

## CONTRACTOR DETAILS:-AREA PROTECTED TAG A TAG B TAG C TAG D TAG E TAG F TAG G TAG H TAG I TAG J TAG K TAG L TAG M TAG N TAG O TAG AA DV SKID NO. NO. OF NOZZLES | K FACTOR | SPRAY ANGLE | TRIGGER HEADS LINE No. 1 LINE No. 2 LINE No. 3 LINE No. 4 LINE No. 6 LINE No. 7 TO FUEL GAS K.O. DRUM 530-V-032 2"-WF-9568-Q35A | 3"-WF-9569-Q15A | 3"-WF-9570-Q15A | 3"-WF-9145-Q35A | 1"-AI-1760-S10A | 1/2"-AI-9007-S10A 9018B 9018C 9018B 9018C 9018B 9018E 9018F 9018G 9018H 9018I 9018J 9018K 9018K 9018L 9018M 9018N 9018N 9018O SP-009 DVS-15 3"-WF-9536-Q35A DOCUMENT TITLE:-PROJECT NO. CONTRACTOR DRG. NO. SHEET NO. 1 OF 2

## GENERAL NOTES:

A. FOR STANDARD SYMBOLS AND NOMENCLATURE SEE DRAWINGS 50489-530-020-PID-1104.001 & 1105.001. . ALL EQUIPMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 530-. . FOR ESDV, SBDV AND MOV DETAILS SEE DRAWINGS 50489-530-020-PID-1106.001 & 1107.001. D. FOR MISCELLANEOUS PIPING DETAILS SEE DRAWING 50489-530-020-PID-1108.001.

E. FOR TYPICAL VALVING, DRAINAGE AND GENERAL ARRANGEMENT OF LEVEL INSTRUMENTATION, PUMPS AND CONTROL VALVES SEE DRAWING 50489-530-020-PID-1109.001.

NOTES:

1. UV/IR FLAME DETECTORS AUTOMATICALLY DETECT FIRE AND WHEN ACTIVATED

A SIGNAL IS SENT TO THE F&G PANEL IN THE CCR. 2. AIR SET IS FITTED WITH AIR FILTER, REGULATOR AND PI.

3. RO SUPPLIED TO GIVE PRESSURE/LOSS CHARACTERISTICS OF THE DELUGE VALVE. 4. 4 WAY SUCTION COLLECTION HEAD IS INSTALLED TO ALLOW SECONDARY SUPPLY OF WATER TO DELUGE SYSTEM. 5. DELUGE VALVE IS DIAPHRAGM TYPE DESIGNED FOR DELUGE OPERATION AND BE UL LISTED AND FM APPROVED

6. TRIGGER HEAD CONFIGURATION 1/2" FUSABLE PLUGS OVER PROTECTED EQUIPMENT ON A GENERAL

3 x 3 METRE MATRIX '. 2 VALVES REQUIRED IN BYPASS LINE TO PREVENT UNNECESSARY LOSS

OF WATER DUE TO GATE VALVE PASSING.

B. ADEQUATE DRAINAGE IS PROVIDED AROUND DELUGE SYSTEM TO AVOID

ACCUMULATION OF WATER AROUND THE EQUIPMENT

9. PROVISION ARE MADE FOR PRESSURE TESTING AS PER NFPA 15 CLAUSE NO.

6.4.4 & 6.4.4.5 NEAR THE HYDRAULICALY REMOTEST NOZZLE.

O. DELUGE VALVES SHALL BE HELD CLOSED BY AIR PRESSURE SUPPLIED FROM THE INSTRUMENT AIR SYSTEM.

1. DELUGE VALVES SHALL FULLY OPEN WITHIN 10 SECONDS ON REMOVE OF INSTRUMENT AIR BY: A. REMOTE OPERATION OF A PUSH BUTTON AT THE MAIN FIRE AND GAS PENEL, LOCATED IN THE CONTROL ROOM, TO ENERGIZE A SOLENOID VALVES IN INSTRUMENT AIR SUPPLY TO DELUGE

VALVE. B. LOCAL OPERATION OF A MECHANICAL AIR RELEASE UNIT OF DELUGE VALVE STATION.

