"DESIGN, CONSTRUCTION, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 2X25 KV ELECTRIFICATION, AND ASSOCIATED WORKS OF DOUBLE TRACK RAILWAY LINES UNDER CONSTRUCTION ON DESIGN BUILD LUMP SUM BASIS FOR MUGHALSARAI – NEW BHAUPUR SECTION OF EASTERN DEDICATED FREIGHT CORRIDOR"

ELECTRICAL WORKS CONTRACT PACKAGE 204

RESPONSES TO PRE-BID QUERIES OF THE BIDDERS

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
276.	Page No. 710 of 887 , Clause 4.2.2 (e) – One of the two transformers shall act as a standby and also be able to work in parallel, if required. The transformers at all stations shall have same rating.	As per Drawing GC/ DFCC/E&M/STATION/801 ELECTRICAL SINGLE LINE DIAGRAM FOR NON TRACTION POWER DISTRIBUTION SYSTEM FOR JUNCTION & CROSSING STATIONS There 2/3 interlocking between both the transformers. So both transformers cannot work in parallel. To run both transformers in parallel, synchronization relay is required only when one transformer is unable to cater full load. Please clarify whether Synchro Check is required?	Being a Design - Build contract, General/ functional/performance requirements have been specified. The responsibility of detailed design rests in the scope of the contractor. The provisions in the Bidding Document are self-explanatory and shall prevail.
277.	Page No. 710 of 887, Clause No. 4.2.2 (m)--- The Transformers shall be outdoor type placed adjacent to the building where substation is located and	As per INDICATIVE AUXILIARY SUB STATION AND ADDITIONAL DG ROOM AT STATIONS & DEPOT Transformers are housed in a room	Please refer addendum No. 08. Sr. No.63

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
	shall be securely fenced. Page No. 724 of 887, Clause 5.8-- A suitable foundation and fencing shall be provided by the Contractor as approved by the Engineer.	Please clarify whether transformers will be housed in room or outside. Price of transformers are different for outside (weather proof) & inside. Also clarify whether room cost for Auxiliary Transformers is to be considered or not.	
278.	Page No. 743 of 887, Clause 7.2 (h) – The conductors shall be of stranded, high conductivity annealed copper / Aluminium Conductor as approved by the Engineer.	Price of copper & Aluminium cables are different. From security point also copper cables are likely to be stolen frequently even after commissioning. Please clarify whether copper or Aluminium cables are to be used.	The provisions in the Bidding Document are self-explanatory and shall prevail.
279.	Page No. 745 of 887, Clause 7.4.1— Underground cables below road/ passages/railway tracks etc. shall be laid through GI pipes.	GI pipes are likely to be rusted. HDPE pipes are used in Metro Rail projects at all locations i.e. Road/Railway track crossings. Please clarify whether HDPE pipes may be used at all crossings.	Please refer addendum No. 08. Sr. No. 52
280.	Page No. 747 of 887, Clause 7.4.4— Minimum depth of top of pipe at various locations from the ground level shall be as indicated below: Under-ground / road / under platform --750 mm Under railway track--- 1500 mm	As per IS 1255 Under Railway Track it is 1000 mm from bottom of sleeper & Road it is 1000 mm. Please clarify whether 1000 mm is to be considered or 1500 mm is to be considered.	Please refer addendum No. 08. Sr.No.53

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
281.	Page No. 775 of 887, Clause 14.1 & 14.3--- Earthing System shall be required at locations at the Auxiliary Sub-station, buildings, depot at all Equipment room including provision of main earth terminal in equipment rooms. The **material** for earthing and lightning protection system shall consist of ground rods with pits, ground conductors, test boxes, lightning down conductors, lightning conductors, air terminals and accessories interconnected for the complete system.	Earthing system is not mentioned for TSS, SP & SSP. For ASS also ground rods with pits is considered. Please clarify whether EARTH MAT is required for ASS or only ground rods with pits will be required. Nothing is mentioned about Clean earth for S&T equipment. Please clarify clean earth is in whose scope.	Please refer Sub clause 6.3 at page 433 of 887, regarding Earthing system for TSS, SP and SSP. Being a Design - Build contract, General/ functional/performance requirements have been specified. The responsibility of detailed design rests in the scope of the contractor. Please refer applicable standards as specified in Sub clause 14.2 at page 775 of 887 and sub clause 14.4(3) at page 776 of 887. It is clarified that the Clean earth for S&T equipment is not in the scope of CP 204 Contractor. The provisions in the Bidding Document are self-explanatory and shall prevail.
282.	Page No. 777 of 887, Clause 15.1--- The contractor shall assess the Air-conditioning& Ventilation requirement to maintain the requisite working temperature range and provide Air-conditioning system for the following installations: (i) Station Manager/ ASM room, Signaling and Telecom Equipment rooms at Stations (ii) Officer Rest room and Inspector	Please clarify whether Air conditioner is required in UPS room or not. Nothing is mentioned in clause 15.1.	The provisions in the Bidding Document are self-explanatory and shall prevail.

