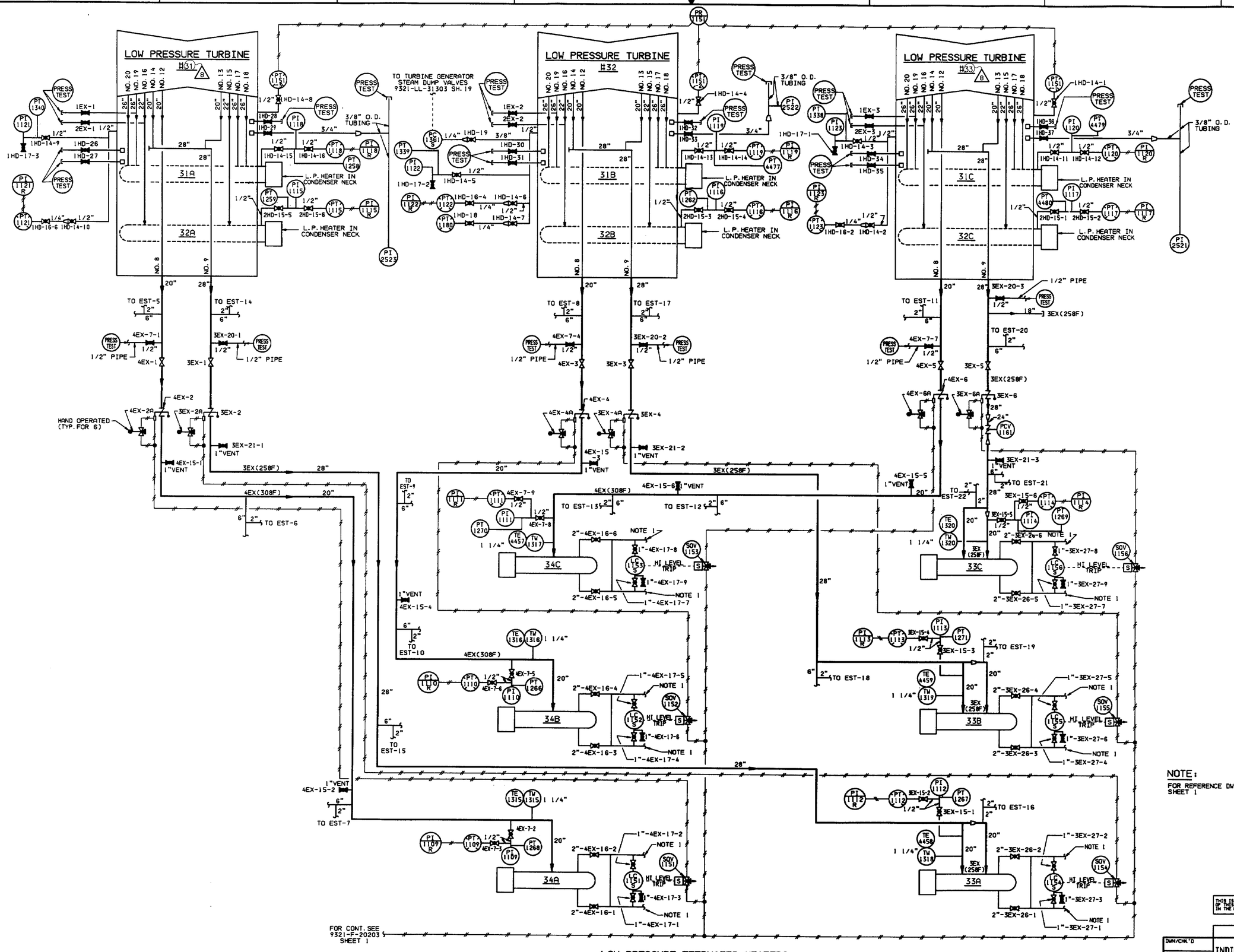
Entergy Nuclear Northeast

SCALE: NONE

DWG NO 9321-F-20203 SHEET 1

REV 28

TYPE A/FSAR/EC



NOTE:
FOR REFERENCE DWGS & NOTES, SEE DWG 9321-F-20203, SHEET 1

LOW PRESSURE FEEDWATER HEATERS

REV NO	DATE	DESCRIPTION	DWN/CHK	DS	DE/DD	PROJ MGR
8	10/19/09	INCORPORATED EC-18077	AI			
7	6/00	AS-BUILT PER DCP 98-3-127 FW	JF/JM		-/RH	
6	11/28/97	AS BUILT PER DCR 100141598	TS/BM	LM	-/-	REG
5	2/28/96	AS BUILT PER MOD 93-03-169CAR, DCR 100073823 & 100028276	AL/EB	REG	-/BY	RE
4	6/15/92	AS BUILT PER DCR 100047615	PM/RD	-	-/-	RE
3	1/13/89	AS BUILT PER PLANT WALKDOWN	PM/RD	-	-/-	RE
2	8/31/81	AS BUILT PER MOD 89-03-001MTG	PM/RD	-	-/-	RE
1	6/21/81	AS-BUILT PER VALVE NUMBERING CHECK	PM/RD	-	-/-	RE

REVISIONS

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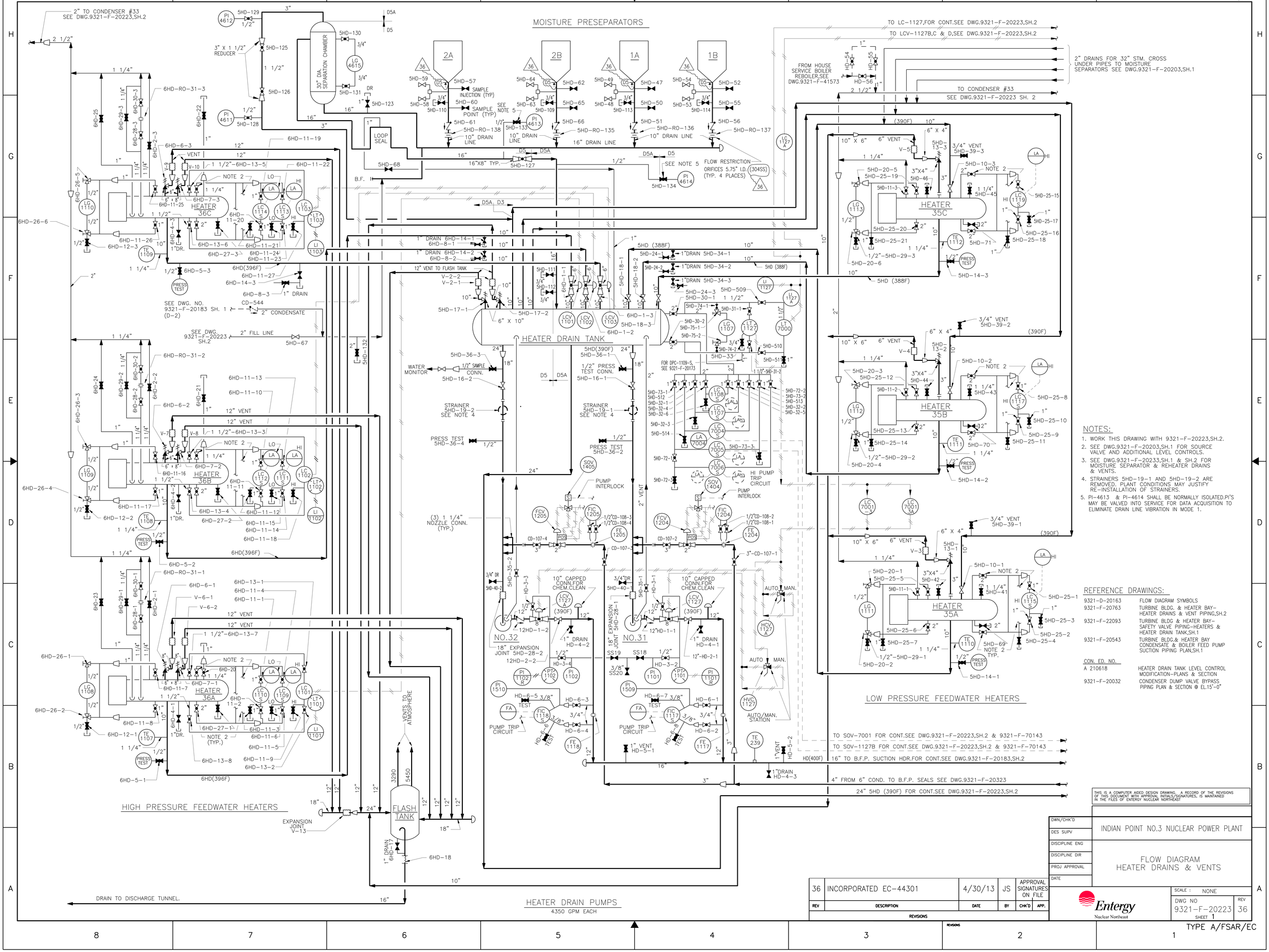
DWN/CHK'D	
DES SUPV	INDIAN POINT NO. 3 NUCLEAR POWER PLANT
DISCIPLINE ENG	
DISCIPLINE DIR	
PROJ APPROVAL	FLOW DIAGRAM EXTRACTION STEAM
DATE	

Entergy Nuclear Northeast

SCALE NONE
DWG NO 9321-F-20203 SHEET 2
REV 8

TYPE A/FSAR/EC



NOTES:

1. WORK THIS DRAWING WITH 9321-F-20223,SH.2.
2. SEE DWG.9321-F-20203,SH.1 FOR SOURCE VALVE AND ADDITIONAL LEVEL CONTROLS.
3. SEE DWG.9321-F-20233,SH.1 & SH.2 FOR MOISTURE SEPARATOR & REHEATER DRAINS & VENTS.
4. STRAINERS 5HD-19-1 AND 5HD-19-2 ARE REMOVED. PLANT CONDITIONS MAY JUSTIFY RE-INSTALLATION OF STRAINERS.
5. PI-4613 & PI-4614 SHALL BE NORMALLY ISOLATED.PI'S MAY BE VALVED INTO SERVICE FOR DATA ACQUISITION TO ELIMINATE DRAIN LINE VIBRATION IN MODE 1.

REFERENCE DRAWINGS:

9321-D-20163	FLOW DIAGRAM SYMBOLS
9321-F-20763	TURBINE BLDG. & HEATER BAY-HEATER DRAINS & VENT PIPING,SH.2
9321-F-22093	TURBINE BLDG & HEATER BAY-SAFETY VALVE PIPING-HEATERS & HEATER DRAIN TANK,SH.1
9321-F-20543	TURBINE BLDG.& HEATER BAY CONDENSATE & BOILER FEED PUMP SUCTION PIPING PLAN,SH.1
CON. ED. NO.	
A 210618	HEATER DRAIN TANK LEVEL CONTROL MODIFICATION-PLANS & SECTION
9321-F-20032	CONDENSER DUMP VALVE BYPASS PIPING PLAN & SECTION @ EL.15'-0"

REV	DESCRIPTION	DATE	BY	CHK'D	APP.
36	INCORPORATED EC-44301	4/30/13	JS	APPROVAL SIGNATURES ON FILE	

REVISIONS

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DWN/CHK'D
DES SUPV
DISCIPLINE ENG
DISCIPLINE DIR
PROJ APPROVAL
DATE

INDIAN POINT NO.3 NUCLEAR POWER PLANT

FLOW DIAGRAM
HEATER DRAINS & VENTS

Entergy Nuclear Northeast

SCALE : NONE

DWG NO 9321-F-20223 REV 36

SHEET 1

TYPE A/FSAR/EC

L. P. TURBINE NO. 31
L. P. TURBINE NO. 32
L. P. TURBINE NO. 33
HEATER 32A
HEATER 31A
HEATER 32B
HEATER 31B
HEATER 32C
HEATER 31C
HEATER 34C
HEATER 34B
HEATER 34A
HEATER 33C
HEATER 33B
HEATER 33A
CONDENSER #33
CONDENSER #32
CONDENSER #31
FROM HOUSE SERVICE BOILER REBOILER 9321-F-41573
FROM HTRS. 35A, B & C. SEE DWG. 9321-F-20223 SH. 1
TO LC-7004S - SEE DWG. 9321-F-20223, SH. 1
FROM LC-7005S FOR CONTINUATION SEE DWG. 9321-F-20223, SH. 1
TO LC-1127A SEE DWG. 9321-F-20223 SH. 1
FILL LINE SEE DWG. 9321-F-20223 SH. 1
FOR CONTINUATION SEE DWG. 9321-F-20223 SH. 1
FROM LC-7004S FOR CONTINUATION SEE DWG. 9321-F-20223 SH. 1
TO FUNNEL, DRAIN TO DISCH. TUNNEL (TYPICAL)
TO DISCH. TUNNEL
EXPANSION JOINT 5HD-27
EXPANSION JOINT-5HD-26
HIGH-HIGH LEVEL DUMP
SEE NOTE 2 (TYP.)
SEE NOTE 2 (TYP.)
SEE NOTE 2 (TYP.)
NOTE 3
3/4" DRAIN FOR CONT. SEE DWG. 9321-F-20173
3/4" DRAIN-FOR CONT. SEE DWG. 9321-F-20173
3/4" DRAIN FOR CONT. SEE DWG. 9321-F-20173
3/4" DRAIN-FOR CONT. SEE DWG.9321-F-20173
3/4" DRAIN-FOR CONT. SEE DWG. 9321-F-20173
3/4" DRAIN FOR CONT. SEE DWG. 9321-F-20173
FUNNEL (TYP.)

NOTES

1. WORK THIS DRAWING WITH DWG. 9321-F-20223, SH. 1.
2. FOR SOURCE VALVE & ADDITIONAL LEVEL CONTROLS SEE DWG. 9321-F-20203, SH. 2
3. CLASS D-6A CHROME-MOLY 6"x3" REDUCER DOWN STREAM OF VALVE LCV-1116.

