GENERAL PIPING SYMBOLS

MAIN PROCESS LINES
SECONDARY PROCESS LINES
UTILITY LINES
UNDERGROUND OR FUTURE LINES (AS PER INDICATED ON PID)
BATTERY OR PACKAGE LIMIT
PIPING SPECIFICATION BREAK (CLASS X | CLASS Y)
INSULATION CHANGE (H | N)
FLOW DIRECTION
NO POCKET — NO LOW POINT LINE (NOTE 3)
SELF DRAINING LINE
1% — SLOPING LINES (CONTINUOUS SLOPE)
TRACED LINE
JACKETED LINE
FLANGES
INSULATING JOINT
INSULATING FLANGE
SPADE
SPACER
SPECTACLE BLIND CLOSE
SPECTACLE BLIND OPEN
CAP
PLUG (THREADED)
HOSE CONNECTION (FEMALE)
HOSE CONNECTION (MALE)
REDUCER
FLEXIBLE HOSE
BLIND FLANGE
WELDED SPOOL
SP — SPOOL PIECE
SG — SIGHT GLASS
SAMPLE CONNECTION
SCYYY 1A — NUMBER / TYPE
ER — ELECTRICAL RESISTANCE PROBE (NOTE1)
CC — COUPON CORROSION (NOTE1) ACCESS FITTING
LIQUID TRAP WITH FILTER
LIQUID TRAP DRAIN
FLAME ARRESTOR
SPARK ARRESTOR
OPEN VENT (HOOK TYPE)
OPEN VENT (WITH HOOD)
OPEN VENT (WITH BIRD SCREEN)
VORTEX BREAKER
XX — TUNDISH TYPE OF SEWER
EXPANSION JOINT

BARRED TEE
MISCELLANEOUS CONNECTION
PS / YYY — PIPING SPECIAL ITEM (SERIAL NUMBER)
STRAIGHTENING VANES
TEMPORARY STRAINER "T" TYPE
TEMPORARY STRAINER "CONE" TYPE
COMPRESSOR SUCTION INLINE STRAINER
"Y" TYPE STRAINER
PULSATION DAMPENER
NOISE CARTRIDGE
V: VENT / D: DRAIN
* : MINIMUM DISTANCE
US N 1 AT GRADE — UTILITY STATION AT GRADE
US N 2 EL: 108400 — UTILITY STATION ON PLATFORM AT LEVEL 108400
PIP INSTR. / ANALYSERS SHELTER N°2 — UTILITY LINES TO ANALYSER SHELTER
CHANGE IN RESPONSIBILITY
VF C — INDICATIVE PACKAGE LIMIT C : EPC CONTRACTOR VF : VENDOR FURNISHED
HOSE REEL
HB — HOSE BOX
FUSIBLE PLUGS
SPRINKLER
DELUGE SPRAY TUBE
FIRE HYDRANT
WF — FIXED WATER/FOAM FIRE MONITOR
FIXED WATER FIRE MONITOR
P12 — POWDER EXTINGUISHER 12Kg
P50 — WHEELED POWDER EXTINGUISHER 50Kg
C6 — CO_2 EXTINGUISHER 6Kg
W6 — WATER EXTINGUISHER 6Kg
SS — SAFETY SHOWER AND EYE WASH

MANUALLY OPERATED VALVES

GATE VALVE
GLOBE VALVE
BUTTERFLY VALVE
CHECK VALVE
NEEDLE VALVE
DIAPHRAGM VALVE
BALL VALVE
BALL VALVE FULL BORE (FB)
ANGLE VALVE
PLUG VALVE
FLOAT VALVE
3 WAY GLOBE VALVE
3 WAY VALVE
4 WAY VALVE
SLIDE GATE VALVE
MINIMUM FLOW VALVE
DAMPER

LET DOWN & DESUPERHEATING STATION
GATE VALVE WITH ELEVATED WHEEL (USED IN THE PITS)
BALL VALVE WITH ELEVATED WHEEL (USED IN THE PITS)
STRAHMAN RAM TYPE VALVE

TSO TSO — TSO VALVE SEALING DIRECTION*
VALVE VENTING DIRECTION** (IF REQUIRED)

* THE SEALING DIRECTION OF "TSO" VALVES SHALL BE INDICATED ON THE PID BY BLACKENING IN THE SIDE FROM WHICH FLOW MUST BE PREVENTED WHEN THE VALVE IS CLOSED.

