


1203059/2022/PS-PEM-CIV

	PROJECT: 2X660 MW TALCHER TPP STAGE-III EPC	DOCUMENT NO. PE-TS-497-600-C031
		REV.NO. 0
	TECHNICAL PREQUALIFYING REQUIREMENT FOR WIND TUNNEL STUDY OF CHIMNEY	DATE 14-12-2022
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**TECHNICAL PREQUALIFYING REQUIREMENT OF BIDDERS
FOR
WIND TUNNEL STUDY OF CHIMNEY**

DOCUMENT NO. PE-TS-497-600-C031




BHARAT HEAVY ELECTRICALS LIMITED
Project Engineering Management
PPEI BUILDING, HRD & ESI COMPLEX
Plot No. 25, Sector 16A
NOIDA, U.P. – 201301

1203059/2022/PS-PEM-CIV

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Project Title	:	2X660 MW TALCHER TPP STAGE-III EPC	
Job No.	:	497	
Document No.	:	PE-TS-497-600-C031	
Building / System	:	CHIMNEY	Sheet
Subject	:	TECHNICAL PREQUALIFYING REQUIREMENT OF BIDDERS FOR WIND TUNNEL STUDY OF CHIMNEY	

Rev. No.	Particulars	Prepared By	Checked By	Approved By	Remarks
0	Name	MTA	LP / SP	CPK	
	Sign				
	Date	14.12.2022	14.12.2022	14.12.2022	

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**TECHNICAL PREQUALIFYING REQUIREMENT FOR WIND
TUNNEL STUDY OF CHIMNEY**

1. Bidder should have successfully executed Wind Tunnel model and testing on aero-elastic model of a structure, of minimum height 100m, for any one of the following in the last seven years from the latest date of bid submission
 - a) One (1) work of value not less than 11,20,000 Rs (eleven lakh twenty thousand rupees) Ex-works price.


OR

 - b) Two (2) works each of value not less than 7,00,000 Rs (seven lakh rupees) Ex-works price.

OR

 - c) Three (3) works each of value not less than 5,60,000 Rs (five lakh sixty thousand rupees) Ex-works price.

2. Bidder should have their own Wind tunnel testing facility which shall be suitable for testing on model having a scale not less than 1:250.

	PROJECT: 2X660 MW TALCHER TPP STAGE-III EPC TECHNICAL SPECIFICATIONS FOR WIND TUNNEL TEST OF RCC CHIMNEY	SPECIFICATION NO. PE-TS-497-620-C001	
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2X660 MW TALCHER TPP STAGE-III EPC

TECHNICAL SPECIFICATIONS FOR WIND TUNNEL TEST OF RCC CHIMNEY

DOCUMENT NO. PE-TS-497-620-C001
(REVISION 00)



BHARAT HEAVY ELECTRICALS LIMITED
Project Engineering Management
Power Sector, Plot No. 25, Sector 16A, Noida (U.P.)-201301

	PROJECT: 2X660 MW TALCHER TPP STAGE-III EPC TECHNICAL SPECIFICATIONS FOR WIND TUNNEL TEST OF RCC CHIMNEY	SPECIFICATION NO. PE-TS-497-620-C001	
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SECTION 'C'

SPECIFIC TECHNICAL REQUIREMENTS

1. General Requirement

- 1.01. Bidder shall conduct wind tunnel study with a scaled down model of chimney in an established wind tunnel to study the along and across behaviour of the subject chimney under wind loading for the cases as mentioned in Table-1.

Table-1

<u>Sl.No</u>	<u>Cases</u>
1	STAND ALONE CHIMNEY, WITHOUT FLUE LINER
2	STAND ALONE CHIMNEY, WITH FLUE LINER
3	INTERFERENCE CASE WITH ADJACENT STRUCTURES, WITHOUT FLUE LINER
4	INTERFERENCE CASE WITH ADJACENT STRUCTURES, WITH FLUE LINER

2. Subject project consists of one RCC chimney of 275m height.


- 2.01. For every case of wind tunnel study, following parameters shall be derived and furnished in a detailed report.

- I. Natural frequency
- II. Bending Moment (at minimum four elevations)
- III. Shear Force (at minimum four elevations)
- IV. Deflection (at peak)

- 2.02. Dimensional analysis of subject chimney vis a vis the model, shall be conducted to find the various dimensional parameters.

This dimensional analysis shall be furnished in the detailed study report.

3. Wind Loading:

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Wind loading will be in accordance with Indian Standard Code IS: 875 (Part 3) for a basic wind speed of 50 m/sec (K1-1.08, Terrain Cat-2). Across-wind loads due to vortex shedding shall be considered in study as per velocity range defined in IS 4998-2015.

4. Material of construction

The bidder shall prepare an aero-elastic model of the chimney with fibre reinforced plastic or any other suitable material reflecting dynamic properties of subject chimney, whose properties may be dimensionally correlated with the grade of concrete of the subject chimney.

5. Bidder shall simulate the subject terrain in the wind tunnel, as per that given in IS 875 Part (III). Aero elastic model of chimney along with rigid model of all major structures (for interference case only) which are within the distance of "20 times the diameter of the chimney at the 2/3 height of the chimney" all around shall be considered in the study.

6. The bidder shall simulate inside the wind tunnel actual prototype flow conditions for the study. The scale of the model shall be such that the boundary conditions (side wall and roof) in the wind tunnel shall not alter the targeted flow conditions. However, the scale of the model shall not be less than 1:250

7. Report

After conducting the wind tunnel test, Bidder shall submit the detailed study report (in soft copy) for review of BHEL/Customer. Final detailed study report after incorporation of BHEL/Customer observations shall be submitted by the bidder (in soft copy and 3 hard copies).