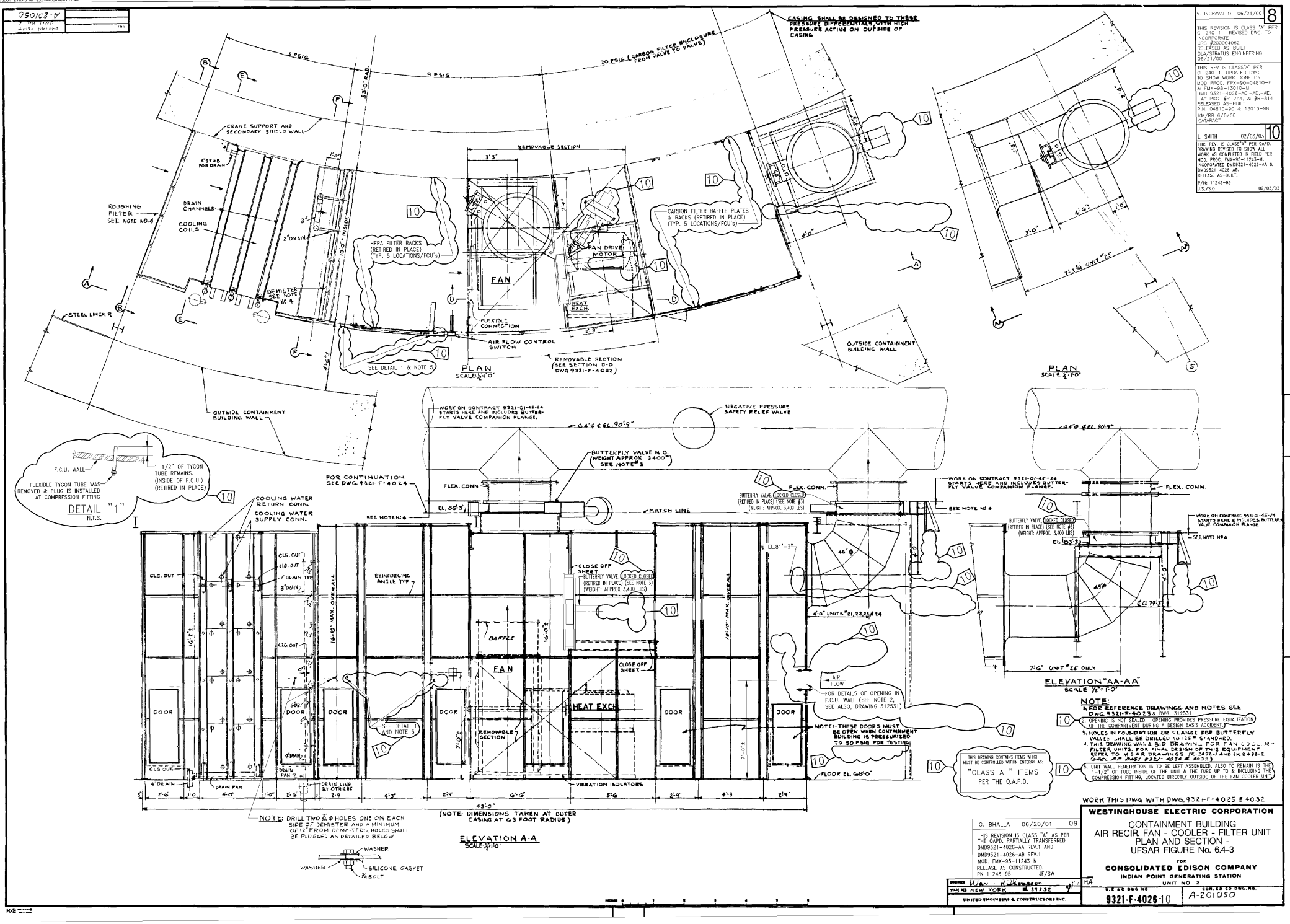
18/2004 4:16:45 AM 9321-4026-D-10.DWG

A-201050

V. INGRAVALLO 06/21/00	8
THIS REVISION IS CLASS "A" PER CI-240-1. REVISED DWG. TO INCORPORATE CRS #2000004062 RELEASED AS-BUILT OLA/STRATUS ENGINEERING 06/21/00	
THIS REV IS CLASS"A" PER CI-240-1. UPDATED DWG. TO SHOW WORK DONE ON MOD PROC. FPX-90-04810-F & FMX-98-13010-M DWG 9321-4026-AC,-AD,-AE, -AF PKG. #R-754, & #R-814 RELEASED AS-BUILT P.N. 04810-90 & 13010-98 KM/RB 6/6/00 CATARACT	
L. SMITH 02/03/03	10
THIS REV. IS CLASS"A" PER QAPD. DRAWING REVISED TO SHOW ALL WORK AS COMPLETED IN FIELD PER MOD. PROC. FMX-95-11243-M. INCORPORATED DWD9321-4026-AA & DWD9321-4026-AB. RELEASE AS-BUILT. P/N: 11243-95 J.S./S.O. 02/03/03	



NOTE:

1. FOR REFERENCE DRAWINGS AND NOTES SEE DWG. 9321-F-4023 & DWG. 312531
2. OPENING IS NOT SEALED. OPENING PROVIDES PRESSURE EQUALIZATION OF THE COMPARTMENT DURING A DESIGN BASIS ACCIDENT.
3. HOLES IN FOUNDATION OR FLANGE FOR BUTTERFLY VALVES SHALL BE DRILLED TO ISE STANDARD.
4. THIS DRAWING WAS A BID DRAWING FOR FAN COOLER-FILTER UNITS. FOR FINAL DESIGN OF THIS EQUIPMENT REFER TO MSAR DRAWINGS JC-2472-1 AND JK 2 & 2E-2 (SEE ALSO DWGS 9321-4034 & 4033)
5. UNIT WALL PENETRATION IS TO BE LEFT ASSEMBLED. ALSO TO REMAIN IS THE 1-1/2" OF TUBE INSIDE OF THE UNIT & THE TUBE UP TO & INCLUDING THE COMPRESSION FITTING, LOCATED DIRECTLY OUTSIDE OF THE FAN COOLER UNIT.

WORK THIS DWG WITH DWG. 9321-F-4025 & 4032

G. BHALLA 06/20/01	09
THIS REVISION IS CLASS "A" AS PER THE QAPD. PARTIALLY TRANSFERRED DWD9321-4026-AA REV.1 AND DWD9321-4026-AB REV.1 MOD. FMX-95-11243-M RELEASE AS CONSTRUCTED. PN 11243-95 JF/SW	

ENGINEER
STATE REG. NEW YORK NO. 31732
UNITED ENGINEERS & CONSTRUCTORS INC.

WESTINGHOUSE ELECTRIC CORPORATION

CONTAINMENT BUILDING
AIR RECIR. FAN - COOLER - FILTER UNIT
PLAN AND SECTION -
UFSAR FIGURE No. 6.4-3

FOR

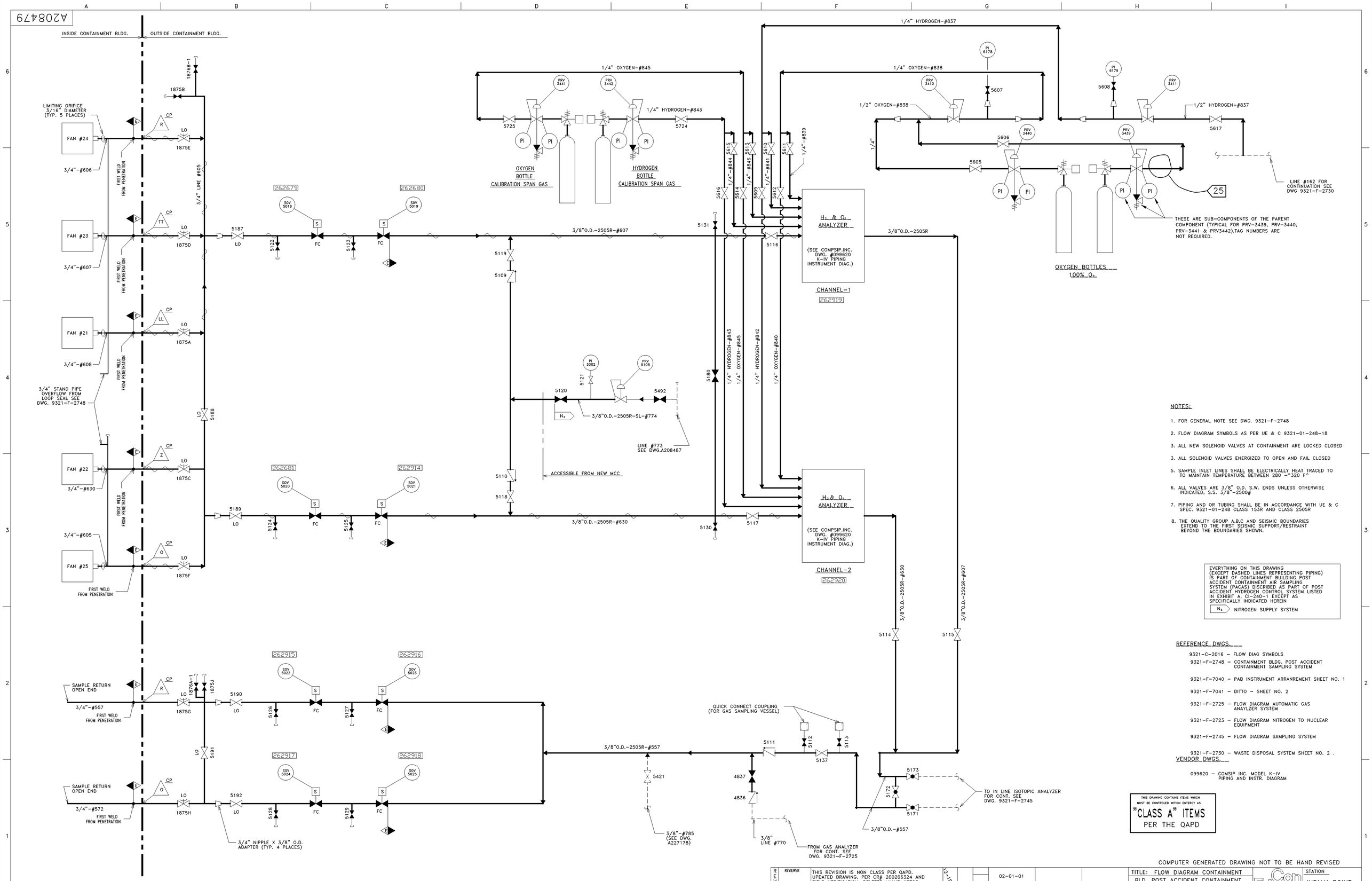
CONSOLIDATED EDISON COMPANY

INDIAN POINT GENERATING STATION
UNIT NO 2

U.E.&C. DWG. NO. **9321-F-4026-10**

CON.ED CO DWG. NO. A-201050

A208479



NOTES:

1. FOR GENERAL NOTE SEE DWG. 9321-F-2748
2. FLOW DIAGRAM SYMBOLS AS PER UE & C 9321-01-248-18
3. ALL NEW SOLENOID VALVES AT CONTAINMENT ARE LOCKED CLOSED
3. ALL SOLENOID VALVES ENERGIZED TO OPEN AND FAIL CLOSED
5. SAMPLE INLET LINES SHALL BE ELECTRICALLY HEAT TRACED TO TO MAINTAIN TEMPERATURE BETWEEN 280 -°320 F°
6. ALL VALVES ARE 3/8" O.D. S.W. ENDS UNLESS OTHERWISE INDICATED, S.S. 3/8"-2500#
7. PIPING AND OR TUBING SHALL BE IN ACCORDANCE WITH UE & C SPEC. 9321-01-248 CLASS 153R AND CLASS 2505R
8. THE QUALITY GROUP A,B,C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.

EVERYTHING ON THIS DRAWING (EXCEPT DASHED LINES REPRESENTING PIPING) IS PART OF CONTAINMENT BUILDING POST ACCIDENT CONTAINMENT AIR SAMPLING SYSTEM (PACAS) DISCRIBED AS PART OF POST ACCIDENT HYDROGEN CONTROL SYSTEM LISTED IN EXHIBIT A, CI-240-1 EXCEPT AS SPECIFICALLY INDICATED HEREIN

N₂ NITROGEN SUPPLY SYSTEM

REFERENCE DWGS.

9321-C-2016 – FLOW DIAG SYMBOLS
9321-F-2748 – CONTAINMENT BLDG. POST ACCIDENT CONTAINMENT SAMPLING SYSTEM
9321-F-7040 – PAB INSTRUMENT ARRANREMENT SHEET NO. 1
9321-F-7041 – DITTO – SHEET NO. 2
9321-F-2725 – FLOW DIAGRAM AUTOMATIC GAS ANAYLZER SYSTEM
9321-F-2723 – FLOW DIAGRAM NITROGEN TO NUCLEAR EQUIPMENT
9321-F-2745 – FLOW DIAGRAM SAMPLING SYSTEM
9321-F-2730 – WASTE DISPOSAL SYSTEM SHEET NO. 2 .

VENDOR DWGS.

099620 – COMSIP INC. MODEL K-IV PIPING AND INSTR. DIAGRAM

THIS DRAWING CONTAINS ITEMS WHICH MUST BE CONTROLED WITHIN ENTERGY AS
"CLASS A" ITEMS
PER THE QAPD

COMPUTER GENERATED DRAWING NOT TO BE HAND REVISED

REVISION	REVIEWER		
		THIS REVISION IS NON CLASS PER QAPD. UPDATED DRAWING. PER CR# 200208324 AND FIELD VERIFICATION. DELETED VALVE #5723. RELEASED AS CONSTRUCTED. P.N. 69901-AF D.B./G.B. 7/29/02	
	G.BHALLA 7/29/02 ENG		

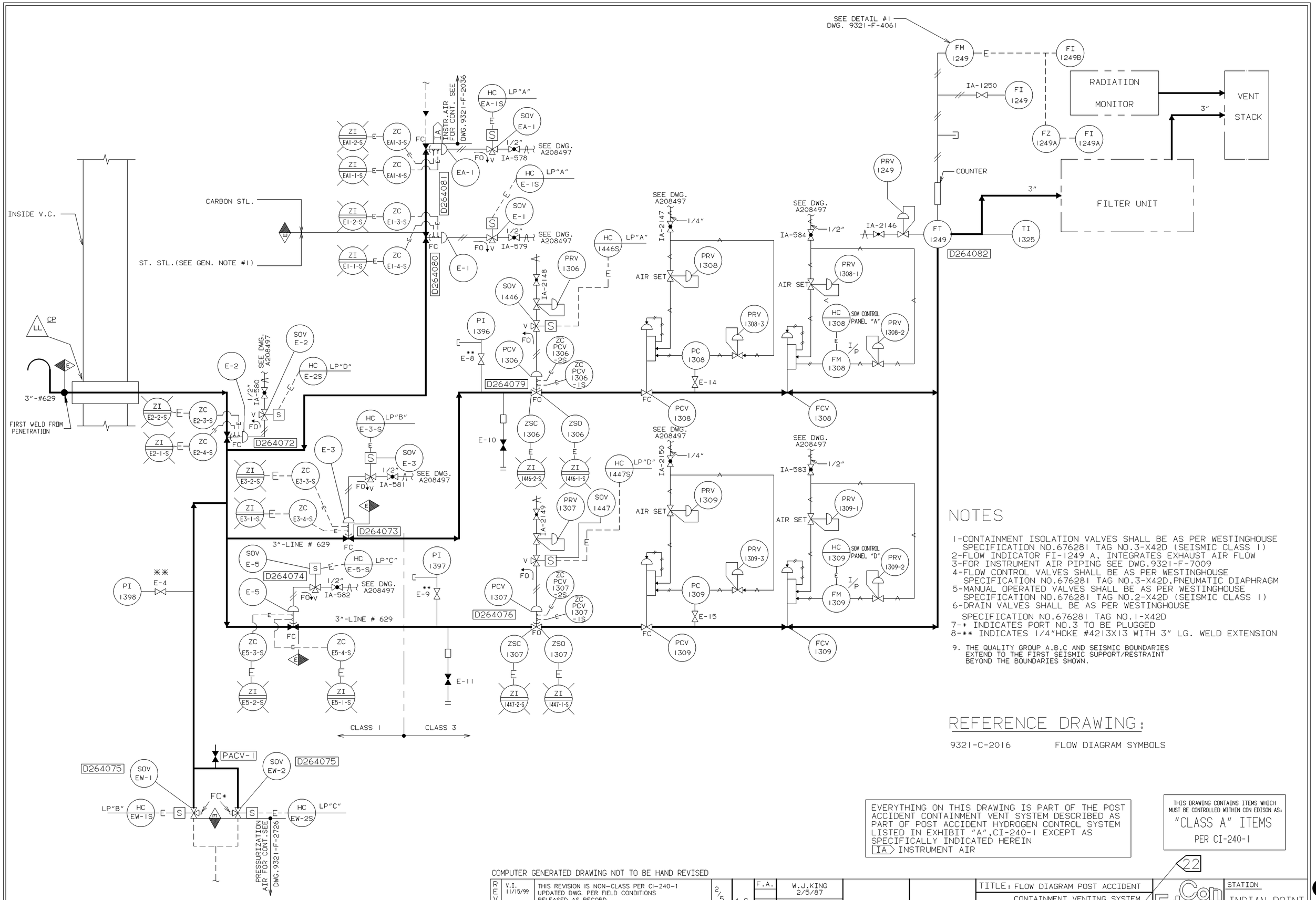
DATE	CKR.	SUPV.	DESIGN ENG	DISC. ENG.	ENG. MGR.
(12-19-200)			02-01-01		
REVIEW			APPROVALS		

TITLE: FLOW DIAGRAM CONTAINMENT BLD. POST ACCIDENT CONTAINMENT AIR SAMPLING SYST.
– UFSAR FIGURE No. 6.8-4

DRWN. BY D. BALADO | SCALE | REC'D

Con Edison | STATION INDIAN POINT

DWG. NO. A208479 -25 | MY



NOTES

1-CONTAINMENT ISOLATION VALVES SHALL BE AS PER WESTINGHOUSE SPECIFICATION NO.676281 TAG NO.3-X42D (SEISMIC CLASS 1)
2-FLOW INDICATOR FI-1249 A, INTEGRATES EXHAUST AIR FLOW
3-FOR INSTRUMENT AIR PIPING SEE DWG.9321-F-7009
4-FLOW CONTROL VALVES SHALL BE AS PER WESTINGHOUSE SPECIFICATION NO.676281 TAG NO.3-X42D,PNEUMATIC DIAPHRAGM
5-MANUAL OPERATED VALVES SHALL BE AS PER WESTINGHOUSE SPECIFICATION NO.676281 TAG NO.2-X42D (SEISMIC CLASS 1)
6-DRAIN VALVES SHALL BE AS PER WESTINGHOUSE SPECIFICATION NO.676281 TAG NO.1-X42D
7-* INDICATES PORT NO.3 TO BE PLUGGED
8-** INDICATES 1/4"HOKE #4213X13 WITH 3" LG. WELD EXTENSION
9. THE QUALITY GROUP A,B,C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.

