

I&C Power and Air Consumption List
for Bibi Hakimeh Production Unit No.1

Rev.	Status	Date	Document Status	Prepared by:	Checked by:	Approved by:	Client Approval
D00	IFC	29.09.2021	Issued For Comment	M.A	S.Mo	A.R.Ma	
D01	IFA	03.10.2022	Issued For Approval (Generally Revised)	H.Esmacillou	B.Shamsedini	A.Samadi	
D02	IFA	08.02.2023	Issued For Approval	H.Esmacillou	B.Shamsedini	A.Samadi	
D03	IFA	10.26.2023	Issued For Approval	H.Esmacillou	B.Shamsedini	A.Samadi	
D04	IFA	10.16.2024	Issued For Approval	A.Babalou	B.Yadegari	M.Setayesh	

Class: A

Status:

IDC: Inter-Discipline Check

IFC: Issued For Comment

IFA: Issued For Approval

IFR: Issued for Rivew

AFD: Approved For Design

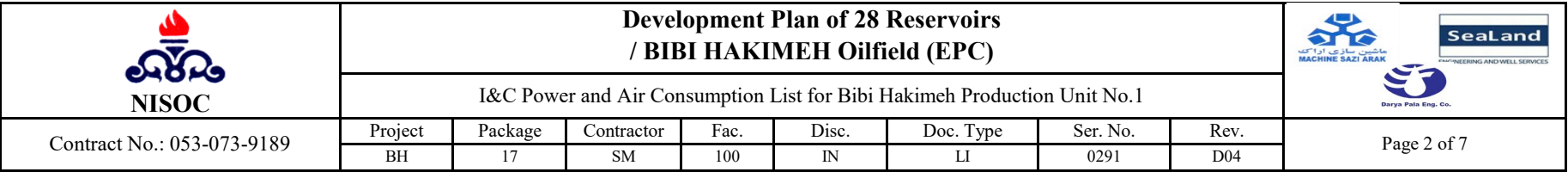
AFC: Approved For Construction





AFP: Approved For Purchase

IFI: Issued For Information

AB-R: As-Built for COMPANY Review

AB-A: As-Built –Approved

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 NISOC	Development Plan of 28 Reservoirs / BIBI HAKIMEH Oilfield (EPC)								 ماشین سازی اراک MACHINE SAZI ARAK	 ENGINEERING AND WELL SERVICES
	I&C Power and Air Consumption List for Bibi Hakimeh Production Unit No.1								 Barya Pata Eng. Co.	Page 3 of 7
Contract No.: 053-073-9189	Project BH	Package 17	Contractor SM	Fac. 100	Disc. IN	Doc. Type LI	Ser. No. 0291	Rev. D04		

References:

Doc Number	Title
BH-17-SM-100-IN-DC-0052	Instrument & Control/Safety System Design Criteria
BH-17-SM-100-IN-SP-0053	General Specification for Instrumentation
BH-17-SM-100-IN-LI-0286	Control System I/O List for Bibi Hakimeh Production Unit No.1
BH-17-SM-100-IN-LI-0287	ESD System I/O List for Bibi Hakimeh Production Unit No.1
BH-17-SM-100-SA-PY-0540	Fire & Gas Detector Location Layout for Bibi Hakimeh Production Unit No.1(Process Area)
BH-17-SM-100-IN-LI-0285	Instrument Index for Bibi Hakimeh Production Unit No.1
BH-17-SM-100-IN-RT-2422	Existing Instrumentation & Control System Report For BBH & Nargesi
IPS-E-PR- 330	Engineering Standard For Process Design Of Compressed Air Systems
IPS-G-IN- 200	General Standard For Instrument Air System

Exclusions:

Power & Air consumption of following items has not been included in this document :

HVAC panel
Safety panels such as CO2 panel,...
Telecom consumers

Abbreviations

CCR	Central Control Room
PDP	Power Distribution Panel
FACP	Fire Alarm Control Panel
UCP	Unit Control Panel
F&G Sys	Fire And Gas System
PCS	Process Control System
ESD	Emergency Shut Down



**Development Plan of 28 Reservoirs
/ BIBI HAKIMEH Oilfield (EPC)**



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Instrument Air Consumption List

Item	Consumer Description	Qty.	Consumption per Consumer (Nm3/h)	Total Air Consumption Per Type	Remark
1	Control Valve	19	1.52	28.88	(Note-3)
2	On-off Valve including ESDV	9	1.52	13.68	(Note-3)
4	H2S Analyzer	2	5	10	(Note-4)
5	CO2 Analyzer	2	5	10	(Note-4)

Total Air Required with Contingency Reserve (20%)	76	Nm3/h
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Notes :

- Instrument air consumption for packaged skids is not included. It is estimated by Mechanical/Process based on information provided by package skid vendor.
- Refer to IPS-E-PR- 330 and IPS-G-IN-200
- Air consumption is estimated based on previous projects and not from actual vendor data . This document shall be revised to indicate actual vendor data upon availability.



