PID- LEGEND1

SYSTEM	SYSTEM PREFIX	ALLOTTED LINE NO'S	P & ID DWG. NUMBERS	
			OVERVIEW	DETAILS
ADMINISTRATION SERVICES BUILDING AIR HANDLING	AAH	N/A	20001	20002 THRU 20004
AUXILIARY BOILER (ALL SYSTEMS)	AB	5120-5189	20012	20014 THRU 20016
CONDENSER AIR EVACUATION	AR	4543-4599	N/A	20744
AUXILIARY STEAM	AS	2301-2400 5190-5229 6980-6999	20564	20565 THRU 20576
AUXILIARY STEAM CONDENSATE (SEE GENERAL NOTE 7)	ASC	2401-2500 5230-5269 7000-7009 8770-8919 8620-8769	20900 20901	20902 THRU 20913, 20925 AND 20926
AUXILIARY STEAM HEAT	ASH	8571-8599 9321-9411 8620-8770	N/A	NOTE 7
BORON RECOVERY SYSTEM	BRS	1851-2053 3181-3299	20853	20854 THRU 20861
BOILING WATER GUARDHOUSE (SEE GENERAL NOTE 8)	BW	7020-7051 7050-7155	20832	20833 THRU 20835
CHEMICAL ANALYSIS SYSTEM	CAS	5700-5799 7300-7329	20408	20411 THRU 20415
CONTROL BUILDING AIR HANDLING	CBA	9600-9625 9866-9900	20300	20302 THRU 20309
CONTAINMENT SPRAY SYSTEM	CBS	1201-1268	N/A	20233
PRIMARY COMPONENT COOLING	CC	701-900 6782-6799	20204 20210	20205 THRU 20215
CARBON DIOXIDE	CD	5850-5853	N/A	20140
COMBUSTIBLE GAS CONTROL	CGC	2801-2850	N/A	20612
CHILLED WATER	CHW	6050-6085	N/A	20026
CHLORINATION	CL	5610-5659	20680	20681 AND 20682
CHLORINATION AIR HANDLING	CLA	N/A	N/A	20769
CHEMICAL LAB VACUUM	CLV	7300-7340	N/A	20010
CONDENSATE	CO	4040-4119	20420	20422 THRU 20430
CONDENSATE POLISHER SYSTEM	CPS	7601-7999	20150	20152 THRU 20159
CHEMICAL AND VOLUME CONTROL	CS	301-550	20720	20722 THRU 20729
CHEMICAL TREATMENT	CT	6000-6009	N/A	20026
CIRCULATING WATER	CW	5310-5349 5030-5069	20672	20673 THRU B20675
CW PUMPHOUSE AIR HANDLING	CWA	N/A	N/A	20240
DIESEL GENERATOR AIR HANDLING	DAH	N/A	N/A	20624
DECONTAMINATION AREA WASTE AND VENTS (SEE GENERAL NOTE 9)	DC	6010-6047 6910-6942	N/A	20182
PLANT DRAINAGE OIL/WATER SEPARATION SYSTEM	DF	9693-9825	20192	20192 THRU 20200
DIESEL GENERATORS	DG	4350-4449	20456 20457	20458 THRU 20467
DEMINERALIZED WATER (SEE GENERAL NOTE 10)	DM	1564-1650 5490-5549 6940-6974	20348	20349 THRU 20356

SYSTEM	SYSTEM PREFIX	ALLOTTED LINE NO'S	P & ID DWG. NUMBERS	
			OVERVIEW	DETAILS
DEWATERING	DW	5881-5900	N/A	20600
ELECTRICAL DISTRIBUTION	ED	N/A	N/A	20321
EXTRACTION STEAM	EX	4120-4169	20324	23026 THRU 20328
FUEL OIL	FO	8600-8619	N/A	20938
FIRE PROTECTION	FP	6000-6019 6140-6200 6610-6709 8000-8299	20264	20266 THRU 20275
FIRE PMP. HOUSE AIR HANDLING	FPA	N/A		20181
FEEDWATER	FW	4600-4639 5854-5880	20684 20685	20686 THRU 20690
GUARD HOUSE AIR HANDLING	GAH	N/A	N/A	20708
GENERATOR STATOR COOLANT	GSC	5798-5799 6542-6549	N/A	20108
HEATER DRAINS	HD	4230-4299	20337	20338 THRU 20341
HYDRAULIC FLUID	HF	N/A	N/A	20144 AND 20145
HYDROGEN GAS	HG	651-700 6750-6752	N/A	20888
HYDROGEN GAS TO GENERATOR	HGG	5800-5819	N/A	20120
HOT WATER HEATING (SEE GENERAL NOTE 11)	HW HWR HWS	6200-6295 6300-6447 9000-9199 9826-9886	20048 20049	20050 THRU 20056
INSTRUMENT AIR	IA	2951-2999 4890-5029 7020 6087-6139	20636	20637 THRU 20646
LEAK DETECTION	LD	N/A	N/A	20864
LUBRICATING OIL	LO	5070-5119	20084	20086 THRU 20089
MISCELLANEOUS AIR HANDLING (SEE GENERAL NOTE 12)	MAH	9300-9314 9412-9599 7010-7099	20492	20494 THRU 20508
MOISTURE SEPARATOR AND REHEATER DRAINS	MD	4170-4229 5410-5449	20473	20474 AND 20475
MISCELLANEOUS GAS	MG	NOTE 15	N/A	20396
MAIN STEAM (SEE GENERAL NOTE 13)	MS	4000-4039	20579	20580 THRU 20588
MAIN STEAM DRAINS	MSD	4450-4542 5901-5950	N/A	NOTE 13
MECHANICAL SEAL SUPPLY	MSS	2701-2800	N/A	NOTE 10
MISCELLANEOUS VENT & DRAIN	MVD	4300-4349 5350-5409 5660-5699	N/A	NOTE 14
NITROGEN GAS	NG	1651-1700 6880-6882	20132	20134 THRU 20136
OIL COLLECTION FOR RC PUMPS	OC	1051-1100	N/A	20180
POTABLE WATER	PW PWH	6020-6086 6450-6517 8300-8570 6214-6255 6517-6541 6550-6610	20914 20915	20916 THRU 20920

