

## ABBREVIATIONS

NOTES:

ACT	ACTUATOR / ACTIVATED	GFD	GALLONS PER DAY	M	PHYSICAL MANWAY	S	SECOND
AG	ABOVE GROUND	GFM	GALLONS PER MINUTE	MIN	MINIMUM	S/S	START/STOP
AOC	ACCIDENTAL OIL CONTAMINATION	GTG	GAS TURBINE GENERATOR	MM	MILL METER	SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
ATM	ATMOSPHERE	HHL	HIGH HIGH LIQUID LEVEL	MMSCF	MILLION STANDARD CUBIC FEET	SOF	STANDARD CUBIC FEET
BAR (A)	BAR ABSOLUTE	HHP	HIGH HIGH PRESSURE	MAN	MANUAL	SCH	SCHEDULE
BAR (G)	BAR GAUGE	HL	HIGH LEVEL	MP	MEDIUM PRESSURE	SCS	SAMPLE CONDITIONING SYSTEM
BBL	BARREL	HLL	HIGH LIQUID LEVEL	MSL	MEAN SEA LEVEL	SDSS	SUPER DUPLEX STAINLESS STEEL
		HP	HIGH PRESSURE	MW	MEGAWATT	SHT	SHEET
BMS	BURNER MANAGEMENT SYSTEM	HRSG	HEAT RECOVERY SYSTEM GENERATOR	NC	NORMALLY CLOSED	SOR	STATEMENT OF REQUIREMENT
BPCS	BASIC PROCESS CONTROL SYSTEM	Hz	HERTZ	NEG	NEGATIVE	SQ	SQUARE
BTU	BRITISH THERMAL UNIT			NIL	NORMAL INTERFACE LEVEL	SQ FT	SQUARE FEET
				NLL	NORMAL LIQUID LEVEL	SS	STAINLESS STEEL
°C	CELSIUS	I/F	INTERFACE	Nm³/hr	NORMAL CUBIC METER PER HOUR	STP	STEAM TRAP
CA	CORROSION ALLOWANCE	I/O	INPUT/OUTPUT	NNF	NORMALLY NO FLOW	SIL	SAFETY INTEGRITY LEVEL
CF	CUBIC FOOT OR CUBIC FEET	IA	INSTRUMENT AIR	NO	NORMALLY OPEN	T/T	TANGENT TO TANGENT
CFM	CUBIC FOOT PER MINUTE	 INTEGRATED CONTROL & SAFETY SYSTEM		NOM	NOMINAL	TDS	TOTAL DISSOLVED SOLIDS
		ID	INNER DIAMETER	NPS	NOMINAL PIPE SIZE	TEMP	TEMPERATURE
cm	CENTIMETER	FOA	INTERNAL FLOW ORIFICE ASSEMBLY			THK	THICKNESS
CP	CATHODIC PROTECTION	IGV	INLET GUIDE VANE			TP	TIE-IN POINT
CS	CARBON STEEL OR CAST STEEL	HMI	HUMAN MACHINE INTERFACE	OD	OUTSIDE DIAMETER	TSO	TIGHT SHUT OFF
CSC	CAR SEAL CLOSED	IL	INDICATION LIGHT	OP	OUTPUT	TYP	TYPICAL
CSO	CAR SEAL OPEN	ILC	INTERLOCKED CLOSE	OUT	OUTLET		
CCR	CENTRAL CONTROL ROOM	ILO	INTERLOCKED OPEN	OZ	OUNCE		
CE	CORROSION ELEMENT	IN	INCHES OR INLET			UC	UTILITY CONNECTION
CEMS	CONTINUOUS EMISSION MONITORING SYSTEM	IP	INTERMEDIATE PRESSURE			UG	UNDERGROUND
CIT	CORROSION INDICATION TRANSMITTER	kg	KILOGRAM	P&ID	PIPING AND INSTRUMENTATION DIAGRAM	 ULTRA VIOLET	
DCS	DISTRIBUTED CONTROL SYSTEM	kg/cm²	KILOGRAMS/SQUARE CENTIMETER GAGE	PFD	PROCESS FLOW DIAGRAM		
DIA	DIAMETER	kg/hr	KILOGRAM PER HOUR	PFP	PASSIVE FIRE PROTECTION		
DP	DESIGN PRESSURE	kO	KNOCKOUT	PLC	PROGRAMMABLE LOGIC CONTROLLER	V	VOLTS
DS	DEGASSING STATION	kW	KILOWATT	PPM	PARTS PER MILLION	VBD	VORTEX BREAKER
DT	DESIGN TEMPERATURE	L OR LT	LITRE	PSF	POUND PER SQUARE FOOT	VC	VITRIFIED CLAY OR VENT CONNECTION
DWG	DRAWING	lb	POUND	PSI	POUND PER SQUARE INCH	VERT	VERTICAL
EDG	EMERGENCY DIESEL GENERATOR	LC	LOCKED CLOSED	PSIG	POUND PER SQUARE INCH GAUGE	VFD	VARIABLE FREQUENCY DRIVE
EL	ELEVATION	LER	LOCAL EQUIPMENT ROOM	PST	PARTIAL STROKE TEST	VOC	VOLATILE ORGANIC COMPOUND
EQUIP	EQUIPMENT	LD	LEAK DETECTION	PWR	POWER	VSD	VARIABLE SPEED DRIVE
ET	ELECTRIC TRACING	LLL	LOW LIQUID LEVEL			VTA	VENDOR TO ADVISE
EXH	EXHAUST	LLLL	LOW LOW LIQUID LEVEL	QDC	QUICK DISCONNECT COUPLING		
EXT	EXTERNAL	LO	LOCKED OPEN	QDV	QUICK DISCONNECT VALVE	W	WATT
EOS	EMERGENCY OVERRIDE SWITCH	LPH	LITRE PER HOUR				
ESD	EMERGENCY SHUTDOWN	LTCS	LOW TEMPERATURE CARBON STEEL	REV	REVISION		
		m	METER	RO	REVERSE OSMOSIS		
F	FAHRENHEIT	m³	CUBIC METER	 REMOTE TERMINAL UNIT			
F&G	FIRE AND GAS	m³/hr	CUBIC METER PER HOUR				
FB	FULL BORE	m³/m	CUBIC METER PER MINUTE				
FC	FAIL CLOSED	MATL	MATERIAL				
FO	FAIL OPEN	MAWP	MAXIMUM ALLOWABLE WORKING PRESSURE				
FPV	FULL PORT VALVE	MAX	MAXIMUM				
FT	FOOT OR FEET	MCC	MOTOR CONTROL CENTER				
FL	FAIL LOCKED						
ft³ OR CU FT	CUBIC FOOT OR CUBIC FEET						
FV	FULL VACUUM						