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/ BIBI HAKIMEH Oilfield (EPC)**



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Power Consumption List (UPS - 110VAC)

Item No	Panel or Instrument Name	Power source/ Location	Cubicle QTY	110VAC UPS Typical Load, (Watt)	Total UPS Power Required, (Watt)	Heat Dissipation			Remark
						Total Watt	Coincidence factor	Total Heat Dissipation (Watt)	
1	PCS System & Marshaling	PDP / CCR	3	1250	3750	3750	50%	1875	Note-2
2	ESD System & Marshaling	PDP / CCR	1	1500	1500	1500	50%	750	Note-2
3	ESD Matrix Panel	PDP / CCR	1	200	200	200	50%	100	
4	Work Station	PDP / CCR	5	300	1500	1500	50%	750	
5	Printer	PDP / CCR	2	-	-	-	-	-	
6	Network Panel	PDP / CCR	1	800	800	800	50%	400	
	Interposing Relay Panel	PDP / MCC	1	300	300	300	50%	150	
7	PDP	PDP / CCR	1	500	500	500	50%	250	
9	Analyzer AT-2201	PDP / Field	1	300	300	-	-	-	Note-1
10	Analyzer AT-2202	PDP / Field	1	300	300	-	-	-	Note-1
11	Analyzer AT-2203	PDP / Field	1	300	300	-	-	-	Note-1
12	Analyzer AT-2204	PDP / Field	1	300	300	-	-	-	Note-1

Total UPS - 110VAC (Watt) - Without Spare






9750





Total Heat Dissipation (Watt) - Without Spare

4275

Notes :

- Power consumption is estimated based on previous projects and not from actual vendor data. These data shall be revised to indicate actual vendor data upon availability.
- Since there is a space constraint in the existing control room, then design of control panels will be based on one-sided system and one-sided marshalling (in a common cabinet) with using the side of the panels.
- Power Consumption of each panel is consist of Relay, Isolator parrier, card ,chanel, madules, fan , lightings,.... And this value is priliminary and will be finalized after receiving vendor data.

 NISOC		Development Plan of 28 Reservoirs / BIBI HAKIMEH Oilfield (EPC)							 مکتب سازي آراك MACHINE SAZI ARAK		 ENGINEERING AND WELL SERVICES		
		I&C Power and Air Consumption List for Bibi Hakimeh Production Unit No.1							 مکتب سازي آراك MACHINE SAZI ARAK		 Bibi Hakimeh Logo		
Contract No.: 053-073-9189		Project BH	Package 17	Contractor SM	Fac. 100	Disc. IN	Doc. Type LI	Ser. No. 0291	Rev. D04	Page 6 of 7			
Power Consumption List (24 VDC)													
Item No.	Panel or Instrument Name	Power source/ Location	Qty	Normal Loads @ 24VDC			Full Alarm Loads @ 24VDC			Heat Dissipation			Remark
				Load (mA)	Total DC Load Required (mA)	Total DC Power Required (Watt)	Load (mA)	Total DC Load Required (mA)	Total DC Power Required (Watt)	Load (Watt)	Coincidence factor	Total Heat Dissipation (Watt)	
1	Gas Detector	F&G Sys./ CCR	27	81	2187	52	405	10935	262	262	50%	131	
2	H2S GAS DETECTOR	F&G Sys./ CCR	25	52	1300	31	260	6500	156	156	50%	78	
3	LINEAR HEAT DETECTOR	F&G Sys./ CCR	5	50	250	6	60	300	7	7	50%	4	
4	UV/IR FLAME DETECTOR	F&G Sys./ CCR	47	85	3995	96	150	7050	169	169	50%	85	
5	Manual Call Point (Weather Proof Type)	F&G Sys./ CCR	21	5	105	3	10	210	5	5	50%	3	
7	Audible Alarm Sounder (Weather Proof)	F&G Sys./ CCR	14	0	0	0	200	2800	67	67	50%	34	
8	Fire Flashing Beacon (BLUE) Weather Proof Type	F&G Sys./ CCR	14	0	0	0	600	8400	202	202	50%	101	
9	Fire Flashing Beacon (RED) -Weather Proof Type	F&G Sys./ CCR	14	0	0	0	600	8400	202	202	50%	101	
10	Flammable Gas Flashing Beacon (Yellow) Weather Proof Type	F&G Sys./ CCR	14	0	0	0	600	8400	202	202	50%	101	
11	F&G System & Marshaling	Battery-Charger/CCR	-	-	-	-	-	-	-	-	-	-	
12	F&G Matrix Panel	Battery Charger/CCR	1	-	-	200	-	-	200	200	50%	100	
13	FACP	Battery Charger/Switchgear Room	4	6500	26000	624	15000	60000	1440	1440	50%	720	
Total Continues Loads @ 24VDC (Watt)							1012						
Total Intermittent Loads @ 24VDC (Watt)							1084						
Total Full Alarm Loads @ 24VDC (Watt) (Batteries will be able to supply the system for a period of five minuts)							2912						
Total Full Heat Dissipation - Without Spare							736						
Notes : 1 Power Consumption of each panel is consist of Relay, Isolator parrier, card ,chanel, madules, fan , lightings,.... And this value is priliminary and will be finalized after receiving vendor data.													