** THE VENTING DIRECTION FOR GATE AND BALL VALVES IN CRYOGENIC LIQUID SERVICE WITH CAVITY VENTS SHALL BE INDICATED BY BLACKENING IN THE SIDE THAT THE CAVITY IS VENTED TO. THE CAVITY SHOULD BE VENTED TO THE SIDE FROM WHICH FLOW MUST BE PREVENTED WHEN VALVE IS CLOSED.

*** IN CASE OF SEQUENCE VALVE INSTALLED AROUND MOLECULAR SIEVE, BLACKEN SIDE SHOWS SEAT END DIRECTION.

LINKS BETWEEN PID'S

B.L
STABILISED CONDENSATE TO STORAGE / 143-0030-0101 — CONNECTION WITH ANOTHER UNIT/ STORAGE (ROUTING THROUGH BATTERY LIMIT); P.I.D. NUMBER
SWEET GAS FROM AMINE TREATMENT / 101-0030-0108 — CONNECTION WITH ANOTHER SECTION LOCATED IN THE SAME GEOGRAPHIC BLOCK (NO BATTERY LIMIT); P.I.D. NUMBER
CONNECTION LINE BETWEEN TWO PROCESS PID INTO THE SAME UNIT.; P.I.D. NUMBER (ONLY SERIAL NUMBER)

LINK BETWEEN PROCESS AND UTILITY PID

TO USER — SL — SERVICE DESIGNATION; DRAWN ON PROCESS PID; UTILITY PID NUMBER (GEOGRAPHICAL DISTRIBUTION)
FROM DISTRIBUTION HEADER — USER ITEM; DRAWN ON UTILITY PID (GEOGRAPHICAL DISTRIBUTION); PROCESS PID NUMBER

ABBREVIATIONS

A/G	ABOVE GROUND
AS	AIR SUPPLY
ATM	ATMOSPHERE
BD	BLOWDOWN
BDV	EMERGENCY BLOWDOWN VALVE
BL	BATTERY LIMIT
C	EPC CONTRACTOR
CC	CORROSION COUPON
CP	CORROSION PROBE
CSC	CAR SEAL CLOSED
CSO	CAR SEAL OPEN
D	DRAIN
EC	EROSION COUPON
ELEV.	ELEVATION
ER	ELECTRICAL RESISTANCE PROBE
ESD	EMERGENCY SHUTDOWN
ESDV	EMERGENCY SHUTDOWN VALVE
FB	FULL BORE
FC	FAIL CLOSED
FL	FAIL LOCKED IN POSITION
FO	FAIL OPEN
FV	FULL VACUUM (NOTE 2)
GOV	GAS OPERATED VALVE
HH	HAND HOLE
HPT	HIGH POINT
HR	HANDLE REMOVED
ID	INTERNAL DIAMETER
INSTR.	INSTRUMENT SECTION SUPPLY
LC	LOCKED CLOSED
LNL	LINE NUMBER LIMIT
LO	LOCKED OPEN
LPT	LOW POINT
LS	LIQUID SEAL
MAX	MAXIMUM
KV	SEQUENCE VALVE
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
MOV	MOTOR OPERATED VALVE
MW	MANWAY
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NNF	NORMALLY NO FLOW
PCS	PROCESS CONTROL SYSTEM
PIP	PIPING SECTION SUPPLY
PLC	PROGRAMMABLE LOGIC CONTROLLER
PS	PIPING SPECIAL
PSS	PROCESS SAFETY SYSTEM
PSV	RELIEF VALVE
RB	REDUCED BORE
RBF	REDUCING FLANGE
RO	RESTRICTION ORIFICE
SC	SAMPLE CONNECTION
SD	SHUT DOWN
SDV	PROCESS SHUTDOWN VALVE
SK	SURFACE MOUNTED (SKIN)
SO	STEAM OUT
TL	TANGENT LINE
TL/TL	TANGENT LINE TO TANGENT LINE
TSO	TIGHT SHUT OFF
TSV	THERMAL RELIEF VALVE
TW	THERMOWELL
UC	UTILITY CONNECTION
UCP	UNIT CONTROL PANEL
U/G	UNDERGROUND
US	UTILITY STATION
USS	ULTIMATE SAFETY SYSTEM
V	VENT
VDU	VISUAL DISPLAY UNIT
VF	VENDOR FURNISHED
VT	VESSEL TRIM
XV	PROCESS ACTUATED ON/OFF VALVE

