


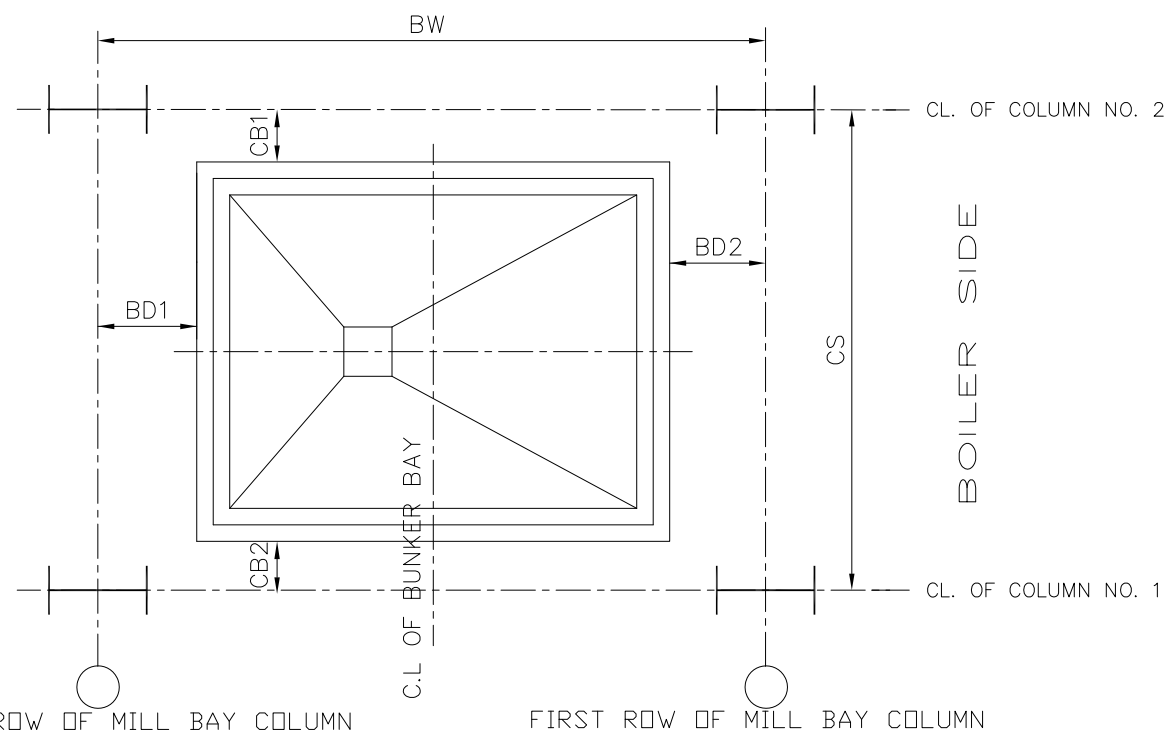
