

| CLAUSE NO.                                                                    | INTENT OF SPECIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | एनटीपीसी<br>NTPC                                     |                         |              |               |  |                                           |  |  |    |                          |                    |   |     |                                                                     |                    |    |  |  |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-------------------------|--------------|---------------|--|-------------------------------------------|--|--|----|--------------------------|--------------------|---|-----|---------------------------------------------------------------------|--------------------|----|--|--|
|                                                                               | <table border="1"> <thead> <tr> <th>Sl. No.</th><th>Drawings Title</th><th>Drawings No.</th><th>No. of Sheets</th></tr> </thead> <tbody> <tr> <td></td><td>Enclosure, purging scheme, DP transmitter</td><td></td><td></td></tr> <tr> <td>9.</td><td>Interfacing of actuators</td><td>0000-999-POI-A-063</td><td>1</td></tr> <tr> <td>10.</td><td>Interfacing of field instruments/Electrical interface/PLC Interface</td><td>0000-999-POI-A-065</td><td>15</td></tr> </tbody> </table> <p><b>(C) ELECTRICAL</b></p> <p>(1) Electrical single line diagram for FGD Package : Drg No. 0011-109-POE-J-001/A-E</p> <p><b>Note :</b> All the above drawings are indicative of Employer's requirements to enable the Bidder to make a suitable offer. All variations/alternations shall be clearly brought out in the technical deviation schedule with implications, if any. Such variations may be acceptable, after assessment of its implication and shall be subjected to the Employer's approval. However, the flexibility of operation and maintenance desired by the schemes and layouts shall be binding.</p> <p>Electrical drawings (except Electrical single line diagram) are attached with respective Electrical Chapters in Part b, Section VI.</p> | Sl. No.                                              | Drawings Title          | Drawings No. | No. of Sheets |  | Enclosure, purging scheme, DP transmitter |  |  | 9. | Interfacing of actuators | 0000-999-POI-A-063 | 1 | 10. | Interfacing of field instruments/Electrical interface/PLC Interface | 0000-999-POI-A-065 | 15 |  |  |
| Sl. No.                                                                       | Drawings Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Drawings No.                                         | No. of Sheets           |              |               |  |                                           |  |  |    |                          |                    |   |     |                                                                     |                    |    |  |  |
|                                                                               | Enclosure, purging scheme, DP transmitter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                      |                         |              |               |  |                                           |  |  |    |                          |                    |   |     |                                                                     |                    |    |  |  |
| 9.                                                                            | Interfacing of actuators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0000-999-POI-A-063                                   | 1                       |              |               |  |                                           |  |  |    |                          |                    |   |     |                                                                     |                    |    |  |  |
| 10.                                                                           | Interfacing of field instruments/Electrical interface/PLC Interface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0000-999-POI-A-065                                   | 15                      |              |               |  |                                           |  |  |    |                          |                    |   |     |                                                                     |                    |    |  |  |
| 4.00.00                                                                       | <b>QUALIFYING REQUIREMENTS FOR EQUIPMENTS/SYSTEMS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                      |                         |              |               |  |                                           |  |  |    |                          |                    |   |     |                                                                     |                    |    |  |  |
| 4.01.00                                                                       | <p><b>Provenness criteria for critical equipment, auxiliaries, systems and bought out items:</b></p> <p>The Bidder / Bidder's sub-vendor(s) is required to meet the provenness criteria and/or qualification requirement for critical equipment, auxiliaries, system and bought out items as per criteria stipulated below:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                      |                         |              |               |  |                                           |  |  |    |                          |                    |   |     |                                                                     |                    |    |  |  |
| 4.01.01                                                                       | <p>Booster Fans, Slurry Recirculation Pumps, Oxidation Blowers, Wet Limestone Grinding Mills, Slurry Pumps, Agitators &amp; Vacuum Belt Filters for the Wet Limestone based Flue Gas Desulphurisation (FGD) System offered by the Bidder shall be only from such manufacturer(s) who has previously designed (either by itself or under collaboration / licensing agreement), manufactured / got manufactured the respective equipment(s) of the type, application and minimum equipment rating as stipulated below such that the respective equipment(s) should have been in successful operation in at least one (1) plant for a period not less than one(1) year reckoned as on the date of consideration for approval but not later than six months to award date of contract to the Main bidder:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                      |                         |              |               |  |                                           |  |  |    |                          |                    |   |     |                                                                     |                    |    |  |  |
| <b>LOT-IA PROJECTS<br/>FLUE GAS DESULPHURISATION (FGD)<br/>SYSTEM PACKAGE</b> | <b>TECHNICAL SPECIFICATION<br/>SECTION – VI, PART-A<br/>BID DOC. NO CS-0011-109-(1A)2</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>SUB-SECTION-I<br/>INTENT OF<br/>SPECIFICATION</b> | <b>PAGE<br/>6 OF 19</b> |              |               |  |                                           |  |  |    |                          |                    |   |     |                                                                     |                    |    |  |  |

