

REFERENCES:

1. PROCESS FLOW DIAGRAM (PFD) DWG.
2. DEFINITION OF SYMBOLS
 - ① E. SPEC. 6675176 REV. 2 AND
 - ② E. SPEC. 6675164 REV. 0
3. INSTALLATION OF INSTRUMENTATION
 - ③ PROC. SPEC. CAP 294367 REV. 1
4. MATERIAL SPEC. PIPE AND FITTINGS
 - ④ E. SPEC. 6569866 REV. 2 AND
 - ⑤ E. SPEC. 6676398 REV. 0

REFERENCE DRAWINGS:

- 9321-F-27193 WDS - WASTE DISPOSAL SYSTEM (SH. 1 & SH. 2)
- 27303 N - WASTE DISPOSAL SYSTEM - GAS
- 27383 RCS - REACTOR COOLANT SYSTEM
- 27473 RCS - REACTOR COOLANT SYSTEM
- 27353 SIS - SAFETY INJECTION SYSTEM
- 27503 SIS - SAFETY INJECTION SYSTEM
- 27203 ACS - AUXILIARY COOLANT SYSTEM
- 27513 ACS - AUXILIARY COOLANT SYSTEM (SHT. 1)
- 27373 CVCS - CHEMICAL & VOLUME CONTROL SYSTEM
- 27233 N - NITROGEN TO NUCLEAR EQUIP.
- 27243 PW - PRIMARY MAKE-UP WATER SYSTEM
- 27283 DH - NUCLEAR EQUIPMENT DRAINS
- 27273 AS - SAMPLING SYSTEM
- 27253 GA - AUX. STEAM & CONDENSATE FOR P. A. BLDG.
- 9321-C-27413 - AUTOMATIC GAS ANALYZER SYSTEM
- 9321-F-27413 - NUCLEAR LINE SCHEDULE

LEGEND:

- V - LOCAL VENT
- PW - PRIMARY MAKE-UP WATER
- DH - DRAIN HEADER (WDS)
- T - CONTAINMENT ISOLATION SIGNAL
- D - LOCAL DRAIN
- HSC - REACTOR COOLANT DRAIN TANK (WDS)
- GA - HAND SPEED CONTROL
- FAI - GAS ANALYZER (WDS)
- FC - FAIL AS IS
- FO - FAIL OPEN
- LO - LOCKED OPEN
- LC - LOCKED CLOSED
- ATM - ATMOSPHERE
- IVSWS - ISOLATION VALVE SEAL WATER SYSTEM
- PRT - PRESSURIZER RELIEF TANK
- WHT - WASTE HOLDUP TANK
- TEMP - TEMPORARY STRAINER
- SRST - SPENT RESIN STORAGE TANK
- HUT - HOLDUP TANK
- WGCP - WASTE GAS COMPRESSOR PACKAGE (WDS)
- △ - CONTAINMENT PENETRATIONS
- △ - SEISMIC CLASSIFICATION

NOTES:

- VALVE FAILS WITH FLOW TO VOLUME CONTROL TANK
- VALVE FUNCTIONS AS ISOLATION VALVE ONLY. OVER PRESSURE PROTECTION FOR THE REGENERATIVE HEAT EXCHANGER PROVIDED BY CH-8282.
- SPECIAL SPRING LOADED CHECK VALVE
- DIAPHRAGM SEAL
- ELECTROMAGNETIC-METER LOCATED IN VERT. PIPE RUN
- 0.6" DIA. HOLE IN CLAPPER OR CUP
- ADDITIONAL VENTS & DRAINS MAY BE INSTALLED SEE PIPING LAYOUT.
- GLOBE VALVES ARE NORMALLY INSTALLED WITH FLOW UNDER THE SEAT. EXCEPTIONS ARE VALVES NO. 230, 232, 233, 235, 236, 238, 240A THRU D INCL. AND 333
- LOOP SEAL EXTENDS 12" BELOW AND ABOVE OVERFLOW NOZZLE
- CHECK VALVES 251E, F, G, ARE LOCATED NEAR CONTAINMENT WALL
- CHECK VALVES 251A, B, C, ARE LOCATED NEAR REACTOR COOLANT PUMPS
- TEMPORARY (START-UP) STRAINER ST-764, ST-765, ST-766, ST-767, ST-768, ST-769, ST-770, ST-771, ST-772, ST-773, ST-774, ST-775, ST-776, ST-777, ST-778, ST-779, ST-780, ST-781, ST-782, ST-783, ST-784, ST-785, ST-786, ST-787, ST-788, ST-789, ST-790, ST-791, ST-792, ST-793, ST-794, ST-795, ST-796, ST-797, ST-798, ST-799, ST-800, ST-801, ST-802, ST-803, ST-804, ST-805, ST-806, ST-807, ST-808, ST-809, ST-810, ST-811, ST-812, ST-813, ST-814, ST-815, ST-816, ST-817, ST-818, ST-819, ST-820, ST-821, ST-822, ST-823, ST-824, ST-825, ST-826, ST-827, ST-828, ST-829, ST-830, ST-831, ST-832, ST-833, ST-834, ST-835, ST-836, ST-837, ST-838, ST-839, ST-840, ST-841, ST-842, ST-843, ST-844, ST-845, ST-846, ST-847, ST-848, ST-849, ST-850, ST-851, ST-852, ST-853, ST-854, ST-855, ST-856, ST-857, ST-858, ST-859, ST-860, ST-861, ST-862, ST-863, ST-864, ST-865, ST-866, ST-867, ST-868, ST-869, ST-870, ST-871, ST-872, ST-873, ST-874, ST-875, ST-876, ST-877, ST-878, ST-879, ST-880, ST-881, ST-882, ST-883, ST-884, ST-885, ST-886, ST-887, ST-888, ST-889, ST-890, ST-891, ST-892, ST-893, ST-894, ST-895, ST-896, ST-897, ST-898, ST-899, ST-900, ST-901, ST-902, ST-903, ST-904, ST-905, ST-906, ST-907, ST-908, ST-909, ST-910, ST-911, ST-912, ST-913, ST-914, ST-915, ST-916, ST-917, ST-918, ST-919, ST-920, ST-921, ST-922, ST-923, ST-924, ST-925, ST-926, ST-927, ST-928, ST-929, ST-930, ST-931, ST-932, ST-933, ST-934, ST-935, ST-936, ST-937, ST-938, ST-939, ST-940, ST-941, ST-942, ST-943, ST-944, ST-945, ST-946, ST-947, ST-948, ST-949, ST-950, ST-951, ST-952, ST-953, ST-954, ST-955, ST-956, ST-957, ST-958, ST-959, ST-960, ST-961, ST-962, ST-963, ST-964, ST-965, ST-966, ST-967, ST-968, ST-969, ST-970, ST-971, ST-972, ST-973, ST-974, ST-975, ST-976, ST-977, ST-978, ST-979, ST-980, ST-981, ST-982, ST-983, ST-984, ST-985, ST-986, ST-987, ST-988, ST-989, ST-990, ST-991, ST-992, ST-993, ST-994, ST-995, ST-996, ST-997, ST-998, ST-999, ST-1000
- FE-156, FE-157, FE-158 AND FE-159 ARE FLOW RESTRICTING DEVICES INSTALLED PER EC-54478

NOTE:

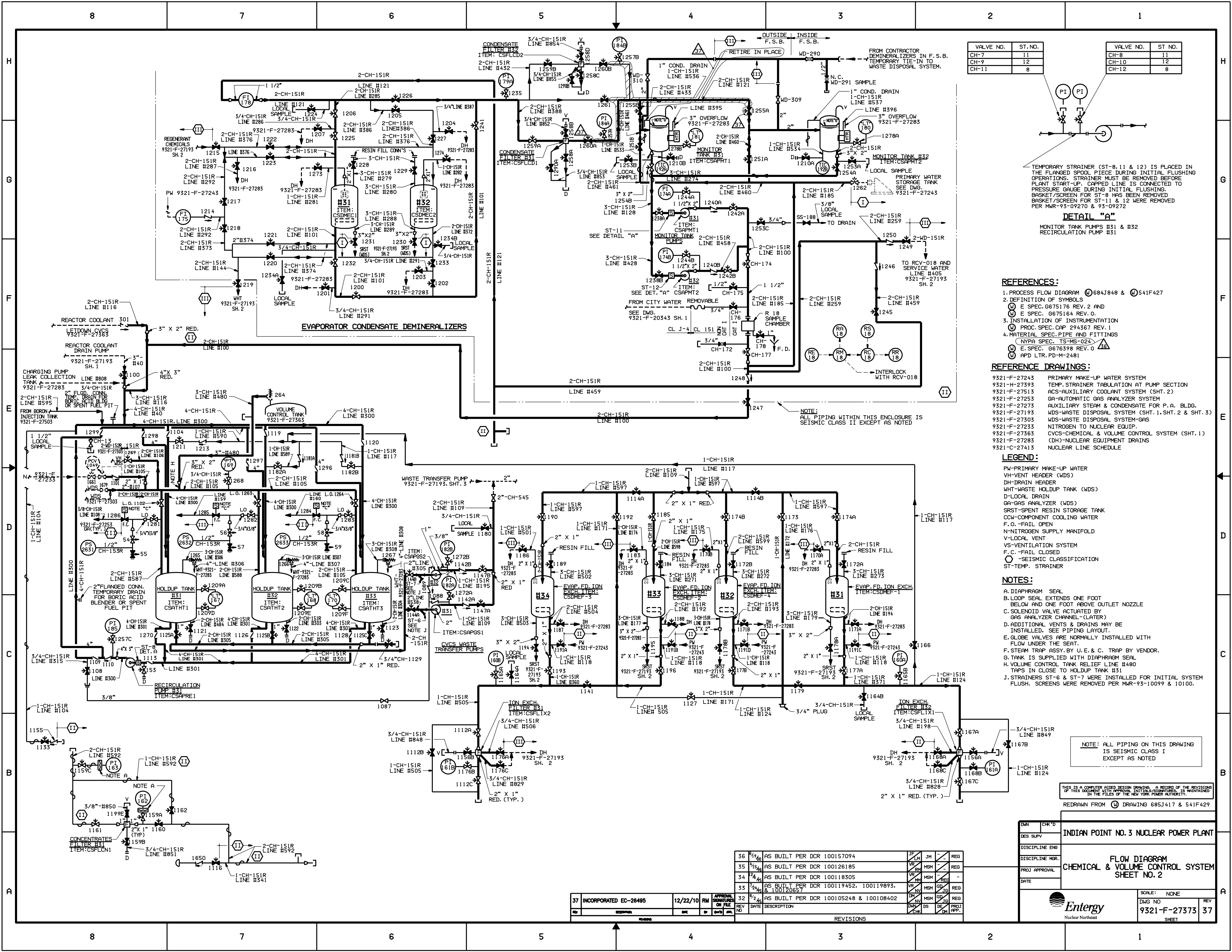
ALL VALVE NO'S ARE PRECEDED BY "CH" AS THE SYSTEM DESIGNATION EXCEPT AS NOTED

THIS IS A COMPUTER AIDED DESIGN DRAWING. A RECORD OF THE REVISIONS IN THIS DOCUMENT WITH APPROVAL INITIALS, IS MAINTAINED IN THE FILE OF ENTRY NUCLEAR NORTH EAST

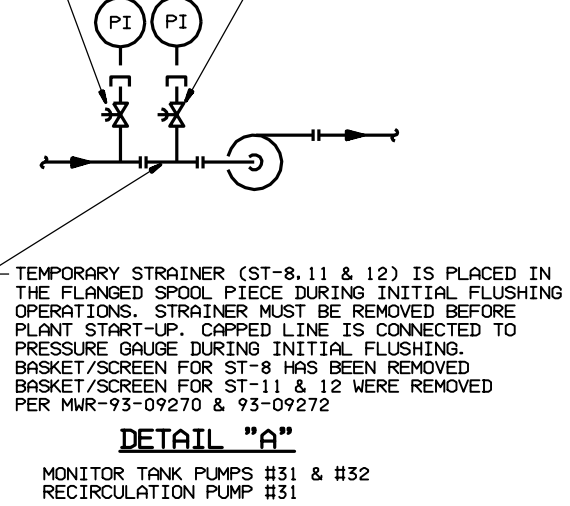
DWN	CHK'D	INDIAN POINT NO.3 NUCLEAR POWER PLANT
DES. SUPV		
DISCIPLINE ENG		
DISCIPLINE MGR.		
PROJ. APPROVAL		
DATE		

53	INCORPORATED EC-46928	3/23/15	VMR	APPROVAL	SIGNATURES	ON FILE
REV	DESCRIPTION	DATE	BY	CHK'D	APP.	

SCALE: NONE	REV 53
DWG NO 9321-F-27363	SHEET



VALVE NO.	ST. NO.	VALVE NO.	ST. NO.
CH-7	11	CH-8	11
CH-9	12	CH-10	12
CH-11	8	CH-12	8



- REFERENCES:**
- PROCESS FLOW DIAGRAM 684J848 & 541F427
 - DEFINITION OF SYMBOLS
 - E SPEC. 6675176 REV. 2 AND
 - E SPEC. 6675164 REV. 0.
 - INSTALLATION OF INSTRUMENTATION
 - PROC. SPEC. CAP 294367 REV. 1
 - MATERIAL SPEC. PIPE AND FITTINGS
 - NYPA SPEC. TS-MS-024
 - E. SPEC. 6676398 REV. 0
 - APD LTR. PD-M-2481
- REFERENCE DRAWINGS:**
- 9321-F-27243 PRIMARY MAKE-UP WATER SYSTEM
 - 9321-H-27393 TEMP. STRAINER TABULATION AT PUMP SECTION
 - 9321-F-27513 ACS-AUXILIARY COOLANT SYSTEM (SHT. 2)
 - 9321-F-27255 GA-AUTOMATIC GAS ANALYZER SYSTEM
 - 9321-F-27273 AUXILIARY STEAM & CONDENSATE FOR P.A. BLDG.
 - 9321-F-27193 WDS-WASTE DISPOSAL SYSTEM (SHT. 1, SHT. 2 & SHT. 3)
 - 9321-F-27305 WDS-WASTE DISPOSAL SYSTEM-GAS
 - 9321-F-27233 NITROGEN TO NUCLEAR EQUIP.
 - 9321-F-27363 CVCS-CHEMICAL & VOLUME CONTROL SYSTEM (SHT. 1)
 - 9321-F-27283 (DH)-NUCLEAR EQUIPMENT DRAINS
 - 9321-C-27413 NUCLEAR LINE SCHEDULE