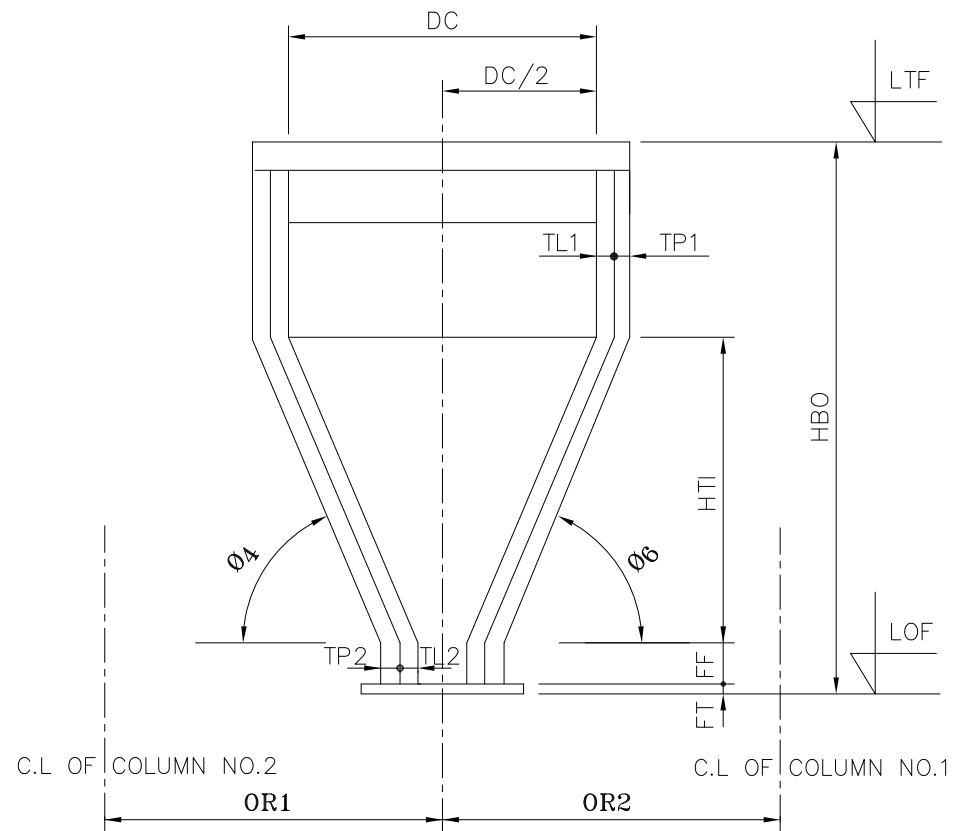
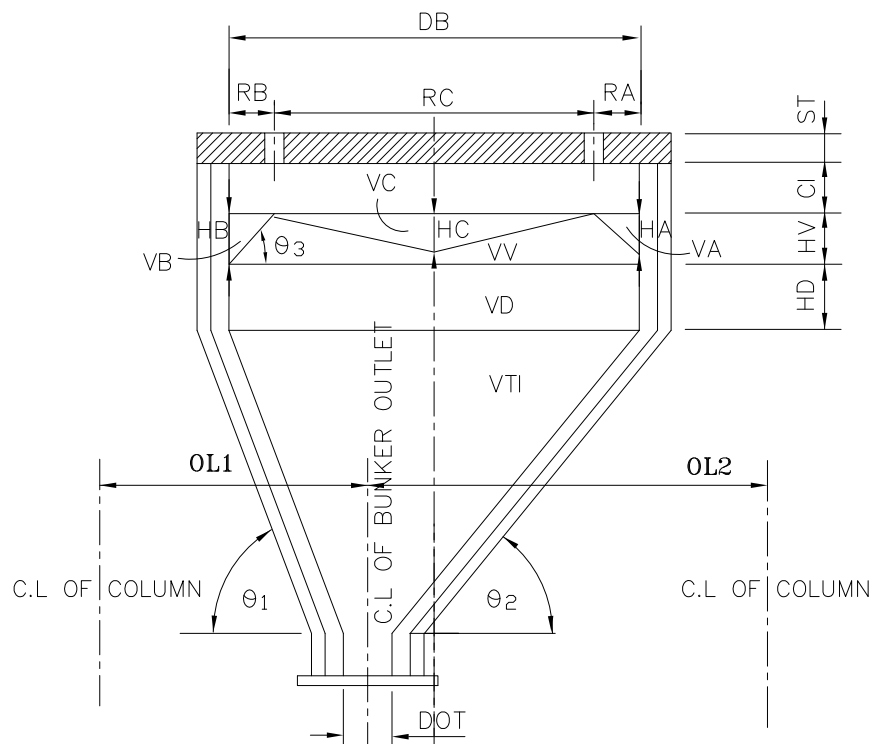


