



TITLE:
1 X 800 MW WANAKBORI TPS
SCOPE OF SUPPLY FOR ENCLOSURE & INTEGRATION

SPECIFICATION NO.
EP-ENCL-TBG-WNK-001

VOLUME NO. :

SECTION :

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03.07.2017

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- a. All power and control terminals shall be clearly visible and available in the cable alley for terminations, it shall not be necessary to draw-out the module for terminating cable.
- b. Gasket shall be neoprene type. PU Foam is not acceptable and bidder to comply strictly with requirement.
- c. External cables shall be terminated on SIC (control draw-out contacts). These shall be connected on a separate set of terminal blocks wherein these set of terminal blocks shall be connected to SIC by suitable sized flexible wires.
- d. Cable alley with all components as per space heater scheme shall be in bidder's scope.
- e. Incoming and O/G links (Flexible or Flats) for all type of module (D/O or fixed) for all rating of feeders as per various parts of specification shall be in vendor scope and size of same shall be decided during detailed engineering/technical bid.
- f. Vendor shall submit internal General arrangement of Mounting plate of breaker feeders, Arrangement of components for all type and rating modules for approval within 10days from the date of input from BHEL.
- g. The construction of enclosure and sizes of the busbars shall be as per specification.
- h. Mounting of components which are provided by EPD and wiring, testing of all type of I/C and O/G modules as per specification are in scope of vendor and shall be carried out at BHEL-EPD premises. Vendor may make all wire bunches at their works and termination of components may be completed at BHEL EPD premises.
- i. Testing of panels at panels at EPD is in vendor scope.
- j. CTs, PTs and Control transformers of various rating and type as per SLD and schematics applicable for various feeder shall be in vendor/bidders scope. These shall be fitted at vendor/bidders works. All the bus bar work of the panel shall be completed to maximum extent at vendor works before dispatch of enclosure to BHEL-EPD, BHEL EPD will issue one no. of sample breaker of each type.
- k. CTs shall not be supported on Bus bar, separate clamp arrangement shall be provided for CT support and fixing. The clamp arrangement shall be fitted to channel which shall be further fitted to Load bearing member of enclosure.
- l. Din rail ,all types of Terminal blocks including CTTBs, wires, flexible, aluminum flats, neutral link, lugs ,ferrule, cable duct etc. required for wiring as per schemes are in scope of vendor.
- m. Based on component input by BHEL, vendor shall provide door cutouts, punch on mounting plates of Breaker feeders and outgoing modules.
- n. Packing shall be considered as per attached packing specification attached with specification and shall be carried out after final testing of the panel at EPD. However the enclosure shall be supplied to BHEL-EPD with wooden base and plastic covered.
- o. 8no.s of door keys shall be provided for each board.
- p. Doors shall be designed such that there shall not be any sag after mounting of components. Adequate stiffeners and proper hinges etc, shall be provided to ensure



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that doors do not sag. If in case the thickness of door to be increased vendor shall take care of same.

- q. Terminal shall be provided with protective cover, end plate and end clamp. Marking tags/identification tag shall be provided on the terminal & component for easy identification.
- r. Terminal shall be connect well/ELEMEX make.
- s. Vendor shall fix fish plates to panel bus bar itself while shipping, separate loose box is not acceptable for fish plates.
- t. Routing of Marshalling cables shall be provided by vendor.
- u. All the name plates as per various parts of specification and feeder name plates are in scope of vendor.
- v. Extension links for feeders wherever required for OG termination decided during detailed engineering shall be provided by vendor without price implication.
- w. SIZE OF THE control WIRING CABLE/WIRE SHALL BE AS PER SPECIFICATION.
- x. VENDOR HAS TO CONSIDERD THE 6 NOS OF COPPER CONTROL BUS OF MINIMUM SIZE 18SQMM.
- y. The draw out trolley rack in/out mechanism shall be screw type and shall be guided by double ball bearing guide rail. Guide rail make shall be of Hettich or equivalent
- z. The neutral link required for I/C and O/G feeders shall be in vendor scope as per specification and schemes drawings.
- aa. Vendor has to submit the valid type test report as per IEC 61439 for 1600A and 800A. If require vendor has to carry out the type test on BHEL-EPD name and same shall be carried out by vendor at extra cost (only type test charge as per CPRI).
- bb. The scheme/schematic drawing furnished along with tender is tentative. There may be Changes in final schematic diagram from tender schematic diagram. For which no additional piece implication will be accepted.
- cc. BHEL will issue the items listed in tender document only as a free issue item. However DIODE and resistor is in vendor Scope. Also any items required apart from free issue item mentioned in tender document is in vendor scope
- dd. The make of PLUG & SOCKET, Thermostat and Heater shall be IS approved.
- ee. Diode module for DC supply circuit shall be in vendor scope of supply.
- ff. All the live parts shall be shrouded in cable alley as well as in modules/feeders.
- gg. Proper shrouding shall be provide to prevent the tool falling accidents in cable alley as well as bus bar chamber.
- hh. Set of drawings and general notes attached with spec shall be adhered.
- ii. Valid Type test reports (tested with in 5years from the date of bid opening) as per IEC either in CPRI/ERDA shall be submitted for acceptance.
- jj. Bidder has to depute his manpower at EPD for wiring, testing and obtaining clearance from customer during inspection.



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kk. Bidder shall arrange packing at EPD after customer clearance.

ll. If any BHEL issued material is damaged the vendor shall replace the same else amount will be deducted from vendor bills.

mm. Preparation of drawings in BHEL Format for GA & SLD is in vendor scope. R0 Drawings shall be submitted with in one week days from load data input. Subsequent revisions shall be submitted in five days' time.

nn. Boards will be dispatched as BHEL EPD product to end client.

ONLY FOLLOWING MATERIALS WILL BE OF FREE ISSUE FROM BHEL BALANCE MATERIAL TO COMPLETE PANEL IN ALL ASPECTS SHALL BE CONSIDERED IN VENDORS SCOPE. FURTHER COMPLETE COMPONENTS FOR SPACE HEATER, PLUG AND SOCKET AND ILLUMINATION SHALL BE IN VENDOR SCOPE ONLY.

1. AIR CIRCUIT BREAKER
2. NUMERICAL RELAYS
3. MCCB
4. MPCB
5. MCB
6. POWER CONTACTOR
7. DP POWER SWITCH
8. POWER FUSES
9. INDICATING LAMPS

FOLLOWING ITEMS ARE IN SCOPE OF VENDOR:

1. CURRENT TRANSFORMERS
2. POTENTIAL TRANSFORMERS
3. CONTROL SUPPLY TRANSFORMERS
4. METERS
5. TRANSDUCERS
6. INTERPOSING RELAYS
7. LOCK OUT RELAYS
8. BREAKER MULTIPLICATION RELAYS
9. DC EARTH FAULT RELAY
10. DC UV RELAYS
11. CONTROL SWITCHES
12. RESISTORS
13. DIODES
14. SPACE HEATERS



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- 15. THERMOSTAT
- 16. CFL
- 17. PLUG & SOCKET
- 18. TERMINAL BLOCKS OF VARIOUS TYPES
- 19. WIRES FOR POWER & CONTROL
- 20. LUGS FOR INTERNAL WIRING
- 21. CABLE TRUF OR BUNCHING
- 22. DIN RAIL
- 23. NAME PLATES, LEGEND PLATES & COMPONENT INDENTIFICATION STICKERS.

AND OTHER ITEMS WHICH ARE REQUIRED FOR COMPLETING PANEL EXCEPT THE ITEMS MENTIONED BY BHEL FOR ISSUING TO VENDOR.