



22. AUTO ACTION TO SUCTION MOV-0105A/B WILL BE APPLIED IN REMOTE CONDITION AND FUNCTIONALITY WILL BE AS PER BELOW TABLE.

GENERAL NOTES:

- A. FOR STANDARD SYMBOLS AND NOMENCLATURE SEE DRAWINGS 50489-530-020-PID-1104.001 & .002.
- B. ALL EQUIPMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 530--.
- C. ALL INSTRUMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 030--.
- D. FOR TYPICAL INSTRUMENT CONNECTION, SBDV, XV, MOV & ESDV DETAILS SEE DRAWINGS 50489-530-020-PID-1108.001, .002, .003, .004, .005, .006 & .007.
- E. FOR MISCELLANEOUS PIPING TYPICAL VALVING, DRAINAGE & GENERAL ARRANGEMENT OF LEVEL INSTRUMENTS, PUMPS, STRAINERS & CONTROL VALVES SEE DRAWINGS 50489-530-020-PID-1108.001 TO 1108.010.
- F. DRAWING NUMBERS SHOWN IN P&ID CONTINUATION BOXES ARE ABBREVIATED SHOWING DRAWING SEQUENTIAL NUMBERS ONLY. THE FULL FORM OF THE DRAWING NUMBER IS 50489-530-020-PID-XXXX.SHT.NO.
- G. FOR MATERIAL SELECTION DIAGRAM SEE DRAWINGS 50489-530-020-MSD-1001.001 TO 1023.
- H. DETAIL NUMBERING FOR CI, SC, CC & CP SEE DRAWING 50489-530-020-PID-1108.003.
- I. PAINTING & COATING ARE IN ACCORDANCE WITH KOC-P-001.
- J. LOW POINT DRAIN & HIGH POINT VENT ARE INDICATED IN P&ID.
- K. FOR CAUSE & EFFECT REFER DOC. NO. 50489-530-020-PHL-1009.
- L. FOR ALARM VALUES REFER DOC. NO. 50489-530-020-SUM-1006.

NOTES:

1. FOR CRUDE EXPORT PUMP DETAILS, SEE DRAWINGS 50489-530-020-PID-1126.003, 1126.004, 1126.005, 1126.006, 1126.007 & 1126.008.
2. HS-0110 ALLOWS OVERRIDE OF THE RESET ACTION OF TANK LEVEL ON THE FLOW INDICATOR CONTROLLER (FIC) AND THE MANUAL LOADING OF THE FLOW CONTROLLER. SEE PID-1126.002.
3. DELETED.
4. VSD SPEED CONTROLLER RECEIVES SET POINT FROM DCS. CONTROLLER SUPPLIES STATUS ONLY TO DCS.
5. THE VIBRATION AND TEMPERATURE SIGNALS OF G-004A/B ARE TRANSFERRED FROM LOCAL TRANSMITTER TO DCS AND ESD SYSTEM THROUGH THE TMS/VMS.
6. ALL INDIVIDUAL VIBRATION HIGH-HIGH SIGNALS GENERATE COMMON TRIP SIGNAL WITH ESD LOGIC.
7. DELETED.
8. ALL INDIVIDUAL TEMPERATURE HIGH-HIGH SIGNALS GENERATE COMMON TRIP SIGNAL WITH ESD LOGIC.
9. REDUNDANCY IS PROVIDED FOR SENSORS FOR BEARING AND WINDING TEMPERATURE.
10. DELETED.
11. NON-SLAM TYPE CHECK VALVE.
12. DELETED.
13. DELETED.
14. TWO OFF 50% PUMPS OPERATING AND ONE OFF 50% STANDBY.
15. PUMP PURGE CONNECTION IS PROVIDED TO PURGE THE PUMP FROM SUCTION LINE TO DISCHARGE LINE.
16. ALL A/G PIPING SUPPORTS & MOV'S ARE FIRE PROOFED INSIDE THE CRUDE OIL EXPORT PUMP SHELTER.
17. STRAIGHT LENGTH REQUIREMENT FOR ORIFICE FLOW METER ARE 20D UPSTREAM & 5D DOWNSTREAM.
18. BLEED POINT IS PROVIDED.
19. REFER CONTROL NARRATIVE FOR CRUDE OIL EXPORT PUMP DOC. NO. 50489-530-020-07278-PHL-V001.
20. START PERMISSIVE FOR MOTOR OF CRUDE OIL EXPORT PUMP. MOV-0105A/B SHALL BE IN OPEN POSITION PRIOR TO START THE PUMP FALL-0101A & FALL-0101B SHALL BE OVERRIDE STARTING THE PUMP. PRIOR TO START-UP OF THE CRUDE OIL EXPORT PUMP WITH DRY CRUDE STORAGE TANK, THE FOLLOWINGS SHOULD BE VERIFIED.
 - A. MANUAL EQUIPMENT BLOCK VALVES IN CRUDE OIL EXPORT PUMP SYSTEM ARE IN THEIR NORMAL OPERATING POSITIONS. REFER BELOW:
 - (i) DRY CRUDE STORAGE TANK OUTLET - ESDV-0094 / XV-0095 - OPEN.
 - (ii) CRUDE OIL BOOSTER PUMPS MCF LINE - MOV. MOV-0092- OPEN.
 - (iii) CRUDE OIL EXPORT PUMPS MCF LINE - MOV. MOV-0091 - OPEN.
 - (iv) CRUDE OIL EXPORT BATTERY LIMIT VALVES. - ESDV-0143 / MOV-0142 - OPEN.
 - B. PROCESS OVERRIDE FOR CRUDE OIL EXPORT PUMPS:
 - (i) CRUDE OIL EXPORT PUMPS DISCHARGE FLOW LOW -LOW - FALL-0101A (FOR G-004A) / FALL-0101B (FOR G-004B) & FALL-0101C (FOR G-004C) III. CRUDE OIL EXPORT HEADER PRESSURE LOW-LOW - FALL-0143.
21. OPERATOR SHOULD ENSURE THAT SUCTION VALVE MOV-0105A/B IS OPEN AND DISCHARGE VALVE IS CLOSED BEFORE INITIATING THE START SEQUENCE OF THE PUMP.