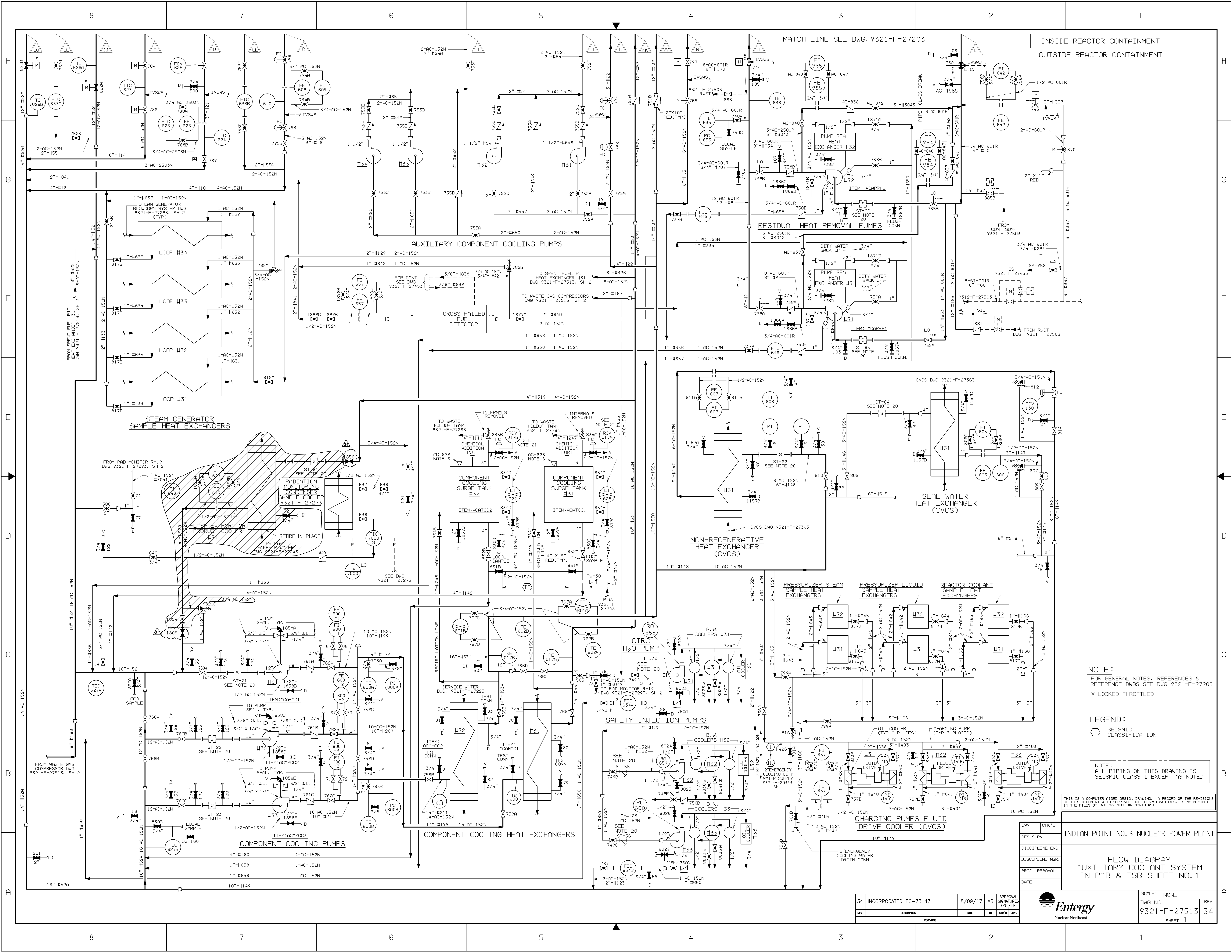
- LEGEND:**
- PW-PRIMARY MAKE-UP WATER
 - VH-VENT HEADER (WDS)
 - DH-DRAIN HEADER
 - WHT-WASTE HOLDUP TANK (WDS)
 - D-LOCAL DRAIN
 - GA-GAS ANALYZER (WDS)
 - SRST-SPENT RESIN STORAGE TANK
 - CCW-COMPONENT COOLING WATER
 - F.O.-FAIL OPEN
 - N-NITROGEN SUPPLY MANIFOLD
 - V-LOCAL VENT
 - VS-VENTILATION SYSTEM
 - F.C.-FAIL CLOSED
 - SEISMIC CLASSIFICATION
 - ST-TEMP. STRAINER
- NOTES:**
- A. DIAPHRAGM SEAL
 - B. LOOP SEAL EXTENDS ONE FOOT BELOW AND ONE FOOT ABOVE OUTLET NOZZLE
 - C. SOLENOID VALVE ACTUATED BY GAS ANALYZER CHANNEL-(LATER)
 - D. ADDITIONAL VENTS & DRAINS MAY BE INSTALLED. SEE PIPING LAYOUT.
 - E. GLOBE VALVES ARE NORMALLY INSTALLED WITH FLOW UNDER THE SEAT.
 - F. STEAM TRAP ASSY. BY U.E. & C. TRAP BY VENDOR.
 - G. TANK IS SUPPLIED WITH DIAPHRAGM SEAL
 - H. VOLUME CONTROL TANK RELIEF LINE #480 TRAPS IN CLOSE TO HOLDUP TANK #31
 - J. STRAINERS ST-6 & ST-7 WERE INSTALLED FOR INITIAL SYSTEM FLUSH. SCREENS WERE REMOVED PER MWR-93-10099 & 10100.
- NOTE:** ALL PIPING ON THIS DRAWING IS SEISMIC CLASS I EXCEPT AS NOTED

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REDRAWN FROM DRAWING 685J417 & 541F429

DWG NO.	9321-F-27373	REV	37
SCALE	NONE		
INDIAN POINT NO. 3 NUCLEAR POWER PLANT			
FLOW DIAGRAM			
CHEMICAL & VOLUME CONTROL SYSTEM			
SHEET NO. 2			
Entergy			
Nuclear Northeast			

REV	DATE	DESCRIPTION	BY	CHK'D	APP'D
37	12/22/10	INCORPORATED EC-26495	RM		
36	6/1/00	AS BUILT PER DCR 100157094	JF	JM	REG
35	5/15/98	AS BUILT PER DCR 100126185	VR	MSM	REG
34	2/6/95	AS BUILT PER DCR 100118305	VR	MSM	REG
33	7/2/93	AS BUILT PER DCR 100119452, 100119893, & 100120657	VR	MSM	REG
32	6/2/93	AS BUILT PER DCR 100105248 & 100108402	DM	MSM	REG



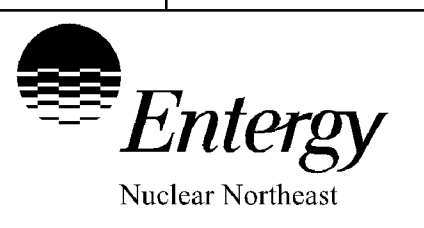
NOTE:
FOR GENERAL NOTES, REFERENCES &
REFERENCE DWGS SEE DWG 9321-F-27203
* LOCKED THROTTLED

LEGEND:
○ SEISMIC
CLASSIFICATION

NOTE:
ALL PIPING ON THIS DRAWING IS
SEISMIC CLASS 1 EXCEPT AS NOTED

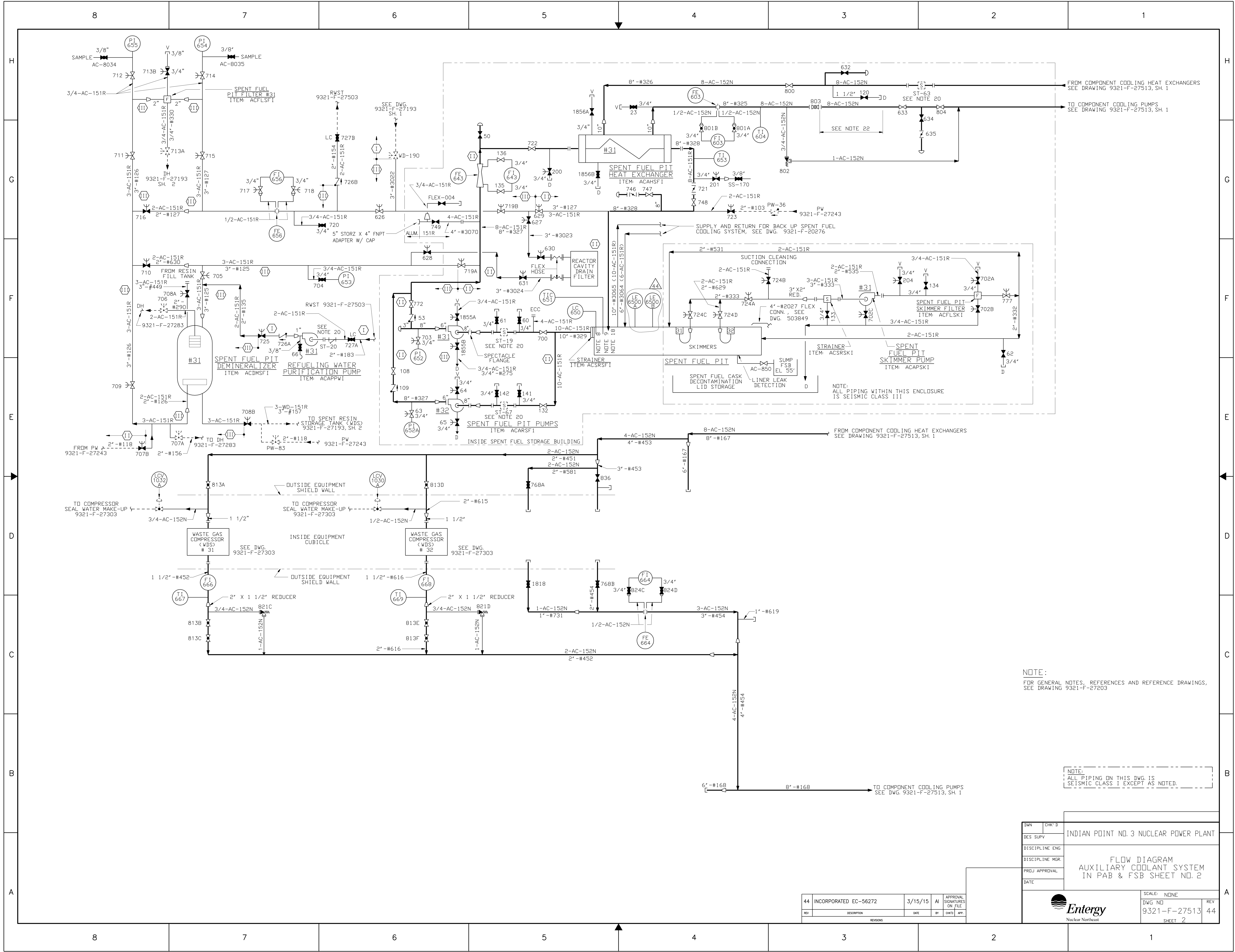
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IN THE FILES OF ENTERTY NUCLEAR NORTHWEST.