REFERENCE DRAWING:

9321-C-2016 FLOW DIAGRAM SYMBOLS

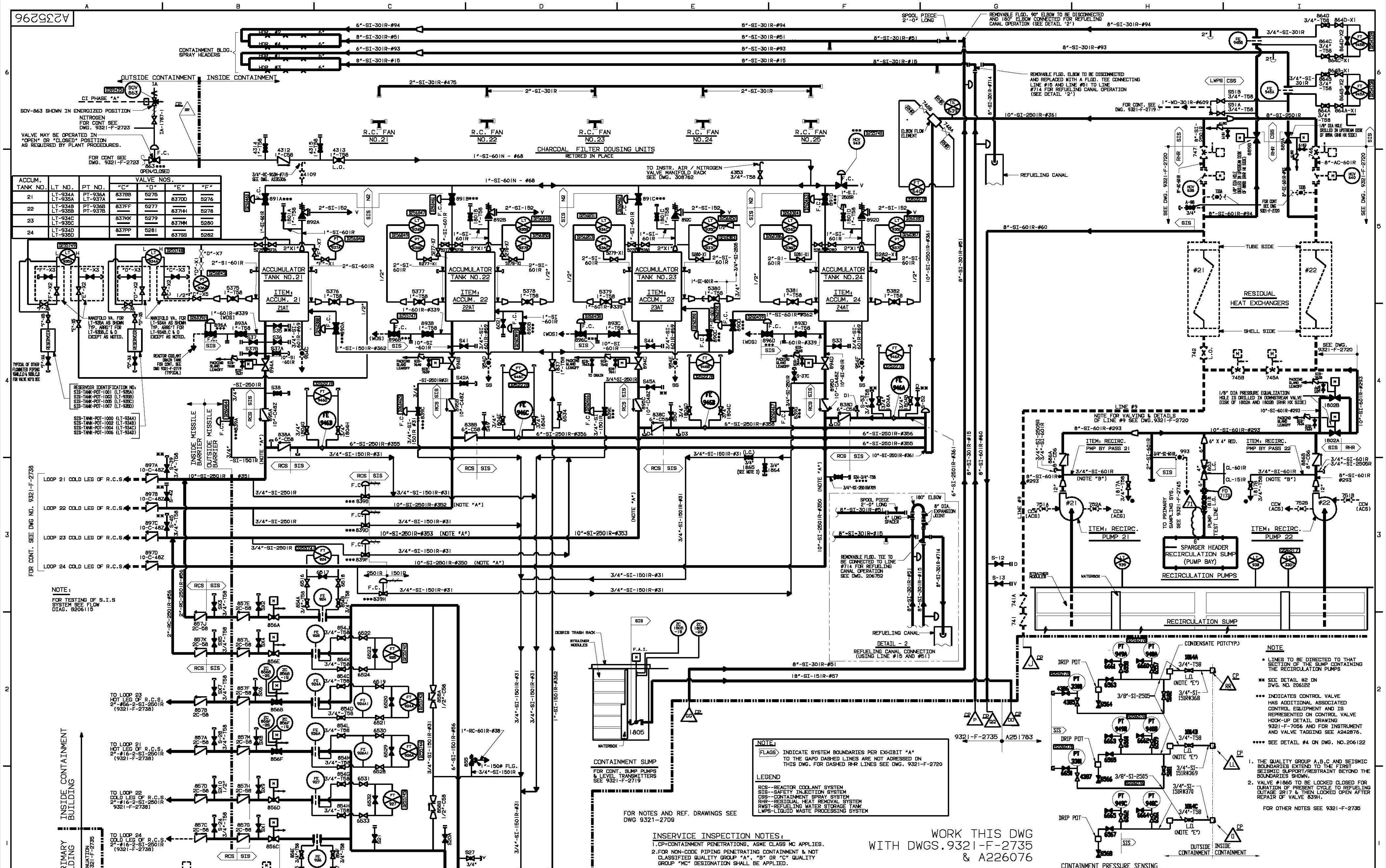
EVERYTHING ON THIS DRAWING IS PART OF THE POST ACCIDENT CONTAINMENT VENT SYSTEM DESCRIBED AS PART OF POST ACCIDENT HYDROGEN CONTROL SYSTEM LISTED IN EXHIBIT "A",CI-240-1 EXCEPT AS SPECIFICALLY INDICATED HEREIN
IA INSTRUMENT AIR

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

22

COMPUTER GENERATED DRAWING NOT TO BE HAND REVISED

REVISION									
V.I. 11/15/99	THIS REVISION IS NON-CLASS PER CI-240-1 UPDATED DWG. PER FIELD CONDITIONS RELEASED AS RECORD P/N 69911-NP PP/VI 11/12/99	2/5/87	A.G.	F.A.	W.J.KING 2/5/87			TITLE: FLOW DIAGRAM POST ACCIDENT CONTAINMENT VENTING SYSTEM - UFSAR FIGURE No. 6.8-3	STATION INDIAN POINT
DES		DATE	CKR.	SUPV.	DESIGN ENG	DISC. ENG.	ENG. MGR.	MOD.PROC.OR SPEC.	Con Edison
ENG			REVIEW		APPROVALS			DRWN BY D.BALADO / SCALE NONE / REC'D	DWG. NO. B208879-22 MY



ACCUM. TANK NO.	LT NO.	PT NO.	VALVE NOS. "C"	"D"	"E"	"F"
21	LT-934A LT-935A	PT-936A LT-937A	837BB	5275	837DD	5276
22	LT-934B LT-935B	PT-936B PT-937B	837FF	5277	837HH	5278
23	LT-934C LT-935C		837KK	5279	837MM	5280
24	LT-934D LT-935D		837PP	5281	837SS	5282

NOTE:

FOR TESTING OF S.I.S SYSTEM SEE FLOW DIAG. B206115

NOTE:

FLAGS INDICATE SYSTEM BOUNDARIES PER EXHIBIT "A" TO THE QAPD DASHED LINES ARE NOT ADRESSED ON THIS DWG. FOR DASHED RHR LINES SEE DWG. 9321-F-2720

LEGEND

RCS--REACTOR COOLANT SYSTEM
SIS--SAFETY INJECTION SYSTEM
CSS--CONTAINMENT SPRAY SYSTEM
RHR--RESIDUAL HEAT REMOVAL SYSTEM
RWST-REFUELING WATER STORAGE TANK
LWPS-LIQUID WASTE PROCESSING SYSTEM

FOR NOTES AND REF. DRAWINGS SEE DWG 9321-2709

INSERVICE INSPECTION NOTES:

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

WORK THIS DWG WITH DWGS.9321-F-2735 & A226076

NOTE

- * LINES TO BE DIRECTED TO THAT SECTION OF THE SUMP CONTAINING THE RECIRCULATION PUMPS
- ** SEE DETAIL #2 ON DWG. NO. 206122
- *** INDICATES CONTROL VALVE HAS ADDITIONAL ASSOCIATED CONTROL EQUIPMENT AND IS REPRESENTED ON CONTROL VALVE HOOK-UP DETAIL DRAWING 9321-F-7056 AND FOR INSTRUMENT AND VALVE TAGGING SEE A242876.
- **** SEE DETAIL #4 ON DWG. NO.206122

1. THE QUALITY GROUP A,B,C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.
2. VALVE #1865 TO BE LOCKED CLOSED FOR DURATION OF PRESENT CYCLE TO REFUELING OUTAGE 2R17 & THEN LOCKED OPEN AFTER REPAIR OF VALVE 839H.

FOR OTHER NOTES SEE 9321-F-2735

71 INCORPORATED EC21540 08/25/10

F.A. W.J.KING 10/23/87

DATE | CKR. | SUPV. | DESIGN ENG | DISC. ENG. | ENG. MGR.
REVIEW | APPROVALS

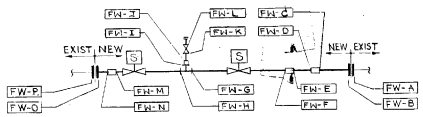
TITLE: FLOW DIAGRAM
SAFETY INJECTION SYSTEM
- UFSAR FIGURE NO. 6.2-1 (SHT. 2)

