POWER SECTOR NORTHERN REGION

(CFX DEPARTMENT)

DOCUMENT COVER SHEET

NAME OF CUSTOMER / PROJECT : **BHEL -2 X 500 MW ANPARA-D THERMAL POWER STATION**

:

JOB NO. : **001**

DOCUMENT NO. : **PE-DC-248-CFX- 001**

SYSTEM : **MECHANICAL**

TITLE : **DESIGN MEMORANDUM – ROAD WEIGH BRIDGE**

REV.	**DATE**	**DETAILS OF REVISION**	**INITIAL**	**SIGN**	**INITIAL**	**SIGN**	**INITIAL**	**SIGN**
			Prepared		**Checked**		**Approved**	

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1.0 INTRODUCTION

This document provides the design basis for road weigh bridge for the Power Plant and associated auxiliaries / facilities of 2 x 500 MW Anpara-D Thermal Power Project. For Project location refer page 12.

2.0 CODES AND STANDARDS

IS: 1436 - Weigh Bridge Specification.

IS: 9777 - Data sheet for selection of weigh bridges for bulk handling equipment.

3.0 SYSTEM DESCRIPTION

All the Incoming materials shall be received in the plant by road trucks / tractor trailers. The trucks / trailers are weighed with material before unloading in stockpile area in the power plant and tare weighed after unloading. The weighbridge consists of platform with load cells, personnel computer with Printer and UPS. The weigh bridge shall be of pit-less type and capacity of weigh bridge shall be 60 Tonnes having platform width as 16000 mm x 3000 mm

4.0 DESIGN REQUIREMENTS

a) The weigh bridge shall be suitable for 24 hrs of operation per day.

b) The weigh bridge shall be suitable for operation during rainy season.

c) The weigh bridge shall be capable of withstanding dynamic load imparted by the vehicle movement and braking.

d) The weigh bridge equipment shall be electronic load cell type.

e) Load cells

The Load Cells shall be of compression or shear type, indigenously manufactured, shall operate on strain gauge principle and hermetically sealed and must be vibration resistant. The number of load cells to be used should be minimum 4 nos. with each load cells having maximum safe over load protection capacity. Capacity of each load cell shall be equal to 2 times the rated weight divided by number of load cells. Suitable compensation must be built in for temperature variation. Overall system accuracy must be better than (±) 0.25% of actual weight. The system accuracy shall be repeatable. The fixing of the load cells must be such as to facilitate easy access for replacement in case of fault. Load cell should conform to IP 68 protection and have overload parameters.

5.0 WEIGHT INDICATOR AND CONTROLS

a) Digital weight indicator shall be provided.

b) Personal computer including necessary software, Printer and Uninterrupted power supply with half an hour backup facility shall be provided.

c) Over capacity annunciations shall be provided.

d) Weigh bridge indicator shall be provided.

6.0 SPECIFIED DESIGN DATA

The specified design data for various components of Road Weighbridge are furnished below :-

SL.NO.	DESCRIPTION	DATA
1.0	Weigh bridge type	Electronic pit less type Road Weigh Bridge – **Mobile Type with Steel Ramp**
2.0	Quantity	One (1) no.
3.0	Weighing capacity	60 MT with 16000 x 3000 mm platform size of anti-skid steel.
4.0	Type of trucks / trailers for weighment	6 Wheeler - Tractor + 8 wheel or 4 wheel - Trailer
5.0	Load cells type	Compression type or shear beam type hermetically sealed & vibration resistant
6.0	Number of load cells per weigh bridge	Minimum 4 Nos.
7.0	Rating of each load cell	Minimum 2 times the rated weight divided by number of load cells
8.0	Digital weight indicator	Shall be provided to display weight.
9.0	Personal computer (PC) configuration	Pentium – IV CPU, 128 MB RAM, 40 GB Hard disk drive, 1.4 MB Floppy disk drive with operating system, 15 inch colour monitor, key board and mouse.
10.0	Backup capacity of UPS	Half an hour backup capacity shall be provided.
11.0	Printer	80 columns, 240 cps, dot matrix
12.0	Overall system Accuracy required	± 0.25 % of actual weight.
13.0	Load cell protection	IP 68
14.0	Accuracy recheck	In-built required.
15.0	Location of Weight indicator / PC / Printer	In the control room near weigh bridge.
16.0	Platform	Anti skid steel
17.0	Weighing equipment in the control room	Desk top type and compact, should be suitable for dusty, hot, humid conditions without an air