REFERENCE DWG:

9321-D-20163 FLOW DIAGRAM SYMBOLS
9321-F-29003 MOISTURE SEPARATOR REHEATER VENT CHAMBER DISCHARGE PLAN

REV	DESCRIPTION	DATE	BY	CHK'D	APP.
11	INCORPORATED EC-52145	7/29/14	VMR	APPROVAL SIGNATURES ON FILE	

REVISIONS

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DWN / CHK'D	
DES SUPV	
DISCIPLINE ENG	
DISCIPLINE MGR.	
PROJ APPROVAL	
DATE	

INDIAN POINT NO. 3 NUCLEAR POWER PLANT

FLOW DIAGRAM
HEATER DRAINS & VENTS

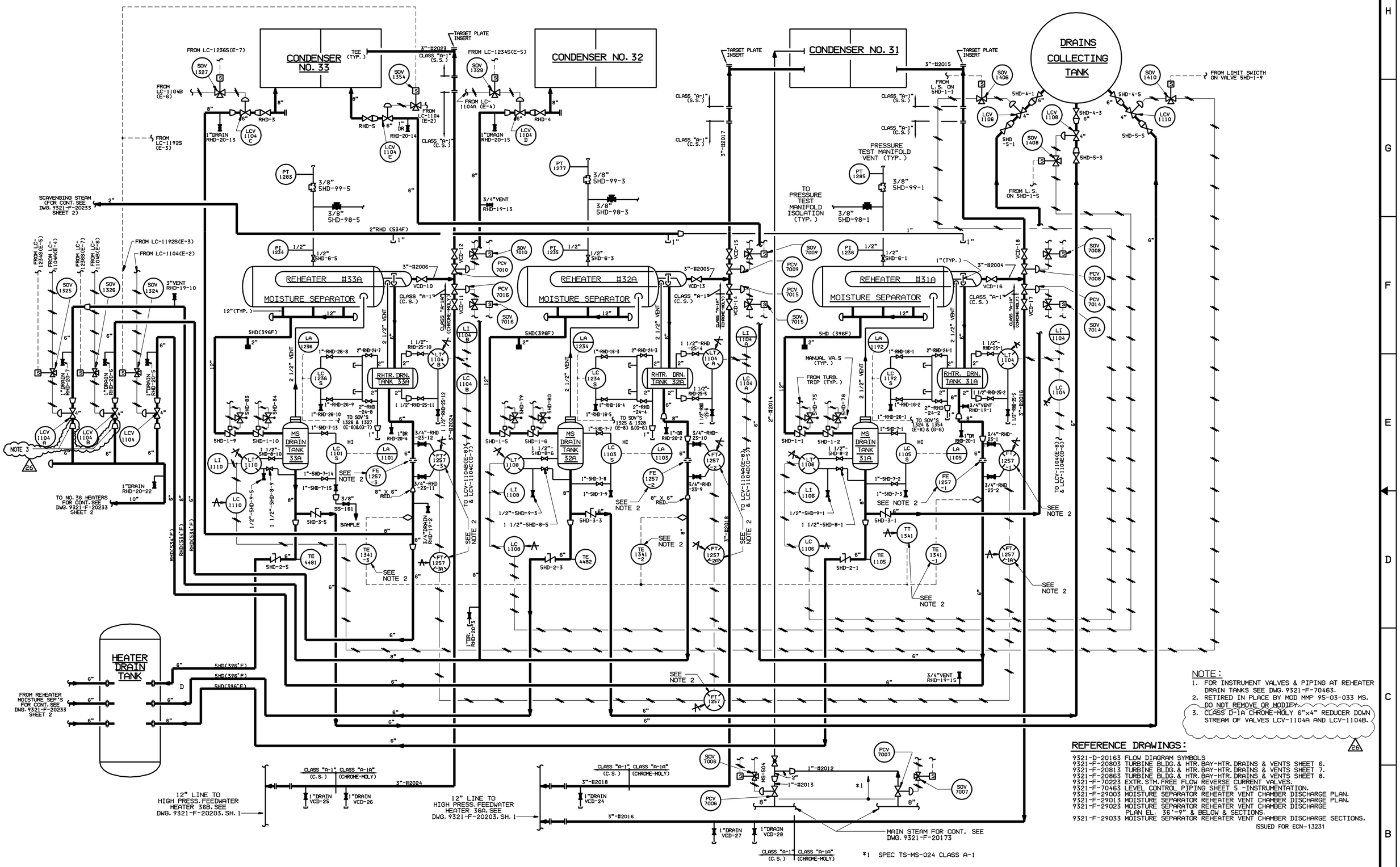
Entergy Nuclear Northeast

SCALE: NONE

DWG NO 9321-F-20223 SHEET 2

REV 11

TYPE A



NOTE:

1. FOR INSTRUMENT VALVES & PIPING AT REHEATER DRAIN TANKS SEE DWG. 9321-F-70463.
2. RETIRED IN PLACE BY MOD MMP 95-03-033 MS. DO NOT REMOVE OR MODIFY.
3. CLASS D-1A CHROME-MOLY 6"×4" REDUCER DOWN STREAM OF VALVES LCV-1104A AND LCV-1104B.

26

REFERENCE DRAWINGS:

9321-D-20163 FLOW DIAGRAM SYMBOLS
9321-F-20803 TURBINE BLDG. & HTR. BAY-HTR. DRAINS & VENTS SHEET 6.
9321-F-20813 TURBINE BLDG. & HTR. BAY-HTR. DRAINS & VENTS SHEET 7.
9321-F-20863 TURBINE BLDG. & HTR. BAY-HTR. DRAINS & VENTS SHEET 8.
9321-F-70223 EXTR. STM. FREE FLOW REVERSE CURRENT VALVES.
9321-F-70463 LEVEL CONTROL PIPING SHEET 5 -INSTRUMENTATION.
9321-F-29003 MOISTURE SEPARATOR REHEATER VENT CHAMBER DISCHARGE PLAN.
9321-F-29013 MOISTURE SEPARATOR REHEATER VENT CHAMBER DISCHARGE PLAN.
9321-F-29023 MOISTURE SEPARATOR REHEATER VENT CHAMBER DISCHARGE PLAN EL. 36'-9" & BELOW & SECTIONS.
9321-F-29033 MOISTURE SEPARATOR REHEATER VENT CHAMBER DISCHARGE SECTIONS.

ISSUED FOR ECN-13231

REV	DESCRIPTION	DATE	BY	APPROVAL SIGNATURES ON FILE CHK'D	APP.
26	INCORPORATED EC-7783	4/3/10	RM		

REVISIONS

DWN	CHK'D
DES SUPV	
DISCIPLINE ENG	
DISCIPLINE DIR	
PROJ APPROVAL	
DATE	

INDIAN POINT NO. 3 NUCLEAR POWER PLANT

FLOW DIAGRAM
MOISTURE SEPARATOR AND
REHEATER DRAINS & VENTS

Entergy Nuclear Northeast

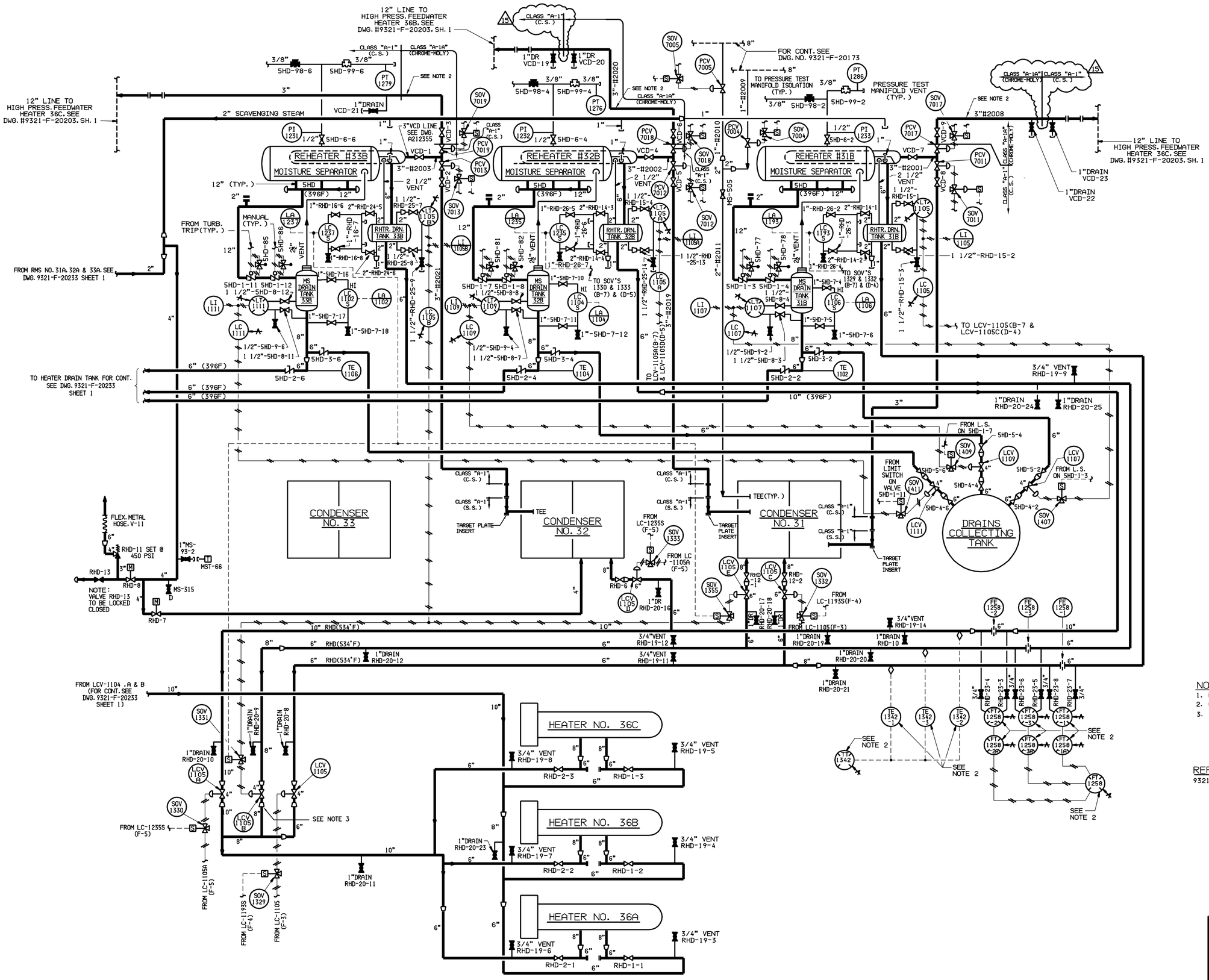
SCALE: NONE

DWG NO 9321-F-20233

REV 26

SHEET 1

TYPE A



NOTE:

1. FOR NOTES & REF. DWG'S SEE DWG. 9321-F-20233 SHEET 1.
2. CHROME-MOLY CLASS A-1A PIPE REPLACED CARBON STEEL PIPE.
3. CLASS D-1A CHROME-MOLY 8"×4" REDUCER AND 3" W.N. FLANGE DOWN STREAM OF VALVE LCV-1105B

REFERENCE DWG.:

9321-F-29003 - MOISTURE SEPARATOR REHEATER VENT CHAMBER DISCHARGE PLAN

15	INCORPORATED EC-43387	4/23/13	VMR	APPROVAL SIGNATURES ON FILE	
REV	DESCRIPTION	DATE	BY	CHK'D	APP.

REVISIONS

DWN | CHK'D
DES SUPV
DISCIPLINE ENG
DISCIPLINE MGR.
PROJ APPROVAL
DATE

INDIAN POINT NO. 3 NUCLEAR POWER PLANT

FLOW DIAGRAM
MOISTURE SEPARATOR AND
REHEATER DRAINS & VENTS

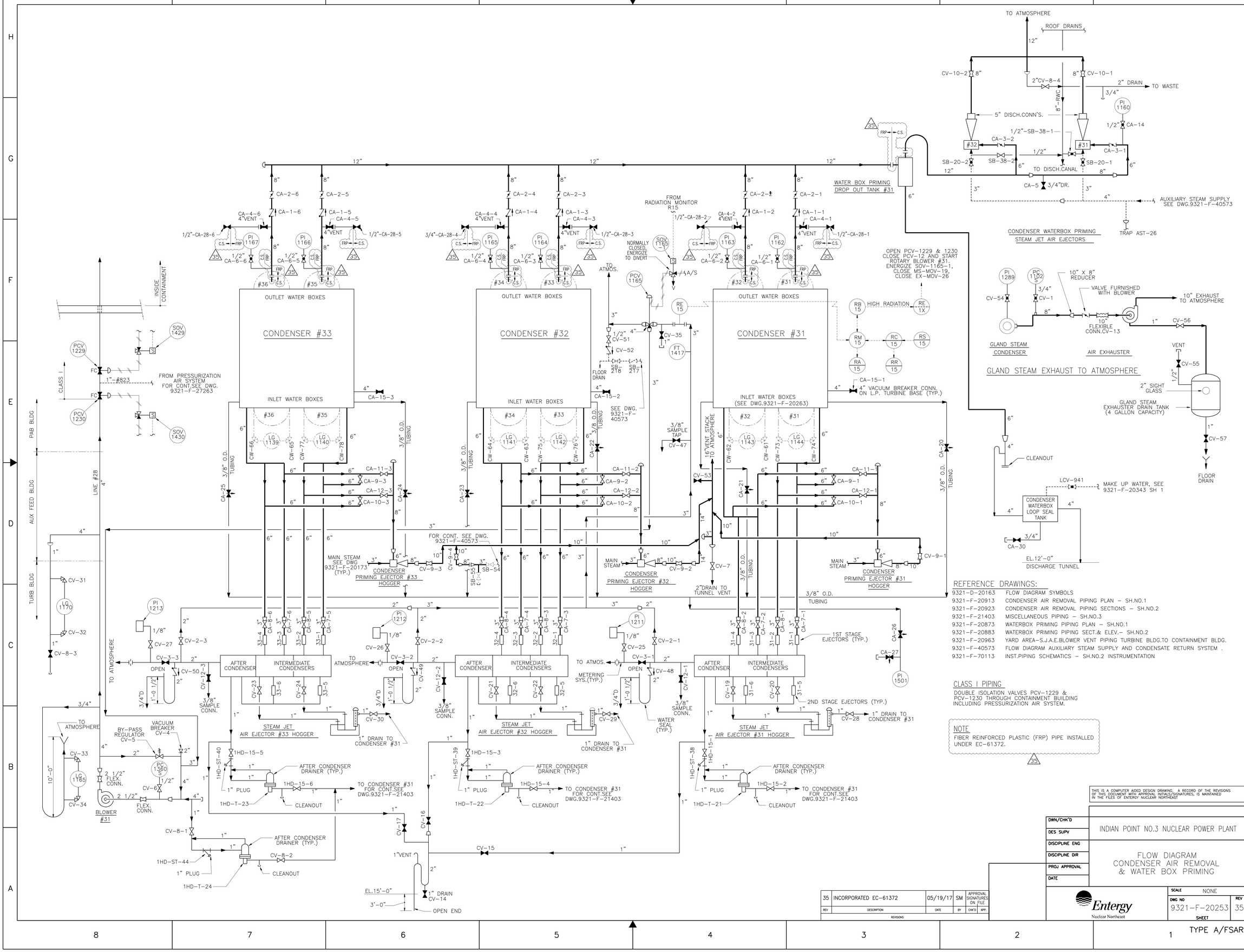
Entergy
Nuclear Northeast

SCALE: NONE

DWG NO 9321-F-20233 SHEET 2

REV 15

TYPE A


CONDENSER #33
CONDENSER #32
CONDENSER #31
OUTLET WATER BOXES
INLET WATER BOXES
INLET WATER BOXES (SEE DWG.9321-F-20263)
AFTER CONDENSER
INTERMEDIATE CONDENSERS
TO ATMOSPHERE
ROOF DRAINS
2" DRAIN
TO WASTE
5" DISCH.CONN'S.
TO DISCH.CANAL
CA-5 3/4"DR.
AUXILIARY STEAM SUPPLY SEE DWG.9321-F-40573
TRAP AST-26
WATER BOX PRIMING DROP OUT TANK #31
CONDENSER WATERBOX PRIMING
STEAM JET AIR EJECTORS
FROM RADIATION MONITOR R15
NORMALLY CLOSED, ENERGIZE TO DIVERT
OPEN PCV-1229 & 1230 CLOSE PCV-12 AND START ROTARY BLOWER #31, ENERGIZE SOV-1165-1, CLOSE MS-MOV-19, CLOSE EX-MOV-26
HIGH RADIATION
10" X 8" REDUCER
VALVE FURNISHED WITH BLOWER
10" EXHAUST TO ATMOSPHERE
10" FLEXIBLE CONN.CV-13
GLAND STEAM CONDENSER
AIR EXHAUSTER
GLAND STEAM EXHAUST TO ATMOSPHERE
GLAND STEAM EXHAUSTER DRAIN TANK (4 GALLON CAPACITY)
2" SIGHT GLASS
FLOOR DRAIN
CLEANOUT
LCV-941
MAKE UP WATER, SEE 9321-F-20343 SH 1
CONDENSER WATERBOX LOOP SEAL TANK
EL.12'-0" DISCHARGE TUNNEL
4" VACUUM BREAKER CONN. ON L.P. TURBINE BASE (TYP.)
10" VENT STACK TO ATMOSPHERE
MAIN STEAM SEE DWG 9321-F-20173 (TYP.)
CONDENSER PRIMING EJECTOR #33 HOGGER
CONDENSER PRIMING EJECTOR #32 HOGGER
CONDENSER PRIMING EJECTOR #31 HOGGER
2"DRAIN TO TUNNEL VENT
FOR CONT. SEE DWG. 9321-F-40573
SEE DWG. 9321-F-40573
1ST STAGE EJECTORS (TYP.)
2ND STAGE EJECTORS (TYP.)
STEAM JET AIR EJECTOR #33 HOGGER
STEAM JET AIR EJECTOR #32 HOGGER
STEAM JET AIR EJECTOR #31 HOGGER
1" DRAIN TO CONDENSER #31
1" DRAIN TO CONDENSER #31
1" DRAIN TO CONDENSER #31
1" DRAIN CV-14
OPEN END
METERING SYS.(TYP.)
WATER SEAL (TYP.)
3/8" SAMPLE CONN.
3/8" SAMPLE TAP
FROM PRESSURIZATION AIR SYSTEM FOR CONT.SEE DWG. 9321-F-27263
CLASS 1
INSIDE CONTAINMENT
PAB BLDG
AUX FEED BLDG
TURB BLDG
LINE #28
BLOWER #31
BY-PASS REGULATOR CV-5
VACUUM BREAKER CV-4
2 1/2" FLEX. CONN.
AFTER CONDENSER DRAINER (TYP.)
TO CONDENSER #31 FOR CONT.SEE DWG.9321-F-21403
3/8" O.D. TUBING
SAMPLE TAP CV-47
REFERENCE DRAWINGS:
9321-D-20163 FLOW DIAGRAM SYMBOLS
9321-F-20913 CONDENSER AIR REMOVAL PIPING PLAN – SH.NO.1
9321-F-20923 CONDENSER AIR REMOVAL PIPING SECTIONS – SH.NO.2
9321-F-21403 MISCELLANEOUS PIPING – SH.NO.3
9321-F-20873 WATERBOX PRIMING PIPING PLAN – SH.NO.1
9321-F-20883 WATERBOX PRIMING PIPING SECT.& ELEV.– SH.NO.2
9321-F-20963 YARD AREA–S.J.A.E.BLOWER VENT PIPING TURBINE BLDG.TO CONTAINMENT BLDG.
9321-F-40573 FLOW DIAGRAM AUXILIARY STEAM SUPPLY AND CONDENSATE RETURN SYSTEM .
9321-F-70113 INST.PIPING SCHEMATICS – SH.NO.2 INSTRUMENTATION
CLASS I PIPING
DOUBLE ISOLATION VALVES PCV-1229 & PCV-1230 THROUGH CONTAINMENT BUILDING INCLUDING PRESSURIZATION AIR SYSTEM.
NOTE
FIBER REINFORCED PLASTIC (FRP) PIPE INSTALLED UNDER EC-61372.
35
35 INCORPORATED EC-61372 05/19/17 SM APPROVAL SIGNATURES ON FILE
REV DESCRIPTION DATE BY CHK'D APP.
REVISIONS
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DWN/CHK'D
DES SUPV
DISCIPLINE ENG
DISCIPLINE DIR
PROJ APPROVAL
DATE
INDIAN POINT NO.3 NUCLEAR POWER PLANT
FLOW DIAGRAM CONDENSER AIR REMOVAL & WATER BOX PRIMING
Entergy Nuclear Northeast
SCALE NONE
DWG NO 9321-F-20253
REV 35
SHEET
TYPE A/FSAR

NOTE
OUTLET WATER BOXES LEVEL CONTROLLERS LC-1177S LC-1178S & LC-1173S ARE "RETIRED IN PLACE"

DRAIN TO RIVER
TRASH PIT
STOP LOG GATE
TRAVELING SCREEN SLUICE
TRAVELING SCREEN (TYP)
2-29" I.D. NOZZLES
2-28" I.D. NOZZLES
8-25.5" I.D. NOZZLES
4-20" I.D. NOZZLES
54" DEICING LINES
INTAKE STRUCTURE
DISCHARGE FROM (BACKWASH) SCREEN WASH STRAINERS, SEE DWG. 9321-F-20016
SEE DWG. 9321-F-20016 FOR SCREEN & FISH RETURN SYSTEM
12-36.5" I.D. NOZZLES
TR 1420
TE 1420
#36
#35
#34
#33
#32
#31
1/4" CW-48
3/4" CW-54
30" DIA. MANHOLE TYPICAL
84"
3/4" CW-47
CW-10-5
CW-10-6
3/4" CW-41 NOTE: PRESS. TAPS FOR DUMP TEST (TYP. FOR 4)
24" BLIND FLANGE (TYP.)
3/4" CW-39
3/4" CW-53
3/4" CW-46
3/4" CW-38
3/4" CW-40
3/4" CW-52
CW-10-4
3/4" CW-45
BY-PASS GATE (NORMALLY CLOSED)
SERVICE WATER PUMPS DWG 9321-F-20333, SH. 1
SERVICE WATER STRAINERS
FINE SCREEN
CW-10-3
3/4" CW-51
3/4" CW-44
CW-10-2
3/4" CW-50
3/4" CW-43
3/4" TYGON (TYP.)
TO EL -6'-0" (TYP)
1 1/2" SPARE-PLUG (TYP.)
CW-10-1
3/4" CW-49
3/4" CW-42
CIRCULATING WATER PUMPS
140,000 GPM EACH
DEBRIS TROUGH TO RIVER
FISH TROUGH TO RIVER
30" DIA. MANHOLE
RETIRE IN PLACE
8" FISH RETURN PIPE
TO RIVER
10" DEBRIS RETURN PIPE
AIR EJECTORS
CW-14-2, 3/4" BLEED-OFF
CW-14-4 3/4" DRAIN
CW-15-2 2" DRAIN
CW-14-3
SLIDE GATE
CW-3-13
DEICING PUMP PERMISSIVES(TYPICAL)
CW-15-1 2" DRAIN
CW-14-1, 3/4" BLEED-OFF
60" X 54" EXPANSION JOINT CW-13-1
60" X 54" EXPANSION JOINT CW-13-2
DEICING PUMPS 85,000 GPM
TR 1419
TE 1419
FI 1152
FC 1102 S
FI 1153
LC 1101 S
PI 1153
UNIT #1 & #2 DISCHARGE CHANNEL
3/4" (TYP.)
CW-60
CW-59
CW-58
CW-57
CW-56
CW-55
30" DIA. MANHOLE (TYP)
STOP LOG GATE
RETIRED IN PLACE
ADJUSTABLE WEIR
OUTSIDE TURBINE BLDG.
INSIDE TURBINE BLDG.
CC3
UNIT #3 DISCHARGE CHANNEL

INLET WATER BOXES
OUTLET WATER BOXES
CONDENSER #33
CONDENSER #32
CONDENSER #31
LC 1184 S
LG 1139
LC 1183 S
LG 1140
CW-66
CW-65
CW-78
CW-77
2"CW-102
2"CW-103
2"CW-69
2"CW-100
2"CW-101
2"CW-72
PLUG (TYP. 6 PLACES)
TE 1146
TE 1147
CW-11-5
CW-3-9
CW-3-10
PIT 1155
PI 1155
PI 1155 R
PI 1154
PIT 1154
PI 1154 R
1/2"CW-3-11
1/2"CW-3-12
3/8" SAMPLE CW-4-6
1 1/4" X 3/8"
CW-12-6
3/8" SAMPLE CW-4-5
TE 1140
TW 1136
TE 1141
TW 1137
LC 1180 S
LG 1141
LC 1179 S
LG 1142
CW-64
CW-63
CW-76
CW-75
2"CW-98
2"CW-99
2"CW-68
2"CW-96
2"CW-97
2"CW-71
LC 1177 S
LC 1178 S
2"CW-108
2"CW-109
2"CW-111
2"CW-110
CW-82
CW-81
CW-88
CW-87
TE 1148
TE 1149
CW-11-3
CW-3-5
CW-3-6
PIT 1157
PI 1157
PI 1157 R
1/2"CW-3-7
1/2"CW-3-8
PI 1156
PIT 1156
PI 1156 R
3/8" SAMPLE CW-4-4
1 1/4" X 3/8"
CW-12-4
TE 1142
TW 1134
TE 1143
TW 1135
LC 1176 S
LG 1143
LC 1175 S
LG 1144
CW-62
CW-61
CW-74
CW-73
2"CW-94
2"CW-95
2"CW-67
2"CW-92
2"CW-93
2"CW-70
LC 1173 S
2"CW-104
2"CW-105
CW-80
CW-79
TE 1150
TE 1151
CW-11-1
CW-3-1
CW-3-2
PIT 1159
PI 1159
PI 1159 R
1/2"CW-3-3
1/2"CW-3-4
PI 1158
PIT 1158
PI 1158 R
3/8" SAMPLE CW-4-2
1 1/4" X 3/8"
CW-12-2
3/8" SAMPLE CW-4-1
TE 1144
TW 1132
TE 1145
TW 1133

REFERENCE DRAWINGS:

9321-D-20163	FLOW DIAGRAM SYMBOLS.
9321-F-22623	INTAKE STRUCTURE CIRC. WATER PIPING SH. 1.
9321-F-70183	LEVEL CONTROL PIPING-SHEET 2 INSTRUMENTATION.
9321-F-70493	LEVEL CONTROL PIPING-SHEET 6 INSTRUMENTATION.
9321-F-20953	PRIMING SYS. PIPING FOR DEICING PIPING.
9321-F-20933	PRIMING SYS. PIPING FOR CIRC. WATER PIPING.
9321-H-22803	FLOW DIAGRAM-JACKET WATER TO DIESEL GENERATORS. ELECTRIC FREEZE PROTECTION.

