

CHART B

VALVE NO	A	B	C	D	E	F
310	ZC-310-1S	ZC-310-2S	SOV-310		IA-857	
FCV-110B	ZC-FV-110B-S	ZC-FV-110B-2S	SOV-110B		IA-856	
FCV-111B	ZC-FV-111B-S	ZC-FV-111B-2S	SOV-111B		IA-849	
LCV-112A	ZC-LV-112A-S	ZC-LV-112A-2S	SOV-112A		IA-848	
LCV-112B	ZC-LV-112B-S	ZC-LV-112B-2S	SOV-112B		IA-852	
PCV-113B	ZC-PV-113B-S	ZC-PV-113B-2S	SOV-113B		IA-1702	
TCV-149	ZC-TV-149-S	ZC-TV-149-2S	SOV-149		IA-847	IA-1699

- REFERENCE DRAWINGS:
- FP9321-2293 - RCS - REACTOR COOLANT SYSTEM
 - 9321-F-2720 - ACS - AUXILIARY COOLANT SYSTEM
 - 9321-F-2745 - SS - SAMPLING SYSTEM
 - 9321-F-2745 - UA - GAS ANALYZER SYSTEM
 - 9321-F-2522 - SIS - SAFETY INJECTION SYSTEM
 - 9321-F-2719 - WDS - WASTE DISPOSAL SYSTEM (SHT. 1)
 - 9321-F-2730 - WDS - WASTE DISPOSAL SYSTEM (SHT. 2)
 - 9321-F-2737 - CVCS - CHEMICAL & VOLUME CONTROL SYSTEM (SHT. 1)
 - 9321-F-2737 - CVCS - CHEMICAL & VOLUME CONTROL SYSTEM (SHT. 2)
 - 9321-F-2737 - CVCS - CHEMICAL & VOLUME CONTROL SYSTEM (SHT. 3)
 - 9321-F-2724 - PW - PRIMARY MAKE-UP WATER
 - 9321-F-2728 - (DH) - NUCLEAR EQUIPMENT DRAINS
 - 9321-C-2016 - FLOW DIAGRAM SYMBOLS
 - 9321-F-2746 - IVSWG - ISOLATION VALVE SEAL WATER SYSTEM
- NOTES:
- A. VALVES FAILS WITH FLOW TO VOLUME CONTROL TANK.
 - B. SPECIAL VALVE - FUNCTIONS AS BOTH ISOLATION RELIEF VALVE.
 - C. SPECIAL SPRING LOADED CHECK VALVE.
 - E. ELECTROMAGNETIC - LOCATE METER IN VERTICAL PIPE RUN.
 - F. .06" DIA. HOLE IN CLAPPER OR CUP.
 - G. ADDITIONAL VENTS & DRAINS MAY BE REQUIRED BY THE PIPE LAYOUT.
 - H. GLOBE VALVES ARE NORMALLY INSTALLED WITH FLOW UNDER THE SEAT. EXCEPTIONS ARE VALVES NO. 230, 232, 233, 235, 236, 238 240A, 250A, 250B, 250C & 250D.
 - J. STEAM TRAP AND STRAINER SUPPLIED BY UE & C.
 - K. ITEM NO'S IN PARENTHESES ARE PROCURED BY IPP.
 - L. DRAIN, CHARGING PUMPS LEAKAGE COLLECTIVE SYSTEM.
 - M. *** INDICATES CONTROL VALVE HAS ADDITIONAL ASSOCIATED CONTROL EQUIPMENT & IS REPRESENTED ON CONTROL VALVE ASSEMBLY DETAIL DWG. 9321-F-7886.
 - N. THE QUALITY GROUP A, B, C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.

CHART A

F1/FE/FXE	A	B	C	D	E	F	G	H
116	239C	240C	5026	5027	5028	5029	5030	5031
115	239D	240D	5032	5033	5034	5035	5036	5037
143	239B	240B	5038	5039	5040	5041	5042	5043
144	239A	240A	5044	5045	5046	5047	5048	5049
116B	4916	4915			5071	5070	5069	5068
116B	4918	4917			5067	5068	5069	5066
143B	4914	4913			5077	5076	5078	5076
144B	4912	4911			5080	5079	5078	

122	INCORPORATED DRN-05-03254, ER MAF-75-2-07	RM							
REV	DESCRIPTION	DATE	BY	CHK	APP				

- SYSTEM INTENDED FUNCTION BOUNDARY
- COMPONENTS SUBJECT TO AMR
- PRIMARY MAKEUP WATER SYSTEM AMM-06
 - CHEMICAL AND VOLUME CONTROL SYSTEM AMM-07
 - COMPRESSED AIR SYSTEMS AMM-14

EVERYTHING ON THIS DRAWING (EXCLUDING THOSE PORTIONS SHOWN WITH DASHED LINES) IS PART OF THE CHEMICAL AND VOLUME CONTROL SYSTEM (CVCS) LISTED IN EXHIBIT "A" BARD

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

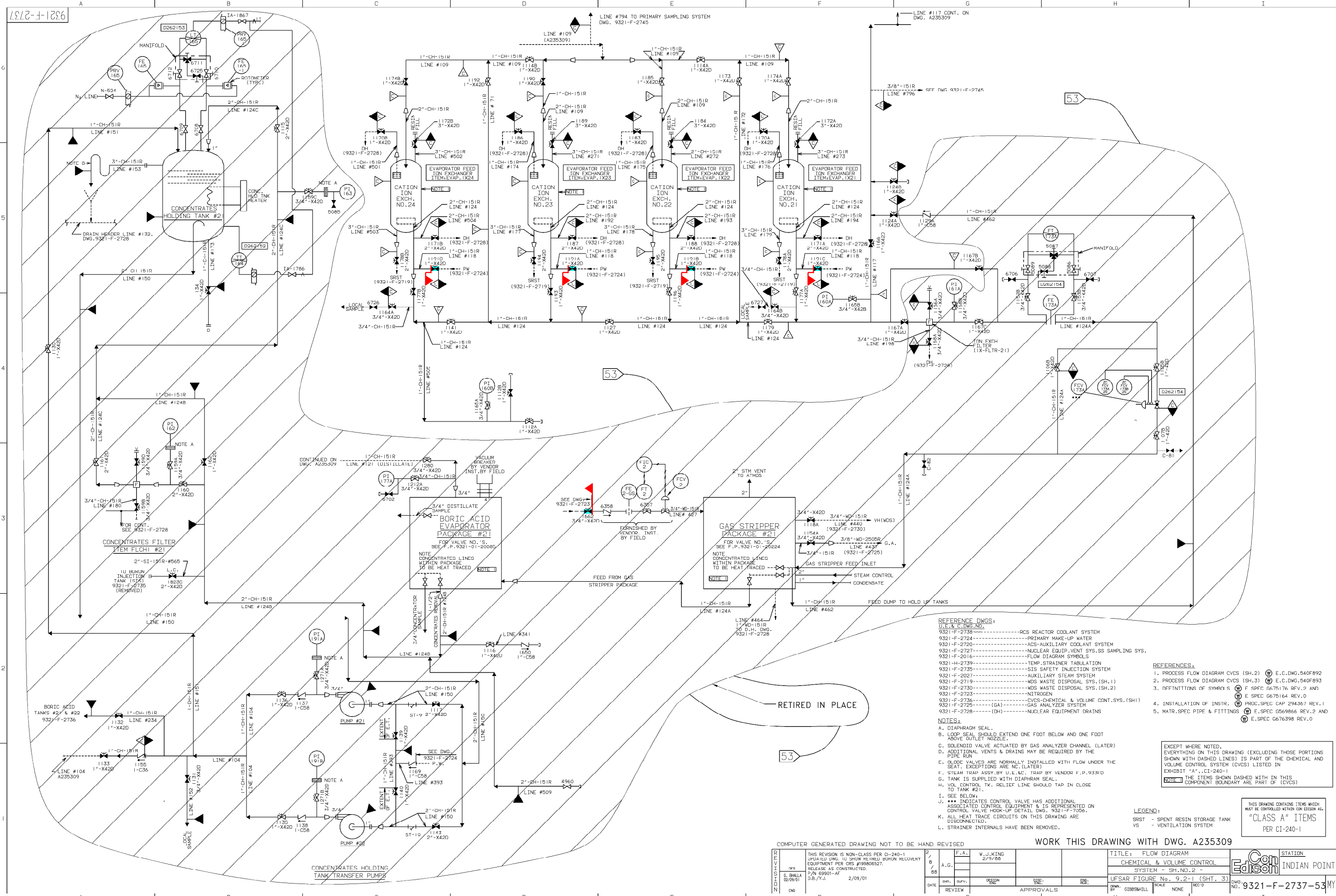
0	12-4-06				
NO.	DATE	DESCRIPTION	BY	CHK	APP
REVISIONS					
LRA-9321-2736-0					
LRA-9321-2736-122.DGN					
9321-2736-122.CAL					

TITLE: FLOW DIAGRAM
CHEMICAL & VOLUME CONTROL SYSTEM -
LUGAR FIGURE No. 9.2.1 (SHT. 1)

STATION: INDIAN POINT

Entergy
Nuclear North

DWG. NO.: 9321-F-2736-122



REFERENCE DWGS:
 ULSAR FIGURE NO. 9,2-1 (SHT. 3)
 9321-F-2736-----RCS REACTOR COOLANT SYSTEM
 9321-F-2724-----PRIMARY MAKE-UP WATER
 9321-F-2720-----ACS-AUXILIARY COOLANT SYSTEM
 9321-F-2727-----NUCLEAR EQUIP. VENT. SYS. SS SAMPLING SYS.
 9321-F-2016-----FLOW DIAGRAM SYMBOLS
 9321-H-2739-----TEMP. STRAINER TABULATION
 9321-F-2735-----SIS SAFETY INJECTION SYSTEM
 9321-F-2027-----AUXILIARY STEAM SYSTEM
 9321-F-2719-----NDS WASTE DISPOSAL SYS. (SH.1)
 9321-F-2730-----NDS WASTE DISPOSAL SYS. (SH.2)
 9321-F-2723-----NITROGEN
 9321-F-2726-----CVCS-CHEMICAL & VOLUME CONT. SYS. (SH.1)
 9321-F-2725-----GAS ANALYZER SYSTEM
 9321-F-2728-----NUCLEAR EQUIPMENT DRAINS

REFERENCES:
 1. PROCESS FLOW DIAGRAM CVCS (SH.2) E.C.DWG.540F892
 2. PROCESS FLOW DIAGRAM CVCS (SH.3) E.C.DWG.540F893
 3. DEFINITIONS OF SYMBOLS E.SPEC. G675176 REV. 2 AND E.SPEC. G675164 REV. 0
 4. INSTALLATION OF INSTR. PRIC. SPEC. CAP. 294367 REV. 1
 5. MATR. SPEC. PIPE & FITTINGS E.SPEC. G659866 REV. 2 AND E.SPEC. G676398 REV. 0

NOTES:
 A. DIAPHRAGM SEAL.
 B. LOOP SEAL SHOULD EXTEND ONE FOOT BELOW AND ONE FOOT ABOVE OUTLET NOZZLE.
 C. SOLENOID VALVE ACTUATED BY GAS ANALYZER CHANNEL (LATER)
 D. ADDITIONAL VENTS & DRAINS MAY BE REQUIRED BY THE PIPE RUN
 E. GLOBE VALVES ARE NORMALLY INSTALLED WITH FLOW UNDER THE SEAT, EXCEPTIONS ARE NOTED (LATER)
 F. STEAM TRAP ASSY. BY U.L.C. TRAP BY VENDOR F.P. 933FD
 G. TANK IS SUPPLIED WITH DIAPHRAGM SEAL.
 H. VCL CONTROL, TX, RELIEF LINE SHOULD TAP IN CLOSE TO TANK #21.
 I. SEE BELOW.
 J. *** INDICATES CONTROL VALVE HAS ADDITIONAL ASSOCIATED CONTROL EQUIPMENT & IS REPRESENTED ON CONTROL VALVE HOOK-UP DETAIL DWG. 9321-F-7056.
 K. ALL HEAT TRACE CIRCUITS ON THIS DRAWING ARE DISCONNECTED.
 L. STRAINER INTERNALS HAVE BEEN REMOVED.

LEGEND:
 SRST - SPENT RESIN STORAGE TANK
 VS - VENTILATION SYSTEM

EXCEPT WHERE NOTED, EVERYTHING ON THIS DRAWING (EXCLUDING THOSE PORTIONS SHOWN WITH DASHED LINES) IS PART OF THE CHEMICAL AND VOLUME CONTROL SYSTEM (CVCS) LISTED IN EXHIBIT "A", CI-240-1

THIS DRAWING CONTAINS ITEMS WHICH MAY BE CONTROLLED WITHIN THE SCOPE OF "CLASS A" ITEMS PER CI-240-1

COMPUTER GENERATED DRAWING NOT TO BE HAND REVISED

WORK THIS DRAWING WITH DWG. A235309

DATE	REV.	BY	DESCRIPTION
02/05/01	1	E. BILLA	ISSUE FOR CONSTRUCTION
02/09/01	2		

DATE	REV.	BY	DESCRIPTION
02/09/01	1		

TITLE: FLOW DIAGRAM
 CHEMICAL & VOLUME CONTROL SYSTEM - SH. NO. 2

UFSAR FIGURE NO. 9,2-1 (SHT. 3)
 DWG. NO. 9321-F-2737-53

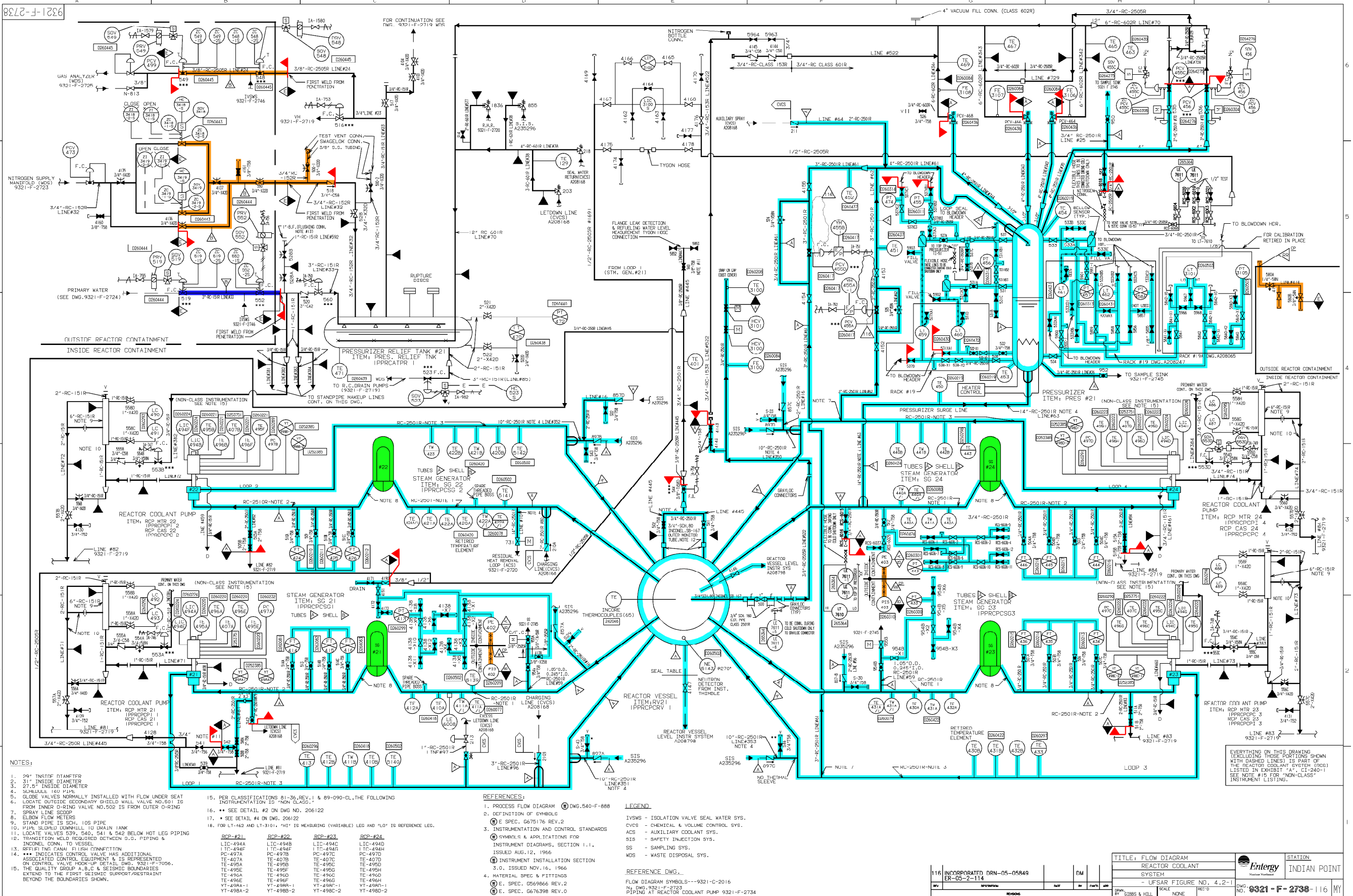


COMPONENTS SUBJECT TO AMR

PRIMARY MAKE-UP WATER SYSTEM AMM-06

0 10-18-06

NO.	DATE	DESCRIPTION	BY	ENG	CHK	APP
REVISIONS						
LRA-9321-2737-0						
LRA-9321-2737-53.DGN						
9321-2737-53.CAL						



9321-F-2738

- NOTES:
- 29" INSIDE DIAMETER
 - 31" INSIDE DIAMETER
 - 27.5" INSIDE DIAMETER
 - SCHEDULE 160 PIPE
 - GLOBE VALVES NORMALLY INSTALLED WITH FLOW UNDER SEAT LOCATE OUTSIDE SECONDARY SHIELD WALL VALVE NO. 601 TO FROM INNER O-RING LOCATED BETWEEN O.G. PIPING & SPRAY LINE SCDOP
 - ELBOW FLOW METERS
 - STAND PIPE IS SCH. 100 PIPE
 - PIPE SLOPED DOWNHILL TO DRAIN TANK
 - LOCATE VALVES 539, 540, 541 & 542 BELOW NET LEG PIPING
 - TRANSITION WELD REQUIRED BETWEEN O.G. PIPING & INCDREL CONN. TO VESSEL
 - REFUR THE CANAL FLUSH CONNECTION
 - *** INDICATES CONTROL VALVE HAS ADDITIONAL ASSOCIATED CONTROL EQUIPMENT & IS REPRESENTED ON CONTROL VALVE HOORUP DETAIL DWG. 9321-F-7056.
 - EXTEND TO THE FIRST SEISMIC SUPPORT RESTRAINT BEYOND THE BOUNDARIES SHOWN.