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
	Rest Room at Stations; (iii) Mini Monitoring Centre at IMD's (iv) Telecom equipment room at IMD's (v) Guest house Club/Institute at Allahabad, air-conditioning of 25% of indicative area of building shall be provided. (vi) Telecom equipment room at TSS's.		
283.	Drawing No. GC/DFCC/PS/TSS/SCH/TYP/101	**1. Coupling Circuit Breaker at incoming side** There are two feeders (separate for each transformer) & each transformer is sized for full load. **Case-1** In normal scenario both feeders are available & coupler is open. In case of transformer fault, 220kV/132 kV CB feeding to Transformer will trip & isolate faulty transformer. In case of line (Gird to TSS) fault, Grid CB will trip & isolate faulty Line. **Case-2** In case of failure of one feeder/transformer (N-1 criteria i.e. single failure) another transformer can cater full load. **Case-3**	The provisions in the Bidding Document are self-explanatory and shall prevail. Please also refer the addendum No. 08 Sr. No. 85..

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
		One feeder & transformer of another feeder failure is N-2 criteria i.e. two failure simultaneously is very rare. Generally System is designed for N-1 criteria. In this case feed can be extended by closing isolators. Hard wired (2/3 i.e. out of three only 2 can be closed) interlocking can be provided between coupling Isolator & 220kV/132 kV CBs feeding to Transformers. Since 220kV/132 kV CB feeding to Transformer will trip & isolate faulty transformer therefore Coupling CB does not add any value. There is no requirement of on load operation of coupling CB. Coupling Bus fault will be cleared by grid CB. If this CB is considered for protection of small section of coupling Bus Bar, which is not required, then no CT & PT is shown in tender drawing to be used protection. In our view only 220/132 kV one triple pole isolator is required for coupling. **2. Coupling Circuit Breaker at 25 kV Bus bar**	

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
		Each Transformer is designed to cater full load. As per tender specifications, one transformer will be Spare/ stand by. In normal scenario coupler will be always closed. Coupler is required when both the transformers are on load, which is not as per tender specifications, to isolate feed of both the transformers. (Coupler will be in open position). When both the transformer are on load capacity of Transformer can be reduce. Please confirm whether both transformer can share load. If not then coupler is to be deleted. If coupler is to be provided then PT at Bus bar side are to be provided for interlocking to prevent paralleling of Transformers **3. Potential Transformer on Up & Dn Line feeders** DN Line feeder has 5 Potential Transformer and Up Line has 3 Potential Transformer of rating 54kV/110V Potential transformer is provided to	

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
		sense presence of voltage i.e. OHE is energized or de energized. its output is used for interlocking to prevent reverse feeding. Therefore one PT of 54 kV or two PT of 25kV rating are enough for each UP & DN line feeder. **4. Interrupter/ CB with Auto Transformer** In TSS interrupter & in SP/SSP CB is provided for Auto transformer As we know from world wide experience On Load operation on the Auto transformer is not done. If it is provided for protection of Auto transformer, then also it does not add much value. In case of any fault in line, TSS feeder trips & isolates the line. These CBs will also trip in case of line fault. TPC segregates faulty section & restores power to healthy section. TPC has to close these CBs also. It will take more time to restore healthy section as TPC has to carry out additional operation.	

