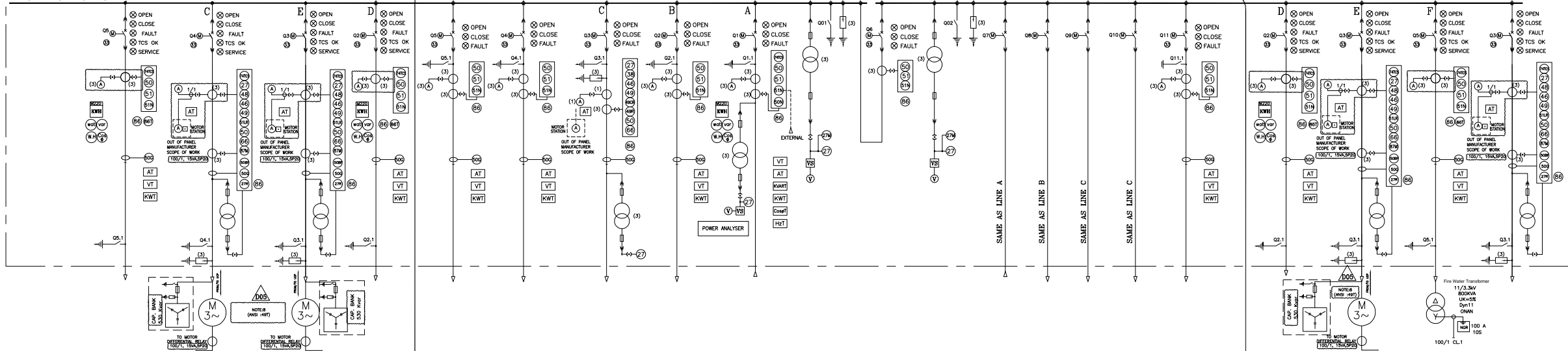


EXISTENT MV SWITCHGEAR EXPANSION SINGLE LINE DIAGRAM

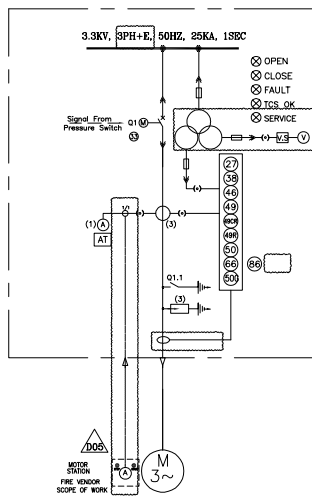
EXISTING

11KV, 3PH+PE, 1600A, 50HZ, 25KA, 1SEC



DESCRIPTION	SPARE	FEEDER TO GAS COMPRESSOR(1250KW)	FEEDER TO GAS COMPRESSOR(1250KW)	FEEDER TO 1250KVA TRANSFORMER	SPARE	SPARE	FEEDER TO GAS COMPRESSOR(1100KW)	FEEDER TO 2000KVA TRANSFORMER	INCOMING FEEDER FROM 230/11KV SUBSTATION	BUS BAR	FE. BREAKER	BUS BAR	INCOMING FEEDER FROM 230/11KV SUBSTATION	FEEDER TO 2000KVA TRANSFORMER	FEEDER TO GAS COMPRESSOR(1100KW)	FEEDER TO GAS COMPRESSOR(1100KW)	SPARE	FEEDER TO 1250KVA TRANSFORMER	FEEDER TO GAS COMPRESSOR(1250KW)	FEEDER TO 800KVA TRANSFORMER	SPARE
RATED CURRENT[A]							100	100	1320		1320										
CIRCUIT TYPE	VACUUM	VACUUM	VACUUM	VACUUM	VACUUM	VACUUM	VACUUM	VACUUM	VACUUM		VACUUM							VACUUM	VACUUM	VACUUM	VACUUM
BREAKER RATED[A]	630	630	630	630	630	630	630	630	1600		1600							630	630	630	630
EARTHING SWITCH[A]	630				630	630			1600									630	630	630	
SURGE ARRESTER [kV]		5KA,11KV	5KA,11KV	5KA,11KV			5KA,11KV		METAL-OXIDE 5KA,11KV			METAL-OXIDE 5KA,11KV						5KA,11KV		5KA,11KV	5KA,11KV
C.T. RATIO,VA,CLASS	100/1/1 CORE1:15VA,CL1.5	100/1/1 CORE1:15VA,CL1.5	100/1/1 CORE1:15VA,CL1.5	75/1/1 CORE1:15VA,CL1.5	2x250/1/1 CORE1:15VA,CL1.5	2x250/1/1 CORE1:15VA,CL1.5	100/1/1 CORE1:15VA,CL1.5	100/1/1 CORE1:15VA,CL1.5	60/1/1 CORE1:15VA,CL1.5			2x800/1/15VA,SP20						75/1/1 CORE1:15VA,CL1.5	100/1/1 CORE1:15VA,CL1.5	75/1/1 CORE1:15VA,CL1.5	100/1/1 CORE1:15VA,CL1.5
V.T. RATIO,VA,CLASS	11/√3/0.11/√3,30VA,CL1.5	11/√3/0.11/√3,30VA,CL1.5	11/√3/0.11/√3,30VA,CL1.5	11/√3/0.11/√3,30VA,CL1.5	11/√3/0.11/√3,30VA,CL1.5	11/√3/0.11/√3,30VA,CL1.5	11/√3/0.11/√3,30VA,CL1.5	11/√3/0.11/√3,30VA,CL1.5	11/√3/0.11/√3,30VA,CL1.5			11/√3/0.11/√3,30VA,CL1.5						11/√3/0.11/√3,30VA,CL1.5	11/√3/0.11/√3,30VA,CL1.5	11/√3/0.11/√3,30VA,CL1.5	11/√3/0.11/√3,30VA,CL1.5
AMMETER SCALE,SIZE,CLASS	0-100A,90° 30°/96,CL1.5	0-100A,90° 30°/96,CL1.5	0-100A,90° 30°/96,CL1.5	0-100A,90° 30°/96,CL1.5	0-500A,90° 30°/96,CL1.5	0-500A,90° 30°/96,CL1.5	0-100A,90° 30°/96,CL1.5	0-100A,90° 30°/96,CL1.5	0-100A,90° 30°/96,CL1.5			0-100A,90° 30°/96,CL1.5						0-100A,90° 30°/96,CL1.5	0-100A,90° 30°/96,CL1.5	0-100A,90° 30°/96,CL1.5	0-100A,90° 30°/96,CL1.5
VOLT-METER SCALE,SIZE,CLASS					0-120KV,90° 30°/96,CL1.5	0-120KV,90° 30°/96,CL1.5	0-120KV,90° 30°/96,CL1.5	0-120KV,90° 30°/96,CL1.5	0-120KV,90° 30°/96,CL1.5			0-120KV,90° 30°/96,CL1.5						0-120KV,90° 30°/96,CL1.5	0-120KV,90° 30°/96,CL1.5	0-120KV,90° 30°/96,CL1.5	0-120KV,90° 30°/96,CL1.5