INSULATION AND TRACING CODE

A	ACOUSTIC INSULATION
B	SOLAR INSULATION PROTECTION
C	COLD INSULATION
D	DUAL (HOT AND COLD)
E	ELECTRICAL TRACING
H	HOT INSULATION
I	ANTI-ICING
J	STEAM JACKETED LINE
K	ANTI-CONDENSATION
L	COLD AND ACOUSTIC INSULATION
N	NO INSULATION
P	PERSONNEL PROTECTION
S	STEAM TRACING
T	HOT AND ACOUSTIC INSULATION
U	UNDERGROUND EXTERNAL COATING

SERVICES SYMBOLS

AIR

EA	EXHAUST AIR
IA	INSTRUMENT AIR
PA	PROCESS AIR
UA	UTILITY AIR

CLOSED DRAINS

DA	AMINE DRAIN
DC	CAUSTIC DRAIN
DP	COLD DRAIN
DR	HYDROCARBON DRAIN
DS	SOUR WATER DRAIN
MD	GLYCOL DRAIN (MEG)
MT	METHANOL DRAIN
SD	DISULFIDE OIL DRAIN

CHEMICALS

AF	ANTI FOAM
AS	ANTI SCALE
AV	VOLATILE AMINE
BI	BIOCIDE
CD	CLEANING AGENT (DISTILLATION)
CE	CLEANING AGENT (ELECTROCHLORINATION)
CG	COAGULANT
CK	CORROSION INHIBITOR
DE	DEMULSIFIER
HY	SODIUM HYPOCHLORITE
ME	METHANOL
MO	MORPHOLINE
OX	OXYGEN SCAVENGER
PH	PHOSPHATE
RE	REVERSE DEMULSIFIER
SA	SULFURIC ACID
SU	SULPHITE
SY	SODIUM HYDROXIDE

STEAM CONDENSATES

CC	COLD STEAM CONDENSATES
CL	LP STEAM CONDENSATES
CH	HP STEAM CONDENSATES
CP	POLLUTED STEAM CONDENSATES

FLARE

FA4(5)	HP WET GAS FLARE PHASE4 (PHASE5)
FC4(5)	HP DRY & COLD GAS FLARE PHASE4 (PHASE5)
FS4(5)	MP WET GAS FLARE PHASE4 (PHASE5)
FT4(5)	MP COLD & DRY GAS FLARE PHASE4 (PHASE5)
FB4(5)	LP WET GAS FLARE PHASE4 (PHASE5)
FD4(5)	LP COLD GAS FLARE PHASE 4 (PHASE5)
FL	LPG FLARE
FJ	JETTY FLARE (BY OTHERS)
FK	LLP GAS HEADER

FUEL

DO	DIESEL OIL
FG	FUEL GAS (HP AND LP)

INERT GAS

IG	INERGEN GAS
N	NITROGEN

MISCELLANEOUS

ATM	ATMOSPHERIC VENT
BB	BOILER BLOWDOWN
BR	BRINE REJECT
CA	CATALYST
HO	HYDRAULIC CIRCUIT
LO	LUBE OIL
SG	SEAL GAS
SO	SEAL OIL

