



**BHARAT HEAVY ELECTRICALS LIMITED**  
**PROJECT ENGINEERING MANAGEMENT, NOIDA**

Date-18-Sep-19

**CORRIGENDUM- 08**

|                   |          |                                      |
|-------------------|----------|--------------------------------------|
| <b>PROJECT</b>    | <b>:</b> | <b>1X660 MW BHUSAWAL TPS UNIT 06</b> |
| <b>PACKAGE</b>    | <b>:</b> | <b>PRETREATMENT PLANT</b>            |
| <b>ENQUIRY NO</b> | <b>:</b> | <b>E-6274/2019 Dated. 30.07.2019</b> |
| <b>SUBJECT</b>    | <b>:</b> | <b>PRE- BID CLARIFICATION</b>        |

| Type of Corrigendum     |                                     |                          |                          |
|-------------------------|-------------------------------------|--------------------------|--------------------------|
| Technical Corrigendum - | <input checked="" type="checkbox"/> | Commercial Corrigendum - | <input type="checkbox"/> |

In reference to the above mentioned tender enquiry for **PRETREATMENT PLANT** package

Please note the following.

1. Reply for Pre-bid queries attached with this corrigendum shall be considered as part of NIT

All the other terms and conditions of the tender enquiry remain unchanged. All the bidders are requested to quote accordingly.

Yours faithfully,

For and on behalf of BHEL

R P Yadav  
Dy. Manager

**Pre-Treatment Plant  
1X660 MW Bhusawal TPP  
PRE BID CLARIFICATION**

| Sr. No | VOLUME                    | Section | CLAUSE NO.      | PAGE NO.  | SPECIFICATION REQUIREMENT                                       | CLARIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | REASONS FOR CLARIFICATION                                        | BHEL Reply                                                                               |
|--------|---------------------------|---------|-----------------|-----------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| 1.     | Mahagenco Doc. Vol-III-E1 | 2       | 13              | 41        | Raw Water Analysis                                              | <p>a) Under Cl. No. 13, it is stated that Turbidity could be up to 10,000 ppm in monsoon season.</p> <p>b) Stated Analysis is of Raw Water being received at plant storage tank. It shall undergo 24 hrs settlement cycle and hence settled water turbidity of Raw Water to Cascade Aerator shall be substantially less. As consideration of Input Turbidity to Cascade Aerator shall determine sludge handling facilities sizing. We request turbidity / TSS design criteria be defined clearly in specification so that all are at one platform.</p> <p>We suggest that considering ground realities, input turbidity to treatment Plant during monsoon season could worst be 200 ppm after settlement during monsoon season and that too it shall be a very rare occasion.</p> <p>We suggest that sludge handling should be conservatively designed for 100 PPM turbidity ( 50 PPM TSS )</p> | For proper engineering; better operation of Plant to be offered. | Bidder to follow BHEL technical specification no PE-TS-415-158A-A001 for water analysis. |
| 2.     | Mahagenco Spec.           | --      | 3.1.9           | 32 of 313 | Specs. Calls for provision of Twin Bed Filters for DM Stream    | Specs. Calls for provision of Twin Bed Filters. Flow rate thru each Filter in case of DM stream units being only 100 cu.m/ hr, provision of Twin Bed configuration shall not only be very un-economical to build. Designer would not be able to meet minimum specified L to W ratio 1.4 for better back washing process.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                  | Bidder to follow BHEL technical specification.                                           |
|        | BHEL Data Sheet           | --      | 22.2            | 92        |                                                                 | We suggest single section of Filter for DM Stream be accepted for better Design and operational consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                  |                                                                                          |
| 3.     | BHEL Data Sheet           | --      | 22.3.1 & 22.3.3 | 92        | Nett Output Guaranteed flow for non DM stream as well DM Stream | Specified Net guaranteed output in each service cycle ( 43632 / 2400 m3/day) do not match with specified normal service flow rates ; number of operating units ; read with maximum Back wash waste water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | For better understanding of requirement                          | System shall be designed as per BHEL technical specification.                            |

|       |                      |    |                                       |           |                                                        |                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------|----------------------|----|---------------------------------------|-----------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                      |    |                                       |           |                                                        | consumption.                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. a) | BHEL Data Sheet      | -- | 22.3.1 ;<br>22.4.1                    | 92        |                                                        | Design Capacity of each Filter is stated as 250 M <sup>3</sup> / hr. and Surface flow rate is stated as 5 M <sup>3</sup> / M <sup>2</sup> / hr.<br>However, under cl.33 it is also stated that Surface flow rate should not exceed 5 M <sup>3</sup> / M <sup>2</sup> / hr. while handling 20% overload.                                                                               | Intent to ask for Clarification is to understand Purchasers intention as interpretation of specification has cost implication on Mech and Civil works. | Specification requirements are clear, Design capacity of each filter is 250 M <sup>3</sup> /Hr and surface flow rate should not exceed 5 M <sup>3</sup> / M <sup>2</sup> / hr. while handling 20% overload.                                                                                                                                                                                                                           |
| b)    | Mahagenco Spec Sheet | 2  | cl. 3.19[<br>Vol-III-<br>E-1<br>Sec-2 | 33 of 313 |                                                        | Specification is contradictory. Are we to consider Surface rate as 5 M <sup>3</sup> / M <sup>2</sup> / hr. while sizing the Filters while handling normal design flow or Filter area is to be determined considering normal flow as design flow plus 20 % as overload.                                                                                                                |                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|       |                      |    |                                       |           |                                                        | As per general practice Filters are sized for design normal flow rate read with design Surface Rate. To allow Filters to function during overload, Filter hydraulic is designed to consider 20% overload.                                                                                                                                                                             |                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5.    | BHEL Data Sheet      | -- | 22.8.4                                | 94        | Back Wash Tank Capacity for Non DM Stream Filter House | While specifying Back wash rate of 35 M / hr, it does not specify Back wash period or Back Wash Tank capacity for either stream.<br><br>Whether Waste Water Tank capacity should be designed to hold one Back Wash requirement or two Back Wash requirement considering provision of 8 Nos working Filters.<br>Back Washing to be done in how many shifts has also not been specified |                                                                                                                                                        | Please refer to the technical specification Vol-IIB Sec C1 clause no 9 (Salient Design Feature) pt no 9 where back wash overhead tank capacity selection criteria is mentioned as<br><br>"The capacity of the overhead filter backwash water tank shall be sufficient to cater backwash requirement of Gravity Filter unit + 20% margin. The tank shall be provided with level indicator, level switches, vent, drain, overflow etc." |