TITLE: PIPING & INSTRUMENTATION DIAGRAM MANDAPETA-GAS COMPRESSION SYSTEM

DWG NO 6775-20-51-02-1122

020-V-206 INTERMEDIATE BLOW DOWN VESSEL

PARAMETER	OPERATING	DESIGN
PRESSURE (kg /cm²g)	4.9	16
TEMPERATURE(°C)	38	80
DIAMETER (MM)	-	700
LENGTH (MM)	-	2100

020-V-207 GAS COMPRESSOR SUCTION KOD

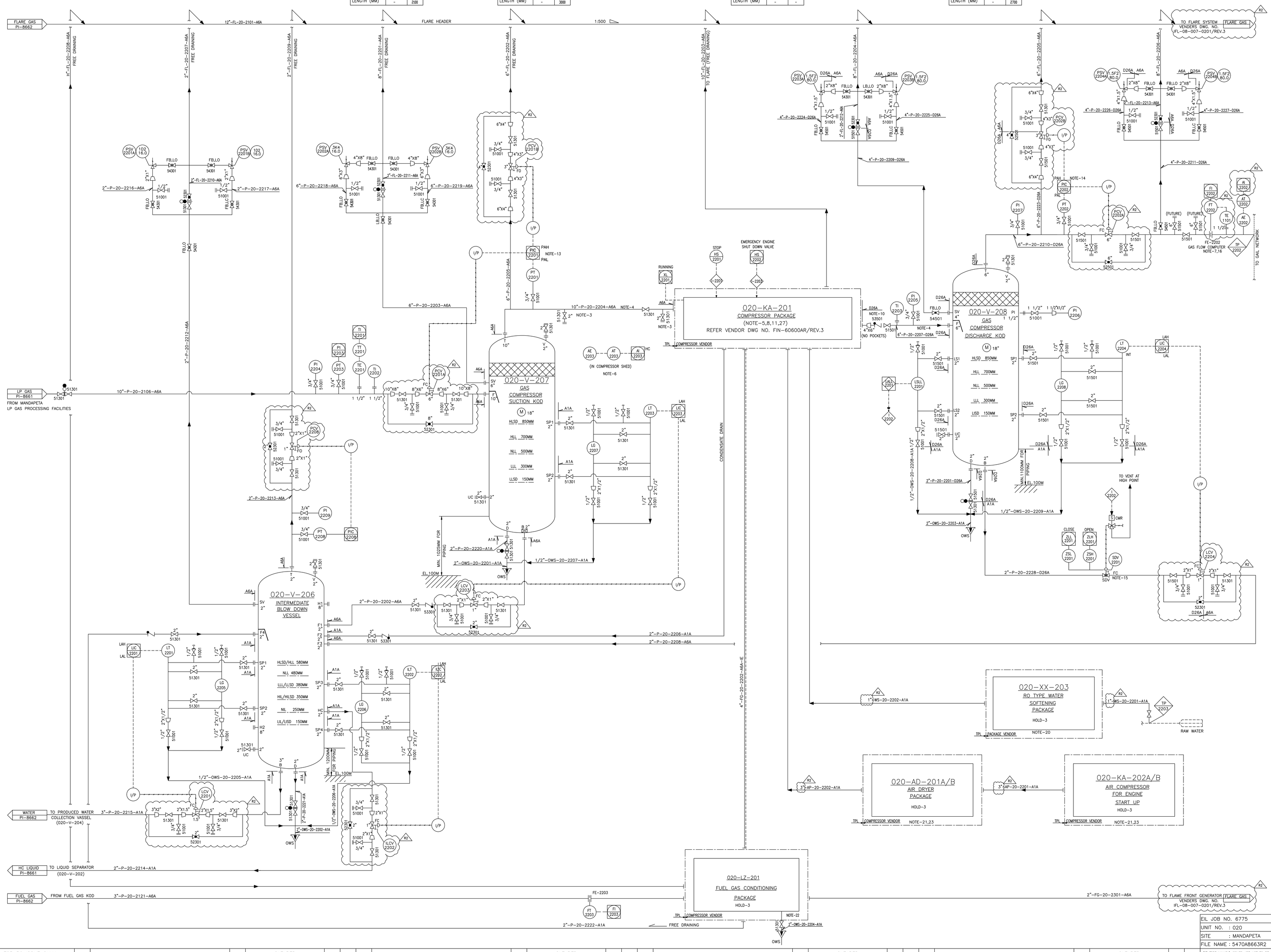
PARAMETER	OPERATING	DESIGN
PRESSURE (kg /cm²g)	5	16
TEMPERATURE(°C)	40	80
DIAMETER (MM)	-	1250
LENGTH (MM)	-	3000

