DRAWING NUMBER LR-18000-C
SHEET NUMBER 1

REFERENCE MEL 1 MASTER EQUIPMENT SCOPE (ME-1) FOR COMPONENT ID PREFIXES.

INSTRUMENT FUNCTION / MEASURED VARIABLE		CONTROLLING						MEASURING											SWITCH			ALARMS							POWER OPERATED VALVES				
		RECORDING	INDICATING	NON INDICATING	CONTROL VALVES	SAFETY-RELIEF VALVES	ORIFICE RESTRICTING	HIGH PRESSURE CONNECTION	LOW PRESSURE CONNECTION	RECORDING	INDICATING	OBSERVATION GLASS	PRIMARY ELEMENT	TEST POINT OR WELL	SET POINT	TRANSMITTER	INTEGRATOR	AMPLIFIER	SAMPLER	INDICATING	NON INDICATING	ELECTRONIC	OPEN	CLOSED	ALARM	ALARM HIGH	ALARM LOW	POWER SUPPLY	BLOCKING	ISOLATION	SOLENOID	MOTOR	REMOTE MANUAL CONTROL
		-RC	-IC	-C	-CV	-RV -SV	$-O_R$	K1	K2	-R	-I	-G	-E	-X	-SP	-T	-Ω	$-A_M$	$-S_M$	-IS	-S	$-S_E$	$-A_O$	$-A_C$	-A	$-A_H$	$-A_L$	$-P_W$	BV	IV	SOV	MO	RMC
CONDUCTIVITY	C	CRC	CIC							CR	CI		CE	CX					CS_M	CIS	CS				CA	CA_H	CA_L						
DENSITY	D			DC									DE		DSP	DT																	
DIFF. PRESS.	dP	dPRC	dPIC	dPC				K1	K2	dPR	dPI					dPT				dPIS	dPS				dPA	dPA_H	dPA_L						
FLOW	F	FRC	FIC	FC	FCV		FO_R	K1	K2	FR	FI	FG	FE	FX		FT	FΩ			FIS	FS	FS_E			FA	FA_H	FA_L						
FREON	F_{12}									$F_{12}R$			$F_{12}E$																				
HUMIDITY	H	HRC	HIC							HR	HI		HE	HX				HA_M															
HYDROGEN	H_2	H_2RC											H_2E												H_2A								
LEVEL	L	LRC	LIC	LC	LCV					LR	LI	LG	LE			LT				LIS	LS	LS_E			LA	LA_H	LA_L						
NEUTRON FLUX	N		NIC							NR	NI		NE	NX		NT	NΩ	NA_M		NIS	NS				NA	NA_H	NA_L	NP_W					
OXYGEN	O_2									O_2R	O_2I		O_2E			O_2T																	
PH	pH	pHRC	pHIC	pHC						pHR	pHI		pHE	pHX				pHA_M	pHS_M						pHA	pHA_H	pHA_L						
POSITION	Po									PoR	PoI					PoT				PoIS	PoS		PoAo	PoAc									
PRESSURE	P	PRC	PIC	PC	PCV	PRV PSV	PO_R			PR	PI			PX		PT				PIS	PS	PS_E			PA	PA_H	PA_L						
RADIATION	R				RCV					RR	RI		RE	RX				RA_M	RS_M		RS				RA	RA_H		RP_W					
SAMPLE	S													SX					SS_M														
SPEC. GRAVITY	Sg	SgRC								SgR	SgI				SgSP	SgT									SgA								
SPEED	Sp	SpRC	SpIC	SpC						SpR	SpI		SpE																				
TEMPERATURE	T	TRC	TIC	TC	TCV					TR	TI		TE	TX	TSP	TT				TIS	TS				TA	TA_H	TA_L						
VACUUM	V^C	V^CRC	V^CIC	V^CC		V^CSV				V^CR	V^CI					V^CT					V^CS				V^CA	V^CA_H	V^CA_L						
VIBRATION	Vb									VbR						VbT		VbA_M			VbS				VbA								
VISCOSITY	V																																

LINE SYMBOLS

- PRIMARY FLOW
- SECONDARY FLOW
- PROCESS LINE
- INSTRUMENT CONTROL AIR
- INST. ELECT. LEADS
- INST. CAPILLARY TUBING
- CONNECTION
- CROSSING
- X-22 DRYWELL PENETRATION & DESIGNATION NO.
- FLOW DIRECTION
- ELECTRICALLY HEATED LINES
- DIAPHRAGM SEAL
- RUPTURE DISC

LINE CONTINUATION

C-18000-C SHEET 1 — REFERENCED DWG. & SHEET No
F-5 — GRID LOCATION

LINE IDENTIFICATION

Ø1-6-A
- LINE MATERIAL
- LINE SIZE (INCH.)
- SYSTEM NUMBER

} SEE PIPE SPECS (SEE NOTE 1)

