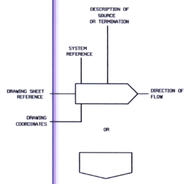
VALVE SYMBOLS

- PIPE SIZE
- VALVE TYPE (SPECIFIED ON VALVE REFERENCE GUIDE)
- 3/4 - 150
- GLOBE VALVE
- GATE VALVE
- GATE VALVE (DOUBLE DISC)
- NEEDLE VALVE
- ANGLE VALVE
- DIAPHRAGM VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- M — MOTOR OPERATED VALVE
- S — SOLENOID OPERATED VALVE
- AIR DIAPHRAGM OPERATED VALVE
- BALL VALVE
- STEM LEAKOFF
- EXTENSION STEM OPERATOR
- SAFETY AND RELIEF VALVE
- THREE WAY VALVE
- PROCESS ACTUATED OPERATOR WITH VALVE POSITIONER
- INSTRUMENT ACTUATED OPERATOR WITH VALVE POSITIONER
- NORMALLY CLOSED VALVE
- NORMALLY OPEN VALVE

REFERENCE BLOCK



LINE CODING

- PIPE SIZE
- SYSTEM
- 18-RC-2502R — PIPE CLASS (REFER TO MATERIAL SPEC. PIPE AND FITTINGS)
- MAIN FLOW LINES (OUT OF SYSTEM DASHED)
- SECONDARY FLOW LINES (OUT OF SYSTEM DASHED)
- INSIDE / OUTSIDE — SHIELD WALL PENETRATION
- FILLED INSTRUMENT CAPILLARY TUBING
- INSTRUMENT TRANSMISSION LINES (PNEUMATIC)
- INSTRUMENT LINES
- ELECTRIC SIGNAL
- IMC / OMC — REACTOR CONTAINMENT
- SS / CS — MATERIAL TRANSITION (TYPICAL FOR FLANGE CONNECTION)
- ELECTRICAL HEAT TRACING

EQUIPMENT SYMBOLS

- SHAFT SEAL PUMP
- VERTICAL U-TUBE STEAM GENERATOR
- HEAT EXCHANGER (KNAT TYPE)
- BLENDER
- POSITIVE DISPLACEMENT PUMP
- CENTRIFUGAL PUMP
- FAN, BLOWER, OR COMPRESSOR
- CANNED MOTOR PUMP
- S — STRAINER
- Y-STRAINER

- F — FILTER
- OPEN DRAIN FUNNEL
- T — STEAM TRAP
- ATMOSPHERIC VENT
- VACUUM BREAKER
- CAPPED OR STUB END
- BLIND FLANGE OR TEMPORARY CONNECTION
- DIAPHRAGM SEAL
- RUPTURE DISC
- FLOW RESTRICTION (NOZZLE OR ORIFICE)
- REDUCER
- THERMAL SLEEVE
- TEMPERATURE WELL
- QUICK DISCONNECT COUPLING
- HEATER (STEAM OR ELECTRICAL)
- LOOP SEAL (TRAP)
- SPARGER (INSIDE VESSEL)
- SPRAY NOZZLES (INSIDE VESSEL)
- M — MIXER (AIR OR ELECTRICAL)
- FLANGE CONNECTION (PIPING OR EQUIPMENT)
- JOHNSON SCREEN
- IMB / OMB — MISSILE BARRIER PENETRATION
- EDUCTOR
- VESSEL MANWAY
- SPOOL PIECE

- TC — TEST CONNECTION LOCATION
- TV — TEST VENT LOCATION

NOTE: FOR TC AND TV PROVIDE 3/4" PIPE WITH CAP OR VALVE.