SYSTEM	SYSTEM PREFIX	ALLOTTED LINE NO'S	P & ID DWG. NUMBERS	
			OVERVIEW	DETAILS
REACTOR COOLANT	RC	1-150	20840	20841 THRU 20846 AND 20848
RESIDUAL HEAT REMOVAL	RH	151-200	20660	20662 AND 20663
RELEASE RECOVERY SYSTEM	RR	6753-6774	N/A	20061
RADIATION MONITORING SYS.	RM	5840-5849	N/A	20360
REACTOR MAKE-UP WATER	RMW	1101-1200	N/A	20509 AND 20510
RESIN SLUICING	RS	2501-2600	N/A	20252
ROOF DRAINS	DR	9639-9825	20632	20633 THRU 20635
SERVICE AIR	SA	2901-2950 4730-4889 6710-6749 6960-6971	20649	20650 THRU 20653
SANITARY PIPING	SAN	8925-8999	N/A	20540, 20541
STEAM GENERATOR BLOWDOWN	SB	1229-1400 2851-2900 3300-3399	20625	20626 THRU 20631
SECONDARY COMPONENT COOLING	SCC	4640-4729 6521-6528	20072	20074 THRU 20078
SCREEN WASH	SCW	5270-5309	N/A	20709
PLANT STORM DRAINAGE	SD	6875-6879	20401	20402 THRU 20405
SPENT FUEL POOL COOLING	SF	1701-1800	20480	20482 THRU 20484
NON-ESSENTIAL SWITCHGEAR AIR HANDLING	SGA	N/A	N/A	20288
SAFETY INJECTION	SI	201-300	20445	20446 THRU 20450
SANITARY LAGOON AREA	SLA	5820-5839	N/A	20940
SEAL OIL GENERATOR	SO	N/A	N/A	20096
SAMPLING SYSTEM	SS	1401-1500	20516	20518 THRU 20522
TURBINE STEAM SEAL	SSS	5450-5489	20756	20758 AND 20759
SERVICE WATER	SW	1801-1850	20792	20794 AND 20795
SW PUMPHOUSE AIR HANDLING	SWA	N/A	N/A	20372
(SWITCHYARD) SF6 GAS	SY	N/A	N/A	20021 AND 20022
TURBINE BLDG. AIR HANDLING	TAH	6518-6527	N/A	20170 THRU 20172
VENT GAS	VG	1501-1563	20779	20780 AND 20782
VALVE STEM LEAK OFF	VSL	N/A	20774	20775 THRU 20777
WASTE GAS SYSTEM	WG	551-650	20768	20770 THRU 20773
WASTE PROCESSING LIQUID	WL	901-1050 2051-2300	20828	20829 THRU 20831
WASTE PROCESSING LIQUID DRAINS	WLD	2051-2300	20216	20218 THRU 20229
WASTE PROCESSING SOLID	WS	2601-2700 3000-3180	20733 20734	20735 THRU 20743
WATER TREATMENT	WT	5550-5618 7500-7502 8910-8924	20036	20038 THRU 20041

BUILDING BOUNDARIES

BUILDING BOUNDARIES-ARE USED TO INDICATE THE BUILDINGS OR ROOMS IN WHICH PIPING SYSTEMS ARE LOCATED OR TO WHICH THEY FLOW. THERE ARE THREE BUILDING BOUNDARY SYMBOLS USED ON P & ID'S.

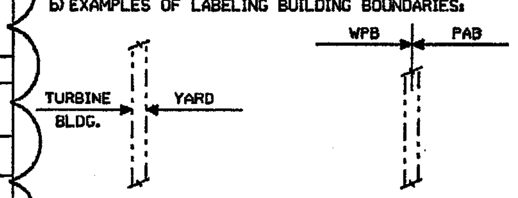
PREFERRED

—XX——XX——XX— XX = BUILDING ABBREVIATION

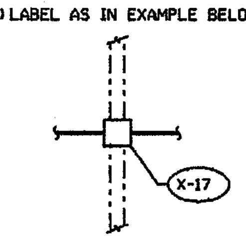
(USED MAINLY FOR OVERVIEWS)

a) BUILDING BOUNDARIES SHOULD BE BROKEN ONLY IF THE LINE CROSSING THE BOUNDRY IS THE SAME LINE WEIGHT.

b) EXAMPLES OF LABELING BUILDING BOUNDARIES:



- INTERIOR BOUNDARIES - WALLS, PARTITION, ETC.
  1) USED TO SHOW IN WHAT ROOMS OR AREAS THE PIPING IS LOCATED.
  2) AREA OR ROOM DESCRIPTION SHOULD BE GIVEN ON P & ID.
- PENETRATIONS
  1) LABEL AS IN EXAMPLE BELOW:



5 (revision triangle)

INSTRUMENT NUMBERING

EXAMPLE:
1-CO-FG-103-A

1 a). UNIT NUMBER → 1-CO
CO b). SYSTEM PREFIX
FG c). FUNCTIONAL IDENTIFICATION
103 d). INSTRUMENT OR LOOP NUMBER
A e). SUFFIX

(FG 103 A)

PROCESS LINE CONTINUATION FLAGS

DRAWING COORDINATE LOCATION
DESCRIPTION OF WHAT/WHERE THE CONTINUATION IS FLOWING TO/FROM
THE CONTINUATION DRAWING

RH-P-8A
(G-10) RH | 20663 | C
(D-10) CS | 20724 | D

REFERENCE TO IDENTICAL LETTER ON THE CONTINUATION DRAWING (FOR MATCH-UP)

FOR DOUBLE ARROWS: SYSTEM PREFIX IS ADDED FOR CLARITY

LINE NUMBERING

IDENT. TAG: X-XXX-XXXX-XX
INFO. TAG: XXX-XX-T

PLANT UNIT NO.
SYSTEM PREFIX
UNIQUE NO.
SUBTENDED NO.
MATERIAL SPECIFICATION
NOMINAL SIZE
TUBING

VALVE NUMBERING

X-X-XX-VXXX

UNIT NO.
NOMINAL SIZE
SYSTEM PREFIX
VALVE NO.