020-KA-201 GAS COMPRESSOR

PARAMETER	OPERATING	DESIGN
PRESSURE (kg /cm²g)	55	80
TEMPERATURE(°C)	40	65
DIAMETER (MM)	-	-
LENGTH (MM)	-	-

020-V-208 GAS COMPRESSOR DISCHARGE KOD

PARAMETER	OPERATING	DESIGN
PRESSURE (kg /cm²g)	55	80
TEMPERATURE(°C)	40	80
DIAMETER (MM)	-	900
LENGTH (MM)	-	2700



NOTES:

1. FOR STANDARD LEGEND & SYMBOLS REFER P&ID NO. TCE.5470A-300-PI-8698-I
2. ALL INSTRUMENT TAG NOS. WILL BE PREFIXED BY UNIT NO.-20.
3. THE 2" CONNECTION IS REQUIRED FOR CHEMICAL CLEANING OF COMPRESSOR SUCTION LINE AND INSPECTION. THIS NOZZLE IS TO BE LOCATED VERY NEAR TO BE COMPRESSOR SUCTION VOLUME BOTTLE.
4. COMPRESSORS SUCTION PIPING/ DISCHARGE PIPING TO BE SYMMETRICAL.
5. THE COMPRESSOR PACKAGE SCOPE SHALL COVER COMPRESSOR SUCTION /INTERSTAGE/DISCHARGE KOD'S, INTERSTAGE/AFTER COOLERS, GAS ENGINE, ASSOCIATED PIPING/VALVES, ALL THE NORMAL INSTRUMENTATION, CONTROL & OTHER ACCESSORIES FOR EFFICIENT & TROUBLE FREE OPERATION OF COMPRESSOR. SUCTION/DICHARGE KOD'S SHALL BE PROVIDED FOR EACH COMPRESSOR. COMPRESSOR VENDOR SHALL ALSO PROVIDE FUEL GAS CONDITIONING AND REGULATION SKID FOR GAS ENGINE OPERATION.
6. HC GAS DETECTORS SHALL BE PROVIDED AT EACH COMPRESSOR SKID FOR PROVIDING ALARMS IN DCS CONTROL PANEL LOCATION AND NUMBER OF DETECTO SHALL BE FIRMED UP AFTER GETTING INFORMATION OF COMPRESSOR VENDOR TAKING CARE OF LAYOUT AND WIND DIRECTION.
7. FE/FT/FI-2202 SHALL BE PROVIDED WITH INTEGRAL TEMPERATURE AND PRESSU COMPENSATION.
8. CONDENSATE GENERATED IN THE INTER STAGE KODs SHALL BE FIRST ROUTED TO AN INTERMEDIATE BLOW DOWN VESSEL. VAPOR GENERATED FROM THIS VESSEL SHALL BE ROUTED BACK INTO THE COMMON SUCTION KOD.
9. ALL THE CRITICAL MONITORING/CONTROL PARAMETERS SHALL BE ROUTED TO CONTROL ROOM.
10. NRV TO BE NON SLAM TYPE.
11. ALL LINES OTHER THAN DISCHARGE GAS LINE COMING FROM EACH COMPRESSOR PACKAGE LIKE CONDENSATE LINES FROM INTERSTAGE/ DISCHARGE KOD'S,FLARE LINES.ETC.AT BATTERY LIMIT SHALL BE PROTECTED/SAFE GUARDED FOR 150# RATING AT ALL TIMES.
12. COMPRESSOR VENDOR TO PROVIDE CLOSED LOOP SOFT WATER COOLING SYSTEI FOR ENGINE JACKET COOLING/COMPRESSOR JACKET COOLING.
13. PIC-2201 OPERATING PCV-2201A & PCV-2201B SHALL FOLLOW TYPE B SEQUENCE VALVE AS PER LEGEND P&ID NO. TCE.5470A-300-PI-8698-R1.