- PER CLASSIFICATIONS 81-36, REV. 1 & 89-090-CL, THE FOLLOWING INSTRUMENTATION IS "NON CLASS":
 - SEE DETAIL #2 ON DWG. NO. 206122
 - SEE DETAIL #4 ON DWG. 206122
- | RCP-#21 | RCP-#22 | RCP-#23 | RCP-#24 |
|-----------|-----------|-----------|-----------|
| LIC-494A | LIC-494B | LIC-494C | LIC-494D |
| ITC-494F | ITC-494G | ITC-494H | ITC-494I |
| PC-497A | PC-497B | PC-497C | PC-497D |
| TE-407A | TE-407B | TE-407C | TE-407D |
| TE-495A | TE-495B | TE-495C | TE-495D |
| TE-495E | TE-495F | TE-495G | TE-495H |
| TE-495A | TE-495B | TE-495C | TE-495D |
| TE-495E | TE-495F | TE-495G | TE-495H |
| VT-498A-1 | VT-498A-2 | VT-498B-1 | VT-498B-2 |

- REFERENCES:
- PROCESS FLOW DIAGRAM DWG. 540-F-888
 - DEFINITION OF SYMBOLS
 - INSTRUMENTATION AND CONTROL STANDARDS
 - SYMBOLS & APPLICATIONS FOR INSTRUMENT DIAGRAMS, SECTION 1.1, ISSUED AUG. 12, 1966
 - INSTRUMENT INSTALLATION SECTION 3.0, ISSUED NOV. 16, 1966
 - MATERIAL, SPEC. & FITTINGS
 - SPEC. 056966 REV. 2
 - SPEC. 067698 REV. 0
- LEGEND:
- IVSW - ISOLATION VALVE SEAL WATER SYS.
 CVCS - CHEMICAL & VOLUME CONTROL SYS.
 ACS - AUXILIARY COOLANT SYS.
 SIS - SAFETY INJECTION SYS.
 SS - SAMPLING SYS.
 WDS - WASTE DISPOSAL SYS.
- REFERENCE DWG.
 116 INCORPORATED DRN-05-05844
 ER-05-2-114

SYSTEM INTENDED FUNCTION BOUNDARY

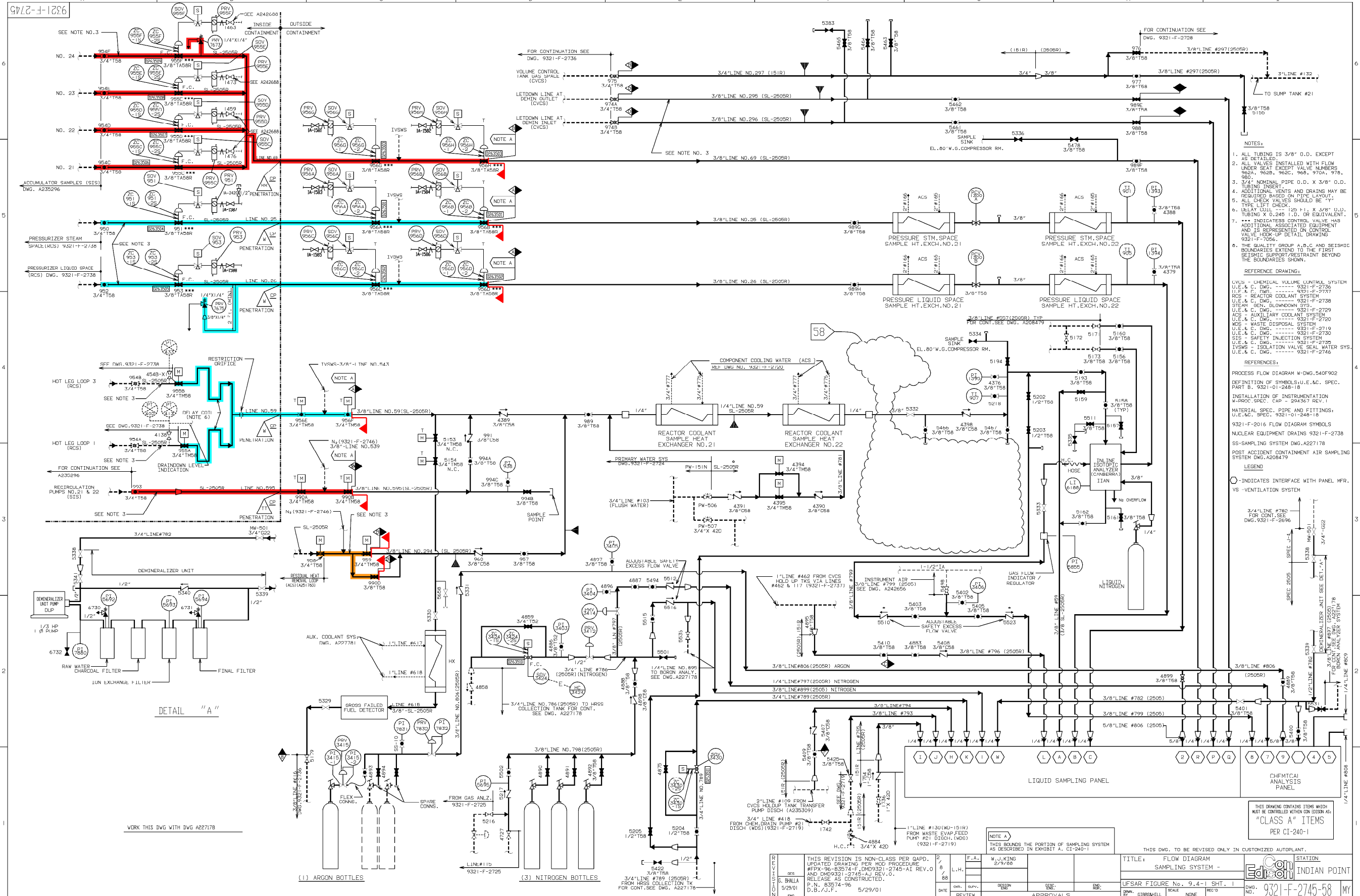
COMPONENTS SUBJECT TO AMR

- UNIT 2 PRIMARY MAKEUP WATER SYSTEM AMM-06
- CONTAINMENT PENETRATIONS AMM-26
- REACTOR COOLANT SYSTEM AMM-33
- STEAM GENERATORS AMM-34

EVERYTHING ON THIS DRAWING (EXCLUDING THOSE PORTIONS SHOWN WITH DASHED LINES) IS PART OF THE REACTOR COOLANT SYSTEM (RCS) LISTED IN EXHIBIT "A", CI-240-1. SEE NOTE #15 FOR "NON-CLASS" INSTRUMENTATION LISTING.

TITLE: FLOW DIAGRAM REACTOR COOLANT SYSTEM	STATION INDIAN POINT
SCALE: NONE	DWG. NO. 9321-F-2738-116
DATE: 08/08/04	BY: GIBBS & HILL
REV. 1	APP. 08/08/04

NO.	DATE	DESCRIPTION	BY	CHK	APP
REVISIONS					
LRA-9321-2738-0					
CAD FILE: LRA-9321-2738-116.DGN					
9321-2738-116.CAL					



- NOTES:
1. ALL TUBING IS 3/8" O.D. EXCEPT AS DETAILED.
 2. ALL VALVES INSTALLED WITH FLOW UNDER SEAT EXCEPT VALVE NUMBERS 960A, 962B, 962C, 960, 970A, 970, 980.
 3. 3/4" NOMINAL PIPE O.D. X 3/8" O.D. TUBING INSERT.
 4. ADDITIONAL VENTS AND DRAINS MAY BE REQUIRED BASED ON P&ID LAYOUT.
 5. ALL CHECK VALVES SHOULD BE "Y" TYPE LIFT CHECK.
 6. ULLY COIL IS 120 P.I. X 3/8" O.D. TUBING X 0.248 I.D. OR EQUIVALENT.
 7. *** INDICATES CONTROL VALVE HAS ADDITIONAL ASSOCIATED EQUIPMENT AND IS REPRESENTED ON CONTROL VALVE HOOD-UP DETAIL DRAWING 9321-F-7056.
 8. THE QUALITY GROUP A, B, C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.

- REFERENCE DRAWING:
- UVCS - CHEMICAL VOLUME CONTROL SYSTEM U.E. & C. DWG. 9321-F-2736
 - RCS - REACTOR COOLANT SYSTEM U.E. & C. DWG. 9321-F-2737
 - SL - SAFETY LIQUID SPACE U.E. & C. DWG. 9321-F-2738
 - ACS - AUXILIARY COOLANT SYSTEM U.E. & C. DWG. 9321-F-2729
 - WDS - WASTE DISPOSAL SYSTEM U.E. & C. DWG. 9321-F-2720
 - U.E. & C. DWG. 9321-F-2710
 - SIS - SAFETY INJECTION SYSTEM U.E. & C. DWG. 9321-F-2730
 - IVSW - ISOLATION VALVE SEAL WATER SYS. U.E. & C. DWG. 9321-F-2746

- REFERENCES:
- PROCESS FLOW DIAGRAM W-DWG. 540F902
 - DEFINITION OF SYMBOLS: U.E. & C. SPEC. PART B. 9321-01-248-18
 - INSTALLATION OF INSTRUMENTATION W-PROC. SPEC. CAP - 294367 REV. 1
 - MATERIAL SPEC. PIPE AND FITTINGS: U.E. & C. SPEC. 9321-01-248-18
 - 9321-F-2016 FLOW DIAGRAM SYMBOLS
 - NUCLEAR EQUIPMENT DRAINS 9321-F-2738
 - SS-SAMPLING SYSTEM DWG. A227178
 - POST ACCIDENT CONTAINMENT AIR SAMPLING SYSTEM DWG. A206479

- LEGEND
- INDICATES INTERFACE WITH PANEL MFR.
 - VS - VENTILATION SYSTEM

SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

- SAFETY INJECTION SYSTEM AMM-03
- RESIDUAL HEAT REMOVAL AMM-05
- REACTOR COOLANT SYSTEM AMM-33

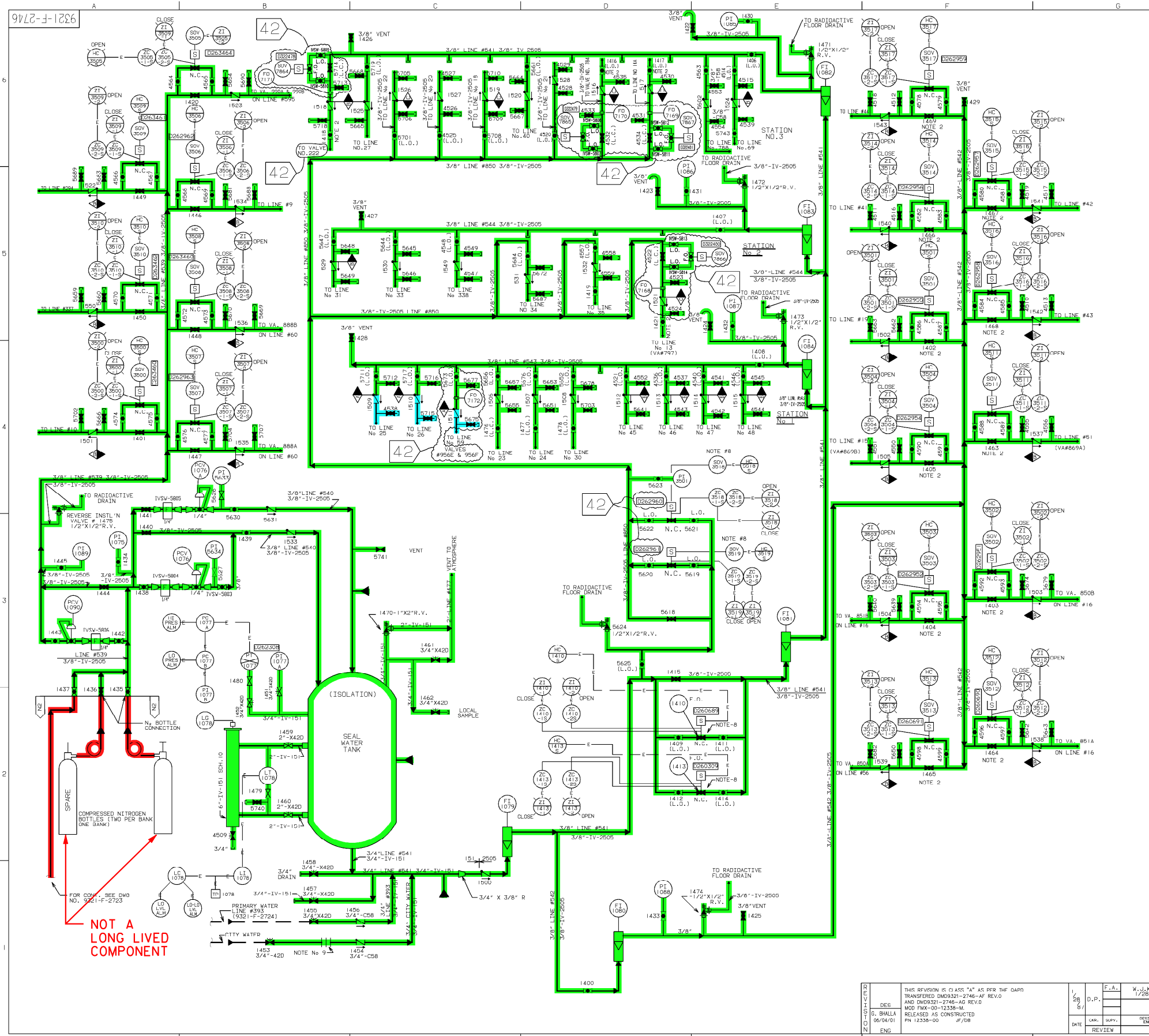
THIS DRAWING CONTAINS ITEMS WHICH MUST BE CONTROLLED WITHIN CONFORMANCE WITH PER CI-240-1

REV.	DATE	DESCRIPTION	BY	CHK	APP
1	5/29/01	THIS REVISION IS NON-CLASS PER BAPD. UPDATED DRAWING PER MOD PROCEDURE. #FPX-96-83074-F. DMD9321-2745-A1 REV. 0 AND DMD9321-2745-A1 REV. 1. RELEASE AS CONSTRUCTED. P.N. 83974-96 D.B./J.F.			

