طرح نگهداشت و افزایش تولید 27 مخزن

DATA SHEETS FOR ON/OFF & SHUTDOWN VALVES

نگهداشت و افزایش تولید میدان نفتی بینک

D03	NOV.2024	AFC	P.Hajisadeghi	M.Fakharian	M.Sadeghian	
D02	JUN.2023	AFC	P.Hajisadeghi	M.Fakharian	A.M.Mohseni	
D01	OCT.2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
D00	MAY.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-708585**

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

DATA SHEETS FOR ON/OFF & SHUTDOWN VALVES

شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
053 - 073 – 9184	BK	PPL	PEDCO	320	IN	DT	0006	D03

شماره صفحه: 2 از 6

REVISION RECORD SHEET

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REFERENCE DOCUMENTS :

1. Instrument & Control System Design Criteria	BK-PPL-PEDCO-320-IN-DC-0001
2. P&ID - Gas Pipeline (to Siahmakan G.I. Station)	BK-PPL-PEDCO-320-PR-PI-0001
3. P&ID - Condensate Pipeline (to Binak PU)	BK-PPL-PEDCO-320-PR-PI-0002
4. Piping Material Specification	BK-PPL-PEDCO-320-PI-SP-0001
5. Specification for Instrumentation	BK-GNRAL-PEDCO-000-IN-SP-0001
6. Specification For On-off Shut Down Valves(ESDVMOV)	BK-GNRAL-PEDCO-000-IN-SP-0006
7. Instrument Hook-Up Diagram	BK-PPL-PEDCO-320-IN-DG-0002
8. Process Basic of Design	BK-GNRAL-PEDCO-000-PR-DB-0001
9. Specification For Hazardous Area Classification	BK-GNRAL-PEDCO-000-SA-SP-0002
10. Specification For Painting	BK-GNRAL-PEDCO-000-PI-SP-0006

GENERAL NOTES:

1. Calculations shall be provided for each completely piped actuated valve assembly (including solenoid valve), the stroking times i.e. to close and to open.

2. The duty, failure action and stroke time shall all be approved by the Purchaser.

3. The actuator shall be designed to operate the valve through its full stroke.

4. The full stroke time for on-off valve which is less or equal than 4" size, shall be max. 5 second and for valves greater than 4", 1 second shall be added to the 4 sec for each increment of 1" in valve size. The maximum fully stroke time shall be 10 seconds.

5. The piping indicates corrosion allowance selected as per document "Piping & Pipeline Material Specification, No. " BK-PPL-PEDCO-320-PI-SP-0001 "

6. Hydro-test duration shall be in accordance with API 6D.

7. All ball valves shall be fitted with suitable 'end of travel' stops at the fully open and fully closed positions and a local position indicator. The design shall prevent the ingress of foreign material and corrosion products which would impair the operation of the stops. Devices capable of locking the valves in their safe position (ESDV in open or closed position) shall be provided for maintenance and shall be vendor's standard proven design.

8. Vendor shall guarantee and demonstrate the required stroking speed, during the Functional Test (FAT).

9. All accessories shall be mounted, together with solenoid valve, etc., on a 316SS sub-plate. Tubing shall be suitably sized TP 316L stainless steel with stainless steel double ferrule compression fittings.

10. Solenoid valve shall be selected in accordance with low power type.

11. All on/off valves shall be preferably fitted with single acting, spring return pnumatic actuators, completed with mounting kit. Also Partial Stroking test or pilot valve to be considered.

12. The actuator shall be fail-safe in operation (as specified in data sheets) in loss of electrical signal or loss of air supply.

13. The spring return actuator shall be "pre stressed".

14. Pneumatic actuators will be sized on the basis of a minimum safety factor of 1.5 and a minimum air pressure of 3 Barg.
The valve actuator torque shall be in excess of the required valve torque under all operating conditions.

15. All actuators and accessories shall be clearly and permanently identified by nameplate. The nameplate shall be in stainless steel and affixed to the VALVE, actuator and accessories.