LEGEND
HEAT TRACE
INDICATES RETIRED IN PLACE

REV	DESCRIPTION	DATE	BY	CHK'D	APP.
30	INCORPORATED EC-14761	04/26/17	SM	APPROVAL SIGNATURES ON FILE	

REVISIONS

THIS IS A COMPUTER AIDED DESIGN DRAWING. A RECORD OF THE REVISIONS OF THIS DOCUMENT WITH APPROVAL INITIALS/SIGNATURES, IS MAINTAINED IN THE FILES OF ENTERGY NUCLEAR NORTHEAST

DWN	CHK'D
DES SUPV	
DISCIPLINE ENG	
DISCIPLINE MGR.	
PROJ APPROVAL	
DATE	

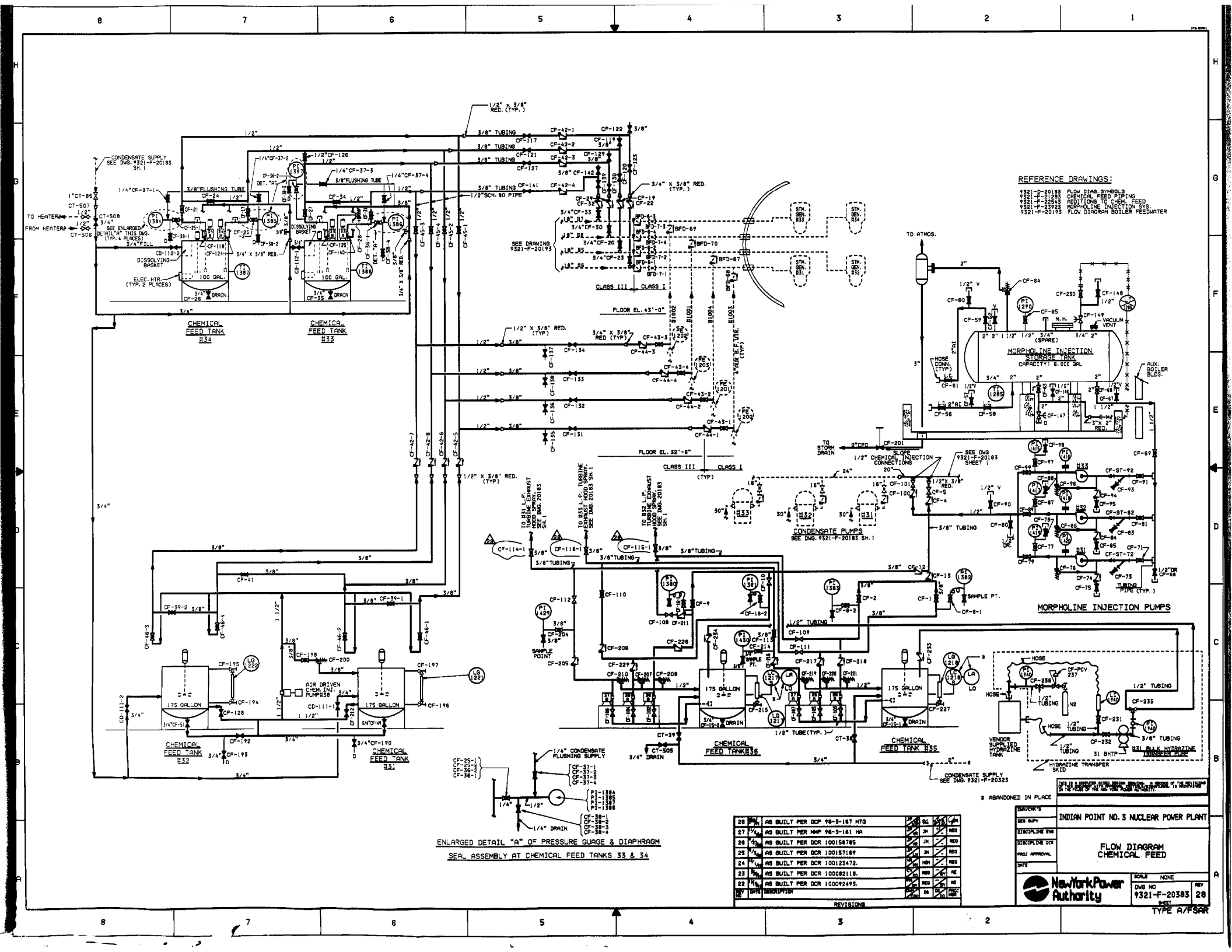
INDIAN POINT NO. 3 NUCLEAR POWER PLANT

FLOW DIAGRAM
CIRCULATING WATER

Entergy
Nuclear Northeast

SCALE: NONE
DWG NO 9321-F-20263
REV 30
SHEET

TYPE A


REFERENCE DRAWINGS:
9321-D-20165 FLOW DIAG.SYMBOLS
9321-F-21285 CHEMICAL FEED PIPING
9321-F-22545 ADDITIONS TO CHEM. FEED
9321-F-23925 MORPHOLINE INJECTION SYS.
9321-F-20193 FLOW DIAGRAM BOILER FEEDWATER
CHEMICAL FEED TANK H34
CHEMICAL FEED TANK H33
CHEMICAL FEED TANK H32
CHEMICAL FEED TANK H31
CHEMICAL FEED TANK H36
CHEMICAL FEED TANK H35
MORPHOLINE INJECTION STORAGE TANK
CAPACITY: 6,000 GAL
MORPHOLINE INJECTION PUMPS
CONDENSATE PUMPS
SEE DWG. 9321-F-20183 SH. 1
CONDENSATE SUPPLY SEE DWG. 9321-F-20183 SH. 1
CONDENSATE SUPPLY SEE DWG. 9321-F-20323
SEE DRAWING 9321-F-20193
TO ATMOS.
TO STORM DRAIN
AUX. BOILER BLDG.
HYDRAZINE TRANSFER SKID
VENDOR SUPPLIED HYDRAZINE TANK
31 BHTP
H31 BLK HYDRAZINE TRANSFER PUMP
ENLARGED DETAIL "A" OF PRESSURE GUAGE & DIAPHRAGM SEAL ASSEMBLY AT CHEMICAL FEED TANKS 33 & 34
* ABANDONED IN PLACE
INDIAN POINT NO. 3 NUCLEAR POWER PLANT
FLOW DIAGRAM CHEMICAL FEED
New York Power Authority
DWG NO 9321-F-20383
REV 28
SCALE NONE
TYPE A/FSAR
REVISIONS
28 AS BUILT PER DCP 98-3-167 MTG
27 AS BUILT PER MMP 98-3-161 HA
26 AS BUILT PER DCR 100158705
25 AS BUILT PER DCR 100157189
24 AS BUILT PER DCR 100123472.
23 AS BUILT PER DCR 100082116.
22 AS BUILT PER DCR 100092495.

LINE IDENTIFICATION TABLE	
CONN. PT.	DESCRIPTION
1	3/4" HYDROGEN FEED FROM GAS SUPPLY
3	1/2" HIGH PRESS. GAUGE LINE TO TRANS. ASSEMBLY
4	1/2" LOW PRESS. GAUGE LINE TO TRANS. ASSEMBLY
5	1/2" H_2 PURITY METER SAMPLE TO TRANS. ASSEMBLY
6	1/2" H_2 PURITY METER SAMPLE FROM TRANS. ASSEMBLY
7	1" FOR GAS DRYER FEED
8	1" FROM GAS DRYER
9	3" GENERATOR VENT TO OUTSIDE
10	2 1/2" CO_2 FEED FROM GAS SUPPLY
005	1/2" H_2 PRESSURE FROM LOW PRESSURE ZONE IN GEN.
006	1/2" H_2 PRESSURE FROM HIGH PREESSURE ZONE IN GEN.
007	1/2" PURITY SAMPLING TO BOTTOM MANIFOLD OF GEN.
008	1/2" PURITY SAMPLING TO TOP MANIFOLD OF GEN.
009	1/2" PURITY SAMPLING FROM BOTTOM MANIFOLD OF GEN.
010	1/2" PURITY SAMPLING FROM TOP MANIFOLD OF GEN.

REFERENCE DRAWINGS:

9321-D-20163	FLOW DIAGRAM-SYMBOLS
9321-F-20443	H_2 & CO_2 PIPING-SH. NO. 1
9321-F-20453	H_2 & CO_2 PIPING-SH. NO. 2

OPERATION

1. THE ACTIVE BANK PRESSURE REGULATOR IN THE CABINET IS SET TO MAINTAIN 125 PSIG GOING TO GENERATOR SERVICE. THE RESERVE ACTIVE REGULATOR ENTERS SERVICE IF PRESSURE DOWNSTREAM FALLS BELOW 110 PSIG.
2. LOW BANK PRESSURE SWITCHES ALARM AT 500 PSIG.
3. REGULATOR "B" IN THE WALL MOUNTED CONTROL STATION MAINTAINS 75 PSIG IN THE GENERATOR.
4. THE EMERGENCY CROSSOVER CONNECTION WITH UNIT NO. 2 MAY BE USED TO TRANSFER QUANTITIES OF LOW PRESSURE HYDROGEN TO OR FROM UNIT NO. 3 DURING GENERATOR FILLING OPERATIONS OR AS AN EMERGENCY SOURCE OF SUPPLY.
5. THIS DWG. SHOWS VALVE POSITIONS WITH #31 H_2 DRYER IN OPERATION AND #32 DRYER ISOLATED. FOR VALVE POSITIONS REQUIRED FOR VARIOUS MODES OF OPERATION, REFER TO COL-TG-2.

NOTES:

EF EXCESS FLOW VALVE

REV	DESCRIPTION	DATE	BY	CHK'D	APP.
39	INCORPORATED EC-71216	4/14/17	AI	APPROVAL SIGNATURES ON FILE	

REVISIONS

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DWN / CHK'D	
DES SUPV	
DISCIPLINE ENG	
DISCIPLINE MGR.	
PROJ APPROVAL	
DATE	

INDIAN POINT NO. 3 NUCLEAR POWER PLANT

FLOW DIAGRAM HYDROGEN AND CO_2

Entergy Nuclear Northeast

SCALE: NONE

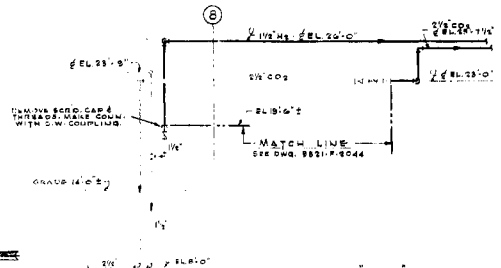
DWG NO 9321-F-20403 REV 39

SHEET

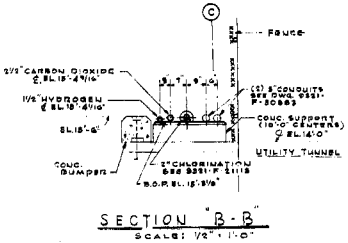
TYPE A/FSAR

DRAWING NUMBER 9321-F 20443 | DRAWING NUMBER U.F.&G. | DRAWING NUMBER | 9321-20443

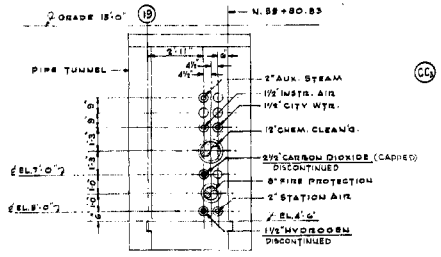
INDIAN POINT UNIT NO. 3



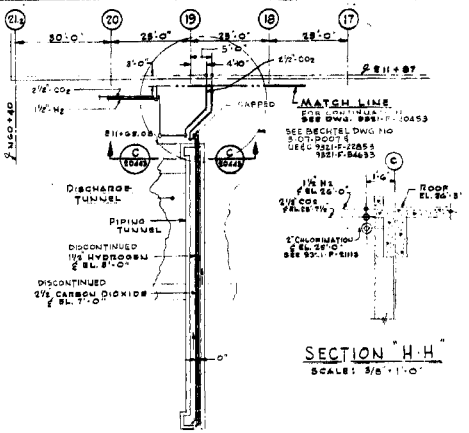
SECTION "A-A"
SCALE: 1/4" = 1'-0"



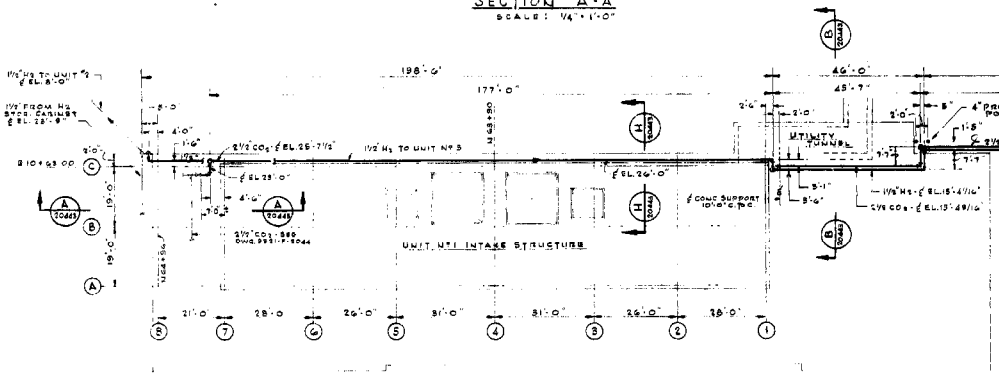
SECTION "B-B"
SCALE: 1/2" = 1'-0"

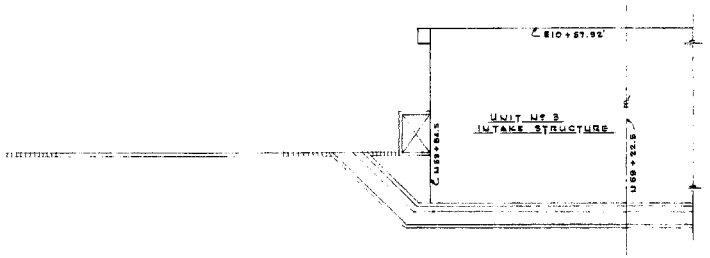


SECTION "C-C"
SCALE: 3/8" = 1'-0"



SECTION "H-H"
SCALE: 3/8" = 1'-0"





PLAN VIEW
SCALE: 1/16" = 1'-0"

GENERAL NOTES:

1. SUBCONTRACTOR OF BULK HYDROGEN SYSTEM SHALL FURNISH STORAGE TUBES, PREFABRICATED CONTROL CABINET & PREFABRICATED STORAGE TUBE MANIFOLDS. HE SHALL ALSO FURNISH PIPING BETWEEN STORAGE TUBES & CONTROL CABINET & BURSTING DISC VENT PIPING IN BULK QUANTITIES FOR FIELD FABRICATION. H2 SUPPLY PIPING SHALL BE FURNISHED BY FIELD.
2. PIPING SHALL BE IN ACCORDANCE WITH NFPA SPECIFICATION 73-MS-062
3. ALL PIPING FURNISHED BY SUB-CONTRACTOR (H2 SYSTEM) WILL BE BRASS PIPE OR COPPER TUBING.
4. (##) INDICATES WALL PENETRATIONS. NUMBERS SHOWN ON 9321-F-21453

LEGEND:

——— PIPING SUPPLIED BY FIELD
– – – – PIPING SUPPLIED BY SUB-CONTRACTOR (HYDROGEN SYSTEM)

REFERENCE DWG'S:

9321-F-20405	FLOW DIAGRAM - H_2 & CO_2
9321-F-20488	INTAKE STRUCT. - H_2 & CO_2 PIPING - SHT. 2
9321-F-21119	INTAKE STRUCT. - CHLORINATION PIPING
9321-F-22893	YARD AREA - COMPOSITE PIPING
9321-F-21453	TURB. & HTR BAY FLOOR PENETRATIONS
9321-F-2044	INTAKE STRUCT. (UNIT #1) H_2 & CO_2 PIPING
5-01-P007	YARD SERVICE PIPING H_2 & CO_2
5-01-P015	YARD SERVICE PIPING H_2 & CO_2

FOREIGN PRINTS:

8521-08-20102	H_2 BOTTLE
9321-08-20099	H_2 CONTROL CABINET
9321-08-20101	H_2 VENT TUBING & MANIFOLD

NO.	DATE	DESCRIPTION	CHKD	APPD
9	9/30	AS BUILT PER DCR 100157859		
8	9/4	REVISED DWG. TO INDICATE LATEST VALVE NOS.		
7	8/5	REV'D. PER MOD. 81-05-013 BUILT. REVD. H_2 & CO_2 PIPING		
6	7/16	RELEASED FOR CONSTRUCTION		
5	5/31	REVISED PER FIELD MARK-UP		
4	4/30	REVISED PER FIELD MARK-UP		
3	3/31	REVISED PER FIELD MARK-UP		
2	2/28	REVISED PER FIELD MARK-UP		
1	1/31	REVISED PER FIELD MARK-UP		
C	12/16	AS PER LINE WALK		
B	11/16	FIRM ISSUE		

STATE OF NEW YORK No. 48194
UNITED ENGINEERS & CONSTRUCTORS INC.

