

SCHEDULE A

REQUIREMENTS

Section-I PEKUA 400/230/132kV AIS Substation

The equipment to be designed, supplied, installed, tested & commissioned as stipulated in bid specification and shown in bid drawings (volume 2 of 3):

Item	Description
1A	420 kV Air Insulated Switchgear (AIS)
	The 420kV AIS shall comply with the particular requirements as detailed in the Schedule of Technical Requirements included as Appendix A1 to this section and shall comprise the following:-
1A1	420KV Circuit breaker associated with transformer switching
1A1.1	Four(4) sets of 420kV, 4000A, 63kA/1sec, 50Hz, 1425kVp BIL, live tank type, gang operated, SF6 gas circuit breakers with spring-stored energy operating mechanism. CSD (Control Switching Device) is required for transformer switching which shall have to be considered for 400kV circuit breaker.
1A1.2	One(1) sets of 420kV, 4000A, 63kA/1sec, 50Hz, 1425kVp BIL, live tank type, single-pole operated , SF6 gas circuit breakers with spring-stored energy operating mechanism. PIR (Pre insertion resistor) and CSD (Control Switching Device) is required for line & transformer switching which shall have to be considered for 400kV circuit breaker.
1A2	Eight (8) sets of 420kV, 4000A, 63kA/1sec, 50Hz, 1425kVp BIL, live tank type, single-pole operated , SF6 gas circuit breakers with spring-stored energy operating mechanism. PIR (Pre insertion resistor) is required for line switching which shall have to be considered for 400kV circuit breaker.
1A3	Seven (7) sets of 420kV, 4000A, 63kA/1sec , 50Hz, 1425kVp BIL, horizontal double break, post type, motor operated disconnectors with motor-operated earthing switch.
1A4	Twenty Six (26) sets of 420kV, 4000A, 63kA/1sec , 50Hz, 1425kVp BIL, horizontal double break, post type, motor operated disconnectors without earthing switch.
1A5	Two(2) sets of 420kV, 63kA/1sec , 50Hz, 1425kVp BIL, post type, motor operated busbar grounding switches.

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Asim *Q. M. M.* *Sd*

1B 245kV Air Insulated Switchgear (AIS)

The 245kV AIS shall comply with the particular requirements as detailed in the Schedule of Technical Requirements included as Appendix A1 to this section and shall comprise the following:-

- 1B1 Five (5) sets of 245kV, 2000A, 50kA/1sec, 50Hz, 1050kVp BIL, live tank type, gang operated, SF6 gas circuit breakers with spring-stored energy operating mechanism (for Transformer bay).
- 1B2 two(2) sets of 245kV, 2000A, 50kA/1sec, 50Hz, 1050kVp BIL, live tank type, single-pole operation, SF6 gas circuit breakers with spring-stored energy operating mechanism (for T/L bay).
- 1B3 One (1) set of 245kV, 3150A , 50kA/1sec, 50Hz, 1050kVp BIL, live tank type, gang operated, SF6 gas circuit breakers with spring-stored energy operating mechanism (for bus coupler).
- 1B4 Ten (10) sets of 245kV, 2000A, 50kA/1sec, 50Hz, 1050kVp BIL, double side break, post type, motor operated disconnectors without earthing switch (for Transformer bay).
- 1B5 Four(4) sets of 245kV, 2000A, 50kA/1sec 50Hz, 1050kVp BIL, double side break, post type, motor operated disconnectors without earthing switch (for T/L bay).
- 1B6 Two (2) sets of 245kV, 3150A , 50kA/1sec, 50Hz, 1050kVp BIL, double side break, post type, motor operated disconnectors without earthing switch (for bus coupler).
- 1B7 Seven (7) sets of 245kV, 2000A, 50kA/1sec, 50Hz, 1050kVp BIL, double side break, post type, motor operated disconnectors with motor-operated earthing switch (for T/L & Transformer bay).
- 1B8 Fifteen (15) nos. of single-phase, 5-core, 245kV, 50kA/1s, 50Hz, 1050kVp BIL , post type current transformer for Transformer bay: 245kV, 50kA/1s single phase, 6-core, current transformer with cores as follows:
 2400-1600-800/1A, Class 5P20, 30-60VA for Main 1 Protection
 2400-1600-800/1A, Class 5P20, 30-60VA for Main 2 Protection,
 2400-1600-800/1A, Class 0.2S,15VA(min burden) for Metering 1
 2400-1600-800/1A, Class 0.2S,15VA(min burden) for Metering 2, BCU
 2400-1600-800/1A, PX, 30VA for Busbar Differential Protection and Breaker Failure
 2400-1600-800/1A, PX, 30VA for Busbar Differential Protection and Breaker Failure

Asim *G. M.* *Sa*

1B14 One(1) lot of steel structures for gantry and equipment supports required for completing 245kV busbar and switchgear as specified in the technical specifications and bid drawings.

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1C 145kV Air Insulated Switchgear (AIS)

The 145kV AIS shall comply with the particular requirements as detailed in the Schedule of Technical Requirements included as Appendix A1 to this section and shall comprise the following:-

- 1C1** Two (2) sets of 145kV, 1600A, 40kA/1sec, 50Hz, 650kVp BIL, live tank type, gang operated, SF6 gas circuit breakers with spring-stored energy operating mechanism (for Transformer bay).
- 1C2** Six(6) sets of 145kV, 1600A, 40kA/1sec, 50Hz, 650kVp BIL, live tank type, single-pole operation, SF6 gas circuit breakers with spring-stored energy operating mechanism (for T/L bay).
- 1C3** One (1) set of 145kV, 3150A, 40kA/1sec, 50Hz, 650kVp BIL, live tank type, gang operated, SF6 gas circuit breakers with spring-stored energy operating mechanism (for bus coupler).
- 1C4** Four (4) sets of 145kV, 1600A, 40kA/1sec, 50Hz, 650kVp BIL, double side break, post type, motor operated disconnectors without earthing switch (for Transformer bay).
- 1C5** Twelve(12) sets of 145kV, 1600A, 40kA/1sec, 50Hz, 650kVp BIL, double side break, post type, motor operated disconnectors without earthing switch (for T/L bay).
- 1C6** Two (2) sets of 145kV, 3150A, 40kA/1sec, 50Hz, 650kVp BIL, double side break, post type, motor operated disconnectors without earthing switch (for bus coupler).
- 1C7** Eight (8) sets of 145kV, 1600A, 40kA/1sec, 50Hz, 650kVp BIL, double side break, post type, motor operated disconnectors with motor-operated earthing switch (for T/L & Transformer bay).
- 1C8** Six(06) nos. of single-phase, 5-core, 145kV, 40kA/1sec, 50Hz, 650kVp BIL, post type current transformer for Transformer bay 145kV, 40kA/1sec single phase, 5-core, current transformer with cores as follows:
2400-1600-800/1A, Class 5P20, 30-60VA for Main 1 Protection
2400-1600-800/1A, Class 5P20, 30-60VA for Main 2 Protection,

  