SL.NO.	DESCRIPTION	DATA
		conditioner.
18.0	Indicator	kg or tonnes
19.0	Auto calibration	Calibrations check facility to be provided.
20.0	Annunciations	Shall be provided for over capacity.
21.0	Control Room	Shall be provided for installing weigh bridge indicator, PC, printer etc.
22.0	Weighment & printouts	a) Name of the contractor b) Date and Time c) Serial Number d) Product Code e) Customer Code f) Truck Registration Number g) Gross Weight h) Tare Weight i) Net (pay load) Weight j) Signature Weigh slip after every weighment (i.e. for item no. g and h) weighments. Built in clock shall be provided for date and time to printer.
23.0	Painting of weigh bridge	Surface preparation : Degreasing and Mech. Cleaning with wire brushing/hand tool (Sa1/St2/St3 as applicable)
		Primer : Two (2) coats of HB Zinc Phosphate (alkyd Medium) as per IS:2074, DFT : 35-45 microns per coat
		Finish Paint : Two (2) coats of Synthetic enamel (alkyd med.) as per IS:2932, DFT - 20 – 25 microns per coat
		Total DFT : 110 – 140 microns
		Make of paint : BERGER / ASIAN PAINTS / SHALIMAR / JENSON & NICHOLSON.
		Final colour of paint : As per manufacturer's standard.
24.0	Spares	E& C Spares and O&M Spares for 2 years to be recommended
25.0	Special Maintenance Tools and tackles	To be supplied by Bidder

7.0 SCOPE OF SUPPLY :

a) All materials in this contract will be new.
b) One complete weigh Bridge Platform with Load Cells , Digital Weight Indicator and Totaliser.
c) Provision of Interfacing with PC to be supplied with necessary software and user manual.
d) Printer and UPS with half Hour On Line Back Up.
e) Weigh Bridge will be Tested for full Capacity and certified to be accurate before dispatch . After erection at site , Bidder shall arrange for inspection of Weigh Bridge by Inspector of Weight and measures and get the weighbridge stamped by him . The requisite fees for this stamping will be paid by the vendor. The requisite test loads will also be arranged by the Bidder .
f) All necessary cables from the load cell to Digital weight Indicator, Totaliser ,and Printer.
g) All other accessories and limits required to complete the weighing system
h) Final paint to be applied after erection
i) Complete Transportation , erection supervision , Testing and commissioning of WeighBridge.
j) All required Civil , Mechanical and Electrical drawings will be submitted by the Vendor. Civil works is excluded from the scope of works
k) Electrical Power of 240V AC +/- 10% , 50 Hz will be made available in the Weigh Bridge Control Room.
l) All consumables for Start Up of the Weigh Bridge will be provided by the Bidder.
m) Quality Plan is to be submitted by Bidder.
n) The provisions outlined in the International or Indian Codes shall be generally used as a guide for all test procedures , unless specified in the Detailed Technical Specifications

8.0 DRAWINGS / DATA DOCUMENTS TO BE SUBMITTED WITH THE TENDER:

a) List of Drawings / documents to be attached with Technical Bid .
b) Comprehensive Write Up and Brochure on details of Manufacturing and Testing facilities of the Bidder
c) GA Drawing showing various dimensions / data and minimum space requirements on all sides of platform weigh bridge.
d) Civil arrangements and requirements.
e) List Of Sub Vendors
f) List Of Recommended Spares for 2 year operation
g) Duly Filled up Technical Data sheet

h) Time schedule for design , manufacturing, shop testing , delivery , erection , site testing , commissioning and trial operation

