
 NISOC	<p>نگهداشت و افزایش تولید میدان نفتی بینک</p> <p>فعالیت های رو زمینی در بسته های کاری تحت الارض</p> <p>عمومی و مشترک</p>																	
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۰۵۳ - ۰۷۳ - ۹۱۸۴	<table><tr><td>پروژه</td><td>بسته کاری</td><td>صادر کننده</td><td>تسهیلات</td><td>رشته</td><td>نوع مدرک</td><td>سریال</td><td>نسخه</td></tr><tr><td>BK</td><td>SSGRL</td><td>PEDCO</td><td>110</td><td>EL</td><td>DT</td><td>0004</td><td>D04</td></tr></table>	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	BK	SSGRL	PEDCO	110	EL	DT	0004	D04	
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طرح نگهداشت و افزایش تولید ۲۷ مخزن

DATA SHEETS FOR DIESEL GENERATOR OF WELL PADS

نگهداشت و افزایش تولید میدان نفتی بینک



D04	May. 2023	AFC	H.Shakiba	M.Fakharian	A.M.Mohseni	
D03	Oct. 2022	IFA	H.Shakiba	M.Fakharian	M.Mehrshad	
D02	Aug. 2022	IFA	H.Shakiba	M.Fakharian	M.Mehrshad	
D01	Apr. 2022	IFA	H.Shakiba	M.Fakharian	M.Mehrshad	
D00	Sep. 2021	IFC	H.Shakiba	M.Fakharian	Sh.Ghalikar	
Rev.	Date	Purpose of Issue/Status	Prepared by:	Checked by:	Approved by:	Client Approval

Class: 1

Client Doc. Number: F0Z-707391

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

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REVISION RECORD SHEET

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4	X	X	X	X	
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	<p>نگهداشت و افزایش تولید میدان نفتی بینک</p> <p>فعالیت های روزمینی در بسته های کاری تحت الارض</p> <p>عمومی و مشترک</p>								
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Technical Data Sheet for <u>Diesel Generator</u> of Well Pads			
Item	Description	Requirement	Supplier's Data
1	GENERAL		
1.1	Location	Binak Oilfield in Bushehr Province	
1.2	Reference	IPS-E-EL-100 (1) IPS-M-EL-138 (1) IPS-M-PM-290 (1)	
1.3	Max. Outdoor Ambient Temperature	52°C	
1.4	Min. Outdoor Ambient Temperature	-5°C	
1.5	Direct Sunlight Temperature	85°C	
1.6	Maximum Relative Outdoor Humidity	100%	
1.7	Altitude	12.5 m Above Sea Level	
1.8	Installation Method	Outdoor (Under Shelter)	
2	ENGINE SPECIFICATIONS		
2.1	Manufacturer	By Vendor	
2.2	Model	By Vendor	
2.3	Type	Industrial, 4 strokes, Direct Injection	
2.4	Duty	Emergency Standby (Calculated for Continuous Operation)	
2.5	Aspiration	Turbo Charged, Intercooler	
2.6	Cylinder Configuration	By Vendor	
2.7	Number of Cylinders	By Vendor	
2.8	Displacement (Liter)	By Vendor	
2.9	Bore/Stroke (mm)	By Vendor	
2.10	Compression Ratio	By Vendor	
2.11	Governor Type	Electronic	
2.12	Air Cleaner Type	Heavy Duty	
2.13	Engine Speed (rpm)	1500	
2.14	Derating Factor at Site Conditions (55°C)	(MFR Shall Advise Value)	
2.15	ISO Gross Shaft Power (kW) at:	-	
	Continuous	> 175.7	
	Prime	> 202	
	Maximum Standby	> 193.3	

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Technical Data Sheet for Diesel Generator of Well Pads

Item	Description	Requirement	Supplier's Data
2.16	ISO Net Shaft Power (kW) at:	-	
	Continuous	165.5	
	Prime	> 190.3	
	Maximum Standby	> 182	
2.17	Cooling Fan Power Requirement (kW)	10 (Assumption)	
2.18	Bore Mean Effective Pressure (Bar) at:	-	
	Continuous Power	By Vendor	
	Prime Power	By Vendor	
	Standby Power	By Vendor	
2.19	Piston Speed	By Vendor	
2.20	Starting System	Electrical	
2.21	Type of Batteries	Nickel Cadmium (Type H, Vented)	
2.22	Quantity of Batteries	20	
2.23	Size of Batteries	By Vendor	
2.24	Max. Startup & Loading Time to Full Load	10 Sec.	
3	LUBRICATING SYSTEM		
3.1	Type	Forced Feed by Gear Oil Pump	
3.2	Total oil Capacity min. / max. (Liter)	By Vendor	
3.3	Oil Filter	By Vendor	
3.4	Oil Cooler	Water Cooled	
3.5	Oil Type Required	By Vendor	
3.6	Lube oil Consumption (gr/h) at:	-	
	Continuous Power	By Vendor	
	Prime Power	By Vendor	
	Standby Power	By Vendor	
4	FUEL SYSTEM		
4.1	Type of Fuel	Gas Oil	
4.2	Fuel Filter Type	By Vendor	
4.3	Permissible Suction Head	By Vendor	
4.4	Permissible Return Head	By Vendor	