Conveyor package - Queries & replies - 4x270MW, Bhadradi project.

| S.No. | Reference Clause | Bidder's Queries | BHEL Replies, Dtd: 04/06/15 |
|-------|---|---|--|
| 1 | <p align="center">Enquiry No.: 77/15/6037/RCD dtd. 25.05.2015</p> | Please refer .BHEL Doc. No: IS-1-DC-691-100-M005 CLAUSE NO. 6 where type of pulley bearing has been mentioned as "Antifriction Double Row Spherical Roller" hence there is no split bearing in the Pulleys. | All underground pulleys and all discharge pulleys of conveyors shall be provided with split bearings, as mentioned in TSGENCO NIT spec. Bidder to quote accordingly. |
| 2 | | Please refer guaranteed power consumption at rated capacity where Flow path 1 & 2 includes both yard conv operating. Please clarify. | Since blending(50:50) is envisaged here, hence both yards conveyors will be operating. |
| 3 | | Please confirm that the trailing cable of Travelling Tripper is in CHP Vendor scope. | Trailing cable for travelling tripper is in Bidder's scope only. |
| 4 | | Confirm the belt width 1400 or 1600 mm | Conveyor belt width shall be 1400mm, as already indicated in Design basis report/CL no. 06 / Pg 10 of 46. Accordingly spares shall be considered. |
| 5 | | - | Bunker sizing calculation is enclosed for your reference. |
| 6 | | Request you to confirm for digital signing of tender document and submission of soft copy of the same in CD. | Ref. addendum-1 issued on Dtd: 02-06-2015. i.e., "Bidders to note that BHEL technical enquiry specification document should be signed and sealed and submitted along with the offer. Other documents given as technical enclosures shall be digitally signed and given in a CD with a covering letter, stating that all the NIT specifications pertaining to this package are acceptable and shall be followed without any deviation." |

| | | | | | |
|---|---|---|-------|----------|----------------|
| 28-05-15 | 01 | Document revised based on comments on Rev00 | RB | RN | GB |
| Date | Rev | Description of Revision | PRPD | CHD | APPD |
|  | TELANGANA STATE POWER GENERATION CORPORATION LIMITED 4x270 MW Bhadradi TPS | | | | |
|  | DESEIN PRIVATE LIMITED CONSULTING ENGINEERS, HYDERABAD | | | | |
|  | BHARAT HEAVY ELECTRICALS LTD POWER SECTOR-PROJECT ENGINEERING MANAGEMENT PLOT NO. 25, SEC-16-A, NOIDA-201301 | | | | |
| JOB No. | 411 | BHEL Doc. No: PE-DC-411-161-A001 | | | Rev: 01 |
| STATUS | CONTRACT | | | | |
| SYSTEM | | COAL BUNKER SIZING | | | |
| TITLE | | BUNKER SIZING CALCULATION | | | |
| PREPARED BY | | RB | SD /- | 02-05-15 | |
| CHECKED BY | | RN | SD /- | 02-05-15 | |
| APPROVED BY | | GB | SD /- | 02-05-15 | |

| Rectangular bunker with two (2) nos. slots | | | |
|--|--|--|-------------|
| Name of project : 4x270 MW Bhadradi TPS | | Rev. no. : 01 | |
| Date : 28.05.2015 | | Ref. drg. no. : RBWF2S.DWG | |
| Description of Item | Data | Description of Item | Data |
| Basis of calculation | BMCR | Elevation of bunker outlet flange in metres, LOF | 25.5 |
| Bulk density of material as per specification in T / M3, BDY | 0.8 | Elevation of bunker / tripper floor in metres , LTF | 50.1 |
| BD1 | 800 | Distance between centre of column and centre of bunker outlet in mm, OL1 | 4616 |
| BD2 | 800 | Distance between centre of column and centre of bunker outlet in mm, OL2 | 7384 |
| CB1 | 315 | Distance between centre of column and centre of bunker outlet in mm, OR1 | 4250 |
| CB2 | 315 | Distance between centre of column and centre of bunker outlet in mm, OR2 | 4250 |
| BW | 12000 | RC (Distance between the centres of 2 slots for tripper filling) | 2280 |
| CS | 8500 | Amount of coal / bunker in tonnes, WWD | 648.6 |
| DB | 10369.7 | Minimum Valley angle of bunker in degrees | 70.06 |
| DC | 7839.7 | | |
| ST | 200 | Wall angle of bunker in degrees, Theta1 | 80.2 |
| CI | 550 | Wall angle of bunker in degrees, Theta2 | 72.48 |
| HV | 3558 | Angle of repose in degrees, Theta 3 | 37.00 |
| HD | 700 | Wall angle of bunker in degrees, Theta4 | 79.86 |
| HTI | 19380 | Wall angle of bunker in degrees, Theta6 | 79.86 |
| FF | 200 | Thickness of liner of rectangular / straight portion in mm, TL1 (SS 304 liner) - (1 m) | 3.15 |
| FT | 12 | Thickness of liner of hopper / inclined portion in mm, TL2 (SS 304 liner) | 3.15 |
| | | Thickness of parent material of bunker top / vertical portion in mm, TP1 | 12 |
| Actual height provided for bunker in metres, HBO | 24.60 | | |
| | | Thickness of parent material of hopper / inclined portion in mm, TP2 | 12 |
| DOT | 914.4 | | |
| Note : | All dimensions are in mm unless otherwise stated. | | |



