

## ABBREVIATIONS

## NOTES:

ACT ACTUATOR / ACTIVATED  
AG ABOVE GROUND  
AOC ACCIDENTAL OIL CONTAMINATION  
ATM ATMOSPHERE

BAR (A) BAR ABSOLUTE  
BAR (G) BAR GAUGE  
BBL BARREL  
BMS BURNER MANAGEMENT SYSTEM  
BPCS BASIC PROCESS CONTROL SYSTEM  
BTU BRITISH THERMAL UNIT

°C CELSIUS  
CA CORROSION ALLOWANCE  
CF CUBIC FOOT OR CUBIC FEET  
CFM CUBIC FOOT PER MINUTE

cm CENTIMETER  
CP CATHODIC PROTECTION  
CS CARBON STEEL OR CAST STEEL  
CSC CAR SEAL CLOSED  
CSO CAR SEAL OPEN  
CCR CENTRAL CONTROL ROOM  
CE CORROSION ELEMENT  
CEMS CONTINUOUS EMISSION MONITORING SYSTEM  
CIT CORROSION INDICATION TRANSMITTER

DCS DISTRIBUTED CONTROL SYSTEM  
DIA DIAMETER  
DP DESIGN PRESSURE  
DS DEGASSING STATION  
DT DESIGN TEMPERATURE  
DWG DRAWING

EDG EMERGENCY DIESEL GENERATOR  
EL ELEVATION  
EQUIP EQUIPMENT  
ET ELECTRIC TRACING  
EXH EXHAUST  
EXT EXTERNAL  
EOS EMERGENCY OVERRIDE SWITCH  
ESD EMERGENCY SHUTDOWN

F FAHRENHEIT  
F&G FIRE AND GAS  
FB FULL BORE  
FC FAIL CLOSED  
FO FAIL OPEN  
FPV FULL PORT VALVE  
FT FOOT OR FEET  
FL FAIL LOCKED  
ft<sup>3</sup> OR CU FT CUBIC FOOT OR CUBIC FEET  
FV FULL VACUUM

GPD GALLONS PER DAY  
GPM GALLONS PER MINUTE  
GTG GAS TURBINE GENERATOR  
HHLL HIGH HIGH LIQUID LEVEL  
HHP HIGH HIGH PRESSURE  
HL HIGH LEVEL  
HLL HIGH LIQUID LEVEL  
HP HIGH PRESSURE  
HRSG HEAT RECOVERY SYSTEM GENERATOR  
HZ HERTZ

I/F INTERFACE  
I/O INPUT/OUTPUT  
IA INSTRUMENT AIR  
ICSS INTEGRATED CONTROL & SAFETY SYSTEM  
ID INNER DIAMETER  
IFOA INTERNAL FLOW ORIFICE ASSEMBLY  
IGV INLET GUIDE VANE  
HMI HUMAN MACHINE INTERFACE  
IL INDICATION LIGHT  
ILC INTERLOCKED CLOSE  
ILO INTERLOCKED OPEN  
IN INCHES OR INLET  
IP INTERMEDIATE PRESSURE

kg KILOGRAM  
kg/cm<sup>2</sup> KILOGRAMS/SQUARE CENTIMETER GAGE  
kg/hr KILOGRAM PER HOUR  
KO KNOCKOUT  
kW KILOWATT  
L OR LIT LITRE  
lb POUND  
LC LOCKED CLOSED  
LER LOCAL EQUIPMENT ROOM  
LD LEAK DETECTION  
LLL LOW LIQUID LEVEL  
LLLL LOW LOW LIQUID LEVEL  
LO LOCKED OPEN  
LPH LITRE PER HOUR  
LTCS LOW TEMPERATURE CARBON STEEL

m METER  
m<sup>3</sup> CUBIC METER  
m<sup>3</sup>/hr CUBIC METER PER HOUR  
m<sup>3</sup>/m CUBIC METER PER MINUTE  
MATL MATERIAL  
MAWP MAXIMUM ALLOWABLE WORKING PRESSURE  
MAX MAXIMUM  
MCC MOTOR CONTROL CENTER

M PHYSICAL MAINWAY  
MIN MINIMUM  
mm MILLIMETER  
MMSCF MILLION STANDARD CUBIC FEET  
MAN MANUAL  
MP MEDIUM PRESSURE  
MSL MEAN SEA LEVEL  
MW MEGAWATT  
NC NORMALLY CLOSED  
NEG NEGATIVE  
NIL NORMAL INTERFACE LEVEL  
NLL NORMAL LIQUID LEVEL  
Nm<sup>3</sup>/hr NORMAL CUBIC METER PER HOUR  
NNF NORMALLY NO FLOW  
NO NORMALLY OPEN  
NOM NOMINAL  
NPS NOMINAL P.P.E SIZE  
OD OUTSIDE DIAMETER  
OP OUTPUT  
OUT OUTFLET  
OZ OUNCE