PIPING SYMBOLS

- STRAINER
- FILTER / STRAINER
- DUPLEX STRAINER
- TRAP
- SEPARATOR
- OPEN VENT
- OPEN DRAIN
- REDUCER
- FLANGED END CAP
- SCREWED CAP
- WELDED CAP
- HEAT EXCHANGER
- FLANGED SPOOL PIECE
- 25KW ELECTRIC HEATER
- SPRAY NOZZLE OR MIXING JET
- HOSE CONNECTION

EXPANSION JOINTS

NOT SHOWN ON P&I WHEN USED ONLY FOR NORMAL FLEXIBILITY

- PIPE LOOP
- FLEXIBLE HOSE
- BELLOWS JOINT
- BALL JOINT

INSTRUMENT SYMBOLS

LOCAL MOUNTED INST. — PR — SERVICE (SEE TABLE), EQUIPMENT PIECE NO.
PANEL MOUNTED INST. — PR — SERVICE (SEE TABLE), EQUIPMENT PIECE NO.
LOCAL MOUNTED TRANS. — dPT — SERVICE (SEE TABLE), EQUIPMENT PIECE NO.
PANEL MOUNTED TRANS. — FT — SERVICE (SEE TABLE), EQUIPMENT PIECE NO.
REMOTE MANUAL CONTROL (CONTROL ROOM EXCEPT AS NOTED OTHERWISE — RMC — EQUIPMENT PIECE NO.
REMOTE MANUAL CONTROL (LOCAL) — RMC — EQUIPMENT PIECE NO.
INTERPOSING RELAY — RELAY No.
CATEGORY 1 REG. GUIDE 1.97 INSTRUMENTATION — LI EPNo
ANNUNCIATOR ALARM — RA — AUDIBLE AND/OR VISIBLE, SERVICE (SEE TABLE), 7K-2-1 ANNUNCIATOR DROP NO., M-ISOLATION VALVE MIMIC
DATA HANDLING SYSTEM — TA_H 333 — SERVICE (SEE TABLE), POINT IDENTIFICATION NO.
CONVERTER — E/P — ELECTRIC PNEUMATIC, EQUIPMENT PIECE NO.
CONTROL COMPONENTS — EQUIP. PIECE OR IDENT. NO.
- SYS.-TOTAL CONTROL SYSTEM
- SQUARE ROOT EXTRACTOR
- Σ SUMMER
- × MULTIPLIER
- ÷ DIVIDER
- FUNCTION GENERATOR
- PROPORTIONAL AMPLIFIER
- MV/I MILLIVOLT/CURRENT TRANSMITTER
- Ω INTEGRATOR
- Δ DIFFERENCE
- AVG AVERAGE

VALVE SYMBOLS

- GATE
- GLOBE
- CHECK (USUALLY SWING TYPE)
- LIFT CHECK
- STOP CHECK
- BUTTERFLY (OPEN)
- BUTTERFLY (CLOSED)
- ANGLE
- SAFETY OR RELIEF
- THREE WAY
- FOUR WAY
- 2 PORT COCK, PLUG OR BALL VALVE
- THREE-PORT COCK
- FOUR-PORT COCK
- FLOW CHECK VALVE
- SAUNDERS TYPE
- BALL VALVE
- NEEDLE VALVE
- HISTORIC SYMBOL FOR GLOBE VALVES

VENTILATION DAMPERS

DAMPERS ARE SHOWN IN NORMAL POSITION FOR USUAL PLANT OPERATIONS (SEE NOTE 3)

- SHUT-OFF
- THROTTLING
- BACK DRAFT
- MULTI-DAMPERS

EQUIP. PIECE No FOR VALVES / DAMPERS & PIPE LINE EQUIP.

SYSTEM Nº
Ø1-01
EQUIP. IDENT. Nº

INSTRUMENT VALVE IDENTIFICATION

VLV-39-04-8-A
- INSTRUMENT LETTER SYMBOL AS SHOWN ON DRAWING F-45136-C, SH. 1
- FIGURE NUMBER AS SHOWN ON DRAWING F-45136-C, SH. 1
- INSTRUMENT EQUIPMENT IDENTIFIER PER MEL-1
- COMPONENT ID PREFIX PER MEL-1

SPECIAL NOTES

L.O.=LOCKED OPEN
L.C.=LOCKED CLOSED
R.M.=REMOTE MANUAL (HANDWHEEL EXTENSION)
K.O.=KEY OPERATED
R.P.S.=REACTOR PROTECTION SYSTEM
H.W.O.=HAND WHEEL OVERRIDE
F.C.=FAILS CLOSED
F.O.=FAILS OPEN

