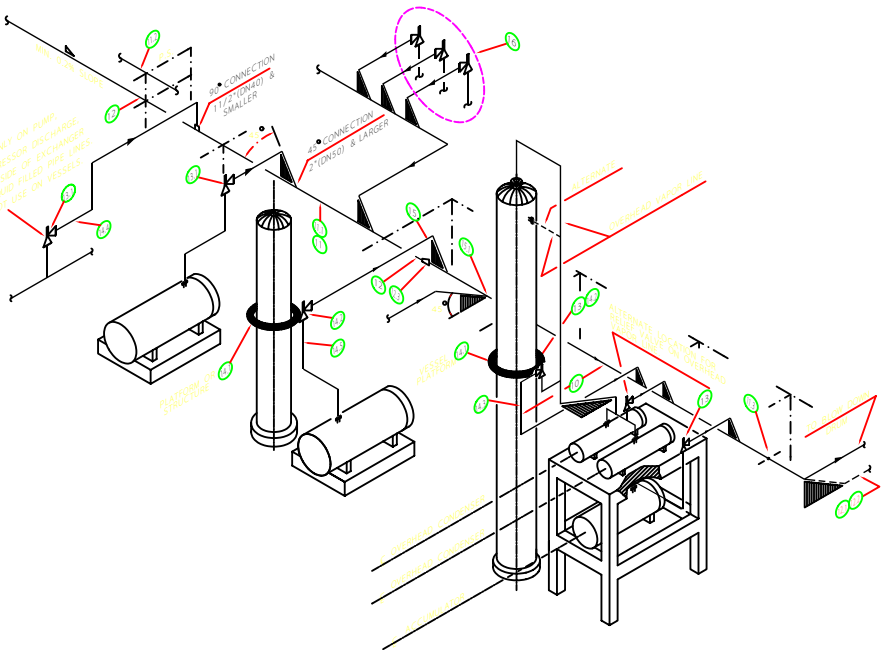
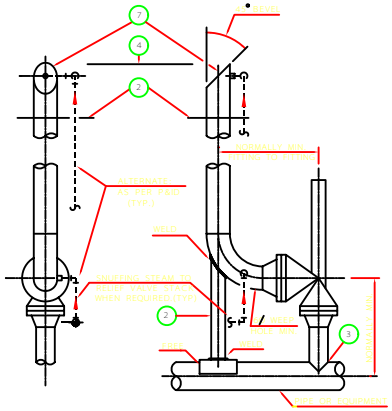
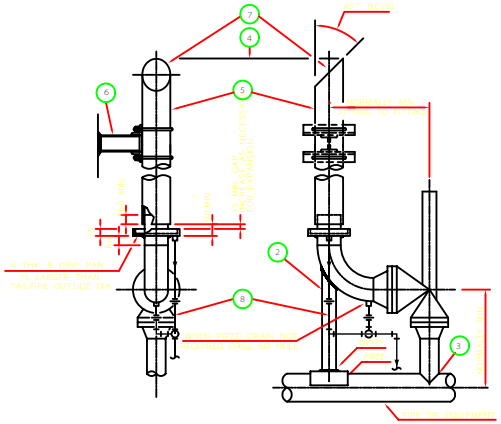


CLOSED RELIEF VALVE SYSTEM



ATTACHED TAILPIPE

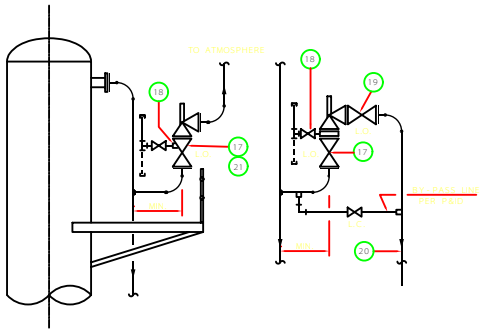


DETACHED TAILPIPE

TO BE USED ONLY AS REQUIRED BY STRESS OR PROCESS CONSIDERATIONS

RELIEF VALVE TO ATMOSPHER DETAILS

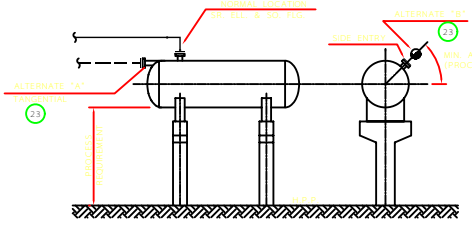
22



OPEN SYSTEM

CLOSED SYSTEM

RELIEF VALVES TO ATMOSPHERE OR TO CLOSED SYSTEM REQUIRING BLOCK VALVE



BLOW-DOWN DRUM ELEVATION

NOTES

1 - ALL THICKNESS VALUES & DIMENSIONS ARE IN mm.