2. SPRAY NOZZLE IS CONSTRUCTED FROM MAINE BRASS.

3. DELUGE VALVE STATIONS ARE PROTECTED FROM RADIATED HEAT BY THE PROVISION OF

METAL RADIATION SHIELDS. **14.** PIPE MOC (AS PER KOC-L-009):

3" SIZE AND BELOW: 90-10 COPPER NIKEL TO ASTM B 466 UNS. 4" SIZE AND ABOVE : CARBON STEEL API 5L GRB WITH PHENOLIC EPOXY COATING. 15. FLANGE INSULATION KITS ARE PROVIDED AT DISSIMILAR METAL JUNCTIONS HAVING

ELECTROMOTIVE POTENTIAL DIFFERENCE GREATER THAN 0.05V AS PER CLAUSE 7.3.1.17 OF KOC-L-009.

16. INTERNALLY COATED UG PIPING ARE FLANGED SPOOLS AS PER KOC-L-009.

17. FLUSHING DRAIN PIT IS ACCESSIBLE FROM GROUND LEVEL.

18. THE UNDERGROUND SECTION ARE EXTERNALLY COATED WITH 3 LAYERS EXTRDED HDPE AS PERKOC-PO04 PART 6, REV-2 WITH THE INTERNAL PHENOLIC EPOXY ON THE PIPING SHALL BE AS PER KOC-P-005 REV-1.

**19.** THE ABOVE GROUND PIPING SECTION ARE COATED WITH SYSTEM A1-1 OF KOC-P-001 REV 3 **20.** TOP CHAMBER OF DELUGE VALVE IS CONNECTED TO WATER LINE & TO WATER INLET OF

ACTUATOR WHEN THE AIR PRESSURE DROPS DUE TO DETECTION OF FIRE THE DIAPHRAGM OF ACTUATOR IS LIFTED AND ALLOWS THE WATER PRESSURIZING DIAPHRAM OF DELUGE VALVE TOP CHAMBER TO DRAIN. THIS RELESES THE PRESSURE IN THE TOP CHAMBER OF DELUGE VALVE ALLOWING THE DELUGE VALVE TO OPEN.

	SYMBOL	DESCRIPTION
YSTEM 2	Ş——FW S	FIRE WATER PIPING
	$\downarrow$	SPRAY NOZZLE
		REDUCER
		GATE VALVE
		END CAP

## PERFERENCE DRAWINGS.

	REFERENCE DRAWINGS:			
	50489-530-000-CAL-1008	HYDRAULIC CALCULATION FOR WATER SPRAY SYSTEM FOR FUEIGAS K.O. DRUM		
ł	K0C-L-009	KOC STANDARD FOR FIRE PROTECTION SYSTEMS		
	50489-530-000-LAD-1065	FIRE WATER NETWORK LAYOUT		

50489-530-000-LAD-1071 FIRE WATER DETAIL ARRANGEMENT DRAWING FOR FUEL GAS K.O. DRUM

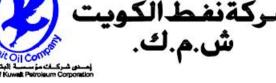
Die De PAK/DEU NIJ SRA RAK 12.08.18 ZO | ISSUED FOR AS-BUILT PAK/DEU NIJ SRA RAK 16.07.16 01 RE-ISSUED FOR CONSTRUCTION 0 ISSUED FOR CONSTRUCTION B ISSUED "INCORPORATED CLIENT COMMENTS" PAK/DEU NIJ SRA RAK 15.10.15

PAK/DEU NIJ SRA RAK 13.05.16 PAK/DEU NIJ SRA RAK 10.04.15 A ISSUED FOR APPROVAL DRAWN CHECKED HOD PEM DATE APPRD. DESCRIPTION

CONTRACTOR REVISION



SHEET NO.



LARSEN & TOUBRO LIMITED FARIDABAD

NEW GATHERING CENTRE GC-30 IN NORTH KUWAIT

PIPING & INSTRUMENTATION DIAGRAM DELUGE WATER SPRAY SYSTEM FOR FUEL GAS K.O. DRUM 530-V-032

DRAWING NO. REV. KOC DRG. NO. 50489-530-000-PID-1120.001 Z0 SHEET NO. EF1902 COMPANY DRG. NO.