

ANNEXURE - 30

DESIGN AND PROCESS PARAMETERS

FOR DRS/CPRS (TYPE - 1) 300# - DESIGNED FOR INLET PRESSURE OF MINIMUM 10 BARG

Project Name : Pressure Reduction Skid – DRS

Revision : 0

- 1. Confirming Standard** : PNGRB Technical Standard, ASME B 31.8 and IGE/TD/13, (Latest Edition)
- 2. Piping/Filter Standard** : ASME B 31.8, API 1104 and ASME Sec.- VIII & IX with (latest addenda)
- 3. Functional Requirements** : IGE/TD/13 and as per agreed MANUFACTURER's Recommendation
- 4. Class Location** : Location Class Four (4) as per PNGRB Standard
- 5. Medium** : Natural Gas
- 6. Design & Operating Data** :

Item No.	DRS Flow (SCMH)	Design Flow, SCMh @ inlet pressure	Design Pres. (Barg)	Design Temp. Deg. C	Inlet Op. Pres. (Barg)	Op. Temp. Deg. C	Set Range of Regulator (Barg)	Outlet set Pres. (Barg)
1	10000	10000@10 barg	49	-10 to 65	10-40	0-50	1.5- 6	4

Note: Piping size of regulator downstream shall be designed considering 4.0 bar outlet pressure.

7. Limiting gas Velocity:

- Filter Upstream - Designing of pipeline size before filter, velocity to be considered 20 m/s.
- Filter Downstream & Before Regulators - Velocity to be consider 30 m/s
- After Regulator - Velocity to be consider 30 m/s

8. Environment Considerations:

All equipment shall be designed for operation, storage & transportation under the following environmental conditions.

9. Site Conditions

The entire instrumentation system shall be designed for the following site conditions:

Max. /Min. temperature	:	50 / 0 ° C
Relative Humidity	:	100%
Hazardous Area classification	:	Zone 1, Gas group IIA / IIB, Temp. Class T3

10. Gas Composition:

Following Gas composition has been considered for design and engineering of PRS skids:

General Gas Composition	
Component	Mole %
CH ₄	92.66%
Nitrogen	0.42%
C ₂ H ₆	6.32%
C ₃ H ₈	0.49%
i-C ₄ H ₁₀	0.05%
n-C ₄ H ₁₀	0.06%

11. Sizing Criteria:

For sizing of inlet piping, outlet piping, Regulator and SSV below criteria shall be considered-

Inlet Pressure	Outlet Pressure
Min : 10 barg	Min : 4.0 barg
Normal : 10 barg	Normal : 4 barg (Set Point)
Max : 26 barg	Max. : 5 barg

12. VENDOR shall provide spool piece as per length of turbine meter mentioned below:

S. No.	DRS/CPRS (SCMH)	Meter Size	Meter type
1	10000	8"	TUR, DN200, 150#, G1600

13. Vendor shall consider the minimum inlet/outlet size of the skid as tabulated below. However, final sizing calculation shall be submitted by the Vendor, along with filter size.

DRS Size	Minimum Inlet Size (Inch)	Minimum Outlet Size (Inch)
10000 SCMH	6"	8"

14. Base frame and Support –

Description	Material	Size
Baseframe	IS 2062 Gr. A	Vendor shall suggest as per stress analysis of DRS-10000 SCMH
Support	IS 2062 Gr. A	
Earthing Boss	SS304	Dia. 30 x 40 LG
Lifting Lug Plate	IS 2062 Gr. A	Vendor shall suggest as per stress analysis of DRS-10000 SCMH
Support Base Plate	IS 2062 Gr. A	
Hex Nut Bolt Set	MS	
U clamp set PVC Coating	IS 2062 Gr. A	
Foundation Base Plate	IS 2062 Gr. A	
Foundation Bolt Set	MS	