14. PIC-2202 OPERATING PCV-2202A AND PCV-2202B SHALL FOLLOW TYPE A SPLIT RANGE VALVE AS PER LEGEND P&ID NO. TCE.5470A-300-PI-8698-R1.
15. ALL SDV'S SHALL BE FULL BORE BALL VALVES.
16. FI-2202 SHALL BE CUSTODY GRADE PANEL MOUNTED FLOW COMPUTER WITH ON-LINE PRESSURE, TEMPERATURE AND SPECIFIC GRAVITY INPUT (THROUGH SEPARATE SPECIFIC GRAVITY INSTRUMENTS) AS PER AGA3 AND THE REPEAT INDICATIONS SHALL BE MADE AVAILABLE AT DCS.
17. LINES SHALL BE FREE DRAINING TOWARDS INTERMEDIATE BLOW DOWN VESSEL.THIS LINE PRESSURE SHALL BE CONTROLLED WITH IN EACH COMPRESSOR TO 150# CLASS(A1A) AND IT SHALL NOT EXCEED THIS PRESSURE AT ANY POINT OF TYPE.
18. CLOSED LOOP COMPRESSOR COOLING REQUIREMENTS SUCH AS CASING COOLIN LUBOIL COOLING,INTERSTAGE & AFTERSTAGE COOLERS.THE SOFTENING PACKAGE SHALL CONSIST OF RO MODULE ALONG WITH MAKE UP WATER PUMP AND A MA UP WATER TANK.
19. AIR COMPRESSOR & DRYER SHALL BE PROVIDED BY GAS ENGINE/GAS COMPRESSOR VENDOR FOR GAS ENGINE START UP.
20. RO TYPE MAKE UP WATER SOFTENING PACKAGE SHALL BE PROVIDED FOR CLOSED LOOP COMPRESSOR COOLING REQUIREMENTS SUCH AS CASING COOLIN LUBOIL COOLING,INTERSTAGE & AFTERSTAGE COOLERS.THE SOFTENING PACKAGE SHALL CONSIST OF RO MODULE ALONG WITH MAKE UP WATER PUMP AND A MA UP WATER TANK.
21. AIR COMPRESSOR(1+1) OF REQUIRED CAPACITY AND AN AIR DRYER (HEAT OF COMPRESSOR TYPE) SHALL BE PROVIDED BY GAS ENGINE/GAS COMPRESSOR
22. THE FUEL GAS CONDITIONING PACKAGE SHALL BE SIZED FOR AN ADDITIONAL CAPACITY OF ≥= 10Kgs/hr FOR CONSUMPTION ELSEWHERE.
23. THE ADDITIONAL CAPACITY TO BE CONSIDERED FOR OWNERS CONSUMPTION ELS WHERE SHALL BE ≥= 100Nm³/hr IN INDIVIDUAL COMPRESSOR PACKAGES,THE COMPRESSOR RETURN LINE FROM
24. RESPECTIVE SUCTION KODS NEED TO BE ELECTRICALLY TRACED TO AVOID CONDENSATION.
25. DETAILED P&IDSs AND PROCESS DESIGN OF FUEL GAS CONDITIONING PACKAGE AIR COMPRESSOR AND AIR DRYER SHALL BE CARRIED OUT BY COMPRESSOR/ ENGINE VENDOR ALONG WITH DETAILING INSIDE COMPRESSOR PACKAGE.
26. ALL FLARE LINES SHALL BE SLOPING TOWARDS FLARE HEADER (WITHOUT POCKE AND JOIN THE MAIN HEADER FROM TOP OR SIDE OF THE HEADER AT 45° ANGL
27. REFER COMPRESSOR VENDOR DRAWING NO. FIN-60600AR/REV.3 FOR BATTERY LIMIT/TIE-IN POINTS.