NO.	DATE	DESCRIPTION	BY	CHK	APP
1	5/29/01	REVISED			

LRA-9321-2745-0
LRA-9321-2745-58.DGN
9321-2745-58.CAL

9321-F-2746



ISOLATION VALVE	CONTAINMENT PENETRATION SLAVE	LINE DESCRIPTION	Q/G	REMARKS
9 VALVE #744	J	RESIDUAL HEAT REMOVAL LOOP IN	B	NITROGEN INJ.
10 VALVE #752	K	DITTO	B	DITTO
37 IN LINE #457	NONE	DITTO	B	DITTO
13 VALVE #797	N	S.G. PUMPS COOLING WATER IN	B	DITTO
14 VALVE #804	O	DITTO	B	DITTO
14A VALVE #804A	O	DITTO	B	DITTO
15 VALVE #808	P	CONTAINMENT SPRAY HEADER	B	IN P.A.B.
16 VALVE #818	Q	SAFETY INJECTION LINE	B	DITTO
17 VALVE #222	R	S.G. PUMPS SEAL WATER RETURN	B	DITTO
18 IN LINE #18	S	EXCESS LETDOWN HT. EXCH. COOLING WTR. RET.	B	DITTO
19 IN LINE #19	S	CHAROLING LINE	B	DITTO
20 VALVE #843	T	AUXILIARY STEAM	NONE	DITTO
21 VALVE #844	T	AUXILIARY STEAM CONDENSATE	NONE	DITTO
22 IN LINE #22	U	EXCESS LETDOWN HT. EXCH. COOLING WTR. SUPPLY	B	DITTO
23 IN LINE #23	Y	CONTAINMENT VENT HEADER	NONE	DITTO
24 IN LINE #24	V	P.P.R. GAS ANALYZER LINE	NONE	DITTO
25 IN LINE #25	W	PRESSURIZER STEAM SAMPLE	A	DITTO
26 IN LINE #26	W	DITTO	A	DITTO
27 IN LINE #27	X	LETDOWN LINE	B	DITTO
28 IN LINE #28	Y	S.G. DRAIN TANK GAS ANALYZER LINE	NONE	DITTO
29 IN LINE #29	Y	S.I.S. TEST LINE	B	DITTO
33 IN LINE #33	Y	P.P.R. MAKE-UP LINE	NONE	DITTO
34 IN LINE #34	Y	SECURITE AIR	NONE	DITTO
35 IN LINE #35	Y	DITTO	NONE	DITTO
38 IN LINE #38	Y	CITY WATER	NONE	DITTO
40 IN LINE #40	Z	S.G. DRAIN TANK PUMP DISCHARGE	NONE	DITTO
41 IN LINE #41	Z	S.G. PUMP SEAL WATER SUPPLY	B	DITTO
42 IN LINE #42	Z	DITTO	B	DITTO
43 IN LINE #43	Z	DITTO	B	DITTO
44 IN LINE #44	Z	DITTO	B	DITTO
45 IN LINE #45	AA	STEAM GENERATOR BLOWDOWN LINE	B	DITTO
46 IN LINE #46	BB	DITTO	B	DITTO
47 IN LINE #47	LL	DITTO	B	DITTO
48 IN LINE #48	DD	DITTO	B	DITTO
49 VALVE #800A	DD	CONTAINMENT SPRAY HEADER	B	DITTO
29A IN LINE #29A	NONE	RESIDUAL HEAT REMOVAL LOOP SAMPLE	B	NITROGEN INJ.
59 IN LINE #59	W	REACTOR COOLANT SAMPLE LINE	A	DITTO
60 VALVE #888B	DD	DITTO	B	DITTO
60 VALVE #888B	DD	DITTO	B	DITTO
59 IN LINE #59	NONE	REACTOR COOLANT SAMPLE LINE	B	DITTO
59 IN LINE #59	NONE	REACTOR COOLANT SAMPLE LINE	B	DITTO
608 IN LINE #608	TT	EXCESS BUMP DISCH. SAMPLE	B	NITROGEN INJ.
788		EXCESS RETURN TO VC SUMP	NONE	DITTO

- REFERENCES:**
- PROCESS FLOW DIAGRAM: PFD
 - DEFINITIONS OF SYMBOLS: SPEC. G.675176 REV. D.
 - INSURANCE & CONSTRUCTION: SYMBOLS & APPLICATIONS FOR INST. DIAGRAMS SECTION - I.1, ISSUED AUG. 12 1966.
 - MATERIAL SPEC & FITTINGS: SPEC. G.569866 REV. 2; SPEC. G.676398 REV. 0

- REFERENCE DRAWINGS:**
- 9321-F-2738 REACTOR COOLANT SYSTEM
 - 9321-F-2736 CHEMICAL VOLUME CONTROL SH. 1
 - 9321-F-2737 CHEMICAL VOLUME CONTROL SH. 2
 - 9321-F-2719 CHEMICAL VOLUME CONTROL SH. 3
 - 9321-F-2730 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 LUBRICATION
 - 9321-F-2724 PRIMARY WATER MAKE-UP SYSTEM
 - 9321-F-2748 ISOLATION SEAL WATER SYSTEM SH. 1
 - 9321-F-2769 ISOLATION SEAL WATER SYSTEM SH. 2
 - 9321-C-2016 FLOW DIAGRAM SYMBOLS
 - B209776 I.V.S.W.S. INJECTION LINE TEST CONNECTIONS

- GENERAL NOTES:**
- ALL PIPING TO BE 3/8" S.S., O.D. TUBING (LINE DESIGNATION 3/8" - IV-2505 EXCEPT AS NOTED).
 - ALL GLOBE VALVES INSTALLED WITH FLOW UNDER SEAT, EXCEPT NO. 5 (492-1400, 1416-1418, 1421, 1463-1469).
 - ALL GLOBE VALVES ARE TYPE 3/8" C58 EXCEPT NO. S (434-1448) (NITROGEN-SUPPLY) WHICH ARE TYPE 3/8" F58507 SEATS AND LARGE ORIF. (253).
 - ALL CHECK VALVES ARE TYPE 3/8" C58 EXCEPT NO. S (454, 1456 & 1533 TO 1536) VALVE 1533-1536 ARE TYPE 3/8" C58 (SOFT SEAT).
 - ALL GLOBE & CHECK VALVES ARE WELDED OR EQUIPPED WITH DWAGELOK FITTINGS. (DWAGELOK PREFERRED FOR MAINTENANCE EASE).
 - ADDITIONAL VENTS AND DRAINS MAY BE REQUIRED.
 - THE INDIVIDUAL SEAL WATER LINES ARE ROUTED TO THE CONTAINMENT ISOLATION POINTS BY THE LINE NUMBERS INDICATED.
 - VALVES 1413, SOV-35-18 & SOV-35-19 ARE OPENED AUTOMATICALLY BY A PHASE "A" CONTAINMENT ISOLATION SIGNAL.
 - FLANGES AND BLANK OFF DISC.
 - THE QUALITY GROUP A, B, C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST FLEXIBLE SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.



NOT A LONG LIVED COMPONENT

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

DESIGNER	DATE	REVISED BY	DATE	REASON FOR CHANGE	APPROVED BY	DATE	TITLE	STATION
G. BHALLA	06/04/01						ISOLATION VALVE SEAL WATER SYSTEM - UFSAR FIGURE No. 6.5-1	INDIAN POINT

SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

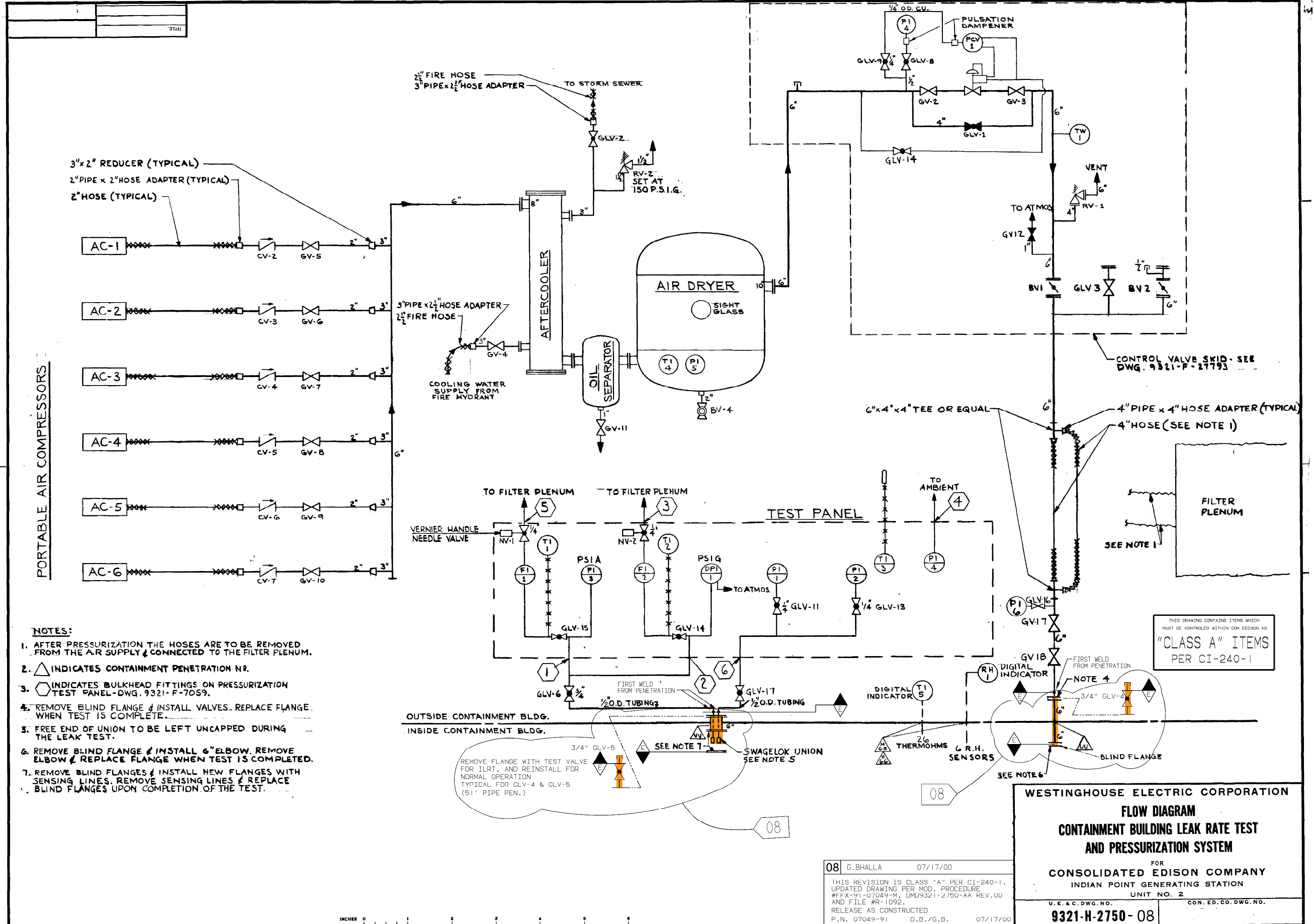
- CONTAINMENT ISOLATION SYSTEM (HPCS, WPS & WCCP) AMM-02
- NITROGEN SYSTEMS AMM-10
- REACTOR COOLANT SYSTEM AMM-33

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK	APP
1	06/04/01	ISSUED FOR CONSTRUCTION			

LRA-9321-2746-0

9321-2746_42.CAL



- NOTES:**
1. AFTER PRESSURIZATION THE HOSES ARE TO BE REMOVED FROM THE A.R. SUPPLY & CONNECTED TO THE FILTER PLENUM.
 2. \triangle INDICATES CONTAINMENT PENETRATION N^o.
 3. \square INDICATES BULKHEAD FITTINGS ON PRESSURIZATION TEST PANEL-DWG. 9321-F-7059.
 4. REMOVE BLIND FLANGE & INSTALL VALVES. REPLACE FLANGE WHEN TEST IS COMPLETE.
 5. FREE END OF UNION TO BE LEFT UNCAPPED DURING THE LEAK TEST.
 6. REMOVE BLIND FLANGE & INSTALL 6" ELBOW. REMOVE ELBOW & REPLACE FLANGE WHEN TEST IS COMPLETED.
 7. REMOVE BLIND FLANGES & INSTALL NEW FLANGES WITH SENSING LINES. REMOVE SENSING LINES & REPLACE BLIND FLANGES UPON COMPLETION OF THE TEST.

REMOVE FLANGE WITH TEST VALVE FOR ILRT, AND REINSTALL FOR NORMAL OPERATION TYPICAL FOR GLV-4 & GLV-5 (51' PIPE PEN.)

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

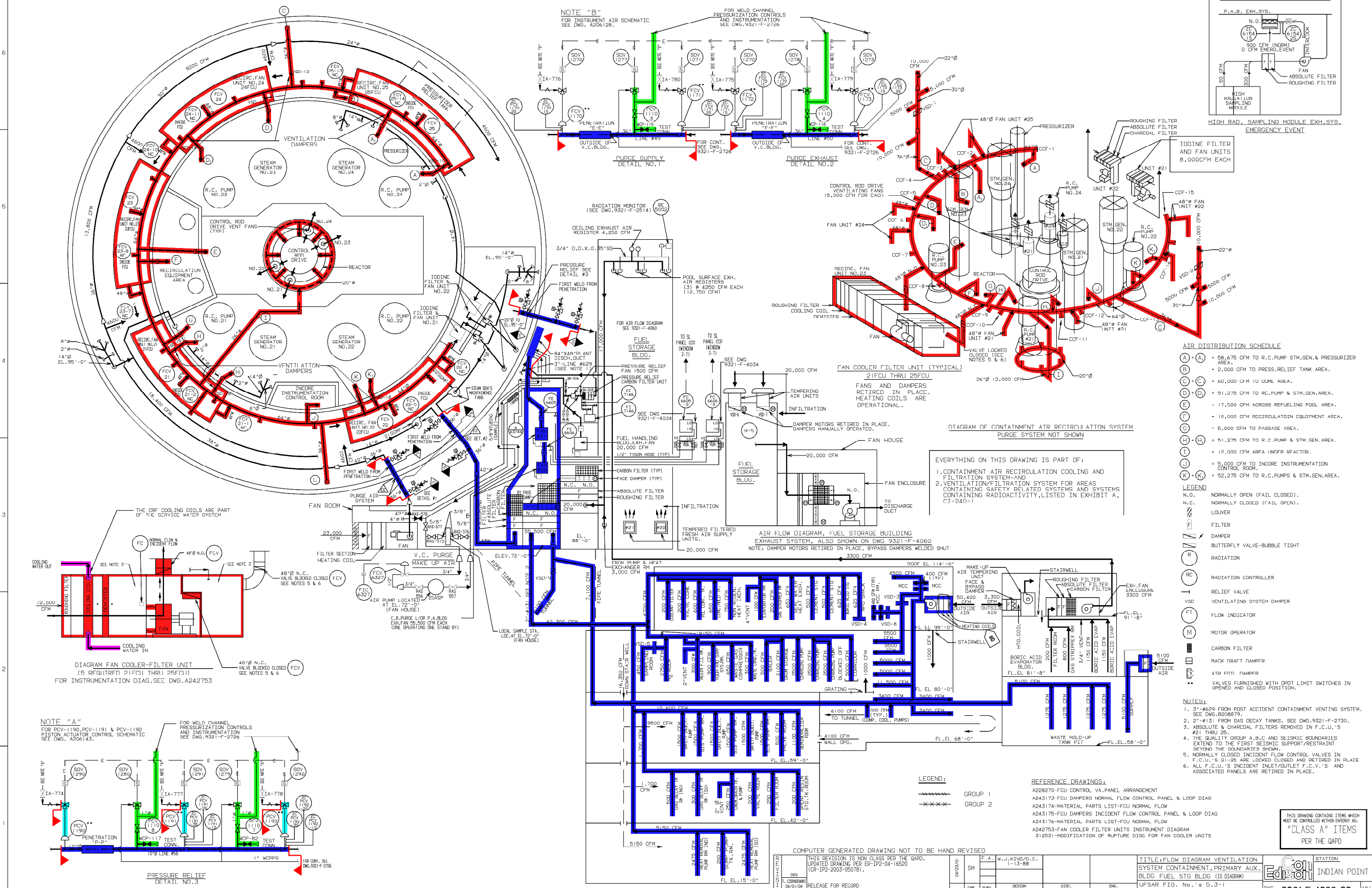
WESTINGHOUSE ELECTRIC CORPORATION
FLOW DIAGRAM
CONTAINMENT BUILDING LEAK RATE TEST
AND PRESSURIZATION SYSTEM
 FOR
CONSOLIDATED EDISON COMPANY
 INDIAN POINT GENERATING STATION
 UNIT NO. 2
 U. E. & C. DWG. NO. **9321-H-2750-08** CON. ED. CO. DWG. NO.

08 G. BHALLA 07/17/00
 THIS REVISION IS CLASS "A" PER CI-240-1. UPDATED DRAWING PER MOD. PROCEDURE #FFX-91-07049-M, DMU9321-2750-AA REV.00 AND FILE #R-1092. RELEASE AS CONSTRUCTED P.N. 07049-91 D.B./G.B. 07/17/00

SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR
 CONTAINMENT PENETRATIONS AMR-26

0	9-5-06				
NO.	DATE	DESCRIPTION	BY	ENG	CHK APP
REVISIONS					
LRA-9321-2750-0					
CAD FILE LRA-9321-2750_08.DGN					
REVISION 9321-2750_08.CAL					



AIR DISTRIBUTION SCHEDULE

(A)	(A)	= 58,675 CFM TO R.C.PUMP STG.GEN.& PRESSURIZER AREA.
(B)	(C)	= 2,000 CFM TO PRESS.RELIEF TANK AREA.
(C)	(D)	= 60,000 CFM TO URINE AREA.
(D)	(D)	= 51,275 CFM TO RC.PUMP & STG.GEN.AREA.
(E)	(D)	= 17,500 CFM ACROSS REFUELING POOL AREA.
(F)	(D)	= 10,000 CFM RECIRCULATION EQUIPMENT AREA.
(G)	(D)	= 8,000 CFM TO PASSAGE AREA.
(H)	(H)	= 51,275 CFM TO R.C.PUMP & STG.GEN.AREA.
(I)	(L)	= 12,000 CFM ARFA UNDER REACTOR.
(J)	(K)	= 8,000 CFM TO INCORE INSTRUMENTATION CONTROL ROOM.
(K)	(K)	= 52,275 CFM TO R.C.PUMPS & STG.GEN.AREA.

- LEGEND**
- (N.O.) NORMALLY OPEN (FAIL CLOSED).
 - (N.C.) NORMALLY CLOSED (FAIL OPEN).
 - (L) LOUVER
 - (F) FILTER
 - (D) DAMPER
 - (B) BUTTERFLY VALVE-BUBBLE TIGHT
 - (R) RADIATION
 - (RC) RADIATION CONTROLLER
 - (RV) RELIEF VALVE
 - (VSD) VENTILATING SYSTEM DAMPER
 - (FI) FLOW INDICATOR
 - (M) MOTOR OPERATOR
 - (CF) CARBON FILTER
 - (RCD) RACK DRAFT DAMPER
 - (ATD) AIR FLOW DAMPER
 - (V) VALVES FURNISHED WITH DROT LIMIT SWITCHES IN OPENED AND CLOSED POSITION.

- NOTES:**
- 3"-#629 FROM POST ACCIDENT CONTAINMENT VENTING SYSTEM. SEE DWG.B208879.
 - 2"-#131 FROM GAS DECAY TANKS. SEE DWG.9321-F-2730.
 - ABSOLUTE & CHARCOAL FILTERS REMOVED IN F.C.U.'S #21 THRU 25.
 - THE QUALITY GROUP A,B,C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.
 - NORMALLY CLOSED INCIDENT FLOW CONTROL VALVES IN F.C.U.'S 21-25 ARE LOCKED CLOSED AND RETIRED IN PLACE.
 - ALL F.C.U.'S INCIDENT INLET/OUTLET F.C.V.'S AND ASSOCIATED PANELS ARE RETIRED IN PLACE.