WATT-METER SCALE,SIZE,CLASS					0-250W,90° 30°/96,CL1.5	0-250W,90° 30°/96,CL1.5	0-250W,90° 30°/96,CL1.5	0-250W,90° 30°/96,CL1.5	0-250W,90° 30°/96,CL1.5			0-250W,90° 30°/96,CL1.5						0-250W,90° 30°/96,CL1.5	0-250W,90° 30°/96,CL1.5	0-250W,90° 30°/96,CL1.5	0-250W,90° 30°/96,CL1.5
VAR-METER SCALE,SIZE,CLASS					0-200VAR,90° 30°/96,CL1.5	0-200VAR,90° 30°/96,CL1.5	0-200VAR,90° 30°/96,CL1.5	0-200VAR,90° 30°/96,CL1.5	0-200VAR,90° 30°/96,CL1.5			0-200VAR,90° 30°/96,CL1.5						0-200VAR,90° 30°/96,CL1.5	0-200VAR,90° 30°/96,CL1.5	0-200VAR,90° 30°/96,CL1.5	0-200VAR,90° 30°/96,CL1.5
ENERGY-METER SCALE,SIZE,CLASS					90°/96,CL1.5	90°/96,CL1.5	90°/96,CL1.5	90°/96,CL1.5	90°/96,CL1.5			90°/96,CL1.5						90°/96,CL1.5	90°/96,CL1.5	90°/96,CL1.5	90°/96,CL1.5
TRANSFORMER(4-20mA)	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED			REQUIRED						REQUIRED	REQUIRED	REQUIRED	REQUIRED
PT FUSE RATING	HV SIDE [A]	2A,11KV	2A,11KV	2A,11KV	2A,11KV	2A,11KV	2A,11KV	2A,11KV	2A,11KV		2A,11KV		2A,11KV					2A,11KV	2A,11KV	2A,11KV	2A,11KV
	LV SIDE [A]	2A,0.11KV	2A,0.11KV	2A,0.11KV	2A,0.11KV	2A,0.11KV	2A,0.11KV	2A,0.11KV	2A,0.11KV		2A,0.11KV		2A,0.11KV					2A,0.11KV	2A,0.11KV	2A,0.11KV	2A,0.11KV
SELECTOR SWITCH POSITION	VOLTMETER	4POSITION	4POSITION	4POSITION	4POSITION	4POSITION	4POSITION	4POSITION	4POSITION		4POSITION		4POSITION					4POSITION	4POSITION	4POSITION	4POSITION
OPERATION					3POSITION(M-O-A)	3POSITION(M-O-A)	3POSITION(M-O-A)	3POSITION(M-O-A)	3POSITION(M-O-A)		3POSITION(M-O-A)		3POSITION(M-O-A)					3POSITION(M-O-A)	3POSITION(M-O-A)	3POSITION(M-O-A)	3POSITION(M-O-A)
CORE BLANC C.T. RATIO,VA,CLASS	60/1,5VA,CL1	30/1,5VA,CL1	30/1,5VA,CL1	60/1,5VA,CL1	60/1,5VA,CL1	60/1,5VA,CL1	60/1,5VA,CL1	60/1,5VA,CL1	60/1,5VA,CL1			60/1,5VA,CL1						60/1,5VA,CL1	30/1,5VA,CL1	30/1,5VA,CL1	30/1,5VA,CL1
CONDUCTOR X,SEC. (mm)	3X95	3X95	3X95	3X95	3X95	3X95	3X95	3X95	3X95			3X95						3X95	3X95	3X95	3X95
POWER CABLE TYPE	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC			Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC						Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC
LENGTH(M)	270	330	330	70	75m	75m	30m	167m	167m			167m						300	300	300	300
TESTING C.T.	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED		REQUIRED		REQUIRED					REQUIRED	REQUIRED	REQUIRED	REQUIRED
TERMINAL V.T.	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED		REQUIRED		REQUIRED					REQUIRED	REQUIRED	REQUIRED	REQUIRED
CATEGORY	C2	C3	C3	C2	C2	C2	C3	C2	C1		C4		C1	C2	C3	C3	C2	C2	C3	C5	C3