DRWN. BY B. JOHN | SCALE | REC'D

Entergy Nuclear Northeast

STATION: INDIAN POINT

DWG. NO. A235296-71 MY

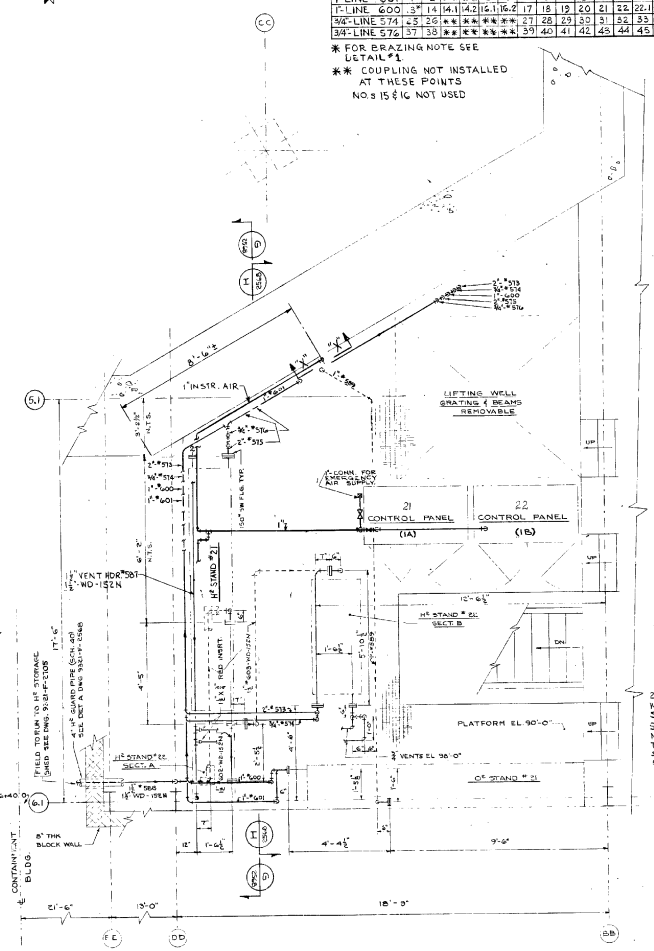


TYPICAL DETAIL-2 (4-REQ'D)
ELEVATION

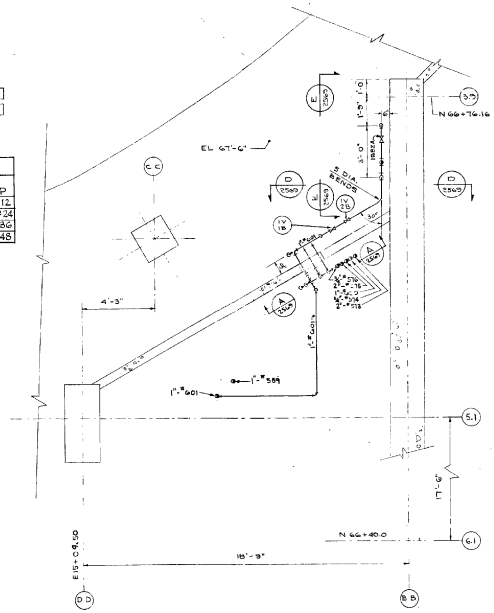
LEGEND

LINE NO. & SIZE	WELD IDENTIFICATION NUMBERS A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1"-LINE 601	14	2	**	**	3	4	5	6	7	8	9	10	**	**	11	*12
1"-LINE 600	13*	14	14.1	14.2	16.1	16.2	17	18	19	20	21	22	22.1	22.2	23	*24
3/4"-LINE 574	25	26	**	**	**	**	27	28	29	30	31	32	33	34	35	36
3/4"-LINE 576	37	38	**	**	**	**	39	40	41	42	43	44	45	46	47	48

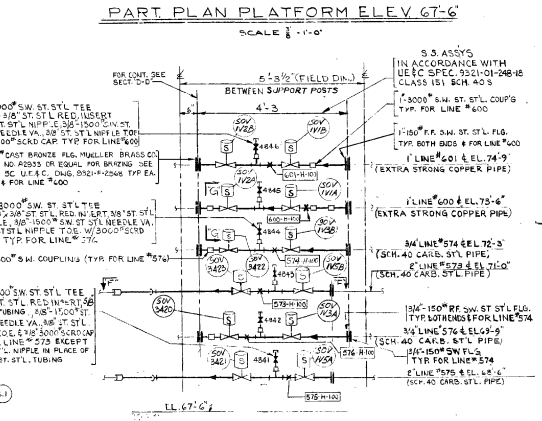
* FOR BRAZING NOTE SEE DETAIL #1
** COUPLING NOT INSTALLED AT THESE POINTS
NOS. 15 & 16 NOT USED



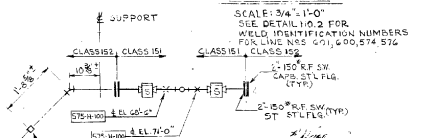
PLAN PLATFORM ELEV. 90'-0"
SCALE 1/8" = 1'-0"



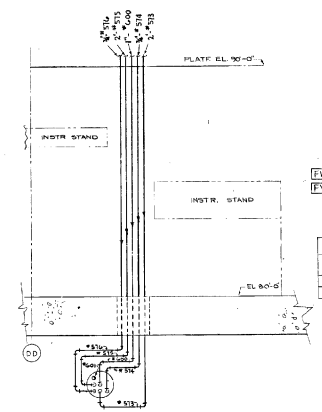
PART PLAN PLATFORM ELEV. 67'-6"
SCALE 1/8" = 1'-0"



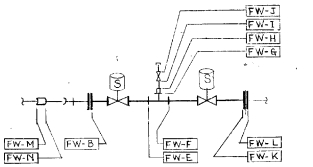
DETAIL-1
SCALE: 3/4" = 1'-0"
SEE DETAIL 1 & 2 FOR WELD IDENTIFICATION NUMBERS FOR LINE NOS. 601, 600, 574, 576



PART PLAN "F-F"
SCALE: 3/4" = 1'-0"
(TYPICAL ST. STEEL ASSEMBLY FOR LINE #573 & LINE #575)
SEE DETAIL NO. 3 FOR WELD IDENTIFICATION NUMBERS



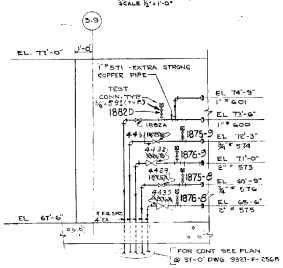
SECTION "A-A"
SEE DWG. 9321-F-2569
SCALE 1/8" = 1'-0"



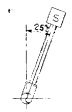
TYPICAL DETAIL-3 (2-REQ'D)
ELEVATION

LEGEND

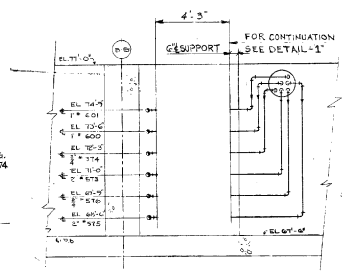
LINE NO. & SIZE	WELD IDENTIFICATION NUMBERS A	B	C	D	E	F	G	H	I	J	K	L	M	N
2"-LINE 573	49	50	51	52	53	54	55	56	57	58	59	60	61	62
2"-LINE 575	61	62	63	64	65	66	67	68	69	70	71	72	73	74



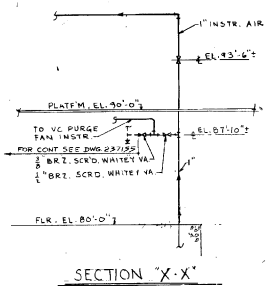
SECT. "E-E"
SEE DWG. 9321-F-2569
SCALE 1/8" = 1'-0"



TYPICAL SECT. "G-G"
NO SCALE
TYPICAL 25° OFFSET FOR SOLENOID VALVES INSTALLED ON LINE NOS 600, 574, 575, 576 & 576



SECT. "D-D"
SEE DWG. 9321-F-2569
SCALE 1/8" = 1'-0"



SECTION "X-X"

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

FOR GENERAL NOTES & REFERENCE DWGS SEE DWG. 9321-F-2569

V.I. 11/12/99	15	V.I. 4/17/99	14
THIS REVISION IS NON-CLASS PER CI-240-1 UPDATED DRAWING TITLE BLOCK No. IN TITLE P/N 6891-NP RELEASED FOR RECORD PP/VI 11/12/99		THIS REVISION IS NON-CLASS PER CI-240-1 UPDATED DRAWING TO INCLUDE UFSAR FIGURE No. IN TITLE P/N 6891-NP RELEASED FOR RECORD DLA/4/17/99	

STRATUS ENGINEERING

SYM.	DATE	DESCRIPTION	DRWN	DES	DFT DWG	APVD
4		FINAL ISSUE				
3		REVISED ASSEM. AT BOTT. FLANGE				
2		REVISED SCHEDULE OF PIPE				
1		ADDED CONTROL PANEL, AIR SUPPLY, & VENT HDR.				
0		FIRST ISSUE				

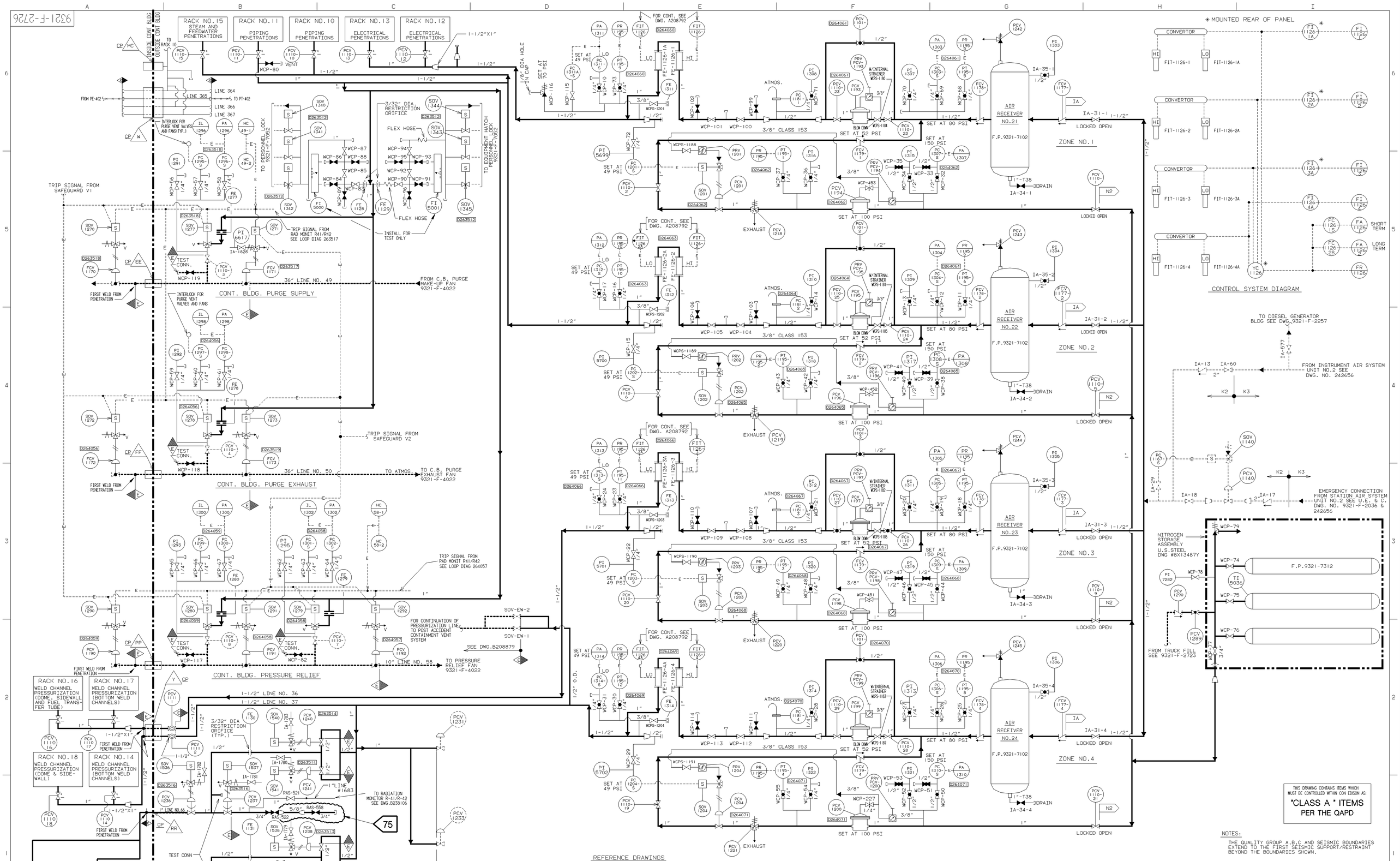
ENGINEER
STATE REG. NO.
UNITED ENGINEERS & CONSTRUCTORS INC.

