Dedicated Freight Corridor Corporation of India Limited

(A Government of India Enterprise)

ADDENDUM NO. 15 Dated 20/03/2018

ADDENDUM /AMENDMENTS TO THE BIDDING DOCUMENT FOR

"DESIGN, SUPPLY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 2X25kV AC ELECTRIFICATION, SIGNALLING & TELECOMMUNICATION, E&M AND ASSOCIATED WORKS ON DESIGN BUILD LUMP SUM BASIS OF SAHNEWAL – PILKHANI SECTION (APPROXIMATELY 175 ROUTE KM OF SINGLE LINE) OF EASTERN DEDICATED FREIGHT CORRIDOR"

ICB No.: HQ/SYS/EC/D-B/Sahnewal – Pilkhani

Following Amendments are hereby made to the Bidding Document, issued on 08.06.2017 for submission of Stage-1 (Technical Proposal) Bids for 2x25kV, 2x25 kV AC Traction Electrification, Signalling & Telecommunication, E&M and Associated Works (Contract Packages 304), in accordance with ITB 8:

S.N.	Part No.	Vol. No.	Page No.	Clause No.	Item	Amendments in the Bidding Document
134	2	2	451 of 1309	2.2	Power Supply for Eastern Freight Corridor	**Replace the contents of 2.2.1 with the following:** Power Supply for the Sahnewal – Pilkhani Section shall be obtained from the sources as detailed below:- (a) 220kV Grid sub-station (GSS) of Power Grid Corporation of India Ltd. (PGCIL) to Jagadhari Receiving Cum Traction Substation (TSS) through a 3-phase, double circuit transmission line Network. (b) 220 kV Grid Sub-Station (GSS) of Power Supply Authority to New Shambhu and New Khanna Traction Substations (TSS) through a 3-phase double circuit transmission line.
135	2	2	451 of 1309	2.2.2	Power Supply for Eastern Freight Corridor	**Deleted**
136	2	2	455 of 1309	3.3	Scope	**Replace the contents of sub clause 3.3.1 (1)(v) with the following:-** (v) Provision of Traction substations (TSS), Sub Sectioning Posts (SSP) and Sectioning Posts (SP), Switching Stations (SS) and ATS (if any) as described in relevant Chapters of this specification are as under: a. Three (3) Traction Substations (TSS). **i. JAGADHARI TSS**

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						Provision of receiving 220 kV, 3 phase double circuit power supply from PGCIL, step down to 132 kV through 150 MVA step-down transformers including 132/2x25 kV traction transformers for feeding 2x25kV AT System. Jagadhari TSS shall also include Gantry for termination of 220 kV incoming feeders (from PGCIL), Gantry for termination of 132 kV transmission line network of IR along with associated switchgears and outgoing feeder arrangement as required. Typical indicative arrangement of Jagadhari TSS is enclosed in Part-4 Reference Documents. **ii. NEW SHAMBHU TSS** Provision of receiving 220 kV, 3 phase double circuit power supply from Power supply authority, including main 220/2x25 kV Traction transformer for feeding 2x25kV AT System. The provisions at TSS shall include the Gantry for termination of feeders of power supply authority as required. Typical indicative arrangement of New Shambhu TSS is enclosed in Part-4 Reference Documents. **iii. NEW KHANNA TSS** Provision of receiving 220 kV, 3 phase double circuit power supply from Power supply authority, including 220/2x25 kV Traction transformer(s) for feeding 2x25kV AT System. The provisions at TSS shall include the Gantry for termination of feeders of power supply authority as required. Typical indicative arrangement of New Khanna TSS is enclosed in Part-4 Reference Documents; In case of Indian Railway transmission line network shall include associated switchgears along with SCADA interface for operation and control as required for satisfactory operation shall be executed by the Contractor. b. Three (3) Sectioning Posts (SP). c. Five (5) Sub Sectioning Posts (SSP). d. Auto-transformers shall be provided at each TSS (as required as per design), SP, SSP and ATS if any. ATS if required, shall have the provision of single transformer without spare/standby arrangement.
137	2	2	478 of 1309	5.1	General	**Replace the contents of sub clause 5.1.2 with the following:-**

