AIR CONDITIONING & VENTILATION

- SUPPLY OR COOLED AIR
- RETURN OR EXHAUST AIR IN SPACE
- AIR IN DUCT
- SUPPLY OR RETURN AIR REGISTER (SUPPLY AIR GRILLE)
- AIR FAN
- AXIAL FAN
- RETURN AIR PLENUM
- MANUAL DAMPER
- FIXED DAMPER OR LOUVER
- CONTROL DAMPER OR LOUVER
- WATER COOLING COIL
- HEATING COIL
- INLET SCREEN
- A — SUPPLY,RETURN & RECIRCULATE AIR UNIT
- PF — PRE-FILTER
- HEF — HIGH EFFICIENCY FILTER
- CF — CHARCOAL FILTER
- SA — SOUND ATTENUATOR
- DE — DEMISTER
- F — FILTER
- H — HUMIDISTAT
- PRD — PRESSURE RELIEF DAMPER
- FD — FIRE DAMPER

INSTRUMENT SYMBOLS

- LOCALLY MOUNTED INSTRUMENT FOR SINGLE MEASURED VARIABLE. IF FOR TWO MEASURED VARIABLE,OR SINGLE VARIABLE INSTRUMENT WITH MULTIPLE FUNCTIONS PROVIDE MULTIPLE BALLOONS
- INSTRUMENT ASSIGNED TO ANOTHER SYSTEM. DUPLICATED FOR CLARITY.
- MOUNTED ON MAIN BOARD INSTRUMENT FOR SINGLE MEASURED VARIABLE.
- MOUNTED BEHIND MAIN BOARD OR IN CONTROL ROOM RACK FOR SINGLE MEASURED VARIABLE.
- MOUNTED ON AUXILIARY BOARD INSTRUMENT FOR SINGLE MEASURED VARIABLE.
- MOUNTED BEHIND AUXILIARY BOARD INSTRUMENT FOR SINGLE MEASURED VARIABLE.
- ANNUNCIATOR — H = HIGH; HH = HIGH HIGH; L = LOW; LL = LOW LOW
- I — INTERLOCK GENERALIZED FOR UNDEFINED OR COMPLEX INTERLOCK LOGIC.
- AND — INTERLOCK IS EFFECTIVE ONLY IF ALL INPUTS EXIST.
- OR — INTERLOCK IS EFFECTIVE WHEN ANY INPUT EXISTS

PRIMARY ELEMENTS

LEVEL

- TANK LG 12 — GAGE GLASS
- TANK LI 12 — LEVEL INDICATOR, MAGNETIC-WINDOW TYPE, FLOAT OR DISPLACER TYPE.
- TANK LT 12 — LEVEL TRANSMITTER
- TANK LI 12 — LEVEL INDICATOR, FLOAT TYPE, WITH GAGE BOARD OR TAPE INDICATOR MOUNTED BELOW TOP OF TANK.
- LI 12 / TANK — LEVEL INDICATOR, FLOAT TYPE WITH GAGE BOARD OR TAPE INDICATOR MOUNTED ABOVE TANK.

INSTRUMENTS (CONT'D)

PRESSURE

- PI 12 — PRESSURE INDICATOR, DIRECT-CONNECTED
- PI 12 — PRESSURE INDICATOR, CONNECTED TO CHEMICAL PROTECTOR WITH FILLED SYSTEM AND PRESSURE LEAD LINE.
- PI 12 — PRESSURE INDICATOR, CONNECTED TO CHEMICAL PROTECTOR WITH FILLED SYSTEM, LINE-MOUNTED.
- PI 12, PY 12, D — PRESSURE GAUGE WITH A PULSATION DAMPENER,PRESSURE SNUBBER OR A PULSATION RESTRICTING VALVE.
- PIC 12, PY 12, G — PRESSURE INDICATING CONTROLLER WITH A GAUGE SAVER,GAUGE SURGE/ OVER PRESSURE PROTECTION DEVICE.
- PI 12, PY 12, P — PRESSURE GAUGE WITH A PIGTAIL OR OTHER TYPE OF STEAM SYPHON DEVICE.
- PI 12, PY 12A, D, G, PY 12B — PRESSURE GAUGE MAY HAVE SEVERAL PROTECTING DEVICES WHICH ARE DISPLAYED AS AN ILLUSTRATION.
- PY 12A, PDI 12, PY 12B, G, G, FILTER OR OTHER DEVICE — PRESSURE/VACUUM DIFFERENTIAL GAUGE WITH TWO GAUGE SAVERS.

INSTRUMENTS (CONT'D)

FLOW

- FE 12 — FLOW ELEMENT, ORIFICE PLATE WITH FLANGE OR CORNER TAPS.
- FE 12 — FLOW ELEMENT, ORIFICE PLATE WITH VENA CONTRACTA, RADIUS, OR PIPE TAPS.
- FO 12 (OR RO) — FIXED RESTRICTION ORIFICE (ORIFICE PLATE, CAPILLARY TUBE OR MULTI-STAGE TYPE, ETC.) IN PROCESS LINE.
- FO 12 (OR RO) — RESTRICTION ORIFICE DRILLED IN VALVE. (INSTRUMENT TAG NUMBER MAY BE OMITTED IF VALVE IS OTHERWISE IDENTIFIED)
- FE 12 — FLOW ELEMENT, VENTURI TUBE OR FLOW NOZZLE.
- FE 12 — FLOW ELEMENT, PITOT TUBE OR PITOT-VENTURI-TUBE.
- FE 12 — FLOW ELEMENT, TURBINE OR PROPELLER-TYPE
- FE 12, FC 12 — UNCLASSIFIED PRIMARY FLOW ELEMENT WITH EXTERNAL CONNECTION TO FLOW CONTROLLER. (FOR MAGNETIC OR LAMINAR FLOW ELEMENTS, ETC.)
- FI 12 — ROTAMETER-TYPE FLOW INDICATOR.
- FG 12 — FLOW SIGHT GLASS PLAIN OR WITH PADDLE WHEEL,FLAPPER, ETC.
- FX 12 — FLOW STRAIGHTENING VANES.