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

COMPUTER GENERATED DRAWING NOT TO BE HAND REVISED

DATE	04/28/80	SM	F.A.	W.J.KING/G.C.	1-13-88	TITLE: FLOW DIAGRAM VENTILATION SYSTEM CONTAINMENT, PRIMARY AUX. BLDG FUEL STG BLDG (IS DIAGRAM)	STATION	INDIAN POINT	
DESIGNER	W.J.KING	DATE	04/28/80	DESIGN	W.J.KING	LUSAR FIG. No. 5-3-1	DWG. NO.	9321-F-4022-60	
CHECKED	W.J.KING	DATE	04/28/80	APPROVAL	W.J.KING	SCALE	NONE	REC'D	MY

- COMPONENTS SUBJECT TO AMR**
- CONTAINMENT ISOLATION SYSTEM (HPC, VSW, WCP & WCCP) AMM-02
 - SERVICE WATER SYSTEMS AMM-12
 - COMPRESSED AIR SYSTEMS AMM-14
 - HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS AMM-15
 - CONTAINMENT COOLING AND FILTRATION SYSTEMS AMM-28

0 11-28-06

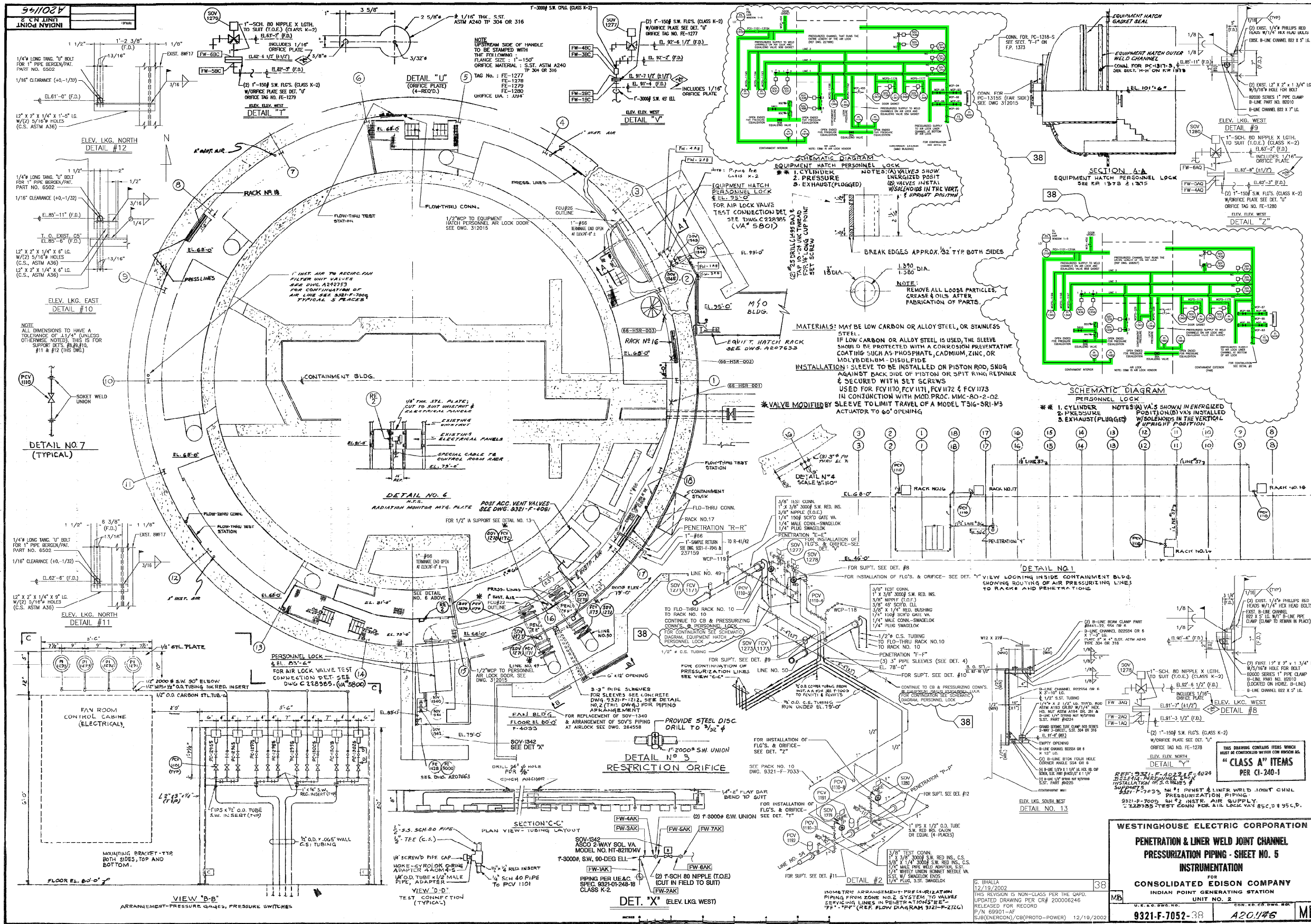
NO.	DATE	DESCRIPTION	BY	CHK	ENG	APP

REVISIONS

LRA-9321-4022-0

LRA-9321-4022_60.DGN

9321-4022_60.CAL



SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

CONTAINMENT ISOLATION SYSTEM (HPC, IVSW, WPCS & WCCPP) AMR-02

WESTINGHOUSE ELECTRIC CORPORATION

PENETRATION & LINER WELD JOINT CHANNEL PRESSURIZATION PIPING - SHEET NO. 5

INSTRUMENTATION

FOR
CONSOLIDATED EDISON COMPANY

INDIAN POINT GENERATING STATION

UNIT NO. 2

U.E.C.O. D.W. NO. 9321-F-7052-38

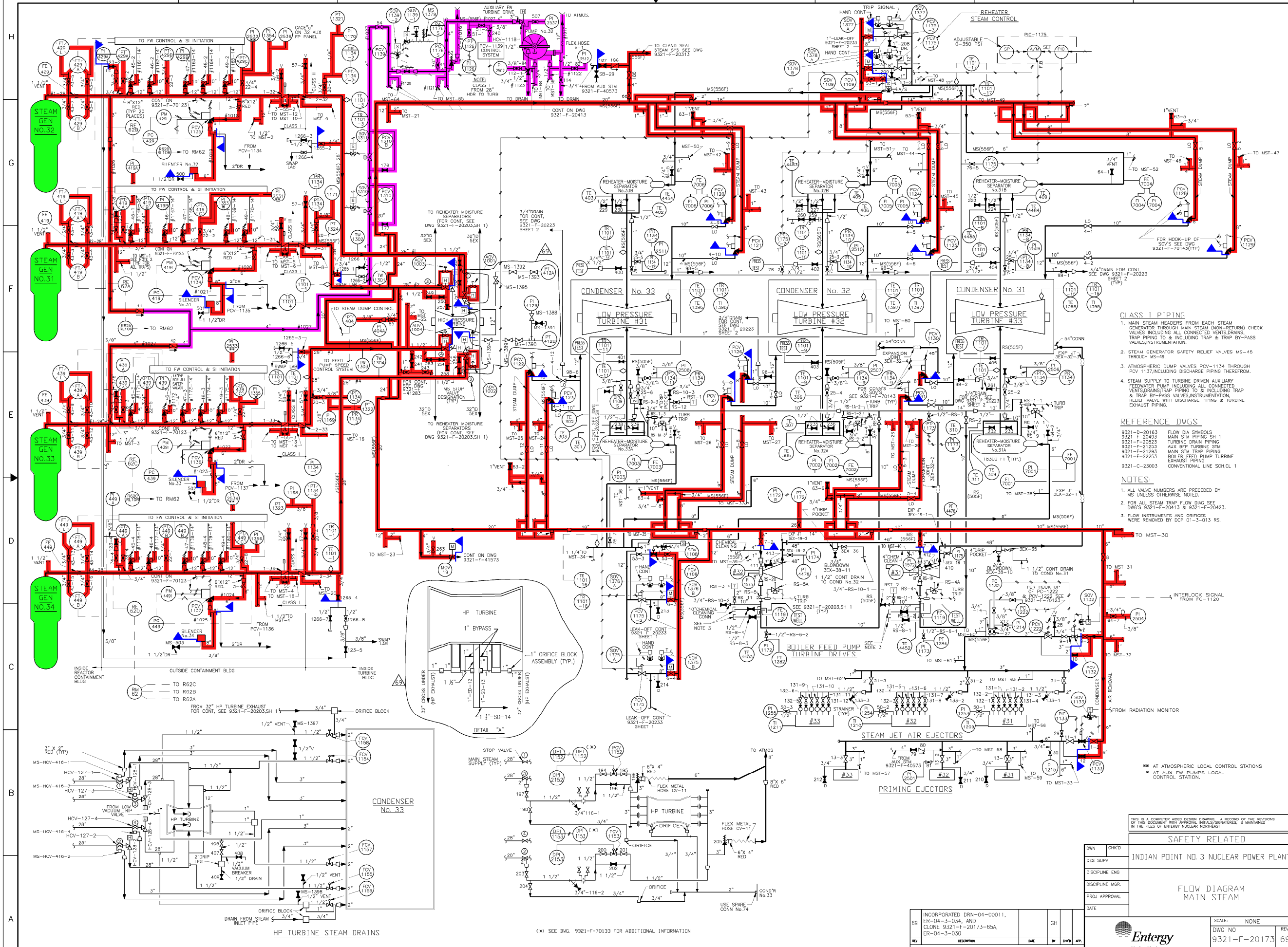
CON. ED. CB. D.W. NO. A201/#6

9321-F-7052-38

A201/#6

MB

NO.	DATE	DESCRIPTION	BY	CHK	APP
0	2-21-06				
REVISIONS					
LRA-9321-7052-0					
CAD FILE LRA-9321-7052_38.DGN					
9321-7052_38.CAL					



CLASS I PIPING

1. MAIN STEAM HEADERS FROM EACH STEAM GENERATOR THROUGH MAIN STEAM (MAIN-RETURN) CHECK VALVES INCLUDING ALL CONNECTED VENTS, DRAINS, TRAP PIPING TO & INCLUDING TRAP & TRAP BY-PASS VALVES, INCLUDING MAIN-RETURN.
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-22293 BOILER FEED PUMP TURBINE EXHAUST PIPING
 9321-C-23003 CONVENTIONAL LINE SCH. CL 1

NOTES:

1. ALL VALVE NUMBERS ARE PRECEDED BY MS UNLESS OTHERWISE NOTED.
2. FOR ALL STEAM TRAP FLOW DIA SEE DWG'S 9321-F-20413 & 9321-F-20423.
3. FLOW INSTRUMENTS AND ORIFICES WERE REMOVED BY DCP 01-3-013 RS.

SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

- MAIN STEAM SYSTEM AMM-23
- AUXILIARY FEEDWATER SYSTEM AMM-24
- STEAM GENERATORS AMM-34

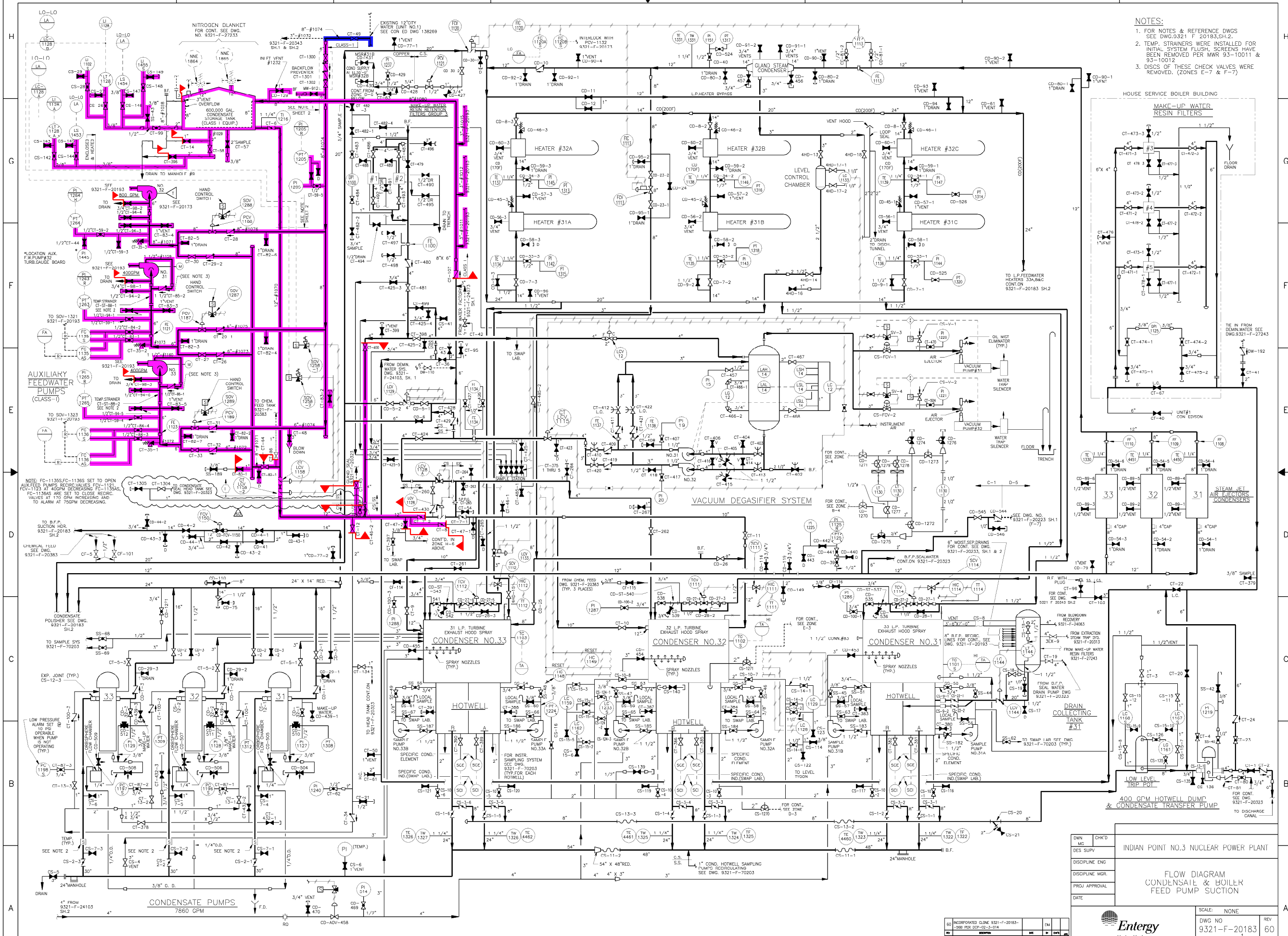
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SAFETY RELATED	
DWN	CHKD
DES SUPV	INDIAN POINT NO. 3 NUCLEAR POWER PLANT
DISCIPLINE ENG	
DISCIPLINE MGR.	FLOW DIAGRAM MAIN STEAM
PROJ APPROVAL	
DATE	

INCORPORATED DRN-04-00011, ER-04-3-034, AND CLONE 9321-1-20173-B5A, ER-04-3-030	GH			
REV	DESCRIPTION	DATE	BY	CHKD
69				

SCALE: NONE	REV: 69
DWG NO: 9321-F-20173	SHEET: 69

0 12-15-06
 NO. DATE DESCRIPTION BY ENG CHK APP
 REVISIONS
LRA-9321-20173-0
 LRA-9321-20173_69.DGN
 9321-20173_69.CAL



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

HOUSE SERVICE BOILER BUILDING

MAKE-UP WATER RESIN FILTERS

HEATER #32A

HEATER #32B

HEATER #32C

HEATER #31A

HEATER #31B

HEATER #31C

VACUUM DEGASIFIER SYSTEM

CONDENSER NO. 33

CONDENSER NO. 32

CONDENSER NO. 31

HOTWELL

HOTWELL

HOTWELL

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SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