INDIAN POINT NO.3 NUCLEAR POWER PLANT
FLOW DIAGRAM
AUXILIARY COOLANT SYSTEM
IN PAB & FSB SHEET NO.1



SCALE: NONE
DWG NO
9321-F-27513
SHEET 1

REV	DESCRIPTION	DATE	BY	CHK'D	APP.
34	INCORPORATED EC-73147	8/09/17	AR		

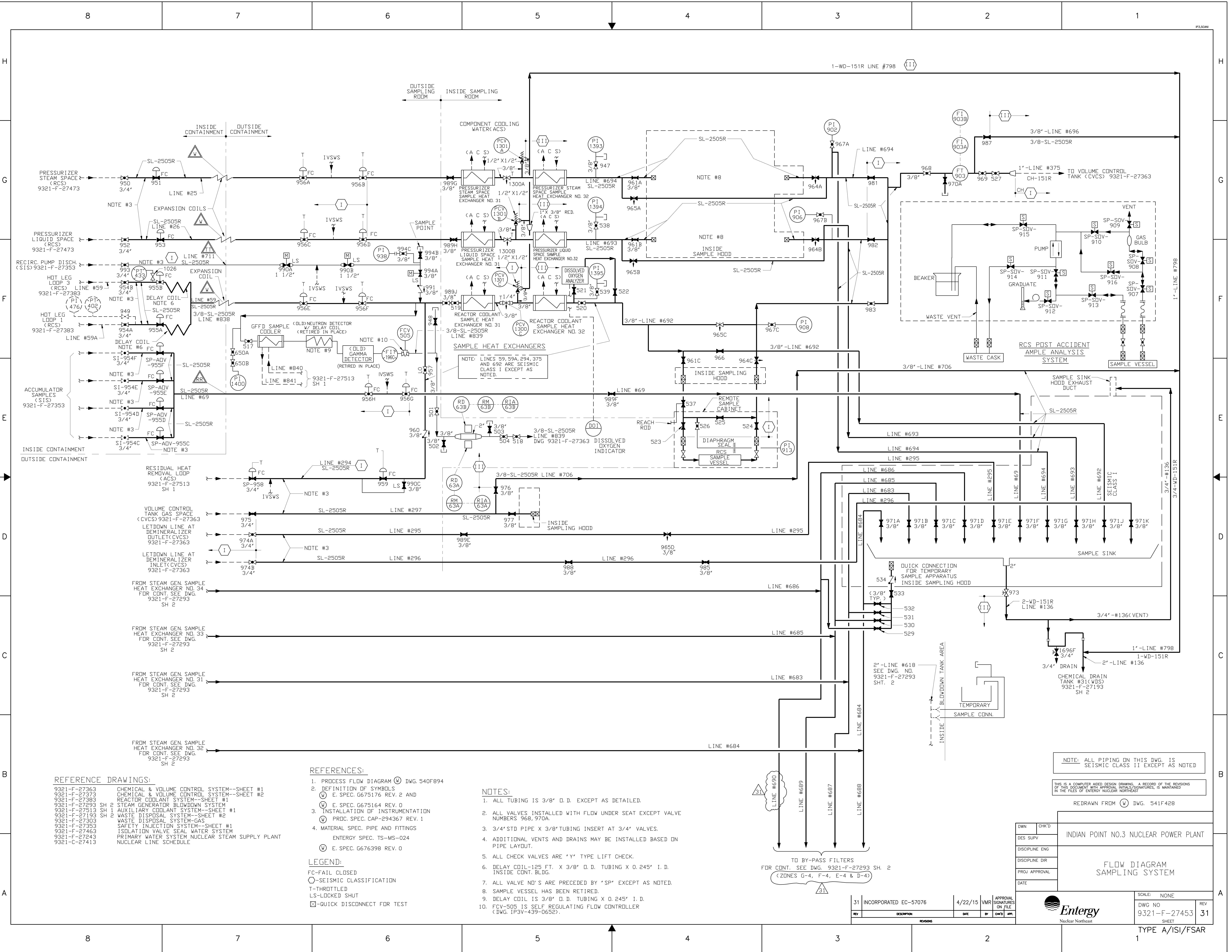


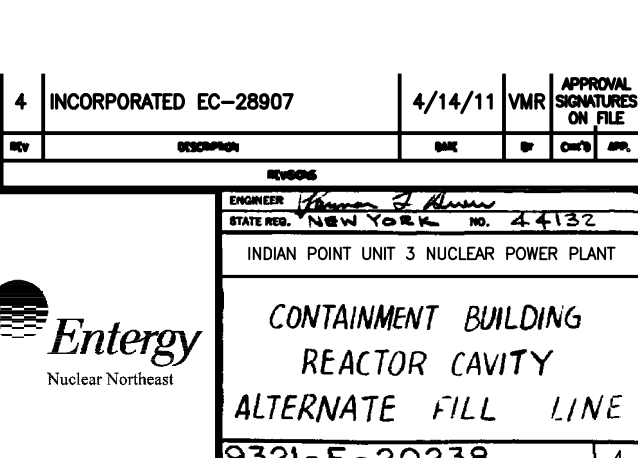
NOTE:
FOR GENERAL NOTES, REFERENCES AND REFERENCE DRAWINGS,
SEE DRAWING 9321-F-27203

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

DWN	CHK'D	INDIAN POINT NO. 3 NUCLEAR POWER PLANT	
DES. SUPV.			
DISCIPLINE ENG.			
DISCIPLINE MGR.		FLOW DIAGRAM AUXILIARY COOLANT SYSTEM IN PAB & FSB SHEET NO. 2	
PRD. APPROVAL			
DATE			
		SCALE: NONE	REV
		DWG NO. 9321-F-27513	44
		SHEET 2	

44	INCORPORATED EC-56272	3/15/15	AI	APPROVAL SIGNATURES ON FILE
REV	DESCRIPTION	DATE	BY	CHK'D
REVISIONS				





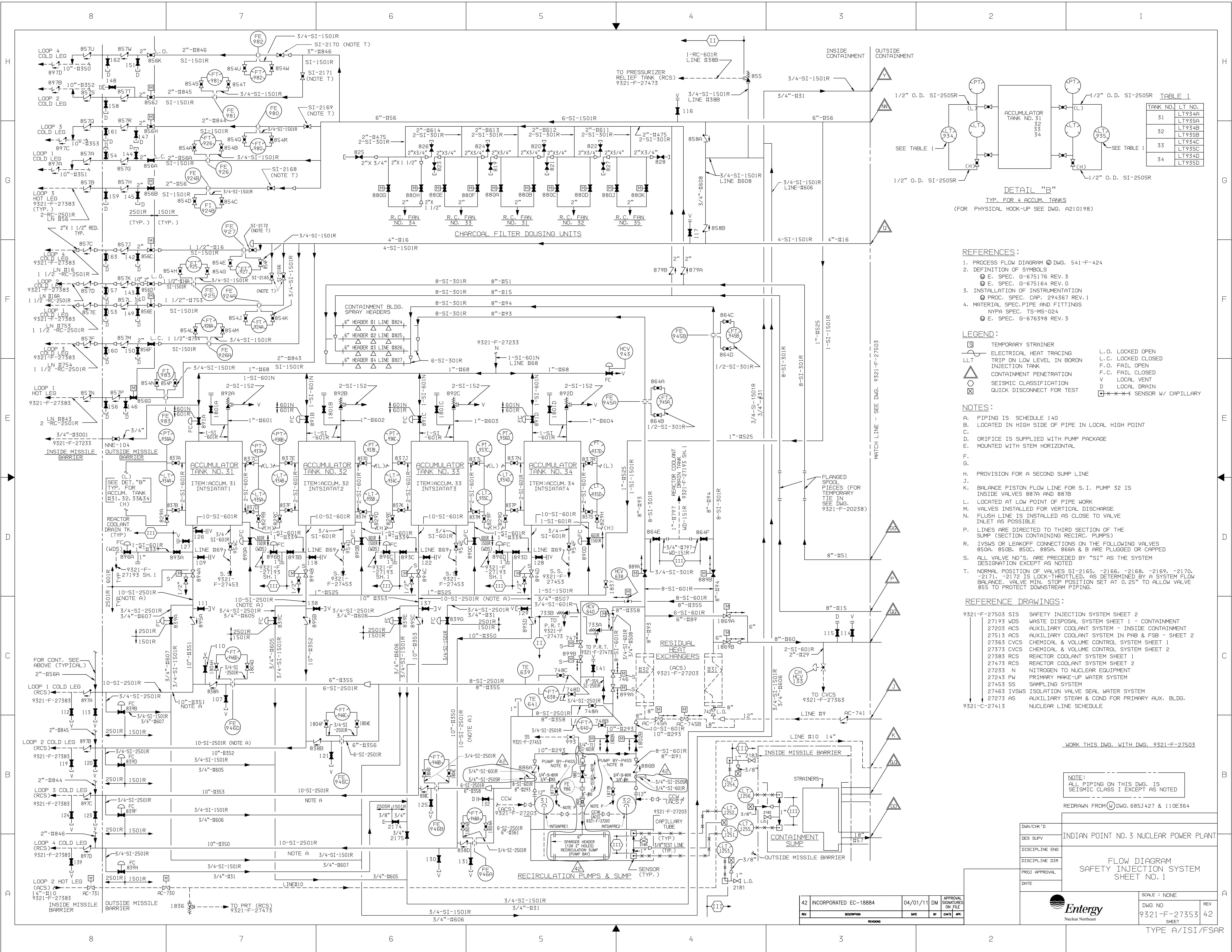


TABLE 1	
TANK NO.	LT NO.
31	LT934A
32	LT934B
33	LT934C
34	LT934D

DETAIL "B"
TYP. FOR 4 ACCUM. TANKS
(FOR PHYSICAL HOOK-UP SEE DWG. A210198)

- REFERENCES:
- 1. PROCESS FLOW DIAGRAM ④ DWG. 541-F-424
 - 2. DEFINITION OF SYMBOLS
 - ④ E. SPEC. G-675178 REV. 3
 - ④ E. SPEC. G-675164 REV. 0
 - 3. INSTALLATION OF INSTRUMENTATION
 - ④ PROC. SPEC. CAP. 294367 REV. 1
 - 4. MATERIAL SPEC. PIPE AND FITTINGS
 - NYPA SPEC. TS-MS-024
 - ④ E. SPEC. G-676398 REV. 3

- LEGEND:
- ④ TEMPORARY STRAINER
 - ④ ELECTRICAL HEAT TRACING
 - ④ TRIP ON LOW LEVEL IN BORON
 - ④ INJECTION TANK
 - ④ CONTAINMENT PENETRATION
 - ④ SEISMIC CLASSIFICATION
 - ④ QUICK DISCONNECT FOR TEST
 - L.O. LOCKED OPEN
 - L.C. LOCKED CLOSED
 - F.O. FAIL OPEN
 - F.C. FAIL CLOSED
 - V LOCAL VENT
 - D LOCAL DRAIN
 - ④ XXXXX SENSOR W/ CAPILLARY

- NOTES:
- A. PIPING IS SCHEDULE 140
 - B. LOCATED IN HIGH SIDE OF PIPE IN LOCAL HIGH POINT
 - C. ORIFICE IS SUPPLIED WITH PUMP PACKAGE
 - D. MOUNTED WITH STEM HORIZONTAL
 - E. PROVISION FOR A SECOND SUMP LINE
 - F. BALANCE PISTON FLOW LINE FOR S.I. PUMP 32 IS INSIDE VALVES 887A AND 887B
 - G. LOCATED AT LOW POINT OF PIPE WORK
 - H. VALVES INSTALLED FOR VERTICAL DISCHARGE
 - I. FLUSH LINE IS INSTALLED AS CLOSE TO VALVE INLET AS POSSIBLE
 - J. LINES ARE DIRECTED TO THIRD SECTION OF THE SUMP (SECTION CONTAINING RECIRC. PUMPS)
 - K. IVSWS OR LEAKOFF CONNECTIONS ON THE FOLLOWING VALVES 850A, 850B, 850C, 885A, 886A & B ARE PLUGGED OR CAPPED
 - L. ALL VALVE NO'S. ARE PRECEDED BY "SI" AS THE SYSTEM DESIGNATION EXCEPT AS NOTED
 - M. NORMAL POSITION OF VALVES SI-2165, -2166, -2168, -2169, -2170, -2171, -2172 IS LOCK-THROTTLED, AS DETERMINED BY A SYSTEM FLOW BALANCE. VALVE MIN. STOP POSITION SET AT 0.25" TO ALLOW VALVE 855 TO PROTECT DOWNSTREAM PIPING.

- REFERENCE DRAWINGS:
- | | |
|------------------|---|
| 9321-F-27503 SIS | SAFETY INJECTION SYSTEM SHEET 2 |
| 27193 WDS | WASTE DISPOSAL SYSTEM SHEET 1 - CONTAINMENT |
| 27203 ACS | AUXILIARY COOLANT SYSTEM - INSIDE CONTAINMENT |
| 27513 ACS | AUXILIARY COOLANT SYSTEM IN PAB & FSB - SHEET 2 |
| 27363 CVCS | CHEMICAL & VOLUME CONTROL SYSTEM SHEET 1 |
| 27373 CVCS | CHEMICAL & VOLUME CONTROL SYSTEM SHEET 2 |
| 27383 CVCS | REACTOR COOLANT SYSTEM SHEET 1 |
| 27473 RCS | REACTOR COOLANT SYSTEM SHEET 2 |
| 27233 N | NITROGEN TO NUCLEAR EQUIPMENT |
| 27243 PW | PRIMARY MAKE-UP WATER SYSTEM |
| 27453 SS | SAMPLING SYSTEM |
| 27463 IVSWS | ISOLATION VALVE SEAL WATER SYSTEM |
| 27273 AS | AUXILIARY STEAM & COND FOR PRIMARY AUX. BLDG. |
| 9321-C-27413 | NUCLEAR LINE SCHEDULE |

WORK THIS DWG. WITH DWG. 9321-F-27503

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

REDRAWN FROM ④ DWG. 685J427 & 110E364

DRAWN/CHK'D	DES SUPV	DISCIPLINE ENG	DISCIPLINE DIR	PROJ APPROVAL	DATE
INDIAN POINT NO. 3 NUCLEAR POWER PLANT					
FLOW DIAGRAM SAFETY INJECTION SYSTEM SHEET NO. 1					
SCALE: NONE					
DWG NO 9321-F-27353					
SHEET 42					
TYPE A/ISI/FSAR					

42 INCORPORATED EC-18884

04/01/11 DM

APPROVAL SIGNATURES ON FILE

REV

DESCRIPTION

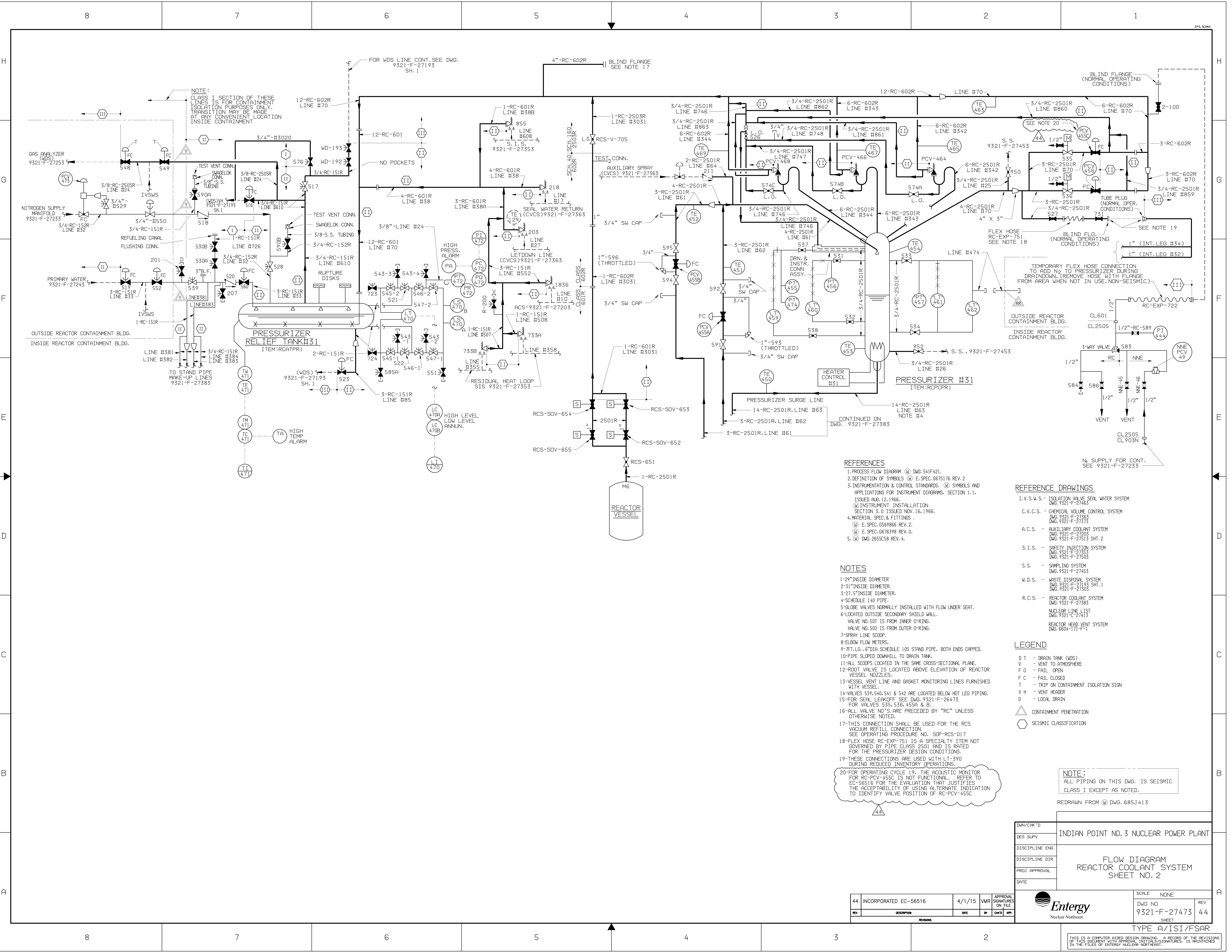
DATE

BY

CHKD

APP.

