طرح نگهداشت و افزایش تولید ۲۷ مخزن

DATASHEETS FOR PRESSURE & SAFETY RELIEF VALVES

نگهداشت و افزایش تولید میدان نفتی بینک

D01	MAY. 2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
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Rev.	**Date**	**Purpose of Issue / Status**	**Prepared by:**	**Checked by:**	**Approved by:**	**CLIENT Approval**

Class: 2 **CLIENT Doc. Number: F9Z-708584**

status:

IDC: Inter-Discipline Check

IFC: Issued For Comment

IFA: Issued For Approval

AFD: Approved For Design

AFC: Approved For Construction

AFP: Approved For Purchase

AFQ: Approved For Quotation

IFI: Issued For Information

AB-R: As-Built for CLIENT Review

AB-A: As-Built –Approved

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک بسته‌های کاری تحت‌الارض احداث خطوط انتقال گاز/مایعات گازی از ایستگاه تقویت فشار گاز بینک تا ایستگاه تزریق گاز سیاهمکان/واحد بهره برداری بینک DATASHEETS FOR PRESSURE & SAFETY RELIEF VALVES	شرکت توسعه پتروایران HIRGAN ENERGY

شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۲ از ٦
۰۵۳ - ۰۷۳ - ۹۱۸٤	BK	PPL	PEDCO	320	IN	DT	0005	D01	

REVISION RECORD SHEET

Page	D00	D01	D02	D03	D04	Page	D00	D01	D02	D03	D04
1	X	X				65					
2	X	X				66					
3	X	X				67					
4	X	X				68					
5	X	X				69					
6	X	X				70					
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شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۳ از ٦
۰۵۳ - ۰۷۳ - ۹۱۸٤	BK	PPL	PEDCO	320	IN	DT	5.00	D01	

REFERENCE DOCUMENTS :

Instrument & Control System Design Criteria	BK-PPL-PEDCO-320-IN-DC-0001_D00
P&ID - Gas Pipeline (to Siahmakan G.I. Station)	BK-PPL-PEDCO-320-PR-PI-0001_D02
P&ID - Condensate Pipeline (to Binak PU)	BK-PPL-PEDCO-320-PR-PI-0002_D02
Piping Material Specification	BK-GCS-PEDCO-120-PI-SP-0001_D01
Specification For Instrumentation	BK-GNRAL-PEDCO-000-IN-SP-0001_D03
Specification For Pressure Safety Valves(PSV)	BK-GNRAL-PEDCO-000-IN-SP-0007_D00
Instrument Hook-Up Diagram	BK-PPL-PEDCO-320-IN-DG-0002_D00

D01

GENERAL NOTES:

1- The pressure relief valves and its accessories shall be supplied pre-assembled. Valves shall be supplied as a whole, complete with all the accessories like cap, lifting lever, test gag, etc. All threaded and flanged openings shall be suitably covered to prevent entry of foreign material.

2- Effective discharge coefficient of pressure relief valves shall be 0.975 for gas and vapor and 0.62 for liquid services as a maximum.

3- The valve size shall be based on size calculations for the worst of all cases that might cause the valve to blow. For flanged pressure relief valves the orifice letter designation and the corresponding relieving area indicated in the EPC Contractor's data sheet will be as per API-526.

4- For a valve of given inlet and outlet sizes and letter designation, relieving area of the valves offered by Vendor, shall meet those in API-526 as a minimum.

5- The set pressure, over pressure and relieving pressure of the PSV depending upon maximum allowable working pressure and accumulation as per API Standard 520 Part I, and ASME Section VIII Division I or ASME Section I as the case may be.

6- If the set pressure is less than maximum allowable working pressure (MAWP), the overpressure could be more than accumulation. However, if PSV set pressure is same as MAWP, the accumulation and overpressure cannot exceed the accumulation. The relieving pressure would be set pressure plus overpressure.

6- ASME SECTION VIII DIV 1 stated a 10 % allowable over pressure over set pressure to achieve full lift of a single relief valve for blocked case. If the set pressure as maximum allowable working pressure (MAWP) set, the accumulation and over pressure is same and it is 10% over MAWP.

7- Emission shall be less than 85 dBA at 1 m distance from the valve.

8- For flanged valves, inlet and outlet sizes and ratings and center to flange face dimensions shall be in accordance with API-526. Dimensional tolerances shall be as mentioned there. If the design of pressure relief valve is such that liquid can collect on the discharge side of the disk, the valve shall be equipped with a drain at the lowest point where liquid can collect.

9- Valves shall, in general, be of the direct spring loaded full nozzle with minimum inlet flange rating of 300#, unless otherwise specified.

10- Nozzles of the forged type are preferable.

11- All valves shall be provided with a cap over the adjusting bolt.

