

Talwandi Sabo Power Limited

Tender document for Design & Engineering, Supply and Erection of Slurry pumping system from Plant to Ash Dyke

Techno commercial offers are invited from the competitive bidders for the EPC contract i.e. Design, Engineering, Manufacture/Supply, Civil and Structural, Erection, Testing, Commissioning, Demonstration of performance guarantee for Ash Slurry Pump System for pumping ash slurry from Plant to Ash Dyke in 3x660mw thermal power plant at Talwandi Sabo Power Limited, Village Bana Wala, Mansa Punjab.

Introduction to the Present Operating System:

We, Talwandi Sabo Power Limited are operating with 3 x 660 MW Units commissioned in 2014-15. Currently we are having 4 Putzmeister make pumps for pumping of ash (Fly and bottom) from plant to Ash dyke.

Details of Putzmeister Pump is as below:

Capacity	20 - 293 m3/h.
Operating pressure	55 bar
Liquid to be pumped	Slurry
Specific gravity slurry	1600 kg/m3
Solids concentration	Max. 65 %
Temperature Slurry	Max. 50 ° C
Discharge line size	250NBX10mm

Proposed tender document is for supply of Slurry pump for pumping Bottom Ash and Fly Ash mixture from Plant to Ash Dyke. The capacity of Pump should be equivalent Putzmeister pump. Pumps will be fixed after ash mixing tank where fly and bottom ash are mixed with water and from slurry. Mixing is done through an agitator.

Details of ash to be pumped is calculated as below

Fly Ash quantity	200 TPH (Approx.)
Bottom ash quantity	50 TPH
Mixing tank capacity	98m3
Height of Mixing tank	4.5m
SG of Solid	2000-2200
Static head (Dyke height)	40 Mtr
Discharge pipe dia	250 mm
Total bends in line up to dyke	20 Nos.
Distance of discharge pipe	5 Km (nearest point – 3 km)

Talwandi Sabo Power Limited

Tender document for Design & Engineering, Supply and Erection of Slurry pumping system from Plant to Ash Dyke

Brief details of the scope of the proposed Design and Engineering.

A CIVIL:

- 1) Design and Engineering of all the civil system for pumping station.
- 2) Supply of all the drawings of Foundation and other support requirement.
- 3) MOC and Approved Design Mix of All Civil structures to be given along with drawing approval.
- 4) Execution of all Civil works along with supply of all civil material with foundation bolts.
- 5) Soil Testing any required shall be carried out by vendor.

B MECHANICAL:

- 1) Design, Engineering and supply of all the Mechanical Items for pumping station on basis of given requirements.(Discharge line size is fixed to 250NB)
- 2) Supply of approved drawings of all components of slurry pump station including pumps, Motors, Base frame, Valves , NRVs, Pulleys , Couplings , V belts , Guards, strainers , extension bellows , pipe line and companion Flanges Etc.
- 3) Erection of all Supplied components and providing of End connections subjected to approval of drawings.
- 4) If water sealing system is required separate pumps to be given for water sealing system. Seal water is to be taken form service water system, required pipe line and valves should be supplied by vendor.
- 5) Erection of supports/plate forms requited for new piping system
- 6) MOC of all Mechanical items to be given along with drawing approval.
- 7) 250mm pipe required will be supplied by TSPL, Other size pipe line to be supplied by Vendor.
- 8) Tentative BOQ and Scope for service is as under
- 9) Laying of 250mm line from Slurry mixing tank 1and 2 up to suction of Pump – 30m length
- 10)Fixing of 250mm Valves, NRV and Strainer in suction line -03 No valve and 2 NRV/ strainer
- 11)Laying of 250 mm discharge line from pump to existing Putzmeister supply lines in vendor's scope.
- 12)Supply of Bends, Strainer, T Joints, Y joints, Flanges, Reducer and dummy for 250mm and 100mm supply and discharge line.
- 13)Fixing of Valves and Expansion Joints in Discharge line.
- 14)Erection of Pump and Fixing of base of motor and erection of motor.
- 15)Motor rating should be IP55 and above.
- 16)All civil work of pump and motor Foundation to be done as per civil scope of work.
- 17)Foundation bolts in contractor scope.
- 18)Fixing of Water line for flushing of ash – 100 mm size line – 40 m length.

Talwandi Sabo Power Limited

Tender document for Design & Engineering, Supply and Erection of Slurry pumping system from Plant to Ash Dyke

- 19) Erection of water supply 100mm line from LP water to slurry mixing tank – 50m length.
 - 20) Supports required to pipe line and plate form required to be made ready by Vendor.
 - 21) Pump/ Motor / Couplings/ pipe lines/ Valves /Steel required to be supplied by vendor.
 - 22) All pumps to be covered with permanent shed.
 - 23) All consumable and safety items required to complete job in Vendors scope.
 - 24) All Rules of TSPL HR and Safety is applicable.
- All the pipe lengths are tentative are given as per site condition may change with respect to provided drawings of pump station supplier

C ELECTRICAL:

- 1) Design, Engineering, supply of all Electrical items for Pumping station as per system requirement. All the main and auxiliary electrical systems and equipment's' should be designed and selected for continuous operation in heavily dusty atmosphere. Also all equipment and system design/selection should be done in such a way to minimize Electrical Energy Consumption by designing energy efficient system and selection of energy efficient equipment.
- 2) Preparation of electrical power and control circuit diagrams and getting approval from TSPL and any other legal approving authority if any.
- 3) Erection of all supplied equipment and system as per applicable IS or IEEE standards; This includes main motors, its related switchgear panels, LCS panels, Protective grounding system including installation of required earth pit, illumination system installation as required.
- 4) TSPL will be providing one suitable electrical power feeder at 11KV level or 415 V level as required based on total power requirement and accordingly feeder availability at nearby switchgears. All downward power distribution, cabling, switchgear control and other required control and protective systems will be in vendor's scope.

