

 <b>NISOC</b>	<b>نگهداشت و افزایش تولید میدان نفتی بینک</b> <b>بسته‌های کاری تحت‌الارض</b>						 	
	<b>احداث خطوط انتقال گاز/مایعات گازی از ایستگاه تقویت فشار گاز بینک تا ایستگاه تزریق گاز سیاه‌مکان/واحد بهره برداری بینک</b>							
<b>DATASHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES</b>								
شماره پیمان: 053 - 073 - 9184	پروژه BK	بسته کاری PPL	صادرکننده PEDCO	تسهیلات 320	رشته IN	نوع مدرک DT	سریال 0005	نسخه D04
شماره صفحه: 1 از 7								

## طرح نگهداشت و افزایش تولید 27 مخزن

### DATASHEETS FOR PRESSURE & SAFETY RELIEF VALVES

#### نگهداشت و افزایش تولید میدان نفتی بینک

D04	NOV. 2024	AFC	P.Hajisadeghi	M.Fakharian	M.Sadeghian	
D03	OCT. 2023	AFC	P.Hajisadeghi	M.Fakharian	S.Faramarzpour	
D02	OCT. 2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
D01	MAY. 2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
D00	MAR. 2022	IFC	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 1

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



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 بهره‌برداری بینک

DATASHEETS FOR PRESSURE & SAFETY RELIEF VALVES



شماره پیمان:

053 - 073 - 9184

پروژه

بسته کاری

صادرکننده

تسهیلات

رشته

نوع مدرک

سریال

نسخه

BK

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REVISION RECORD SHEET

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3	X	X		X	
4	X	X		X	
5	X	X	X	X	X
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 <p>NISOC</p>	<p>نگهداشت و افزایش تولید میدان نفتی بینک بسته‌های کاری تحت‌الارض</p> <p>احداث خطوط انتقال گاز/مایعات گازی از ایستگاه تقویت فشار گاز بینک تا ایستگاه تزریق گاز سیاه‌مکان/واحد بهره برداری بینک</p> <p>DATASHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES</p>								
<p>شماره پیمان: 053 - 073 - 9184</p>	<p>پروژه BK</p>	<p>بسته کاری PPL</p>	<p>صادرکننده PEDCO</p>	<p>تسهیلات 320</p>	<p>رشته IN</p>	<p>نوع مدرک DT</p>	<p>سریال 0005</p>	<p>نسخه D04</p>	<p>شماره صفحه: 3 از 7</p>

#### REFERENCE DOCUMENTS :

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



نگهداشت و افزایش تولید میدان نفتی بینک  
بسته‌های کاری تحت‌الارض

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DATASHEETS FOR PRESSURE & SAFETY RELIEF VALVES

شماره پیمان:

053 - 073 - 9184

پروژه

BK

بسته کاری

PPL

صادر کننده

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شماره صفحه: 4 از 7

**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.
- 7- 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.
- 8- Emission shall be less than 85 dBA at 1 m distance from the valve.
- 9- 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.
- 10- Valves shall, in general, be of the direct spring loaded full nozzle with minimum inlet flange rating of 300#, unless otherwise specified.
- 11- Nozzles of the forged type are preferable.
- 12- All valves shall be provided with a cap over the adjusting bolt.
- 13- 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:  
-  $\pm 0.14$  bar for set pressures up to and including 4.8 barg.  
-  $\pm 3\%$  for set pressures above 4.8 barg.
- 14- 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
15. In general, unless specifically identified otherwise in this specification and attachments, process wetted materials which are in contact with Corrosive Services (H<sub>2</sub>S, CO<sub>2</sub>, H<sub>2</sub>O), 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".
16. According to "Specification For Pressure Safety Valves(PSV)", Valve bonnet or spring housing material shall be the same as the valve body material



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تا ایستگاه تزریق گاز سیاه‌مکان/واحد بهره برداری بینک

DATASHEETS FOR PRESSURE & SAFETY RELIEF VALVES



شماره پیمان:

053 - 073 - 9184

پروژه

بسته کاری

صادرکننده

تسهیلات

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شماره صفحه: 7 از 5

## GENERAL NOTES:

17-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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18- Refer To Specification For Painting Doc.No.BK-GNRL-PEDCO- 000-PI-SP-0006 Safety Valve Color Is not Specified So, Red Yellow Color Is Requested Considering Safety Factors , It Shall Be Finalized During KOM.