C01	25.05.16	ISSUED FOR CONSTRUCTION	DX	VU	AB	SQ
D01	18.02.16	ISSUED FOR USE (DD)	DX	SI/VU	AB	SQ
H01	09.11.15	ISSUED FOR HAZOP (DD)	DX	SI/VU	TT	SQ
G01	26.10.15	ISSUED FOR REVIEW (DD)	DX	SI/VU	TT	SQ
B02	15.07.15	APPROVED FOR COMPLETION OF FEED	DX	SI/RS	TT	SQ
B01	28.05.15	ISSUED FOR DESIGN	DX	SI/RS	TT	SQ
A01	10.02.15	ISSUED FOR COMPANY REVIEW	DX	HW/RS	VM	JF
REV DATE		DESCRIPTION	PREP'D	CHK'D	APP'D	

EARLY POWER PLANT  
RUMAILA OIL FIELD  
CONTRACT NO. 100478

中国石油工程建设公司  
CHINA PETROLEUM ENGINEERING & CONSTRUCTION CORP.

CH2MHILL

DRAWING TITLE:  
PIPING AND INSTRUMENTATION DIAGRAM  
LEGEND SHEET  
ABBREVIATIONS

PROJECT NO.	100478CP	SCALE:	NONE	DWG SIZE:	A1
*		DRAWING NUMBER:		SHT. NO.:	REV.

