

AREA PROTECTED	NO. OF NOZZLES	K FACTOR	SPRAY ANGLE	TRIGGER HEADS	LINE No. 1	LINE No. 2	LINE No. 3	LINE No. 14	LINE No. 15	LINE No. 16	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.
DIESEL DAY TANK AND DIESEL TRANSFER PUMPS 530-D-015, 530-G-010A/B	46	50	140°	46	6"-WF-9567-Q35A	6"-WF-9387-Q35A	6"-WF-9388-Q15A	6"-WF-9386-Q35A	1"-AI-1772-S10A	1/2"-AI-9033-S10A	9030A 9030B	9030C 903	0D 9030E	9030F 9030G	9030H 9030 I	9030J 9030K	9030L 9030M	9030N 9030 O 9030	DVS-29

GENERAL NOTES:

- A. FOR STANDARD SYMBOLS AND NOMENCLATURE SEE DRAWINGS 50489-530-020-PID-1104.001 & 1105.001.

 B. ALL EQUIPMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 530-.

 C. 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.
- 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
- 7. 2 VALVES REQUIRED IN BYPASS LINE TO PREVENT UNNECESSARY LOSS OF WATER DUE TO GATE VALVE PASSING.
- 8. 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.
- 10. DELUGE VALVES ARE HELD CLOSED BY AIR PRESSURE SUPPLIED FROM THE INSTRUMENT AIR SYSTEM. 11. 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
- 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. 12. SPRAY NOZZLE IS CONSTRUCTED FROM MAINE BRASS.
- 13. 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 SHALL BE ACCESSIBLE FROM GROUND LEVEL.
- 18. THE UNDERGROUND SECTION ARE EXTERNALLY COATED WITH 3 LAYERS EXTRDED HDPE AS PERKOC-P004 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 TOF CHAMBER TO DRAIN. THIS RELESES THE PRESSURE IN THE TOP CHAMBER OF DELUGE VALVE

LEGENDS:

<u>EM</u>	SYMBOL	DESCRIPTION
_/	Ş——FW	FIRE WATER PIPING
	\downarrow	SPRAY NOZZLE
		REDUCER
		GATE VALVE
	——D	END CAP

REFERENCE DRAWINGS:

HYDRAULIC CALCULATION FOR WATER SPRAY SYSTEM FOR DIESEL DAY TANK & DIESEL TRANSFER PUMPS

KOC-L-009

KOC STANDARD FOR FIRE PROTECTION SYSTEMS

50489-530-000-LAD-1065 FIRE WATER NETWORK LAYOUT

ALLOWING THE DELUGE VALVE TO OPEN.

		Darbak	Her	Rau	S.		
Z0	ISSUED FOR AS-BUILT	PAK/DEU	NIJ	SRA	RAK	12.08.18	
01	RE-ISSUED FOR CONSTRUCTION	PAK/DEU	NIJ	SRA	RAK	27.07.16	
0	ISSUED FOR CONSTRUCTION	PAK/DEU	NIJ	SRA	RAK	13.05.16	
A	ISSUED FOR APPROVAL	PAK/DEU	NIJ	SRA	RAK	10.12.15	
REV.	DESCRIPTION	DRAWN	CHECKED	HOD	PEM	DATE	
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CONTRACTOR REVISION



CONTRACTOR DETAILS:-

) LARSEN & TOUBRO LIMITED FARIDABAD

PROJECT TITLE

VAIBHAV VERMA

12-Aug-2018

DESIGNATION: AGM

DEPT/ DIVISON: ENGINEERING

SIGNATURE : DATE :

> NEW GATHERING CENTRE GC-30 IN NORTH KUWAIT

PIPING & INSTRUMENTATION DIAGRAM
DELUGE WATER SPRAY SYSTEM FOR DIESEL
DAY TANK & DIESEL TRANSFER PUMP

PROJECT NO.	DRAWING NO.							
	CONTRACTOR DRG. NO.		KOC DRG. NO.	REV.				
	50489-530-000-PID-1130.001	ZO						
	SHEET NO. 1 OF 2		SHEET NO.					
EF1902	COMPANY DRG. NO.	REV.						
	SHEET NO.							