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
		Relay setting will also become complex. Direction protection cannot be provided because in extended feed condition direction of current will be opposite to normal feed condition. In our opinion only isolator should be provided with Auto transformer.	
284.	Page No. 705 of 887, Clause 3.3.1 (9)—Additional DG Room Page No. 717 of 887, Clause 4.5 (9)— Construction of additional **room** for installation of DG sets in crossing/junction station building shall preferably be on extreme corner of building to keep vibration and exhaust at one end. Page No. 763 of 887, Clause 11.1 (5) – DG set shall be with mandatory canopy and shall be located outdoor.	Please clarify DG will be located inside the room or outside the room as these clause are contradictory.	Please refer the addendum No. 08 Sr.No.54
285.	Page No. 779 of 887, Clause 16.2(6)— Import & Export metering	Size of Solar power system to be provided are 5KW for Junction stations & IMDs 2 KW for crossing stations& Rest house/Guest house 1 KW for IMSDs & 0.2 KW for LC	The provisions in the Bidding Document are self-explanatory and shall prevail

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
		gates. Since sizes is small so there is no scope of exporting the energy. This size can not cater full requirement of stations/ other locations. Import & Export meters are required for large sizes. Please confirm import/export metering is mandatory or optional.	
286.	Page 424 of 887 Chapter 5, Clause 5.1.3, bullet no. 5. – In case of taking any transformer for maintenance or the load switching from one transformer to the other transformer, the other transformer shall be taken on load while retaining previous transformer on load momentarily and there after the previous transformer will be taken off of the service to avoid stalling of any train in approach of the high gradient thus allowing the momentary paralleling at Bus ends, hence the associated equipment shall be designed to sustain the short circuiting during such short time paralleling, if any.	This Clause has very deep impact on 54 kV circuit breakers, bus bars, and equipment in general. If this paragraph must be taken into account in the design of the equipment, it really means that (even for a "short period of time" its a huge amount of time electrically talking) all the equipment has to withstand the short-circuit contribution of both transformers at the same time. Please clarify whether paralleling of Transformers is to be considered.	Please refer Addendum No. 08, Sr.No.57.
287.	Page 72 of 887, Form LOP – For Bidders in India to be executed on non-judicial Stamp paper of	We understand that we need not require to submit Form LOP from Siemens AG, Germany, who is a member of our JV from outside	Please refer to Addendum No 04 Sr. No. 4 also.

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
	appropriate value. For Bidders from outside India, submission of this form is not mandatory. If an equivalent form is submitted by Bidders from outside India, it is to be executed according to the applicable law in the Bidder's country and by taking into account the Notes shown below.	India. Kindly confirm.	
288.	Page 75 of 887, Form POA-1— For Bidders in India to be executed on non-judicial Stamp paper of appropriate value. For Bidders from outside India, submission of this form is not mandatory. If an equivalent form is submitted by Bidders from outside India, it is to be executed according to the applicable law in the Bidder's country and by taking into account the Notes shown below	We understand that we need not require to submit Form POA-1 for Siemens AG, Germany, who is a member of our JV from outside India. Kindly confirm.	Please refer Addendum No. 08, Sr.No.55 also.
289.	Page 77 of 887, Form POA-2— For Bidders in India to be executed on non-judicial Stamp paper of appropriate value. For Bidders from outside India, submission of this form is not mandatory. If an equivalent form is submitted by Bidders from outside India, it is to be executed according to the applicable law in the Bidder's	We understand that we need not require to submit Form POA-2 from Siemens AG, Germany, who is a member of our JV from outside India. Kindly confirm.	Please refer Addendum No. 08, Sr.No.56 also.

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
	country and by taking into account the Notes shown below.)		
290.	Page 49 of 887, Section III. Evaluation and Qualification Clause 2.4 Equipment -- The Bidder shall also be required to submit a certificate, from the Developer/Vendor of the Software, that the Simulation Software has been validated by comparing its result to actual field measurements on a 2 x 25 kV Traction supply system.	Can the same Independent simulation agency as used by DFCC be employed?	Please refer sub clause 3.2.5 at page 399 of 887 and sub clause 4.3 at page 10 of 887. Provision of Bidding document shall prevail.
291.	Page 47 of 887, Section III. Evaluation and Qualification Clause 2.3 Personnel – The Bidder shall propose to arrange the minimum key personnel during the execution of work for each lot	Would DFCC accept the **Person of Indian Origin** with experience more than number of years asked for, and **the kind of experience in Metro/ Rail infrastructure in India**.	There is no stipulation about the origin of personnel. The person from any origin is acceptable so long as the criteria stipulated in the bid document is fulfilled. Provision of Bidding document shall prevail.
292.	Page 49 of 887, Section III. Evaluation and Qualification Clause 2.4	The PQ calls for qualification of One member to meet the requirement (self) (or can be a specialist Sub– Contractor or specialised design consultant) for successful completion of the key design activity in the completed works as prime Design consultant sub-design consultant or in-house designer.	Bidder's attention is drawn to Clause 2.5 Section III (Evaluation and Qualification Criteria) ITBs 24.4 & 49.3 of Section-I: Instruction to Bidders read with their corresponding ITBs in the Bid Data Sheet.