16. For application in sour gas services, as indicated in individual data sheets, material of body, trim and all other wetted metal parts in contact with the sour gas shall meet the requirements of NACE, MR-01-75, latest edition.

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

18. Manual Reset to be consider for all Emergency Shut off solenoids as per P&ID.

19.Disc/seat material shall be resilient to give a tight shut off feature.

20 .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: -

Maximum Design relative humidity (%): 100

Minimum Design relative humidity (%): 0

21. Flow direction shall be permanently and clearly indicated on the valve body.

22. External grounding shall be provided for each solenoid valve.

23. Valves in safety related services should have been fire tested and certification to be provided by Vendor.

24. Seat rings shall be spring loaded and so designed that line pressure will assist in sealing round the ball.

25. Valve stem extension shall be detachable for easy replacements.

26. At least two stem seals shall be provided with facility for injection of secondary sealant and with stainless steel fittings.

27. Stem seal shall be replaceable while the valve is in closed operation position.

28. Short stroke single acting pneumatic piston actuators shall preferably be used on emergency shutdown service.

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29. Valve color shall be Gray as per Project Specification For Painting, Doc.No.BK-GNRAL-PEDCO-000-PI-SP-0006. Actuator color shall be Red for ESD application.

30. In cases where on-off valve has been equipped with two solenoid valves, one shall be SIL certified and the other could be non-SIL (one SOV is connected to ESD system and another, to the process control system).

31. Valves 2" and larger shall be as per API 6D.

32. All wet parts in sour service service shall meet requirements of NACE MR0175 and "Project specification for Material Requirements in Sorur Service". Document No.:BK-GNRAL-PEDCO-000-PI-SP-0008.

NISOC

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DATA SHEETS FOR ON/OFF & SHUTDOWN VALVES

شرکت توسعه نیروگاهی ایران

HIRGAN ENERGY

شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 5 از 6
053 - 073 – 9038	BK	PPL	PEDCO	320	IN	DT	0006	D03	

D03

On-Off Valve

TAG NO:	ESDV-3201	**P&ID NO :**	BK-PPL-PEDCO-320-PR-PI-0001_D05 (page 1 of 3)
FLUID STATE:	HYDROCARBONE GAS	**PHASE:**	GAS
SERVICE:	FROM DEHYDRATION (PK-2101)		
AREA CLASSIFICATION:	Zone 2, IIB T4		

			UNITS	**Max Flow**	**Norm. Flow**	**Min. Flow**	**Shut-Off**
SERVICE CONDITION	1	FLOW RATE	kg/h	-	17170.80	-	-
	2	INLET PRESSURE	bar(g)	50.92		-	-
	3	OUTLET PRESSURE	bar(g)	50.92		-	-
	4	DIFFERENTIAL PRESSURE	bar(g)	-		-	60
	5	INLET TEMPERATURE	°C	58.3		-	-
	6	DENSITY(Mix./Gas/Liquid)	kg/m3	55.82		-	-
	7	VISCOSITY (GAS/LIQ.)	CP	0.013		-	-
	8	DESIGN PRESSURE	bar(g)	60			
	9	DESIGN TEMPERATURE	°C	85			
	10	VAPOR PRESSURE Pv	bar(a)	-		-	-
	11	CRITICAL PRESSURE	bar(g)	104.9		-	-