CONSTRUCTION ISOMETRIC NUMBERING

XX-XXXX-XX: SYSTEM PREFIX, UNIQUE NO., SHEET NO.

X-XXXXXX: DRAWING NUMBER, SHEET SIZE

ABBREVIATIONS

A	AIR
ACCUM	ACCUMULATOR
ACT	ACETYLENE
ACDB	AMBIENT CARBON DELAY BED
ADMIN	ADMINISTRATION
AM	ARGON-METHANE
AN	ARGON
AOV	AIR OPERATED VALVE
AS	AIR SUPPLY OR AUX. STM.
ASB	ADMIN. & SERVICES BUILDING
AT	ACCUMULATOR TANK
ATM	ATMOSPHERE
AUX	AUXILIARY
BA	BORIC ACID
BAB	BORIC ACID BLENDER
BAF	BORIC ACID FILTER
BAT	BORIC ACID TANK
BCMS	BORON CONCENTRATE MEASURING SYSTEM
BEBP	BLOWDOWN EVAPORATOR BTM. PUMP
BF	BLIND FLANGE
BIRP	BORON INJECTION RECIRC. PUMPS
BIST	BORON INJECTION SURGE TANK
BIT	BORON INJECTION TANK
BLDG	BUILDING
BLDN	BLOWDOWN
BLND	BLENDER
BT	BATCHING TANK
BTM	BOTTOM
BTRS	BORON THERMAL REGENERATION SYSTEM
BWST	BORON WASTE STORAGE TANK
CAT	CATALYST
CB	CATION BED
CCP	CENTRIFUGAL CHARGING PUMPS
CCWS	COMPONENT COOLING WATER SYS
CDTP	CHEMICAL DRAIN TREATMENT PUMP
CDTT	CHEMICAL DRAIN TREATMENT TANK
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHAR	CHARCOAL
CHEM	CHEMICAL
CHRGP	CHARGING PUMPS
CIRC WTR	CIRCULATING WATER
CL	COLD LEG
CLR	COOLER
CNTMNT	CONTAINMENT
CNTMNT SP	CONTAINMENT SPRAY
CO	CLEAN OUT
COMP	COMPRESSOR
CONC	CONCENTRATES
COND	CONDENSATE
CONDSR	CONDENSER
CONN	CONNECTION
CPLG	COUPLING
CRIE	CESIUM REMOVAL ION-EXCHANGER
CTY WTR	CITY WATER
CVCS	CHEMICAL & VOLUME CONTROL SYSTEM
CVCT	CHEMICAL & VOLUME CONTROL TANK
CWCT	CHROMATED WATER COLLECTION TANK
CRYST	CRYSTALLIZER
CVIS	CONTAINMENT VENTILATION ISOLATION SYSTEM
DECON	DECONTAMINATION
DEGAS	DEGASIFIER
DEMIN	DEMINERALIZER
DGEN	DIESEL GENERATOR
DISCH	DISCHARGE
DIST	DISTILLATE
DOP	DIFFERENTIAL OPERATING PRESSURE
DPF	DEMINERALIZER PRE-FILTER
DR	DRAIN
DM	DEMINERALIZED WATER
DWG	DRAWING
E	EXCHANGER
ECCS	EMERGENCY CORE COOLING SYSTEM
EDC	EVAPORATOR DISTILLATE CONDENSER
EL	ELEVATION
ENCL	ENCLOSURE
EQUIP	EQUIPMENT
EV	EVAPORATOR
EVS	EQUIPMENT VENT SYSTEM
EXC	EXCESS
EXT	EXTERNAL
EP	EXPANSION JOINT
FAI	FAIL AS IS
FC	FAIL CLOSED
FD	FLOOR DRAIN
FDT	FLOOR DRAIN TANK
FE	FLOW ELEMENT
FG	FLOW GLASS
FHC-1	NFPA CLASS III HOSE CABINET-RECESSED
FHC-2	NFPA CLASS II HOSE CABINET-SURFACE
FHC-3	NFPA CLASS III HOSE CABINET-SURFACE
FHC-4	NFPA CLASS II HOSE CABINET-RECESSED
FL	FLOOR
FLTR	FILTER
FN	FAN
FO	FAIL OPEN
FP	FUEL POOL
FPPF	FUEL POOL POST FILTER
FS	FLOW SWITCH
FSB	FUEL STORAGE BUILDING
FTBC	FLASH TANK BOTTOM COOLER
FUN'L	FUNNEL
GEN	GENERATOR
GSSNN	GAS SERVICE SYSTEM NITROGEN NUCLEAR
HC	HOSE CONNECTOR
HDR	HEADER
HE	HELIUM
HL	HOT LEG
HLP	HOLD-UP
HPR	HOPPER
HTR	HEATER
HVAC	HEATING, VENTING & AIR CONDITIONING
HX	HEAT EXCHANGER
HYD	HYDROGENATED
HYDG	HYDROGEN GAS
ID	INNER DIAMETER
INSTR	INSTRUMENT
IR	INSTRUMENT RACK
IRC	INSIDE REACTOR CONTAINMENT
JKT	JACKET
LC	LOCKED CLOSED
LDR	LETDOWN DEGASIFIER RECIRCULATION
LKOFF	LEAKOFF
LO	LOCKED OPEN
LOC	LOCATION
LOCA	LOSS OF COOLANT ACCIDENT
LT	LEVEL TRANSMITTER (INSTRUMENT)
LT	LOCKED THROTTLED
LW	LIQUID WASTE
MB	MIX BED
MECH	MECHANICAL
MKUP	MAKE UP
MN	MAIN
MOD	MODERATING
MOV	MOTOR OPERATED VALVE
MX	MIX
MW	MANWAY
NC	NORMALLY CLOSED
NEUT	NEUTRALIZING
NNS	NON-NUCLEAR SAFETY
NO	NORMALLY OPEN
NSP	NITROGEN SUPPLY PACKAGE
NSSS	NUCLEAR STEAM SUPPLY SYSTEM
NUC	NUCLEAR
NX	NITROUS-OXIDE
