



**SCHEME OF OPERATION**

THE AUTOMISED WATER SPRAY SYSTEM FOR PROTECTION OF THE GENERATOR HAS BEEN DESIGNED FOR AUTOMATIC/MANUAL OPERATION IN CASE OF FIRE INSIDE THE GENERATOR AS SHOWN IN THE LAYOUT. THE SYSTEM COMPRISES OF TWO RING HEADERS (40 N/B) INSIDE THE GENERATOR, ONE LOCATED AT BOTTOM (TURBINE END) AND OTHER LOCATED AT TOP (COLLECTOR END). BOTH THE RING HEADERS ARE FED AT TWO POINT THROUGH 500 NB PIPES VIA CONTROL VALVE STATION LOCATED NEAR THE GENERATOR. EACH OF THE RING HEADERS SHALL BE FITTED WITH SPECIALLY DESIGNED NOZZLES ON TOP AND ON BOTTOM DISCHARGING WATER AT THE RATE OF 5 LPM AND PROPERLY SPACED SUCH THAT EVERY CM OF PROTECTED AREA IS COVERED BY AUTOMISED WATER SPRAY. THE SYSTEM HAS BEEN DESIGNED FOR A PRESSURE OF 5 Kg/cm<sup>2</sup>.

THE CONTROL SYSTEM HAS BEEN DESIGNED IN SUCH A WAY THAT BY OPERATION OF SMOKE DETECTOR, ALARM WILL BE SOUNDED. THE SYSTEM COMES INTO OPERATION INSTANTANEOUSLY, BY OPERATION OF A COMBINATION OF HEAT DETECTOR, GENERATOR E/F RELAY, GENERATOR DIFFERENTIAL RELAY AND TIME DELAY. THE SYSTEM COMES INTO OPERATION BY PRESSURISING THE WATER HEADERS. IF THE AUTO MANUAL SWITCH IS IN AUTO MODE IN CASE THE ABOVE SWITCH IS IN MANUAL MODE THEN SYSTEM CAN BE OPERATED BY PRESSING THE PUSH BUTTON AFTER OPERATION OF COMBINATION OF HEAT DETECTOR GENERATOR E/F RELAY AND THE SYSTEM CAN ALSO BE OPERATED FROM THE AUTOMATIC VALVE ENCLOSURE BY TURNING THE MANUALLY OPERATED DELUGE VALVE.

REMOTE OPERATION OF THE SYSTEM IS ALSO PROVIDED BY PRESSING THE PUSH BUTTON TO OPERATE SOLENOID VALVE ONLY AFTER HEAT DETECTOR OPERATES WHICH CAUSES THE AUTOMATIC VALVE TO OPERATE. ALSO THE MECHANICAL ALARM VALVE HAS BEEN INCLUDED IN THE SYSTEM FOR INDICATING THE FLOW OF PRESSURISED WATER INSIDE THE GENERATOR. DOWN STREAM OF THE GONG IS CONNECTED TO THE DRAIN PIPE FOR DRAINING OUT WATER FROM THE GONG. PROPER TEST FACILITIES HAVE ALSO BEEN INCLUDED IN THE SYSTEM.

**REFERENCE DOCUMENT:**

- PRODUCT STD HG10022 REV02
- STATION LAYOUT DRAWING NO. 1 200 00 16655
- CONTRACT SPEC CLAUSE NO.5.1.5.9

REV.	DATE	ALTERED	CHECKED	APPROVED	ZONE
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STATUS OF DRAWING	U
NAME OF CUSTOMER/PROJECT	UHL-III HPSEB
DISTRIBUTION OF PRINTS	HGE - 3
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