9.0 DRAWINGS / DATA DOCUMENTS TO BE SUBMITTED BY THE SUCCESSFUL BIDDER :

a) GA Drawing showing various dimensions / data , cross section and clearance requirements on all sides of platform weigh bridge for Platform , Load Cell, Load Cell Brackets , Controls and Indicators
b) Single Line Diagram for Enclosure ad sealing System
c) Civil arrangements and requirements.
d) GA drawing of required Control Room
e) Electrical Drawings
f) Complete Bill Of Material with spare part ordering detail
g) Material Test certificates
h) Clearance Certificate for load cells from Chief Controller of Explosives or Control Mining Research Institute , Dhanbad
i) Instruction Manuals –Installation Manual , O& M Manual
j) List Of Sub Vendors
k) List Of Recommended Spares for 2 year operation

10.0 NUMBER OF COPIES OF DRAWINGS / DATA DOCUMENTS TO BE SUBMITTED BY THE SUCCESSFUL BIDDER

a) 2 sets of Drawings and Documents is required to be submitted with the tender
b) 3 sets of Drawings and Documents is required to be submitted for approval by the successful bidder.
c) 5 sets of Drawings and Documents is required to be submitted as AS BUILT drawings with 3 CDs

TECHNICAL DATA SHEET

SL.NO.	DESCRIPTION	DATA
1	Weigh bridge type	
2	Quantity	
3	Platform Size (mm x mm)	
4	Weighing capacity (MT)	
5	Safe Overload Capacity (MT)	
6	Guaranteed Accuracy of Weighing	
7	Accuracy Repeatability	
8	Load cells type	
9	Number of load cells per weigh bridge	
10	Rating of each load cell	
11	Type Of protection of Load Cell	
12	Digital weight indicator Type	
13	Digital weight indicator Details	
14	Printer Type	
15	UPS Details	
16	UPS Back Up Time	
17	Printer Details	
18	Personal computer (PC) Type	
19	Personal computer (PC) Details	
20	Control Room Size required (m x m x m)	
21	Other Features	
22	GA Drawing Enclosed (Y / N)	
23	Other Features	

SCHEDULE OF GUARANTEE

SL.NO.	DESCRIPTION	DATA
1	Weighing capacity (MT)	
2	Platform Size (mm x mm)	
3	Accuracy (kg)	

SCHEDULE OF DEVIATIONS TECHNICAL / COMMERCIAL

SL.NO.	PAGE NO / SECTION NO / CLAUSE NO	SPECIFIED	DEVIATION

1. Attach more sheets , if required .
2. Deviations to be mentioned in this schedule only .
3. Deviations listed elsewhere will not be considered .

PRICE SCHEDULE

SL.NO.	DESCRIPTION	PRICE in FIGURES	PRICE in WORDS
1	Price of Main Equipment including Commissioning Spares Equipment FOR WORKS		
2	Price of 2 years Recommended Spares		
3	Price for Freight to Anpara Site		
4	Price For Erection Supervision including Weight Certification		
	TOTAL		

PROJECT SYNOPSIS

1. Name of the Owner : UTTAR PRADESH RAJYA VIDYUT UTPADAN NIGAM
2. Address : ANPARA-D THERMAL POWER STATION
   District : SONE BHADRA
   UTTAR PRADESH
3. Installed capacity : New project
4. New Installation : 2 x 500 MW
5. Nearest Railway station : Singrauli – 20 km
   Renukoot - 40 km
   Varanasi - 200 km
6. Nearest City : Varanasi -200 km
7. Nearest Airport : Varanasi – 200 km
8. Maximum Tempreture : 48 Deg C
9. Minimum tempreture : Appx 2 Deg C