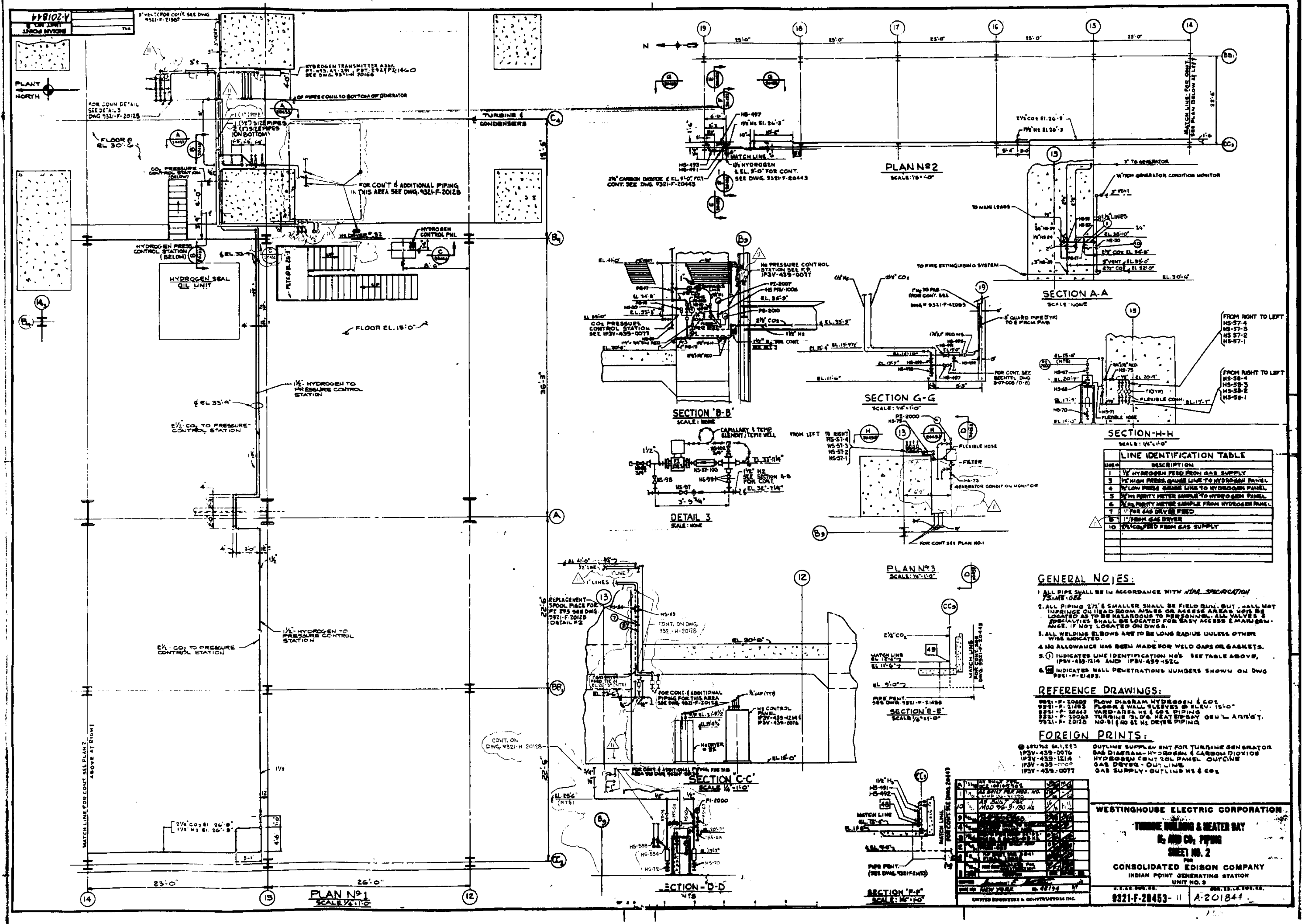
WESTINGHOUSE ELECTRIC CORPORATION

YARD AREA H_2 AND CO_2 PIPING SHEET NO. 1

FOR

CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 3

U.E.&C. DWG. NO.	SDN. SD. CO. DWG. NO.
9321-F-20443-9	A-701843



	LINE IDENTIFICATION TABLE
LINE #	DESCRIPTION
1	1/2" HYDROGEN FEED FROM GAS SUPPLY
3	1/2" HIGH PRESS. GAUGE LINE TO HYDROGEN PANEL
4	1/2" LOW PRESS. GAUGE LINE TO HYDROGEN PANEL
5	1/2" H2 PURITY METER SAMPLE TO HYDROGEN PANEL
6	1/2" H2 PURITY METER SAMPLE FROM HYDROGEN PANEL
7	1" FOR GAS DRYER FEED
8	1" FROM GAS DRYER
10	2 1/2" CO_2 FEED FROM GAS SUPPLY

GENERAL NOTES:

1. ALL PIPE SHALL BE IN ACCORDANCE WITH NYPA SPECIFICATION 75-ME-022
2. ALL PIPING 2 1/2" & SMALLER SHALL BE FIELD RUN. BUT SHALL NOT INFRINGE ON HEAD ROOM AISLES OR ACCESS AREAS NOR BE LOCATED AS TO BE HAZARDOUS TO PERSONNEL. ALL VALVES & SPECIALTIES SHALL BE LOCATED FOR EASY ACCESS & MAINTENANCE, IF NOT LOCATED ON DWGS.
3. ALL WELDING ELBOWS ARE TO BE LONG RADIUS UNLESS OTHERWISE INDICATED.
4. NO ALLOWANCE HAS BEEN MADE FOR WELD GAPS OR GASKETS.
5. (1) INDICATES LINE IDENTIFICATION NO'S. SEE TABLE ABOVE, IP3V-439-1214 AND IP3V-439-1526.
6. [48] INDICATES WALL PENETRATIONS NUMBERS SHOWN ON DWG 9321-F-21453.

REFERENCE DRAWINGS:

9321-F-20403 FLOW DIAGRAM HYDROGEN & CO2
9321-F-21453 FLOOR & WALL SLEEVES @ ELEV. 15'-0"
9321-F-20443 YARD-AREA H2 & CO2 PIPING
9321-F-20063 TURBINE BLD'G. HEATER BAY GEN'L ARR'G'T.
9321-F-20128 NO. 31 & NO 32 H2 DRYER PIPING

FOREIGN PRINTS:

@ 6151162 SH. 1, 2 & 3 OUTLINE SUPPLEMENT FOR TURBINE GENERATOR
IP3V-439-0076 GAS DIAGRAM-HYDROGEN & CARBON DIOXIDE
IP3V-439-1214 HYDROGEN CONTROL PANEL OUTLINE
IP3V-439-0009 GAS DRYER-OUTLINE
IP3V-439-0077 GAS SUPPLY-OUTLINE H2 & CO2

12 AS BUILT PER DCR 10916-3902
11 AS BUILT PER MOD. NO. MMP 96-3-290
10 AS BUILT PER MOD 96-3-180 H2

NEW YORK
UNITED ENGINEERS & CONSTRUCTORS INC.

WESTINGHOUSE ELECTRIC CORPORATION

TURBINE BUILDING & HEATER BAY
H_2 AND CO_2 PIPING
SHEET NO. 2
FOR
CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 3

U.E.&C. DWG. NO. 9321-F-20453- 11
CON. ED. CO. DWG. NO. A-201844

12	INCORPORATED EC-32015	9/23/11	RM	APPROVAL SIGNATURES ON FILE
REV	DESCRIPTION	DATE	BY	CHK'D / APP.
REVISIONS				

FOR CONT. SEE DWG. 9321-F-27293, SH. 1

3/4" VENT

64-2 64-1 66-2 66-1 67-2 67-1

4"BDR-B6-1300

65-1 65-2 3/4" DRAIN

YARD TURBINE BLDG.

4" DRAIN TO 18" SW. DRAIN DWG. 9321-F-20333 SH. 2

4"BDR-B6-1335

8" CD-C1-1332 DWG. 9321-F-20183, SH. 2

68 69 74 4"BDR-B6-1326 4"BDR-B6-1325 4"BDR-B6-1327 85 76

3/4" VENT 70-1 70-2 77-2 77-1

STEAM GENERATOR BLOWDOWN HEAT EXCHANGER #3 (SGBDHX-3)

STEAM GENERATOR BLOWDOWN HEAT EXCHANGER #4 (A & B) (SGBDHX4-A) (SGBDHX4-B)

4"-SWT-R3-1334 DWG. 9321-F-20333, SH. 2

4"-SWT-R3-1333 DWG. 9321-F-20333, SH. 2

8" CD-C1-1331 DWG. 9321-F-20183, SH. 2

TIC 504 TE 504 71-2 71-1 3/4" DRAIN 73-1 73-2 83-2 83-1 72 84 4"BDR-B6-1328

FI 506 LP FT 506 75-1 75-2 3/4"

PIC 515 LP PT 515 TIC 505 LP TA 505 HI LP TE 505 PCV 2 PA 532 HI LP PS 532 SOV 1 AOV 1 AOV 2 SOV 2

INSTRUMENT AIR SEE DWG. 9321-F-20363

CONTROL AIR SEE DWG. 9321-F-20363

SET AT 250 PSIG 3" TO ATMOSPHERE 3"BDR-JK-B7-1338 10

4" X 2" RED. (TYP) 2" F.C. SEE NOTE 1 CLASS B-6 CLASS B-7 4" F.C. 3/4" DRAIN 86 87 88-1 88-2 89-1 89-2 90 91 92 93 94 95

4"BDR-B6-1328 4" BDR-B7-1330 4" BDR-B7-1328

1" SA-K1-1337 STATION AIR SEE DRAWING 9321-F-20353

SA-98 SA-100 SA-101 SA PCV 99 PDAH

PI 543 PDS 544 206 207 124-5 123-5 122-5 125-5 SGBDF-5 121-5 205 204 PI 542

INSTRUMENT AIR SEE DRAWING 9321-F-20363

PIC 541 LP PCV 3 PT 541 131 132 TO DRAINS COLLECTION TANK SEE DRAWING 9321-F-20183, SH. 1 158 SEE NOTE 1 4"BDR-B7-1329

STEAM GENERATOR BLOWDOWN POST FILTERS

PI 546 PDS 547 210 211 124-6 123-6 122-6 125-6 SGBDF-6 121-6 209 208 PI 545

SA-102-1 SA-103-1 SA-104-1 SA-105-1 6" X 4" RED. (TYP) FI 514 PDS 516 SGBDIX-1

FQ 510 FOAH (ANNUNC.) FR 509-1 FIT 510 PI 510 105-1 187 180 181 182 FE 510 AOV-114-1 AOV-97 FI 513 99 98 2 1/2" HOSE CONN. 102 RESIN EDUCTOR AOV-100 101 2 1/2" HOSE CONN. 2 1/2" CT-101 3" PW-J2-1336 SLUICE WATER SEE DWG. 9321-F-27243

AOV-120-1 RESIN RINSE TO DRAIN PI 507 191 RT #1 188 189 PDIS 519 AOV-119-1 117-1 118-1 190 CONNECTION FOR SPENT RESIN DISPOSAL FOAH (ANNUNC.) FQ 511 FR 509-2 FIT 511 PI 511 105-2 193 192 104-2 FE 511 AOV-114-2 AOV-112-2 AOV-110-1 AOV-112-1 AOV-110-2 AOV-112-3 AOV-110-3 AOV-112-2 111-1 111-2 111-3 113-1 113-2 113-3 106-1 107-1 109-1 115-1 SGBDIX-2 SA-102-2 SA-103-2 SA-104-2 SA-105-2 FI 515 PDS 517 AOV-120-2 RESIN RINSE TO DRAIN PT 508 197 RT #2 196 195 PDIS 520 AOV-119-2 117-2 118-2 CONNECTION FOR SPENT RESIN DISPOSAL FOAH (ANNUNC.) FQ 512 FR 509-3 FIT 512 PI 512 105-3 199 198 104-3 FE 512 AOV-114-3 SA-102-3 SA-103-3 SA-104-3 SA-105-3 FI 516 PDS 518 SGBDIX-3 AOV-120-3 RESIN RINSE TO DRAIN PI 509 203 RT #3 200 PDIS 521 AOV-119-3 117-3 118-3 202 201 CONNECTION FOR SPENT RESIN DISPOSAL 107-2 107-3 108-1 108-2 108-3 109-2 109-3 115-2 115-3 116-1 116-2 116-3 ION EXCHANGERS

PI 523 PDS 534 169 168 167 PDS 530 TT 507 TE 507 TI 507 173 175 174 PI 527 SGBDF-3 121-3 164 PI 526 PI 529 PDS 533 176 177 178 SGBDF-4 121-4 124-4 3/4" SAMPLE & DRAIN (TYP) 166 165 PI 528 PI 525 PDS 531 172 171 170 SGBDF-1 121-1 160 159 PI 522 SGBDF-2 121-2 162 161 PI 524 125-1 125-2 125-3 124-3 125-4 122-1 122-2 122-3 122-4 123-1 123-2 123-3 123-4 STEAM GENERATOR BLOWINGDOWN PRE-FILTERS

CE 505 CE 510 CIC 510 CR 509-2 CAH SA-102-2 CIC 505/506 12 CE 506 CE 511 CIC 511 CR 509-1 CAH SA-102-3 CR 509-3 CIC 512 CE 512 CAH FOR CONT. SEE DWG. 9321-F-70203 12 1 1/2" 2" X 1" RED. 2" X 1 1/2" RED. SGBDRP-1 127 128 129 179 PI 513 RECYCLE PUMP

130 126 3/8" CE 508 CIC 508 CR 513 CAH FOR CONT. SEE DWG. 9321-F-70203 12

NOTES:

1. WHERE INDICATED, REDUCERS FURNISHED WITH VALVES.
2. ALL VALVE NUMBERS ARE PRECEDED BY A "BD" SYSTEM DESIGNATION UNLESS NOTED OTHERWISE.
3. LP. LOCALLY MOUNTED PANEL LOCATED IN TURBINE HALL BLDG. 15'-0"EL.