WESTINGHOUSE ELECTRIC CORPORATION
HYDROGEN RECOMBINER PIPING
SHEET No. 2
FOR
CONSOLIDATED EDISON COMPA
INDIAN POINT GENERATING STATION
UNIT NO. 2

15

U.E.&C. DWG. NO. **9321-F-2569-15**
CON. ED. CO. DWG. A 2000

9321-F-2726



THIS DRAWING CONTAINS ITEMS WHICH MUST BE CONTROLLED WITHIN CON EDISON AS:
"CLASS A " ITEMS PER THE QAPD

NOTES:

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

REFERENCE DRAWINGS

9321-C-2016 FLOW DIAGRAM SYMBOLS
9321-F-7033 PENETRATION AND LINER WELD CHANNEL PIPING - SHT.1
9321-F-7034 - SHT.2
9321-F-7035 - SHT.3
9321-F-7039 - SHT.4
9321-F-7052 - SHT.5
9321-F-7019 - SHT.6

REVISION	DES		
	G. BHALLA 05/15/01	THIS REVISION IS NON-CLASS PER THE QAPD. UPDATED DRAWING PER CR #200104549 RELEASED AS-BUILT P.N. 69901-AF JWR/S&L	
	ENG		

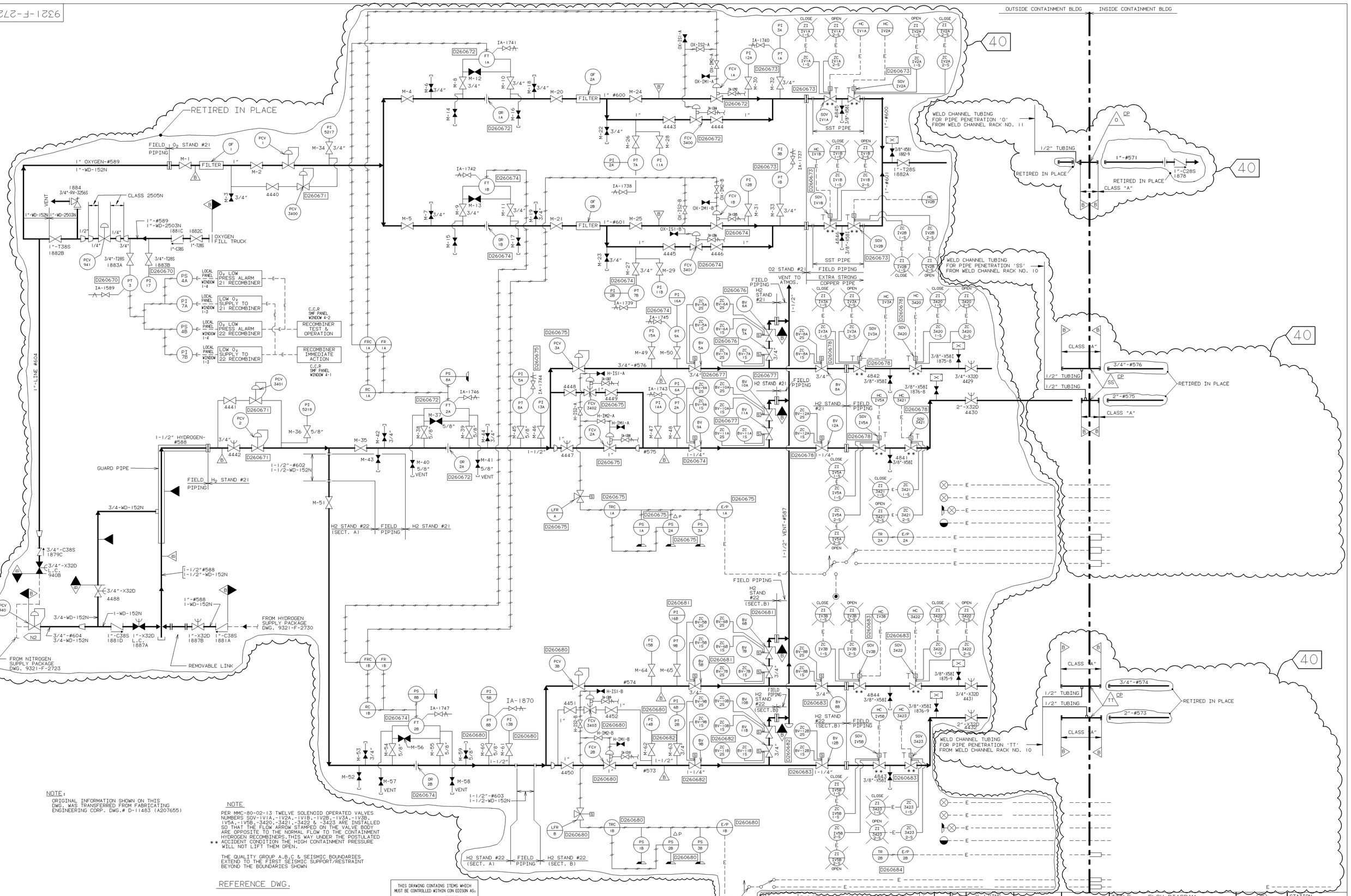
DATE				
9/15/87	E.C.	F.A.	W.J.KING 9-15-87	
	CKR.	SUPV.	DESIGN ENG.	DISC. ENG. / ENG. MGR.
	REVIEW		APPROVALS	

COMPUTER GENERATED DRAWING NOT TO BE HAND REVISED

TITLE: FLOW DIAGRAM-PENETRATION AND LINER WELD JOINT CHANNEL PRESSURIZATION SYSTEM - UFSAR FIGURE No. 6.6-1

Con Edison — STATION: INDIAN POINT

DRWN. BY: GIBBS&HILL | SCALE: NONE | REC'D | DWG. NO. 9321-F-2726-75 | MY



NOTE:

ORIGINAL INFORMATION SHOWN ON THIS DWG. WAS TRANSFERRED FROM FABRICATING ENGINEERING CORP. DWG.# D-11483 (A207655)

NOTE

PER MMC-80-02-13 TWELVE SOLENOID OPERATED VALVES NUMBERS SOV-1V1A,-1V2A,-1V1B,-1V2B,-1V3A,-1V3B, 1V5A,-1V5B,-3420,-3421,-3422 & -3423 ARE INSTALLED SO THAT THE FLOW ARROW STAMPED ON THE VALVE BODY ARE OPPOSITE TO THE NORMAL FLOW TO THE CONTAINMENT HYDROGEN RECOMBINERS.THIS WAY UNDER THE POSTULATED
** ACCIDENT CONDITION THE HIGH CONTAINMENT PRESSURE WILL NOT LIFT THEM OPEN.

THE QUALITY GROUP A,B,C & SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN

REFERENCE DWG.

9321-C-2016 - FLOW DIAGRAMS SYMBOLS

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

COMPUTER GEN. DWG. NOT TO BE HAND REVISED.

REVISION	DES	
	G. BHALLA 06/26/01	THIS REVISION IS CLASS A AS PER THE QAPD PARTIALLY TRANSFERRED DMD9321-2727-AE REV. 0 AND DMD9321-2727-AF REV. 1 MOD. FMX-95-10912-M RELEASE AS CONSTRUCTED P/N 10912-95 JF/SW
	ENG	

DATE	CHKR.	SUPV.	DESIGN ENG	DISC. ENG.	ENG. MGR.
6/19/87	K.E.		W.J.KING 6-19-87		
	REVIEW		APPROVALS		

TITLE: FLOW DIAGRAM
HYDROGEN RECOMBINER SYSTEM
– UFSAR FIGURE No. 6.8-5

MOD.PROC.OR SPEC.
DRWN. BY B.JOHN
SCALE NONE
REC'D

Con Edison

STATION INDIAN POINT

DWG. NO. 9321-F-2727-40 MY

9321-F-2735

REFERENCE DRAWINGS: U.E. & C. NO.