LINE	12	PIPE LINE SIZE & SCHEDULE	IN	6" & SCH.80		**ACTUATOR**	52	TYPE	Single Acting , Spring Return
			OUT	6"& SCH.80			53	SIZE	VTA / VTA
	13	PIPNG CLASS / PIPE LINE INSULATION / CORROSION ALLOWENCE		FN05 / PAINTED (Note 29) / 3mm			54	SPRING FAIL ACTION	Fail to Close
VALVE BODY & BONNET	14	TYPE		Full Bore Ball Valve/Trunnion Mounted			55	MAX ALLOWABLE PRESSURE	VTA
	15	SIZE		6"			56	MIN REQUIRES PRESSURE	VTA
	16	MAX PRESS./TEMP		As per Specification For Pipeline Material (Note 5)			57	AVAILABLE AIR SUPPLY PRESS.	MAX/NOR/MIN: 8/7/4.5 barg (Note 14)
	17	MFR. & MODEL		Will be finalized later			58	BENCH RANGE	VTA
	18	BODY / BONNET MATL		A216 Gr. WCB (Note 5)			59	TRAVELING TIME	6 Sec.
	19	LINER MATERIAL / ID		VTA			60	FUNCTION	On/Off
	20	END CONNECTION	ANSI Class	6" / 6"	600#		61	LOCAL POSITION INDICATOR	Required
							62	ACT. ORIENTATION	VTA
	21	FLG FACE FINISH		RF			63	HAND WHEEL TYPE	Declutchable side mounted
	22	END EXT./MATL.		N/A			64	ADJUSTABLE LIMIT STOP	Yes
	23	FLOW DIRECTION		N/A			65	INPUT SIGNAL	24VDC
	24	TYPE OF BONNET		Standard			66	MFR. & MODEL	Will be finalized later
	25	LUBE & ISO VALVE		No		**POSITIONER**	67	TYPE	N/A
	26	PACKING MATERIAL	PACKING TYPE	PTFE	Standard		68	MFR. & MODEL	N/A
	27	ENTRY DESIGN		Top/Side Entry			69	ON INCR SIGNAL OUTPUT INCR / DECR	N/A
	28	NACE REQUIREMENTNACE (MR-0175/ISO 15156)		Yes			70	GAUGES	N/A
TRIM	29	TRIM TYPE	TRIM MATERIAL	VTA	316+RPTFE		71	CAM CHARACTERISTIC	N/A
	30	SIZE	RATED TRAVEL	VTA	VTA		72	AIR CONNECTION	N/A
	31	CHARACTERISTICS		On/Off		**LIMIT SWITCHES**	75	TAG NO. :	EZSC-3201 /EZSO-3201
	32	BALANCED / UNBALANCED		BALANCED			76	TYPE / QUANTITY	Magnetically operated 'REED' contacts / 2
	33	RATED Cv	FL / XT	VTA	VTA / VTA		77	CONTACTS / RATING	110V DC , 10A
	34	PLUG / BALL MATERIAL		SS316 (Note 5)			78	ACTUATION POINT	Fully Open/Close
	35	DISK/ SEAT MATERIAL	SEAT TYPE	316+RPTFE (Note 19)	Soft seat (VTC)		79	ENCLOSURE MATERIAL	Die Cast Aluminum
	36	CAGE / GUIDE MATERIAL		VTA			80	WEATHER PROTECTION	IP-65
	37	STEM TYPE	STEM MATERIAL	Anti-Blow Out (As per reference 6)	forged, 13% chromium steel (As per reference 6)		81	ELEC. CERTIFICATE / ELEC. CONNECTION	EEx "d", IIB T4 / ISO M20 × 1.5
	38	LEAKAGE CLASS		ANSI Class VI			82	MFR. & MODEL	Will be finalized later
	39	VALVE STEM EXTENSION REQUIREMENT		No		**AIR SET**	83	SET PRESSURE	VTA
SOLENOID VALVE	40	TAG NO		ESOV-3201, PSOV-3201			84	PNEUMATIC CONNECTION	1/4" NPT
	41	TYPE		3 Way			85	GAUGES / FILTER	Required / Required
	42	BODY MATERIAL	WEATHER IP.	AISI 316 S.S	IP-65		86	MFR. & MODEL	Will be finalized later
	43	ELE. CERTIFICATE	ELE. CONNECTION	EEx "d", IIB T4	ISO M20 x 1.5	**TEST**	87	ANSI/FCI LEAKAGE CLASS	Required
	44	MANUAL RESET		Yes (Note 18)			88	HYDRO PRESSURE	Required
	45	POWER SUPPLY		24 VDC			89	FUNCTIONAL TEST	Required
	46	PNEU. CONNECTION		1/4" NPT			90		
SPECIAL / ACCESS.	47	FUSIBLE LEAKAGE		No			91		
	48	BLOCK RELAY		No			92		
	49	QUICK EXHUST		Yes		**OPTION**	93	PASSIVE FIRE PROTECTION	Yes
	50	FILTER REGULATOR		Yes			94	API 6FA REQUIREMENTS	Yes
	51	VOLUME TANK		Yes			95	SIL REQUIREMENTS	Yes
	52	MECHANICAL POSITION INDICATOR		Required			96	PARTIAL STROKING VALVE TEST	Yes
	53	MANUAL PNE. BYPASS VALVE FOR SOLENOID VALVE		Yes					