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|-----------------------|----------|--|------|
| CUSTOMER | | TELANGANA STATE POWER GENERATION CO. LTD. | |
| CUSTOMER'S CONSULTANT | | DESEIN PRIVATE LIMITED | |
| PROJECT | | BHADRADRI TPS, UNIT # 1 TO 4 (4X270MW), MANUGURU, KHAMMAM DISTRICT | |
| DRAWN BY | | BHARAT HEAVY ELECTRICALS LTD POWER SECTOR : PROJECTS ENGG MGMT NEW DELHI | |
| REV | DATE | ALTD | CHKD |
| 01 | 28-05-15 | RB | RN |
| JOB NO. 411 | | STATUS | |
| DISTRIBUTION | | TO NO | |
| REV | | APPRD | |
| 01 | | GB | |
| TITLE | | COAL BUNKER PROFILE | |
| DRG. NO. | | RBWF2S.DWG | |
| SHEET NO | | 1 | |
| NO OF SHEETS | | 1 | |
| NAME | | SIGN | |
| RB | | SD/- | |
| CHECKED | | RN | |
| APPRD | | GB | |
| DATE | | DATE | |
| 02/05/15 | | 02/05/15 | |
| REV | | DATE | |
| 01 | | 02/05/15 | |

REAR ROW OF MILL BAY COLUMN

FIRST ROW OF MILL BAY COLUMN

BOILER SIDE

| Project name: Bharat Heavy Electricals Limited 4x270 MW BHADRADRI TPS | | | | | | |
|--|---|-------------------|-------------------|--|---|--|
| Name of the Bidder: BEVCON WAYORS PVT. LTD., | | | | | | |
| E & I Clarifications/ Confirmation points | | | | | | |
| S.NO | VOL.NO/PART NO/SPECF NO | PAGE NO | CLAUSE/ Serial NO | ENQUIRY SPECIFICATION/REQUIREMENT | DEVIATION/CLARIFICATION | BHEL REPLY |
| 1 | Technical Enquiry Specifications for conveyor Package (BTPS/CHP PKG-B/001 | 14 OF 34&28 of 34 | 9&17 | All HT motors shall be provided RTD & BTD sensors shall be provided for winding and bearing temperature detectors. Bearing temperature for DE and NDE side in x&y direction and 4-20 mA out put. | 1). Please clarify Temperature Transmitters required for Each RTD signals separately (OR) 1 no. temperature transmitter consider for 2 RTD signals in a single RTD winding. 2). Please clarify Temperature Transmitters required for Each BTD signals separately (OR) 1 no. temperature transmitter consider for 2 BTD signals in a single side of X & Y direction. | Please note that Each RTD signal (for bearing as well as winding)shall be wired such that 4-20mA signal shall be available individually for each signal . |
| 2 | Technical Enquiry Specifications for conveyor Package BTPS/CHP PKG-B/001 | 10 OF 34 | 29 | Construction power at one point. | 1.Please clarify the exact location of construction power point. 2. Please provide 3 no's additional construction power point at Bunker location ,crusher house and TP-4 | Bidder to note that Construction power of 415V, 3 phase, 4 wire shall be provided at one point (tentatively either near crusher house or wagon tippler area) from the Distribution Transformer/Distribution Board. Further distribution (including Tariff Meter installation) from the Distribution Transformer/Distribution Board shall be carried out by the Mechanical Vendor as per requirement, refer page 28 of 34/ additional point no 19. Feasibility of additional construction point shall be intimated later. |
| 3 | Technical Enquiry Specifications for conveyor Package BTPS/CHP PKG-B/001 | 29 OF 34 | 1 | AC motors-iv)IE1,IE2 efficiency class as per latest version of IEC-60034 | Please confirm the Motor Efficiency IE1 (or) IE2 | IE2 efficiency class motors are acceptable. |
| 4 | BTPS/CHP PKG-B/001 | 15 OF 34 | 10 | Power DB with control transformers as applicable for single phase 240 v supply for field instruments. | 1. We are considering Power Distribution Boards at each transfer tower ,Crusher House & bunker location, please confirm. | Noted. PDB of ERH shall also be included. Also, any PDBs at any other locations if deemed necessary during detailed engg shall be provided by Bidder without any const implication to BHEL. |