REVISIONS



REFERENCES

1. PROCESS FLOW DIAGRAM (PFD) DWG. 541F421.
2. DEFINITION OF SYMBOLS (D.S.) E.SPEC. 6675176 REV. 2
3. INSTRUMENTATION & CONTROL STANDARDS. (I.C.S.) SYMBOLS AND APPLICATIONS FOR INSTRUMENT DIAGRAMS, SECTION 1.1.
4. MATERIAL SPEC. & FITTINGS
(M.S.F.) E.SPEC. 6569866 REV. 2.
(M.S.F.) E.SPEC. 6676398 REV. 0.
(M.S.F.) DWG. 2655C58 REV. 4.

NOTES

- 1-29" INSIDE DIAMETER
- 2-31" INSIDE DIAMETER
- 3-27.5" INSIDE DIAMETER
- 4-SCHEDULE 140 PIPE
- 5-GLOBE VALVES NORMALLY INSTALLED WITH FLOW UNDER SEAT.
6-LOCATED OUTSIDE SECONDARY SHIELD WALL.
7-SPRAY LINE SCOOP
- 8-ELBOW FLOW METERS
- 9-7FT. LG. 6" DIA. SCHEDULE 10S STAND PIPE, BOTH ENDS CAPPED.
- 10-PIPE SLOPED DOWNHILL TO DRAIN TANK.
- 11-ALL SCOPES LOCATED IN THE SAME CROSS-SECTIONAL PLANE.
- 12-ROOT VALVE IS LOCATED ABOVE ELEVATION OF REACTOR VESSEL NOZZLES
- 13-VESSEL VENT LINE AND GASKET MONITORING LINES FURNISHED WITH VESSEL
- 14-VALVES 539, 540, 541 & 542 ARE LOCATED BELOW HOT LEG PIPING.
- 15-FOR SEAL LEAKOFF, SEE DWG. 9321-F-26473
FOR VALVES 535, 536, 455A & B.
- 16-ALL VALVE NO.'S ARE PRECEDED BY "RC" UNLESS OTHERWISE NOTED.
- 17-THIS CONNECTION SHALL BE USED FOR THE RCS VACUUM REFILL CONNECTION.
SEE OPERATING PROCEDURE NO. SOP-RCS-017
- 18-FLEX HOSE RC-EXP-751 IS A SPECIALTY ITEM NOT GOVERNED BY PIPE CLASS 2501 AND IS RATED FOR THE PRESSURIZER DESIGN CONDITIONS.
- 19-THese CONNECTIONS ARE USED WITH LT-390 DURING REDUCED INVENTORY OPERATIONS.
- 20-FOR OPERATING CYCLE 19, THE ACOUSTIC MONITOR FOR RC-PCV-455C IS NOT FUNCTIONAL. REFER TO EC-56516 FOR THE EVALUATION THAT JUSTIFIES THE ACCEPTABILITY OF USING ALTERNATE INDICATION TO IDENTIFY VALVE POSITION OF RC-PCV-455C

REFERENCE DRAWINGS

- I.V.S.W.S. - ISOLATION VALVE SEAL WATER SYSTEM
DWG. 9321-F-27485
- C.V.C.S. - CHEMICAL VOLUME CONTROL SYSTEM
DWG. 9321-F-27363
DWG. 9321-F-27373
- A.C.S. - AUXILIARY COOLANT SYSTEM
DWG. 9321-F-27203
DWG. 9321-F-27513 SHT. 2
- S.I.S. - SAFETY INJECTION SYSTEM
DWG. 9321-F-27353
DWG. 9321-F-27503
- S.S. - SAMPLING SYSTEM
DWG. 9321-F-27453
- W.D.S. - WASTE DISPOSAL SYSTEM
DWG. 9321-F-27193 SHT. 1
DWG. 9321-F-27303
- R.C.S. - REACTOR COOLANT SYSTEM
DWG. 9321-F-27383
- NUCLEAR LINE LIST
DWG. 9321-C-27413
- REACTOR HEAD VENT SYSTEM
DWG. 6604-171-F-1

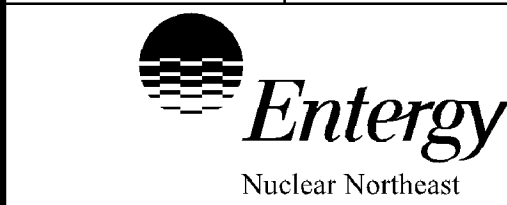
LEGEND

- D T - DRAIN TANK (WDS)
- V - VENT TO ATMOSPHERE
- F O - FAIL OPEN
- F C - FAIL CLOSED
- T - TRIP ON CONTAINMENT ISOLATION SIGN
- V H - VENT HEADER
- D - LOCAL DRAIN
- CONTAINMENT PENETRATION
- SEISMIC CLASSIFICATION

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

REDRAWN FROM (P) DWG. 685J413

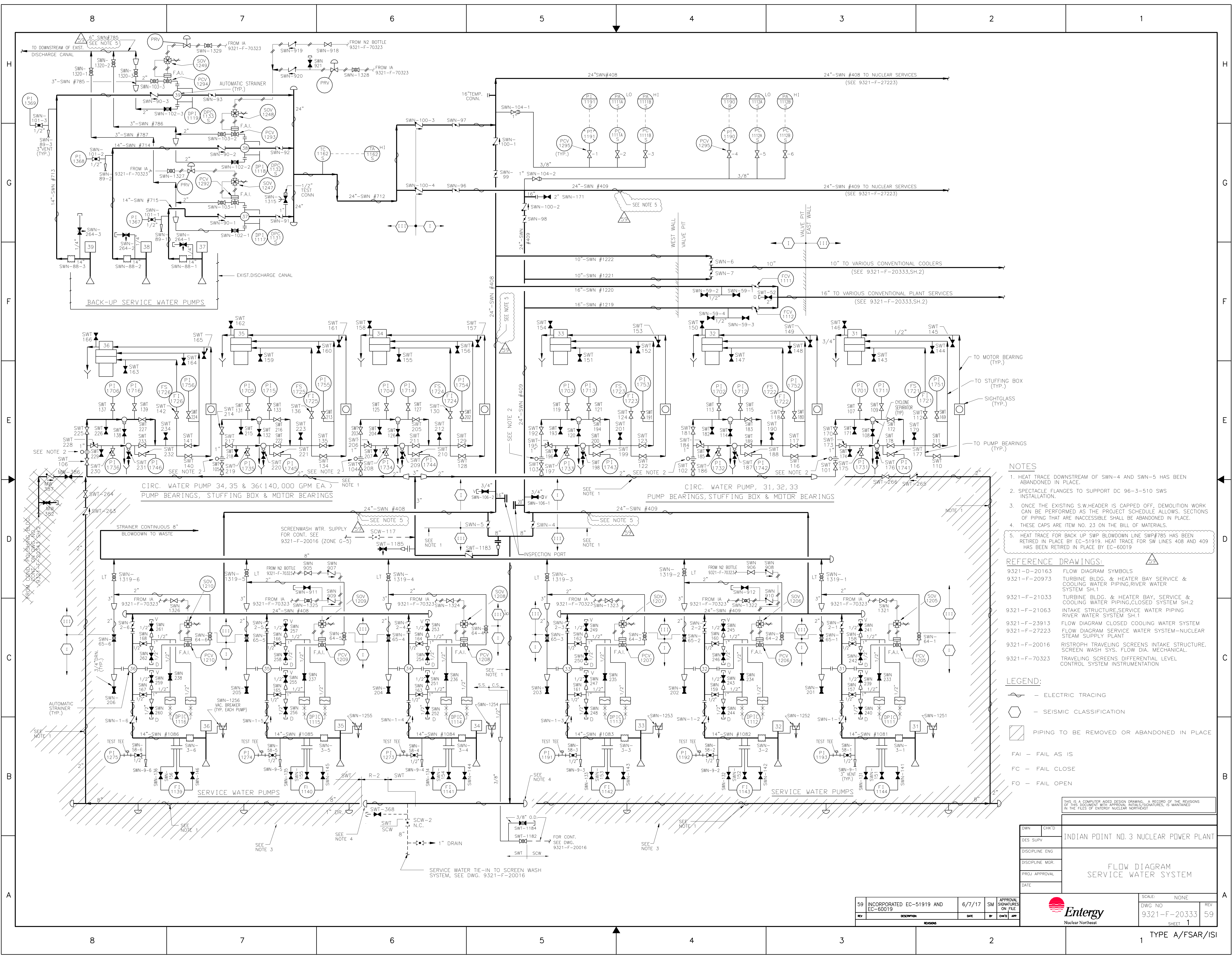
DWG/CHK'D	INDIAN POINT NO. 3 NUCLEAR POWER PLANT
DES SUPV	
DISCIPLINE ENG	
DISCIPLINE DIR	
PROJ APPROVAL	
DATE	



SCALE	NONE	REV	
DWG NO	9321-F-27473	44	
SHEET			

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	CHK'D	APP.
44	INCORPORATED EC-56516	4/1/15	VMR		



- NOTES**
- HEAT TRACE DOWNSTREAM OF SWN-4 AND SWN-5 HAS BEEN ABANDONED IN PLACE.
 - SPECTACLE FLANGES TO SUPPORT DC 96-3-510 SWS INSTALLATION.
 - ONCE THE EXISTING S.W.HEADER IS CAPPED OFF, DEMOLITION WORK CAN BE PERFORMED AS THE PROJECT SCHEDULE ALLOWS. SECTIONS OF PIPING THAT ARE INACCESSIBLE SHALL BE ABANDONED IN PLACE.
 - THESE CAPS ARE ITEM NO. 23 ON THE BILL OF MATERIALS.
 - HEAT TRACE FOR BACK UP SWP BLOWDOWN LINE SWP#785 HAS BEEN RETIRED IN PLACE BY EC-51919. HEAT TRACE FOR SW LINES 408 AND 409 HAS BEEN RETIRED IN PLACE BY EC-60019

- REFERENCE DRAWINGS:**
- 9321-D-20163 FLOW DIAGRAM SYMBOLS
 - 9321-F-20973 TURBINE BLDG. & HEATER BAY SERVICE & COOLING WATER PIPING, RIVER WATER SYSTEM SH.1
 - 9321-F-21033 TURBINE BLDG. & HEATER BAY, SERVICE & COOLING WATER PIPING, CLOSED SYSTEM SH.2
 - 9321-F-21063 INTAKE STRUCTURE, SERVICE WATER PIPING RIVER WATER SYSTEM SH.1
 - 9321-F-23913 FLOW DIAGRAM CLOSED COOLING WATER SYSTEM
 - 9321-F-27223 FLOW DIAGRAM SERVICE WATER SYSTEM-NUCLEAR STEAM SUPPLY PLANT
 - 9321-F-20016 RISTROPH TRAVELING SCREENS INTAKE STRUCTURE, SCREEN WASH SYS. FLOW DIA. MECHANICAL.
 - 9321-F-70323 TRAVELING SCREENS DIFFERENTIAL LEVEL CONTROL SYSTEM INSTRUMENTATION

- LEGEND:**
- ELECTRIC TRACING
 - SEISMIC CLASSIFICATION
 - PIPING TO BE REMOVED OR ABANDONED IN PLACE
 - FAI - FAIL AS IS
 - FC - FAIL CLOSE
 - FO - FAIL OPEN

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 ENTERTY NUCLEAR NORTHEAST.