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
		The PQ provision allows the bidder to quote with own credentials or with the credentials of the sub consultant. Can the JV member having the required/ better Design Experience be acceptable (even if exercised the option to propose a design sub consultant)?	
293.	Page 53 of 887 Point (m), Section III. Evaluation and Qualification Clause 2.1	Manufacturers' Authorisation (FORM-MA, Bidding Forms-Section IV). As, mentioned in the tender document that the material should be procured from approved vendors as listed in RDSO / CORE. So, instead of Manufacturer's Authorization letter allow us to submit an undertaking that the material proposed by bidder will be as per approved vendor list of RDSO/CORE	Request not accepted. The provisions of Bid Document shall prevail.
294.		Request you to provide drawings in CAD format	Please refer the response to query at Sr. No.7.
295.	Civil & Track works Planning	Request to kindly provide the civil schedule, Track schedule and milestone for completion of work as Electrical	Please refer to the response to query at Sr.No.11 .

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
		work is completely dependent on the front availability.	
296.	Access Date	Kindly provide the availability of access (dates of access) on Track formation, Finished track for each block section.	Please refer the response to query at Sr.No.26.
297.	Page 41 of 887, Section II Bid Data Sheet Clause ITB 19.1--- The deadline for submission of First Stage Technical Proposals is: Date: 31.07.2015 Time: 15:00 Hrs	Request to kindly extend the first stage Submission date by 90 days due to voluminous work.	Please refer Addendum No.07 Dated:28/08/2015
298.	Page No. 489 of 887, Part-2, Section- VI, Vol. 2, Clause: 10.6.9 The SCADA system shall be capable of time stamping with less than 0.1ms resolution.	Industry standard practice is for time stamping with 1ms resolution. The communication protocol (IEC 60870-5-104) proposed in the technical specifications also support time stamp resolution of up to 1ms only. Hence, it is requested that the clause be amended accordingly.	Please refer the response to query at Sr.No..176.
299.	Page No. 512 of 887, Part-2, Section- VI, Vol. 2, Clause: 10.10.2(41) In order to provide for easy upgrading and/or correction, the RTU software shall be stored on a removable flash memory card.	The RTU supports upgrading of RTU software or configuration locally as well as remotely. However, the RTU software is not stored on removable flash memory card, so that the software upgrade is performed in a controlled and authorized procedure, and not by simply replacing removable flash	The provisions of Bidding document are self-explanatory and shall prevail.

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
		memory. Hence, this requirement may be removed.	
300.	Page No. 500 of 887, Part-2, Section- VI, Vol. 2, Clause: 10.10.2(9)(g) System Users and User Authentication	The requirement for independent domain servers for user authentication makes sense is all systems (S&T applications, Building Management Systems, etc.) at OCC will use the domain servers for user authentication. Alternately, SCADA servers have built-in user authentication methods can be used. Having domain servers only for the purpose of SCADA may please be reviewed.	The Provisions of Bidding document are self-explanatory and shall prevail.
301.	Page No. 451 of 887, Part 2, Section VI, Vol 2, Clause: 7.6 Batteries and Chargers	As per Indian railway practice, we propose to provide one battery set of 110V DC and two battery chargers please confirm the same.	Please refer the response to query at Sr.No.126.
302.	Page No. 434 of 887, Part 2, Section VI, Vol 2, Clause: 6.3 All the Earth mat joints shall be exothermic as per the requirements of IEEE80:2013	As per IEEE 80:2013, the joining of two ground rods is done by using the exothermic method, swaged connection, or a tread less coupler. The connection between the ground rod and grid conductor can be made using various methods. Please confirm.	The provisions of Bidding document are self-explanatory and shall prevail.
303.	Page No. 299 of 887, Part 2, Section VI, Vol 1, Clause: 12.21.1 During the Defects Correction	Please confirm description of day to day monitoring, means the same as described in the clause of 12.22.1	The provisions of Bidding document are self- explanatory and shall prevail.