2 - SUPPORTS AND GUIDES SHALL BE PROVIDED FOR TAILPIPES IF:
2.1 - REQUIRED BY STRESS TO OVERCOME THRUST EFFECT OF DISCHARGING MEDIUM.
2.2 - TAILPIPE OR STACK EXCEEDS ALLOWABLE FREE STANDING HEIGHT, SHALL BE DETERMINED AS FOLLOWS:
3/4"(DN20) TO 1 1/2"(DN40) MAXIMUM EQUALS 900. 2" (DN50) TO 4" (DN100) USE FACTOR OF 30 PER NOMINAL mm OF OUTLET SIZE ie, 2" (DN50) x 30= 1500 ALLOWABLE.
6" (DN150) TO 10" (DN250) USE FACTOR OF 18 PER NOMINAL mm OF OUTLET SIZE ie 6" (DN150) x 18= 2700 ALLOWABLE.

3 - HEAVIER WALL PIPE OR STRONGER TYPE OF BRANCH CONN. SHALL BE USED IF REQD. BY STRESS CONDITIONS .

4 - END OF TAILPIPE SHALL BE MITERED AT 45° BEVEL FACING AWAY FROM THE OPERATING AREA AND SHALL TERMINATE 3000 ABOVE NEARBY PLATFORMS WITHIN A RADIUS OF 8000.

5 - MINIMUM STACK SIZE SHALL BE ONE SIZE LARGER THAN RELIEF VALVE OUTLET. A LARGER SIZE MAY BE REQUIRED BY INSTRUMENT SPECIFICATIONS. EXCESSIVE STACK HEIGTH , OR MOVEMENT OF THE RELIEF VALVE DUE TO THERMAL EXPANSION OF THE PIPING OR EQUIPMENT.

6 - STACK SHALL BE SUPPORTED AND GUIDED FROM ADJACENT BUILDING , STEEL STRUCTURE, ETC.

7 - TAILPIPES FROM RELIEF VALVES SHALL BE DIRECTED AWAY FROM WINDOWS, BUILDINGS, ROOF OVERHANGS OR OVERHEAD OBSTRUCTIONS.

8 - DRAIN PIPE IF REQUIRED FOR SAFETY OR CONTRACT SPECIFICATIONS.

9 - THERMAL RELIEF VALVES SHALL BE PROVIDED IN ACCORDANCE WITH PROCESS REQUIREMENTS AND SHALL BE SHOWN ON THE FLOW DIAGRAM.

10 - RELIEF VALVE TAILPIPES AND HEADERS, SIZE AND CONFIGURATIONS, SHALL BE BASED ON THE OUTLET TEMPERATURE OF THE RELIEF VALVES AS STATED IN THE INSTRUMENT SPECIFICATIONS WITH CONSIDERATION GIVEN TO THE ACTUAL HEAT LOSS OR PICK-UP FROM THE ATMOSPHERE AND ANY PROCESS REQUIREMENTS.

11 - NORMAL RELIEF HEADER LOCATION IN THE PIPERACK SHALL BE ON SIDE WHERE THE MAJORITY OF THE EQUIPMENT IS LOCATED.
11.1 - IF POSSIBLE THE HEADER SHALL BE LOCATED ON THE PIPE SUPPORT(S) WITH OTHER PIPING.
11.2 - IF AN ADDITIONAL ELEVATION IS REQUIRED, THE HEADER NORMALLY SHALL BE LOCATED ABOVE THE PIPE SUPPORT COLUMNS.
11.3 - PIPE ANCHORS AND GUIDES SHALL BE PROVIDED AS REQUIRED TO CONTROL THERMAL MOVEMENTS AND FORCES.

12 - ELEVATION OF RELIEF HEADER IS SET BY THE REQUIRED ELEVATION OF THE BLOW-DOWN DRUM, OR ROAD CLEARANCE, WHICHEVER GREATER.
12.1 - HEADER SHALL BE SLOPED, BUT DIRECTIONAL CHANGES NECESSITING ELEVATIONAL CHANGES SHALL BE SO ARRANGED THAT THE HEADER DROPS CONTINUOUSLY IN THE DIRECTION OF THE BLOWDOWN DRUM (NO POCKETS).
12.2 - FLAT TURNS SHALL BE USED WHEN PRACTICABLE.
12.3 - HEADER REDUCERS SHALL BE BOTTOM FLAT.