DWN	CHK'D
DES. SUPV.	INDIAN POINT NO. 3 NUCLEAR POWER PLANT
DISCIPLINE ENG.	
DISCIPLINE MGR.	
PROJ. APPROVAL	
DATE	

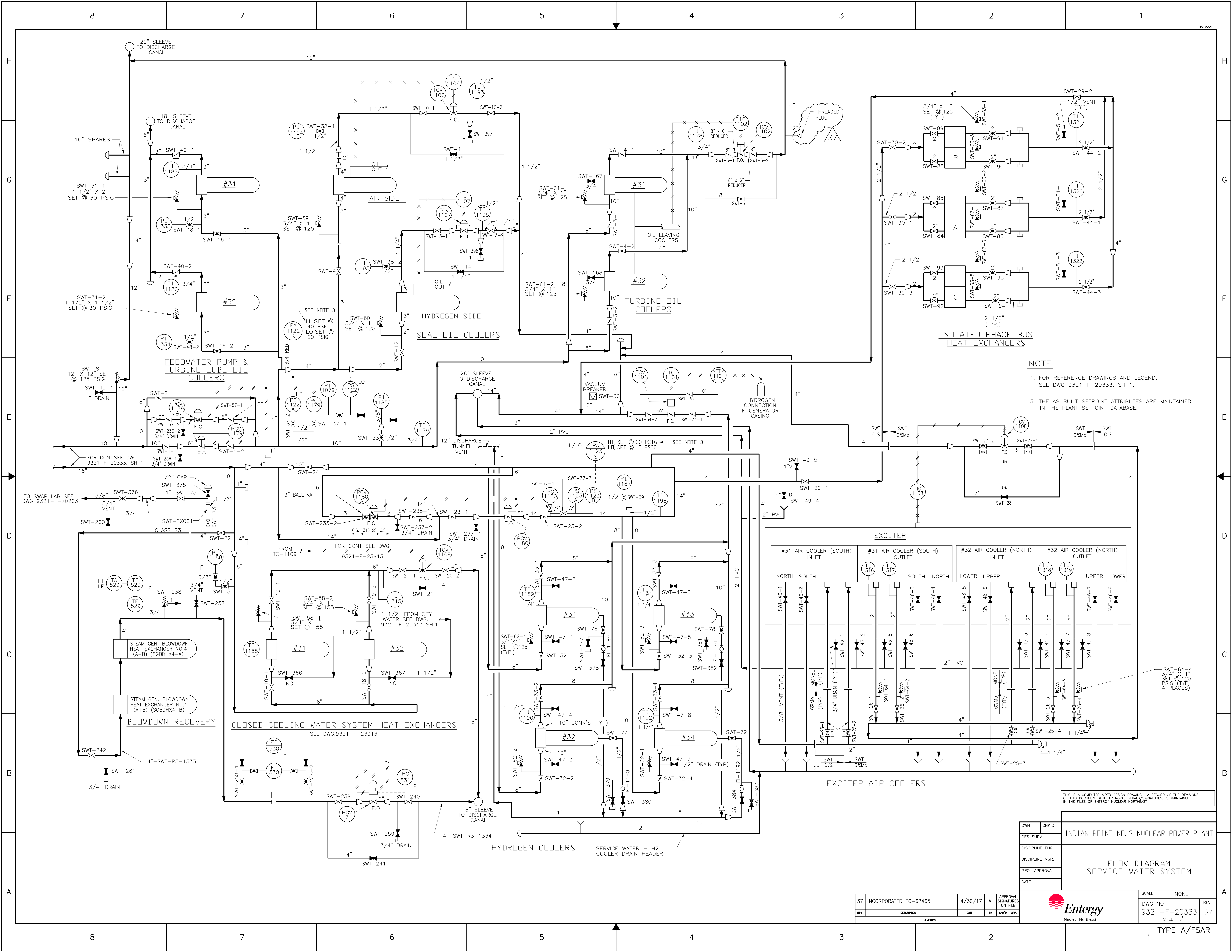
FLOW DIAGRAM SERVICE WATER SYSTEM

SCALE: NONE
DWG NO: 9321-F-20333
SHEET 1
REV 59

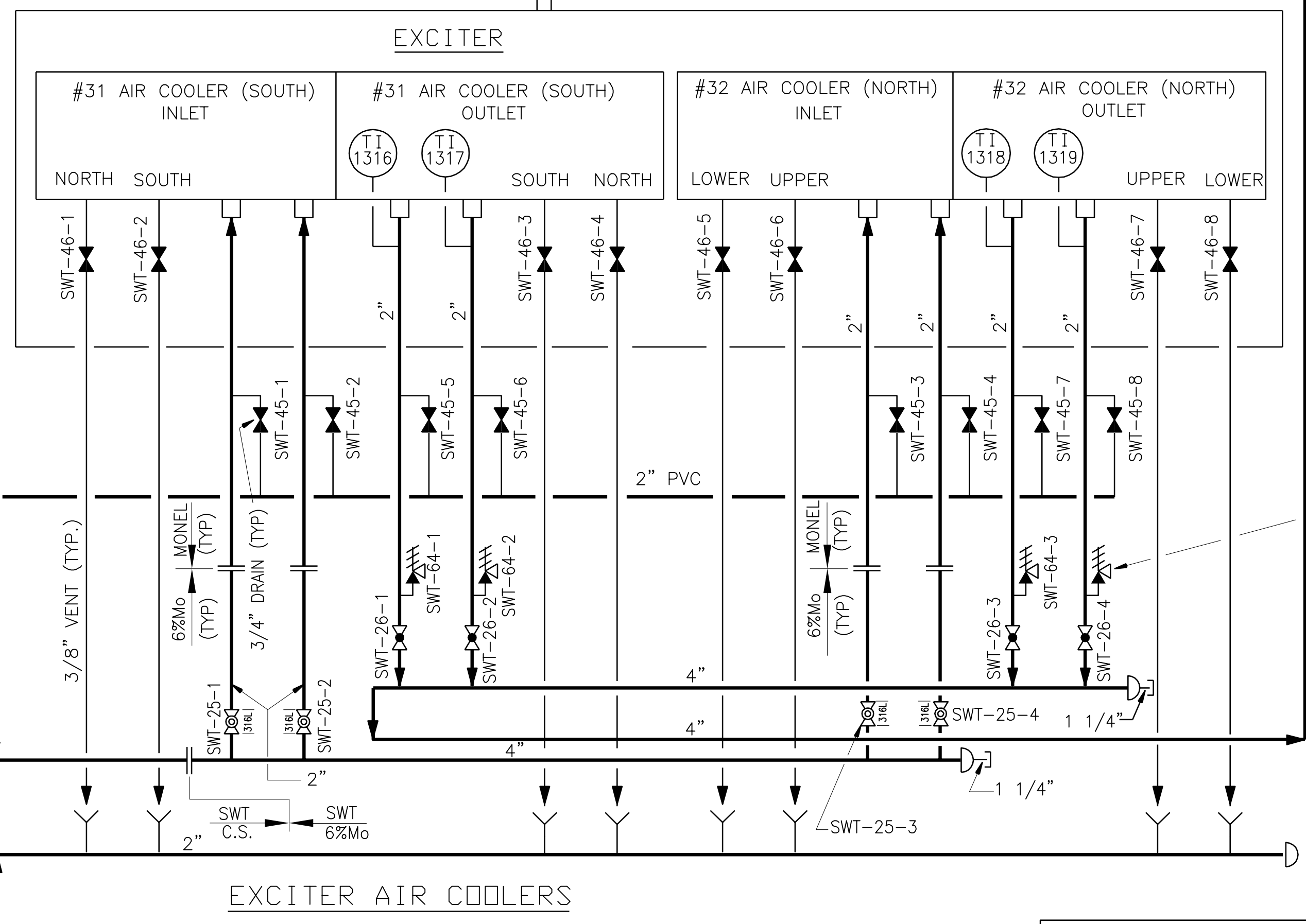
Entergy Nuclear Northeast

59	INCORPORATED EC-51919 AND EC-60019	6/7/17	SM	APPROVAL SIGNATURES ON FILE
REV	DESCRIPTION	DATE	BY	CHK'D

TYPE A/FSAR/ISI



NOTE:
1. FOR REFERENCE DRAWINGS AND LEGEND, SEE DWG 9321-F-20333, SH 1.
3. THE AS BUILT SETPOINT ATTRIBUTES ARE MAINTAINED IN THE PLANT SETPOINT DATABASE.



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	INDIAN POINT NO. 3 NUCLEAR POWER PLANT
DES SUPV		
DISCIPLINE ENG		
DISCIPLINE MGR		
PROJ APPROVAL		
DATE		FLOW DIAGRAM SERVICE WATER SYSTEM

37	INCORPORATED EC-62465	4/30/17	AI	APPROVAL SIGNATURES ON FILE	SCALE: NONE
REV	DESCRIPTION	DATE	BY	CHK'D	APP.

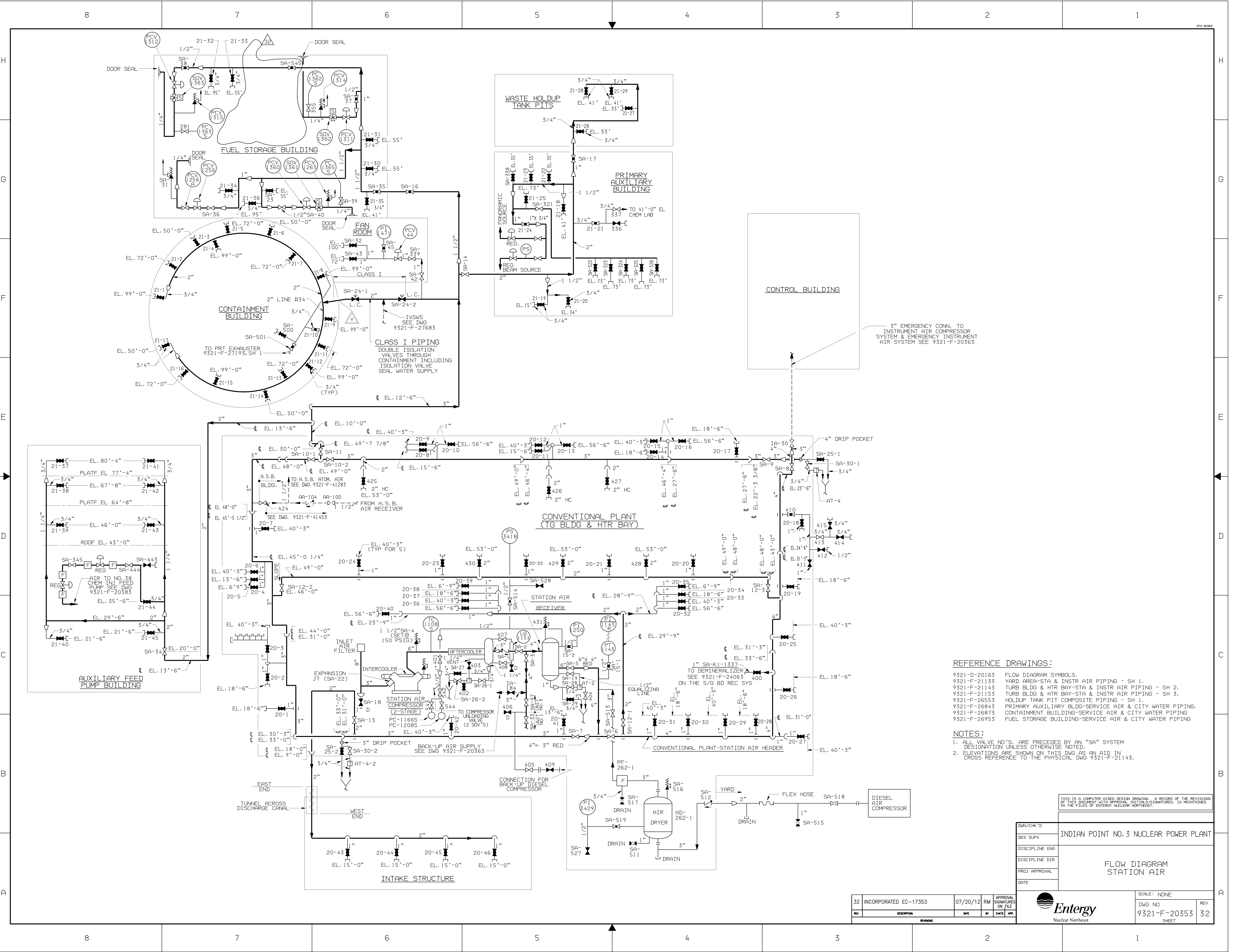
Entergy

Nuclear Northeast

DWG NO
9321-F-20333
SHEET 2

REV
37

TYPE A/FSAR



REFERENCE DRAWINGS:

- 9321-D-20163 FLOW DIAGRAM SYMBOLS.
9321-F-21133 YARD AREA-STA & INSTR AIR PIPING - SH 1.
9321-F-21143 TURB BLDG & HTR BAY-STA & INSTR AIR PIPING - SH 2.
9321-F-21153 TURB BLDG & HTR BAY-STA & INSTR AIR PIPING - SH 3.
9321-F-26553 HOLDUP TANK PIT COMPOSITE PIPING - SH 1.
9321-F-26843 PRIMARY AUXILIARY BLDG-SERVICE AIR & CITY WATER PIPING.
9321-F-26873 CONTAINMENT BUILDING-SERVICE AIR & CITY WATER PIPING.
9321-F-26953 FUEL STORAGE BUILDING-SERVICE AIR & CITY WATER PIPING

NOTES:

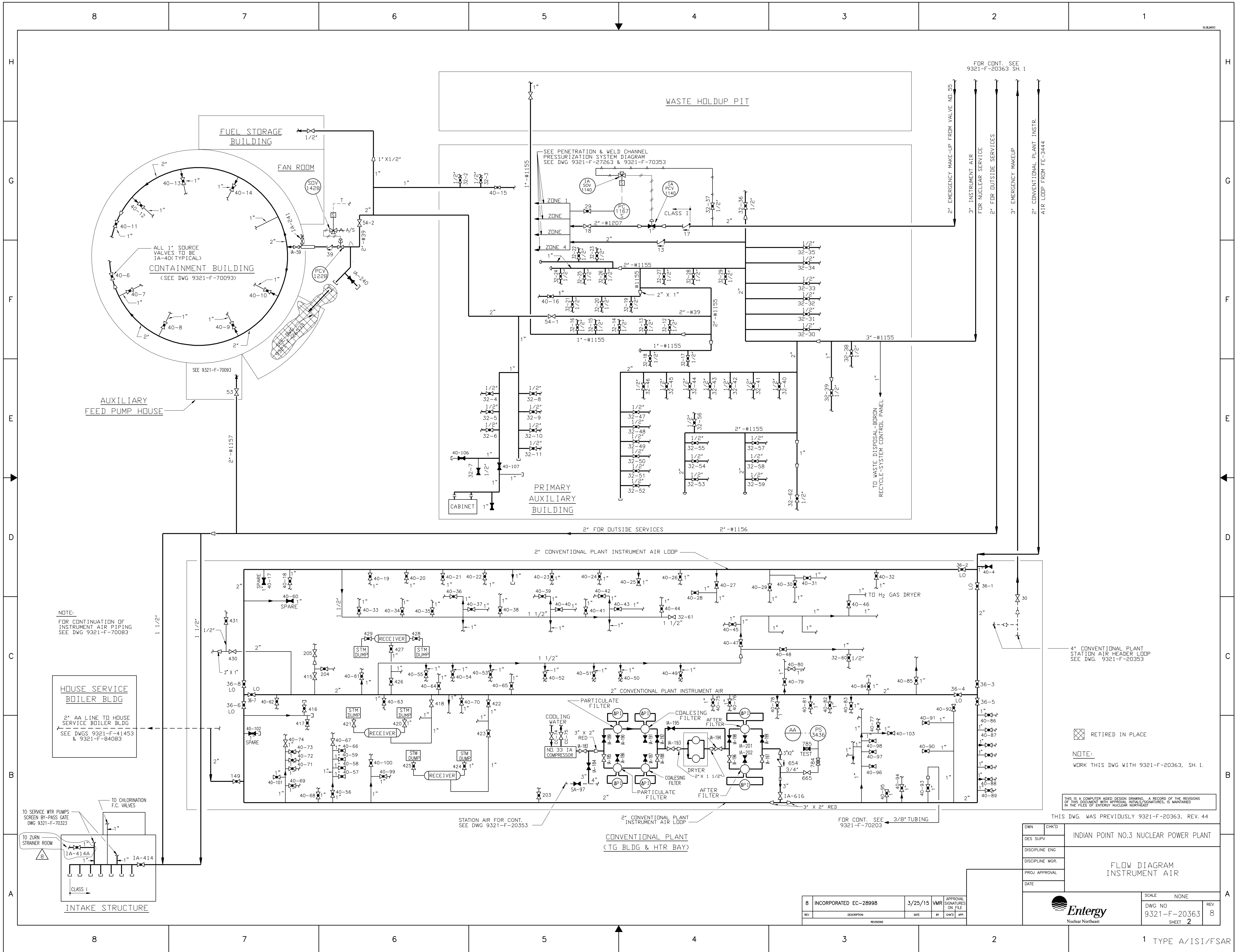
1. ALL VALVE NO.'S. ARE PRECEDED BY AN "SA" SYSTEM DESIGNATION UNLESS OTHERWISE NOTED.
2. ELEVATIONS ARE SHOWN ON THIS DWG AS AN AID IN CROSS REFERENCE TO THE PHYSICAL DWG 9321-F-21143.

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 DIR	PROJ APPROVAL	DATE
INDIAN POINT NO. 3 NUCLEAR POWER PLANT					
FLOW DIAGRAM STATION AIR					
SCALE: NONE					
DWG NO 9321-F-20353					
REV 32					
SHEET					

Entergy
Nuclear Northeast

32	INCORPORATED EC-17353	07/20/12	RM	APPROVAL SIGNATURES ON FILE
REV	DESCRIPTION	DATE	BY	CHKD APP.
REVISIONS				



NOTE:
FOR CONTINUATION OF
INSTRUMENT AIR PIPING
SEE DWG 9321-F-70083

HOUSE SERVICE
BOILER BLDG
2" AA LINE TO HOUSE
SERVICE BOILER BLDG
SEE DWGS 9321-F-41453
& 9321-F-64083

TO SERVICE WTR PUMPS
SCREEN BY-PASS GATE
DWG 9321-F-70323

TO CHLORINATION
F.C. VALVES

TO TURN
STRAINER ROOM

INTAKE STRUCTURE

FOR CONT. SEE
9321-F-20363 SH. 1

4" CONVENTIONAL PLANT
STATION AIR HEADER LOOP
SEE DWG. 9321-F-20353

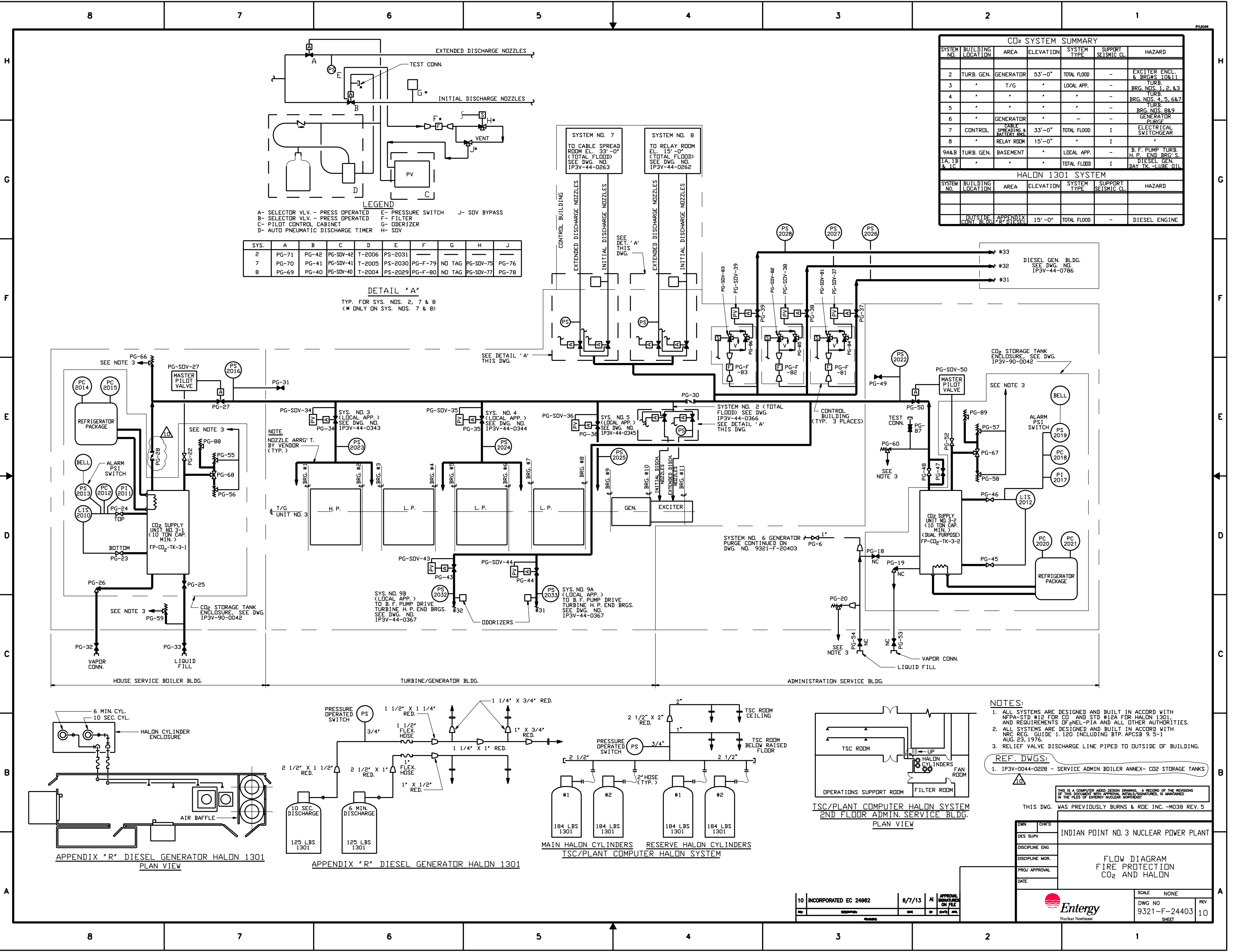
NOTE:
WORK THIS DWG WITH 9321-F-20363, SH. 1.

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

THIS DWG. WAS PREVIOUSLY 9321-F-20363, REV. 44

DWN	CHKD	INDIAN POINT NO.3 NUCLEAR POWER PLANT	
DES SURV			
DISCIPLINE ENG			
DISCIPLINE MGR		FLOW DIAGRAM INSTRUMENT AIR	
PROJ APPROVAL			
DATE			
		SCALE NONE	REV 8
		DWG NO 9321-F-20363	
		SHEET 2	

8	INCORPORATED EC-28998	3/25/15	VMR	APPROVAL SIGNATURES ON FILE
REV	DESCRIPTION	DATE	BY	CHKD APP.



CO2 SYSTEM SUMMARY						
SYSTEM NO.	BUILDING LOCATION	AREA	ELEVATION	SYSTEM TYPE	SUPPORT SEISMIC CL.	HAZARD
2	TURB. GEN.	GENERATOR	53'-0"	TOTAL FLOOD	-	EXCITER ENCL. & BRGS 10&11
3	"	T/G	"	LOCAL APP.	-	TURB. BRG. NOS. 1, 2, & 3
4	"	"	"	"	-	TURB. BRG. NOS. 4, 5, 6&7
5	"	"	"	"	-	TURB. BRG. NOS. 8&9
6	"	GENERATOR	"	"	-	GENERATOR PURGE ELECTRICAL SWITCHGEAR
7	CONTROL	CABLE SPREADING & BATTERY RMS	33'-0"	TOTAL FLOOD	I	"
8	"	RELAY ROOM	15'-0"	"	I	"
9A&B	TURB. GEN.	BASEMENT	"	LOCAL APP.	-	B. F. PUMP TURB. H. P. END BRG'S
1A, 1B & 1C	"	"	"	TOTAL FLOOD	I	DIESEL GEN. DAY TK. - LUBE OIL
HALON 1301 SYSTEM						
SYSTEM NO.	BUILDING LOCATION	AREA	ELEVATION	SYSTEM TYPE	SUPPORT SEISMIC CL.	HAZARD
	OUTSIDE CONT. BLDG.	APPENDIX "R" DIESEL	15'-0"	TOTAL FLOOD	-	DIESEL ENGINE

LEGEND

A-	SELECTOR VLV. - PRESS OPERATED	E-	PRESSURE SWITCH	J-	SDV BYPASS
B-	SELECTOR VLV. - PRESS OPERATED	F-	FILTER		
C-	PILOT CONTROL CABINET	G-	ODORIZER		
D-	AUTO PNEUMATIC DISCHARGE TIMER	H-	SDV		

SYS.	A	B	C	D	E	F	G	H	J
2	PG-71	PG-42	PG-SDV-42	T-2006	PS-2031	—	—	—	—
7	PG-70	PG-41	PG-SDV-41	T-2005	PS-2030	PG-F-79	NO TAG	PG-SDV-75	PG-76
8	PG-69	PG-40	PG-SDV-40	T-2004	PS-2029	PG-F-80	NO TAG	PG-SDV-77	PG-78

DETAIL "A"
TYP. FOR SYS. NOS. 2, 7 & 8
(* ONLY ON SYS. NOS. 7 & 8)

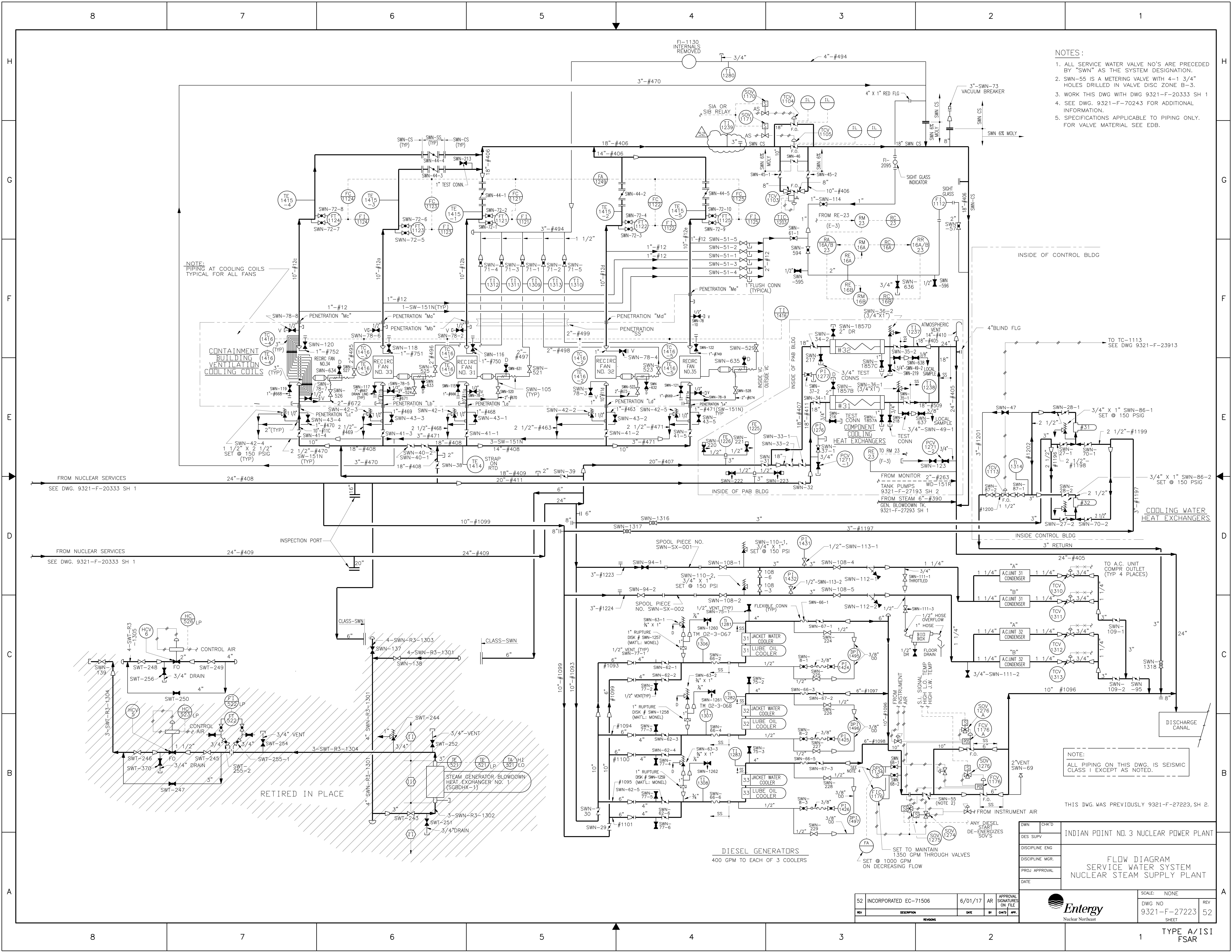
- NOTES:
- ALL SYSTEMS ARE DESIGNED AND BUILT IN ACCORD WITH NFPA-STD #12 FOR CO₂ AND STD #12A FOR HALON 1301, AND REQUIREMENTS OF ANEL-P14 AND ALL OTHER AUTHORITIES.
 - ALL SYSTEMS ARE DESIGNED AND BUILT IN ACCORD WITH NRC REG. GUIDE 1.120 INCLUDING BTP, APCS 9.5-1 AUG. 23, 1976.
 - RELIEF VALVE DISCHARGE LINE PIPED TO OUTSIDE OF BUILDING.
- REF. DWGS:
- IP3V-0044-0228 - SERVICE ADMIN BOILER ANNEX- CO₂ STORAGE TANKS

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

THIS DWG. WAS PREVIOUSLY BURNS & ROE INC. -M038 REV. 5

DWN	CHK'D	INDIAN POINT NO. 3 NUCLEAR POWER PLANT	
DES. SUPV			
DISCIPLINE ENG			
DISCIPLINE MGR.			
PROJ. APPROVAL			
DATE			
		FLOW DIAGRAM FIRE PROTECTION CO ₂ AND HALON	
		SCALE NONE	
		DWG NO 9321-F-24403	
		SHEET 10	

10 INCORPORATED EC 24962 6/7/13 AI APPROVAL SIGNATURES ON FILE



- NOTES:
1. ALL SERVICE WATER VALVE NO'S ARE PRECEDED BY "SWN" AS THE SYSTEM DESIGNATION.
 2. SWN-55 IS A METERING VALVE WITH 4-1 3/4" HOLES DRILLED IN VALVE DISC ZONE B-3.
 3. WORK THIS DWG WITH DWG 9321-F-20333 SH 1
 4. SEE DWG. 9321-F-70243 FOR ADDITIONAL INFORMATION.
 5. SPECIFICATIONS APPLICABLE TO PIPING ONLY. FOR VALVE MATERIAL SEE EDB.