| CLAUSE NO.                                                           | INTENT OF SPECIFICATION           |                                                                                  |                                                |                                                                                         |                 |
|----------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------|------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
|                                                                      | Type and Rating for Qualification |                                                                                  |                                                |                                                                                         |                                                                                                    |
|                                                                      | Sl. No.                           | Name of Equipment                                                                | Type of Equipment                              | Application                                                                             | Equipment Rating                                                                                   |
|                                                                      | (a)                               | Booster Fans                                                                     | Axial type with variable pitch control         | Coal fired power plant                                                                  | 80% of the flow & 100% of the head of the offered Booster Fan with Fan Speed 900 rpm (maximum)     |
|                                                                      | (b)                               | Slurry Recirculation Pumps                                                       | Centrifugal type                               | Wet Limestone based FGD application in Coal fired power plant                           | 80% of the flow & 100% of the head of the offered Slurry Recirculation Pump                        |
|                                                                      | (c)                               | Oxidation Blowers                                                                | Centrifugal/ positive displacement type blower | Wet Limestone based FGD application in Coal fired power plant                           | 80% of the flow & 100% of the head of the offered Oxidation Blower                                 |
|                                                                      | (d)                               | Wet limestone Grinding mills                                                     | Horizontal Wet Ball mill                       | Wet Limestone based FGD application in Coal fired power plant                           | 80% of the offered Ball mill capacity with pulverizing fineness not less than 90% thru 325 mesh    |
|                                                                      | (e)                               | Slurry Pumps                                                                     | Centrifugal type                               | Wet Limestone based FGD application or ash slurry application in Coal fired power plant | 80% of the flow & 100% of the head of the offered Slurry Pump(s)                                   |
|                                                                      | (f)                               | Agitators                                                                        | Vertical/Horizontal                            | Wet Limestone based FGD application in Coal fired power plant                           | Agitator rating not less than that supplied for 500 MW or higher size unit for similar application |
|                                                                      | (g)                               | Vacuum Belt filters                                                              | Belt type                                      | Wet Limestone based FGD application in Coal fired power plant                           | 80% of the offered Vacuum Belt filter capacity                                                     |
| LOT-IA PROJECTS<br>FLUE GAS DESULPHURISATION (FGD)<br>SYSTEM PACKAGE |                                   | TECHNICAL SPECIFICATION<br>SECTION – VI, PART-A<br>BID DOC. NO CS-0011-109-(1A)2 |                                                | SUB-SECTION-I<br>INTENT OF<br>SPECIFICATION                                             | PAGE<br>7 OF 19                                                                                    |

| CLAUSE NO.                                                                    | INTENT OF SPECIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |                                                      |                         |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------|-------------------------|
|                                                                               | <p>Bidder shall offer and supply only the type of the above equipment(s) for which he himself or the manufacturer proposed by the bidder for the above equipment(s) is qualified.</p> <p>The provenness criteria for equipment (Booster Fans) stipulated at Sl. No. 4.01.01 (a) above shall also be considered acceptable provided the rating parameters (i.e., flow, head and rated rpm) is covered within the operating regime of the respective fan performance curve of the reference plant equipment.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                           |                                                      |                         |
| 4.01.02                                                                       | In case the Bidder or the proposed sub-vendor is not manufacturer of proven Booster Fans as per clause 4.01.01 (a) above but is a manufacturer of such equipment for units of at least 500 MW rating, the Bidder or the proposed sub vendor can manufacture such equipment for 660 MW units also, provided it has collaboration or valid licensing agreement for design, engineering, manufacturing, supply of such equipment in India with such manufacturer who meet the requirements stipulated at clause 4.01.01 (a) above for the Booster Fans.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                           |                                                      |                         |
| 4.01.03                                                                       | <p>A JV / Subsidiary Company formed for manufacturing and supply of equipment(s) as listed at clause no. 4.01.01 above in India, can also manufacture such equipment(s), provided that it has a valid collaboration or licensing agreement for design, engineering, manufacturing of such equipment(s) in India with a qualified equipment manufacturer who meets the requirements stipulated at clause 4.01.01 above (or the technology provider of the qualified equipment manufacturer) for the respective equipment(s). Before taking up the manufacturing of such equipment(s), the bidder/ his sub-vendor(s) must create /have created manufacturing facilities at his works as per collaborator's/licenser's design, manufacturing and quality control system for such equipment(s).</p> <p>Further, in such a case, such qualified equipment manufacturers should have, directly or indirectly through its holding company/ subsidiary company, at least 26% equity participation in the Indian Joint Venture Company/ Subsidiary Company, which shall be maintained for a lock-in period of seven (7) years from the date of incorporation of such Joint Venture/ Subsidiary or upto the end of defect liability period of the contract, whichever is later.</p> |                                                                                           |                                                      |                         |
| 4.01.04                                                                       | In case the Bidder or the proposed sub-vendor is not manufacturer of proven Oxidation Blowers as per clause 4.01.01 (c) above but is a manufacturer of Blowers/compressors for minimum 50 NM <sup>3</sup> /min capacity, the Bidder or the proposed sub-vendor can also manufacture Oxidation Blowers, provided it has collaboration or valid licensing agreement for design, engineering, manufacturing, supply of such Oxidation Blowers in India with such manufacturer who meet the requirements stipulated at clause 4.01.01 (c) above for the Oxidation Blowers. Before taking up the manufacturing of such equipment, the bidder/ his sub-vendor must create /have created manufacturing facilities at his works as per collaborator's /licenser's design, manufacturing and quality control system for such equipments.                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                           |                                                      |                         |
| 4.01.05                                                                       | (i) In case the Bidder or the proposed sub-vendor is not manufacturer of proven Wet limestone Grinding mills as per clause 4.01.01 (d) above but is a manufacturer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                           |                                                      |                         |
| <b>LOT-IA PROJECTS<br/>FLUE GAS DESULPHURISATION (FGD)<br/>SYSTEM PACKAGE</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>TECHNICAL SPECIFICATION<br/>SECTION – VI, PART-A<br/>BID DOC. NO CS-0011-109-(1A)2</b> | <b>SUB-SECTION-I<br/>INTENT OF<br/>SPECIFICATION</b> | <b>PAGE<br/>8 OF 19</b> |