CITY WATER SYSTEM AMM-04

AUXILIARY FEEDWATER SYSTEM AMM-24

INDIAN POINT NO.3 NUCLEAR POWER PLANT

FLOW DIAGRAM
CONDENSATE & BOILER
FEED PUMP SECTION

SCALE: NONE

DWG NO: 9321-F-20183

REV: 60

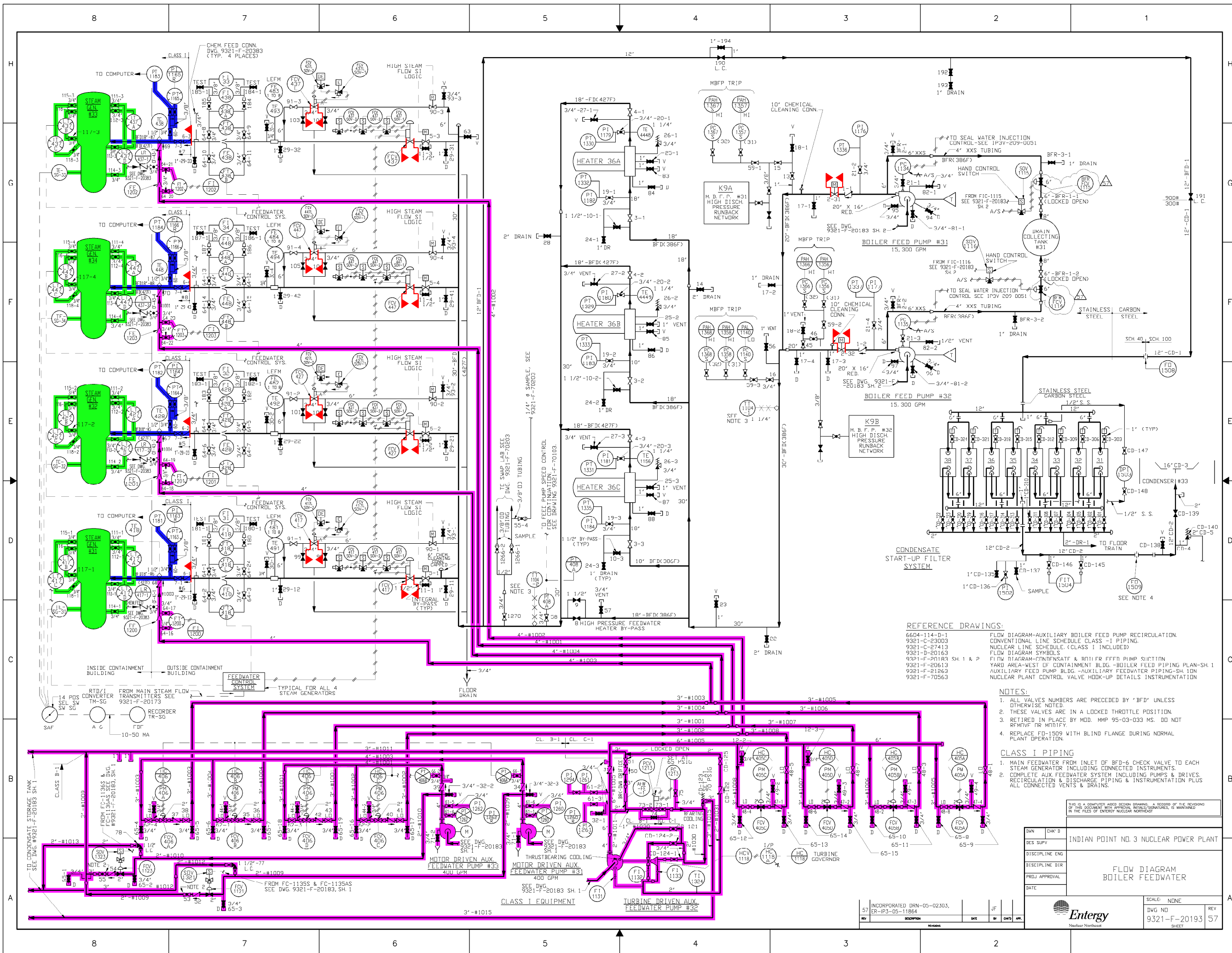
DATE: 01/14/06

TYPE A/ISI/FSAR/FC

NO.	DATE	DESCRIPTION	BY	CHK	APP
0	01-14-06				
REVISIONS					
LRA-9321-20183-001-0					
LRA-9321-20183-001-60.DGN					
9321-20183-001-60.CAL					



THIS IS A COMPUTER AIDED DESIGN DRAWING. A RECORD OF THE REVISIONS IN THE FILES OF ENTERGY NUCLEAR NORTHEAST.



REFERENCE DRAWINGS:
 6604-114-D-1
 9321-C-23003
 9321-C-27413
 9321-D-20163
 9321-F-20183 SH. 1 & 2
 9321-F-20613
 9321-F-21263
 9321-F-70563

FLOW DIAGRAM-AUXILIARY BOILER FEED PUMP RECIRCULATION CONVENTIONAL LINE SCHEDULE CLASS -1 PIPING. NUCLEAR LINE SCHEDULE. (CLASS 1 INCLUDED)
FLOW DIAGRAM SYMBOLS:
 FLOW DIAGRAM-CONDENSATE & BOILER FEED PUMP SUCTION
 YARD AREA-WEST OF CONTAINMENT BLDG.-BOILER FEED PIPING PLAN-SH. 1
 AUXILIARY FEED PUMP BLDG.-AUXILIARY FEEDWATER PIPING-SH. 10
 NUCLEAR PLANT CONTROL VALVE HODK-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 REINSTATE OR MODIFY.
 4. REPLACE FD-1509 WITH BLIND FLANGE DURING NORMAL PLANT OPERATION.

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.

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DWG NO	9321-F-20193
REV	57
DATE	
DISCIPLINE	DISCIPLINE DIR
APPROVAL	PROJ APPROVAL
DATE	

NO.	DATE	DESCRIPTION	BY	CHK	APP
1	9-13-06	REVISED			

SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

AUXILIARY FEEDWATER SYSTEM AMM-24

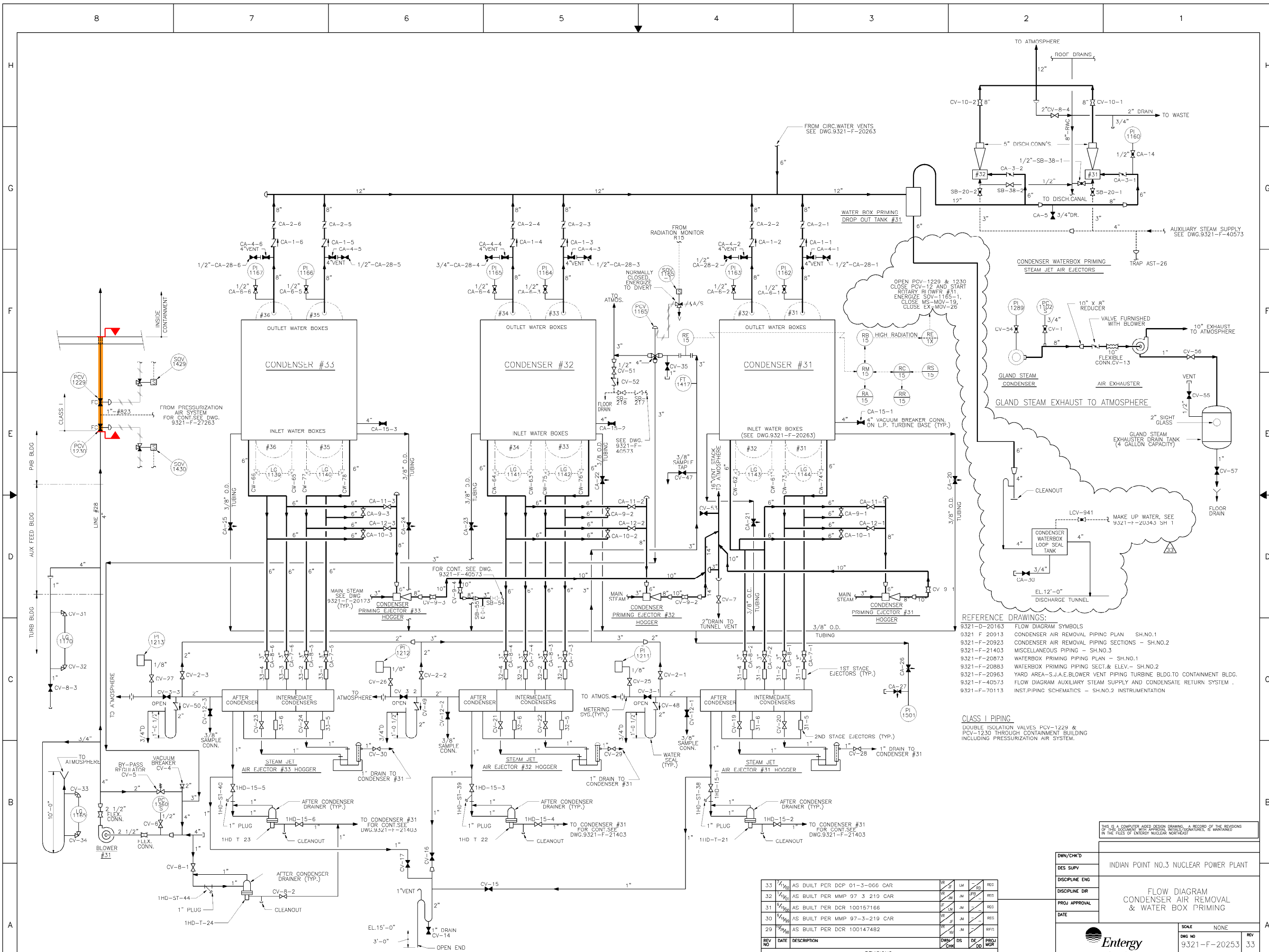
MAIN FEEDWATER AMM-27

STEAM GENERATORS AMM-34

DWG NO	9321-F-20193
REV	57
SCALE	NONE
DATE	

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 Nuclear Northeast

LRA-9321-20193-0
 CAD FILE
 LRA-9321-20193_57.DGN
 9321-20193_57.CAL



REFERENCE DRAWINGS:
 9321-D-20163 FLOW DIAGRAM SYMBOLS
 9321-F-20013 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.

SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR
 CONTAINMENT PENETRATIONS
 AMM-26

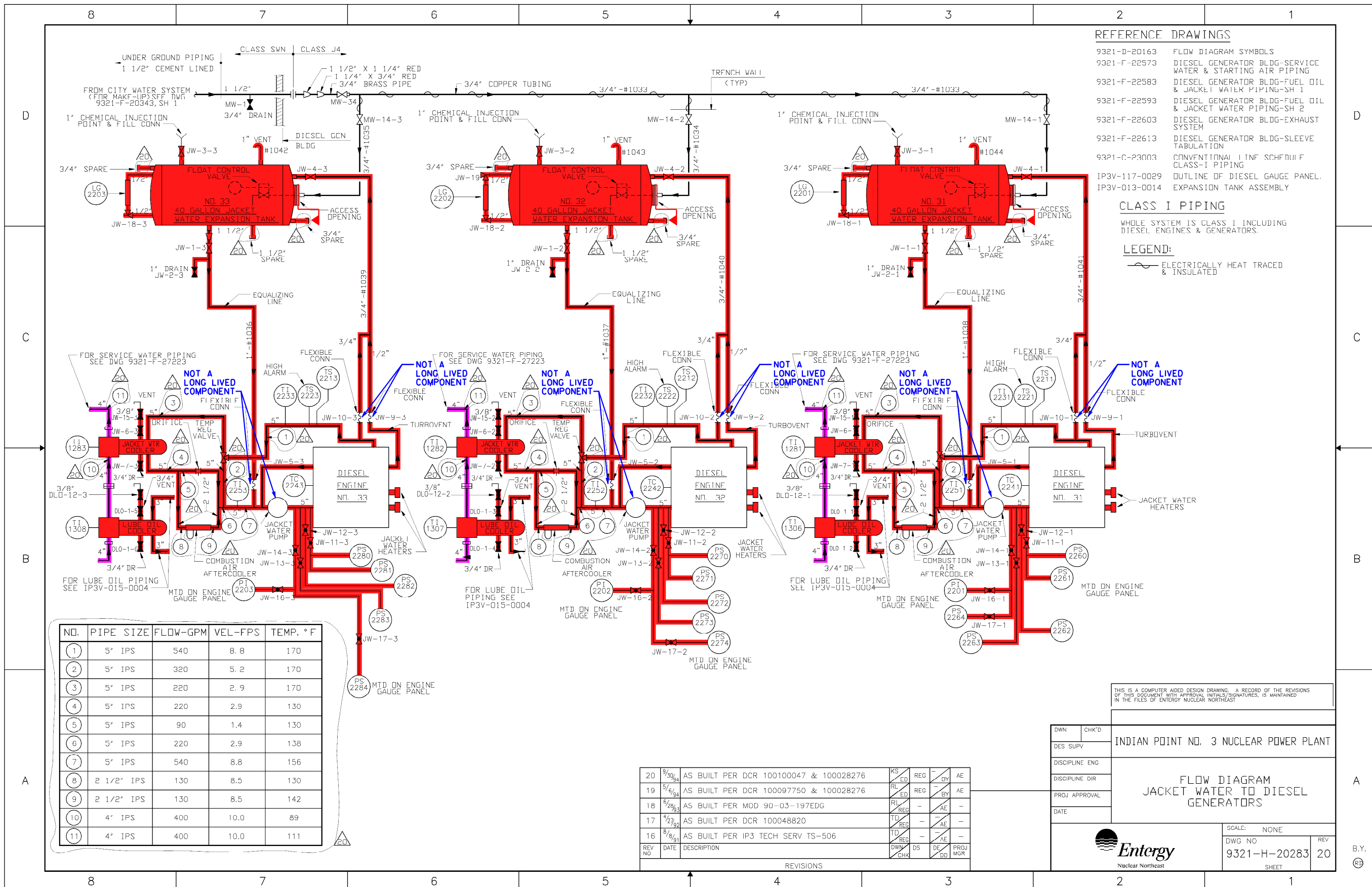
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DWG/CHK'D	INDIAN POINT NO.3 NUCLEAR POWER PLANT
DES SUPV	
DISCIPLINE ENG	
DISCIPLINE DIR	
PROJ APPROVAL	
DATE	
Entergy Nuclear Northeast	
SCALE	NONE
DWG NO	9321-F-20253
REV	33
SHEET	

REV NO	DATE	DESCRIPTION	DWG/CHK	DS	DE	DO	PROJ MOR
33	1/10/08	AS BUILT PCR DCP 01-3-066 CAR	VR	JM	LM	LM	REF
32	1/10/08	AS BUILT PER MMP 97 3 219 CAR	VR	JM	JM	LM	REF
31	1/10/08	AS BUILT PER DCR 100157166	VR	JM	JM	LM	REF
30	1/10/08	AS BUILT PER MMP 97-3-219 CAR	VR	JM	JM	LM	REF
29	1/10/08	AS BUILT PER DCR 100147482	VR	JM	JM	LM	REF

NO.	DATE	DESCRIPTION	BY	ENG	CHK	APP
REVISIONS						
LRA-9321-20253-0						
CAD FILE LRA-9321-20253_33.DGN						
9321-20253_33.CAL						

TYPE A/FSAR



- REFERENCE DRAWINGS**
- 9321-D-20163 FLOW DIAGRAM SYMBOLS
 - 9321-F-22573 DIESEL GENERATOR BLDG-SERVICE WATER & STARTING AIR PIPING
 - 9321-F-22583 DIESEL GENERATOR BLDG-FUEL OIL & JACKET WATER PIPING-SH 1
 - 9321-F-22593 DIESEL GENERATOR BLDG-FUEL OIL & JACKET WATER PIPING-SH 2
 - 9321-F-22603 DIESEL GENERATOR BLDG-EXHAUST SYSTEM
 - 9321-F-22613 DIESEL GENERATOR BLDG-SLEEVE TABULATION
 - 9321-C-23003 CONVENTIONAL INF SCHWUI F CLASS-I PIPING
 - IP3V-117-0029 OUTLINE OF DIESEL GAUGE PANEL
 - IP3V-013-0014 EXPANSION TANK ASSEMBLY

CLASS I PIPING
 WHOLE SYSTEM IS CLASS I INCLUDING DIESEL ENGINES & GENERATORS.

LEGEND:
 ELECTRICALLY HEAT TRACED & INSULATED

NO.	PIPE SIZE	FLOW-GPM	VEL-FPS	TEMP. ° F
1	5" IPS	540	8.8	170
2	5" IPS	320	5.2	170
3	5" IPS	220	2.9	170
4	5" IPS	220	2.9	130
5	5" IPS	90	1.4	130
6	5" IPS	220	2.9	138
7	5" IPS	540	8.8	156
8	2 1/2" IPS	130	8.5	130
9	2 1/2" IPS	130	8.5	142
10	4" IPS	400	10.0	89
11	4" IPS	400	10.0	111

REVISIONS

REV NO	DATE	DESCRIPTION	DWN	CHK	DES	APP
20	9/30/04	AS BUILT PER DCR 100100047 & 100028276	KS	LD	REG	-
19	5/6/94	AS BUILT PER DCR 100097750 & 100028276	RL	ED	REG	-
18	6/28/93	AS BUILT PER MOD 90-03-197EDG	RL	REG	-	-
17	4/27/92	AS BUILT PER DCR 100048820	TD	REG	-	-
16	8/8/91	AS BUILT PER IP3 TECH SERV TS-506	TD	REG	-	-

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INDIAN POINT NO. 3 NUCLEAR POWER PLANT

