

Subject: Engineering, Procurement and Construction (EPC) Contract for Renovation and Modernization of Existing Navigational Lock at Farakka, West Bengal

Reference: IN-IWAI-350002-CW-RFB

CPP Portal Tender no2023_JMVP_752273_1

Pre-bid minutes dated 18.05.2023

Sr. No	Description	As per tender	Bidder's Query	Employer's Response
General				
1	Pre-Qualification, Vol - 1 Bid Documents, 2.4.2.a, pg 52 of 300	Fabrication/ Installation/ Commissioning of Caisson gates/ Mitre gates requires special skills. Either a member of JV or the lead partner should have necessary experience in construction/ installation/ commissioning of gates in Navigational lock s/ hydropower/ irrigation projects *Cost of works of previous years shall be increased by 7% per year **Projects which are 80% completed shall be considered as substantially completed	Bidder requests the employer to modify the qualification criteria as "Fabrication/ Installation/ Commissioning of Caisson gates/mitre gates requires special skills. Either a member of JV or the lead partner or specialized sub-contractor should have necessary experience in construction/ installation/ commissioning of gates in Navigational lock s/ hydropower/ irrigation projects".	<p>The clause may be read as:</p> <p>a) Having executed works as contractor, joint venture member, or subcontractor within the last seven (7) years from the bid submission deadline</p> <ul style="list-style-type: none"> • One similar work* of at least INR 128 crores <p>or</p> <ul style="list-style-type: none"> • Two similar work* each with the value of at least INR 80 crores <p>or</p> <ul style="list-style-type: none"> • Three similar work* each with value of at least INR 64 crores <p>that have been successfully and substantially completed**</p> <p>Works with in last seven (07) years from the bid submission deadline. The similarity shall be based on the physical size, complexity, methods / technology or other characteristics as described in Part 2, Employer's Requirements.</p> <p>“Similar Work” means Construction of</p> <p>Jetty or Berth with pile foundation/ diaphragm wall or Navigational lock / barrage / RCC dam / hydropower in river or sea.</p> <p>Fabrication/ Installation/ Commissioning of gates requires special skills. Preferably, either a member of JV or sub-</p>

				<p>contractor should have necessary experience in construction/ installation/ commissioning of gates in Navigational locks/ hydropower/ irrigation projects.</p> <p>*Cost of works of previous years shall be increased by 7% per year</p> <p>**Projects which are 80% completed shall be considered as substantially completed</p>
2	<p>Environmental Clearance, Vol - 1 Bid Documents, 3.1.2, pg 135 of 300</p>	<p>The Contractor shall comply with all Applicable Laws and Applicable Permits (including renewals as required) in the performance of its obligations under this Agreement. The Contractor shall comply with (a) all environmental clearances required (if any) during construction including implementation of Environmental and Social Management Plan (ESMP); (b) ESHS Management Strategies and Implementation Plans; and (c) Code of Conduct (ESHS).</p>	<p>Bidder presumes that all the clearances required for the construction of tender scope from the government bodies including renewal shall be under the scope of the employer.</p> <p>Kindly clarify.</p>	<p>The tender conditions prevail. Further to clarify that all the clearances connected with work execution at site shall be responsibility of the contractor.</p>
3	<p>Recovery of Mobilization Advance, Vol - 1 Bid Documents, 19.2.1, 19.2.6, pg 196 of 300</p>	<p>Clause no 19.2.1 "The recovery of the same shall be made from the 5th to 14th Month against monthly RA bills in 10 equal instalments. Full recovery of this advance (10%) shall be made and ensured till 14th Month." Clause no 19.2.6: "The advance payment shall be recovered from the monthly RA</p>	<p>Bidder requests Employer to consider recovery of mobilization advance shall be in pro rata basis from every RA bill.</p> <p>Also, bidder shall be allowed to reduce the value of BG on every 6 months equivalent to the amount recovered.</p>	<p>The clause no 19.2.1 to be read as: "The recovery of the same shall be made from the 5th to 18th Month against monthly RA bills in equal instalments. Full recovery of the advance shall be made upto 18th Month." The clause no 19.2.6 to be read as: "The advance payment shall be recovered from the monthly RA Bills starting from the 5th month to 18th Month in equal monthly installments from the RA bills payable to the contractor by the employer within 18th months. In case, if approved invoice amount is less than the recovery installment amount, the same shall be adjusted in the next</p>