ENGINEERING REFERENCE DRAWING / DOCUMENTS

1. EIL P&ID NO. 6775-20-51-02-1122-REV.D
2. PROCESS FLOW DIAGRAM TCE.5470A-300-PF-8602-R1

INTER LOCK DESCRIPTION

INTER LOCK NO.	ACTUATED BY	ACTION
I - 2202	LSLL-2201	CLOSE SDV - 2201

TABLE-1

TYPE OF FLUID	LINE NO. ALLOTED	LINE NO. DELETED	LAST LINE NO.
PROCESS	2201-2299	-	2228
FLARE	2201-2299	-	2213
UTILITY(FUEL GAS)	2201-2299	2201	2202
OWS	2201-2299	-	2209
INSTRUMENT AIR	2001-2099	2001	-
PLANT AIR	2201-2299	-	2202
SERVICE WATER	2201-2299	-	2202

TABLE-2

EQUIPMENT TAG NO.	DESCRIPTION	MOC	CAPAC
020-V-206	INTERMEDIATE BLOW DOWN VESSEL	SHELL : KCS	0.81
020-V-207	GAS COMPRESSOR SUCTION KOD	SHELL : KCS	3.4
020-V-208	GAS COMPRESSOR DISCHARGE KOD	SHELL : KCS	1.72
020-KA-201	GAS COMPRESSOR PACKAGE	-	3.0 SL
020-KA-202A/B	AIR COMPRESSOR FOR ENGINE START-UP	-	-
020-AD-201A/B	AIR DRYER PACKAGE	-	-
020-LZ-201	FUEL GAS CONDITIONING PACKAGE	-	-
020-XX-203	MAKE UP WATER SOFTENING PACKAGE	-	-

HOLD

1. DELETED.
2. DELETED.
3. P&IDs FOR FUEL GAS CONDITIONING PACKAGE, AIR COMPRESSOR, AIR DRYER AND RO TYPE WATER SOFTENING PACKAGE ARE UNDER HOLD FOR VENDOR INFORMATION.

DO NOT SCALE

CLIENT: M/s OIL AND NATURAL GAS CORPORATIC, RAJAHMUNDRY, ANDHRA PRADESH, INDIA.

ENGINEERING CONSULTANT: M/s ENGINEERS INDIA LIMITED., CHENNAI, INDIA.

LSTK CONTRACTOR: TATA PROJECTS LIMITED, MUMBAI, INDIA.

REVIEW BY TPL:

DETAIL ENGINEERING CONSULTANT: TCE Consulting Engineers Limite, MUMBAI, INDIA.

DWG. NO.: TCE.5470A-300-PI-8663/R2

PROJECT TITLE: LOW PRESSURE GAS PROCESSING & COMPRESSION FACILI AT RAJAHMUNDRY, ANDHRA PRADESH, INDIA.

DRAWING TITLE: PIPING & INSTRUMENTATION DIAGRAM MANDAPETA-GAS COMPRESSION SYSTEM

EIL JOB NO. 6775
UNIT NO. : 020
SITE : MANDAPETA
FILE NAME : 5470A8663R2

"#" (PRELIMINARY) ISSUES ARE NOT TO BE USED FOR CONSTRUCTION / FABRICATION. ONLY "NUMERICAL" ISSUES ARE TO BE USED AS INDICATED IN THE SMALL BLOCK AT THE TOP RIGHT HAND CORNER OF THE TITLE BLOCK.

CONSTRUCTION / FABRICATION WORK IS PERMITTED ON "R" (RELEASED) ISSUES ONLY.

INFORMATION CONTAINED WITHIN "HOLD" ISSUE "RELEASED" FOR CONSTRUCTION/ FABRICATION HAS BEEN HELD BACK BY DESIGN OFFICE TO CLEAR "HOLDS" IN TIME BEFORE PROCEEDING WITH ANY CONSTRUCTION/FABRICATION WORK RELATED TO "HOLDS".

DEPT	SIGNATURE	DATE
CHEM	Sd/-VTD	16.09.08
CIVIL	-	-
ELEC	-	-
I&C	Sd/-RRC	16.09.08
MECH	Sd/-VS	16.09.08

ISSUE	REVISIONS	DRN	CHEM	CIVIL	ELEC	I&C	MECH	APPD	DATE
R1	REVISED AS PER DR VENDOR DRAWING & PSV SIZING.	MSS	Sd/-VTD	-	-	Sd/-RRC	Sd/-UAB		13.02.09
R2	REVISED AS PER CONTROL VALVE SIZING.	SKB							17.03.09

SCALE: NTS	APPROVED	DATE (RO ISS 16.09.2008
DN: DV-CH	PROJECT MANAGER	DATE (CURRENT 17.03.2009
DRN: VAP		
CHD: SH	DWG NO 6775-20-51-02-1122	ISSUE G

FILE NAME: F040R3.DWG

TCE FORM NO. 1