12- Valve spring design shall not permit an adjustment of more than 5% above or 5% below that for which the valve is marked; unless the setting is within the spring design range established by the manufacturer or is determined to be acceptable to the manufacturer. The allowable tolerances in set pressures are as below:
- ±0.14 bar for set pressures up to and including 4.8 barg.
- ±3% for set pressures above 4.8 barg.

13- Materials of construction shall be suitable for the environmental conditions and the process conditions identified in the relevant instrument datasheets. Provision of corrosion resistant materials shall be considered for conventional valves for corrosive fluid. Materials to be used shall be in accordance with project piping material specification and relevant datasheets

14. In general, unless specifically identified otherwise in this specification and attachments, process wetted materials which are in contact with Corrosive Services (H2S, CO2, H2O), shall comply with the requirements of .. NACE MR0175/ISO 15156 . Body material shall normally be carbon steel and generally adhered to and consistent with project document “Piping Material Specification”.

15. According to "Specification For Pressure Safety Valves(PSV)", Valve bonnet or spring housing material shall be the same as the valve body material

16-According to "Process Basic of Design" Document, Environmental Condition For Field Instrumentation of BINAK Complex Shall Be Considered As Per The Following:

Maximum ambient temperature: 50 (°C)

Minimum ambient temperature: 5 (°C)

Maximum steel surface exposed to sun: 85 (°C)

Maximum summer dry bulb: 50 (°C)

Maximum Design relative humidity (%): 100

Minimum Design relative humidity (%): 0

Maximum Design relative humidity (%): 100

Minimum Design relative humidity (%): 0

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نگهداشت و افزایش تولید میدان نفتی بینک

بسته‌های کاری تحت‌الارض

احداث خطوط انتقال گاز/مایعات گازی از ایستگاه تقویت فشار گاز بینک تا ایستگاه تزریق گاز سیاهمکان/واحد بهره برداری بینک

DATASHEETS FOR PRESSURE & SAFETY RELIEF VALVES

شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۵ از ٦
۰۵۳ – ۰۷۳ – ۹۱۸٤	BK	PPL	PEDCO	320	IN	DT	0005	D01	

Item	Data Category	Technical Features		D01 Project Data & Requirements	
1	GENERAL	Tag Number		PSV-3201	
2		P&ID NO and Page :		BK-PPL-PEDCO-320- PR-PI-0001 (1 of 3)	
3		Service		Pig Launcher	
4		Inlet Line No.	Outlet Line No.	FL-113-0002-AN07-1"-PT	GAS-113-0003-FN05-1"-PT
5		Discharge to		To LP Flare Header	
6		Protect Equipment		Launcher	
7		Area Clacification for Discharge		Zone 2, IIB T4	
8		Sour Service		Yes	
9		NACE MR0175/ISO 15156 Compliance		Yes	
10	BASIS	Nozzle (Full, Semi)		Full Nozzle	
11		Design Type	Safety, Relief, Safety-Relief	Saftey	
12			Conventional, Bellow, Pilot Op.	Conventional	
13		Bonnet Type		Closed	
14	PROCESS CONDITIONS (note 2)	Fluid / Phase / State		Gas / 1-phase / Vapor	
15		Ambient Temperature °C		5-50	85
16		Temperature °C	Operating	58.30	
17		Pressure Barg	Operating	50.90	
18		Oper. Temperature °C	RelievingTemp. °C	58.30	103.9
19		Required Capacity kg/h		1799.993	
20		Molecular Mass	Sp. Gr.@ relief Tmp kg/m3	24.58	1.94
21		Oper. Pressure barg	Set Pressure barg	50.90	62
22		Back Pressure Barg	Constant	0.5	
23			Variable	0	
24			Total	0.5	
25		% Allowable Overpressure		21%	
26		Over Pressure Factor		1.21	
27		Compressibility Factor (Z)		0.839	
28		Latent Heat of Vaporization (Kj/Kg)		508.1	
29		Ratio of Specific Heats(Cp/Cv)		1.448	
30		Density @ Oper. kg/m3 temprature & pressure		55.86	
31		Operating Viscosity cP		0.0137	
32		Barometric Pressure (psia)		14.37	
33	SELECTION	Design Code	Sizing Basis	API 520	-
34		pressure relieving and de-pressurising systems Code		API 521	
35		Design of Construction		API 521	
36		Scenarios		fire	
37		Basis of Selection		fire	
38		Calculated Area	cm^2	0.294	
39		Selected Area	cm^2	0.709	
40		Accumulation AC %		121	
41		Orifice Designation		D	
42	CONNECTIONS	Size: Inlet	Outlet	1"	2"
43		Rating & Facing : Inlet	Outlet	#600 RF	#150 RF
44	MATERIALS (VTC)	Body and Bonnet		ASTM A105 (Note 14)	
45		Seat and Disc (Trim)		SS 316+RPTFE (Note 14)	
46		Nozzle		SS 316 (Note 14)	
47		Guide and Rings		SS 316 (Note 14)	
48		Spring		ASTM A105 (Note 15)	
49		Bellows		N/A	
50	OPTIONS	Cap without Lever: Screwed or Bolted		Screwed cap	
51		Lifting Lever: Plain or Packed		N/A	
52		Test Gage		Yes	
53		With Rupture Disc		No	
54		Flame Arrestor		No	
55		Hydro Test		Required	
56		Seat Leakage Test		Required	
57		Compliance Standard		According to MR-0175 / ISO15156	
58	PURCHASE	Manufacturer		will be finalized later	
59		Model		will be finalized later	
60		Serial No.		will be finalized later	