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

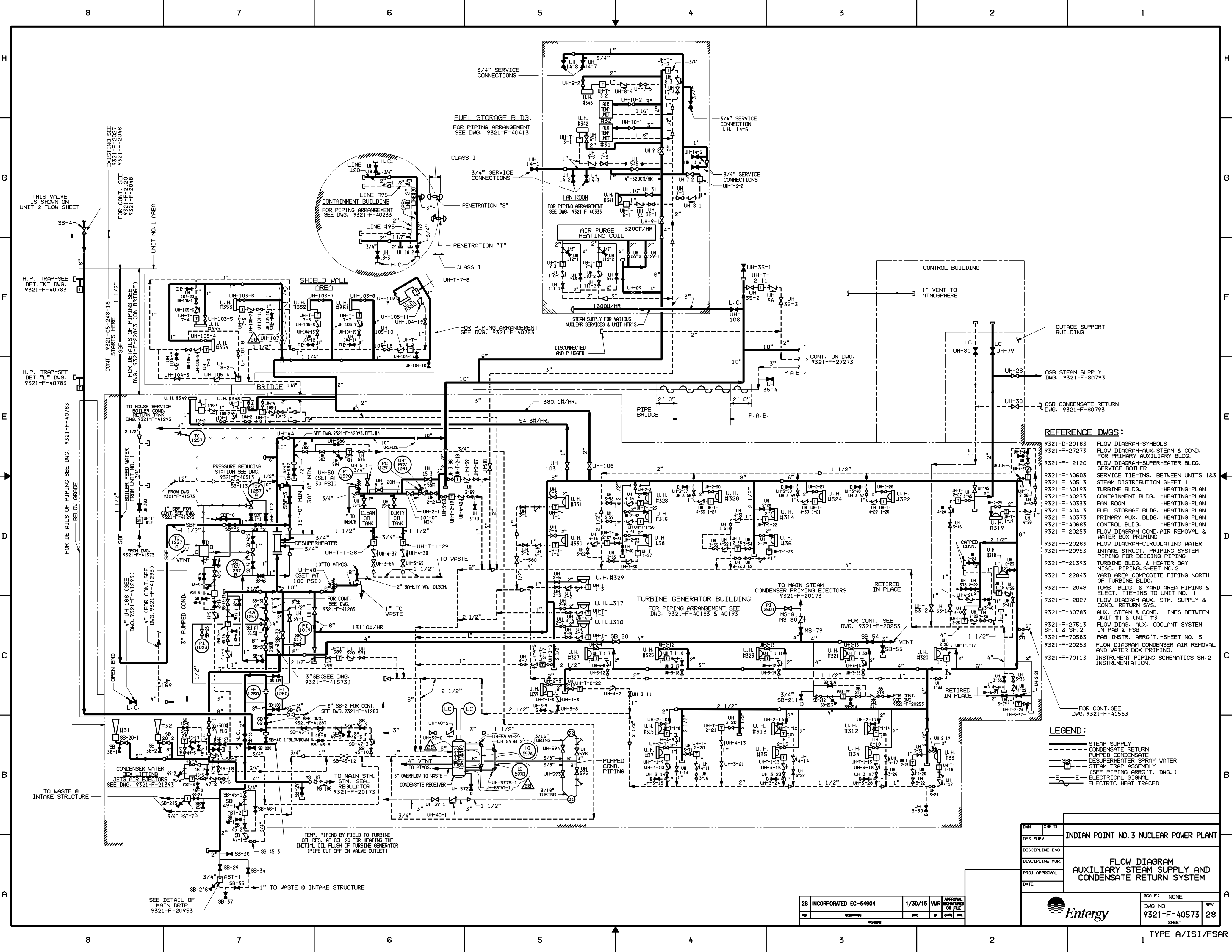
THIS DWG. WAS PREVIOUSLY 9321-F-27223, SH. 2.

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

52	INCORPORATED EC-71506	6/01/17	AR	APPROVAL SIGNATURES ON FILE
REV	DESCRIPTION	DATE	BY	CHK'D APP.

SCALE: NONE	REV
DWG NO 9321-F-27223	52
SHEET	

TYPE A/ISI FSAR



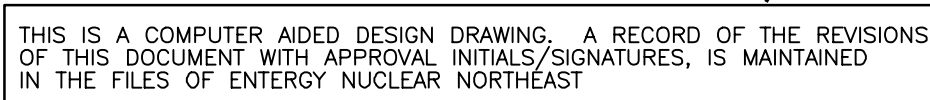
- REFERENCE DWGS:**
- 9321-D-20163 FLOW DIAGRAM-SYMBOLS
 - 9321-F-27273 FLOW DIAGRAM-AUX. STEAM & COND. FOR PRIMARY AUXILIARY BLDG.
 - 9321-F-2120 FLOW DIAGRAM-SUPERHEATER BLDG. SERVICE BOILER
 - 9321-F-40603 SERVICE TIE-INS. BETWEEN UNITS 1&3
 - 9321-F-40513 STEAM DISTRIBUTION-SHEET 1
 - 9321-F-40193 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
 - 9321-F-22843 MISC. PIPING SHEET NO. 2
 - 9321-F-2048 YARD AREA COMPOSITE PIPING NORTH OF TURBINE BLDG.
 - 9321-F-2027 TURB. BLDG. & YARD AREA PIPING & ELECT. TIE-INS TO UNIT NO. 1
 - 9321-F-40783 FLOW DIAGRAM AUX. STM. SUPPLY & COND. RETURN SYS.
 - 9321-F-27513 AUX. STEAM & COND. LINES BETWEEN UNIT #1 & UNIT #3
 - 9321-F-70583 FLOW DIAG. AUX. COOLANT SYSTEM IN PAB & FSB
 - 9321-F-20253 PAB INSTR. ARR'G'T.-SHEET NO. 5
 - 9321-F-70113 FLOW DIAGRAM CONDENSER AIR REMOVAL AND WATER BOX PRIMING.
 - 9321-F-41553 INSTRUMENT PIPING SCHEMATICS SH. 2 INSTRUMENTATION.
- FOR CONT. SEE DWG. 9321-F-41553

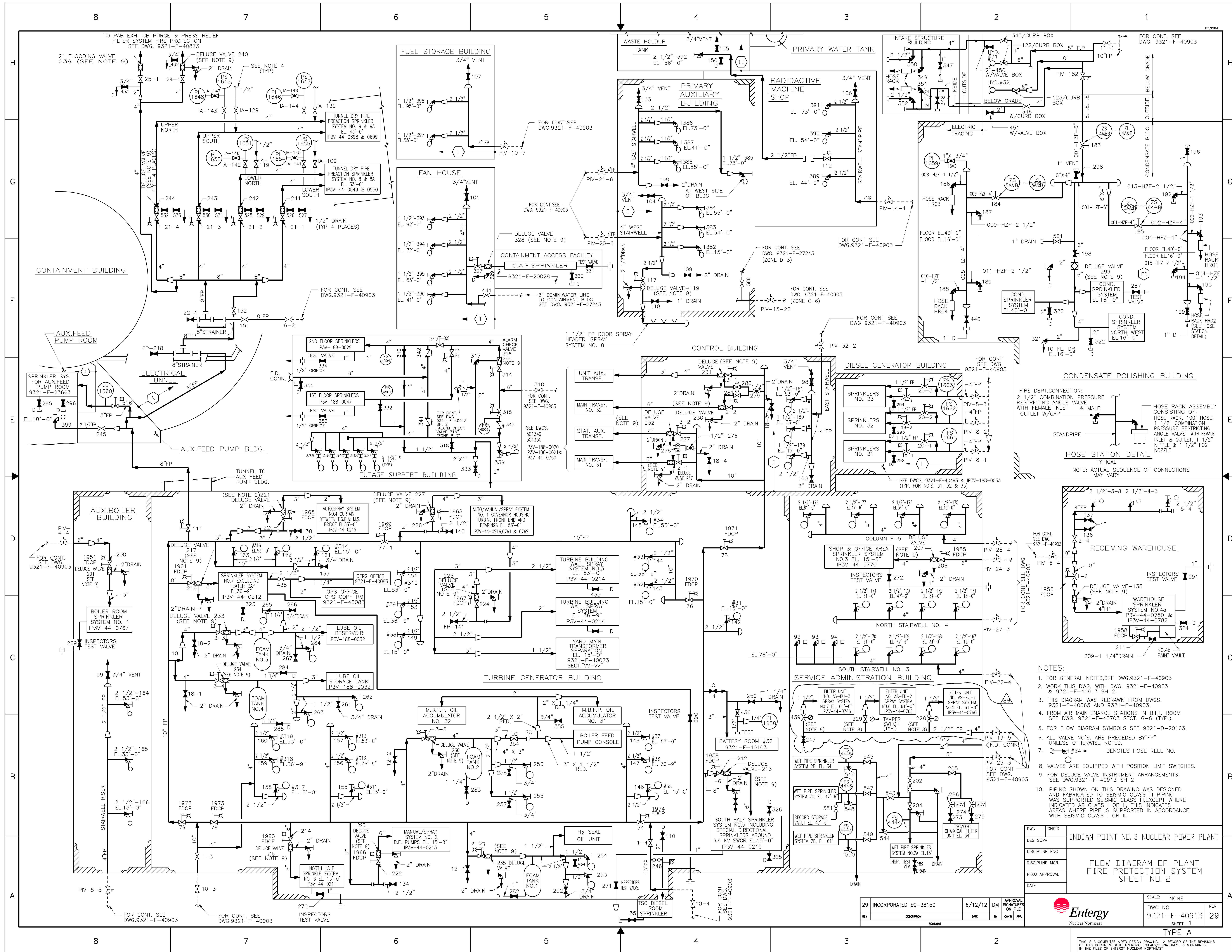
- LEGEND:**
- STEAM SUPPLY
 - CONDENSATE RETURN
 - PUMPED CONDENSATE
 - DESUPERHEATER SPRAY WATER
 - STEAM TRAP ASSEMBLY (SEE PIPING ARR'G'T. DWG.)
 - ELECTRIC SIGNAL
 - ELECTRIC HEAT TRACED

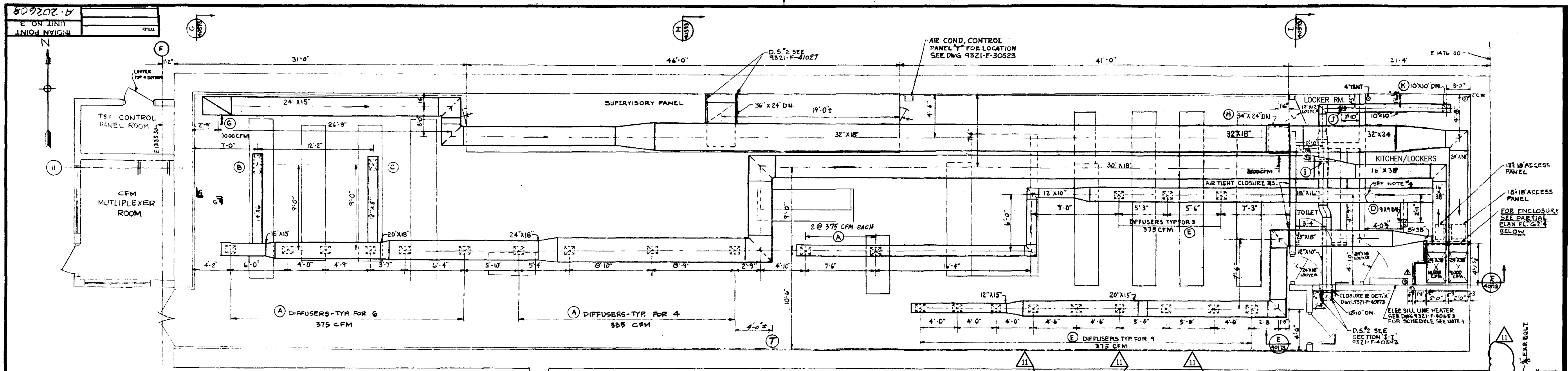
INDIAN POINT NO. 3 NUCLEAR POWER PLANT	
FLOW DIAGRAM AUXILIARY STEAM SUPPLY AND CONDENSATE RETURN SYSTEM	
SCALE: NONE	
DWG NO 9321-F-40573	REV 28
SHEET	