		<i>CHS</i>	<i>CHS</i>	<i>CHS</i>	<i>CHS</i>	<i>CHS</i>	<i>CHS</i>
Z1	RE-ISSUED FOR AS-BUILT	VPA/CHS	CHS	SRA	DER	10.10.18	
Z0	ISSUED FOR AS-BUILT	VPA/CHS	CHS	SRA	DER	17.09.18	
O4	RE-ISSUED FOR CONSTRUCTION	VPA/CHS	CHS	SRA	DER	07.02.18	
O3	RE-ISSUED FOR CONSTRUCTION	VPA/CHS	CHS	SRA	DER	06.01.18	
D2	ISSUED FOR CONSTRUCTION	VPA/CHS	CHS	SRA	DER	02.10.17	
O1	ISSUED FOR CONSTRUCTION	HSH/SSI	AKG	SRA	DER	22.12.16	
D	ISSUED FOR CONSTRUCTION	HSH/VSA	AKG	SRA	RAK	30.03.16	
O	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSA	AKG	SRA	RAK	29.12.15	
C	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSA	AKG	SRA	RAK	15.10.15	
OC	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSA	AKG	SRA	RAK	30.05.15	
B	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSA	AKG	SRA	RAK	13.02.15	
A	ISSUED FOR APPROVAL	BAK/VSA	AKG	SRA	RAK	29.11.14	
REV.	DESCRIPTION	DRAWN	CHECKED	HOD	PEM APPRD.	DATE	

CONTRACTOR REVISION:

CONTRACTOR DETAILS:-

 **LARSEN & TOUBRO LIMITED**
FARIDABAD

PROJECT TITLE:-
NEW GATHERING CENTRE GC-30
IN NORTH KUWAIT

DOCUMENT TITLE:—

PIPING & INSTRUMENTATION DIAGRAM
CRUDE OIL EXPORT PUMP G-004A/B

PROJECT NO.		DRAWING NO.		
EF1902	CONTRACTOR DRG. NO.	REV.	KOC DRG. NO.	REV.
	50489-530-020-PID-1126.001	Z1		
	SHEET NO. 1 OF 11		SHEET NO.	
	COMPANY DRG. NO.	REV.		
	EF1902-530-DCO-PID-0126.001	A2		
	SHEET NO.			