AUTOMATIC TRANSFER SWITCHING EQUIPMENT

The automatic transfer switching equipment (ATSE) shall comprise of a transfer switching device and a necessary monitoring and transfer control device (automatic transfer switching module as described in Section 14.0 – Generator Set Control Board and Generator Set Controllers) for monitoring supply circuits and for transferring load circuits
from the normal supply to an alternative supply in the event of a monitored supply deviation and automatically returning the load to the normal supply when it is restored.
ATSE shall be of utilization category AC 33B and shall comply to MS IEC 60947- 1 and IEC 60947-6-1. Unless otherwise specified, the operating mechanism of the ATSE shall be reliably, electrically and mechanically interlocked to prevent simultaneous connection to both normal mains and alternative supplies.

15.1 TRANSFER SWITCHING DEVICE

Unless specified otherwise in the Bill of Quantities and/or Drawings, the transfer switching device of an ATSE shall be of automatic changeover contactors Class PC type in accordance with IEC 60947-6-1. The automatic changeover contactors shall be bar mounted type with fixed bar and moving shaft made of steel and bearing supports made of
aluminium/bronze alloy. They shall be of double air-break, quick-make and quick-break type complying with MS IEC 60947-1 and IEC 60947-4-1. They shall be dust-proof, rust protected, fully tropicalised and suitable for use on 240 V/415 V, 50 Hz A.C. system. The operating coil shall be 240 V/415 V 50 Hz A.C. type and shall operate satisfactorily when the voltage at the coil terminals is between 85% and 110% of the nominal voltage. The electromagnet shall be of laminated type. The

automatic changeover contactors shall be four pole type. Each pole shall comprise three main parts: –
(a) The main contacts shall be of ‘butt-contact’ pattern without sliding or rolling and shall operate with absolute minimum contact bounce.
(b) The blow out coil shall be rated to carry the total current flowing through the main pole and according to the thermal rating of the contactor.

The arc chute shall be De-ion type or the type having ‘arc splitter’ for rapid extinction of electric arc. Each arc chute shall have a steatite disc on its internal faces for preventing rapid erosion of the chute by the effect of arcs. The arc chutes shall be easily removable to allow inspection of the main contacts and where necessary their replacement.
The main contacts shall able to carry continuously the rated current, capable of making and withstanding short-circuit currents without damage in an enclosure having an ambient temperature up to 40 0C. Unless otherwise specified, a minimum of four normally close and four normally open auxiliary contacts shall be provided. A transparent protection screen of full compartment size shall be provided in front of the automatic changeover contactors.
For Class CB where the circuit breakers are specified as transfer switching devices, the circuit breakers shall comply with MS IEC 60947-1 and MS IEC 60947-2. Unless specified otherwise, the rated short-time withstand current shall be of the same rating for the circuit breaker receiving supply from the Licensee or Supply Authority.

15.2 MONITORING AND TRANSFER CONTROL DEVICE
ATSE shall complete with a monitoring and transfer control device for monitoring supply circuits and for transferring load circuits from the normal mains supply to an alternative supply in the event of a monitored supply deviation and automatically returning the load to the normal mains supply

when it is restored. The monitoring and transfer control device shall be of microprocessor based controller comprising automatic transfer switching module or combination of automatic transfer switching module and automatic mains failure module. The device shall form part of the generator set controller to serve its functions in standby operation mode as described in Section 14.0 – Generator Set Control Board and Generator Set Controllers.