Main Notes:

VTA : Vendor to Advise in bidding stage VTC : Vendor to confirm in bidding stage N/A: Not applicable

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نگهداشت و افزایش تولید میدان نفتی بینک

بسته‌های کاری تحت‌الارض

احداث خطوط انتقال گاز/مایعات گازی از ایستگاه تقویت فشار گاز بینک تا ایستگاه تزریق گاز سیاهمکان/واحد بهره برداری بینک

DATASHEETS FOR PRESSURE & SAFETY RELIEF VALVES

شماره صفحه: ٦ از ٦

شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
۰۵۳ - ۰۷۳ - ۹۱۸٤	BK	PPL	PEDCO	320	IN	DT	0005	D01

Item	Data Category	Technical Features		D01	Project Data & Requirements
1	GENERAL	Tag Number		PSV-3202	
2		P&ID NO and Page :		BK-PPL-PEDCO-320- PR-PI-0001 (3 of 3)	
3		Service		Pig Receiver	
4		Inlet Line No.	Outlet Line No.	GAS-113-0014-FN05-1"-PT	FL-113-0004-AN07-2"-PT
5		Discharge to		To Existing Flare System	
6		Protect Equipment		Receiver	
7		Area Clacification for Discharge		Zone 2, IIB T4	
8		Sour Service		Yes	
9		NACE MR0175/ISO 15156 Compliance		Yes	
10	BASIS	Nozzle (Full, Semi)		Full Nozzle	
11		Design Type	Safety, Relief, Safety-Relief	Relief	
12			Conventional, Bellow, Pilot Op.	Conventional	
13		Bonnet Type		Closed	
14	PROCESS CONDITIONS (note 2)	Fluid / Phase / State		Gas / 1-phase / Vapor	
15		Ambient Temperature °C		5-50	85
16		Temperature °C	Operating	31.3	
17		Pressure Barg	Operating	40	
18		Oper. Temperature °C	RelievingTemp. °C	31.30	48.51
19		Required Capacity kg/h		1132.12	
20		Molecular Mass	Sp. Gr.@ relief Tmp kg/m3	24.58	2.58
21		Oper. Pressure barg	Set Pressure barg	40	62
22		Back Pressure Barg	Constant	0.5	
23			Variable	0	
24			Total	0.5	
25		% Allowable Overpressure		21%	
26		Over Pressure Factor		1.21	
27		Compressibility Factor (Z)		0.846	
28		Latent Heat of Vaporization (Kj/Kg)		557.5	
29		Ratio of Specific Heats(Cp/Cv)		1.448	
30		Density @ Oper. kg/m3 temprature & pressure		49.09	
31		Operating Viscosity cP		-	
32		Barometric Pressure (psia)		14.37	
33	SELECTION	Design Code	Sizing Basis	API 520	-
34		pressure relieving and de-pressurising systems Code		API 521	
35		Design of Construction		API 521	
36		Scenarios		fire	
37		Basis of Selection		fire	
38		Calculated Area cm^2		0.188	
39		Selected Area cm^2		0.709	
40		Accumulation AC %		121	
41		Orifice Designation		D	
42	CONNECTIONS	Size: Inlet	Outlet	1"	2"
43		Rating & Facing : Inlet	Outlet	#600 RF	#150 RF
44	MATERIALS (VTC)	Body and Bonnet		ASTM A105 (Note 14)	
45		Seat and Disc (Trim)		SS 316+RPTFE (Note 14)	
46		Nozzle		SS 316 (Note 14)	
47		Guide and Rings		SS 316 (Note 14)	
48		Spring		ASTM A105 (Note 15)	
49		Bellows		N/A	
50	OPTIONS	Cap without Lever: Screwed or Bolted		Screwed cap	
51		Lifting Lever: Plain or Packed		N/A	
52		Test Gage		Yes	
53		With Rupture Disc		No	
54		Flame Arrestor		No	
55		Hydro Test		Required	
56		Seat Leakage Test		Required	
57		Compliance Standard		According to MR-0175 / ISO15156	
58	PURCHASE	Manufacturer		will be finalized later	
59		Model		will be finalized later	
60		Serial No.		will be finalized later	

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