OD	OUTSIDE DIAMETER
ORC	OUTSIDE REACTOR CONTAINMENT
OX	OXYGEN
P	PRIMARY
PAB	PRIMARY AUXILIARY BUILDING
PDS	PRESSURE DIFFERENTIAL SWITCH
PDT	PRIMARY DRAIN TANK
PDTDRP	PRIMARY DRAIN TANK DEGASIFIER RECIRC PUMP
PEN	PENETRATION
PHR	PREHEATER
PKG	PACKAGE
PMP	PUMP
PNL	PANEL
PP	PROPANE
PW	POTABLE WATER
PRESS	PRESSURE
PRG	PURGE
PZR	PRESSURIZER
PROC	PROCESS
PRT	PRESSURIZER-RELIEF TANK
PS	PRESSURE SWITCH
PSIA	POUND PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GUAGE
RAD	RADIATION
RB	REBOILER
RCA	RADIATION CONTROLLED AREA
RCDT	REACTOR COOLANT DRAIN TANK
RCF	REACTOR COOLANT FILTER
RCL	REACTOR COOLANT LOOP
RCP	REACTOR COOLANT PUMP
RCS	REACTOR COOLANT SYSTEM
REBC	RECOVERY EVAPORATOR BOTTOMS COOLER
REBF	RECOVERY EVAPORATOR BOTTOMS FILTER
REBP	RECOVERY EVAPORATOR BOTTOMS PUMP
REC	RECOVERY
RECIRC	RECIRCULATING
RED	REDUCER
REDA	RECOVERY EVAPORATOR DISTILLATE ACCUMULATOR
REDC	RECOVERY EVAPORATOR DISTILLATE COOLER
REDP	RECOVERY EVAPORATOR DISTILLATE PUMP
REF	REFERENCE
REFD	RECOVERY EVAPORATOR FEED
REFP	RECOVERY EVAPORATOR FEED PUMP
REG	REGENERATIVE
REH	REHEATER
RERB	RECOVERY EVAPORATOR REBOILER
RES	RESIDUAL
RFT	RESIN FILL TANK
RGWS	RADIOACTIVE GAS WASTE SYSTEM
RHR	RESIDUAL HEAT REMOVAL
RCDTP	REACTOR COOLANT DRAIN TANK PUMP
RM	ROOM
RMU	REACTOR MAKE-UP
RMWP	REACTOR MAKE-UP PUMP
RMWST	REACTOR MAKE-UP WATER STORAGE TANK
RPV	REACTOR PRESSURE VESSEL
RSN	RESIN
RTD	RESISTANCE TEMPERATURE DETECTOR
RTT	RECOVERY TEST TANK
RV	RELIEF VALVE
RWST	REFUELING WATER STORAGE TANK
S	SAFETY INJECTION SIGNAL
SAT	SPRAY ADDITIVE TANK
SBEDC	STEAM GENERATOR BLOWDOWN EV. CLR.
SC	SAMPLE CONNECTION
SCC	SECONDARY COMPONENT COOLING WATER
SEC	SECONDARY
SW	SERVICE WATER
SFP	SPENT FUEL POOL
SFPC	SPENT FUEL POOL COOLING
SG	STEAM GENERATOR
SGBLDN	STEAM GENERATOR BLOWDOWN
SRTP	SPENT RESIN TRANSFER PUMP
SGSHX	STEAM GENERATOR SAMPLE HEAT EXCHANGER
SHT	SHEET
SIF	SAFETY INJECTION FILTER
SIP	SAFETY INJECTION PUMP
SIST	SAFETY INJECTION SYSTEM TEST
SIT	SAFETY INJECTION TANK
SKD	SKID
SKIM	SKIMMER
SL	SEAL LEAKOFF
SLBY	SEAL BYPASS
SLSU	SEAL SUPPLY
SLW	SEAL WATER
SMPL	SAMPLE
SP	SPRAY
SRF	SEAL RETURN FILTER
SRS	SPENT RESIN SLUICE
SRSP	SPENT RESIN SLUICE PUMP
SRST	SPENT RESIN SLUICE TANK
SSK	SAMPLE SINK
ST	SURGE TANK
STA	STATION
STM	STEAM
STOR	STORAGE
STPIP	STANDPIPE
STRU	STRUCTURE
SUCT	SUCTION
SUP	SUPPLY
SV	SAMPLE VESSEL
SWRF	SEAL WATER RETURN FILTER
SYS	SYSTEM
TC	TEST CONNECTION
TE	TEMPERATURE ELEMENT
TH	THERMAL
THB	THERMAL BARRIER
TI	TEMPERATURE INDICATOR
TK	TANK
TR	TRENCH
TRM CLR	TRIM COOLER
TT	TEMPERATURE TRANSMITTER
TV	TEST VENT
TWR	TOWER
TYP	TYPICAL
V	VENT
VCLR	VENT COOLER
VI	VACUUM GAGE
VLV	VALVE
WCT	WASTE CONCENTRATES TANK
WCTP	WASTE CONCENTRATES TRANSFER PUMP
WEBC	WASTE EVAPORATOR BOTTOM COOLER
WEBP	WASTE EVAPORATOR BOTTOMS PUMP
WED	WASTE EVAPORATOR DISTILLATE
WEDA	WASTE EVAPORATOR DISTILLATE ACCUMULATOR
WEDC	WASTE EVAPORATOR DISTILLATE CONDENSER
WEDP	WASTE EVAPORATOR DISTILLATE PUMP
WERB	WASTE EVAPORATOR REBOILER
WEV	WASTE EVAPORATOR
WGC & D	WASTE GAS CHILLER & DRYER
WPB	WASTE PROCESSING BUILDING
WEDCLR	WASTE EVAPORATOR DISTILLATE COOLER
WTT	WASTE TEST TANK
WST	WASTE
WST PROC	WASTE PROCESS
WTR	WATER
YE	VIBRATION ELEMENT