13 - RELIEF VALVES, WHENEVER PRACTICABLE, SHALL BE LOCATED AT A PLATFORM PRIMARILY INTENDED FOR MANHOLE ACCESS,INSTRUMENTATION, MAINTENANCE, ETC.
13.1 - WHEN PLATFORMS ARE NOT AVAILABLE, CONSIDERATION SHALL BE GIVEN TO VALVE LOCATIONS ABOVE HEADER AT EDGE OF PIPERACK.

14 - RELIEF VALVE ELEVATIONS SHALL BE PREDICATED ON ONE OR MORE OF THE FOLLOWINGS.
14.1 - AVAILABLE PLATFORMS.
14.2 - AN ELEVATION THAT WILL PERMIT FREE DRAINING INTO THE RELIEF HEADER.
14.3 - A LOCATION THAT PROVIDES SUFFICIENT FLEXIBILITY FOR STRESS REQUIREMENTS.
14.4 - IF THE RELIEF VALVE MUST BE AT A LOWER ELEVATION THAN THE HEADER THE TAILPIPE LOW POINT SHALL BE DRAINED AND PROCESS CONDITIONS MAY REQUIRE A CHECK VALVE IN THE HORIZONTAL LINE NEAR THE HEADER.
14.5 - IF VALVE IS NOT LOCATED ADJACENT TO LINE OR EQUIPMENT BING RELIEVED, INSTRUMENT REQUIREMENTS MAY DICTATE INCREASE IN LINE SIZE TO THE RELIEF VALVE.

15 - NORMAL TAILPIPE HEADER CONNECTION SHALL BE ON TOP.
15.1 - IF, DUE TO SUPPORT PROBLEMS, IT IS NOT FEASIBLE TO ENTER THE TOP OF THE HEADER CONSIDERATION SHALL BE GIVEN TO INCREASE IN SIDE ENTRY PROVIDING STRESS REQUIREMENTS PERMIT.

16 - WHEN PRACTICABLE, CONSIDERATION SHALL BE GIVEN TO MANIFOLDING SEVERAL RELIEF VALVE DISCHARGES INTO A COMMON SUB HEADER.

17 - BLOCK VALVES TO BE PROVIDED ONLY WHEN SPECIFIED BY PROCESS / INSTRUMENTS AND SHWON ON FLOW DIAGRAM BLOCK VALVES TO BE LOCKED OPEN (L.O.)

18 - BLEEDING FACILITIES (e. g. DRIP RING, SPOOL PIECE OR TAPPEDHOLE) SHALL BE PROVIDED BETWEEN SAFETY VALVE AND ITS UPSTREAM BLOCK VALVE. DOWNSTREAM BLOCK VALVE OF SAFETY VALVE MAY REQUIRE BLEEDER.

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NOTES CONTINUATION

19 - DOWNSTREAM BLOCK VALVE SHALL BE INSTALLED PREFERIBLY WITH STEM EITHER IN THE HORIZONTAL OR IN THE DOWN POSITION TO ELIMINATE THE POSSIBILITY OF THE DISC FALLING INTO THE LINE AND BLOCKING THE FLOW IN CASE THE STEM SHOULD CORRODE OFF JUST ABOVE THE DISC. OMIT VALVE ON ATMOSPHERIC EXHAUST.

20 - DISCHARGE PIPING TO CLOSED SYSTEMS SHALL BE SELFSUPPORTING TO PERMIT REMOVAL OF RELIEF VALVE.

21 - BLOCK VALVE TO BE INSTALLED AGAINST RELIEF VALVE WHEN INLET SIZE IS 6"(DN150) OR LARGER AND INLET BLOCK VALVE AND RELIEF VALVE HAVE IDENTICAL FLANGE RATINGS.

22 - RELIEF VALVE TO ATMOSPHER SHALL BE LOCATED AWAY FROM ANY HEAT OR FLAME SOURCES.

23 - ALTERNATES CAN BE USED ONLY WHEN ELEVATIONS ARE CRITICAL.

NO.	DESCRIPTION	DATE

IRANIAN PETROLEUM STANDARD

NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION

RELIEF VALVE INSTALLATION AND RELIEF SYSTEM

DATE	DRAWING No.	SHEET	REV.
	IPS-D-PI-123	1	1