		<p>Bills from the 5th to 14th Month in 10 equal installments of the RA bill payable to the contractor by the employer within 14 months. In case if the recovery installment amount is less than the billed amount in any RA bill, the balance shall be adjusted in the next RA bill.”</p> <p>Clause no 19.2.7 “The Contractor shall repay each instalment of the Advance Payment on or before the due date of repayment. In the event of the Contractor’s failure to make the repayment on time, the Employer shall be entitled to encash the Bank guarantee for Advance Payment. The Parties expressly agree that for any delay in repayment of the Advance Payment, the Contractor shall pay interest to the Employer for each day of delay, such interest to be calculated at the rate of 18% (eighteen per cent) per annum.”</p>		<p>RA bill”.</p> <p>The clause no 19.2.7 to be read as follows: “In case the total installments are not recovered till 18th month, the Contractor shall pay the balance installment amount to the Employer, failing which, the Employer shall be entitled to encash the Bank guarantee for recovering the Advance Payment.””</p>
4	Input Tax, Vol - 1 Bid Documents, 19.2.1, pg 294 of 300	<p>We, (Name of the Contractor) hereby certify that the for INPUT TAX Credit in GST in accordance with clause 19.22 of the Agreement shall pass on the input tax credit in GST and shall compensate the employer for any loss suffered on this account by employee (if any).</p>	<p>This clause is not applicable as the quoted rates are exclusive of input GST.</p> <p>Bidder requests Employer to delete this clause.</p>	<p>The clause shall be considered as deleted.</p>
Civil and Structural				
1	Design Life of structures, Volume	Design Life The permanent works shall be	1.New structures (residential quarters, Toilet Block, Security	

	2:Civil Structural, 2.1.2, Pg 44 of 550	designed and constructed to give the following design lives: > Locks - 50 years (As per PIANC 2011 workshop) > Bank protection works - 50 years > Fenders, Bollards and ladders - 8 years > Buildings - 50 years Above design lives are defined as a period within which the asset will continue to be serviceable for design loads without collapse.	Office cum check post, caisson gate parking bay -design life shall be considered 50 years. 2.Retrofitted /modernized structures such as lock and control building -design life as specified will not be applicable and overall strength and stability shall be client's scope	The new permanent works shall be designed and constructed to give the following design life: > Locks - 50 years (As per PIANC 2011 workshop) > Gates: 30 years > Bank protection works - 50 years > Fenders, Bollards and ladders - 8 years > Buildings - 50 years Above design life are defined as a period within which the asset will continue to be serviceable for design loads without collapse.
2	Tech specification, Tech specification, 2.1.2 & 2.3.3		As per Clause no. 2.1.2 and 2.3.3 of technical specifications, the design life of locks is 50 years and gate structure is 30 years. As the bidder is not designing the lock, we request you to elaborate on the design guarantee of the lock.	The new permanent works shall be designed and constructed to give the following design life: > Locks - 50 years (As per PIANC 2011 workshop) > Gates: 30 years > Bank protection works - 50 years > Fenders, Bollards and ladders - 8 years > Buildings - 50 years Above design life are defined as a period within which the asset will continue to be serviceable for design loads without collapse.
2	Earthquake Load, Volume 2:Civil Structural, 2.1.6, Pg 46 of 550	Average response acceleration coefficient, which depends on time period of the structure. The time period, T of the structure will be evaluated by STAAD analysis considering Dead load & 50% Live load.	The time period evaluation of the structure either we can go empirical formula as specified by the code IS- 1893 or we can go to detailed dynamic Eigen-Value Analysis to find out exact time period through Modal analysis. In static analysis, STAAD does not give time period, it is to be pick from empirical formula as specified by code & then as a input to be given in STAAD. In case of Dynamic-Modal analysis, STAAD gives exact time period	The clause may be read as: Average response acceleration coefficient, which depends on time period of the structure. The time period, T of the structure will be evaluated by STAAD analysis considering Dead load & 50% Live load or using dynamic analysis and adopt the more severe criteria in the design.