TEMPERATURE

- TE 12 — TEMPERATURE ELEMENT WITH OR WITHOUT WELL.(ELEMENT NOT CONNECTED TO SECONDARY INSTRUMENT)
- TX 12 — TEMPERATURE TEST CONNECTION
- TE 12, TE 13 — DUAL OR DUPLEX TEMPERATURE ELEMENT (ELEMENT NOT CONNECTED TO SECONDARY INSTRUMENT)
- TE 12, TR 12 — SINGLE TEMPERATURE ELEMENT NORMALLY RECORDED,OPTIONALLY INDICATED OR TRANSMITTED.
- TI 12 — TEMPERATURE INDICATOR.
- TI 12 — FILLED SYSTEM TYPE TEMPERATURE INDICATOR.

INSTRUMENTS (CONT'D)

ACTUATORS

- DIAPHRAGM, SPRING-OPPOSED
- DIAPHRAGM, PRESSURE-BALANCED
- M — ROTARY MOTOR
- SINGLE-ACTING CYLINDER
- DOUBLE-ACTING CYLINDER
- E/H — ELECTROHYDRAULIC
- BALL-FLOAT TYPE (MECHANICAL LINK ACTUATED)
- S — SOLENOID
- HAND ACTUATOR (MOUNTED AT TOP, SIDE OR BOTTOM OF ACTUATED DEVICE AS APPLICABLE)
- FOR PRESSURE RELIEF OR SAFETY VALVES ONLY: DENOTES A SPRING, WEIGHT, OR INTEGRAL PILOT.

SYMBOLS FOR ACTUATOR ACTION IN EVENT OF ACTUATOR POWER FAILURE. (SHOWN TYPICALLY FOR DIAPHRAGM-ACTUATED CONTROL VALVE)

- FO — FO INDICATES FAIL OPEN; FC INDICATES FAIL CLOSED
- A, B, C, FO — THREE WAY VALVE FAIL OPEN TO PATH A-C
- FO, A, B, C, D, FO — FOUR WAY VALVE FAIL OPEN TO PATHS A-C AND D-B

CONTROL VALVE BODIES

- GLOBE, GATE OR OTHER IN-LINE TYPE NOT OTHERWISE IDENTIFIED.
- ANGLE
- THREE WAY
- FOUR WAY
- ROTARY-PLUG OR BALL
- BUTTERFLY
- BLEEDER TRIP

SELF-ACTUATED DEVICES

PRESSURE

- PCV 12 — PRESSURE-REDUCING REGULATOR WITH EXTERNAL PRESSURE TAP.
- PCV 12 — BACKPRESSURE REGULATOR, SELF-CONTAINED.
- PCV 12 — BACKPRESSURE REGULATOR WITH EXTERNAL PRESSURE TAP.
- PCV 12 — PRESSURE-REDUCING REGULATOR, SELF-CONTAINED.
- PCV 12 — PRESSURE REDUCING REGULATOR SELF CONTAINED. USED IN PLACE OF PRECEDING SYMBOL ABOVE WHEN DRAWING SPACE IS LIMITED.
- PSV 12 (OR RV) — PRESSURE RELIEF OR SAFETY VALVE, ANGLE PATTERN, SPRING OR WEIGHT-LOADED, OR WITH INTERNAL PILOT.
- PSV 12 — PRESSURE RELIEF OR SAFETY VALVE, STRAIGHT-THROUGH PATTERN, SPRING OR WEIGHT-LOADED, OR WITH INTERNAL PILOT.
- PSV 12 (OR RV) — VACUUM RELIEF VALVE, ANGLE PATTERN, SPRING OR WEIGHT-LOADED, OR WITH INTERNAL PILOT.
- PSE 12 — RUPTURE DISC OR SAFETY HEAD FOR VACUUM RELIEF
- PSE 12 — RUPTURE DISC OR SAFETY HEAD FOR PRESSURE RELIEF
- PX 12 — PRESSURE TEST CONNECTION

TEMPERATURE

- TCV 12 — TEMPERATURE REGULATOR, FILLED SYSTEM TYPE

FLOW

- FICV 12 — AUTOMATIC REGULATOR WITH INTEGRAL FLOW INDICATION, TAG REGULATOR FCV-12 IF IT DOES NOT HAVE INTEGRAL FLOW INDICATION.
- HCV 12 — HAND CONTROL VALVE IN PROCESS LINE (HCV IS FOR HAND ACTUATED VALVES USED FOR THROTTLING OR REQUISITIONED BY INSTRUMENT GROUP)

NOTES:

1. SEE DWG 5178000DE FOR SHEET 1.
2. SEE DWG 5178002DE FOR SHEET 3.

DRAWING NUMBER	DESCRIPTION

REFERENCES

NO	DESCRIPTION	RE	IRE	GS	DM	CHK	OTHER	DATE
2	ISSUED FOR BUILD						DCWS	04/14/00

REVISIONS

APRIL 14, 2000 11:37

QC NSR UNIT 1

SAN ONOFRE NUCLEAR GENERATING STATION

DECOMMISSIONING
P & I DIAGRAM
LEGEND
SHEET 2

SOUTHERN CALIFORNIA EDISON

Scale: NONE DRAWN BY: J. LEYVA

5178001DE REV 0

Site File Copy