FLOW DIAGRAM
 JACKET WATER TO DIESEL GENERATORS

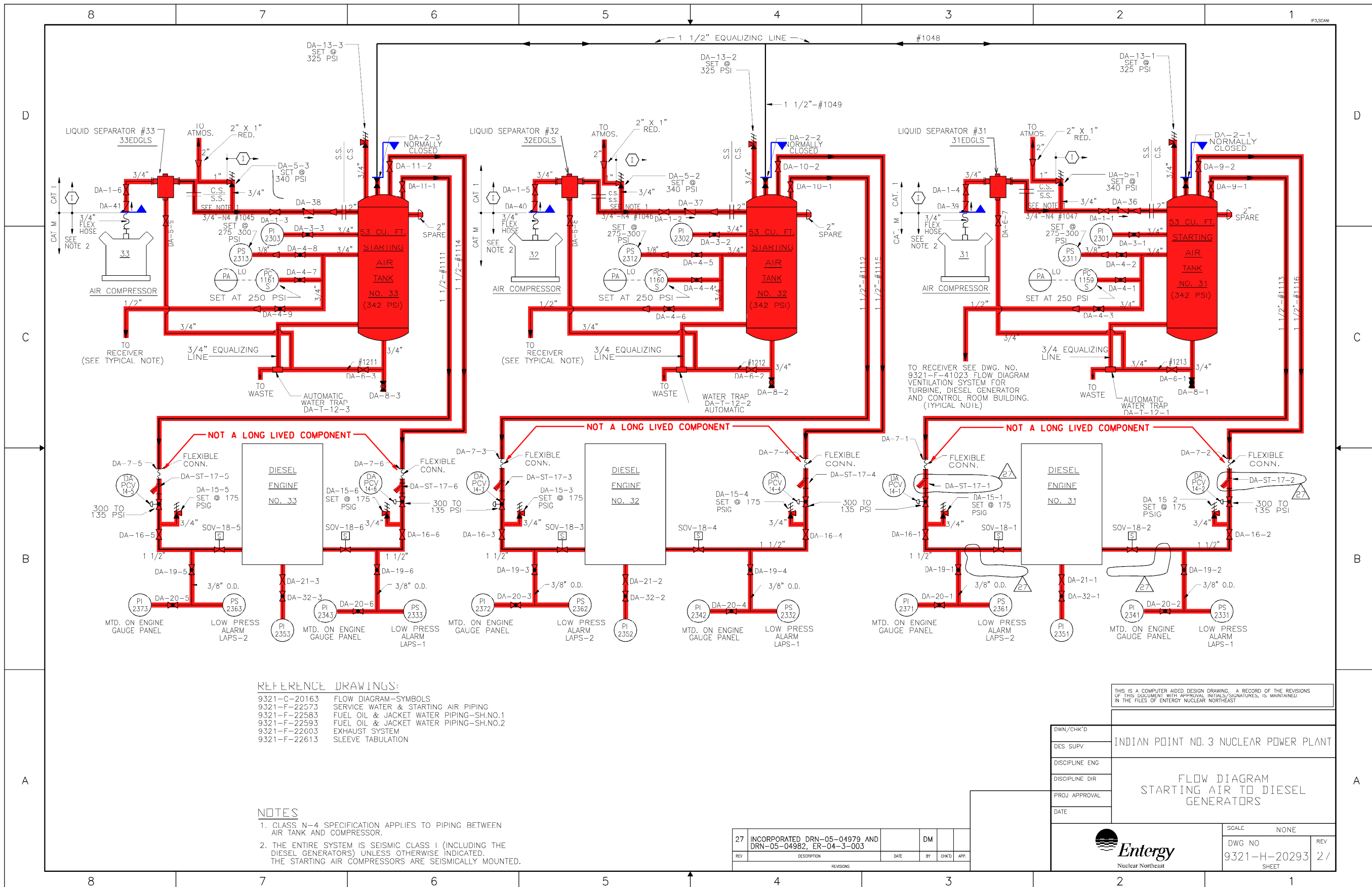
SCALE: NONE
 DWG NO: 9321-H-20283
 SHEET: 20

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 Nuclear Northeast

- SYSTEM INTENDED FUNCTION BOUNDARY**
- COMPONENTS SUBJECT TO AMR**
- SERVICE WATER SYSTEMS AMM-12
 - EMERGENCY DIESEL GENERATOR SYSTEM AMM-17

0 9-5-06

NO.	DATE	DESCRIPTION	BY	ENG	CHK	APP
REVISIONS						
LRA-9321-20283-0						
CAD FILE LRA-9321-20283_20.DGN						
REVISION FILE 9321-20283_20.CAL						



REFERENCE DRAWINGS:
 9321-C-20163 FLOW DIAGRAM-SYMBOLS
 9321-F-22573 SERVICE WATER & STARTING AIR PIPING
 9321-F-22583 FUEL OIL & JACKET WATER PIPING-SH.NO.1
 9321-F-22593 FUEL OIL & JACKET WATER PIPING-SH.NO.2
 9321-F-22603 EXHAUST SYSTEM
 9321-F-22613 SLEEVE TABULATION

NOTES
 1. CLASS N-4 SPECIFICATION APPLIES TO PIPING BETWEEN AIR TANK AND COMPRESSOR.
 2. THE ENTIRE SYSTEM IS SEISMIC CLASS I (INCLUDING THE DIESEL GENERATORS) UNLESS OTHERWISE INDICATED. THE STARTING AIR COMPRESSORS ARE SEISMICALLY MOUNTED.

REV	DESCRIPTION	DATE	BY	CHKD	APP.
27	INCORPORATED DRN-05-04979 AND DRN-05-04982, ER-04-3-003		DM		

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

FLOW DIAGRAM STARTING AIR TO DIESEL GENERATORS

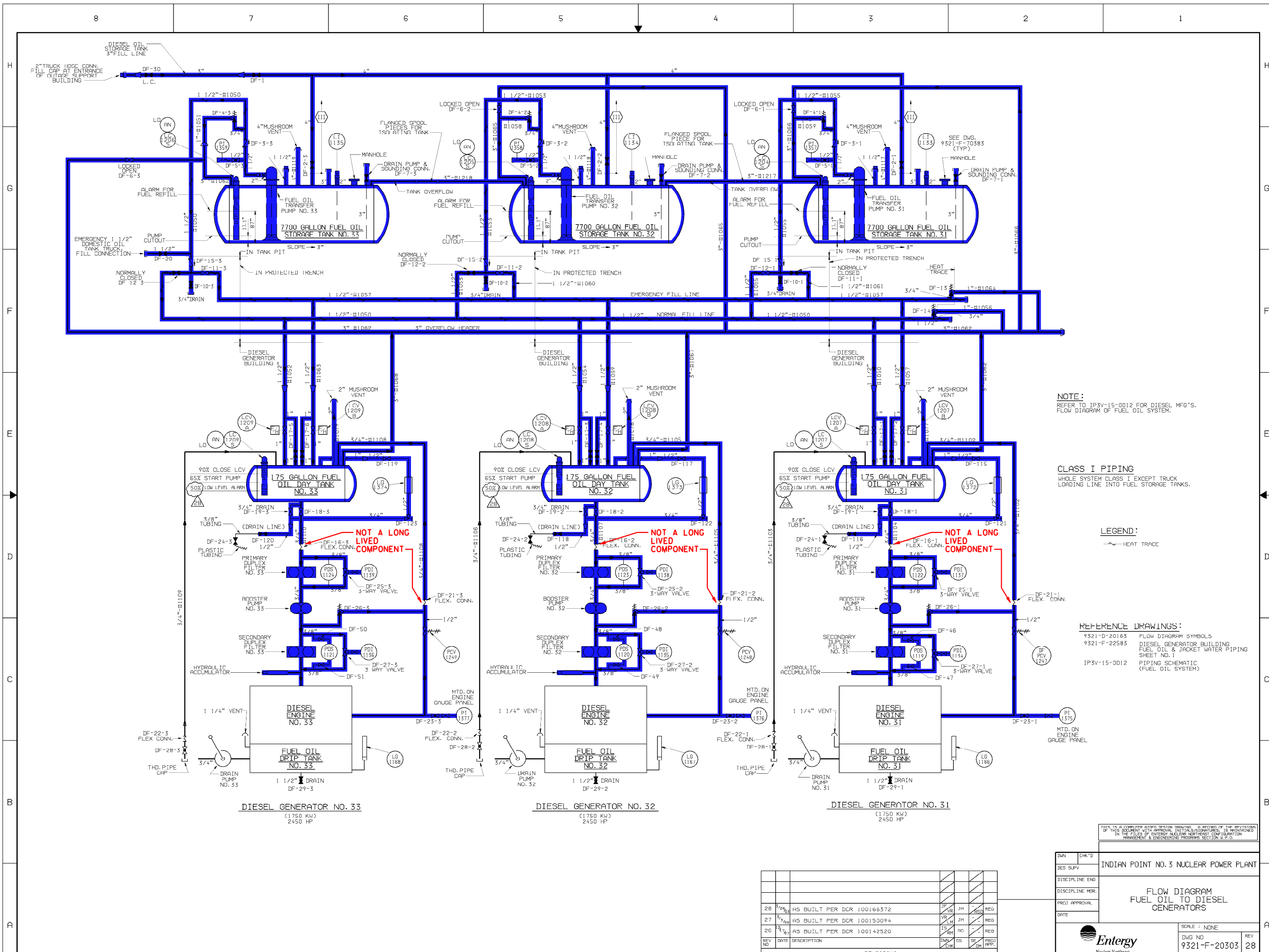
SCALE	NONE
DWG NO	9321-H-20293
REV	2 /
SHEET	

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Nuclear Northeast

SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR
 EMERGENCY DIESEL GENERATOR SYSTEM AMM-17

NO.	DATE	DESCRIPTION	BY	ENG	CHK	APP
REVISIONS						
LRA-9321-20293-0						
CAD FILE LRA-9321-20293_27.DGN						
REVISION FILE 9321-20293_27.CAL						



NOTE:
REFER TO IP3V-15-0012 FOR DIESEL MFG'S.
FLOW DIAGRAM OF FUEL OIL SYSTEM.

CLASS I PIPING
WHOLE SYSTEM CLASS I EXCEPT TRUCK
LOADING LINE INTO FUEL STORAGE TANKS.

LEGEND:
— HEAT TRACE

REFERENCE DRAWINGS:
9321-D-20163 FLOW DIAGRAM SYMBOLS
9321-F-22585 DIESEL GENERATOR BUILDING
FUEL OIL & JACKET WATER PIPING
SHEET NO. 1
IP3V-15-0012 PIPING SCHEMATIC
(FUEL OIL SYSTEM)

SYSTEM INTENDED
FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

FUEL OIL SYSTEM
AMM-21

DIESEL GENERATOR NO. 33
(1750 KW)
2450 HP

DIESEL GENERATOR NO. 32
(1750 KW)
2450 HP

DIESEL GENERATOR NO. 31
(1750 KW)
2450 HP

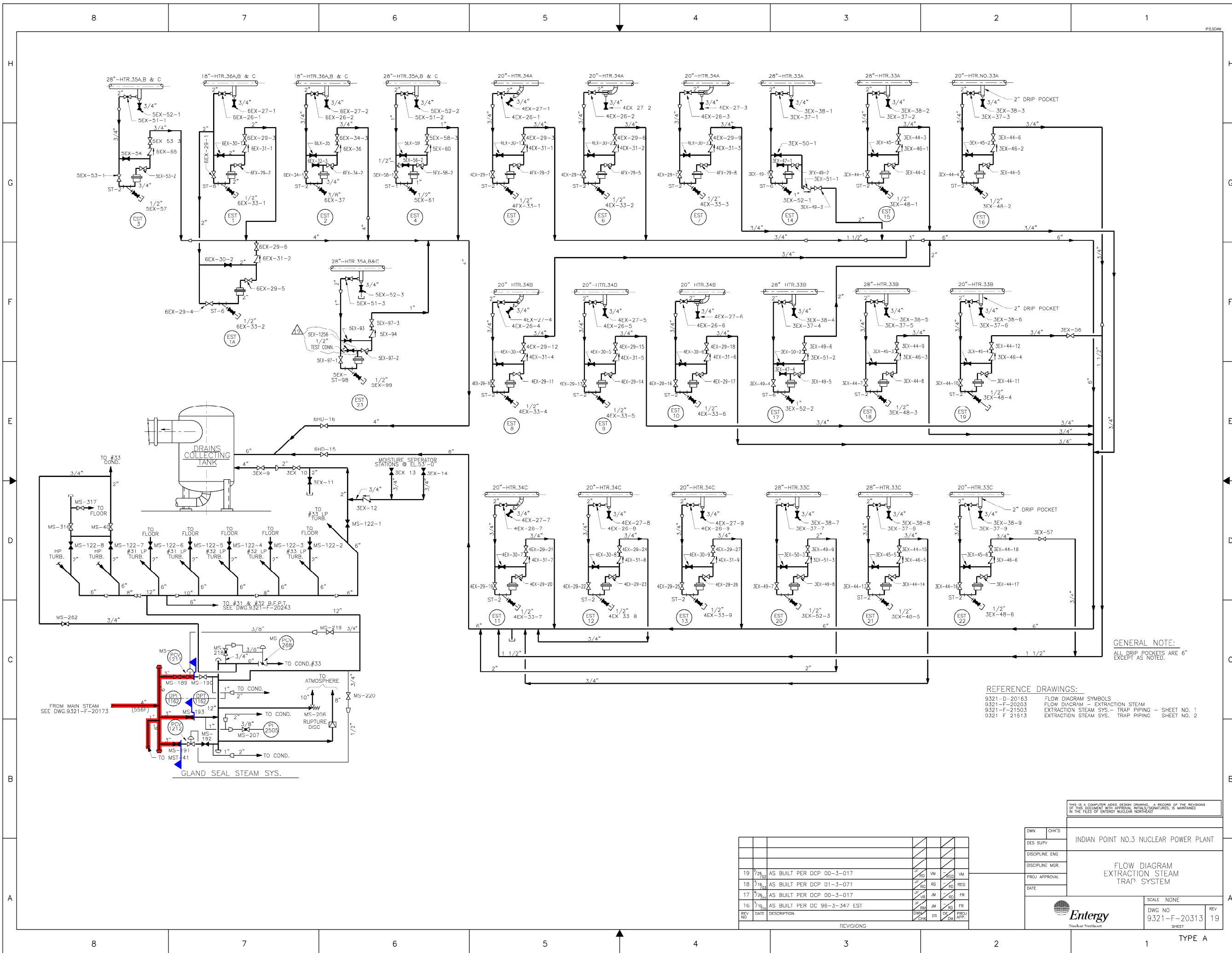
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IN THE FILES OF ENTERTY NUCLEAR NORTHWEST CORPORATION
MANAGEMENT & ENGINEERING PROGRAM SECTION, W.P.O.

DES. SUPV.	INDIAN POINT NO. 3 NUCLEAR POWER PLANT
DISCIPLINE ENG.	
DISCIPLINE MGR.	
PROJ. APPROVAL	
DATE	
FLOW DIAGRAM FUEL OIL TO DIESEL GENERATORS	
SCALE: NONE	REV
DWG NO 9321-F-20303	28
Entergy Nuclear Northeast	

REV. NO.	DATE	DESCRIPTION	REVISED BY	CHK'D BY	PROJ. APP.
28	3/26/03	AS BUILT PER DCR 100168372	DF	VR	JM
27	3/14/03	AS BUILT PER DCR 100150094	VR	LM	JM
26	3/14/03	AS BUILT PER DCR 100142520	IS	RM	RD

NO.	DATE	DESCRIPTION	BY	CHK	APP
0	1-19-07				
REVISIONS					
LRA-9321-20303-0					
CAD FILE LRA-9321-20303_28.DGN					
9321-20303_28.CAL					

TYPE A/FSAR



GENERAL NOTE:
ALL DRIP POCKETS ARE 6" EXCEPT AS NOTED.

REFERENCE DRAWINGS:
 9321-D-20163 FLOW DIAGRAM SYMBOLS
 9321-F-20203 FLOW DIAGRAM - EXTRACTION STEAM
 9321-F-21503 EXTRACTION STEAM SYS. - TRAP PIPING - SHEET NO. 1
 9321-F-21513 EXTRACTION STEAM SYS. - TRAP PIPING - SHEET NO. 2

SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

MAIN STEAM SYSTEM AMM-23

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REV NO	DATE	DESCRIPTION	BY	CHK'D	APP'D
19	7/29/03	AS BUILT PER DCP 00-3-017	VM	VM	VM
18	7/19/03	AS BUILT PER DCP 01-3-071	RG	RG	REG
17	7/26/03	AS BUILT PER DCP 00-3-017	VR	JM	FR
16	7/18/03	AS BUILT PER DC 98-3-347 EST	DM	JM	FR
			DWN	CHK'D	PROJ APP.

INDIAN POINT NO.3 NUCLEAR POWER PLANT

FLOW DIAGRAM EXTRACTION STEAM TRAP SYSTEM

SCALE: NONE

DWG NO: 9321-F-20313

REV: 19

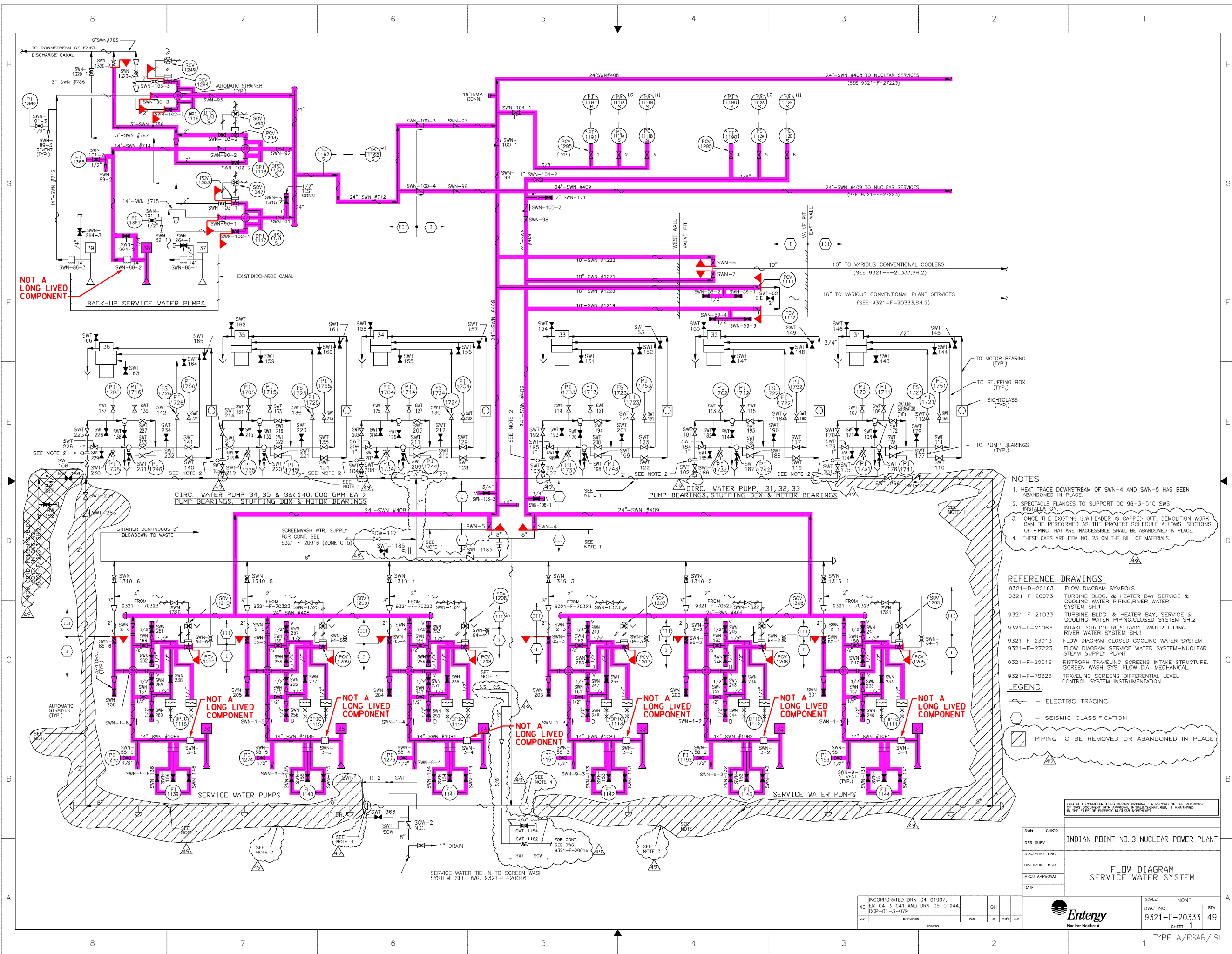
DATE: 7/20/06

Entergy Nuclear Northeast

0 7-20-06

NO.	DATE	DESCRIPTION	BY	ENG	CHK	APP
REVISIONS						
LRA-9321-20313-0						
LRA-9321-20313-19.DGN						
9321-20313_19.CAL						

TYPE A



- 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.