GENERAL NOTES:

1. UNLESS AN ANS SAFETY CLASS BREAK IS INDICATED, THE ASME SECTION III CODE CLASS BOUNDARY TERMINATES AT THE INSTRUMENT MANIFOLD (2 OR 5) OR IT'S ASSOCIATED SEALS WHICH IS EXCLUDED FROM THE CODE BY N.A. 1130 PARAGRAPH "C". INSTRUMENT PIPING AND COMPONENT DETAILS BETWEEN THE INSTRUMENT ROOT VALVE (OR FLANGE) AND THE INSTRUMENT ARE SHOWN ON THE INSTRUMENT INSTALLATION DETAIL DRAWINGS 1-NHY-505200 THRU 505299.
2. FOR ADDITIONAL REF. AND INSTRUMENT SYMBOLS SEE DRAWING 9763-M-500006
3. FOR VENT AND DRAIN OPERATIONS, FIELD TO INSTALL APPROPRIATE HOSE CONNECTIONS.
4. DELETED
5. ANS SAFETY CLASSIFICATION BOUNDARIES OCCUR AT VALVES OR RESTRICTING ORIFICES, UNLESS NOTED OTHERWISE.
6. DELETED
7. AUXILIARY STEAM HEATING (ASH) IS NOW INCORPORATED IN AUXILIARY STEAM CONDENSATE DRAWING (ASC) 20925.
8. BOILING WATER RETURN (BWR) AND BOILING WATER SUPPLY (BWS) ARE NOW INCORPORATED IN BOILING WATER GUARD HOUSE (BW).
9. CONTAMINATED WASTE (DCW) AND CHEMICAL DRAIN VENTS (DCV) HAVE BEEN INCORPORATED IN DECONTAMINATION AREA WASTE AND VENTS (DC) 20182.
10. MECHANICAL SEAL SUPPLY (MSS) IS NOW INCORPORATED IN DEMINERALIZED WATER DRAWINGS (DM) 20351 AND 20354.
11. HOT WATER RETURN (HWR) AND HOT WATER SUPPLY (HWS) ARE NOW INCORPORATED IN HOT WATER HEATING (HW).
12. THE FOLLOWING SYSTEMS HAVE BEEN INCORPORATED IN MISCELLANEOUS AIR HANDLING (MAH).

SYSTEM	SYSTEM PREFIX	ALLOTTED LINE NO.'S
CONTAINMENT AIR HANDLING	CAH	9575-9578
CONTAINMENT AIR PURGE	CAP	9300-9310
CONTAINMENT ON LINE PURGE	COP	9311-9314
CHECK POINT AIR HANDLING	CPA	N/A
CONTAINMENT ENCLOSURE AIR HANDLING	EAH	7010-7040
EMERGENCY FW PUMPHOUSE AIR HANDLING	EPA	N/A
ELECTRICAL TUNNEL AIR HANDLING	ETA	N/A
FUEL STORAGE BLDG. AIR HANDLING	FAH	9412-9423
WASTE PROCESSING AIR HANDLING	WAH	9315-9323
PRIMARY AUX. BUILDING AIR HANDLING	PAH	7010-7115

13. MAIN STEAM DRAINS (MSD) SYSTEM IS NOW INCORPORATED IN MAIN STEAM (MS).
14. MISC. VENTS & DRAINS (MVD) SYSTEM IS NOW INCORPORATED IN MAIN STEAM (MS) & CONDENSATE (CO).
15. THE FOLLOWING SYSTEMS HAVE BEEN INCORPORATED IN MISCELLANEOUS GAS (MG).

SYSTEM	SYSTEM PREFIX	ALLOTTED LINE NO.'S
ARGONE-METHANE	AM	6850-6851
ARGONE	AN	6825-6848
ACETYLENE	ACT	6862-6874
HELIUM	HE	6800-6806
ISOBUTANE HELIUM	IH	6860-6861
MAP	MAP	6840-6841
NITROUS OXIDE	NX	6775-6781
OXYGEN	OG	6901-6903
PROPANE GAS	PP	6890-6911

REV	DATE	DSGN	DRWN	CHKD	COE	SES	DESCRIPTION
5	5/10/02	MPW	—	JM	—	RRB	INCORPORATED DCR 97-013 DCN 00 & DCR 00-007 DCN 00. REVISED LINE NUMBERS PER THE LASTEST LINE LIST.
4	10/8/99	BCS	—	DWS	MPW	DJM	INCORPORATED MMOD 91-515 CA00, MMOD 92-532 CA00, DRR 910022 REV 0 & DCR 950039 DCN*00
3	6/12/95	BCL	—	DWS	MPW	DJM	INCORPORATED MMOD 94-570 CA0
2	12/11/91	RMC	—	JM	MRB	BCL	INCORPORATED MMOD 91-511 CA01
1	1/24/91	MRB	RMC	JM	APL	BCL	ISSUED FOR OPERATIONS
0	8/8/86	MRJ	JM/SKN	WRD	BCL	RRC	INITIAL ISSUE