			performing 90% mass participation to a particular direction. In this regard, should we go dynamic analysis? Please confirm.	
3	Exposure condition, Volume 2:Civil Structural, 4.2.5.5, Pf 143 of 550	Exposure conditions for durability	Specify the exposure condition to be considered for Structures as per IS 456.	Please refer Table 2A on page 144 of Volume-2. The bidder shall conduct its own assessment/due diligence and design in accordance with the provisions, codes, specifications etc.
4	Grade of concrete, Volume 2:Civil Structural, 2.1.12, Pg 47 of 550	Structural concrete to used M40 grade concrete for building works	Should we use M40 grade concrete also in building works?	M 40 grade concrete shall be used for the lock structure, as defined in tender documents. However, the building works may be done with appropriate grade of concrete as per the design & site condition. .
5	Scour Depth, Volume 2:Civil Structural, 2.1.8, Pg 46 of 550	Scour depth shall be considered suitably in compliance with IS 14262.	Since lock structure is existing, please inform whether scour depth criteria to be considered.	The scour depth criteria shall be considered only for new structures (namely caisson gate, parking bay etc).
6	Bank Protection, Volume 2:Civil Structural, 1.2.3, Pg 27 of 550	Bank protection works shall be carried out on the left bank of the approach channel to protect the river bank from erosion and flooding. Stability of the bank slopes shall be carried out in accordance with the Indian standards and guidelines.	please confirm and clarify type of bank protection	Please refer Drawing No. ENL-006 of Volume 2, Annexure 2.
Mechanical				
1	Volume 1: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka. SCHEDULE - K (TESTS ON COMPLETION), pg 282 of 300	Time taken for filling / emptying of the lock shall not exceed 8 minutes. If it does not meet the criteria, appropriate modification to the feeder channel shall be made.	Rectification / modernization of existing under ground duct for meeting the specified time limit for water filling / transfer is not in the scope of work - hence this clause is not applicable.	The clause may be read as: The filling & emptying time of existing navigational lock shall be retained as per original design of the structure.
2	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of	Caisson Gate: By filling up top buoyancy tanks from river water by gravity and draining the same from end tanks during	It is recommended that sinking and Raising operations of the caisson gate shall always be carried out by pumps during normal & emergency operating	The clause may be read as: Caisson Gate: By filling up top buoyancy tanks from river water and draining the same from end tanks during floating operation through pumps during normal and emergency operating conditions.

	Existing Navigational Lock at Farakka, 1. GENERAL INFORMATION AND EMPLOYER'S REQUIREMENTS/ SCOPE OF WORK, clause 1.1.4.1 Operations system: Caisson Gate, pg 15 of 550	floating operation through drain valve.	conditions to ensure safe operation. Please confirm.	
3	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, 1.2.5 Buildings, 1.2.10 Sewerage System, pg 32 of 550	The Contractor shall plan, design and construct complete sewerage system including laying of pipelines for collection of sewage from buildings to Sewerage Treatment Plant (STP) to constructed by the contractor.	Location of STP shall be specified.	The bidder to assess the appropriate location. Preferably the location will be lock downstream side.
4	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, 2.1.3 Navigational Lock and caisson gate parking bay, Fendering System, pg 45 of 550	Based on these criteria, the fender of AN 800, grade E3.0	A) ARCH fender AN 800 is specified, Bidder presume that other type of fender system shall also be considered by meeting the design & functional requirement specified. - B) Kindly provide the below details for the designing the fender 1.Length of vessel 2.Width of vessels 3.Draft of the vessel 4.Limiting fender Depth	A. The bidder shall conduct its own assessment and design in accordance with the provisions, codes, specifications etc. ' B. The maximum size of the vessel to accommodate in the navigational lock i. Length- 70-80 M ii. Width- 10-15 M iii. Draft- 2-3 M iv. Limiting fender depth- 300-800 mm
5	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of	Lock gate envelope plating and primary Structural members Ship building quality steel (IS:3039) -	it is foreseen that design the gate using IS 3039 having a yield stress of 235 MPa is not feasible to meet the performance criteria specified.	The bidder shall follow the codal provision of IS 2062.

	Existing Navigational Lock at Farakka, Volume II, 2.3 HYDROMECHANICAL, 2.3.11 Material, pg 83 of 550	Secondary structural members Hot Rolled Medium & High Tensile Structural Steel (IS:2062)	We shall be allowed to use IS 2062 E350 B0 Grade. Please confirm.	
6	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, 2.3 HYDROMECHANICAL, 2.3.11 Material, pg 84 of 550	Ballast Cast Iron (IS:210) or concrete	We shall be allowed to use carbon steel material. Please confirm	Tender condition prevail.
7	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, 3.6 FIELD SURVEYS AND INVESTIGATIONS, 3.6.5 Model Studies, pg 107 of 550	The Mathematical/Physical model studies for the whole structure to access the filling/emptying time of the lock chamber, sedimentation in the hydraulic system, check for air entrapment in the hydraulic system, waves, currents and turbulence generation in the lock chamber	This is not applicable for Renovation and Modernization of Existing Navigational Lock project.	The tender conditions prevail.
8	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, 3.6 FIELD SURVEYS AND INVESTIGATIONS, 3.6.6 Green Belt	Contractor shall develop green belt all along the boundary within the site. The length and width of the green belt shall be 1000 m x 10 m. About 900 trees along with herbs and shrubs will be planted in 10000 m2 area reserved for green belt.	This is not applicable for Renovation and Modernization of Existing Navigational Lock project.	The tender conditions prevail.

