



Salient Technical Features for Renovation & Retrofitting of ESP at Bhilai

Salient Technical Features of the works covered in IFB no. CC/C&M/C-497 dated 19/12/2017 are mentioned below. These Salient Technical Features are mentioned only to facilitate prospective bidders to prime-facie understand the requirements under the tender and shall not in any way limit or alter the Scope of Work and Technical Features / Specification of Works covered in the Bidding Documents. Detailed provisions in regard of Scope of Work and Technical Features / Specification of Works, contained in the bidding document shall be final and binding.

Introduction

NSPCL, BHILAI PP-II Captive power plant comprising of 3 units (2X30 MW + 1X14 MW BPTG) were commissioned during the period 1982-85. The steaming capacity of each boiler along with its auxiliaries is 150 TPH which correspond to 30 MW load. NSPCL, BHILAI PP –II was supplied with two pass ESPs from BHEL. Subsequently, additional one pass was installed through M/s Andrew Yule. Each BHEL pass consists of 3 fields and that of Andrew Yule pass 4 fields.

The steam generators are balanced draft, pulverized coal fired type. CO gas is used in conjunction with pulverized coal firing during start up and at low loads for warm up and flame stabilization. Each steam generator is provided with three dedicated Electrostatic Precipitator set as stated above comprising of separate independently operated gas streams housed in independent casings

Location and Approach

Project Location	(i) Place: Bhilai (ii) District: Durg (iii) State: Chattisgarh
Latitude and Longitude of project location	21 Deg 11' (North) 81 Deg 26' (East)
Nearest Railway Station	Bhilai
Distance of project location from the Railway station	4 KM (Approx.)
Nearest Major Town	Bhilai
Distance of the town from the Project site	10 KM
Distance of Raipur Airport from the Project Site	35 KM (Approx.)
Distance from Nearest Highway NH – 6 Point to the site	5 KM

BRIEF SCOPE OF WORK

The broad scope of work consists of the following:

- (a) Modification of existing ESP to achieve the targeted emission level 50 Mg/Nm³ from the present operating emission level to meet pollution control norms through retrofitting / renovation with additional collection area:



(Option – I: Renovation & Retrofitting of existing ESPs with rigid discharge frame work type design) Renovate the existing BHEL make ESP passes to enhance the collecting area through redesign / re-engineering work like increasing its height, increasing the collecting electrode spacing, adding additional field in series (if required) in the available space and Install new additional ESP similar to the renovated ESP to achieve the targeted emission level.

OR

(Option – II: Renovation & Retrofitting of existing ESPs in combination of rigid discharge frame work type ESP with Moving electrode plate type design ESP (MEEP)) Renovate the existing BHEL make ESP passes to enhance the collecting area through redesign / re-engineering work like increasing its height, increasing the collecting electrode spacing, adding additional field in series (if required) in the available space and converting last one / two fix field of existing ESP to MEEP field and Install new additional ESP similar to the renovated ESP consisting of fix field and MEEP field to achieve the targeted emission level.

- (b) In case of U#1 and U#3, existing Andrew Yule ESP pass shall be completely dismantled and new ESP pass shall be erected in place of it. In the case of unit #2, new ESP pass shall be erected in the space available between U#1 and U#2 and existing Andrew Yule pass shall be completely dismantled.
- (c) All Civil works including foundation for new fields of existing ESP & new parallel ESP, Construction of new ESP SWGR room.
- (d) Supply, installation and commissioning of electrical system including two nos. (02) nos. 6.6kV/415V Dry type Transformers, associated power, control & instrumentation cables, switch gear and protection
- (e) Associated instrumentation work.
- (f) Replacement of internals of existing ESP and E&C of modified ESP and new ESP.
- (g) CFD and Physical modeling of New as well as modified ESP.
- (h) Supply of item/component as required.
- (i) Supply of Mandatory spares as detailed in technical specification.
- (j) Services like dismantling / repair / overhaul/retrofitting of various other components / systems / sub-systems as may be required, to ensure sustained, safe commercial operation, and to meet stipulated design / guarantee requirements and to meet the overall objectives of retrofitting of ESP.
- (k) The scope of work also includes erection of the total equipment, commissioning, gas distribution testing, trial operation, Performance guarantee testing etc.