REF. DRAWING NO.	REV	TITLE
9763-M-500006	13	P & ID GENERAL INFORMATION SHEETS
9763-F-805001	10	LEAD SHEET NUCLEAR P & ID

North Atlantic Energy Service Corporation

SEABROOK STATION

LEAD SHEET NUCLEAR
PIPING & INSTRUMENT DIAGRAMS

SHEET 1 OF 2

PID- LEGEND1

PID- LEGEND2

MISCELLANEOUS PIPING AND EQUIPMENT SYMBOLS

SYMBOL	DESCRIPTION
	WYE STRAINER
	FIGURE "8" FLANGE, (SPECTACLE FLANGE)
	PERMANANT INLINE STRAINER
	TEMPORARY STRAINER, REMOVABLE SCREEN
	BASKET STRAINER DUPLEX
	BASKET STRAINER SINGLE
	CONE TYPE REMOVABLE STRAINER
	REMOVABLE SPOOL
	BLIND FLANGE
	RESTRICTING ORIFICE
	FLOW ORIFICE
	PRESSURE REDUCER
	PULSATION DAMPER
	REDUCER, CONCENTRIC
	REDUCER, ECCENTRIC
	DRESSER COUPLING
	EXPANSION JOINT
	FLEX HOSE
	ELECTRIC EMERSION HEATER
D	PLUG
	OPEN FUNNEL DRAIN
	LOW POINT DRAIN
DR	
HV	HIGH POINT VENT
	VENT TO ATMOSPHERE
	POST INDICATOR
	FILTER
D	DRIER FILTER
T X	TRAP X=D DRAIN X=A AIR X=L LIQUID X=S STEAM
R T	RESIN TRAP
	JOHNSON SCREEN
	SPRAY NOZZLES
	SPARGER (INSIDE VESSELS)
	CAP-SMALL BORE (SOCKET WELDED OR TREADED)
	CAP-LARGE BORE (BUTT WELDED)
	QUICK DISCONNECT COUPLING
	HOSE CONNECTOR
FA	FLAME ARRESTER
	SIGHT FLOW GLASS
	SILENCER
	VALVE STEM LEAK-OFF BASKET STRAINER DUPLEX
	ATOMIZER
VXXX	FIRE HOSE REEL ASSEMBLY
VXXX	ANGLE VALVE
VXXX	PRESSURE RESTRICTIVE VALVE
RXX	HYDROLATOR VALVE
	HOSE & REEL ASSEMBLY
	NOZZLE
	FIRE HYDRANT WITH HOSE HOUSE
	FIRE HYDRANT
	SPRINKLER HEAD-UPRIGHT TYPE
	SPRINKLER HEAD-PENDANT TYPE

VALVE TYPES

NOTE:ALL VALVES SHOWN SOLID REPRESENTS CLOSED POSITION.

EXAMPLE — GATE VALVE (CLOSED)

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	GATE VALVE		VACUUM BREAKER
	GLOBE VALVE		VACUUM RELIEF VALVE
	BALL VALVE		AUTO AIR RELEASE VALVE
	PLUG VALVE		SAFETY OR RELIEF VALVE
	SWING CHECK VALVE		ANGLE VALVE
	STOP CHECK VALVE		THREE WAY VALVE
	PACKLESS METAL DIAPHRAM VALVE		FOUR WAY VALVE
	SAUNDERS WEIR VALVE (OPEN)		DELUGE VALVE OR PREACTION DRYPIPE VALVE
	NEEDLE VALVE		SPRINKLER VALVE
	QUICK TEST LEVEL VALVE		FLOW ALARM
	QUICK OPENING VALVE (OPEN)		FOOT VALVE
	BUTTERYFLY VALVE (OPEN)		ANTI-SIPHON VALVE
	BUTTERYFLY VALVE (CLOSED)		DISPERSAL VALVE
	HYDRAULIC ISOLATOR		

VALVE OPERATORS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
E/H	ELECTRO-HYDRAULIC		REACH ROD
	DIAPHRAGM		SPEED CONTROL
M	MOTOR		HANDWHEEL
	PISTON		VALVE HANDWHEEL W/BOX AT GRADE
X	X = G GEAR = S SOLENOID = H HYDRAULIC		CHAIN OPERATOR

LINE CODES

LINE	DESCRIPTION
	PRIMARY DISTRIBUTION HEADERS & PRINCIPLE FLOW PATH PROCESS PIPING
	SECONDARY HEADERS, ALTERNATE FLOW PATHS, BYPASS PIPING & SERVICE PIPING (e.g. COOLING WATER)
	VENTS AND DRAINS, SAMPLE LINES, INSTRUMENT LINES, VARIOUS SIGNAL LINES, COMPONENT OUTLINES AND LETTERING.
	REVISION CLOUDS, BUILDING OUTLINES, SAFETY CLASS/PIPING CLASS BOUNDRIES & LEADERS
	EQUIPMENT/LINES SHOWN IN PHANTOM
	HIDDEN LINES, SYS INTERFACE FUTURE DESIGN AND TEMP DESIGN
—P——P——P—	SKID/VENDOR PACKAGE OUTLINES & BUILDING OUTLINES (SCHEM ONLY)
	ELECTRICALLY TRACED
	STEAM TRACED
	STEAM JACKETED
	DRAWING SEPARATIONS ON OVERVIEWS
	FLOOR ELEVATIONS
	FLOW ARROWS
—R——R——R—	REFRIGERANT LINE

TYPICAL HEAT EXCHANGERS

TYPICAL TANKS AND VESSELS

TYPICAL PUMP TYPES

TURBINE DRIVEN, SUBMERSIBLE, SUMP PUMP, VERTICAL PUMP, CENTRIFUGAL, POSITIVE DISPLACEMENT

TYPICAL INSTRUMENT DETAILS

MOUNTING: LOCALLY MOUNTED; MAIN CONTROL BOARD MOUNTED; CABINET, PANEL OR RACK MOUNTED DEVICE

FLOW: ORIFICE TYPE; VENTURI TYPE; PITOT TUBE; INLINE TYPE; ANNUBAR- BELOW 8"; ANNUBAR- 8" & ABOVE

TEMPERATURE: THERMOWELL (XX=TE, TI, TT, TC, ETC.); FILLED SYSTEM; WHEN THERMOWELL NOT REQUIRED; RADIATION ISO-KINETIC SAMPLER; TEMPERATURE, FLOW, OR RADIATION ELEMENT SURFACE MOUNTED