- 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 INTAKF 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 PLAN
 - 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

- SYSTEM INTENDED FUNCTION BOUNDARY**
- COMPONENTS SUBJECT TO AMR**
- SERVICE WATER SYSTEMS AMM-12

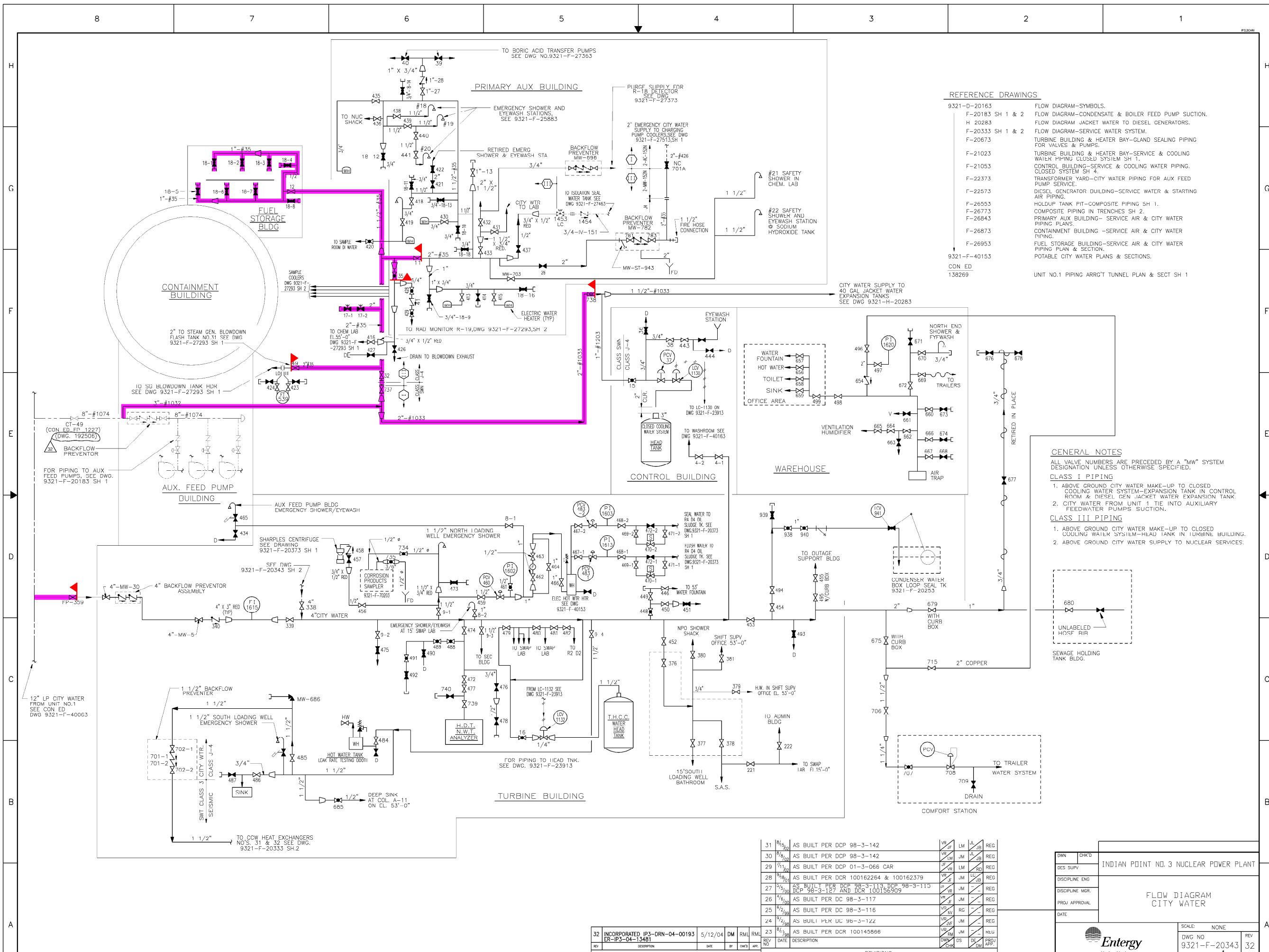
THIS IS A COMPUTER AIDED DESIGN DRAWING. A RECORD OF THE REVISIONS IN THIS DOCUMENT WITH ORIGINAL INITIALS/SIGNATURES, IS MAINTAINED IN THE FILES OF ENTERTY NUCLEAR NORTHWEST

DWN	CHK'D	INDIAN POINT NO. 3 NUCLEAR POWER PLANT
DES SUPV		
DISCIPLINE ENG		
DISCIPLINE MGR.		FLOW DIAGRAM SERVICE WATER SYSTEM
PRJLV APPROVAL		
DATE		

INCORPORATED DRN-04-01907	GH	SCALE: NONE
49 ER-04-3-041 AND DRN-05-01944	DATE	DWC NO 9321-F-20333
DCP-01-3-079	BY	REV 49
	CHKD	SHEET 1
	APP	TYPE A/FSAR/ISI

Enterty Nuclear Northeast

NO.	DATE	DESCRIPTION	BY	ENG	CHK	APP
1	10-13-06					
REVISIONS						
LRA-9321-20333-001-0						
CAD FILE LRA-9321-20333-001-49.DGN						
9321-20333-001-49.CAL						



REFERENCE DRAWINGS

- 9321-D-20163 FLOW DIAGRAM-SYMBOLS.
- F-20183 SH 1 & 2 FLOW DIAGRAM-CONDENSATE & BOILER FEED PUMP SUCTION.
- H 20283 FLOW DIAGRAM JACKET WATER TO DIESEL GENERATORS.
- F-20333 SH 1 & 2 FLOW DIAGRAM-SERVICE WATER SYSTEM.
- F-20673 TURBINE BUILDING & HEATER BAY-GLAND SEALING PIPING FOR VALVES & PUMPS.
- F-21023 TURBINE BUILDING & HEATER BAY-SERVICE & COOLING WATER PIPING CLOSED SYSTEM SH 1.
- F-21053 CONTROL BUILDING-SERVICE & COOLING WATER PIPING. CLOSED SYSTEM SH 4.
- F-22373 TRANSFORMER YARD-CITY WATER PIPING FOR AUX FEED PUMP SERVICE.
- F-22573 DIESEL GENERATOR BUILDING-SERVICE WATER & STARTING AIR PIPING.
- F-26553 HOLDUP TANK PIT-COMPOSITE PIPING SH 1.
- F-26773 COMPOSITE PIPING IN TRENCHES SH 2.
- F-26843 PRIMARY AUX BUILDING-SERVICE AIR & CITY WATER PIPING PLANS.
- F-26873 CONTAINMENT BUILDING-SERVICE AIR & CITY WATER PIPING.
- F-26953 FUEL STORAGE BUILDING-SERVICE AIR & CITY WATER PIPING PLAN & SECTION.
- 9321-F-40153 POTABLE CITY WATER PLANS & SECTIONS.
- CON ED 138269 UNIT NO.1 PIPING ARR'G'T TUNNEL PLAN & SECT SH 1

GENERAL NOTES

- ALL VALVE NUMBERS ARE PRECEDED BY A "MW" SYSTEM DESIGNATION UNLESS OTHERWISE SPECIFIED.
- CLASS I PIPING**
- ABOVE GROUND CITY WATER MAKE-UP TO CLOSED COOLING WATER SYSTEM-EXPANSION TANK IN CONTROL ROOM & DIESEL GEN JACKET WATER EXPANSION TANK.
 - CITY WATER FROM UNIT 1 TIE INTO AUXILIARY FEEDWATER PUMPS SUCTION.
- CLASS III PIPING**
- ABOVE GROUND CITY WATER MAKE-UP TO CLOSED COOLING WATER SYSTEM-HEAD TANK IN TURBINE BUILDING.
 - ABOVE GROUND CITY WATER SUPPLY TO NUCLEAR SERVICES.

SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

CITY WATER SYSTEM AMM-4

REV	NO.	DATE	DESCRIPTION	BY	CHKD	APP
31	8/6/90		AS BUILT PER DCP 98-3-142	VR	LM	JL
30	8/6/90		AS BUILT PER DCP 98-3-142	VR	LM	JM
29	1/13/90		AS BUILT PER DCP 01-3-066 CAR	VR	LM	RD
28	8/18/90		AS BUILT PER DCR 100162264 & 100162379	VR	JM	LC
27	8/6/90		AS BUILT PER DCP 98-3-113, DCP 98-3-115 DCP 98-3-127 AND DCR 100156909	VR	JM	REG
26	8/6/90		AS BUILT PER DC 98-3-117	VR	JM	REG
25	8/2/90		AS BUILT PER DC 98-3-116	VR	RC	REG
24	8/1/90		AS BUILT PLK DC 98-3-122	VR	JM	REG
23	8/1/90		AS BUILT PER DCR 100145866	VR	JM	REG
32			INCORPORATED IP3-DRN-04-00193 ER-IP3-04-13481	DM	RML	RML

INDIAN POINT NO. 3 NUCLEAR POWER PLANT

FLOW DIAGRAM
CITY WATER

DWG NO: 9321-F-20343
SHEET: 1

SCALE: NONE

REV: 32

DATE: 5/12/04

TYPE A

0 10-3-06

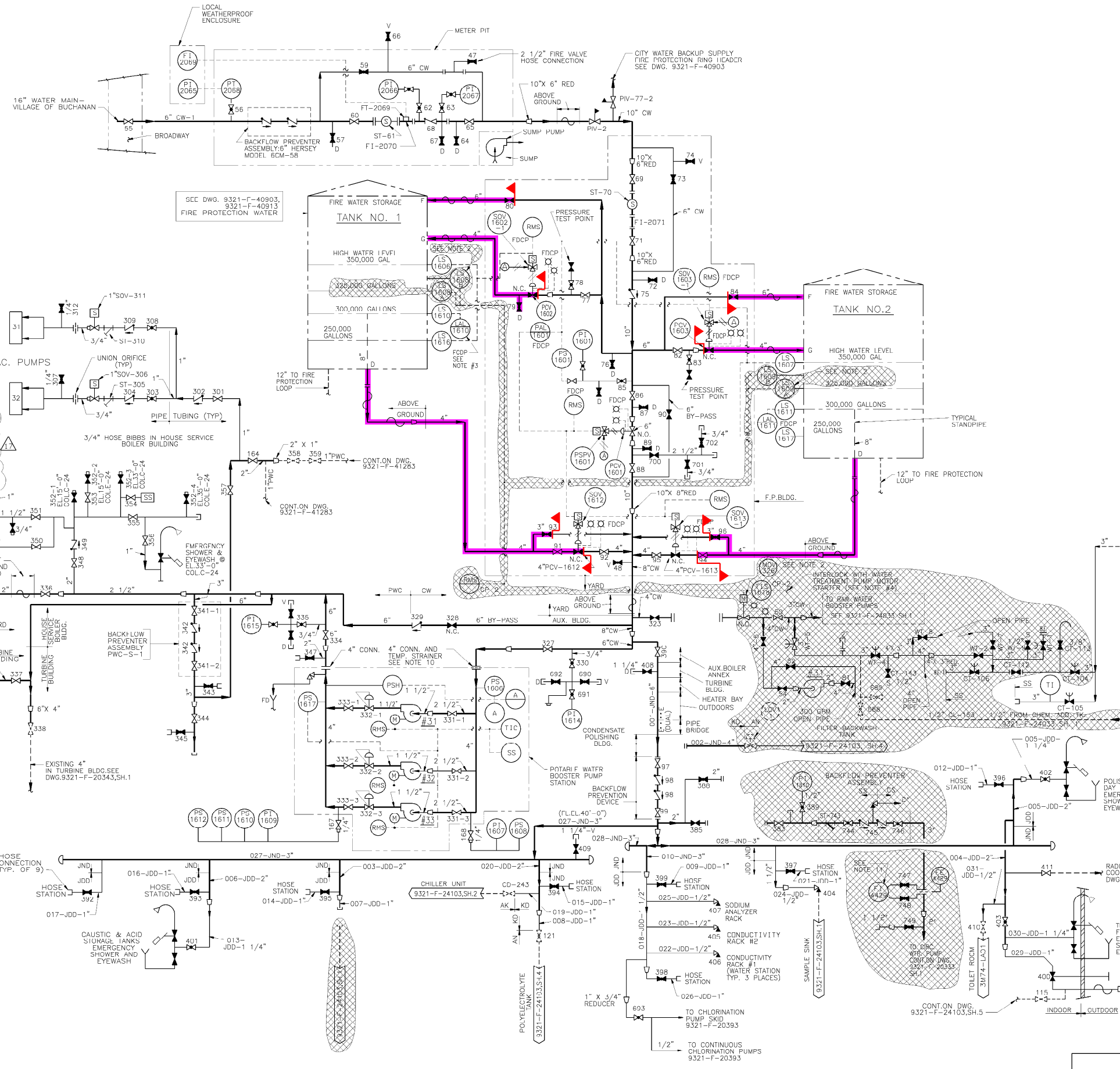
NO. DATE DESCRIPTION BY ENG CHK APP

REVISIONS

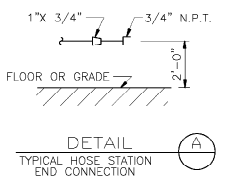
LRA-9321-20343-001-0

CAD FILE: LRA-9321-20343-001_32.DGN

REVISION FILE: 9321-20343-001_32.CAL



- NOTES:**
1. ALL INSTRUMENTATION IS SHOWN DIAGRAMMATICALLY.
 - 2.
 3. "FDCP" IS ABBREVIATION FOR "FIRE DISPLAY CONTROL PANEL" WHICH IS LOCATED IN THE MAIN CONTROL ROOM.
 4. "CP-2" IS ABBREVIATION FOR "CONTROL PANEL-2". THIS CONTROL PANEL IS FOR MAKE-UP WATER TREATMENT PLANT AND IS LOCATED ON EL.33' OF HOUSE SERVICE BOILER.
 5. UNLESS OTHERWISE NOTED, ALL PRESSURE INSTRUMENTATION ROOT VALVES ARE 3/4" GLOBE.
 6. ALL VALVE NUMBERS ARE PREFIXED BY A "MW" SYSTEM DESIGNATION UNLESS OTHERWISE NOTED.
 7. WORK THIS DWG. WITH REFERENCE DWGS: 9321-D-20163 FLOW DIAGRAM SYMBOLS, & BECHTEL 14034-3MT4-001, P & ID SYMBOLS.
 8. DIELECTRIC UNIONS ARE INSTALLED AT EVERY TRANSITION FROM GALVANIZED CARBON STEEL PIPE (JND) TO COPPER PIPE (JDD).
 9. FOR MECHANICAL SYMBOLS AND ABBREVIATIONS SEE DWGS. 9321-F-83913 & 9321-F-83923.
 10. TEMP. STRAINERS WERE INSTALLED FOR INITIAL SYSTEM FLUSH. SCREENS HAVE BEEN REMOVED UNDER MWR # 94-00365-00
 11. FI-4429 IS RETIRED IN PLACE.



- LEGEND:**
- ELECTRIC HEAT TRACED
 - STEAM TRACED

- REFERENCE DRAWINGS:**
- 9321-F-24033, FLOW DIAGRAM-H.S.B. WTR TREATMENT SYS MAKE-UP & DEMIN. WTR.
 - 9321 F 20260, FLOW DIAGRAM CONTRACTOR WATER TREATMENT SYSTEM

SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

CITY WATER SYSTEM AMM-04

RETIRED IN PLACE

THIS IS A COMPUTER AIDED DESIGN DRAWING. A RECORD OF THE REVISIONS OF THIS DOCUMENT WITH APPROVAL INITIALS AND DATES, IS MAINTAINED IN THE FILES OF ENERGY NUCLEAR NORTHEAST.