	Development, pg 108 of 550			
9	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, 4.24 LOCK APPURTENANCES, 4.24.1 General, pg 362 of 550	<ul style="list-style-type: none"> • Bollards • Ladders • Mooring rings • Rubbing strip • Edge angles • Handrails 	Please inform the numbers and its location of installation of various items to be provided.	For Bollards, refer Table 1.1, Point 5 in Volume 2, Clause No.1.1.4, Page No 14 & 15, Number of requirements of Ladders, Mooring rings, Rubbing strips, Edge angles, Handrails etc to be assessed by the bidder.
10	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, 6. SPECIFICATION – HYDROMECHANICAL, 6.1 GENERAL, pg 527 of 550	Two (2) nos. floating type of Caisson Gates are proposed for replacement / repair / maintenance of Mitre Gate. Gates will be installed vertically at both end of the lock for stopping water flow from U/S and D/S of lock chamber only when Mitre gates are required to be attended for repairs.	Bidder presume that Caisson gate isolation position on the Lock will be at Upstream and Downstream end of lock only. Upstream / downstream Mitre gate will be isolated from the lock simultaneously for any maintenance work. Owner shall reconfirm the Bidder understanding.	Caisson gate isolation position will be two (2) numbers for U/S Mitre gate & two (2) numbers for D/S Mitre gate.
11	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, Scope, General	General	Bidder Presume that the existing embedment plate for Mitre gate, radial, Bulkhead, caisson gate needs to be completely chipped & removed. New embedment plate to meet system requirements needs to be envisaged. Owner shall review and confirm the Bidder understanding	Embedment plates, being part of the gates, shall be replaced.
12	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational	Sill and side walls at gate grooves should be made of polished granite as per IS codes 14223 (Part-I) as mentioned in Design Criteria,	Sill and side well of gate shall have embedment steel plate instead of granite to meet the functional requirement of the gate/ Tender specification. Owner shall confirm.	The tender conditions prevail. However, the bidder may propose appropriate better material as per the Indian Standard code.

	Lock at Farakka, Volume II, 6.2 MITRE GATE, 6.2.4 Fixing Arrangements, pg 530 of 550			
13	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, 6.3 CAISSON GATE, 6.3.1 Structure, pg 533 of 550	Sill and side walls at gate grooves should be made of polished granite as per IS codes 14223 (Part-I) as mentioned in Design Criteria	Sill and side well of gate shall have embedment steel plate instead of granite to meet the functional requirement of the gate/ Tender specification. Owner shall confirm.	The tender conditions prevail. However, the bidder may propose appropriate better material as per the Indian Standard code
14	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, 6.3 CAISSON GATE, 6.3.2 Miscellaneous items / fittings and fixtures, pg 530 of 550	Fixed Hard Rails- galvanized steel	Increasing the weight of members on the top of caisson gate is not recommended. Alternatively GRP hand rail at top of caisson gate is recommend as per international practice and followed in the executed IWAI project. Bidder shall note and confirm the usage of GRP handrail.	The tender conditions prevail.
15	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, 6.4 RADIAL GATES, pg 538 of 550	The radial gates shall consist of curved skin plate as per IS:2062 steel quality clad with corrosion resistant steel conforming to IS:1570 Part V.	Can we use skin plate material as per IS 2062 which is followed in Dam / Barrage based projects.	The tender conditions prevail.
16	Volume 2: Technical Specifications and Drawings for Renovation and	General arrangement drawing and details of mooring equipment of existing Navigation lock	Please confirm is it in contractor scope of work or not (mooring equipment). If it is included, indicate the quantity	The tender conditions prevail. Refer to Table 1.1, Point 5 in Volume 2, Clause No.1.1.4, Page No 14 & 15,

	Modernization of Existing Navigational Lock at Farakka, Annexure to Volume 2 Drawing, Drawing No ENL 005		/ specification of mooring equipment requirements.	
17	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Annexure to Volume 2 Drawing & Volume II, 6.5 BULKHEAD GATES, Drawing No ENL 009-SH1- 6.5.7 Operating Mechanism, Page no 546	Material Handling	Crane hoist is shown for bulkhead gate lifting / Lowering however in the specification of Bulkhead gate Rope drum hoist is requested. - Owner shall check the discrepancy and Confirm the type of material handling arrangement requirements. - We suggest Rope drum hoist as per technical write up.	The clause may be read as: Clause no 1.1.4 Bulkhead Gates: To be operated by Electric Wire Rope Hoist. Clause no 2.3.8 Bulkhead Gates: To be operated by Electric Wire Rope Hoist. Clause no 6.5.7 The bulkhead gate shall be operated by Electric Wire Rope Hoist. The Electric Wire Rope Hoist shall be designed and manufactured as per IS: 6938.
18	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, Scope, General	General	Kindly confirm the Requirement of Jib crane for maintenance of bulk and radial gate.	Electric Wire Rope Hoist as shown in Drawing No. ENL 009-SH1 attached in Volume-2 tender documents shall be used.
19	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, Drawing ENL013, maneuvering	maneuvering	Caisson gate parking bay is located away from the lock. Manoeuvring scheme and auxiliary equipment requirements for this operation needs to be specified.	The location of Caisson gate parking bay may be fixed by the contractor in accordance with IWAI within the IWAI boundary. The appropriate location of caisson gate, parking bay, shall be proposed by the contractor within the lock premises.
20	Volume 2: Technical Specifications and	The allowable average water leakage tolerance of gates under	Maximum Permissible water Leakage rate specified is not	The clause may be read as:

	Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Volume II, 2.3 HYDROMECHANICAL, 2.3.13 Water-tightness of Gates, Page no 85	any head and without the use of any additional sealing material per metre length of seal shall be 0.10 l/s.	line with codal limiting values for gate testing. Limiting water leakage rate as per IS Code (IS 7718 for Gates) is 0.25 l/s / m of seal length. Bidder presume that leakage rate as per above IS 7718 code for gates shall be considered. Owner shall reconfirm bidder understanding	The allowable average water leakage tolerance of gates @ 0.10 l/s is indicative. IS 7718 for gates in this regard shall be followed.
Electrical & Instrumentation				
1	POWER SINGLE LINE DIAGRAM OF EXISTING NAVIGATION LOCK, FARAKKA (DRG. No: ENL011), ELECTRICAL Note no.15 & 16	Local Control Room	As per SLD note no.15 & 16, There are 8nos of LCR has been proposed. However as per actual operational requirement 4nos of LCR has been visualized in "Control System architecture for exiting lock (Drg.no.ENL012). Kindly clarify the requirement of additional 4nos of LCR.	The clause may be read as: 1 Central Control Room and 4 local control room
2	BASIC CONTROL SYSTEM ARCHITECTURE OF EXISTING LOCK, FARAKKA (DRG. No: ENL012), CONTROL SYSTEM, CCTV system	CCTV system	As per tender drawing, CCTV cameras are connected with Ethernet switch of Main PLC. As per OEM architecture of CCTV system, CCTV cameras will be connected with CCTV rack/panel from which the CCTV workstation will be communicated. hence we are clarifying that CCTV system will be standalone system. We are proceeding as per above said clarification. Kindly provide your confirmation.	The tender conditions prevail.
3	GENERAL LOCATION PLAN FOR MONITORING	Monitoring Instruments	As per tender drawing, monitoring field instruments are proposed for both locks	The tender conditions prevail.

	INSTRUMENTATION OF EXISTING NAVIGATION LOCK, FARAKKA (DRG. No: ENL014), MONITORING INSTRUMENTATION, Monitoring Instruments		(existing and new lock structure). However, There are field instruments were already provided on single side (east bank) of new lock and single side (west bank) of existing lock during construction of new lock. Hence, Those instruments will be used for monitoring, and new instruments will be considered only for existing lock (east bank).	
4	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 1.2.12.2 Detailed Electrical Scope of Work, pg 34 of 550	WBSEDCL Metering Panel location	As per specification, we understood that the metering panel will be supplied by WBSEDCL. Kindly confirm the location of metering panel.	Location shall be considered in consultation with WBSEDCL.
5	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, General, Clause:1.1.4, Table 1.1 Salient Features of Existing Navigational lock, pg 14 & 15 of 550	Local Control Room (LCR)	As per tender drawing & technical specification, 2no of LCR is mentioned. however the as per the operational requirement of 4leaf of mitre gates (2leaf for each gate), each leaf will be operated from dedicated LCR. Hence, kindly confirm the number of local control room	The clause may be read as: 1 Central Control Room and 4 local control room
6	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of	Cable crossing bridge across the existing lock	Since there are electrical equipment will be placed on both bay (East bank & West bank) of lock, There will be cable crossing across the lock.	The existing height of the cable crossing structure shall be retained.