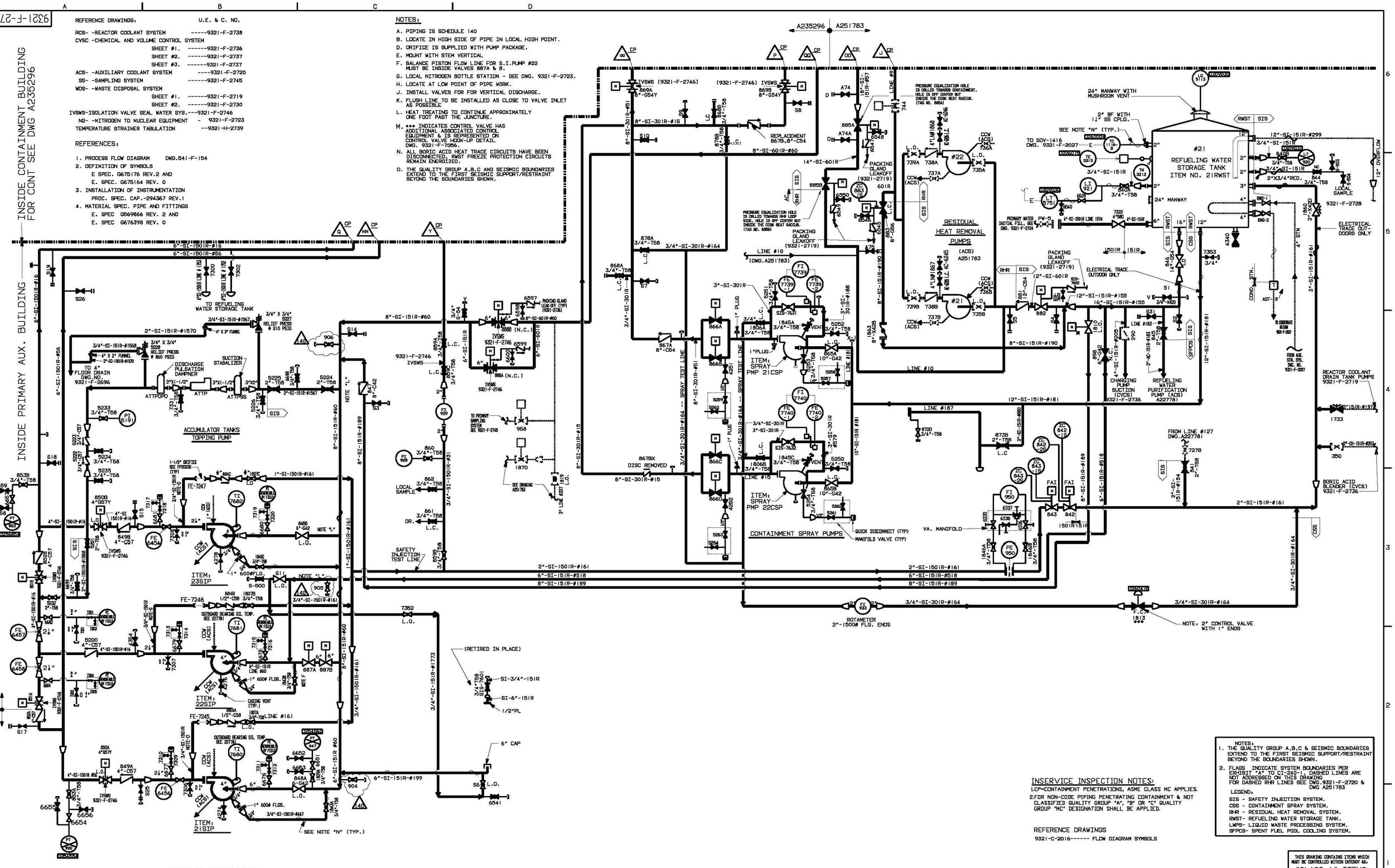
RCS- -REACTOR COOLANT SYSTEM -----9321-F-2738
CVSC -CHEMICAL AND VOLUME CONTROL SYSTEM
SHEET #1. ------9321-F-2736
SHEET #2. ------9321-F-2737
SHEET #3. ------9321-F-2737
ACS- -AUXILIARY COOLANT SYSTEM ----9321-F-2720
SS- -SAMPLING SYSTEM ------9321-F-2745
WDS- -WASTE DISPOSAL SYSTEM
SHEET #1. ------9321-F-2719
SHEET #2. ------9321-F-2730
IVSWS-ISOLATION VALVE SEAL WATER SYS.---9321-F-2746
N2- -NITROGEN TO NUCLEAR EQUIPMENT - 9321-F-2723
TEMPERATURE STRAINER TABULATION --9321-H-2739

REFERENCES:

1. PROCESS FLOW DIAGRAM DWG.541-F-154
2. DEFINITION OF SYMBOLS
   E SPEC. G675176 REV.2 AND
   E. SPEC. G675164 REV. 0
3. INSTALLATION OF INSTRUMENTATION
   PROC. SPEC. CAP.-294367 REV.1
4. MATERIAL SPEC. PIPE AND FITTINGS
   E. SPEC G569866 REV. 2 AND
   E. SPEC G676398 REV. 0

NOTES:

A. PIPING IS SCHEDULE 140
B. LOCATE IN HIGH SIDE OF PIPE IN LOCAL HIGH POINT.
D. ORIFICE IS SUPPLIED WITH PUMP PACKAGE.
E. MOUNT WITH STEM VERTICAL
F. BALANCE PISTON FLOW LINE FOR S.I.PUMP #22 MUST BE INSIDE VALVES 867A & B.
G. LOCAL NITROGEN BOTTLE STATION - SEE DWG. 9321-F-2723.
H. LOCATE AT LOW POINT OF PIPE WORK.
J. INSTALL VALVES FOR FOR VERTICAL DISCHARGE.
K. FLUSH LINE TO BE INSTALLED AS CLOSE TO VALVE INLET AS POSSIBLE
L. HEAT TREATING TO CONTINUE APPROXIMATELY ONE FOOT PAST THE JUNCTURE.
M. *** INDICATES CONTROL VALVE HAS ADDITIONAL ASSOCIATED CONTROL EQUIPMENT & IS REPRESENTED ON CONTROL VALVE HOOK-UP DETAIL DWG. 9321-F-7056.
N. ALL BORIC ACID HEAT TRACE CIRCUITS HAVE BEEN DISCONNECTED. RWST FREEZE PROTECTION CIRCUITS REMAIN ENERGIZED.
O. THE QUALITY GROUP A,B,C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.



NOTES:
1. THE QUALITY GROUP A,B,C & SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.
2. FLAGS INDICATE SYSTEM BOUNDARIES PER EXHIBIT "A" TO CI-240-1. DASHED LINES ARE NOT ADDRESSED ON THIS DRAWING FOR DASHED RHR LINES SEE DWG.9321-F-2720 & DWG A251783

LEGEND.
SIS - SAFETY INJECTION SYSTEM.
CSS - CONTAINMENT SPRAY SYSTEM.
RHR - RESIDUAL HEAT REMOVAL SYSTEM.
RWST- REFUELING WATER STORAGE TANK.
LWPS- LIQUID WASTE PROCESSING SYSTEM.
SFPCS- SPENT FUEL POOL COOLING SYSTEM.

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

REFERENCE DRAWINGS
9321-C-2016------ FLOW DIAGRAM SYMBOLS

THIS DRAWING CONTAINS ITEMS WHICH MUST BE CONTROLLED WITHIN ENTERGY AS: "CLASS A" ITEMS PER THE QAPD

WORK THIS DWG. WITH A235296

THIS DWG. TO BE REVISED ONLY IN AUTOCAD.

REV	DESCRIPTION	DATE	BY	APPROVAL SIGNATURES ON FILE
140	INCORPORATED EC15683	3/25/10	RML	

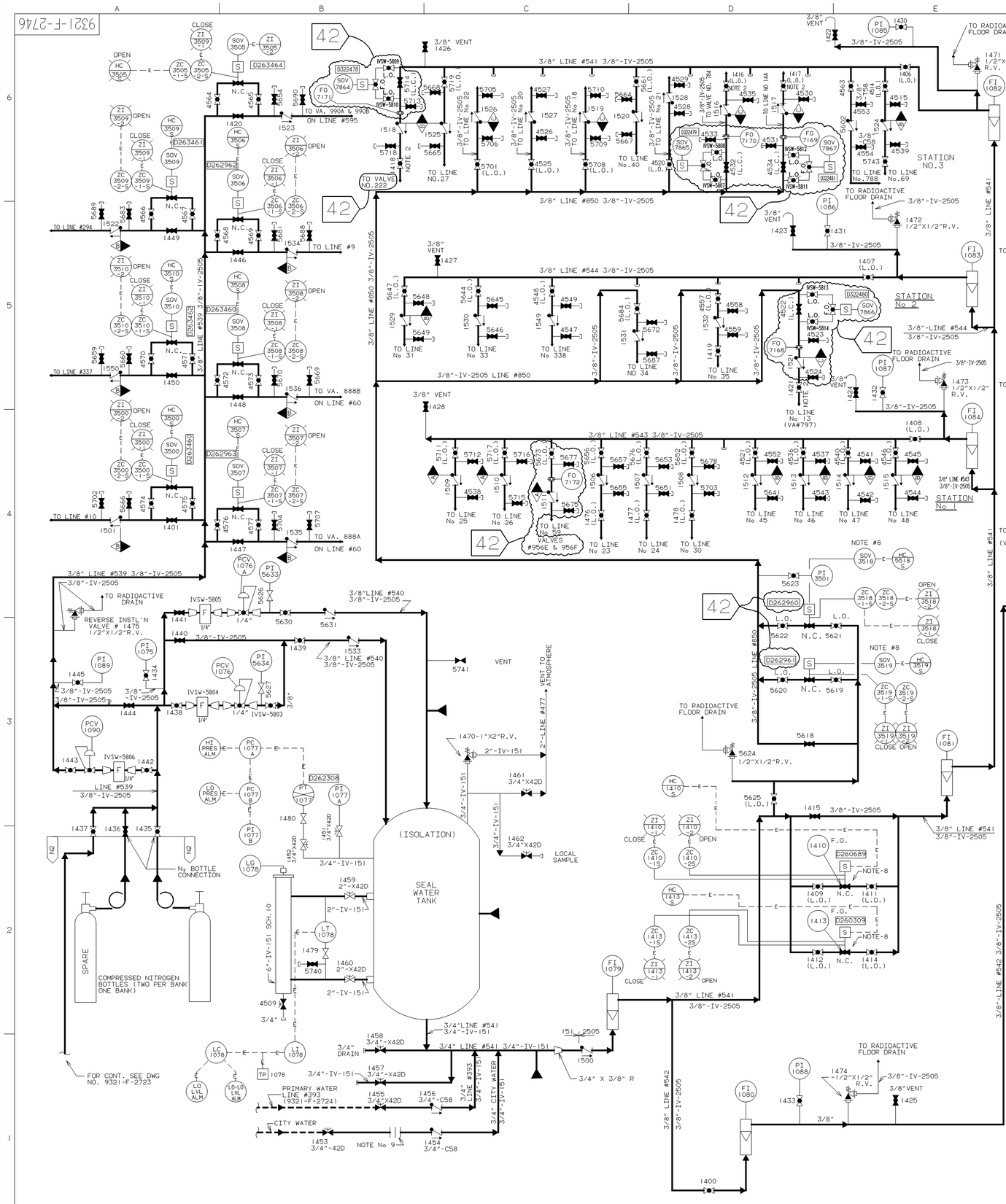
REVISION: DES T.CZMIENSKI 02/11/04 ENG
THIS REVISION IS NON-CLASS PER THE QAPD. DRAWING UPDATED IN RESPONSE TO CR-IP2-2004-00398 RELEASE FOR RECORD
PN 69901-AF RL/TC