VALVE POSITIONS

VALVES ARE SHOWN IN NORMAL POSITION FOR USUAL PLANT OPERATIONS

- OPEN
- CLOSED

CONTROL VALVE / DAMPER OPERATION

1. USE APPLICABLE OPERATOR WITH VALVE / DAMPER SYMBOL
2. SHOW VALVE IN NORMAL POSITION FOR USUAL PLANT CONDITION
3. DETERMINE VALVE POSITION (MODE OF FAILURE) LOSS OF MOTIVE POWER

- NORMALLY OPEN CLOSES ON LOSS OF MOTIVE POWER (F.C.)
- NORMALLY OPEN OPENS ON LOSS OF MOTIVE POWER (F.O.)
- NORMALLY CLOSED CLOSES ON LOSS OF MOTIVE POWER (F.C.)
- NORMALLY CLOSED OPENS ON LOSS OF MOTIVE POWER (F.O.)
- MØ — NORMALLY OPEN FAILS AS IS ON LOSS OF MOTIVE POWER
- MØ — NORMALLY CLOSED FAILS AS IS ON LOSS OF MOTIVE POWER

CONTROL VALVES / DAMPER OPERATORS

- MO AC or DC — M.O.-MOTOR OPERATED, A.O.-AIR PISTON OPER., H.O.-HYDRAULIC PISTON OPER.
- AØ — SINGLE ACTING AIR CYLINDER
- AØ — DOUBLE ACTING AIR CYLINDER
- DIAPHRAGM OPERATED
- PRESSURE CONTROLLER
- DIFF. PRESS. CONTROLLER
- PRESSURE REGULATOR WITH INTERNAL TAP
- 2-WAY SOLENOID VALVE
- DIAPHRAGM OPERATED WITH POSITIONER
- 3 WAY SOLENOID VALVE (ALWAYS SHOWN DE-ENERGIZED): CLOSED PORT, AIR SUPPLY, NEXT TO CLOSE, VENT
- AIR SUPPLY — THESE TWO PORTS CONNECTED WHEN DE-ENERGIZED — 4-WAY SOLENOID VALVE — THESE TWO PORTS CONNECTED WHEN DE-ENERGIZED

FLOW DEVICES

- FE — FLOW ELEMENT ORIFICE, EQUIPMENT PIECE NO.
- FI — IN-LINE FLOW DEVICE, EQUIPMENT PIECE NO.
- FE — FLOW ELEMENT NOZZLE, EQUIPMENT PIECE NO.
- PITOT TUBE
- FE — CLAMP ON FLOW DEVICE

PUMPS & FANS

- CENTRIFUGAL PUMP
- RECIPROCATING PUMP OR COMPRESSOR
- FAN OR BLOWER
- ROTARY UNIT PUMP, BLOWER OR COMPRESSOR

CONTROL OR POWER OPERATED VALVES / DAMPERS COMPOSITE DESIGNATION

SEE PLANT EQUIPMENT IDENTIFICATION SYSTEM MDG-005 FOR FURTHER INFORMATION

IV= DRYWELL ISOLATION VALVE
BV= BLOCKING VALVE

RMC — EP NO.-A; PoI — EP NO.-B; SOV — EP NO.-C; PoS — EP NO.; IV — EP NO.
PoI — EP NO.-B; RMC — EP NO.-A; RPS (REACTOR PROTECTION SYSTEM); MO; PoS — EP NO.; BV — EP NO.; SEE TABLE; FCV — EP NO.

NOTES:

(1) FOR SYSTEM PIPING SPECIFICATION SEE THE FOLLOWING, PIPE SPECIFICATION RECORD SET NINE MILE POINT UNIT #1, DOCUMENT NUMBERS PSRS-GN THRU PSRS 606.

(2) FOR INSTRUMENTATION AIR PROCESS PIPING AND TUBING SEE DRAWING A-22101-C (S18.B).

(3) FOR DETAILED LIST OF FIRE DAMPERS, REFER TO THE FIRE DAMPER SCHEDULE, DRAWING C-42355-C (S10) SHEETS 1, 2 & 3.

◆ DENOTES SYMBOLS ADDED AFTER INITIAL CONSTRUCTION AND TO BE USED IN FUTURE ADDITIONS AND MODIFICATIONS.

NOTE: THIS DRAWING WAS CREATED USING COMPUTER AIDED DRAFTING. DO NOT MAKE MANUAL CHANGES

REV	DATE	BY	REMARKS	CK	APP	MF
Ø						

Constellation Energy Group
STA: NINE MILE POINT NUCLEAR STATION UNIT NO. 1
ACC NO:
LICENSE RENEWAL BOUNDARY DRAWING
SYMBOLS, NOTES, AND ACRONYMS
APP JH — DATE 2-26-65
DES — DR GPM — CK AWC
SCALE NONE — DWG NO LR-18000-C — INDEX — SH 1 — REV Ø

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