THIS DWG. WAS PREVIOUSLY BURNS & ROE MO25 REV.11 AND BECHTEL DWG. 3M74-KD01 REV.4

OWN	CHK'D	INDIAN POINT NO. 3 NUCLEAR POWER PLANT	
DES SUPV		FLOW DIAGRAM CITY WATER	
DISCIPLINE ENG			
DISCIPLINE MGR.			
PROJ APPROVAL			
DATE			

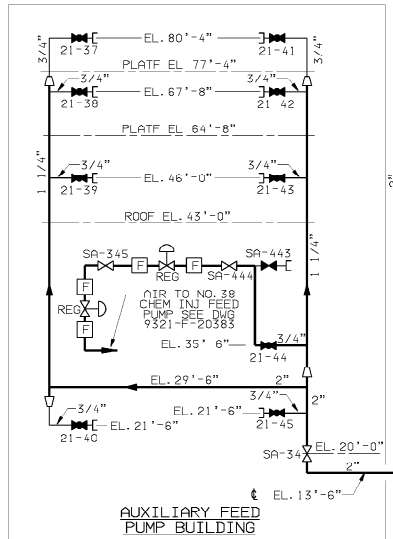
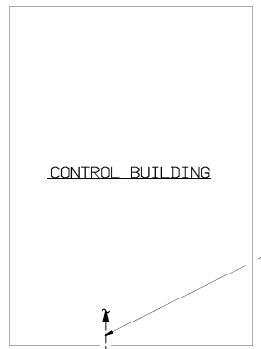
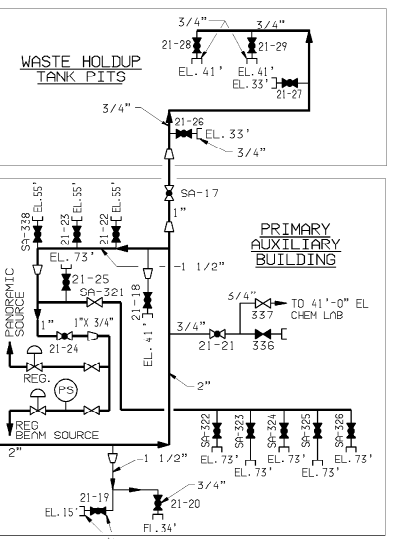
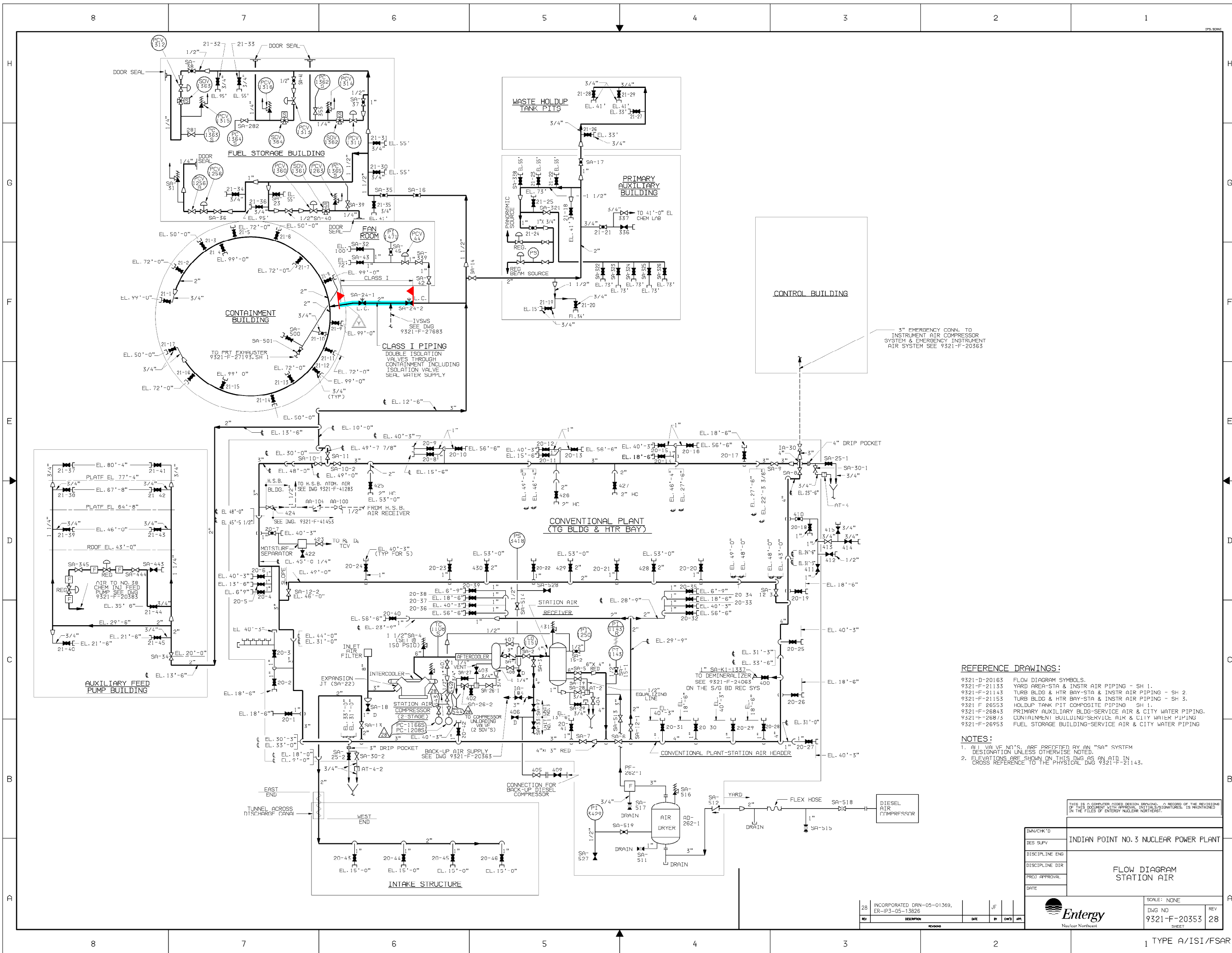
NO.	DESCRIPTION	DATE	BY	CHK'D	APP.
17	INCORPORATED DRN-05-05630 ER-05-3-078				

SCALE:	NONE
DWG NO:	9321-F-20343
SHEET:	2
REV:	17

NO.	DATE	DESCRIPTION	BY	ENG	CHK	APP
REVISIONS						
LRA-9321-20343-002-0						
CAD FILE LRA-9321-20343-002-17.DGN						
9321-20343-002-17.CAL						



TYPE A



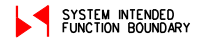
3" EMERGENCY CONN. TO INSTRUMENT AIR COMPRESSOR SYSTEM & EMERGENCY INSTRUMENT AIR SYSTEM SEE 9321-F-20565

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 PREFIXED 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.



COMPONENTS SUBJECT TO AMR

COMPRESSED AIR SYSTEMS AMM-14

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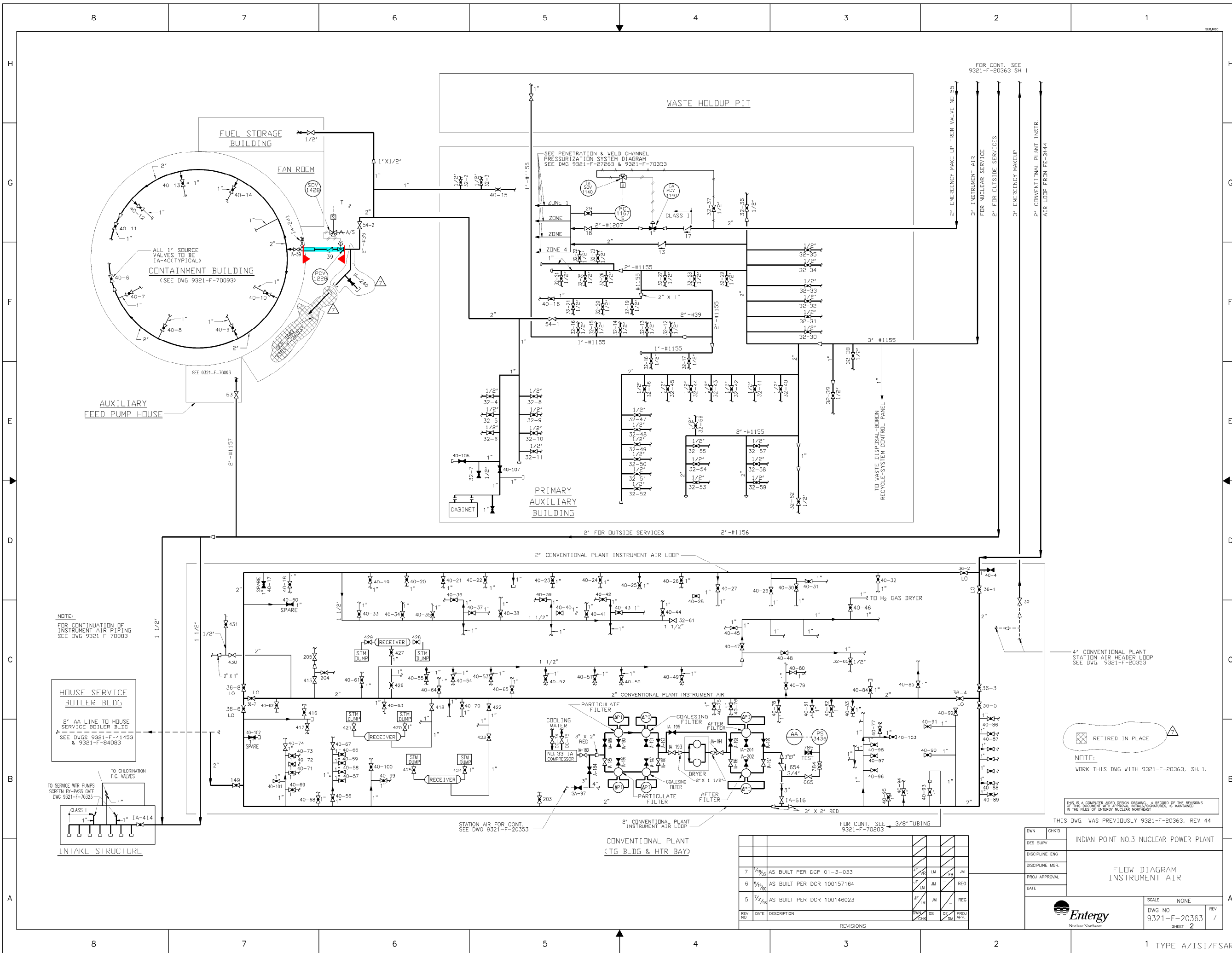
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28	INCORPORATED DRN-05-01369, ER-IP3-05-13826	JF		
REV	DESCRIPTION	DATE	BY	CHK APP.



0	8-8-06				
NO.	DATE	DESCRIPTION	BY	ENG	CHK APP
REVISIONS					
LRA-9321-20353-0					
CAD FILE: LRA-9321-20353-28.DGN					
REVISION FILE: 9321-20353_28.CAL					

1 TYPE A/ISI/FSAR



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-11453
& 9321-F-84083

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

CLASS 1
1" IA-414

INIAKL STRUCTURE

RETIRED IN PLACE

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

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

REV NO	DATE	DESCRIPTION	BY	CHK'D	APP'D
7	7/19/03	AS BUILT PER DCP 01-3-033	JF	VR	JM
6	9/19/00	AS BUILT PER DCR 100157164	JF	LM	REG
5	7/3/98	AS BUILT PER DCR 100146023	JF	JM	REG

DWN	CHK'D	INDIAN POINT NO.3 NUCLEAR POWER PLANT
DES SUPV		
DISCIPLINE ENG		
DISCIPLINE MGR.		
PROJ APPROVAL		FLOW DIAGRAM INSTRUMENT AIR
DATE		
SCALE NONE		REV /
DWG NO 9321-F-20363		
SHEET 2		

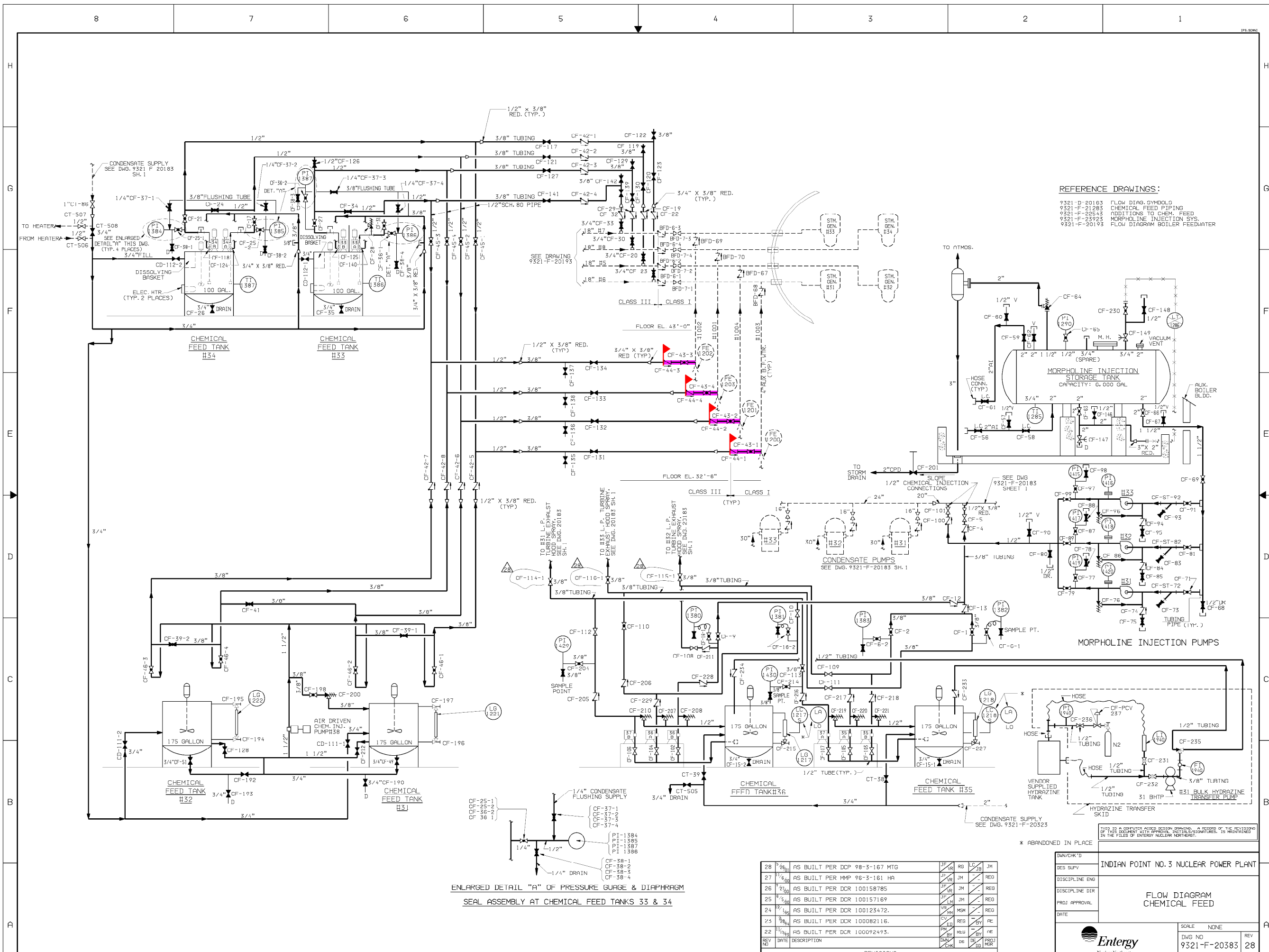


SYSTEM INTENDED
FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

COMPRESSED AIR
SYSTEMS AMM-14

NO.	DATE	DESCRIPTION	BY	CHK	APP
0	9-12-06				
REVISIONS					
LRA-9321-20363-002-0					
CAD FILE LRA-9321-20363-002_07.DGN					
REVISION 9321-20363-002_07.DGN					



REFERENCE DRAWINGS:
 9321-D-20163 FLOW DIAG. SYMBOLS
 9321-F-21283 CHEMICAL FEED PIPING
 9321-F-22843 ADDITIONS TO CHEM. FEED
 9321-F-23923 MORPHOLINE INJECTION SYS.
 9321-F-20193 FLOW DIAGRAM BOILER FEEDWATER

ENLARGED DETAIL "A" OF PRESSURE GAUGE & DIAPHRAGM SEAL ASSEMBLY AT CHEMICAL FEED TANKS 33 & 34

SYSTEM INTENDED FUNCTION BOUNDARY
 COMPONENTS SUBJECT TO AMR
 AUXILIARY FEEDWATER SYSTEM AMM-24

NO.	DATE	DESCRIPTION	BY	CHK	APP
28	1/26/01	AS BUILT PER DCP 98-3-167 MTG	JF	VR	RG
27	1/6/01	AS BUILT PER MMP 96-3-161 HA	JF	VR	JM
26	1/21/00	AS BUILT PER DCR 100158785	JF	VR	JM
25	1/5/00	AS BUILT PER DCR 100157169	JF	VR	JM
24	1/15/99	AS BUILT PER DCR 100123472	JF	VR	JM
23	1/28/98	AS BUILT PER DCR 100082116	CV	EL	REG
22	1/15/93	AS BUILT PER DCR 100092493	CV	EL	REG

* ABANDONED IN PLACE

DWG/CHK'D	INDIAN POINT NO. 3 NUCLEAR POWER PLANT
DES. SUPV.	
DISCIPLINE ENG.	
DISCIPLINE DIR.	FLOW DIAGRAM CHEMICAL FEED
PROJ. APPROVAL	
DATE	
SCALE	NONE
DWG. NO.	9321-F-20383
SHEET	28

0 5-26-06
 NO. DATE DESCRIPTION BY ENG CHK APP
 REVISIONS
 LRA-9321-20383-0
 CAD FILE
 LRA-9321-20383-28.DGN
 9321-20383-28.CAL

TYPE A/FSAR