19- For Flammable Or Toxic Services, Bonnets Shall Be Vented To The Discharge Side Of The Relief Valve( In Conventional Type PSVs,).

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20- Suitable coating such as cadmium plated shall be considered ( vendor to advise)

21- Allowable noise level shall be less than 115 dB(A) at 1 m distance from the valve as stated in IPS G-SF-900 sections 13.3.1 and 14.3.2.

22 - Material Test Certificate and calibration Certificate for all transmitters to be submitted by Vendor.

23- Body and other pressure parts subject to inlet pressure (primary pressure zone) shall be hydrostatically tested at a pressure of at least 1.5 times the design pressure of the parts

24- Safety relief valves shall be subject to a seat leakage test in accordance with API standard 527 as applicable, or as agreed upon by the manufacturer and the CLINET

25- As per specification for pressure safety valves (PSV) Doc. No.:"BK-GNRL-PEDCO-000-IN-SP-0007" ,the spring material shall be as follows:


- Austenitic stainless steel for discharge temperature from -260° C to -60 °C.
- Cadmium plated carbon steel from -50 to 230° C.
- Nickel plated tungsten steel For above 230° C

26-Vendor to advise all wetted parts materials include disc holder, stem guide, blowdown ring, ring pin, bushing and other internal components in contact with process fluid in bid stage

27- Gasket material shall be suitable for the application.

28- All valves shall be clearly and permanently marked. The name plate shall be corrosion resistant Stainless Steel and pinned to the valve body. Wired on labels are not acceptable. Following information shall be submitted on nameplate for approval.

- Tag number
- Manufacturer name, model and serial number
- Set Pressure
- Pressure rating
- Body size and material
- Measurement Range
- Liquid density
- Degree of protection & electrical construction
- Marking as per IEC Codes
- Well name





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نگهداشت و افزایش تولید میدان نفتی بینک  
بسته های کاری تحت الارض

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: 053 - 073 - 9184


پروژهBK
بسته کاریPPL
صادر کنندهPEDCO
تهیهات320
رشتهIN
نوع مدرکDT
سریال0005
نسخهD04

شماره صفحه: 6 از 7

Item	Data Category	Technical Features	Project Data & Requirements
1	GENERAL	Tag Number	PSV-3201
2		P&ID NO and Page :	BK-PPL-PEDCO-320- PR-PI-0001 _D05 (1 of 3)
3		Service	Pig Launcher
4		Inlet Line No.	GAS-113-0003-FN05-1"-PT
		Outlet Line No.	FL-113-0002-AN07-1"-PT
		Corrosion allowance inlet line	3 mm
		Outlet line	6 mm
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, Spring Loaded Type
11		Design Type	Safety, Relief, Safety-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
16		Temperature °C	Operating
17		Pressure Barg	Operating
18		Oper. Temperature °C	RelievingTemp. °C
19		Required Capacity kg/h	1799.993
20		Molecular Mass	Sp. Gr.@ relief Tmp
21		Oper. Pressure barg	Set Pressure barg
22			Constant
23		Back Pressure Barg	Variable
24			Total
25		% Allowable Overpressure	21%
26		Over Pressure Factor	1.21
27		Compressibility Factor (Z)	0.82
28		Latent Heat of Vaporization (Kj/Kg)	1453
29		Ratio of Specific Heats(Cp/Cv)	1.448
30		Density @ Oper. kg/m3 temprature & pressure	55.82
31	Operating Viscosity cP	0.014	
32	Barometric Pressure (psia)	14.37	
33	SELECTION	Design Code	Sizing Basis
34		pressure relieving and de-pressurising systems Code	API 520
35		Design of Construction	API 521
36		Scenarios	fire
37		Basis of Selection	fire
38		Calculated Area	cm²
39		Selected Area	cm²
40		Accumulation AC %	121
41		Orifice Designation	D
42	CONNECTIONS	Size: Inlet	Outlet
43		Rating & Facing : Inlet	Outlet
44	MATERIALS (VTC)	Body and Bonnet	A216 Gr. WCB (Note 15)
45		Seat and Disc (Trim)	SS316+RPTFE (Note 15)
46		Nozzle	SS 316 (Note 15)
47		Guide and Rings	SS 316 (Note 15)
48		Spring	A216 Gr. WCB (Note 16&20&25)
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 NACE 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