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Technical Data Sheet for Diesel Generator of Well Pads

Item	Description	Requirement	Supplier's Data
4.5	Daily Tank	For 8 Hours Operation	
4.6	Specified Fuel Consumption (gr/kWh) at:	-	
	100% Maximum Standby Power	By Vendor	
	Prime Power	By Vendor	
	100% Continuous Power	By Vendor	
5	COOLING SYSTEM		
5.1	Total Coolant Capacity (Lt)	By Vendor	
5.2	Water Pump Type	Centrifugal	
5.3	Temp. Rise Across Engine (°C) at:	-	
	Continuous Power	By Vendor	
	Prime Power	By Vendor	
	Standby Power	By Vendor	
5.4	Heat Rejection to Exhaust (kW) Prime Power	By Vendor	
5.5	Heat Rejection to Coolant (kW) Prime Power	By Vendor	
5.6	Heat Rejection to Intercooler (kW) Prime Power	By Vendor	
5.7	Heat Rejection by Radiation From Engine Surface (kW) Prime Power	By Vendor	
5.8	Cooling Air Required for Radiator (m ³ /h) Prime Power	By Vendor	
6	AIR INTAKE		
6.1	Combustion Air Flow (m ³ /h) at:	-	
	Standby Power	By Vendor	
	Prime Power	By Vendor	
	Continuous Power	By Vendor	
6.2	Max. Air Intake Restriction of Engine (hPa)	-	
	With New Filter	By Vendor	
	With Used Filter	By Vendor	
6.3	Alternator Cooling Air (m ³ /h)	By Vendor	
7	EXHAUST SYSTEM		
7.1	Max. Allowable Back Pressure for Exhaust Line (Pa)	By Vendor	
7.2	Exhaust Flow (at Standby Power) (m ³ /h)	By Vendor	

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Technical Data Sheet for Diesel Generator of Well Pads

Item	Description	Requirement	Supplier's Data
7.3	Exhaust Gas Temp After Turbine (at Standby Power) (°C)	By Vendor	
7.4	Silencer Type	Residential	
7.5	Spark Arrester	Required	
8	ENGINE AUXILIARIES		
8.1	Alternator Manufacturer	By Vendor	
8.2	Alternator Voltage (V)	By Vendor	
8.3	Alternator Current (A)	By Vendor	
8.4	Starter Manufacturer	By Vendor	
8.5	Starter Motor Voltage (V)	By Vendor	
8.6	Starter Motor Power (kW)	By Vendor	
9	GENERATOR SPECIFICATIONS		
9.1	Quantity / Duty	1 X 100% / Continuous	
9.2	Manufacturer / Type	By Vendor	
9.3	Continuous Rating (MCR) at Standard Condition for Class F Temperature Rise (KVA)	> 198.5 kVA to Meet Continuous Operation	
9.4	De-rating Factor for Ambient Temperature Kt	(MFR Shall Advise His Value)	
9.5	De-rating Factor for Altitude Ka	1	
9.6	Total Generator de-Rating Factor Kd=Ka*Kt	(MFR Shall Advise His Value)	
9.7	Continuous Rating (MCR) at Site Conditions for Class F Temp. Rise (KVA)	>178.6 kVA to Meet Continuous Operation	
9.8	Permissible Overload (Class B Temp. Rise & Standby Duty) (KVA)	10% of Rated Current for a Period of One Hour	
9.9	Starting Capability (12% Voltage Dip at Gen. Terminal)	By Vendor (Note 1)	
9.10	Unbalance Loading Capacity (%)	15%	
9.11	Power Factor	0.80	
9.12	Terminal Voltage (V)	400	
9.13	Stator Winding Connection	Series Star	
9.14	Frequency (Hz)	50	
9.15	Grounding	Solidly Grounded	
9.16	Neutral Point	Brought Out	
9.17	Insulation Class	F	
9.18	Temp. Rise for Continuous Duty	B	

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Technical Data Sheet for Diesel Generator of Well Pads