NOTE: VTA : VENDOR TO ADVISE

* -

** PMS: Piping Material Specification

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 سیاهکمان/واحد بهره برداری بینک

DATA SHEETS FOR ON/OFF & SHUTDOWN VALVES

شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
053 - 073 – 9038	BK	PPL	PEDCO	320	IN	DT	0006	D03

شماره صفحه: 6 از 6

D03

On-Off Valve

TAG NO:	ESDV-3202	**P&ID NO :**	BK-PPL-PEDCO-320-PR-PI-0001_D05 (page 3 of 3)
FLUID STATE:	HYDROCARBONE GAS	**PHASE:**	GAS
SERVICE:	FROM PIG LAUNCHER (PL-3201)		
AREA CLASSIFICATION:	Zone 2, IIB T4		

SERVICE CONDITION

		UNITS	Max Flow	Norm. Flow	Min. Flow	Shut-Off
1	FLOW RATE	kg/h	-	17170.80	-	-
2	INLET PRESSURE	bar(g)	40		-	-
3	OUTLET PRESSURE	bar(g)	40		-	-
4	DIFFERENTIAL PRESSURE	bar(g)	-		-	60
5	INLET TEMPERATURE	°C	31.3		-	-
6	DENSITY(Mix./Gas/Liquid)	kg/m3	49.09		-	-
7	VISCOSITY (GAS/LIQ.)	CP	0.012		-	-
8	DESIGN PRESSURE	bar(g)	60			
9	DESIGN TEMPERATURE	°C	85			
10	VAPOR PRESSURE Pv	bar(a)	-		-	-
11	CRITICAL PRESSURE	bar(g)	104.9		-	-

LINE

12	PIPE LINE SIZE & SCHEDULE	IN	8" & SCH.80	
		OUT	8"& SCH.80	
13	PIPNG CLASS / PIPE LINE INSULATION / CORROSION ALLOWENCE		FN05 / PAINTED (Note 29) / 3mm	

VALVE BODY & BONNET

14	TYPE		Full Bore Ball Valve/Trunnion Mounted	
15	SIZE		8"	
16	MAX PRESS./TEMP		As per Specification For Pipeline Material (Note 5)	
17	MFR. & MODEL		Will be finalized later	
18	BODY / BONNET MATL		A216 Gr. WCB (Note 5)	
19	LINER MATERIAL / ID		VTA	
20	END CONNECTION	ANSI Class	8"	600#
			8"	
21	FLG FACE FINISH		RF	
22	END EXT./MATL.		N/A	
23	FLOW DIRECTION		N/A	
24	TYPE OF BONNET		Standard	

TRIM

25	LUBE & ISO VALVE		No		
26	PACKING MATERIAL	PACKING TYPE	PTFE		Standard
27	ENTRY DESIGN		Top/Side Entry		
28	NACE REQUIREMENTNACE (MR-0175/ISO 15156)		Yes		
29	TRIM TYPE	TRIM MATERIAL	VTA	316+RPTFE	
30	SIZE	RATED TRAVEL	VTA		VTA
31	CHARACTERISTICS		On/Off		
32	BALANCED / UNBALANCED		BALANCED		
33	RATED Cv	FL / XT	VTA	VTA	VTA
34	PLUG / BALL MATERIAL		SS316 (Note 5)		
35	DISK/ SEAT MATERIAL	SEAT TYPE	316+RPTFE (Note 19)	Soft seat (VTC)	
36	CAGE / GUIDE MATERIAL		VTA		
37	STEM TYPE	STEM MATERIAL	Anti-Blow Out (As per reference 6)		forged, 13% chromium steel (As per reference 6)
38	LEAKAGE CLASS		ANSI Class VI		
39	VALVE STEM EXTENSION REQUIREMENT		No		