REFERENCE DRAWINGS:

9321-F-27293, SH. 1	FLOW DIAGRAM-S.G. BLOWDOWN SYSTEM
9321-F-20183, SH. 1 & 2	FLOW DIAGRAM-COND. & B.F. PUMP SUCTION
9321-F-20333, SH. 2	FLOW DIAGRAM-SERVICE WATER SYSTEM.
9321-F-20353	FLOW DIAGRAM-STATION AIR
9321-F-20363	FLOW DIAGRAM-INSTR. AIR
9321-F-27243	FLOW DIAGRAM-PRIMARY MAKE-UP WATER SYSTEM NUCLEAR STEAM SUPPLY PLANT
9321-F-70203	STM. & WATER ANALYSIS SYSTEM SAMPLING DIAGRAM - INSTM.

LEGEND:

LINE SIZE - SYMBOL - CLASS - LINE NO.
4" BDR B6 45

CE — DENOTES REMOTE MOUNTED CONDUCTIVITY INSTRUMENTATION W/LARSON LANE COLUMN.

FI — FLOW INDICATOR

RT — RESIN TRAP

REV NO	DATE	DESCRIPTION	DWN / CHK	DS	DE / DM	PROJ APP.
11	7/10/02	AS BUILT PER DCP 01-3-061 SGBR	JF / VR	LM	CP / -	RG
10	5/24/99	AS BUILT PER DCR 100151657	JF / LM	JM	- / -	REG
9	4/15/96	AS BUILT PER DCR 100126143	VR / RM	MSM	- / -	REG
8	9/16/94	AS BUILT PER DCR 100102072, 100102416 & 100028276	KS / ED	REG	- / BY	AE
7	5/14/94	AS BUILT PER DCR 100069926	RL / ED	REG	- / BY	AE
6	11/23/92	AS BUILT PER DCR 100069373.	PM / REG	—	— / AE	—
5	8/17/92	AS BUILT PER DCR 100061883 & 100028276.	PM / REG	—	— / AE	—
4	6/8/92	AS BUILT PER DCR #100028276.	TD / REG	—	— / AE	—
3	7/11/89	AS BUILT PER IP3 TECH SERVICES #TS-164M, #TS-163M, #TS-165E, #TS-168E, #TS-171M & VALVE NUMBERING CHECK	TD / REG	—	— / AE	—

REVISIONS

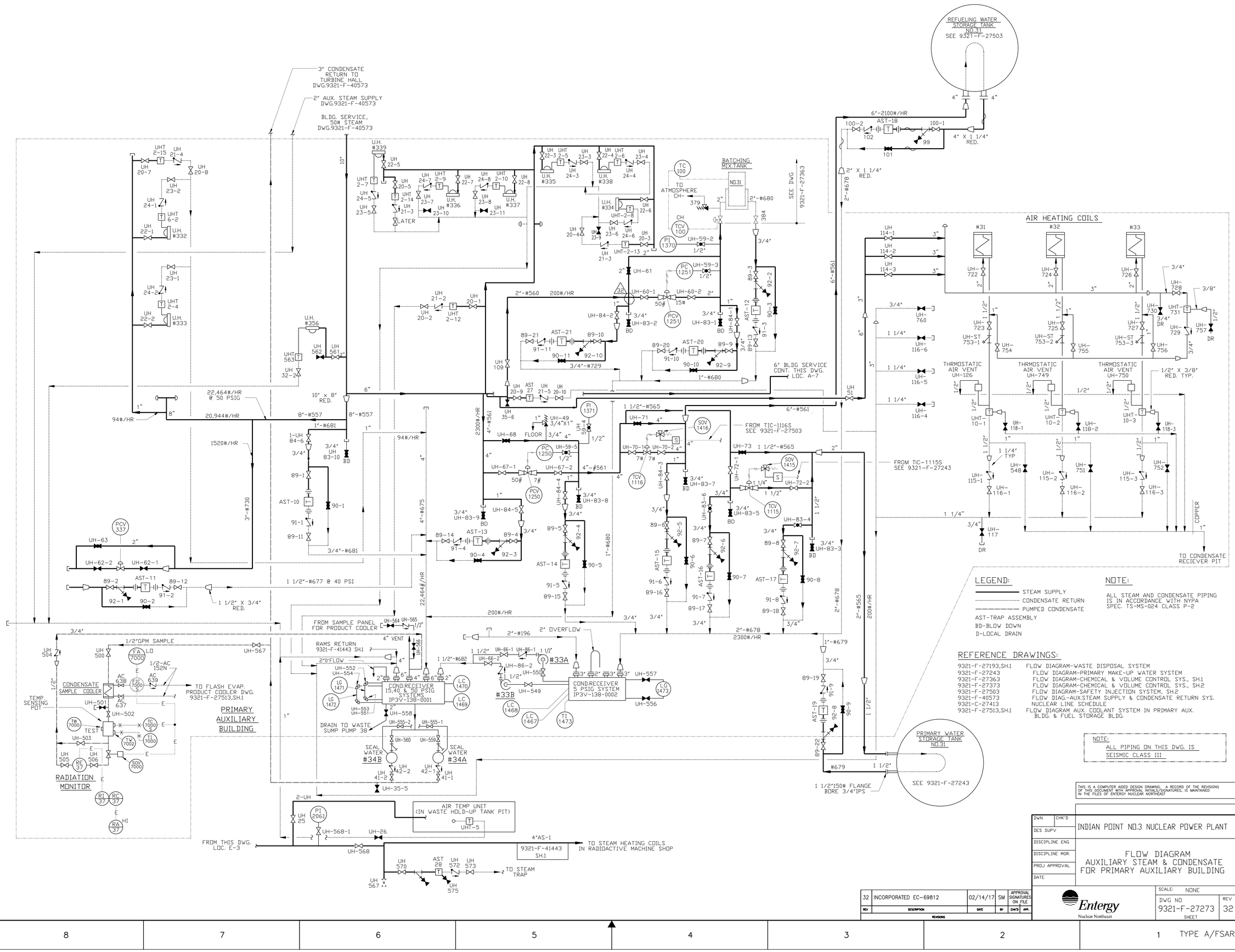
NOTE:
ALL PIPING ON THIS DWG. IS SEISMIC CLASS III EXCEPT AS NOTED

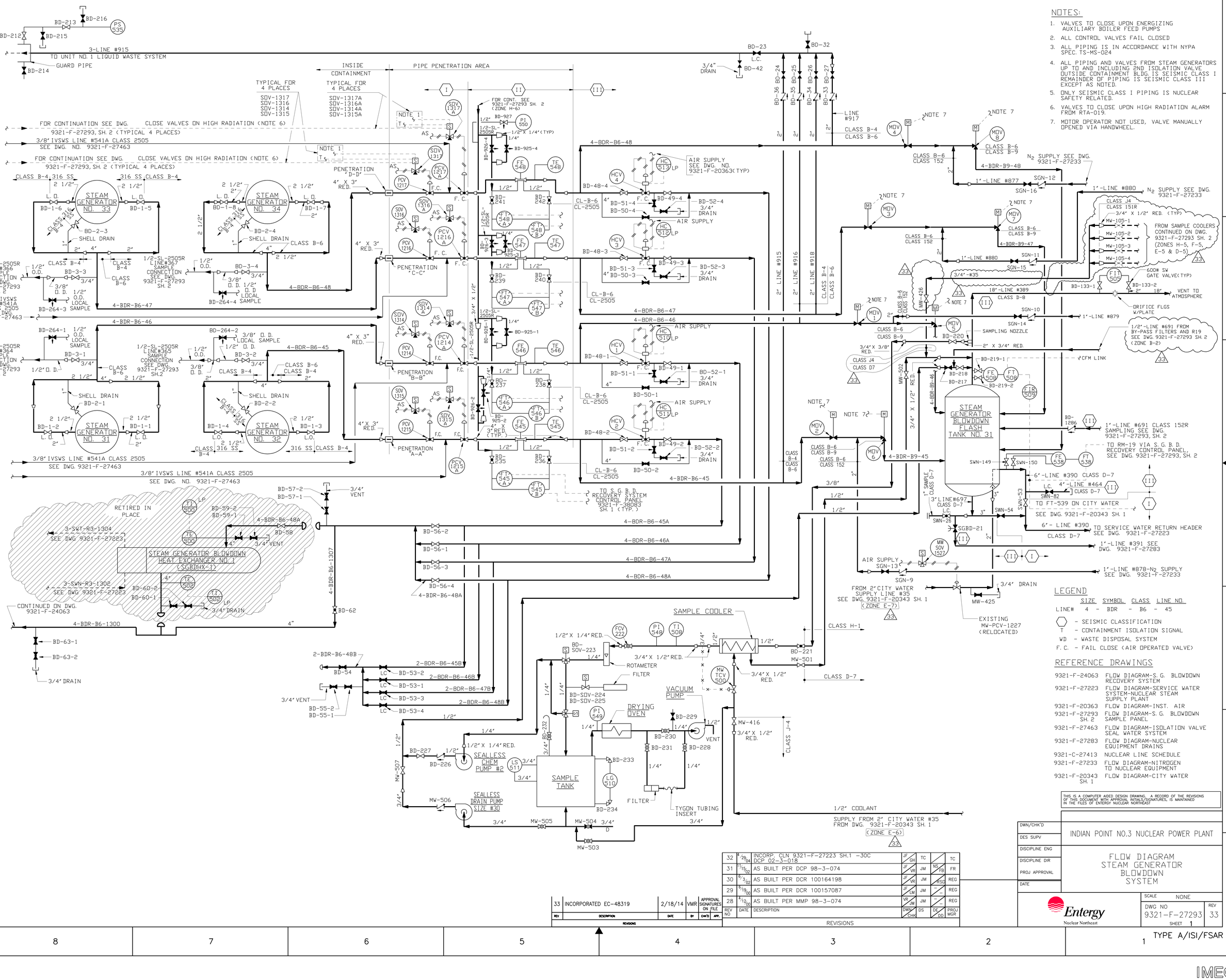
DWN / CHK'D	
DES SUPV	INDIAN POINT NO. 3 NUCLEAR POWER PLANT
DISCIPLINE ENG	
DISCIPLINE MGR.	FLOW DIAGRAM STEAM GENERATOR BLOWDOWN RECOVERY SYSTEM
PROJ APPROVAL	
DATE	

Entergy Nuclear Northeast

SCALE: NONE
DWG NO 9321-F-24063 REV 12
SHEET

TYPE A/FSAR


REFUELING WATER STORAGE TANK NO.31 SEE 9321-F-27503
3" CONDENSATE RETURN TO TURBINE HALL DWG.9321-F-40573
2" AUX. STEAM SUPPLY DWG.9321-F-40573
BLDG. SERVICE, 50# STEAM DWG.9321-F-40573
6"-2100#/HR
2" X 1 1/4" RED.
AIR HEATING COILS
#31
#32
#33
BATCHING MIX.TANK
NO.31
TO ATMOSPHERE CH-
SEE DWG 9321-F-27363
6"-#561
2"-#560 200#/HR
6" BLDG SERVICE CONT. THIS DWG. LOC. A-7
10" x 8" RED.
22,464#/HR @ 50 PSIG
20,944#/HR
94#/HR
1520#/HR
8"-#557
1'-#681
3"-#730
3/4"-#681
1 1/2"-#677 @ 40 PSI
1 1/2" X 3/4" RED.
2300#/HR
4"-#561
4"-#675
1"-#680
22,464#/HR
200#/HR
2"-#678
2"-#565
1"-#679
1 1/2"-#682
2"-#196
2" OVERFLOW
4" VENT
RAMS RETURN 9321-F-41443 SH.1
2"O"FLOW
FROM SAMPLE PANEL FOR PRODUCT COOLER
FROM TIC-1116S SEE 9321-F-27503
FROM TIC-1115S SEE 9321-F-27243
THERMOSTATIC AIR VENT UH-126
THERMOSTATIC AIR VENT UH-749
THERMOSTATIC AIR VENT UH-750
1/2" X 3/8" RED. TYP.
1 1/4" TYP
COPPER
TO CONDENSATE RECIEVER PIT
CONDENSATE SAMPLE COOLER
TO FLASH EVAP. PRODUCT COOLER DWG. 9321-F-27513,SH.1
TEMP. SENSING POT
PRIMARY AUXILIARY BUILDING
RADIATION MONITOR
COND.RECEIVER 15,40 & 50 PSIG SYSTEMS IP3V-138-0001
COND.RECEIVER 5 PSIG SYSTEM IP3V-138-0002
#33A
#33B
#34A
#34B
SEAL WATER
DRAIN TO WASTE SUMP PUMP 38
AIR TEMP UNIT (IN WASTE HOLD-UP TANK PIT)
FROM THIS DWG. LOC. E-3
4"AS-1
9321-F-41443 SH.1
TO STEAM HEATING COILS IN RADIOACTIVE MACHINE SHOP
TO STEAM TRAP
PRIMARY WATER STORAGE TANK NO.31
SEE 9321-F-27243
1 1/2"150# FLANGE BORE 3/4"IPS
LEGEND:
STEAM SUPPLY
CONDENSATE RETURN
PUMPED CONDENSATE
AST-TRAP ASSEMBLY
BD-BLOW DOWN
D-LOCAL DRAIN
NOTE:
ALL STEAM AND CONDENSATE PIPING IS IN ACCORDANCE WITH NYPA SPEC. TS-MS-024 CLASS P-2
REFERENCE DRAWINGS:
9321-F-27193,SH.1 FLOW DIAGRAM-WASTE DISPOSAL SYSTEM
9321-F-27243 FLOW DIAGRAM-PRIMARY MAKE-UP WATER SYSTEM
9321-F-27363 FLOW DIAGRAM-CHEMICAL & VOLUME CONTROL SYS., SH.1
9321-F-27373 FLOW DIAGRAM-CHEMICAL & VOLUME CONTROL SYS., SH.2
9321-F-27503 FLOW DIAGRAM-SAFETY INJECTION SYSTEM, SH.2
9321-F-40573 FLOW DIAG.-AUX.STEAM SUPPLY & CONDENSATE RETURN SYS.
9321-C-27413 NUCLEAR LINE SCHEDULE
9321-F-27513,SH.1 FLOW DIAGRAM AUX. COOLANT SYSTEM IN PRIMARY AUX. BLDG. & FUEL STORAGE BLDG.
NOTE:
ALL PIPING ON THIS DWG. IS SEISMIC CLASS III
THIS IS A COMPUTER AIDED DESIGN DRAWING. A RECORD OF THE REVISIONS OF THIS DOCUMENT WITH APPROVAL INITIALS/SIGNATURES, IS MAINTAINED IN THE FILES OF ENTERGY NUCLEAR NORTHEAST
32 INCORPORATED EC-69812 02/14/17 SM
REVISIONS
INDIAN POINT NO.3 NUCLEAR POWER PLANT
FLOW DIAGRAM AUXILIARY STEAM & CONDENSATE FOR PRIMARY AUXILIARY BUILDING
Entergy Nuclear Northeast
SCALE: NONE
DWG NO 9321-F-27273
REV 32
SHEET
TYPE A/FSAR