	Existing Navigational Lock at Farakka, General, Clause: 1.1.4, Table 1.1 Salient Features of Existing Navigational lock, pg 14 & 15 of 550		Hence kindly provide the height of cable crossing structure for our further proceedings.	
7	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 1.2.12.1 Electrical Works- Authority's (IWAI's) Requirements, pg 32 of 550	Electrical works for central control room	As per specification, all electrical works to be provided for existing central control room building, kindly share the existing drawing of central control room and its electrics.	The existing drawings of central control room can be requested by the bidders through email.
8	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 1.2.12.2 Detailed Electrical Scope of Work, pg 36 of 550	Lighting Fixture-Material	As per specification & BOQ (S. No. 8 & 9), 1x20W and 2x20W LED tube light fixture shall made up of Aluminium with heat sink. However as per OEM standard manufacturing range, Aluminium material with heat sink is obsolete product. instead, polycarbonate material will be for the same. Kindly accept the proposal.	As per the latest specifications & OEM standard, electrical fittings shall be considered by the contractor.
9	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause:	HPSV Lighting Fixture	As per specification, HPSV lighting fixtures are proposed however as per OEM product range HPSV lighting fixtures are obsolete. which is not available. Hence, we are considering LED lighting fixtures instead of HPSV wherever mentioned in	The tender conditions prevail.

	2.2.6, Lighting System, pg 69 of 550		the specification. Kindly confirm	
10	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 2.2.6.4 Lighting Installation, pg 70 of 550	Concealed conduit for lighting	As per specification 'concealed conduit' to be provided for lighting fixture wiring (wherever practicable), however as it is Existing building (i.e. Central control room), providing concealed conduit is not possible. Hence, all over the existing control room building the conduits will be surface mounted only. which will be inside the false ceiling wherever applicable.	Tender conditions prevail.
11	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 5.2.4.1, Moulded Case Circuit Breaker (MCCB), pg 410 of 550	MCCB - TMD and MP based release	As per specification, "MCCBs shall be provided with thermo-magnetic type release for over current and short circuit protection. These shall be microprocessor based with RS 485 communication facility". Whereas in tender SLD (Drg.No: ENL011), All incomer & outgoing breaker rated 125A and above shall have microprocessor (MP) based release and breaker below 125A shall have Thermal-Magnetic (TMD) release. Hence, we are considering requirement as per SLD, also RS485 (MODBUS RTU) communication facility will be provided only in microprocessor based MCCB. kindly confirm.	Please refer 5.2.4.1: MCCB as follows: "MCCB shall in general conform to IS: 13947 Part-2. MCCBs shall be provided with thermo- magnetic type release for over current and short circuit protection. These shall be microprocessor based with RS 485 communication facility." The amended drawing (ENL011) is attached as Annexure-I.
12	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of	Bushing type	As per OEM manufacturer recommendation porcelain bushing is outdated, same shall be provided by epoxy. Kindly confirm	As per the latest specifications & OEM standard, suitable type of bushing shall be considered by the contractor

	Existing Navigational Lock at Farakka, Electrical, Clause: 5.1.2.2, Transformer-Bushings, pg 395 of 550			
13	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 5.2.5, 110VDC System, pg 419 of 550	110V DC System - Quantity	As per specification clause 5.2.5, 1x100% battery charger with DCDB & battery is mentioned where as in in electrical works table (Clause: 1.2.12.2, page no. 35) 110V DC battery charger with dual battery charging and DC Distribution boards. Kindly clarify the requirement of DC system is 1x100% or 2x100%	<p>The clause (1.2.12.2, scope of work, point no 7) may be read as:</p> <p>Substation Battery, Lead Acid (Valve regulated) Sealed maintenance free type, 110V DC with minimum 1 Hour back up, 110V DC battery charger with battery charging and DC Distribution boards</p> <p>Please refer Volume 2, clause no 5.2.5, Page no 419, as follows:</p> <p>“Batteries shall be sized in accordance with IEEE-485. The battery shall be sized with a 10% design margin and an ageing factor of 1.25. 110V DC Power Supply System shall consist of 1x100% 110V batteries, 1x100% 110V battery charger cum DC Distribution Board.”</p>
14	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 5.2.5.1, 110VDC System - Construction of Battery, pg 421 of 550	110V DC System - Battery rack	As per specification, Wooden racks shall be provided for batteries of multi-tier installation. However as per Battery OEM recommendation battery rack shall be MS only. Also wooden racks are not applicable for VRLA SMF batteries. kindly accept the same.	<p>The clause may be read as:</p> <p>Mild Steel racks shall be provided for batteries for multi-tier installation.</p>
15	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka,	110V DC System - Degree of protection	As per specification, IP54 is the requirement for battery charger cum DCDB. However as per OEM recommendation IP42 is the maximum available protection for battery charger	The tender conditions prevail.