PRESSURE: XX=PI, PS, PT, PC, ETC.; 2 OR MORE PRESSURE DEVICES FROM SINGLE TAP

LEVEL: XX=LS, LT, LC, LI, LE, ETC.; SIDE MOUNTS; BUBBLER TYPE; INTERNAL FLOAT; SONIC TYPE

CONTROL VALVES: PRESSURE CONTROL VALVE; PRESSURE CONTROL VALVE WITH LIMIT SWITCH; PRESSURE CONTROL VALVE (PROCESS ACTUATED); PRESSURE REDUCING REGULATOR SELF CONTAINED; PRESSURE REDUCING REGULATOR SELF CONTAINED WITH RELIEF VALVE; CONTROL LINE BETWEEN VALVE AND INSTRUMENT

MISCELLANEOUS INSTRUMENTS & SYMBOLS

CONDUCTIVITY CELL: INLINE; BYPASS

DIAPHRAM SEAL: CLOSED COUPLED; FILLED SYSTEM

SYMBOL	DESCRIPTION
	INTERLOCK
	INSTRUMENT BELLOWS
	VACUUM RUPTURE DISC
	PRESSURE RUPTURE DISC
	REGULATOR FILTER
	INSTRUMENT REFERENCE (PER ALPHA DESIGNATION)
	LIMIT SWITCH

LINE CODES

LINE	DESCRIPTION
	SIGNAL LINES
	INSTRUMENT PNEUMATIC
	INSTRUMENT CAPILLARY
	INSTRUMENT HYDRAULIC
	INSTRUMENT LINES, VARIOUS SIGNAL LINES, COMPONENT OUTLINES AND LETTERING.

HVAC SYMBOLS

SYMBOL	DESCRIPTION
	SUPPLY AIR DUCT SECTION (VERTICAL)
	EXHAUST AIR DUCT SECTION (VERICAL)
X	FILTER X=F=ROUGHING OR MEDIUM EFF FILTER X=A=HIGH EFFICIENCY PARTICULATE X=C=CARBON X=M=MOISTURE SEPRATOR
	ROLL FILTER
C	COOLING COIL X=W=WATER X=R=REFRIGERANT
H	HEATING COIL X=W=WATER X=S=STEAM
E	ELECTRIC HEATING COIL
	FIXED LOUVER
	COMBINATION LOUVER
	BACK DRAFT DAMPER
B/D	BALANCING DAMPER
F/D	FIRE DAMPER
	CIRCUIT SETTER OR BALANCING VALVE
	BUTTERFLY DAMPER
	RADIAL MULTI - BLADE DAMPER
	PARALLEL MULTI - BLADE DAMPER
	OPPOSED MULTI - BLADE DAMPER
	VANE AXIAL FAN
	POWER ROOF VENT FAN
	PROPELLER FAN
HU	HUMIDIFIER X=W=WATER X=S=STEAM
UH	UNIT HEATER X=W=WATER X=S=STEAM X=E=ELECTRIC
XXX CFM	NORMAL AIR FLOW
(XXX CFM)	FUEL HANDLING AIR FLOW
0XXX CFM)	INTERMITTENT AIR FLOW
[XXX CFM]	EMERGENCY AIR FLOW
	DIAPHRAGM ACTUATOR SPRING RETURN
	PISTON ACTUATOR SPRING RETURN
	PISTON ACTUATOR DOUBLE ACTING

LINE CODES

LINE	DESCRIPTION
	NON-DUCTED AIR
	HVAC RETURN DUCT
	DUCTED SUPPLY

MITD (MASTER INTEGRITY TEST DIAGRAMS)

(SEE MITD DWG'S)

- TEST BOUNDRY
- N — NO TEST REQUIRED
- IS — INITIAL SERVICE
- SW — STANDING WATER
- SF — STANDING FLUID
- XX — PRESSURE DESIGNATIONS (NUMERIC CODE, ALPHA CODE)

PIPING SAFETY CLASS FLAGS

1	ANS SAFETY CLASS 1 AND ASME III CODE CLASS 1	TO	ANS SAFETY CLASS 2 AND ASME III CODE CLASS 2
2	ANS SAFETY CLASS 2 AND ASME III CODE CLASS 2	TO	ANS SAFETY CLASS 3 AND ASME III CODE CLASS 3
2	ANS SAFETY CLASS 2 AND ASME III CODE CLASS 2	TO	NON-NUCLEAR SAFETY
3	ANS SAFETY CLASS 3 AND ASME III CODE CLASS 3	TO	NON-NUCLEAR SAFETY
3Q	ANS SAFETY CLASS 3 AND ASME III CODE CLASS 3	TO	NON-NUCLEAR SAFETY WITH SPECIAL QUALITY REQUIREMENTS
3S	ANS SAFETY CLASS 3 AND ASME III CODE CLASS 3	TO	NON-NUCLEAR SAFETY WITH SPECIAL SEISMIC SUPPORT REQUIREMENTS FOR HVAC OR I&C
NS	NON-NUCLEAR SAFETY	TO	NON-NUCLEAR SAFETY DESIGNED TO REMAIN FUNCTIONAL DURING AND AFTER AN SSE
2	ANS SAFETY CLASS 2 AND NON-ASME III CODE CLASS	TO	ANS SAFETY CLASS 3 AND NON-ASME III CODE CLASS

- 1 = NON-NUCLEAR SAFETY WITH SPECIAL SUPPORT REQUIREMENTS FOR HVAC OR I&C
- 2 = NON-NUCLEAR SAFETY WHICH MUST REMAIN FUNCTIONAL DURING AND AFTER AN SSE
- 3 = (QUALITY RELATED) NON-NUCLEAR SAFETY WITH SPECIAL QUALITY REQUIREMENTS
- 3* = ANS SAFETY CLASS 3, NON-ASME III CODE CLASS
- 2* = ANS SAFETY CLASS 2, NON-ASME III CODE CLASS

