

## ANNEXURE-A

### 8.26 FIRE PROTECTION SYSTEM

#### 8.26.1 Quantity

One set for each Transformer.

#### 8.26.2 General

The Contractor shall design, supply and install identical fire sprinkler systems for each transformer.

The sprinkler system shall be deluge system with a system pressure of requisite value. The water supply will be arranged by the purchaser up to the inside of the transformer yard at one point

The Contractor shall furnish all the required water supply pipes inside the transformer with flanges, bolts and gaskets.

Details of the connection for water supply system shall be decided after the award of contract.


#### 8.26.3 Scheme and performance

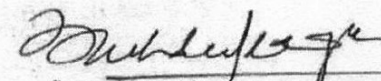
The deluge system shall employ open sprinklers attached to a piping system connected to the water supply through an automatic control valve which shall be opened by the operation of a fire detection system.

The fire detection systems shall employ incitators attached to a piping system being steadily supervised by pressure water branched from the same water supply as the

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sprinklers. The incitators shall be properly arranged atop and under the protected transformer where they will most effectively sense a fire.

The sprinklers shall be in such an arrangement that in the event of a fire, they will build up a fog bank which shall thoroughly envelope the transformer for 20 minutes and effectively cool down, suffocate and extinguish a transformer fire. Meanwhile, additional nozzles shall be provided atop the bushings and above the complete foundation of the transformer where heavy spray of extinguishing water is needed.

#### 8.26.4 Control

Actuation of the sprinkler system shall be either automatically by means of blow-out of incitators and actuation of differential relay or manually by means of operation of the manual release level of a solenoid valve which is provided for remote control, or by pressing a press button switch mounted on the detection system and located at the most accessible place around the protected transformer.

Operation of the sprinkler system shall actuate a pressure relay to electrically signal the fire alarm system, and shall drive a water motor going for local alarm.

The control cubicle to be installed at the transformer room shall be furnished with the monitoring circuits or terminal for control device. Automatic-Manual changeover switch, alarm system and necessary accessories, fire alarm, actuation of sprinkler and failure of control system etc. shall be transmitted to the control room.

Electrical control device shall be rated at DC 220 Volts.

#### 8.26.5 Components

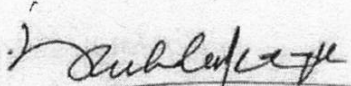
Each sprinkler system shall consist of, but not limited to, following components:

i)	Gate valve and a strainer for water supply	One (1) Lot
ii)	Gate valve and an automatic control valve for the sprinkler system	One (1) Lot
iii)	Drain valve and a vent valve	One (1) Lot
iv)	Alarm test cock	One (1) Lot
v)	Pressure switch with two normally open contacts for signaling	One (1) Lot
vi)	Solenoid valve with manual release level	One (1) Lot
vii)	Water motor gong	One (1) Lot
viii)	Pressure gauges	One (1) Lot
ix)	Control cubicle (indoor type)	One (1) Lot
x)	Pressure button switch	One (1) Lot

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xi)	Open sprinklers	One (1) Lot
xii)	Indicators	One (1) Lot
xiii)	Piping, fittings, supports, etc.	One (1) Lot
xiv)	Other necessary parts	One (1) Lot

Nozzles and valves shall be manufactured with approval of Purchaser.

#### 8.26.6 Accessories

Each sprinkler system shall be furnished complete with following accessories:-

i)	Cabinet with special tools	Two (2) Sets
ii)	Name plate	One (1) Lot
iii)	Foundation bolts	One (1) Lot

#### 8.26.7 MANDATORY SPARES:-

1. OPEN SPRINKLER - SIX OF EACH KIND
2. INDICATORS - SIX OF EACH KIND
3. FUSIBLE ELEMENT FOR INDICATORS - TWO OF EACH KIND AND RATING
4. STRAINER ELEMENT - SIX OF EACH KIND
5. ANY OTHER ITEM RECOMMENDED BY BIDDER.

NOTES:- 1. CABLE AND ITS LAYING FROM LOCAL PANELS AT TRANSFORMER TO CONTROL ROOM IS IN SCOPE OF SUPPLIER. FOR EVALUATION PURPOSE WE HAVE CONSIDERED THE DISTANCE AS 500 MTR. BIDDER TO QUOTE THE PER MTR PRICE OF CABLE AND PAYMENT OF CABLE SHALL BE DONE ON PRO RATA BASIS.

2. THE LENGTH OF PIPES SHALL BE SUFFICIENT TO COVER THE COMPLETE TRANSFORMER AND ITS BUSHING/COMPONENTS PROTECTION. THEREFORE BIDDER TO CONSIDER SUFFICIENT MARGIN IN LENGTH OF PIPE IN THEIR OFFER ITSELF.


3. ANY CIVIL WORK RELATED TO INSTALLATION & COMMISSIONING OF SYSTEM IS IN SCOPE OF BIDDER.

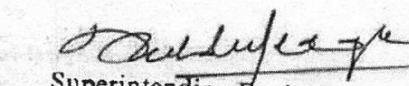
4. ANY OTHER ITEM/EQUIPMENT REQUIRED FOR SUCCESSFUL WORKING OF FIRE PROTECTION SYSTEM IS TO BE SUPPLIED BY BIDDER AND SHALL BE IN SCOPE OF BIDDER.

5. BIDDER SCOPE SHALL BE DESIGN, INSTALLATION, TESTING AND COMMISSIONING OF FIRE PROTECTION SYSTEM.

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