REVIEW: DATE 2/12/88; CKR. A.G.; SUPV. F.A.
APPROVALS: DESIGN MGR. W.J.KING 2/12/88; CHIEF DESIGN ENG.; DISC. ENG.; ENG. MGR.

TITLE: FLOW DIAGRAM
SAFETY INJECTION SYSTEM
– UFSAR FIGURE No. 6.2-1 (SHT. 1)

Entergy Nuclear Northeast
STATION: INDIAN POINT
DRAWN BY: B.JOHN; SCALE: NONE; REC'D
DWG. NO. 9321-F-2735 MY

9321-F-2746



PENETRATION LIST

SEAL CONN TO LINE NO.	INJECTION POINTS	CONTAINMENT PENETRATION SLEEVE	LINE DESCRIPTION	Q/G	REMARKS
9	VALVE #744	J	RESIDUAL HEAT REMOVAL LOOP IN	B	NITROGEN INJ.
10	VALVE #732	K	DITTO OUT	B	DITTO
337	IN LINE #337	NONE	DITTO OUT	B	DITTO
13	VALVE #797	N	R.C. PUMPS COOLING WATER IN	C	
14	VALVE #784	O	DITTO OUT	C	
14A	VALVE FCV #625	O	DITTO OUT	C	
15	VALVE #869B	P	CONTAINMENT SPRAY HEADER	B	
16	VALVE #850B	Q	SAFETY INJECTION LINE	B	IN P.A.B.
16	VALVE #851B	Q	DITTO	B	DITTO
17	VALVE #222	R	R.C. PUMPS SEAL WATER RETURN	B	
18	IN LINE #18	R	EXCESS LETDOWN HT. EXCH. COOLING WTR.RET.	C	
19	IN LINE #19	R	CHARGING LINE	B	
20	VALVE #U943	S	AUXILIARY STEAM	NONE	
21	VALVE #U944	T	AUXILIARY STEAM CONDENSATE	NONE	
22	IN LINE #22	U	EXCESS LETDOWN HT. EXCH. COOLING WTR. SUPPLY	C	
23	IN LINE #23	V	CONTAINMENT VENT HEADER	NONE	
24	IN LINE #24	V	P.R.T. GAS ANALYZER LINE	NONE	
25	IN LINE #25	W	PRESSURIZER STEAM SAMPLE	A	
26	IN LINE #26	W	DITTO LIQUID DITTO	A	
27	IN LINE #27	X	LETDOWN LINE	B	
30	IN LINE #30	V	R.C. DRAIN TANK GAS ANALYZER LINE	NONE	
31	IN LINE #31	Y	S.I.S. TEST LINE	B	
33	IN LINE #33	Y	P.R.T. MAKE-UP LINE	NONE	
34	IN LINE #34	Y	SERVICE AIR	NONE	
35	IN LINE #35	Y	CITY WATER	NONE	
40	IN LINE #40	Z	R.C. DRAIN TANK PUMP DISCHARGE	NONE	
41	IN LINE #41	Z	R.C. PUMP SEAL WATER SUPPLY	B	
42	IN LINE #42	Z	DITTO	B	
43	IN LINE #43	Z	DITTO	B	
44	IN LINE #44	Z	DITTO	B	
45	IN LINE #45	AA	STEAM GENERATOR BLOWDOWN LINE	B	
46	IN LINE #46	BB	DITTO	B	
47	IN LINE #47	CC	DITTO	B	
48	IN LINE #48	DD	DITTO	B	
51	VALVE #869A	GG	CONTAINMENT SPRAY HEADER	B	
294	IN LINE #294	NONE	RESIDUAL HEAT REMOVAL LOOP SAMPLE	B	NITROGEN INJ.
16	VALVE #851A	NN	SAFETY INJECTION LINE	B	IN P.A.B.
56	VALVE #850A	NN	DITTO	B	DITTO
59	IN LINE #59	W	REACTOR COOLANT SAMPLE LINE	A	
60	VALVE #888A	QQ	RESIDUAL HT.EXCH. TO SAFETY INJ. PUMPS	B	NITROGEN INJ.
60	VALVE #888B	QQ	DITTO	B	DITTO
69	IN LINE #69	RR	ACCUMULATOR SAMPLE LINE	B	
338	IN LINE #338	Y	SUMP PUMP DISCHARGE	NONE	
595	IN LINE #595	TT	RECIRC. PUMP DISCH. SAMPLE	B	NITROGEN INJ.
788			HRSS RETURN TO VC SUMP	NONE	

REFERENCES:

1. PROCESS FLOW DIAGRAM---------- (W)
2. DEFINITIONS OF SYMBOLS ---------- (W) SPEC. G675176 REV D.
3. INSTRUMENT & CONTROL STD -------- (W) SYMBOLS & APPLICATIONS FOR INST. DIAGRAMS SECTION - I.I.ISSUED AUG.12 1966.
   (W) INST. INSTALLATION: SECT.3.0 ISSUE
4. MATERIAL SPEC & FITTINGS -------- (W) SPEC. G.569866 REV.2
   (W) SPEC. G.676398 REV. 0

REFERENCE DRAWINGS

UE & C. DWGS

9321-F-2738 ---------- REACTOR COOLANT SYSTEM
9321-F-2736 ---------- CHEMICAL VOLUME CONTROL SH. 1

9321-F-2737 ---------- CHEMICAL VOLUME CONTROL SH. 2
CHEMICAL VOLUME CONTROL SH. 3
9321-F-2719 ---------- WASTE DISPOSAL SYSTEM SH. 1
9321-F-2730 ---------- WASTE DISPOSAL SYSTEM SH. 2

9321-F-2735 ---------- SAFETY INJECTION SYSTEM
9321-F-2745 ---------- SAMPLE SYSTEM
9321-F-2729 ---------- STEAM GEN. BLOWDOWN SYSTEM
9321-F-2720 ---------- AUXILIARY COOLANT
9321-F-2724 ---------- PRIMARY WATER MAKE-UP SYSTEM
9321-F-2768 ---------- ISOLATION SEAL WATER PIPING ARRGT.
9321-F-2769 ---------- ISOLATION SEAL WATER PIPING ARRGT.
9321-C-2016 ---------- FLOW DIAGRAM SYMBOLS
B209776 ---------- I.V.S.W.S. INJECTION LINE TEST CONNECTIONS

GENERAL NOTES

1. ALL PIPING TO BE 3/8" S.S., O.D. TUBING (LINE DESIGNATION 3/8" - IV-2505 (EXCEPT AS NOTED).
2. ALL GLOBE VALVES INSTALLED WITH FLOW UNDER SEAT, EXCEPT NO. S 1402-1405,1416-1418, 1421, 1463-1469
3. ALL GLOBE VALVES ARE TYPE 3/8" T58 EXCEPT NO. S 1434-1448 (NITROGEN-SUPPLY) WHICH ARE TYPE 3/8" T58S(SOFT SEATS AND LARGE ORIFICES)
4. ALL CHECK VALVES ARE TYPE 3/8"-C58,EXCEPT NO. S 1454,1456 & 1533 TO 1536. VALVE 1533-1536 ARE TYPE 3/8"-C58S (SOFT SEAT).
5. ALL GLOBE & CHECK VALVES ARE WELDED OR EQUIPTED WITH SWAGELOK FITTINGS. (SWAGELOK PREFERRED FOR MAINTENANCE EASE)
6. ADDITIONAL VENTS AND DRAINS MAY BE REQUIRED.
7. THE INDIVIDUAL SEAL WATER LINES ARE ROUTED TO THE CONTAINMENT ISOLATION POINTS BY THE LINE NUMBERS INDICATED.
8. VALVES 1410, 1413, SOV-35-18 & SOV-3519 ARE OPENED AUTOMATICALLY BY A PHASE "A" CONTAINMENT ISOLATION SIGNAL.
9. FLANGES AND BLANK OFF DISC.
10. THE QUALITY GROUP A,B,C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.