P PRESSURE  
P&ID PIPING AND INSTRUMENTATION DIAGRAM  
PFD PROCESS FLOW DIAGRAM  
PFP PASSIVE FIRE PROTECTION  
PLC PROGRAMMABLE LOGIC CONTROLLER  
PPM PARTS PER MILLION  
PSF POUND PER SQUARE FOOT  
PSI POUND PER SQUARE INCH  
PSIA POUND PER SQUARE INCH ABSOLUTE  
PSIG POUND PER SQUARE INCH GAUGE  
PST PARTIAL STROKE TEST  
PWR POWER

QDC QUICK DISCONNECT COUPLING  
QDV QUICK DISCONNECT VALVE

REV REVISION  
RO REVERSE OSMOSIS

RTU REMOTE TERMINAL UNIT

S SECOND  
S/S START/STOP  
SCADA SUPERVISORY CONTROL AND DATA ACQUISITION  
SCF STANDARD CUBIC FEET  
SCH SCHEDULE  
SCS SAMPLE CONDITIONING SYSTEM  
SDSS SUPER DUPLEX STAINLESS STEEL  
SHT SHEET  
SIS SAFETY INSTRUMENTED SYSTEM  
SOR STATEMENT OF REQUIREMENT  
SQ SQUARE  
SQ FT SQUARE FEET  
SS STAINLESS STEEL  
STP STEAM TRAP  
SIL SAFETY INTEGRITY LEVEL  
T/T TANGENT TO TANGENT  
TDS TOTAL DISSOLVED SOLIDS  
TEMP TEMPERATURE  
THK THICKNESS  
TP TE-IN POINT  
TSO TIGHT SHUT OFF  
TYP TYPICAL

UC UTILITY CONNECTION

UG UNDERGROUND

UV ULTRA VIOLET

V VOLTS  
VB VORTEX BREAKER  
VC VITRIFIED CLAY OR VENT CONNECTION  
VERT VERTICAL  
VFD VARIABLE FREQUENCY DRIVE  
VOC VOLATILE ORGANIC COMPOUND  
VSD VARIABLE SPEED DRIVE  
VTA VENDOR TO ADVISE

W WATT

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



EARLY POWER PLANT  
RUMAILA OIL FIELD  
CONTRACT NO. 100478



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



DRAWING TITLE  
PIPING AND INSTRUMENTATION DIAGRAM  
LEGEND SHEET  
ABBREVIATIONS

PROJECT NO.	100478CP	SCALE:	NONE	DWG. SIZE:	A1
DRAWING NUMBER:	100478CP-N-PG-PP01-PR-PID-0001-001	SHT. NO.:	01/17	REV.	C01

ABBREVIATIONS

NOTES:

ACT	ACTUATOR / ACTIVATED
AG	ABOVE GROUND
AOC	ACCIDENTAL OIL CONTAMINATION
ATM	ATMOSPHERE
BAR (A)	BAR ABSOLUTE
BAR (G)	BAR GAUGE
BBL	BARREL
BMS	BURNER MANAGEMENT SYSTEM
BPCS	BASIC PROCESS CONTROL SYSTEM
BTU	BRITISH THERMAL UNIT
°C	CELSIUS
CA	CORROSION ALLOWANCE
CF	CUBIC FOOT OR CUBIC FEET
CFM	CUBIC FOOT PER MINUTE
cm	CENTIMETER
CP	CATHODIC PROTECTION
CS	CARBON STEEL OR CAST STEEL
CSC	CAR SEAL CLOSED
CSO	CAR SEAL OPEN
CCR	CENTRAL CONTROL ROOM
CE	CORROSION ELEMENT
CEMS	CONTINUOUS EMISSION MONITORING SYSTEM
CIT	CORROSION INDICATION TRANSMITTER

DCS	DISTRIBUTED CONTROL SYSTEM
DIA	DIAMETER
DP	DESIGN PRESSURE
DS	DEGASSING STATION
DT	DESIGN TEMPERATURE
DWG	DRAWING

EDG	EMERGENCY DIESEL GENERATOR
EL	ELEVATION
EQUIP	EQUIPMENT
ET	ELECTRIC TRACING
EXH	EXHAUST
EXT	EXTERNAL
EOS	EMERGENCY OVERRIDE SWITCH
ESD	EMERGENCY SHUTDOWN

F	FAHRENHEIT
F&G	FIRE AND GAS
FB	FULL BORE
FC	FAIL CLOSED
FO	FAIL OPEN
FPV	FULL PORT VALVE
FT	FOOT OR FEET
FL	FAIL LOCKED
ft <sup>3</sup> OR CU FT	CUBIC FOOT OR CUBIC FEET
FV	FULL VACUUM

GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GTG	GAS TURBINE GENERATOR
HHLL	HIGH HIGH LIQUID LEVEL
HHP	HIGH HIGH PRESSURE
HL	HIGH LEVEL
HLL	HIGH LIQUID LEVEL
HP	HIGH PRESSURE
HRS	HEAT RECOVERY SYSTEM GENERATOR
HZ	HERTZ

I/F	INTERFACE
I/O	INPUT/OUTPUT
IA	INSTRUMENT AIR
ICSS	INTEGRATED CONTROL & SAFETY SYSTEM
ID	INNER DIAMETER
IFOA	INTERNAL FLOW ORIFICE ASSEMBLY
IGV	INLET GUIDE VANE
HMI	HUMAN MACHINE INTERFACE
IL	INDICATION LIGHT
ILC	INTERLOCKED CLOSE
ILO	INTERLOCKED OPEN
IN	INCHES OR INLET
IP	INTERMEDIATE PRESSURE

kg	KILOGRAM
kg/cm <sup>2</sup>	KILOGRAMS/SQUARE CENTIMETER GAGE
kg/hr	KILOGRAM PER HOUR
KO	KNOCKOUT
kW	KILOWATT

L OR LIT	LITRE
lb	POUND
LC	LOCKED CLOSED
LER	LOCAL EQUIPMENT ROOM
LD	LEAK DETECTION
LLL	LOW LIQUID LEVEL
LLLL	LOW LOW LIQUID LEVEL
LO	LOCKED OPEN
LPH	LITRE PER HOUR
LTCS	LOW TEMPERATURE CARBON STEEL

m	METER
m <sup>3</sup>	CUBIC METER
m <sup>3</sup> /hr	CUBIC METER PER HOUR
m <sup>3</sup> /m	CUBIC METER PER MINUTE
MATL	MATERIAL
MAWP	MAXIMUM ALLOWABLE WORKING PRESSURE
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER

M	PHYSICAL MANWAY
MIN	MINIMUM
mm	MILLIMETER
MMSCF	MILLION STANDARD CUBIC FEET
MAN	MANUAL
MP	MEDIUM PRESSURE
MSL	MEAN SEA LEVEL
MW	MEGAWATT
NC	NORMALLY CLOSED
NEG	NEGATIVE
NIL	NORMAL INTERFACE LEVEL
NLL	NORMAL LIQUID LEVEL
Nm <sup>3</sup> /hr	NORMAL CUBIC METER PER HOUR
NNF	NORMALLY NO FLOW
NO	NORMALLY OPEN
NOM	NOMINAL
NPS	NOMINAL PIPE SIZE

OD	OUTSIDE DIAMETER
OP	OUTPUT
OUT	OUTLET
OZ	OUNCE

P	PRESSURE
P&ID	PIPING AND INSTRUMENTATION DIAGRAM
PFD	PROCESS FLOW DIAGRAM
PFP	PASSIVE FIRE PROTECTION
PLC	PROGRAMMABLE LOGIC CONTROLLER
PPM	PARTS PER MILLION
PSF	POUND PER SQUARE FOOT
PSI	POUND PER SQUARE INCH
PSIA	POUND PER SQUARE INCH ABSOLUTE
PSIG	POUND PER SQUARE INCH GAUGE
PST	PARTIAL STROKE TEST
PWR	POWER

QDC	QUICK DISCONNECT COUPLING
QDV	QUICK DISCONNECT VALVE

REV	REVISION
RO	REVERSE OSMOSIS

RTU	REMOTE TERMINAL UNIT
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S	SECOND
S/S	START/STOP
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCF	STANDARD CUBIC FEET
SCH	SCHEDULE
SCS	SAMPLE CONDITIONING SYSTEM
SDSS	SUPER DUPLEX STAINLESS STEEL
SHT	SHEET
SIS	SAFETY INSTRUMENTED SYSTEM
SOR	STATEMENT OF REQUIREMENT
SQ	SQUARE
SQ FT	SQUARE FEET
SS	STAINLESS STEEL
STP	STEAM TRAP
SIL	SAFETY INTEGRITY LEVEL

T/T	TANGENT TO TANGENT
TDS	TOTAL DISSOLVED SOLIDS
TEMP	TEMPERATURE
THK	THICKNESS
TP	TIE-IN POINT
TSO	TIGHT SHUT OFF
TYP	TYPICAL


UC	UTILITY CONNECTION
UG	UNDERGROUND

UV	ULTRA VIOLET
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V	VOLTS
VB	VORTEX BREAKER
VC	VITRIFIED CLAY OR VENT CONNECTION
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOC	VOLATILE ORGANIC COMPOUND
VSD	VARIABLE SPEED DRIVE
VTA	VENDOR TO ADVISE

W	WATT
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