- T — INDICATES VALVE CLOSED ON T SIGNAL (CONTAINMENT ISOLATION SIGNAL, PHASE A, DERIVED FROM SAFETY INJECTION OR MANUALLY).
- P — INDICATES VALVE CLOSES ON P SIGNAL (CONTAINMENT ISOLATION SIGNAL, PHASE B, HIGH-HIGH CONTAINMENT PRESSURE).
- S / M — INDICATES VALVE RECEIVES SIGNAL DERIVED FROM SAFETY INJECTION

SCHEDULE OF FLOW DIAGRAMS

SIZE	DWG. NO.	TITLE	SYSTEM IDENTIFICATION
D	302-781	STEAM GENERATOR BLOWDOWN	BD
D	302-782	NUCLEAR BLOWDOWN PROCESSING SYSTEM HOLDUP TANK AND DEMINERALIZERS	NB
D	302-783	NUCLEAR BLOWDOWN PROCESSING SYSTEM SPENT RESIN STORAGE TANK	NR
D	302-791	REACTOR MAKEUP WATER SYSTEM	MU
D	302-811	REACTOR BUILDING LEAK RATE TESTING SYSTEM	LR
D	302-812	ECCS CHECK VALVE TESTING	SI
D	302-821	REACTOR AND AUXILIARY BUILDING SUMP PUMPS	ND
D	302-822	NUCLEAR DRAINS TO WASTE HOLDUP TANK	ND
D	302-823	NUCLEAR VALVE LEAK-OFF DRAINS TO RECYCLE HOLDUP TANK	
D	302-824	REACTOR BUILDING COOLING UNIT DRAINS	ND
D	302-825	REACTOR BUILDING VALVE LEAKOFFS TO REACTOR COOLANT DRAIN TANK	
D	302-841	CHILLED WATER - PUMP AND CHILLER AREA	VU
D	302-842	CHILLED WATER TO COOLING COILS 'A'	VU
D	302-843	CHILLED WATER TO COOLING COILS 'B'	VU
D	302-844	CHILLED WATER TURBINE ROOM	VU
D	302-845	NON-NUCLEAR SAFETY CHILLED WATER SYSTEM	VU
D	302-851	INDUSTRIAL COOLING WATER	CI
D	302-852	CRDM COOLING WATER	AC
D	302-861	POST ACCIDENT H_2 REMOVAL AND ALTERNATE PURGE SYSTEM	HR

LEGEND:

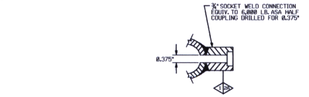
- AUX RJK - AUXILIARY RELAY RACK
- LPP - LIQUID PROCESSING PANEL
- GPP - GAS PROCESSING PANEL
- RWST - REFUELING WATER STORAGE TANK
- SRST - SPENT RESIN STORAGE TANK
- PRT - PRESSURIZER RELIEF TANK
- WHT - WASTER HOLDUP TANK
- ATM - ATMOSPHERE
- RMW - REACTOR MAKEUP WATER
- CCW - COMPONENT COOLING WATER
- F.A.L. - FAIL AS IS
- F.C. - FAIL CLOSED
- F.O. - FAIL OPEN
- L.C. - LOCKED CLOSED
- L.O. - LOCKED OPEN
- CS - CONTAINMENT SUMP
- RHT - RECYCLE HOLDUP TANK
- N.O. - NORMALLY OPEN
- N.C. - NORMALLY CLOSED
- ECC - EMERGENCY COOLING CONNECTION

- RCPS - REACTOR CONTROL & PROTECTION SYSTEM
- IRC - INSIDE REACTOR CONTAINMENT
- ORC - OUTSIDE REACTOR CONTAINMENT
- RD - THERMAL REGENERATION SIGNAL
- CIV - CONTAINMENT ISOLATION VALVE (SEE NOTE 5)
- CBV - CONTAINMENT BOUNDARY VALVE (SEE NOTE 5)