NISOC

نگهداشت و افزایش تولید میدان نفتی بینک  
بسته های کاری تحت الارض

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: 053 - 073 - 9184

پروژه: BK
بسته کاری: PPL
صادر کننده: PEDCO
تهیهات: 320
رشته: IN
نوع مدرک: DT
سریال: 0005
نسخه: D04

شماره صفحه: 7 از 7

Item	Data Category	Technical Features	Project Data & Requirements
1	GENERAL	Tag Number	PSV-3202
2		P&ID NO and Page :	BK-PPL-PEDCO-320- PR-PI-0001 _D04 (3 of 3)
3		Service	Pig Receiver
4		Inlet Line No.	GAS-113-0014-FN05-1"-PT
5		Outlet Line No.	FL-113-0004-AN07-2"-PT
6		Corrosion allowance inlet line	3 mm
7		Outlet line	6 mm
8		Discharge to	To Existing Flare System
9		Protect Equipment	Receiver
10		Area Clacification for Discharge	Zone 2, IIB T4
11	BASIS	Sour Service	Yes
12		NACE MR0175/ISO 15156 Compliance	Yes
13	BASIS	Nozzle (Full, Semi)	Full Nozzle, Spring Loaded Type
14		Design Type	Relief
15	BASIS	Safety, Relief, Safety-Relief	Conventional
16		Conventional, Bellow, Pilot Op.	Closed
17	BASIS	Bonnet Type	Gas / 1-phase / Vapor
18		Fluid / Phase / State	5-50
19	BASIS	Ambient Temperature °C	85
20		Temperature °C	Operating
21	BASIS	Pressure Barg	31.3
22		Operating	40
23	BASIS	Oper. Temperature °C	31.30
24		RelievingTemp. °C	289
25	BASIS	Required Capacity kg/h	4300.75
26		Molecular Mass	24.58
27	BASIS	Sp. Gr.@ relief Tmp	0.84
28		Oper. Pressure barg	Set Pressure barg
29	BASIS	Constant	0.5
30		Back Pressure Barg	Variable
31	BASIS	Total	0.5
32		% Allowable Overpressure	21%
33	BASIS	Over Pressure Factor	1.21
34		Compressibility Factor (Z)	0.827
35	BASIS	Latent Heat of Vaporization (Kj/Kg)	1453
36		Ratio of Specific Heats(Cp/Cv)	1.437
37	BASIS	Density @ Oper. kg/m3 temprature & pressure	49.09
38		Operating Viscosity cP	0.01
39	BASIS	Barometric Pressure (psia)	14.37
40		Design Code	API 520
41	SELECTION	Sizing Basis	-
42		pressure relieving and de-pressurising systems Code	API 521
43	SELECTION	Design of Construction	API 521
44		Scenarios	fire
45	SELECTION	Basis of Selection	fire
46		Calculated Area cm²	0.938
47	SELECTION	Selected Area cm²	1.539
48		Accumulation AC %	121
49	SELECTION	Orifice Designation	E
50		Size: Inlet	1"
51	CONNECTIONS	Outlet	2"
52		Rating & Facing : Inlet	#600 RF
53	CONNECTIONS	Outlet	#150 RF
54		Body and Bonnet	A216 Gr. WCB (Note 15)
55	MATERIALS (VTC)	Seat and Disc (Trim)	SS316+RPTFE (Note 15)
56		Nozzle	SS 316 (Note 15)
57	MATERIALS (VTC)	Guide and Rings	SS 316 (Note 15)
58		Spring	A216 Gr. WCB (Note 16&25)
59	MATERIALS (VTC)	Bellows	N/A
60		Cap without Lever: Screwed or Bolted	Screwed cap
61	OPTIONS	Lifting Lever: Plain or Packed	N/A
62		Test Gage	Yes
63	OPTIONS	With Rupture Disc	No
64		Flame Arrestor	No
65	OPTIONS	Hydro Test	Required
66		Seat Leakage Test	Required
67	OPTIONS	Compliance Standard	According to NACE MR-0175 / ISO15156
68		Manufacturer	will be finalized later
69	PURCHASE	Model	will be finalized later
70		Serial No.	will be finalized later

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