MMOD 94-578

REF. DRAWING NO.	REV	TITLE
9763-M-500006	13	P & ID GENERAL INFORMATION SHEETS
9763-F-805081	10	LEAD SHEET NUCLEAR P & ID

REV	DATE	DSGN	DRWN	CHKD	CDE	SES	DESCRIPTION
5	6/14/95	BCL	—	DWS	MPW	JKM	INCORP. MMOD 94-578 CA-8
4	4/14/94	BCL	—	MPW	DWS	DMQ	INCORP. MMOD 93-517 CA8
3	10/14/92	MRB	—	BCL	DWS	GRM	INCORP. MMOD 92-956 CA8 & DCR 86-41 CA8
2	12/16/91	RMC	—	JM	MRB	BCL	INCORPORATED MMOD 91-511 CA8I
1	3/24/91	MRB	FCB	JM	APL	BCL	ISSUED FOR OPERATIONS
0	6/8/86	MRJ	SKN	WRD	BCL	RRC	INITIAL ISSUE

North Atlantic Energy Service Corporation

SEABROOK STATION

LEAD SHEET
NUCLEAR
P & I DIAGRAMS
SHEET 2 OF 2

PID- LEGEND2

06/06/95

DWG. TRANSFERRED TO CUSTODY OF NHY AT REV. 2 LTR. SBU #A0723 DTD. 10/16/86

LOGIC	SYMBOL	DESCRIPTION
TWO OUT OF THREE	A, B, C → 2/3 → OUTPUT	ANY TWO OUT OF THREE INPUTS TO PRODUCE AN OUTPUT; i.e. A & B, A & C, B & C (ANY AMOUNT OF INPUTS MAY BE USED - E.G. 1 OUT OF 4 = 1/4)
AND	A, B, C → Σ → OUTPUT	INPUTS A, B & C MUST ALL BE PRESENT TO PRODUCE AN OUTPUT.
OR	A, B, C → OR → OUTPUT	INPUTS A, OR B, OR C, OR ANY COMBINATION OF A, B & C TO PRODUCE AN OUTPUT.
NOT	A → ☒ → OUTPUT	WHEN INPUT "A" IS PRESENT THERE IS NO OUTPUT SIGNAL. WITH NO INPUT SIGNAL AN OUTPUT IS PRESENT.
TIME DELAY	"X" SEC, "Y" SEC → OUTPUT	OUTPUT SIGNAL IS PRESENT "X" SEC AFTER INPUT IS APPLIED; OUTPUT SIGNAL REMAINS "Y" SEC AFTER INPUT IS REMOVED.
RETENTIVE MEMORY	→	RETAINS THE COND. OF OUTPUT CORRESPONDING TO LAST ENERG. INPUT (ALSO UPON INTERRUPTION OF POWER)

CS-NAC SBM SWITCH APPLICATIONS: NAC EQUALS "NORMAL AFTER CLOSE"
CS-NAS NAS EQUALS "NORMAL AFTER START"
RED FLAG IS EXPOSED ON THE SWITCH ESCUTCHEON.
CS-NA STOP : NA STOP EQUALS "NORMAL AFTER STOP"
CS-NA TRIP : NA TRIP EQUALS "NORMAL AFTER TRIP"
GREEN FLAG IS EXPOSED ON THE SWITCH ESCUTCHEON

MOV SCHEMES

SCHEME Nº1 - OPEN

VALVE FULL OPEN
OPENING TORQUE SWITCH ACTUATED
VALVE FULL CLOSE
CLOSE MOTOR STARTER ENERG (SEE NOTE 3)
MOTOR OVERLOADS RESET
→ OR → Σ →

SCHEME Nº2A CLOSE (LIMIT ONLY)

VALVE FULL CLOSED
OPEN MOTOR STARTER ENERG.
MOTOR OVERLOAD RESET
→ Σ →

SCHEME Nº2 - CLOSE (LIMIT WITH TORQUE BACK-UP)

VALVE FULL CLOSED
CLOSING TORQUE SWITCH ACTUATED
VALVE FULL OPEN
OPEN MOTOR STARTER ENERG
MOTOR OVERLOAD RESET
→ OR → Σ →

SCHEME Nº3 (T SEATED) - CLOSE

CLOSING TORQUE SWITCH ACTUATED
VALVE FULL OPEN
OPEN MOTOR STARTER ENERG
MOTOR OVERLOADS RESET
→ OR → Σ →

NOTES

1.) LOGIC SHOWN DOWNSTREAM (TO THE RIGHT) OF COMPUTER INPUTS (◇S) IS BY SOFTWARE & INTERNAL TO THE COMPUTER

2.) GATE AND GLOBE VALVES, TYPICALLY, ARE TORQUE (T) SEATED

3.) FULL CLOSED AS DEFINED BY ROTOR 2 OF LIMITORQUE SWITCH IS ADJUSTED IN ACCORDANCE WITH APPLICABLE STATION PROCEDURES TO PROVIDE A SUFFICIENT BY-PASS OF THE OPENING TORQUE SWITCH TO ALLOW THE VALVE TO OPEN FROM THE MAIN SEAT WHEN DESIGNATED IN STATION SCHEMATICS.

ISSUED-FOR-CONSTRUCTION

SYMBOLS
LOGIC DIAGRAM

New Hampshire Yankee
Seabrook Station

1 - NHY - 503100 REV 5

REV. NO.	DATE	DESCRIPTION	DWN. BY	CKD. BY	NES. ENG.	QAE	PEM
5	3/25/92	Rev'd Per DER 92-005	JDB				
4	9/21/88	INCORP. DCR 87-0071, CA-02	JFB				
3	10/29/86	97G3-M-503100 SUPERCEDES UE&C DWG.	JA				
2	4-21-78	ISSUED FOR CONSTR. (NO CHANGE REQ'D.)	APL				
1	8-1977	ADDED LOGIC MEM. & NOTES 1/2, REV.	AMC				
	7-20-76	FIRST ISSUE					

1 - NHY - 503100 REV 5

SECURITY-RELATED INFORMATION – WITHHELD UNDER 5 U.S.C. SECTION 552(b)(4) AND 5 U.S.C. SECTION 552(b)(7)(F)

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