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
	Period, day to day monitoring of the Railway RAM performance shall be carried out and the findings shall be used to enable systematic means of data analysis and recording of the RAM performance.		
304.	Page No. 288 of 887, Part 2, Section VI, Vol 1, Clause: 12.9.7 That all Safety Critical systems have been identified at the Detailed Design stage and the apportionment of risk factors between the major systems and sub-systems support the overall safety criteria approved in the "System Safety Plan".	Please clarify whether safety critical systems refer to same as safety critical item list.	The provisions of Bidding document are self- explanatory and shall prevail.
305.	Page No. 457 of 887, Part 2, Section VI, Vol 2, Clause: 7.11 The bus bar in 220/132 kV bays may be flexible type whereas on 54kV and 25kV bays shall be suitably sized rigid aluminum bus bar type for higher short-circuit withstands capacity, reliability and Maintenance friendliness suitably rated for Thermodynamic stress due to short circuit in conformance to relevant IEC/ EN standards.	We assume this clause is applicable only for TSS. For other SP & SSP's flexible bus bar arrangement can be adopted since it has more flexibility and easy to install, also for the other DFCC projects we are adopting flexible bus bar arrangement for all TSS,SP,SSP's.	The provisions of Bidding document are self- explanatory and shall prevail.
306.	Part 4, Drawings 2_Power Supply Schemes and SCADA Layouts	As shown in this drawing "Green colour-Work to be done by Civil",	The BEC as required shall be under the scope of the Contractor CP 204.

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
	TYPICAL ARRANGEMENT OF OHE MAST ON EMBANKMENT	we understand that the scope of works for CP-204 contractor pertaining to BEC shall be limited only to supply and the installation of BEC shall be carried out by civil contractor. Kindly confirm.	Please refer Addendum No. 08, Sr.No.58.
307.	Page 850 of 883, Section VIII Particular conditions, Sub clause-2.1 Clause 2.1. Right of Access to Site. Delete Sub-clause (b) in Para-3 " Payment of any such Cost plus reasonable profit, which shall be included in the contract price"	We have noticed in the proposed terms and conditions for CP-204, that in case of delay for which reasons are not attributable to the contractor, only Extension of Time (EOT) will be given and no cost compensation. You will appreciate that in infrastructure projects of magnitude and complexity as DFCC, there can be project delays, beyond the control of the contractors and are not possible to be envisaged at the stage of bidding. The project delays cause a heavy burden on the various stakeholders with the engagement of resources and funds. It is therefore not fair to burden the contractors with the risk of cost escalations due to project delays, not attributable to them. The global projects of this	Please refer Addendum No. 08, Sr.No.62.

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
		magnitude and complexity provide for balanced terms and conditions in respect of extension of time with cost compensation, in case of delays not attributable to the contractor. The FIDIC yellow book guidelines followed by World Bank provides for EOT with cost compensation. This was also followed in CP-104. The global multinational players capable of executing such complex projects of this magnitude tend to attach a huge risk to this and generally do not participate in the projects with such un-balanced terms and conditions. The EOT with cost compensation was followed in CP-104 and suddenly withdrawn in CP-204. We request DFCC to correct this inconsistency in order to give a positive signal to the industry, and ensure a level playing field to enable contractors bid effectively.	
308.	Part-4 Reference Drawings (Yard Plans of Stations) Yard Plans of Stations	It is understood that the tracks in multi-track yards at junction and crossing stations are having track centers of 6m between mainlines and 6.25m between loop lines. For more than 5 tracks and with	All the Loop Lines of DFCC Stations and Mughalsarai Yard of Indian Railways are with spacing of 6.25m. The OHE & foundation design shall be carried out as per EN 50119 within the available space. The provisions of Bidding document are self-explanatory and shall prevail.

Sr. No.	Reference to Bidding Document	Clarification Sought by the Bidders	DFCC's Response
(1)	(3)	(4)	(5)
		6m/6.25m track center, it is not possible to locate the standard portals. Minimum track center of 7.6 m is required for 3.5m setting distance. In view of the above, please modify the track layout in yards for provision of adequate track center either by reducing the track centers to be able to provide standard portals or by increasing the track centers with sufficient clearance to be able to provide a separate mast foundation for the loop line.	