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						For the purpose of Power supply reliability, double circuit 220 kV Power supply has been planned to be received from PGCIL at Jagadhari TSS as detailed hereunder: a) The Traction Sub Station (TSS) at Jagadhari shall include 3 phase double circuits of 220 kV incoming bays (from PGCIL) and 132 kV outgoing feeder arrangement for IR: comprising of Bus coupler arrangement and outgoing Circuit breakers. In addition to the bays, a set of 220 / 132 kV Power Transformers and 132/2X25 kV Traction Transformers along with associated Switchgears are planned to be installed at Jagadhari TSS. b) The Traction Sub Station (TSS) at New Shambhu shall include 220 kV incoming bays and 220/2X25 kV Traction Transformer along with associated Switchgears. The 220kV supply received from power supply authority shall be stepped down to feed 2x25 kV AT system. c) The Traction Sub Station (TSS) at New Khanna shall include 220 kV incoming bays and 220/2X25 kV Traction Transformers along with associated Switchgears. The 220kV supply received from power supply authority shall be stepped down to feed 2x25 kV AT system. The indicative typical conceptual Scheme Diagrams of TSSs are attached in Part-4: 'Reference Documents'.
138	2	2	478 of 1309	5.1.4	Normal Feeding Scenario	**Replace the contents of sub clause 5.1.4 (1) with the following:** **1. 220 kV or 132 kV Bay Normal Scenario** (a) Both the incomers are available, 220 kV or 132 kV Bus Coupler in open condition. Only one of the 220 kV or 132 kV incomer bay is taken on load. Both the 220 kV or 132 kV incomers are independently rated to take full load of the TSS. (b) In case, One of the incomer supply is not available or any 220 kV or 132 kV bay equipment are under faulty/maintenance, the power supply shall be available through healthy 220 kV or 132 kV bay to connected Power/Traction Transformer bay and through remotely closed 220 kV or 132 kV bus coupler to other Transformer Bay.
139	2	2	484 of 1309	6.1.3	Traction Substations (TSSs)	**The word "Circuit Breaker (CB)" from the sub clause 6.1.3 (4)(a) is deleted.**
140	2	2	481 of 1309	Table 5.2.2	Train operation plan	**Replace the table 5.2.2:Train Operation Plan as under:** **Table 5.2.2: Train operation plan**

<table>
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<tr><td></td><td></td><td></td><td></td><td></td><td></td><td>
<table>
<tr><th>Train consist</th><th>Headway/Frequency</th></tr>
<tr><td>1. 1x9000kW/12000 HP electric locomotive plus 63 BOXN wagons (100T each)
2. All the trains shall be fully loaded.
3. A mix of normal Train and long haul train in the ratio of 2:1 shall be considered for both UP & DN directions.
4. For 6500T – 2 train (Normal)
For 13000T – 1 train (Long haul)
5. Train stoppage – At alternative stations for crossing or any other reason etc.</td><td>Headway 17 min.</td></tr>
</table>
</td></tr>
<tr><td>141</td><td>2</td><td>2</td><td>484 of 1309</td><td>6.1.3</td><td>Traction Sub Stations (TSSs)</td><td>Replace the contents of 6.1.3 with the following:
1. “Power supply for the Sahnewal – Pilkhani section shall be planned from following sources as detailed below:-”
a) JAGADHARI TSS
Provision of receiving 220 kV, 3 phase double circuit power supply from PGCIL, step down to 132 kV through 2 Nos of Power transformer and further step down to 2X25 kV through 132/2X25 kV traction transformers for feeding 2x25kV AT System. The Jagadhari TSS shall also include Gantry for termination of 220 kV incoming feeders (from PGCIL) and Gantry for termination of 132 kV transmission line network of IR along with associated switchgears and outgoing feeder arrangement as required. Typical indicative arrangement of Jagadhari TSS is enclosed in Part-4 Reference Documents;
b) New Shambhu TSS”
Provision of receiving 220kV, 3-phase double circuit power supply from power supply authority including 220/2x25kV traction transformer for feeding 2x25kV AT system. The provision at TSS shall include the Gantry for termination of feeders of power supply authority as required. TSS equipment and bus bars shall be suitably designed and capable to feed the extended feed zone as per application duty requirement. Typical indicative arrangement of New Shambhu TSS is enclosed in Part-4 Reference Documents;</td></tr>
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						c) NEW KHANNA TSS Provision of receiving 220kV, 3-phase double circuit power supply from power supply authority including 220/2x25kV traction transformer for feeding 2x25kV AT system. The provision at TSS shall include the Gantry for termination of feeders of power supply authority as required. TSS equipment and bus bars shall be suitably designed and capable to feed the extended feed zone as per application duty requirement. Typical indicative arrangement of New Khanna TSS is enclosed in Part-4 Reference Documents.
142	2	2	494 of 1309	6.9	Protection Scheme	**Replace the contents of 6.9.8 with the following:** 6.9.8 The protection scheme shall meet to the requirements of EN 60076, EN 50119, IE Rules and ACTM and include the following protections as minimum but not limited to: (a) 132 kV Bus coupler protection as required (For Jagadhari) (b) 220 kV Power Transformer Protection in TSS(in case of Jagadhari TSS); - Over current Instantaneous / IDMT - Restricted Earth fault (REF) - Differential Protection - Internal faults Buchholz, - OTI & A (H/L) and Oil Temperature Trip (H) - WTI& A(H/L) and Winding temperature Trip(H), - Low Oil Level Alarm - Transformer Tank Earth Protection (c) 132 kV Out Going Feeder Protection (in case of Jagadhari TSS): - Over current Instantaneous / IDMT - Line Distance Protection (d) 220 and 132 kV Traction Transformer Protection: - Over current Instantaneous / IDMT

