

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							 
	I&C POWER CONSUMPTION SUMMARY							
شماره پیمان: 053 - 073 - 9184	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
	BK	GCS	PEDCO	120	IN	LI	0007	D05
								شماره صفحه: 1 از 8

طرح نگهداشت و افزایش تولید 27 مخزن

I&C POWER CONSUMPTION SUMMARY

نگهداشت و افزایش تولید میدان نفتی بینک

Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval
D05	AUG.2024	IFA	P.Hajisadeghi	M.Fakharian	M.Sadeghian	
D04	JAN.2024	IFA	P.Hajisadeghi	M.Fakharian	S.Faramarzpour	
D03	AUG.2023	IFA	P.Hajisadeghi	M.Fakharian	A.M.Mohseni	
D02	DEC.2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
D01	APR.2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
D00	FEB.2022	IFC	P.Hajisadeghi	M.Fakharian	M.Mehrshad	

Class: 1

CLIENT Doc. Number: F0Z-708973

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 سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک								
	I&C POWER CONSUMPTION SUMMARY								
شماره پیمان:	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 2 از 8
053 - 073 - 9184	BK	GCS	PEDCO	120	IN	LI	0007	D05	

REVISION RECORD SHEET

Page	D00	D01	D02	D03	D04	Page	D05	D06	D07	D08	D09
1	X	X	X	X	X	1	X				
2	X	X	X	X	X	2	X				
3	X	X				3					
4	X	X	X	X	X	4	X				
5	X	X	X	X	X	5					
6		X	X	X		6	X				
7				X	X	7	X				
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 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک								
	I&C POWER CONSUMPTION SUMMARY								
	شماره پیمان:	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
053 - 073 – 9184	BK	GCS	PEDCO	120	IN	LI	0007	D05	شماره صفحه: 3 از 8

REFERENCE DOCUMENTS:

I/O LIST FOR CONTROL SYSTM
 I/O LIST FOR ESD SYSTEM
 I/O LIST FOR F&G SYSTEM
 SPECIFICATION FOR INSTRUMENTATION
 SPECIFICATION FOR CONTROL SYSTEM
 SPECIFICATION FOR ESD SYSTEM
 SPECIFICATION FOR ESD SYSTEM
 SPECIFICATION FOR INSTRUMENT AND CONTROL OF PACKAGE UNIT SYSTEM(PU)

BK-GCS-PEDCO-120-IN-LI-0002
 BK-GCS-PEDCO-120-IN-LI-0003
 BK-GCS-PEDCO-120-IN-LI-0004
 BK-GNRAL-PEDCO-000-IN-SP-0001
 BK-GNRAL-PEDCO-000-IN-SP-0002
 BK-GNRAL-PEDCO-000-IN-SP-0003
 BK-GNRAL-PEDCO-000-IN-SP-0012
 BK-GNRAL-PEDCO-000-IN-SP-0004

 NISOC	تجهیزات و افزایش تولید میدان نفتی بینک سبخ الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک I&C POWER CONSUMPTION SUMMARY								
شماره پیمان: 053 - 073 - 9184	پروژه: BK	بسته کاری: GCS	صادر کننده: PEDCO	تجهیزات: 120	رشته: IN	نوع مدارک: LI	سریال: 0007	نسخه: D05	شماره صفحه: 4 از 8

INST./CONTROL UPS 110 VAC POWER CONSUMPTION TABLE



- Table (1) is represents AC UPS power consumption for inst./control system. The estimation is based on the design of control systems, comprising of various equipment located in Control Room/Field.