SOLENOID VALVE (Note *)

40	TAG NO		ESOV-3202, PSOV-3202	
41	TYPE		3 Way	
42	BODY MATERIAL	WEATHER IP.	AISI 316 S.S	IP-65
43	ELE. CERTIFICATE	ELE. CONNECTION	EEx "d", IIB T4	ISO M20 x 1.5
44	MANUAL RESET		Yes (Note 18)	
45	POWER SUPPLY		24 VDC	
46	PNEU. CONNECTION		1/4" NPT	

SPECIAL / ACCESS.

47	FUSIBLE LEAKAGE		No	
48	BLOCK RELAY		No	
49	QUICK EXHUST		Yes	
50	FILTER REGULATOR		Yes	
51	VOLUME TANK		Yes	
52	MECHANICAL POSITION INDICATOR		Required	
53	MANUAL PNE. BYPASS VALVE FOR SOLENOID VALVE		Yes	

ACTUATOR

52	TYPE		Single Acting , Spring Return
53	SIZE		VTA / VTA
54	SPRING FAIL ACTION		Fail to Close
55	MAX ALLOWABLE PRESSURE		VTA
56	MIN REQUIRES PRESSURE		VTA
57	AVAILABLE AIR SUPPLY PRESS.		MAX/NOR/MIN: 8/7/4.5 barg (Note 14)
58	BENCH RANGE		VTA
59	TRAVELING TIME		8 Sec.
60	FUNCTION		On/Off
61	LOCAL POSITION INDICATOR		Required
62	ACT. ORIENTATION		VTA
63	HAND WHEEL TYPE		Declutchable side mounted
64	ADJUSTABLE LIMIT STOP		Yes
65	INPUT SIGNAL		24VDC
66	MFR. & MODEL		Will be finalized later

POSITIONER

67	TYPE		N/A
68	MFR. & MODEL		N/A
69	ON INCR SIGNAL OUTPUT INCR / DECR		N/A
70	GAUGES		N/A
71	CAM CHARACTERISTIC		N/A
72	AIR CONNECTION		N/A

LIMIT SWITCHES

75	TAG NO. :		EZSC-3202 /EZSO-3202
76	TYPE	QUANTITY	Magnetically operated 'REED' contacts / 2
77	CONTACTS / RATING		110V DC , 10A
78	ACTUATION POINT		Fully Open/Close
79	ENCLOSURE MATERIAL		Die Cast Aluminum
80	WEATHER PROTECTION		IP-65
81	ELEC. CERTIFICATE	ELEC. CONNECTION	EEx "d", IIB T4 / ISO M20 × 1.5
82	MFR. & MODEL		Will be finalized later

AIR SET

83	SET PRESSURE		VTA
84	PNEUMATIC CONNECTION		1/4" NPT
85	GAUGES	FILTER	Required / Required
86	MFR. & MODEL		Will be finalized later

TEST

87	ANSI/FCI LEAKAGE CLASS	Required
88	HYDRO PRESSURE	Required
89	FUNCTIONAL TEST	Required
90		
91		
92		

OPTION

93	PASSIVE FIRE PROTECTION	Yes
94	API 6FA REQUIREMENTS	Yes
95	SIL REQUIREMENTS	Yes
96	PARTIAL STROKING VALVE TEST	Yes

NOTE: VTA : VENDOR TO ADVISE

* Considering safety factor requested by NISOC, 2 cable (2*1.5 mm2) will be considered for ESD trip which shall be connected to ESOV. So, required JB / Termination / Control items shall be provided by valve vendor

** PMS: Piping Material Specification