- WPM - WASTE PROCESS MODULE
- WCCT - WASTE EVAPORATOR CONCENTRATES TANK
- ELWS - EXCESS LIQUID WASTE SYSTEM
- SWDS - SOLID WASTE DISPOSAL SYSTEM
- NDS - NUCLEAR BLOWDOWN SYSTEM
- CI - INDUSTRIAL COOLING WATER SYSTEM
- BRP - BORON RECYCLE PANEL
- LAE - LOCK AS IS (PRESET POSITION)
- SW - SERVICE WATER
- VN - VENT HEADER
- DW - DEMINERALIZED WATER
- D - LOCAL DRAIN TO FLOOR OR PORTABLE CONTAINER
- V - VENT TO ATMOSPHERE
- N_2 - NITROGEN FROM WPS NITROGEN MANIFOLD
- I - CONTAINMENT ISOLATION TRIP SIGNAL PHASE A (S SIGNAL OR MANUAL)
- RCDT - REACTOR COOLANT DRAIN TANK
- S - SAFETY INJECTION SIGNAL
- FV - FLARE VENT
- CRE - CONTROL ROOM EVACUATION
- SS - SAMPLING SYSTEM
- IMB - INSIDE MISSILE BARRIER
- OMB - OUTSIDE MISSILE BARRIER
- RR - REACH ROD REQUIRED
- RMWS - REACTOR MAKEUP WATER SYSTEM
- P - CONTAINMENT ISOLATION TRIP SIGNAL PHASE B (HI-HI CONTAINMENT PRESS)
- CCDT - COMPONENT COOLING DRAIN TANK
- FDT - FLOOR DRAIN TANK
- SFPCS - SPENT FUEL PIT COOLING SYSTEM
- SD - SHUT DOWN
- DH - DRAIN HEADER
- H_2 - HYDROGEN FROM WPS HYDROGEN MANIFOLD
- NNS - NON-NUCLEAR SAFETY CLASS

NOTES:

1. FOR WESTINGHOUSE SYSTEM FLOW DIAGRAM SHEETS, SEE IMS-07-M0-0F1-12-13-0001-0.
2. ANS SAFETY CLASSIFICATIONS EQUIPMENT CLASS DESIGNATION EXAMPLE: SAFETY CLASS 2A. THE BOUNDARIES FOR PIPING AND VALVES ARE DESIGNATED BY THE FOLLOWING FLAGS:
   - SAFETY CLASS 1 — QUALITY RELATED
   - SAFETY CLASS 2A
   - SAFETY CLASS 2B
   - SAFETY CLASS 3
   - NON-NUCLEAR SAFETY CLASS
   - BOUNDARY BETWEEN CLASS 1 AND 2A
   - CLASS 1 CONTINUES
3. ALPHA REFERENCES FOR INSTRUMENTATION:
   - A. WASTE PROCESSING PANEL, LIQUID, GAS, OR BORON RECYCLE PANEL SECTIONS.
   - C. MAIN CONTROL BOARD ANNUNCIATOR SYSTEM.
   - S. MASTER COMPUTER INPUT/OUTPUT LIST.
   - D. PROCESS CONTROL BLOCK DIAGRAMS (DRAWING SERIES IMS-51-B32-1 THROUGH 32.
   - E. ELEMENTARY WIRING DIAGRAM IMS-41-B12-1 THROUGH 427.
   - F. FUNCTIONAL DIAGRAMS IMS-41-B05-1 THROUGH 35.
4. IN SAFETY CLASS 1 PIPING, A FLOW RESTRICTION IS REQUIRED, IN 3/8 INCH PIPING TO ALLOW TRANSITION FROM SAFETY CLASS 1 TO SAFETY CLASS 2A. TYPICAL FLOW RESTRICTOR.
5. CIV - CONTAINMENT ISOLATION VALVE. CBV - CONTAINMENT BOUNDARY VALVE. 10 CFR 50 APPX. J VALVE EXEMPT FROM TYPE C TESTING.



D-128

3							
2							
1							
0	ISSUED	ITEL CARD ENHANCED PER ESD-SRD-PM	MLR	JCK			
1	ISSUED	PER ECN 2	MLR	JCK			
2	ISSUED	ADD SERIES IMS, PER MRF 12854	MLR	JCK			
No.	DATE	BY	REVISION	CHK BY	APPROVAL		

DRAWING LEGIBILITY CLASS 1
SCANNED CAD ENHANCED

FSAR Figure 1.2-27

SOUTH CAROLINA ELECTRIC & GAS COMPANY

SOUTH CAROLINA NUCLEAR STATION

FIPING — SYSTEM FLOW DIAGRAM
FLOW DIAGRAM LEGEND

DESIGN ENGINEERING
SOUTH CAROLINA ELECTRIC & GAS COMPANY
A.W.N. — M.G.R. — D.J.C.

E-302-002 — 0

DESIGN ENGINEERING — DESIGN ENGINEERING