

1	Applicable Standards	10993
2	Quantity	1 Nos.
18. SHED FOR DELUGE VALVE, BOOSTER PUMP		
1.	Service	To accommodate deluge valves coming under spray system
2.	Location	Outdoor. Bidder to select the Suitable locations based on piping layout
3.	Number	Bidder to indicate
4.	Material of Construction	Brick Masonary with minimum 4" RCC Roof
19. STRAINERS		
1.	Type	Y type
2.	Material of construction	
a)	Body	MS fabricated IS:2062 tested quality
b)	Internal	SS (AISI 316), 30 mesh suitably reinforced

F. FIRE ALARM AND DETECTION SYSTEM**1. Main/ Sub Fire Alarm Panel**

1	Make	
2	Type	Intelligent Analog addressable type
3	No. of addressable Devices per loop	As per Manufacturer Standard
4	Features of Main Fire Alarm Panel-:	
i	Five Programmable Function Switches	yes
ii	Point Status Control Keys	yes
iii	Event Time and History Back up.	yes
iv	LCD Navigation Control	yes
v	Numeric KeyPad	yes
vi	Inbuilt Regulated DC Power Supply	yes
vii	Inbuilt Battery Charger	yes
viii	Redundancy in CPU(Hot)	yes
ix	Redundancy in Power Supply	yes
x	Accessories required	
	Graphics software	Yes
	OWS + Printer(Laser type)	Yes

A. MULTI CRITERIA SMOKE DETECTORS

1.	Manufacturer :	As per approved make.
2.	Type :	Combination of Photo electric sensing and heat sensing, intelligent Analogue Addressable.
3.	Code/ Specification :	NFPA-72E/BS-5839/IS.
4.	Sensitivity :	Preset at factory/Adjustable at site (as per UL-268).
5.	Temperature range :	0.0 Deg.C to + 38 Deg.C
6.	Humidity range :	10% to 90% RH.
7.	Air velocity :	0 to 300 ± 25 feet/minute.
8.	Plug in type detector to be provided :	Yes
9.	No. of terminals on detector on mounting base :	Bidder to indicate.

10.	Area covered by single detector :	Bidder to indicate.
11.	Operating voltage :	24 volt D.C.
12.	Inbuilt indicating lamp to indicate operation of the detector provided	Yes [Separate response indicators mounted on false ceiling to be provided for smoke detectors mounted above false ceiling].
13.	Material of detector body :	Metallic/ Plastic.
14.	Detector is approved by UL/ FOC/ FM/ TAC :	Yes.
15.	Detector Base:	Mounting box (if applicable) Double Compression gland.
16.	Coverage area	Considering maximum spacing as per IS:2189.
B PhotoElectric Smoke Detectors		
1	Make	DDE
2	Type	Intelligent Analog.
3	Model No	DDE
4	Remote LED Indicator Alarm Current	1mA, no impact to alarm current.
5	Temperature Range within which detector operates	0-38 degree C
6	Humidity Range	10-95% RH
7	Smoke sensor ambient rating	Air Velocity-0-4000ft/min
B. HEAT DETECTORS		
1.	Manufacturer :	As per approved make.
2.	Type :	Fixed temperature cum rate of rise type, intelligent Addressable Analog.
3.	Sensitivity :	Preset at factory/ Adjustable at site.
4.	Operating temperature range :	54°C. to 60°C.
5.	Humidity range :	5% to 90% RH.
6.	Detector automatically resets after actuation:	Yes.
7.	Area covered by single detector :	Bidder to indicate.
8.	Operating voltage :	24V DC.
9.	Type of contacts :	Silver.
10.	Principle of operation :	As per Specification.
11.	Detector approved by FOC/ FM/ UL/ TAC :	Yes.
12.	Detector Base:	Mounting box (if applicable) Double Compression gland.
13.	Coverage area :	As per NFPA-72.
14.	Special cable :	To be provided.
C. QUARTZOID BULB DETECTORS		
1.	Manufacturer :	As per approved make.
2.	Type :	Frangible bulb type.
3.	Operating temperature :	79°C.
4.	Material of Construction	
a)	Frame :	Bronze (ASTM B 145) Class-5A Lead gun metal, Chrome plated.

b)	Bulb :	Glass filled with heat sensitivity liquid (coloured).
c)	Deflector :	Brass.
d)	Cap :	Copper.
e)	Seal :	Teflon/ Rubber.
5.	Working pressure :	3.5 Kg/Sq. cm (g) minimum.
6.	Detector approved by : TAC/FOC/UL/FAS/NFPA	Yes.
D. LINEAR HEAT SENSING CABLE		
1.	Manufacturer :	As per approved make
2.	Type :	SS Braided Digital type
3.	Operating voltage	24 Volt D.C.
4.	Ambient temperature	-20 to 79 degreeC
5.	Operating temperature	Programmable type, with combination of fixed temperature and Rate of Rise in temperature
6.	Cable Jacket :	Steel Type(for conveyor)
	i) Nominal Cable Diameter :	3.2mm 4mm
	ii) Maximum weight :	33kg/km 23 kg/km
	iii) Minimum Bending Radius :	75mm 63mm
8.	Typical Performance :	
	i) Sampling Resolution :	1.0 meter
	ii) Measurement Time :	10 sec for 4 kms
	iii) Measurement Range :	-20o C to 150oC
11	All accessories such as fittings, fastenings, sleeves, straps, staples, clips (mounting) rings, test terminals, Junction Box etc. as may be required for interconnection of linear heat detector cables as well as interconnection to Control and Power Cable :	Yes
12.	Linear Heat Detector approval	FM / UL / TAC / NFPA / VDS / LPCB
	Fire Detection	Unit should be able to detect abnormal/hot spot within 1 mtrs.
E INFRARED DETECTORS		
1	Manufacturer :	As per approved make.
2	Type	Air Purging type with inbuilt blower
3	Operating Voltage	24V DC
4	Temperature Range :	- 40°C to 60°C
5	Nominal Response Time :	75 milli sec. (Max.)
6	Sensitivity :	1.0 to 5.0 Microwatt shall be Field Adjustable.
7	Dimensions :	As per manufacturer's standard.
8	Enclosure :	Dust and Water proof.
9	Mounting :	To be mounted in protective sheet metal housing above conveyor.
10	Quiescent Current :	10 mA/As per manufacturer standard.
11	Alarm Current :	20 mA/As per manufacturer standard.
12	Acceptance Angle :	120°/As per manufacturer standard
13	Spectral Response :	0.8 to 2.0 Micron/As per manufacturer standard.
14	Spectral Range	3000-14000Nm

15	Half Power Cone Vision :	90°/As per manufacturer standard.
16	All accessories such as air purging facilities for cleaning lens, protective housing mounting hinge & latch, J. Box Glands etc. as required.	Yes
17	Detector shall be solar blind :	Yes
F. Manual Pull Stations		
1	Make	Approved make
2	Type	Manual Pull type
3	Temperature Range	0-40 degree C
4	Humidity Range	0-93% RH
G. Fixed/ ROR type Heat Detectors		
1	Make	Approved make
2	Type	Fixed/ROR type
3	Maximum Operating Temperature	68 degree C
4	Operating Range in case Rate of Rise	8.3-11.1 deg C per minute.