ITEM	DESCRIPTION		PANEL QTY (Note 1)	BACK UP TIME	ESTIMATED I/O (NOTE 3)	POWER CONSUMPTION (W) (Note 1)(AS PER APPENDIX A,B)	FEEDER QTY	TOTAL POWER CONSUMPTION (W)
1	DCS SYSTEM PANEL (AS PER APPENDEX "A")	Power Supply for CPUs (2 No. redundant)	1	2 hr.	400	132	2 Nos. (Redundant)	950
		110/24 VDC Power Supply		2 hr.		818	2 Nos. (Redundant)	
2	DCS MARSHALING PANEL (AS PER APPENDEX "B")	110/24 VDC Power Supply (2 No. redundant)	3	2 hr.	-	550	2 Nos. (Redundant)	550
3	ESD SYSTEM PANEL (AS PER APPENDEX "A")	Power Supply for CPUs (2 No. redundant)	1	2 hr.	200	132	2 Nos. (Redundant)	865
		110/24 VDC Power Supply		2 hr.		733	2 Nos. (Redundant)	
4	ESD MARSHALING PANEL (AS PER APPENDEX "B")	110/24 VDC Power Supply	2	2 hr.	-	635	2 Nos. (Redundant)	635
ITEM	DESCRIPTION		PANEL QTY (Note 1)	BACK UP TIME	ESTIMATED I/O (NOTE 3)	UNIT POWER CONSUMPTION (W) (Note 1)	FEEDER QTY	TOTAL POWER CONSUMPTION (W)
5	ELECRO GAS COMPRESSOR UCP A/B/C SYSTEM AND MARSHALING CABINET		3	2 hr.	3x200	1500	2 Nos. (Redundant)	4500
6	DEHYDRATION PACKAGE(UCP/BMS)		2	2 hr.	2x60	500	2 Nos. (Redundant)	1000
7	PAGING SYSTEM		1	2 hr.	-	1000	2 Nos. (Redundant)	1000
8	AIR COMPRESSOR UCP A/B		2	2 hr.	2x100	1000	2 Nos. (Redundant)	2000
9	AIR DRAYER LOCAL LCP		2	2 hr.	-	250	2 Nos. (Redundant)	500
10	NITROGEN PACKAGE UCP		1	2 hr.	100	1000	2 Nos. (Redundant)	1000
11	OPERATOR WORKSTATION (INCLUDING DCS, ESD, PACKAGE OWSS)		4	2 hr.	-	500	1 No. (Socket)	2000
12	DCS ENGINEERING WORKSTATION		1	2 hr.	-	500	1 No. (Socket)	500
13	ESD ENGINEERING WORKSTATION		1	2 hr.	-	500	1 No. (Socket)	500
14	F&G OPERATOR/ ENGINEERING WORKSTATION		1	2 hr.	-	500	1 No. (Socket)	500

TABLE 1

TOTAL POWER CONSUMPTION (W)	16500
TOTAL POWER CONSUMPTION CONSIDERING SPARE CAPACITY (W)	19800

Note 1 : Shall Be Finalized After Purchase Through Vendor Final Documents. Power supply modules QTY, Voltage/Amp Range, Spare capacity... will be specified by vendor considering project documents.

Note 3: UPS power for HVAC Panel shall be supplied by vendor. Only 400VAC , 3 phase will be supplied by EPC contractor.

Note 3: Power Consumption of panels have been estimated considering project I/O count. Refer to " I/O List For Control System Doc.No.BK-GCS-PEDCO-120-IN-LI-0002 , I/O List For ESD System Doc.No.BK-GCS-PEDCO-120-IN-LI-0003 , I/O List For F&G System Doc.No.BK-GCS-PEDCO-120-IN-LI-0003

Note 4 : UPS of CCTV panel is not considered.It will be provided by vendor.

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	I&C POWER CONSUMPTION SUMMARY								
	شماره پیمان:	پروژه	بسته کاری	صادر کننده	تجهیزات	رشته	نوع مدارک	سریال	
053 - 073 - 9184	BK	GCS	PEDCO	120	IN	LI	0007	D05	شماره صفحه: 8 از 5

INST./CONTROL NON- UPS 230 VAC POWER CONSUMPTION TABLE

- Table (2) is represents AC UPS power consumption for inst./control system. The estimation is based on the design of control systems, comprising of various equipment located in Control Room.

ITEM	DESCRIPTION	UNIT POWER CONSUMPTION (W) (Note 1)	QTY. (Note 1)	TOTAL POWER CONSUMPTION (W) + 500 W for 1 Socket per system
1	Cabinet Utilities For DCS (Heater, Fan , Light, Socket)	400	4	2100
2	Cabinet Utilities For ESD (Heater, Fan , Light, Socket)	400	3	1700
3	Cabinet Utilities For F&G (Heater, Fan , Light, Socket)	400	3	1700
4	Cabinet Utilities For Gas Compressor UCP(Heater, Fan , Light ,Socket)	400	3	1700
5	Cabinet Utilities For Dehydration BMS(if any) (Heater, Socket, Fan , Light, Socket)	400	1	900
6	Cabinet Utilities For Total Flooding UCP(Heater, Socket, Fan , Light, Socket)	400	1	900
7	Cabinet Utilities For Paging Cabinet (Heater, Socket, Fan , Light, Socket)	400	1	900
8	Cabinet Utilities For Air Compressor UCP(Heater, Socket, Fan , Light, Socket)	400	2	1300
9	Cabinet Utilities For Nitrogen package UCP(Heater, Socket, Fan , Ligh, Sockett)	400	2	1300
10	Control Desk Sockets	500	7	3500
TOTAL POWER CONSUMPTION				16000