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						- Restricted Earth fault (REF) - Differential Protection - Internal faults Buchholz, - OTI & A (H/L) and Oil Temperature Trip (H) - WTI& A(H/L) and Winding temperature Trip(H), - Low Oil Level Alarm - Transformer Tank Earth Protection (e) 55/ 2x25kV LV side Transformer Protection: - Over current Instantaneous / IDMT - Differential Protection (f) 55/ 2x25kV Bus Bar protection system - Under Voltage Relay (g) 55/ 2x25kVFeeding Bay Breakers - Over current Instantaneous / IDMT - Distance Protection - Under Voltage Relay (h) Auto Transformer Protection - Over current Instantaneous / IDMT - Deleted - Differential Protection - Internal faults Buchholz, - OTI & A (H/L) and Oil Temperature Trip (H) - WTI & A(H/L) and Winding temperature Trip(H), - Low Oil Level Alarm (i) Feeder Protection - Feeder Distance Protection (as applicable to SSP/SP)

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<tr><td>143</td><td>2</td><td>2</td><td>502 of 1309</td><td>7.1.5</td><td>List of Proposed TSS,SP,SSP</td><td>Replace Table 7.1.4 with the following:-
List of Proposed TSS/SP/SSP of adjoining section upto next TSS of CP-305
<table><tr><th>SN</th><th>Installation Name</th><th>Approx. DFCC Chainage (in Km)</th></tr><tr><td>1</td><td>New Tapri SSP</td><td>100.00</td></tr><tr><td>2</td><td>New Talheri TSS</td><td>83.93</td></tr></table></td></tr>
<tr><td>144</td><td>2</td><td>2</td><td>519 of 1309</td><td>8.4</td><td>OHE CONDUCTORS</td><td>The word “AAC” should be replaced by “AAAC” IN 4th row of table no. 8.4.1: OHE Conductors.</td></tr>
<tr><td>145</td><td>2</td><td>2</td><td>595 of 1309</td><td>Table No. 13.2.1</td><td>Quantity of Contract Spares</td><td>Replace the content of “B : PSI (TSS,SP,SSP) – Spares SN-14” of table 13.2.1 with the following:
<table><tr><td>14</td><td>Auto Transformer</td><td>01 Number suitable for TSS (if required as per design) and 01 no. suitable for SP/SSP on short circuit capacity.</td></tr></table></td></tr>
<tr><td>146</td><td>2</td><td>2</td><td>628 of 1309</td><td>18.3</td><td>Interfacing Requirements</td><td>Replace the clause 18.3.2 (1) with the following:
1) Indian Railways (Northern Railway)</td></tr>
<tr><td>147</td><td>2</td><td>2</td><td>643 of 1309</td><td>18.4.4</td><td>Interface with Power Supply Authorities</td><td>Delete subclause 18.4.4 (1) (c).</td></tr>
<tr><td>148</td><td>2</td><td>5</td><td>1222 of 1309</td><td>17.7</td><td>Foundation Work</td><td>Replace the contents of Clause 17.7.1 with the following:
In Traction Sub station (TSS), SP and SSP, the contractor shall provide a road & rail system integrated with the transformer foundation to enable installation and the replacement of any failed unit by the spare unit located at the site. The contractor shall take such rail and road system to the adjoining approach road for easy transport of the transformers and heavy equipment through rail/road transport. This system shall enable the removal of any failed unit from its foundation to the nearest road.</td></tr>
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S.N.	Part No.	Vol. No.	Page No.	Clause No.	Item	Amendments in the Bidding Document
149	4	-	-	-	**Schematic diagram of 220/55 kV TSS (With one transformer)**	**Replace drawing no. "GC/DFCC/PS/TSS/SCH/TYP/101-2(a) Rev-01" with the revised drawing no. " GC/DFCC/PS/TSS/SCH/TYP/101-2(a) Rev-02"**
150	4	-	-	-	**Schematic diagram of 220/55 kV TSS (With two transformer)**	**Replace drawing no. "GC/DFCC/PS/TSS/SCH/TYP/101-2(b) Rev-01" with the revised drawing no. " GC/DFCC/PS/TSS/SCH/TYP/101-2(b) Rev-02"**
151	4	-	-	-	**Schematic Diagram of 220/132kV Receiving Sub-Station Cum 132/55kV Traction Sub-Station at Jagadhari**	**Replace the "Drawing no. "GC/DFCC/PS/TSS/SCH/TYP/101 Rev.02". with the revised drawing no. "GC/DFCC/PS/TSS/SCH/TYP/101 Rev.03".**

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