Item	Description	Requirement	Supplier's Data
9.19	Ingress Protection of Terminal Box	IP55	
9.20	Ingress Protection for Generator	IP23	
9.21	Short Circuit Ratio at Rated Volts & Current	According to SLD (BK-SSGRL-PEDCO-110-EL-SL-0002)	
9.22	Synchronous Reactance Xd (base 600kVA, 400V, Saturated) (p.u.)	By Vendor	
9.23	Direct Axis Transient Reactance X'd1 (p.u.)	By Vendor	
9.24	Direct Axis sub-trans. Reactance X''d (p.u.)	By Vendor	
9.25	Quadrature Axis Reactance Xq (p.u.)	By Vendor	
9.26	Quadrature Axis sub-trans. Reactance X''q(p.u.)	By Vendor	
9.27	Zero Sequence Reactance X0 (p.u.)	By Vendor	
9.28	Negative Sequence Reactance X2 (p.u.)	By Vendor	
9.29	Leakage Reactance XL (p.u.)	By Vendor	
9.30	Time Constants (sec):	-	
	Td'	By Vendor	
	Td''	By Vendor	
	Ta	By Vendor	
9.31	Generator Efficiency at (%):	-	
	1/2 Full Load	By Vendor	
	3/4 Full Load	By Vendor	
	4/4 Full Load	By Vendor	
9.32	Number of Bearings	1 (2 is Preferred)	
9.33	Type of Bearings / Lubrication	Anti Friction / Grease	
9.34	Generator Space Heater	Required	
	Voltage (V)	230 (V)	
	Power (W)	By Vendor	
9.35	Exciter Type	Self-Excited (PMG is preferred) Brushless, 3 Phase Sensing	
9.36	Exciter Voltage	By Vendor	
9.37	Exciter Manufacturer	By Vendor	
9.38	AVR Model	By Vendor	
9.39	Voltage Regulation	±5%	

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Technical Data Sheet for Diesel Generator of Well Pads

Item	Description	Requirement	Supplier's Data
9.40	Exciter Current at (A):	-	
	Continuous Operation	By Vendor	
	Short Time Overload	By Vendor	
10	CONTROL PANEL		
10.1	Manufacturer	By Vendor	
10.2	Standard	IEC, IPS-M-EL-143(3)	
10.3	Type	Fixed	
10.4	Construction	Self-Standing	
10.5	Sheet Steel Thickness	2mm Wall / 2.5 mm Frame	
10.6	Access	Front Via Hinged Door	
10.7	Location	Outdoor (Under Shelter)	
10.8	Ingress Protection	IP54	
10.9	Busbar System	3Ph+N+PE	
10.10	Rated Busbar Current (A)	630	
10.11	Busbar Material	Copper (Insulated With Heat Shrink)	
10.12	Protection Functions (Embedded in ACB Protection Unit)	According to SLD (BK-SSGRL-PEDCO-110-EL-SL-0002)	
10.13	Protection Functions (Other than ACB Protection Unit)	According to SLD (BK-SSGRL-PEDCO-110-EL-SL-0002)	
10.14	Controller Manufacturer / Model no.	By Vendor	
10.15	Indicators on Panel	According to SLD (BK-SSGRL-PEDCO-110-EL-SL-0002) (Open, Close, Fault)	
10.16	Transducers (4~20mA output)	Generator Voltage Frequency	
10.17	Generator Neutral CT	According to SLD (BK-SSGRL-PEDCO-110-EL-SL-0002)	
10.18	Earth Fault Protections	Required	
10.19	Panel Accessories	Anti Condensation Heater Panel Lighting Removable Gland Plate	
10.20	Finish Color	RAL 7032	
10.21	Cable Entry	Bottom via Cable Gland	
10.22	Cable Specification & Size From Generator to Local Panel: From Local Panel to LV Switchgear:	According to Cable Sizing	

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Technical Data Sheet for <u>Diesel Generator</u> of Well Pads			
Item	Description	Requirement	Supplier's Data
11	SWITCH DEVICE		
11.1	Type of Switching Device	ACB	
11.2	Manufacturer	By Vendor	
11.3	Type Designation	By Vendor	
11.4	Operating Mechanism	Motor Operated, Spring Charged, Stored Energy, Trip Free Mechanism	
11.5	Number of Poles	4	
11.6	Rated Current	630	
11.7	Rated Voltage	690	
11.8	Standard	IEC	
11.9	Rated Breaking Current	Not Less Than 35kA	
11.10	Charging Motor Operating Voltage	24 (Fed From Diesel Batteries)	
11.11	Trip Unit	Electronic type	
11.12	Trip Unit Functions	According to SLD (BK-SSGRL-PEDCO-110-EL-SL-0002)	
11.13	Trip Unit Model	By Vendor	
12	GENERATOR ACCESSORIES		
12.1	RTD (Pt100)	Yes (9 RTD's for S > 500kVA)	
12.2	Lifting Bolts	Yes	
12.3	Earthing Bolt	Yes	
12.4	Drain Plug	Yes	
13	GENERAL		
13.1	Noise Level	Not Exceed 81 dB (A) in No Load Running	
13.2	Weight of Diesel Engine Without Oil & Water (kg)	By Vendor	
13.3	Weight of Generator (kg)	By Vendor	
13.4	Weight of Diesel Generator Skid (kg)	By Vendor	
13.5	Overall Dimension of Diesel Generator Skid (W x D x H) (mm)	By Vendor	
13.6	Dimension of Control Panel (W x D x H) (mm)	By Vendor	

* Note 1 of item 9.9: Since in well pads, there is no motor feeder type on switchgear, therefore starting of biggest motor has not been studied.