TABLE 2

TOTAL POWER CONSUMPTION (W)	16000
TOTAL POWER CONSUMPTION CONSIDERING SPARE CAPACITY (W)	19200

Note 1 : Shall Be Finalized After Purchase Through Vendor Final Documents.

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	I&C POWER CONSUMPTION SUMMARY								
	شماره پیمان:	پروژه	بسته کاری	صادر کننده	تجهیزات	رشته	نوع مدارک	سریال	نسخه
053 - 073 - 9184	BK	GCS	PEDCO	120	IN	LI	0007	D05	

INST./CONTROL UPS 24 VDC POWER CONSUMPTION TABLE

D05

- Table (3) is represents 24V DC UPS power consumption for F&G system. The estimation is based on the design of F&G systems, comprising of various equipment located in Control Room/Field.

ITEM	DESCRIPTION	PANEL QTY (Note 1)	BACK UP TIME	ESTIMATTED I/O (NOTE 4)	POWER CONSUMPTION (W) (Refer to appendix A,B)	FEEDER QTY	TOTAL POWER CONSUMPTION FOR QUIESCENCE MODE(W) (Note 3)	TOTAL POWER CONSUMPTION FOR ALARM MODE (W) (Note 3)
1	F&G SYSTEM PANEL	1	24hr.	265	1000 (for Quiescence- Refer to appendix A)	2 Nos. (Redundant)	1130	1826
			5 MIN		1826 (for alarm mode- Refer to appendix A)			
2	F&G MARSHALLING PANEL	2	24hr.		130 (for Quiescence- Refer to appendix B)			
1	FACP system	1	24hr.	-	250 (for Quiescence)	2 Nos. (Redundant)	390	-
2	FACP Detectors		24hr.		140 (for Quiescence mode)			
			5 MIN		404		-	404
3	FIRE PROTECTION AND TOTAL FLOODING SYSTEM UCP	1	5 MIN	50	500	2 Nos. (Redundant)	-	500

TOTAL POWER CONSUMPTION FOR 5 MIN BACK UP TIME (W) (Note 3)	2730
TOTAL POWER CONSUMPTION FOR 24 HOURS BACK UP TIME (W) (Note 3)	1520
TOTAL POWER CONSUMPTION CONSIDERING SPARE CAPACITYFOR 5 MIN BACK UP TIME (W)	3276.0
TOTAL POWER CONSUMPTION CONSIDERING SPARE CAPACITY FOR 24 HOURS BACK UP TIME (W)	1824.0

Note 1 : Shall Be Finalized After Purchase Through Vendor Final Documents.

Note 2: Deleted

Note 3: DC charger shall supply 2KW + Spare, for 24H back up time but also it shall be capable to prepare 4.3KW+ Spare, as a peak power consumption in alarming conditions for 5 Min back up time. it shall be considered during battery sizing in related documents.

Note 4: Power Consumption of panels have been estimatted considering project I/O count. Refer to " I/O List For Control System Doc.No.BK-GCS-PEDCO-120-IN-LI-0002 , I/O List For ESD System Doc.No.BK-GCS-PEDCO-120-IN-LI-0003 , I/O List For F&G System Doc.No.BK-GCS-PEDCO-120-IN-LI-0003.

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سنگ الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک I&C POWER CONSUMPTION SUMMARY								 
شماره پیمان: 053 - 073 - 9184	پروژه: BK	بسته کاری: GCS	صادر کننده: PEDCO	تجهیزات: 120	رشته: IN	نوع مدارک: LI	سوال: 0007	نسخه: D05	شماره صفحه: 7 از 8

(APPENDIX "A")