D C&I

- 1) Supply of all associated instruments like flow meter, pressure transmitter, gauges, actuators for gate valve, limit switch assembly, zero speed switches in case of belt driven pump, vibration sensor etc if required.
- 2) Erection of all such instruments on the line as per pre-approved P&ID & Hook up drawing
- 3) Supply and erection of all GI conduit, cable tray, double compression cable glands.
- 4) Supply and laying of all power control & signal cable for instrument and motor control signal which will be hooked up in PLC.
- 5) Supply and erection of local instrument JB if required. All signal and power cable should be provided cable tag. Prior starting the job agency has to get approved the IO list, cable schedule and hook up diagram from TSPL.

Talwandi Sabo Power Limited

Tender document for Design & Engineering, Supply and Erection of Slurry pumping system from Plant to Ash Dyke

- 6) All instruments should be of renowned manufacturer like E&H/WIKA/Rosemount/Yokogawa.
- 7) Agency has to furnish all preconditions/ Trip/ Alarm signal well before the finalizing the project so that feasibility study for incorporating the signals in existing AB PLC logic can be done well in advance.
- 8) For remote operation required logic, interlock & SCADA development in AB PLC under vendor scope.
- 9) For Local operation if HMI (Human machine Interface) required and it will be under vendor scope.
- 10) Vendor has to provide backup, software & Licenses for HMI..
- 11) Test certificate and calibration certificate for all instrument to be submitted by Vendor.

E OTHER TERMS AND CONDITIONS:

1. EPC Contract for design, Engineering, Manufacturing, Supply, civil and structural works.
2. The supplier shall provide all services, equipment, expert services, material and all associated engineering services for the satisfactory performance of the contract.
3. Guarantee of availability of spares for a minimum period of 15 Years in case of technological changes. Insurance and O & M spares for 3 years of trouble free operations at free of cost. Performance demonstration and guarantee parameters.
4. Scope of work mentioned here in tender document is only broad guide lines, but limited to successful completion of the job in all respects till handling over of the plant and demonstration of supply of ash slurry from plant to ash dyke operating regimes during the entire period of the guarantee period and supply of the insurance spares for 3 years trouble free operation i.e. scope of work includes :
 - Design and detailed engineering.
 - Manufacturing and supply of equipment & plant-imported and indigenous (including commissioning spares)
 - Freight and insurance, sea-worthy packing.
 - Civil & structural works, erection, testing and commissioning of the plant including compliance/clearance/approvals of all statutory requirements
 - Supply of insurance and O&M Spares for trouble free operation of 3 Years of Operations.
 - Port handling, customs clearance, inland transportation up to project site including insurance.
 - Insurance coverage shall be till handling over of the plant which includes surrounding property insurance.
 - Supply of initial fills and lubricants till handling over of the plant, supply of specials tools / tackles, lifting equipment and machinery required for smooth operations and maintenance. Supply of licensed software where ever applicable.
 - Handling and erection of complete equipment.

Talwandi Sabo Power Limited

Tender document for Design & Engineering, Supply and Erection of Slurry pumping system from Plant to Ash Dyke

- Start-up and commissioning
- Demonstration of Performance Guarantees.
- Training of purchaser's personnel at site and at manufacture's premises, wherever necessary.
- Augmentation / extension of the infrastructures and utilities as required.
- Agency to supply the test procedure and relevant guarantees as per the applicable international standards along with
- drawings and documentation:
 - Party shall submit all the drawings for the proposed modifications along with QAP with recommended sub vendor list, manufacturing schedule and all other relevant data within 30 days from the date of release of loi i.e before the kick off meeting.
 - All the drawings and documents shall be submitted for the approval of engineer in charge TSPL, however approval of EIC will not be governing the manufacturing process and hence will not be having any binding on the contractual deliveries / obligations.
 - All standard SOPs and SMPs must be submitted by vendor in both hard and soft form (min three copies)
- Technical details of the existing lay out the ash slurry system are annexed here with.

ERECTION AND COMMISSIONING:

Erection of all equipment as indicated under mechanical, electrical and civil including all erection materials. Testing and commissioning of equipment and systems.

TOOLS AND SPARES: commissioning spares, special tools and tackles.

Vendor will_Supply of recommended spares for one year of trouble free operations.

PERFORMANCE GUANTEE:

- Supplier to submit the Test procedure as per the relevant international standards for the approvals of TSPL / Representative of TSPL prior to start of commissioning activities.
- LD-Delivery-
- Penalties on Performance :
- If the agency fails to demonstrate the guaranteed performance then equipment will be rejected and agency shall supply the equipment at free of cost.

BIDDER SHALL SUBMIT THE FOLLOWING DOCUMENTS ALONG WITH THE OFFER:

Talwandi Sabo Power Limited

Tender document for Design & Engineering, Supply and Erection of Slurry pumping system from Plant to Ash Dyke

1. Project Management Philosophy.
2. Schedule of the Project – In MSP including manufacturing schedule
3. Quality assurance plan right from concept to commissioning.
4. Sub- vendor list.
5. Credentials of the vendors and their financial back ups.
6. Experiences on identical / similar projects.
7. Details of the customers and contact details.
8. Current orders in hand and the projects executed in last 3 years.

TIME FRAME OF THE PROPOSED CONTRACT;

1. Collection of the data and inputs required from TSPL: * days from the date of receipt of Tender documents by mail.
2. Submission of the Techno commercial Offers in sealed documents: * Days from the data collections.
3. Total Time period for the execution:
4. Tentative completion Date :

Based on the requirement