DAN	CHK'D
DES SUPV	
DISCIPLINE ENG	
DISCIPLINE MGR	
PROJ APPROVAL	
DATE	

28	INCORPORATED EC-54904	1/30/15	VMR	APPROVAL
REV	DESCRIPTION	DATE	BY	CHK'D



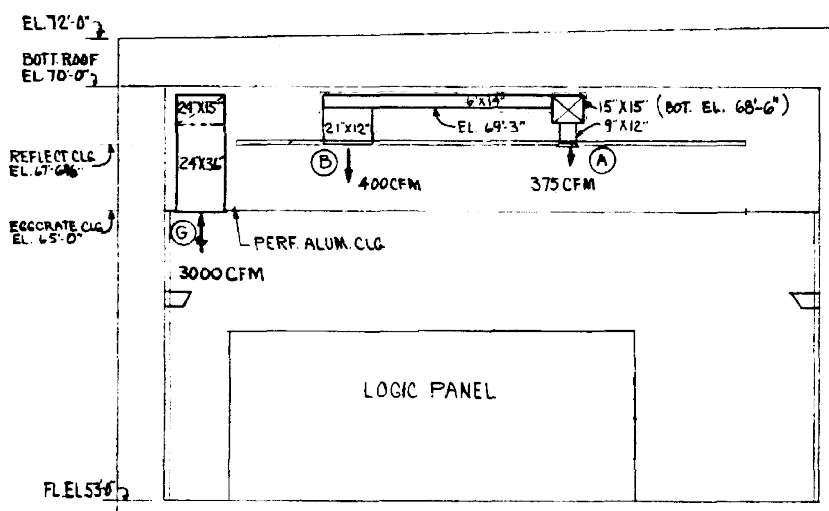




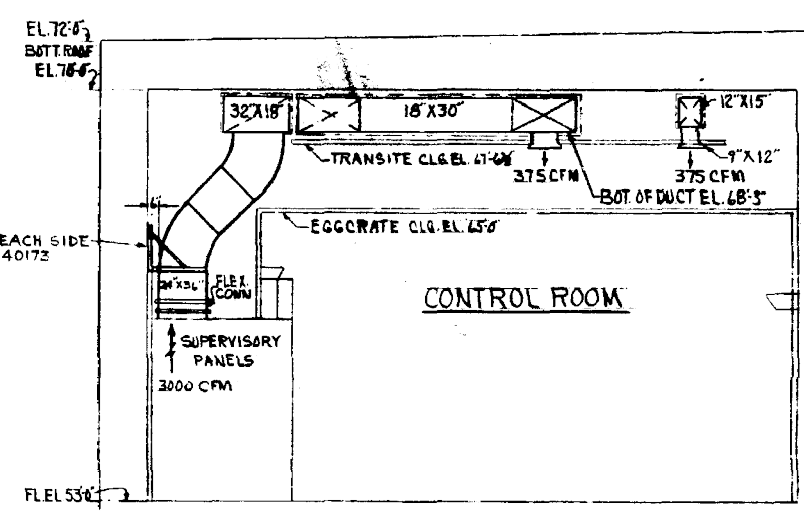
CONTROL ROOM
FLOOR PLAN EL 53'-0"
SCALE 1/4"=1'-0"

SECTION "K-K"
DWG. 9321-F-40593
SCALE 1/4"=1'-0"

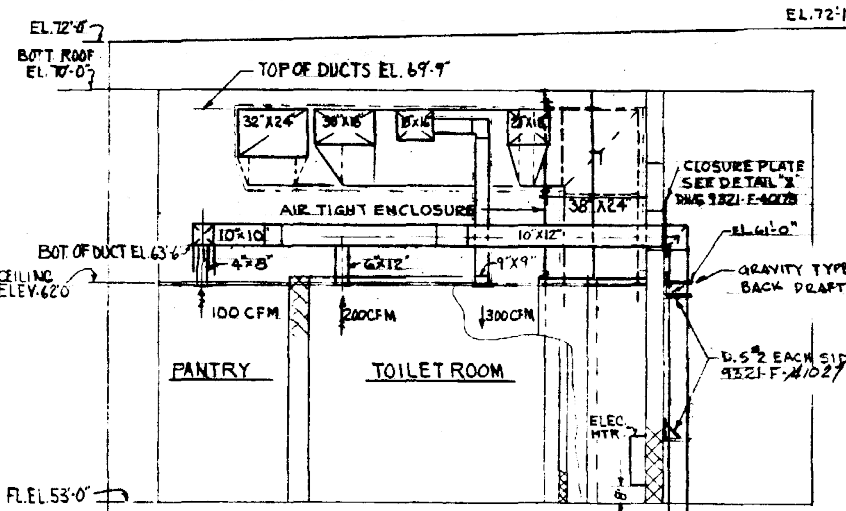
PARTIAL PLAN EL 52'-4"
SCALE 1/4"=1'-0"



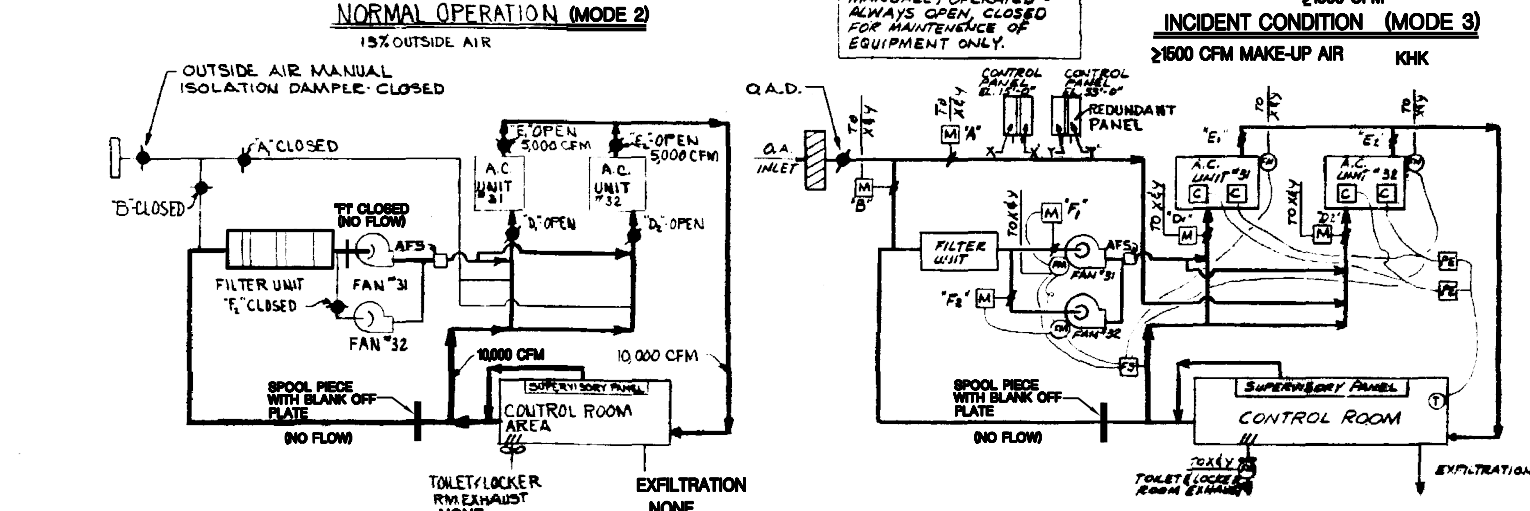
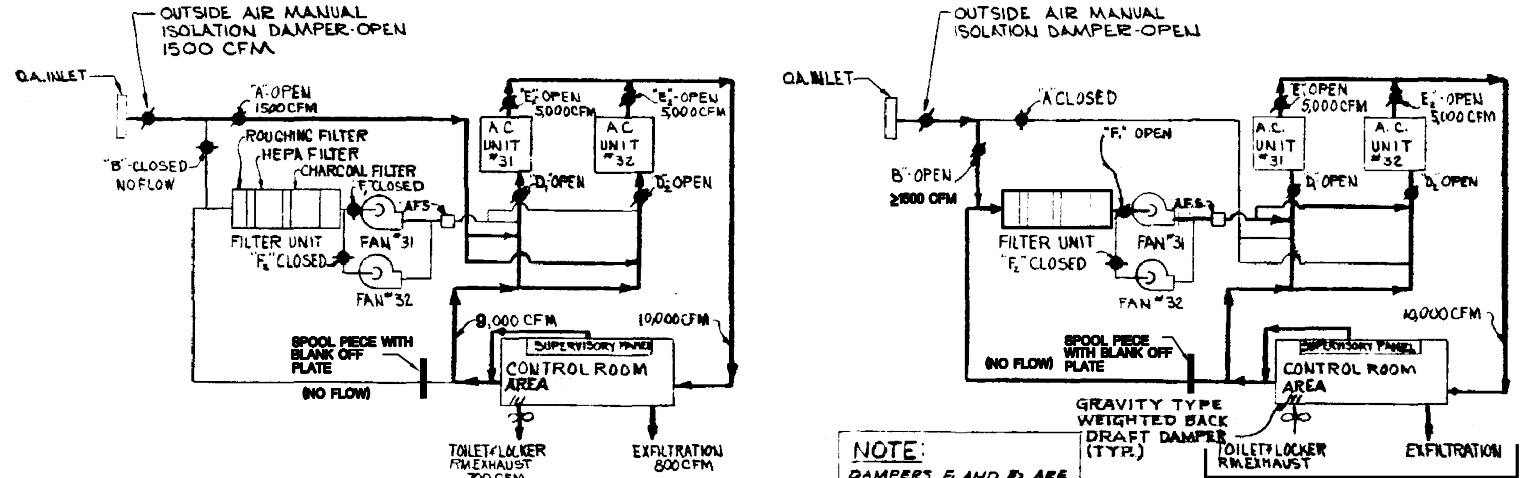
SECTION "G-G"
DWG. 9321-F-40593
SCALE 1/4"=1'-0"



SECTION "H-H"
DWG. 9321-F-40593
SCALE 1/4"=1'-0"



SECTION "I-I"
DWG. 9321-F-40593
SCALE 1/4"=1'-0"



REGISTER & DIFFUSER SCHEDULE				
REGISTER	QUAN.	SIZE	MFG. & TYPE NO.	REMARKS
(A)	12	12"x9"	AGTAIR MODEL AYD-20L DAMPER/GRID	SUPPLY
(B)	1	24"x12"	"	SUPPLY
(C)	1	15"x9"	"	SUPPLY 340 CFM
(D)	1	9"x9"	"	SUPPLY 300 CFM
(E)	12	12"x9"	AGTAIR MODEL AYD-21L	SUPPLY 375 CFM
(G)	1	36"x24"	AGTAIR MODEL EDHFO	RETURN 3000 CFM
(H)	1	34"x24"	"	RETURN 3000 CFM
(I)	1	12"x6"	"	RETURN 200 CFM
(J)	1	9"x4"	"	RETURN 100 CFM
(K)	1	14"x18"	"	RETURN 400 CFM

REGISTERS/DIFFUSERS SHALL BE OF TYPE/SIZE LISTED AS MFG. BY AIR DEVICES INC. OR APPROVED EQUAL.

LEGEND

- 1 FIRESTAT
- 2 FAN MOTOR
- 3 PNEUMATIC ELECT. SWITCH (DPST NO.)
- 4 DAMPER MOTOR
- 5 REFRIGERANT COMPRESSOR
- 6 AIR FLOW SW TO START 2ND FAN IN EVENT 1ST FAN DOES NOT START
- 7 SPOOL PIECE WITH BLANK OFF PLATE

REFERENCE DRAWINGS
 9321-F-13833 CONTROL BLDG. SUSPENDED CEILING PLAN.
 9321-F-30523 EQUIP. ROOM CONTROL BLDG. (ELEC.)
 9321-F-30103 CONTROL BLDG. LOCATION OF SLEEVES/OPENINGS
 9321-F-30399 LIGHTING & PA SYS. CONTROL BLDG.
 9321-F-40173 CONTROL BLDG. AIR EQUIPMENT RM.
 9321-F-13645 TURBINE BLDG. 2ND FLOOR EXTENSION
 9321-F-13813 CONTROL BLDG. DIESEL GEN. BLDG. EL 53' FLOOR PLAN/SECT
 9321-F-40167 DUCT SUPPORT DWG.

SPECIFICATIONS
 9321-05 45-24 PLANT HEATING, VENTILATING/AIR COND. SYSTEMS.

NOTES
 1. ELECTRIC SHILL LINE HEATER TO BE FURNISHED UNDER SPEC 9321-05-45-24 BUT INSTALLED BY FIELD.
 2. DUCT WORK ABOVE REFLECTIVE CEILING TO BE INSULATED.
 3. DOOR GRILLES TO BE FURNISHED BY OTHERS.
 4. INFRARED LIGHT WILL BE FURNISHED BY OTHERS.
 5. DUCT SUPPORTS TO BE FABRICATED AS SHOWN IN TABULAR DATA ON THIS DRAWING EXCEPT AS OTHERWISE NOTED.
 6. DOTTED LINE IN DUCT HANGER & BRACING DETAIL SHOWS CONDITION WHERE DUCT IS TOO CLOSE TO WALL TO INSTALL DIAGONAL BRACE.
 7. USE EXISTING UNISTRUT TYPE CEILING & WALL INSERTS WHERE POSSIBLE.

11 INCORPORATED EC9066	7/30/08 JF	APPROVAL SIGNATURES ON FILE
REV	DESCRIPTION	DATE

WESTINGHOUSE ELECTRIC CORPORATION

CONTROL ROOM (EL. 53'-0")
 AIR CONDITIONING
 PLAN, SECTIONS & DIAGRAMS
 FOR
 INDIAN POINT ENERGY CENTER
 INDIAN POINT GENERATING STATION
 UNIT NO. 3

U.S.A.C. DWG. NO. 9321-F-40593-11 CON. ED. CO. DWG. NO. A-202608

TYPE "B" FSAR FIG.