NOTES:
1. VALVES TO CLOSE UPON ENERGIZING AUXILIARY BOILER FEED PUMPS
2. ALL CONTROL VALVES FAIL CLOSED
3. ALL PIPING IS IN ACCORDANCE WITH NYPA SPEC. TS-MS-024
4. ALL PIPING AND VALVES FROM STEAM GENERATORS UP TO AND INCLUDING 2ND ISOLATION VALVE OUTSIDE CONTAINMENT BLDG. IS SEISMIC CLASS I REMAINDER OF PIPING IS SEISMIC CLASS III EXCEPT AS NOTED.
5. ONLY SEISMIC CLASS I PIPING IS NUCLEAR SAFETY RELATED.
6. VALVES TO CLOSE UPON HIGH RADIATION ALARM FROM RTA-019.
7. MOTOR OPERATOR NOT USED, VALVE MANUALLY OPENED VIA HANDWHEEL.
INSIDE CONTAINMENT
PIPE PENETRATION AREA
STEAM GENERATOR NO. 33
STEAM GENERATOR NO. 34
STEAM GENERATOR NO. 31
STEAM GENERATOR NO. 32
STEAM GENERATOR BLOWDOWN FLASH TANK NO. 31
STEAM GENERATOR BLOWDOWN HEAT EXCHANGER NO. 1 (SGBDHX-1)
SAMPLE COOLER
VACUUM PUMP
DRYING OVEN
SAMPLE TANK
SEALLESS CHEM PUMP #2
SEALLESS DRAIN PUMP SIZE #30
RETIRED IN PLACE
LEGEND
REFERENCE DRAWINGS
9321-F-24063 FLOW DIAGRAM-S. G. BLOWDOWN RECOVERY SYSTEM
9321-F-27223 FLOW DIAGRAM-SERVICE WATER SYSTEM-NUCLEAR STEAM SUPPLY PLANT
9321-F-20363 FLOW DIAGRAM-INST. AIR
9321-F-27293 SH. 2 FLOW DIAGRAM-S. G. BLOWDOWN SAMPLE PANEL
9321-F-27463 FLOW DIAGRAM-ISOLATION VALVE SEAL WATER SYSTEM
9321-F-27283 FLOW DIAGRAM-NUCLEAR EQUIPMENT DRAINS
9321-C-27413 NUCLEAR LINE SCHEDULE
9321-F-27233 FLOW DIAGRAM-NITROGEN TO NUCLEAR EQUIPMENT
9321-F-20343 SH. 1 FLOW DIAGRAM-CITY WATER
THIS IS A COMPUTER AIDED DESIGN DRAWING. A RECORD OF THE REVISIONS OF THIS DOCUMENT WITH APPROVAL INITIALS/SIGNATURES, IS MAINTAINED IN THE FILES OF ENTERGY NUCLEAR NORTHEAST
INDIAN POINT NO.3 NUCLEAR POWER PLANT
FLOW DIAGRAM STEAM GENERATOR BLOWDOWN SYSTEM
Entergy Nuclear Northeast
DWG NO 9321-F-27293
REV 33
SHEET 1
SCALE NONE
TYPE A/ISI/FSAR
33 INCORPORATED EC-48319 2/18/14 VMR
32 4/29/04 INCORP. CLN 9321-F-27223 SH.1 -30C DCP 02-3-018
31 11/15/02 AS BUILT PER DCP 98-3-074
30 6/3/02 AS BUILT PER DCR 100164198
29 6/19/00 AS BUILT PER DCR 100157087
28 4/12/00 AS BUILT PER MMP 98-3-074
REVISIONS

IP3.SGWd

INSIDE CONTAINMENT STRUCTURE | OUTSIDE CONTAINMENT STRUCTURE

AIR SUPPLY (TYPICAL)

EXPANSION COIL

1/2"-H364-SL-2505R
SEE DWG. 9321-F-27293 SH. 1

PENETRATION "W"

SOV 1523 | PCV 1223 | SOV 1523A | PCV 1223A | 1/2" X 3/8" (TYP) | 3/8"

IVSWS VA-1545 FROM CHK. VA 9321-F-27463 SEE DWG. 9321-F-27463

FT 1241 RETIRED IN PLACE

SS180 | SS174

2" A.C.S. H129 FROM DWG. 9321-F-27515. SH. 1

2" A.C.S. H133 TO DWG. 9321-F-27513. SH. 1

AC-817D | H31 | 3/8"-H683 | 989B

FOR CONT. SEE 9321-F-27293 SH. 1 (ZONE G-5)

CONT. ON DWG. 9321-F-20343 SH. 1 (ZONE F-6)

3/4" X 1/2" CRT | 923-1 | 3/8" X 1/2" | MW-100-1 | MW-101-1 | 924-1

CLASS J4 CLASS 151R | MW-102-1 | MW-104-1 | MW-103-1 | 987-1 | T.S.

TO VENT LINE ON BLOWDOWN TANK FROM SAMPLE HTX SEE DWG. 9321-F-27293. SH. 1 (ZONE F-1)

TCV 1201 | TI 1274

31 SG B/D SAMPLE COOLER#1 | 31 SG B/D SAMPLE COOLER#2

3/8"-H687 | 908-1 | PI 1243A | PI 1243B | 907-1 | 909-1 | 972C | 913-1 | 914-1

BY-PASS FILTER #31

3/8"-H687 | PCV 910-1 | PCV 915-1 | 916-1 | PI 1243C | 917-1 | CE 1111-1 (CATION) | 918-1 | PI 1243 (TYP) | CE 1111-2 (SPECIFIC) | 919-1 | AE 1111-4 | AIT 1111-4 | 920-1 | AE 1111-3 | UR 1111-4 | UR 1111-3 | 922-1

CIT 1111-1 | UR 1111-1 | CIT 1111-2 | UR 1111-2

TI 1276 | 3/8"-H685 TO SAMPLE SINK EL. 55'-0"

EXPANSION COIL

1/2"-H366-SL-2505R
SEE DWG. H9321-F-27293 SH. 1

PENETRATION "W"

SOV 1525 | PCV 1225 | SOV 1525A | PCV 1225A | 3/8"

IVSWS VA-1547 FROM CHK. VA 9321-F-27463 SEE DWG. 9321-F-27463

FT 1243 RETIRED IN PLACE

SS179 | SS175

AC-817F | H33 | 3/8"-H685 | 989C

CONT. ON DWG. 9321-F-20343 SH. 1 (ZONE F-6)

3/4" X 1/2" CRT | 923-3 | 3/8" X 1/2" | MW-100-3 | MW-101-3 | 924-3

CLASS J4 CLASS 151R | MW-102-3 | MW-104-3 | MW-103-3 | 987-3 | T.S.

TO VENT LINE ON BLOWDOWN TANK FROM SAMPLE HTX SEE DWG. 9321-F-27293. SH. 1 (ZONE F-1)

TCV 1203

33 SG B/D SAMPLE COOLER#1 | 33 SG B/D SAMPLE COOLER#2

3/8"-H689 | 908-3 | PI 1245A | PI 1245B | 907-3 | 909-3 | 972B | 913-3 | 914-3

BY-PASS FILTER #33

3/8"-H689 | PCV 910-3 | PCV 915-3 | 916-3 | PI 1245C | 917-3 | CE 1113-1 (CATION) | 918-3 | PI 1245 (TYP) | CE 1113-2 (SPECIFIC) | 919-3 | AE 1113-4 | AIT 1113-4 | 920-3 | AE 1113-3 | UR 1113-4 | UR 1113-3 | 922-3

CIT 1113-1 | UR 1113-1 | CIT 1113-2 | UR 1113-2

TI 1275 | 3/8"-H684 TO SAMPLE SINK EL. 55'-0"

EXPANSION COIL

1/2"-H365-SL-2505R
SEE DWG. H9321-F-27293 SH. 1

PENETRATION "W"

SOV 1524 | PCV 1224 | SOV 1524A | PCV 1224A | 3/8"

IVSWS VA-1546 FROM CHK. VA 9321-F-27463 SEE DWG. 9321-F-27463

FT 1242 RETIRED IN PLACE

SS181 | SS176

AC-817E | H32 | 3/8"-H684 | 989A

CONT. ON DWG. 9321-F-20343 SH. 1 (ZONE F-6)

3/4" X 1/2" CRT | 923-2 | 3/8" X 1/2" | MW-100-2 | MW-101-2 | 924-2

CLASS J4 CLASS 151R | MW-102-2 | MW-104-2 | MW-103-2 | 987-2 | T.S.

TO VENT LINE ON BLOWDOWN TANK FROM SAMPLE HTX SEE DWG. 9321-F-27293. SH. 1 (ZONE F-1)

TCV 1202

32 SG B/D SAMPLE COOLER#1 | 32 SG B/D SAMPLE COOLER#2

3/8"-H688 | 908-2 | PI 1244A | PI 1244B | 907-2 | 909-2 | 972D | 913-2 | 914-2

BY-PASS FILTER #32

3/8"-H688 | PCV 910-2 | PCV 915-2 | 916-2 | PI 1244C | 917-2 | CE 1112-1 (CATION) | 918-2 | PI 1244 (TYP) | CE 1112-2 (SPECIFIC) | 919-2 | AE 1112-4 | AIT 1112-4 | 920-2 | AE 1112-3 | UR 1112-4 | UR 1112-3 | 922-2

CIT 1112-1 | UR 1112-1 | CIT 1112-2 | UR 1112-2

TI 1277 | 3/8"-H686 TO SAMPLE SINK EL. 55'-0"

PENETRATION "W"

1/2"-H367-SL-2505R
SEE DWG. H9321-F-27293 SH. 1

EXPANSION COIL

SOV 1526 | PCV 1226 | SOV 1526A | PCV 1226A | 3/8"

IVSWS VA-1548 FROM CHK. VA 9321-F-27463 SEE DWG. 9321-F-27463

FT 1244 RETIRED IN PLACE

SS178 | SS177

19

AC-817G | H34 | 3/8"-H686 | 989D

SG SAMPLE HEAT EXCHANGER (TYPICAL)

CONT. ON DWG. 9321-F-20343 SH. 1 (ZONE F-6)

3/4" X 1/2" CRT | 923-4 | 3/8" X 1/2" | MW-100-4 | MW-101-4 | 924-4

CLASS J4 CLASS 151R | MW-102-4 | MW-104-4 | MW-103-4 | 987-4 | T.S.

TO VENT LINE ON BLOWDOWN TANK FROM SAMPLE HTX SEE DWG. 9321-F-27293. SH. 1 (ZONE F-1)

TCV 1204

34 SG B/D SAMPLE COOLER#1 | 34 SG B/D SAMPLE COOLER#2

3/8"-H690 | 908-4 | PT 1246A | PT 1246B | 907-4 | 909-4 | 972A | 913-4 | 914-4

BY-PASS FILTER #34

3/8"-H690 | PCV 910-4 | PCV 915-4 | 916-4 | PI 1246C | 917-4 | CE 1114-1 (CATION) | 918-4 | PI 1246 | CE 1114-2 (SPECIFIC) | 919-4 | AE 1114-4 | AIT 1114-4 | 920-4 | AE 1114-3 | UR 1114-4 | UR 1114-3 | 922-4

CIT 1114-1 | UR 1114-1 | CIT 1114-2 | UR 1114-2

TO ION CHROMATOGRAPH 9321-F-20332

912-2 | 912-3 | 912-1

921-4 | 3/8" | 921-1 | 3/8" | 921-3 | 3/8" | 921-2 | 3/8"

1 1/2" | DRAIN

TO SOV-1317 (NOTE 1)
TO SOV-1316 (NOTE 1)
TO SOV-1314 (NOTE 1)
TO SOV-1315 (NOTE 1)
TO SOV-1317A (NOTE 1)
TO SOV-1316A (NOTE 1)
TO SOV-1314A (NOTE 1)
TO SOV-1315A (NOTE 1)

SEE DWG. 9321-F-27293. SHEET 1

I | II

3/8"-SL-250R | 3/8"-SL-2505R | 3/8"-SL-2505R | 3/8"-SL-2505R

PT 1332 | BD-20 | 1/2"-2505R | 922-5 | 1" CLASS 151R | LOCAL DRAIN

FI 1248 | FI 1246 | FI 1247 | FI 1245 | 253-4 | 253-2 | 253-5 | 253-1 | 254-4 | 254-2 | 254-3 | 254-1 | 3/8

151R | 2505R | 1/2"-BD-46 | 1/2"-H691 | 1/2"-BD-45 | 1/2"-BD-47 | 1/2"-BD-44

TO SAMPLE INLET R19 SKID

FROM SAMPLE/PURGE OUTLET R19 SKID

COLLECTION TANK NO. 31 | 2"-H618

COLLECTION TANK NO. 31 TRANSFER PUMPS | H31 | H32 | BD-37 | BD-38

1"- H745 | 3/4"-H745 CLASS 152R | 1"- H691 CLASS 152R

TO BLOWDOWN FLASH TANK SEE DWG. 9321-F-27293. SH. 1

1/2"-H691 TO 1/2" HEADER TO BLOWDOWN TANK SEE DWG. 9321-F-27293. SH. 1 (ZONE E-1)

1-AC-152N-H3041 AUX. COOLANT 9321-F-27513. SH. 1

1-AC-152N-H3042 AUX. COOLANT 9321-F-27513. SH. 1

SAMPLE INLET | BD-247 | 3/4" | TS 20 | TI 19 | FIS 19 | BD-248 | BD-249 | 1/4" O.D. | BD-250 | PT 21 | H31 | 3/4" | BD-252 | BD-SOV-251 | RE-19A | CALIBRATION PORTS | BD-254 | BD-SOV-255 | BD-253 DR.