| 5 | BTPS/CHP PKG-B/001 | 15 OF 34 | 14 | Earthing for bidder supplied Equipments and BHEL supplied Ht Motors covered up to this package nearest grid | Please confirm earth grid terminal point for all the equipments and conveyors. | Generally BHEL nearest grid/flat shall run on each floor of buildings/TP's/pump houses. For paddle feeders , Earthing of BHEL supplied equipment and Rail earthing and its connection to nearby BHEL earth-grid/ riser shall be in bidders scope. Bidder shall provide earthing to equipments as mentioned in enquiry specification. |
| 6 | BTPS/CHP PKG-B/001 | 5 OF 34 | 2 | Coal sampling Unit | Please confirm the PLC Redundant type or non- redundant type | PLC shall be micro processor based type. All annunciations/indications required locally and at control room/desk shall be provided by the bidder as per specifications. |
| 7 | BTPS/CHP PKG-B/001 | 16 OF 39 | 15 | field Devices/safety switches | Please clarify the cable connection details for pull cord and belts sway switches(series or Parallel) | Preferably in series. Pull cord & belt sway shall be intelligent type. Also Pull cord and Belt sway switches of all conveyors shall be continuously monitored through "Pull Cord & Belt sway Indication System". |
| 8 | BTPS/CHP PKG-B/005 | 24 OF 34 | O-3 | festoon/flexible cables & festoning arrangement for traveling tripper | Please confirm the traveling trippers power & control feeding point is Center or End Feeding. | BHEL shall terminate the power/control cables from MCC / R/O panel at the fixed power JB/control JB (fixed power JB / control JB in bidder scope) located at the centre of travel length at the bunker floor . Further distribution in bidders scope. |
| 8 | Technical Enquiry Specifications for conveyor Package BTPS/CHP PKG-B/001 | 25 OF 34 | P-7 | Air conditioning for control rooms | please mention the tonnage (or) BTU & Star rating for each control rooms of Air conditioning systems | Tonnage to be furnished by Bidder during detailed engg, based on the room details provided by BHEL (tentative room sizes given along in enquiry. Refer page 25/34 of enquiry spec). However, please note that the final room dimensions shall be intimated only after receiving all load details from the Bidder, during detailed engg. Also BTU and Star rating shall be decided during detailed engg in consultation with customer/Consultant and shall have no commercial implication on BHEL. |
| 9 | Vendor list | | | In Tender document No where is not mentioned the make list for Flexible Trailing cable for CRD & Hoist application | Please provide the vendor list for flexible Trailing cables & CRD. | Please note In the event of order , for the items not covered in the list, bidder shall obtain prior approval for make of the item from TSGENCO/BHEL-LSG before placing order during detail engineering. |

| S.NO | VOL.NO/PART NO/SPECIF NO | PAGE NO | CLAUSE/ Serial NO | ENQUIRY SPECIFICATION/REQUIREMENT | DEVIATION /CLARIFICATION | BHEL REPLY |
|------|--------------------------|---------|-------------------|---|--|--|
| 10 | Vendor list | | | In Tender document Nowhere is not mentioned the make list for local control panel | Please provide the vendor list for local control panel | Also note that Any additon/deletion made by customer/BHEL in the vendor list shall not have any price implication on BHEL. |