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Power Consumption (Non- UPS - 230VAC)									
Item No	Panel or Instrument Name	Power source/ Location	QTY	230VAC Non- UPS Typical Load, (Watt)	Total 230VAC Non- UPS Power Required, (Watt)	Heat Dissipation			Remark
						Total Watt	Coincidence factor	Total Heat Dissipation (Watt)	
	Analyzer-AT-1201	EL panel / Field	1	7000	7000	-	-	-	Moved to UPS
	Analyzer-AT-1202	EL panel / Field	1	7000	7000	-	-	-	Moved to UPS
	Analyzer-AT-1203	EL panel / Field	1	7000	7000	-	-	-	Moved to UPS
	Analyzer-AT-1204	EL panel / Field	1	7000	7000	-	-	-	Moved to UPS
1	PCS System & Marshaling	EL panel / CCR	3	1000	3000	-	-	-	
2	ESD System & Marshaling	EL panel / CCR	1	1000	1000	-	-	-	
3	PRINTER	EL panel / CCR	2	1000	2000	-	-	-	
4	FGS	EL panel / CCR	3	1000	3000	-	-	-	
5	Interposing Relay Panel	EL panel / MCC	1	1000	1000	-	-	-	
6	LCPs in field	EL panel / Field	2	500	1000	-	-	-	
7	LG-1101A	EL panel / Field	1	60	60				
8	LG-1101B	EL panel / Field	1	60	60	-	-	-	
9	LG-1102A	EL panel / Field	1	60	60	-	-	-	
10	LG-1102B	EL panel / Field	1	60	60	-	-	-	
11	LG-1103A	EL panel / Field	1	60	60	-	-	-	
12	LG-1103B	EL panel / Field	1	60	60	-	-	-	
13	LG-1104A	EL panel / Field	1	60	60	-	-	-	
14	LG-1104B	EL panel / Field	1	60	60	-	-	-	
15	LG-1105A	EL panel / Field	1	60	60	-	-	-	
16	LG-1105B	EL panel / Field	1	60	60	-	-	-	
17	LG-1106A	EL panel / Field	1	60	60	-	-	-	
18	LG-1106B	EL panel / Field	1	60	60	-	-	-	
19	LG-1107A	EL panel / Field	1	60	60	-	-	-	
20	LG-1107B	EL panel / Field	1	60	60	-	-	-	
21	LG-1108A	EL panel / Field	1	60	60	-	-	-	
22	LG-1108B	EL panel / Field	1	60	60	-	-	-	
23	LG-3301	EL panel / Field	1	60	60	-	-	-	
24	LG-3302	EL panel / Field	1	60	60	-	-	-	
25	LG-7101	EL panel / Field	1	60	60	-	-	-	
26	LG-7111	EL panel / Field	1	60	60	-	-	-	
27	LG-8101A	EL panel / Field	1	60	60	-	-	-	
28	LG-8101B	EL panel / Field	1	60	60	-	-	-	