1 1/2" | COOLING WATER HEAT EXCHANGER #31 | 1 1/2"

3/4" CITY WATER DWG. 9321-F-20343. SH. 1 (ZONE F-6)

PURGE INLET | BD-SOV-262 | BD-SOV-263 | 3/4" | BD-SOV-258 | BD-259 | RE-19B | CALIBRATION PORTS | BD-257 | BD-SOV-256 | BD-261 | BD-260

SAMPLE PURGE OUTLET | 3/4"

CLOSE VALVES ON HIGH RADIATION (NOTE 1)

RM 19 | FROM FT-538 DWG. 9321-F-27293. SH. 1

RADIATION MONITOR R19 SKID

NOTES:

1. VALVES TO CLOSE UPON HIGH RADIATION ALARM.
2. ALL VALVE NO'S. ARE PRECEDED BY A "BD" SYSTEM DESIGNATION UNLESS OTHERWISE NOTED.

REFERENCE DRAWINGS:

9321-F-27293. SH. 1-STEAM GENERATOR BLOWDOWN SYSTEM-FLOW DIAGRAM.

9321-F-27453-SAMPLING SYSTEM-FLOW DIAGRAM.

9321-F-27463-ISOLATION VALVE SEAL WATER SYSTEM-FLOW DIAGRAM.

9321-F-27513. SH. 1-AUX COOLANT SYSTEM IN PAB & FSB-FLOW DIAGRAM.

9321-F-27513. SH. 2-AUX COOLANT SYSTEM IN PAB & FSB-FLOW DIAGRAM.

9321-F-20332-ION CHROMATOGRAPHY ANALYZER

LEGEND:

IVSWS	ISOLATION VALVE SEAL WATER SYSTEM
L.O.	LOCKED OPEN VALVE
L.C.	LOCKED CLOSED VALVE
T	CONTAINMENT ISOLATION SIGNAL
F.C.	FAIL CLOSE (AIR OPERATED VALVE)
⬡	SEISMIC CLASSIFICATION
⬭	LOCAL CONTROL PANEL

THIS IS A COMPUTER AIDED DESIGN DRAWING. A RECORD OF THE REVISIONS OF THIS DOCUMENT WITH APPROVAL INITIALS/SIGNATURES. IS MAINTAINED IN THE FILES OF ENTERGY NUCLEAR NORTHEAST.

REV	DESCRIPTION	DATE	BY	APPROVAL SIGNATURES ON FILE CHK'D	APP.
19	INCORPORATED EC-71388	4/20/17	SM		

REVISIONS

DWN	CHK'D
DES SUPV	
DISCIPLINE ENG	
DISCIPLINE MGR.	
PROJ APPROVAL	
DATE	

INDIAN POINT NO. 3 NUCLEAR POWER PLANT

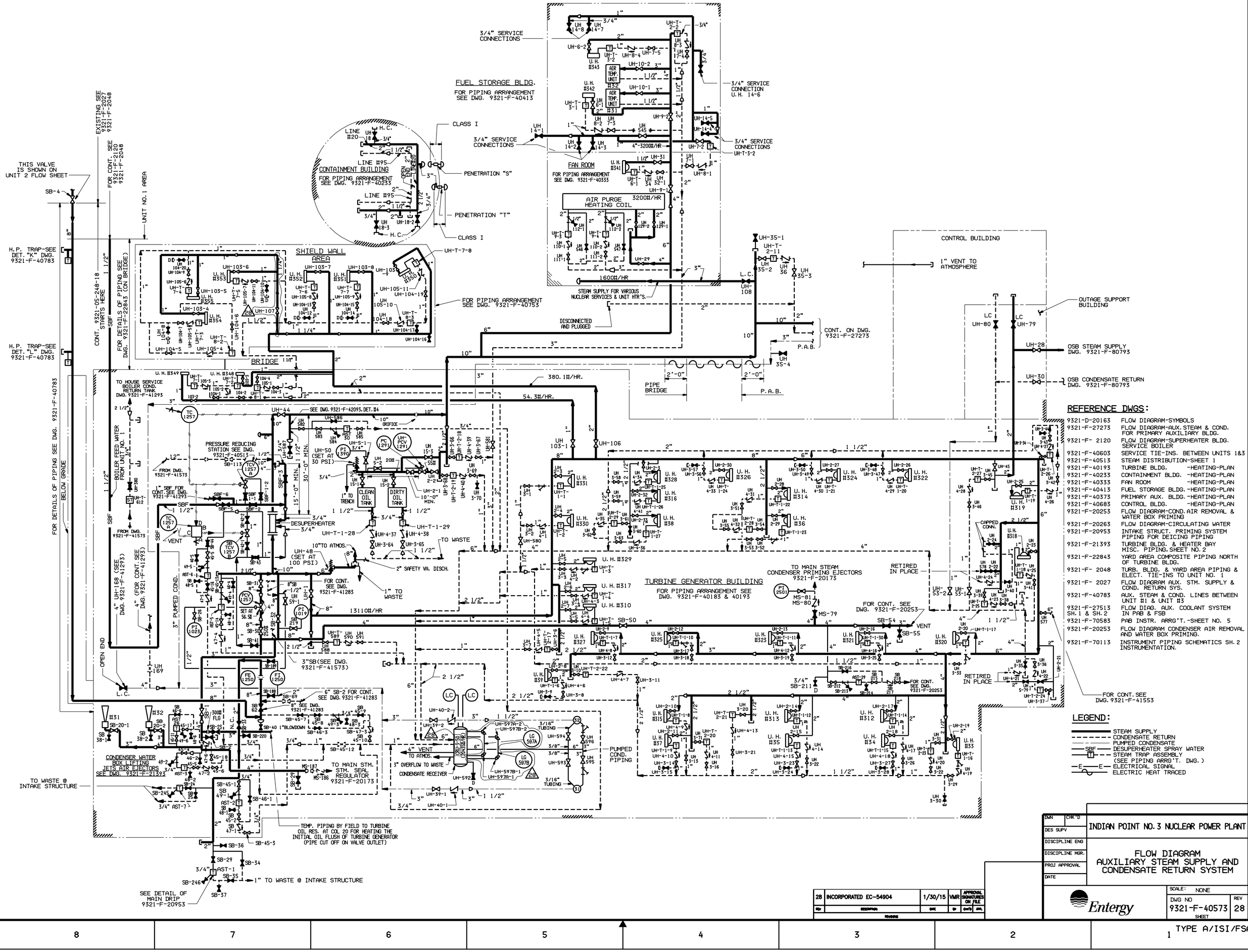
FLOW DIAGRAM STEAM GENERATOR BLOWDOWN SAMPLE PANEL

Entergy Nuclear Northeast

SCALE: NONE

DWG NO 9321-F-27293 SHEET 2 | REV 19

TYPE A/ISI/FSAR


FUEL STORAGE BLDG.
FOR PIPING ARRANGEMENT SEE DWG. 9321-F-40413
3/4" SERVICE CONNECTIONS
3/4" SERVICE CONNECTION U.H. 14-6
FAN ROOM
FOR PIPING ARRANGEMENT SEE DWG. 9321-F-40333
AIR PURGE HEATING COIL 3200#/HR
1600#/HR
STEAM SUPPLY FOR VARIOUS NUCLEAR SERVICES & UNIT HTR'S.
DISCONNECTED AND PLUGGED
CONTAINMENT BUILDING
FOR PIPING ARRANGEMENT SEE DWG. 9321-F-40233
LINE #20
LINE #95
CLASS I
PENETRATION "S"
PENETRATION "T"
THIS VALVE IS SHOWN ON UNIT 2 FLOW SHEET
EXISTING SEE 9321-F-2027 9321-F-2048
FOR CONT. SEE 9321-F-2120 9321-F-2048
UNIT NO.1 AREA
SHIELD WALL AREA
FOR PIPING ARRANGEMENT SEE DWG. 9321-F-40753
FOR DETAILS OF PIPING SEE DWG. 9321-F-22843 (ON BRIDGE)
CONT. 9321-05-248-18 STARTS HERE
H.P. TRAP-SEE DET. "K" DWG. 9321-F-40783
H.P. TRAP-SEE DET. "L" DWG. 9321-F-40783
BRIDGE
PIPE BRIDGE
P.A.B.
CONT. ON DWG. 9321-F-27273
CONTROL BUILDING
1" VENT TO ATMOSPHERE
OUTAGE SUPPORT BUILDING
OSB STEAM SUPPLY DWG. 9321-F-80793
OSB CONDENSATE RETURN DWG. 9321-F-80793
TO HOUSE SERVICE BOILER COND. RETURN TANK DWG. 9321-F-41293
PRESSURE REDUCING STATION SEE DWG. 9321-F-40513
SEE DWG. 9321-F-42093. DET. #4
UH-50 (SET AT 30 PSI)
UH-48 (SET AT 100 PSI)
DESUPERHEATER
CLEAN OIL TANK
DIRTY OIL TANK
TO WASTE
2" SAFETY VA. DISCH.
1" TO WASTE
10"TO ATMOS.
FOR CONT. SEE DWG. 9321-F-41283
3"SB(SEE DWG. 9321-F-41573)
380.1#/HR.
54.3#/HR.
1311O#/HR
ORIFICE
TURBINE GENERATOR BUILDING
FOR PIPING ARRANGEMENT SEE DWG. 9321-F-40183 & 40193
TO MAIN STEAM CONDENSER PRIMING EJECTORS 9321-F-20173
RETIRED IN PLACE
FOR CONT. SEE DWG. 9321-F-20253
CONDENSER WATER BOX LIFTING JETS AIR EJECTORS SEE DWG. 9321-F-21392
TO MAIN STM. STM. SEAL REGULATOR 9321-F-20173
TO WASTE @ INTAKE STRUCTURE
TEMP. PIPING BY FIELD TO TURBINE OIL RES. AT COL 20 FOR HEATING THE INITIAL OIL FLUSH OF TURBINE GENERATOR (PIPE CUT OFF ON VALVE OUTLET)
SEE DETAIL OF MAIN DRIP 9321-F-20953
PUMPED COND. PIPING
4" VENT TO ATMOS.
3" OVERFLOW TO WASTE
CONDENSATE RECEIVER
ORD-3-501 (COAXIAL HX)
3" PUMPED COND.
4" (FOR CONT. SEE DWG. 9321-F-41293)
4" UH-168 (SEE DWG. 9321-F-41293)
FOR DETAILS OF PIPING SEE DWG. 9321-F-40783
BELOW GRADE
OPEN END
BOILER FEED WATER FROM UNIT NO. 1
FOR CONT. SEE DWG. 9321-F-41293
FROM DWG. 9321-F-41573
1" SBF FOR CONT. SEE DWG. 9321-F-41293
FOR CONT. SEE DWG. 9321-F-41283
6" SB-2 FOR CONT. SEE DWG. 9321-F-41283
SEE DWG. 9321-F-40783
SEE DWG. 9321-F-41283
SEE DWG. 9321-F-41573
FOR CONT. SEE DWG. 9321-F-41553
REFERENCE DWGS:
9321-D-20163 FLOW DIAGRAM-SYMBOLS
9321-F-27273 FLOW DIAGRAM-AUX. STEAM & COND. FOR PRIMARY AUXILIARY BLDG.
9321-F- 2120 FLOW DIAGRAM-SUPERHEATER BLDG. SERVICE BOILER
9321-F-40603 SERVICE TIE-INS. BETWEEN UNITS 1&3
9321-F-40513 STEAM DISTRIBUTION-SHEET 1
9321-F-40193 TURBINE BLDG. -HEATING-PLAN
9321-F-40233 CONTAINMENT BLDG. -HEATING-PLAN
9321-F-40333 FAN ROOM -HEATING-PLAN
9321-F-40413 FUEL STORAGE BLDG. -HEATING-PLAN
9321-F-40373 PRIMARY AUX. BLDG. -HEATING-PLAN
9321-F-40683 CONTROL BLDG. -HEATING-PLAN
9321-F-20253 FLOW DIAGRAM-COND. AIR REMOVAL & WATER BOX PRIMING
9321-F-20263 FLOW DIAGRAM-CIRCULATING WATER
9321-F-20953 INTAKE STRUCT. PRIMING SYSTEM PIPING FOR DEICING PIPING
9321-F-21393 TURBINE BLDG. & HEATER BAY MISC. PIPING, SHEET NO. 2
9321-F-22843 YARD AREA COMPOSITE PIPING NORTH OF TURBINE BLDG.
9321-F- 2048 TURB. BLDG. & YARD AREA PIPING & ELECT. TIE-INS TO UNIT NO. 1
9321-F- 2027 FLOW DIAGRAM AUX. STM. SUPPLY & COND. RETURN SYS.
9321-F-40783 AUX. STEAM & COND. LINES BETWEEN UNIT #1 & UNIT #3
9321-F-27513 SH. 1 & SH. 2 FLOW DIAG. AUX. COOLANT SYSTEM IN PAB & FSB
9321-F-70585 PAB INSTR. ARRG'T. -SHEET NO. 5
9321-F-20253 FLOW DIAGRAM CONDENSER AIR REMOVAL AND WATER BOX PRIMING.
9321-F-70113 INSTRUMENT PIPING SCHEMATICS SH. 2 INSTRUMENTATION.
LEGEND:
STEAM SUPPLY
CONDENSATE RETURN
PUMPED CONDENSATE
DESUPERHEATER SPRAY WATER
STEAM TRAP ASSEMBLY (SEE PIPING ARRG'T. DWG.)
ELECTRICAL SIGNAL
ELECTRIC HEAT TRACED
28 INCORPORATED EC-54904 1/30/15 VMR APPROVAL SIGNATURES ON FILE
DWN CHK'D
DES SUPV
DISCIPLINE ENG
DISCIPLINE MGR.
PROJ APPROVAL
DATE
INDIAN POINT NO. 3 NUCLEAR POWER PLANT
FLOW DIAGRAM AUXILIARY STEAM SUPPLY AND CONDENSATE RETURN SYSTEM
Entergy
SCALE: NONE
DWG NO 9321-F-40573
REV 28
SHEET
TYPE A/ISI/FSAR