DESCRIPTION	FIRE WATER PUMP
RATED CURRENT[A]	VACUUM
CIRCUIT TYPE	VACUUM
BREAKER RATED[A]	630
EARTHING SWITCH[A]	630
SURGE ARRESTER [kV]	5KA,3.3KV
C.T. RATIO,VA,CLASS	100/1/1 CORE1:15VA,CL1.5
V.T. RATIO,VA,CLASS	3.3/√3/0.11/√3,30VA,CL1.5P
AMMETER SCALE,SIZE,CLASS	0-100A,90° 30°/96,CL1.5
VOLT-METER SCALE,SIZE,CLASS	0-3.3 KV, CL1.5
WATT-METER SCALE,SIZE,CLASS	
VAR-METER SCALE,SIZE,CLASS	
ENERGY-METER SCALE,SIZE,CLASS	
TRANSFORMER(4-20mA)	NOT REQUIRED
FUSE RATING	
HV SIDE [A]	2A,3.3KV
LV SIDE [A]	2A,0.11KV
SELECTOR SWITCH POSITION	VOLTMETER
OPERATION	4POSITION
CORE BLANC C.T. RATIO,VA,CLASS	30/1,5VA,CL1
CONDUCTOR X,SEC. (mm)	3X95
POWER CABLE TYPE	Cu/SC/ALPE/SC/CT/Lay/BL/3M/PVC
LENGTH(M)	250
TESTING C.T.	REQUIRED
TERMINAL V.T.	REQUIRED
CATEGORY	C6



NOTES

- FOR CONTROL AND WIRING DIAGRAM CATEGORY (C2, C3) REFER TO DOC. NO. "BK-GCS-PEDCO-120-EL-DG-0001"
- THE GCS-11-SWG BUSBAR WILL EXTEND IN BOTH SIDE & NEW OUTGOING FEEDERS WILL BE CONSIDER ON EXTENSION
- 800 KVA TRANSFORMER WILL POWER 3.3 KV BUS WHICH WILL SUPPLY FIRE WATER PUMP.
- IF ANY VOLTAGE & CURRENT SAMPLE FOR CAPACITOR BANKS OF COMPRESSORS IS REQUIRED SHALL BE CONSIDERED BY VENDOR.
- DIFFERENTIAL CURRENT PROTECTION SHALL BE PROVIDED FOR MOTORS ABOVE 1000 KW.
- PROTECTIONS CONSIST OF REQUIRED PROTECTIONS FOR POWER CABLE & 27R FUNCTION SHALL BE CONSIDERED IN 3.3KV PANEL.
- LOCKOUT RELAY SHALL HAVE FLAG.
- MOTOR RTD SIGNALS WILL BE SENT TO UCD.