	Electrical, Clause: 5.2.5.2, 110VDC System - Construction of Battery Charger cum DCDB, pg 424 of 550		due to heat dissipation. Kindly confirm.	
16	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 5.2.5.1, 110VDC System - Construction of Battery, pg 421 & 422 of 550	110V DC System - Battery Accessories	As per specification, There are some accessories are inquired, in which the following accessories are not applicable for VRLA SMF type battery; * Syringe type Hydrometer-2 Nos per Battery * Thermometer with specific gravity correction scale-2 Nos per Battery * Acid resistant funnel-2 Nos per Battery * Acid resistant jug.-2 Nos per Battery * Rubber apron and gloves-2 Nos per Battery.	The tender conditions prevail.
17	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 5.2.5.1, 110VDC System - Construction of Battery, pg 422 of 550	110V DC System - Battery Spare list	As per specification, There are some spares are inquired, in which the following spares are not applicable for VRLA SMF type battery; * Battery stand insulators - 02 Nos. * Cell insulators - 02 Nos. * Vent plugs - 10 Nos.	The tender conditions prevail.
18	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka,	110V DC System - Annunciator	As per specification, Digital type Window annunciator need to be provided for alarm annunciation with acknowledge, test & reset push buttons and a buzzer for the following conditions:	As per the latest specifications & OEM standard, suitable type of Annunciator shall be considered by the contractor.

	Electrical, Clause: 5.2.5.2, 110VDC System - Construction of Battery Charger cum DCDB, pg 424 & 425 of 550		<ul style="list-style-type: none"> · SCR fuse fail · Battery / DC system under voltage · DC system over voltage · DC overload · Output fuse blown · AC supply fail · AC under voltage · Battery earth fault · Filter fuse failure · Battery on Float / Boost · Charger fail/Battery on discharge · Any other annunciation, as required <p>However as per OEM recommendation annunciator are outdated technology, hence all these parameters shall be displayed on LCD display. Kindly accept the same.</p>	
19	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 2.2.8.1, Cable Selection Criteria, Clause: 5.2.6, Power and Control cables, pg 73, 427 of 550	Power cable selection - Voltage drop	<p>As per specification clause-2.2.8.1, voltage drop details are mentioned as</p> <p>Starting Voltage drop of Motor: 15%</p> <p>Running Voltage drop of Motor: 3%</p> <p>whereas on specification clause-5.2.6, voltage drop details are mentioned as</p> <p>Steady state Voltage drop (Continuous running condition): 2.5%</p> <p>Transient state voltage drop (During Motor Starting): 10 %</p> <p>Kindly clarify which one we must follow.</p>	<p>The clause may be read as:</p> <p>Permissible Voltage drop in Cables:</p> <ul style="list-style-type: none"> • Transformer to Switchgear Busbars: 1% • Switchgear, PCC to Motor: - 3% • Switchgear, PCC, ACDB, MLDB to Lighting DB (LDB): 2% • LDB to farthest lighting fixture in the circuit: 2.5% • Starting Voltage drop of Motor: 10% • Running Voltage drop of Motor: 2.5% <p>Please refer Volume 2, clause no 5.2.6 as follows: To maintain voltage at motor terminals / equipment end with in desirable limit, it is proposed to limit the voltage drop in the cables within the following limits:</p> <ul style="list-style-type: none"> • Steady state Voltage drop (Continuous running condition): 2.5% • Transient state voltage drops (During Motor Starting): 10 %
20	Volume 2: Technical Specifications and Drawings for	63A welding socket - MOC	Kindly provide the enclosure material for 63A welding receptacles as there is no	Refer Volume 2, Clause no 5.2.7 on Page 432.

	Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 5.2.7.1, Receptacles, pg 435 of 550		details provided in specification.	
21	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 5.2.7, Lighting System, pg 432 of 550	Receptacle - Degree of protection	As per specification, all receptacle have IP67 however as per OEM product range IP65 is available for outdoor and the MOC will be polycarbonate instead of polyamide. Kindly confirm	The tender conditions prevail.
22	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 5.2.9.1, Design and Construction of Cable Trays, pg 451 of 550	Cable fill criteria in cable tray	As per specification, 'The size of the trays shall be selected on the basis of maximum 50% fill criteria'. However, as there are space constrain in existing lock cable routing we are unable to consider the 50% of fill criteria. Hence, sufficient space will be consider in each tray for cable erection only. kindly consider our proposal and accept the same.	The tender conditions prevail.
23	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 5.2.10, 415V Silent Diesel Generator, pg 454 of 550	DG set rating	Kindly clarify that DG set is required for only emergency operation or complete normal operation of existing lock if main supply failure.	Please refer volume 2, clause no 5.2.10, page no 454: "The output from the unit shall be 400 KVA (at alternator output), 415 volts, 3 ph, 50 Hz, 0.8 power factor. It shall cater to 100% indoor lighting, Operation of Mitre & Radial Gates and 20% High Mast Load. DG set shall be required to operate as standby unit under the following environmental conditions: <ul style="list-style-type: none"> • Ambient temperature: 45 Degree C • Relative humidity: Above 90% • Altitude: Sea-level"