PROCESS

AM	AMINE
CF	FRESH CAUSTIC
DF	DISULFIDE OIL (DSO)
G	HYDROCARBON GAS
GA	ACID GAS (H2S + CO2)
GM	GLYCOL (MEG)
HC	HYDROCARBON (LIQUID GAS)
L	HYDROCARBON LIQUID
LC	LEAN CAUSTIC
PR	PROPANE REFRIGERANT
RC	RICH CAUSTIC
SC	SPENT CAUSTIC
LS	SULFUR (LIQUID)
SS	SULFUR (SOLID)

SEWER

AOC	ACCIDENTALLY OIL CONTAMINATED SEWER
CS	CHEMICAL SEWER
HW	HOT NON-CONTAMINATED SEWER
NW	NON-CONTAMINATED SEWER
OD	OILY WATER SEWER (OPEN DRAIN)
WD	DOMESTIC SEWER

STEAM

SL	LOW PRESSURE STEAM
SH	HIGH PRESSURE STEAM

WATER

WA	FOAM SOLUTION WATER (FIRE FIGHTING)
BW	BOILER FEED WATER
CW	COOLING WATER
DW	DRINKING WATER
FW	FIRE WATER
PW	PROCESS WATER (OILY WATER)
RW	DESALINATED WATER
SW	SEA WATER
TW	DEMINERALISED WATER
UW	UTILITY WATER
WS	SOUR WATER
WT	STRIPPED WATER
WW	SPENT OR WASTE WATER

LINE NUMBERING

1. GENERAL LINE NUMBERING

4"-XXX.UUU.SYYZZ-CCCC-H

- H — INSULATION OR TRACING CODE
- CCCC — PIPING CLASS
- YY — SEQUENTIAL NUMBER FROM 01 UP TO 99
- S — UTILITY SYSTEM NUMBER
  - 21 FOR STEAM GENERATION AND DISTRIBUTION
  - 22 FOR FUEL GAS
  - 23 FOR INSTRUMENT & SERVICE AIR
  - ETC
- UUU — 00 SHALL BE USED FOR PROCESS LINES (THEN 01,02 ..... IF REQUIRED BY THE NUMBER OF LINES)
- XXX — SECTION NUMBER =1,2,3 OR N FOR MULTI-SECTION UNITS =1 FOR SINGLE-SECTION UNITS
- UNIT NUMBER
- FLUID LETTER SYMBOL (3 ALPHAS MAX.)
- LINE SIZE (IN INCH) (2 DIGITS MAX.)

2. FIRE WATER LINE NUMBERING

4"-FW.130.S3ZZZ-CCCC-H

- H — INSULATION OR TRACING CODE
- CCCC — PIPING CLASS
- ZZZ — SEQUENTIAL NUMBER FROM 001 UP TO 999
- S — SYSTEM NUMBER OF FIRE WATER(3)
- 3 — SECTION NUMBER =1,2,3 OR N FOR MULTI-SECTION UNITS =1 FOR SINGLE-SECTION UNITS
- 130 — FIRE WATER UNIT NUMNBER(3)
- FW — FLUID LETTER NUMBER
- LINE SIZE (IN INCH) (2 DIGITS MAX.)

NOTE

1 – CC AND ER TO BE INSTALLED AT 6 O'CLOCK POSITION ROOM TO BE PROVIDED FOR RETRIEVER TOOL INSTALLATION. POLARISATION PROBE (PP) USED FOR WATER FILLED LINES ONLY.

2 – UNLESS OTHERWISE INDICATED, FULL VACUUM (FV) CONDITIONS SHALL BE CONSIDERED AT A TEMPERATURE OF 5°C.

3 – NO LIQUID POCKET IN THE LINE. WHEN NECESSARY TO PREVENT VAPOUR POCKETS, THE NOTE WILL READ "NO VAPOUR POCKET"