LEGEND

- VOLTAGE TRANSFORMER
- CURRENT TRANSFORMER
- CURRENT TRANSFORMER (RING TYPE)
- CIRCUIT BREAKER
- EARTHING SWITCH
- CABLE GLAND
- SIGNAL LAMP
- DRAWOUT UNIT
- AMMETER
- VOLTMETER
- VOLTMETER SWITCH
- BUS BAR
- KILO WATT HOUR METER
- RELAY (NUMBER IN THE SYMBOLS INDICATES)
- FUSE GENERAL SYMBOL
- TESTING TERMINAL
- OPERATING BY ELECTRIC MOTOR
- LIGHTNING ARRESTER OR SURGE ARRESTER
- AMMETER TRANSDUCER
- VOLT TRANSDUCER
- KILO WATT TRANSDUCER
- KILO VAR TRANSDUCER
- POWER FACTOR TRANSDUCER
- POWER FACTOR METER
- WATT METER
- VAR METER
- UNDER VOLTAGE RELAY
- INDUCED VOLTAGE RELAY
- POSITION SWITCH
- BEARING PROTECTIVE DEVICE
- REVERSE-PHASE OR PHASE- BALANCE CURRENT RELAY
- MACHINE THERMAL RELAY
- INSTANTANEOUS OVER CURRENT RELAY
- AC TIME OVER CURRENT RELAY
- SENSITIVE EARTH FAULT RELAY
- INSTANTANEOUS EARTH FAULT RELAY
- AC INVERSE TIME EARTH FAULT RELAY
- LOCK OUT RELAY
- TOO FREQUENT START RELAY
- WINDING OVER TEMPERATURE RELAY
- LOCKED ROTOR RELAY
- DIFFERENTIAL RELAY FOR MV MOTOR
- TRIP CIRCUIT SUPERVISION
- INTER TRIP RECEIVE RELAY

REFERENCES

ELECTRICAL LOAD LIST	BK-GCS-PEDCO-120-EL-LI-0001
ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR MV PANEL	BK-GCS-PEDCO-120-EL-DG-0001

ABBREVIATION

- A AMPERE
- M MOTOR
- AS AMMETER SWITCH
- CT CURRENT TRANSFORMER
- Hz HERTZ
- IP DEGREE OF PROTECTION BY ENCLOSURE
- KA KILO AMPERE
- KV KILO VOLT
- KW KILO WATT
- MV MEDIUM VOLTAGE
- VS VOLTMETER SWITCH
- VI VOLTAGE TRANSFORMER
- KVA KILOVOLT-AMPERE
- KWH KILOWATT-HOUR
- VCB VACUUM CIRCUIT BREAKER
- ICS TRIP COIL SUPERVISION
- KVAR KILOVAR
- SWGR SWITCH GEAR

D05	AUG.2024	IPA	H.SHAKIBA	M.PAKHARJAN	M.SADEGHIAN	***
D04	DEC.2022	IPA	H.SHAKIBA	M.PAKHARJAN	M.MEHRSHAD	** **
D03	JUL.2022	IPA	H.SHAKIBA	M.PAKHARJAN	M.MEHRSHAD	** **
D02	APR.2022	IPA	H.SHAKIBA	M.PAKHARJAN	M.MEHRSHAD	** **
D01	MAR.2022	IPA	H.SHAKIBA	M.PAKHARJAN	M.MEHRSHAD	** **
D00	MAR.2022	IPC	H.SHAKIBA	M.PAKHARJAN	M.MEHRSHAD	** **
REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.

PROJECT NAME: BINAK OILFIELD DEVELOPMENT GENERAL

PROJECT NO.: 971020

EPC CONTRACTOR:	EPD/EPC CONTRACTOR (GC):
HIRGAN ENERGY - DESIGN & INSPECTION COMPANIES	PETROIRAN DEVELOPMENT COMPANY

DRAWING TITLE: Existent MV Switchgear Expansion Single Line Diagram

SCALE	SIZE	DRAWING NO.	SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE CLASS	SERIAL NO.	SHEET	REVISION
NTS	A0	BK-GCS-PEDCO-120-EL-SL-0003	02 OF 02	D05	053-073-9184	F	2	P	709036	02 OF 02 D05

BINAK OILFIELD DEVELOPMENT GENERAL				
DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.
NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED				
APPROVED FOR CONSTRUCTION		BY:		DATE:
BUDGET REF.	LOCATION	SIZE CLASS	SERIAL NO.	SHEET
053-073-9184	F	2	P	709036