100478CP-N-PG-PP01-PR-PID-0001-001 01/17 C01

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AOC	ACCIDENTAL OIL CONTAMINATION	GTG	GAS TURBINE GENERATOR	mm	MILLIMETER	SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION		
ATM	ATMOSPHERE			MMSCF	MILLION STANDARD CUBIC FEET	SCF	STANDARD CUBIC FEET		
BAR (A)	BAR ABSOLUTE	HHLL	HIGH HIGH LIQUID LEVEL	MAN	MANUAL	SCH	SCHEDULE		
BAR (G)	BAR GAUGE	HHP	HIGH HIGH PRESSURE	MP	MEDIUM PRESSURE	SCS	SAMPLE CONDITIONING SYSTEM		
BBL	BARREL	HL	HIGH LEVEL	MSL	MEAN SEA LEVEL	SDSS	SUPER DUPLEX STAINLESS STEEL		
		HLL	HIGH LIQUID LEVEL	MW	MEGAWATT	SHT	SHEET		
		HP	HIGH PRESSURE			SIS	SAFETY INSTRUMENTED SYSTEM		
BMS	BURNER MANAGEMENT SYSTEM	HRSG	HEAT RECOVERY SYSTEM GENERATOR	NC	NORMALLY CLOSED	SOR	STATEMENT OF REQUIREMENT		
BPCS	BASIC PROCESS CONTROL SYSTEM	HZ	HERTZ	NEG	NEGATIVE	SQ	SQUARE		
BTU	BRITISH THERMAL UNIT			NIL	NORMAL INTERFACE LEVEL	SQ FT	SQUARE FEET		
°C	CELSIUS	I/F	INTERFACE	NLL	NORMAL LIQUID LEVEL	SS	STAINLESS STEEL		
CA	CORROSION ALLOWANCE	I/O	INPUT/OUTPUT	Nm <sup>3</sup> /hr	NORMAL CUBIC METER PER HOUR	STP	STEAM TRAP		
CF	CUBIC FOOT OR CUBIC FEET	IA	INSTRUMENT AIR	NNF	NORMALLY NO FLOW	SIL	SAFETY INTEGRITY LEVEL		
CFM	CUBIC FOOT PER MINUTE	 INTEGRATED CONTROL & SAFETY SYSTEM		NO	NORMALLY OPEN	T/T	TANGENT TO TANGENT		
cm	CENTIMETER	ID	INNER DIAMETER	NOM	NOMINAL	TDS	TOTAL DISSOLVED SOLIDS		
CP	CATHODIC PROTECTION	IFOA	INTERNAL FLOW ORIFICE ASSEMBLY	NPS	NOMINAL PIPE SIZE	TEMP	TEMPERATURE		
CS	CARBON STEEL OR CAST STEEL	IGV	INLET GUIDE VANE	OD	OUTSIDE DIAMETER	THK	THICKNESS		
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CCR	CENTRAL CONTROL ROOM	ILC	INTERLOCKED CLOSE	OZ	OUNCE	TYP	TYPICAL		
CE	CORROSION ELEMENT	ILO	INTERLOCKED OPEN						
CEMS	CONTINUOUS EMISSION MONITORING SYSTEM	IN	INCHES OR INLET						
CIT	CORROSION INDICATION TRANSMITTER	IP	INTERMEDIATE PRESSURE						
		kg	KILOGRAM	P	PRESSURE	UC	UTILITY CONNECTION		
DCS	DISTRIBUTED CONTROL SYSTEM	kg/cm <sup>2</sup>	KILOGRAMS/SQUARE CENTIMETER GAGE	P&ID	PIPING AND INSTRUMENTATION DIAGRAM	UG	UNDERGROUND	 ULTRA VIOLET	
DIA	DIAMETER	kg/hr	KILOGRAM PER HOUR	PFD	PROCESS FLOW DIAGRAM				
DP	DESIGN PRESSURE	KO	KNOCKOUT	PFP	PASSIVE FIRE PROTECTION				
DS	DEGASSING STATION	KW	KILOWATT	PLC	PROGRAMMABLE LOGIC CONTROLLER	V	VOLTS		
DT	DESIGN TEMPERATURE	L OR LIT	LITRE	PPM	PARTS PER MILLION	VB	VORTEX BREAKER		
DWG	DRAWING	lb	POUND	PSF	POUND PER SQUARE FOOT	VC	VITRIFIED CLAY OR VENT CONNECTION		
EDG	EMERGENCY DIESEL GENERATOR	LC	LOCKED CLOSED	PSI	POUND PER SQUARE INCH	VERT	VERTICAL		
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EOS	EMERGENCY OVERRIDE SWITCH	LPH	LITRE PER HOUR	QDV	QUICK DISCONNECT VALVE	W	WATT		
ESD	EMERGENCY SHUTDOWN	LTCS	LOW TEMPERATURE CARBON STEEL	REV	REVISION				
		m	METER	RO	REVERSE OSMOSIS				
F	FAHRENHEIT	m <sup>3</sup>	CUBIC METER	 REMOTE TERMINAL UNIT					
F&G	FIRE AND GAS	m <sup>3</sup> /hr	CUBIC METER PER HOUR						
FB	FULL BORE	m <sup>3</sup> /m	CUBIC METER PER MINUTE						
FC	FAIL CLOSED	MATL	MATERIAL						
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FPV	FULL PORT VALVE	MAX	MAXIMUM						
FT	FOOT OR FEET	MCC	MOTOR CONTROL CENTER						
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