D05

ITEM	DESCRIPTION		QTY	UNIT POWER CONSUMPTION (W)(Note 1)	TOTAL POWER CONSUMPTION (W)		
1	DCS SYSTEM PANEL (As per last DCS I/O List)		Interface Base Plates	8	13	104	
2			Commuciation Processor Module	7	2.4	16.8	
3			DI : 219	DI Module 16Channel (Note 2)	20	8.5	170
4			DO : 91	DO Module 16 Channel (Note 2)	9	50	450
5			AI : 98	AI Module 8 Channel (Note 2)	18	2	36
6			AO : 26	AO Module 8 Channel (Note 2)	5	6	30
7			Industrial Ethernet Switch	2	5.8	11.6	
8			Spare	INCLUDED	-	-	
				TOTAL :	818.4		

ITEM	DESCRIPTION		QTY	UNIT POWER CONSUMPTION (W)(Note 1)	TOTAL POWER CONSUMPTION (W)	
1	ESD SYSTEM PANEL (As per last DCS I/O List)		Interface Base Plates	8	13	104
2	DI-R : 47	DI Module 16 Channel (Note 2)	5	14	70	
3	DO-R : 107	DO Module 16 Channel (Note 2)	10	50	500	
4	AI-R : 72	AI Module 8 Channel (Note 2)	13	4.6	59.8	
5		Spare	INCLUDED	-	-	
					733.8	

ITEM	PANEL NAME	DETECTOR TYPE	24H / 5 MIN	QTY	UNIT POWER CONSUMPTION (W) (Note 1)	TOTAL POWER CONSUMPTION FOR 24H (W)	TOTAL POWER CONSUMPTION FOR 5 MIN (W)	
1	F&G SYSTEM PANEL 24VDC (External) For field	Flame Detector :	24H	19	1	19	0	
		Flame Detector :	5 MIN	19	9	0	171	
2		Flammable Gas Detector :	24H	33	1	33	0	
		Flammable Gas Detector :	5 MIN	33	9	0	297	
3		Toxic Gas Detector :	24H	33	1	33	0	
		Toxic Gas Detector :	5 MIN	33	9	0	297	
4		Hydrogen Gas Detector :	24H	3	1	3	0	
		Hydrogen Gas Detector :	5 MIN	3	9	0	27	
5		Manual Call Point :	24H	19	0	0	0	
6		Heat Detector :	24H	3	2	6	0	
7		Linear Heat Detector :	24H	4	3	12	0	
8		Beacon :	5 MIN	30	3	0	90	
9	Horn :	5 MIN	10	5	0	50		
1	F&G SYSTEM PANEL (As per last F&G I/O List) 24VDC (Internal)	CPU	24H/5 MIN	2	200	400	400	
2		DI Module 24 Channel	24H/5 MIN	6	18	108	108	
3		AI-R : 88	DO Module 10 Channel	24H/5 MIN	34	5	170	170
4		DI-NR : 47	AI Module 6 Channel	24H/5 MIN	36	6	216	216
5		DO-NR : 130	Spare	24H/5 MIN	INCLUDED	-	-	-
				TOTAL POWER CONSUMPTION FOR 24 HOURS BACK UP TIME :		1000		
				TOTAL POWER CONSUMPTION FOR 5 MIN BACK UP TIME :			1826	

Note 1 : Shall Be Finalized After Purchase Through Vendor Final Documents. (As per Siemens base)

Note 2: Number of channel per card in this project will be estimated by vendor considering minimum amount, specified in project specification and also vendor practic. For UPS calculation average for redundant cards have been considered to estimate cards QTYS.



NISOC

تکهداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



I&C POWER CONSUMPTION SUMMARY

شماره پیمان: 053 - 073 - 9184

پروژه

بسته کاری

صادرکننده

تجهیزات

رشته

نوع مدارک

سرمال

نسخه

شماره صفحه: 8 از 8

BK

GCS

PEDCO

120

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D05

(APPENDIX "B")

D05

ITEM	DESCRIPTION		QTY	UNIT POWER CONSUMPTION (W) (Note 1)	TOTAL POWER CONSUMPTION (W)
1	DCS MARSHALING PANEL	Barrier	150	1.3	195
2		Relay Coils	350	1	350
3		Spare	INCLUDED	-	-
				TOTAL :	545

1	ESD MARSHALING PANEL	Barrier	70	3	210
2		Relay Coils	170	2.5	425
3		Spare	INCLUDED	-	-
				TOTAL :	635

1	F&G MARSHALING PANEL	Relay Coils	130	1	130
2		Spare	INCLUDED	-	-
			TOTAL POWER CONSUMPTION FOR 24 HOURS BACK UP TIME :		130

Note 1 : Shall Be Finalized After Purchase Through Vendor Final Documents. (As per Siemens base)