LEGEND

PW----------PRIMARY WATER
FC----------FAIL CLOSE
CW----------CITY WATER
N.C. ----------NORMALLY CLOSED
LO----------LOCKED OPEN

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

REVISION	DES		
	G. BHALLA 06/04/01	ENG	THIS REVISION IS CLASS "A" AS PER THE QAPD TRANSFERED DMD9321-2746-AF REV.0 AND DMD9321-2746-AG REV.0 MOD FMX-00-12338-M. RELEASED AS CONSTRUCTED PN 12338-00 JF/DB

DATE	CHR.	SUPV.	DESIGN ENG	DISC. ENG.	ENG. MGR.
1/28 87	D.P.	F.A.	W.J.KING 1/28/87		
	REVIEW		APPROVALS		

TITLE: FLOW DIAGRAM
ISOLATION VALVE SEAL WATER SYSTEM
- UFSAR FIGURE No. 6.5-1

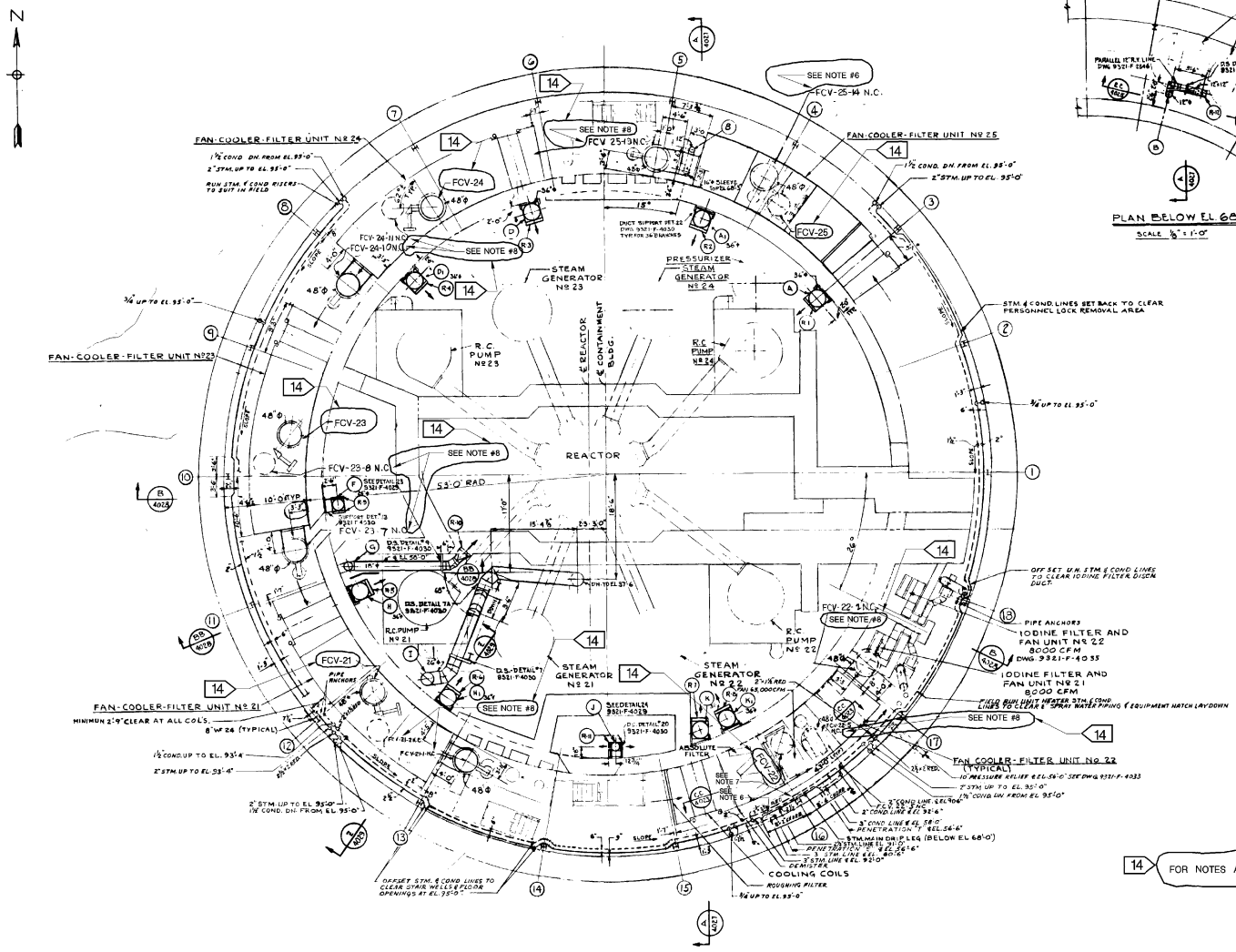
DRWN. BY GIBBS&HILL | SCALE NONE | REC'D

Con Edison

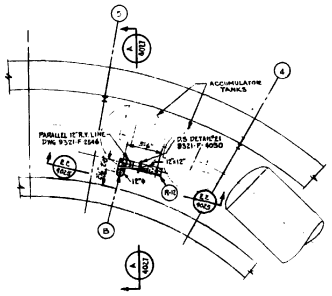
STATION INDIAN POINT

DWG NO. 9321-F-2746-42 MY

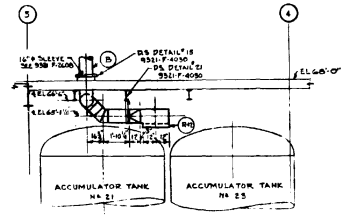
A201049



PLAN ABOVE EL. 68'-0"
SCALE: ⅛" = 1'-0"



PLAN BELOW EL. 68'-0"
SCALE: ⅛" = 1'-0"



SECTION EE-EE
9321-F-4025
SCALE: ¼" = 1'-0"

14 THIS DRAWING CONTAINS ITEMS WHICH MUST BE CONTROLLED WITHIN ENTERGY AS: "CLASS A" ITEMS PER THE Q.A.P.D.

14 FOR NOTES AND REF. DWGS. SEE 9321-2709.

NOTES:
1. FOR REFERENCE DRAWINGS AND NOTES SEE DWG. 9321-F-4023 & CON. ED. DWG. A201838
2. PITCH UNIT HEATER CONDENSATE LINE 1" IN 40' TOWARD PENETRATION "T"
3. PITCH UNIT HEATER STEAM SUPPLY LINE 1" IN 40' TOWARD PENETRATIONS
4. PROVIDE PIPE GUIDES AT COLUMNS FOR STEAM AND CONDENSATE LINES
5. ALL PIPES 2" AND SMALLER ARE SHOWN DIAGRAMMATICALLY AND SHALL BE RUN TO SUIT IN FIELD
6. SEE DETAIL 1 ON DWG. #311904
7. SEE DETAIL 2 ON DWG. #311904
8. ALL FCU'S INCIDENT INLET/OUTLET FCV'S & ASSOCIATED PANELS ARE RETIRED IN PLACE 14

L. SMITH 5/27/03	14	V.I. 9/20/00	13	V.I. 4/17/99	12
THIS REVISION IS CLASS "A" PER THE QAPD. DRAWING REVISED TO INCORPORATE CHANGES IN FIELD PER MOD. FMX-95-11243-M. INCORPORATED DMD9321-4025-AB & DMD9321-4025-AC. RELEASED AS BUILT P.N. 11243-95 SL/JS 5/27/03		THIS REVISION IS CLASS "A" PER CI-240-1 UPDATED DRAWING TO SHOW WORK DONE ON MOD. PROC. MFI-88-01408-M DMD9321-4025-AE PKG. R-812 RELEASED AS-BUILT P.N. 01408-88 THIS WO. 09/20/00 CATARACT		THIS REVISION IS NON-CLASS PER CI-240-1 UPDATED DRAWING TO INCLUDE UFSAR FIGURE No. IN TITLE P.N. 89971-NP RELEASED FOR RECORD DLA/4/17/99 STRATUS ENGINEERING	

11 [illegible] THIS REVISION IS CLASS "A" PER CI-240-1 UPDATED DWG TO SHOW WORK OF REV 9 MOD PROC MPC-84-15743-35. RELEASE AS CONSTRUCTED P.N. 15743-35 DMI & D. 10-15-84

10 [illegible] THIS REVISION CONTAIN CLASS "A" ITEMS PER CI-240-1, MOD PROC MPC-84-15743.35 REVISED TAG NOS. FCV-23-8NC, FCV-23-9NC, FCV-23-1NO, FCV-24-12NC, FCV-24-10NO, FCV-25-13NC, FCV-25-14NO, FCV-22-2NC, FCV-22-1NO, FCV-21-2NC, FCV-21-1NO TO READ FCV-23-7NC, FCV-23-8NC, FCV-23-9NO, FCV-24-10NC, FCV-24-11NO, FCV-25-13NC, FCV-25-14NC, FCV-22-1NC, FCV-22-2NO, RESPECTIVELY. RELEASE FOR [illegible]

9	5/27/03	THIS REV. CONTAINS CLASS "A" ITEMS PER CI-240-1 MOD. PROC. DWG.: FCV-22-4N C RELEASE FOR RECORD ONLY W.O. INCORPORATED FMX-95-11243-06 P.N. 8777	
8	5/27/03		
7	4/17/03	FINAL RELEASE	
6	7/14/	REVISED PER [illegible]	
5	7/14/	CONDENSATE LINE	
4	7/14/	[illegible]	
3	3/17/	ADDED DESUPERHEATER	
2	7/14/	[illegible]	
1	7/14/	[illegible]	
0	7/14/	ISSUED FOR BIDDING	
REV.	DATE	DESCRIPTION	CHKD.

ENGINEER [illegible] SCALE NONE NEW YORK

UNITED ENGINEERS & CONSTRUCTORS INC.

WESTINGHOUSE ELECTRIC CORPORATION

CONTAINMENT BUILDING
AIR RECIRCULATION SYSTEM
PLAN ABOVE 68'-0"
- UFSAR FIGURE No. 6.4-4

FOR

CONSOLIDATED EDISON COMPANY
INDIAN POINT GENERATING STATION
UNIT NO. 2

U.E. & C. DWG. NO. 9321-F-4025-14 CON. ED. CO. DWG. NO. A-201049