24	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 5.2.11.8, Metering and AMF Control Panel, pg 460 of 550	DG set - Protection relay & Indication lamp	The following protections are in built with DG controller in addition to annunciator panel instead of individual protection. 1) Generator high voltage 2) Generator low voltage 3) Field failure relay 4) Phase failure relay Hence, additional indication lamp or relay will not be provided as recommended by OEM.	As per the latest specifications & OEM standard, suitable type of protection relay & indication lamp shall be considered by the contractor
25	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 5.2.14.5, Telephone System (EPABX) - Power Supply, pg 475 of 550	EPABX - Power Supply	As per specification, Dedicated Battery charger with Battery is required for Telephone system (EPABX) alone. However as per specification, we are providing Separate UPS system and Separate 110VDC battery charger system for existing lock. Hence, We are considering the Telephone system load in UPS system and not considering dedicated battery charger system for telephone system alone. kindly consider our proposal and accept the same.	As per the latest specifications & OEM standard, suitable type of EPABX-power supply system shall be considered by the contractor
26	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Control & Automation works. Clause: 5.3.2.6, The Programmable Logic Controllers PLCs, pg 485 of 550	Major equipment's controlled from PLC	As per specification, START/STOP operation of 'Submersible pump (for caisson gate)' and 'Capstan motor' to be controlled from PLC (from control room). However, as these equipment's are located in field there must be manual intervention required for safe operation of equipment. Hence considering the safety aspects which can be controlled & monitored from respective local	The tender conditions prevail.

			control panels (field) and only can be monitored from PLC (from control room).	
27	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Control & Automation works, Clause: 5.3.2.12, Control and Instrumentation Cable, pg 494 of 550	Control & Instrumentation cable - Insulation material	As per specification clause 5.3.2.12, Insulation of control & instrumentation cable shall be of 'XLPE' whereas as per clause:5.2.6.1, Insulation of Control cable shall be 'PVC'. Kindly confirm the insulation material.	<p>The clause (5.2.6.1 (C)) may be read as: Control cables shall be of 1.1 kV grade, multicore, XLPE insulated, PVC inner sheathed, armoured, FRLS PVC outer sheathed stranded copper conductor conforming to IS:1554 Part-I. Up to 5 cores it shall be colour coded and above 5 cores shall be numbered.</p> <p>Please refer Volume 2, clause no 5.3.2.12 at page no 494 as follows: “.....The insulation shall be chemically crosslinked polyethylene XLPE conforming to the physical, electrical and ageing properties as required to relevant IS specified.....”.</p>
28	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Control & Automation works, Clause: 5.3.3.2, Management Software, pg 498 of 550	Operational requirement of management software	As per specification, it is mentioned that "The goal of the system is to centralize information and planning for the Material Handling solution operations and to optimize the utilization of all facilities". as we are not constructing any material handling plant, the requirement of management software to be confirmed. The functional requirement of Management software to be provided for our further design & proceedings if management software required.	<p>The clause may be read as:</p> <p>The management software is required for the following points related to different components of the Navigational Lock.:</p> <ol style="list-style-type: none"> Data management & central repository of equipment. Functionality of different component of lock. Repository of spare parts & accessories. Indicate scheduled and preventive maintenance of different components of the lock etc. <p>The bidder shall design the same with respect to the actual requirement & propose in the proposal along with the financial implication.</p>
29	Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, General	General	Boundary wall lighting has not been envisaged only indoor lighting, street lighting (if required) and high mast only will be considered. Kindly confirm.	Please refer Volume-2, clause no 2.2.6.1, page no 69.

<p>30</p>	<p>Volume 2: Technical Specifications and Drawings for Renovation and Modernization of Existing Navigational Lock at Farakka, Electrical, Clause: 7, Specification for Fire Fighting System, pg 549 of 550</p>	<p>Fire detection & Alarm system</p>	<p>As per fire fighting system specification, There is no detailed requirement for Fire detection and Alarm System. however as per Fire protection system norm, it may be required. Hence kindly ensure the requirement of fire detection and alarm system. also share the specification if required.</p>	<p>The clause may be read as: SPECIFICATIONS - FIRE FIGHTING AND FIRE DETECTION & ALARM SYSTEM</p> <p>7.1 SCOPE OF WORK The Scope of Work is for the installation of Fire Fighting and Fire Detection & Alarm Systems in the main and local Control Room of Farakka Navigational Lock as per IS: 2189. The firefighting system shall consist of dry powder stored pressure by nitrogen gas with inbuilt pressure gauge to indicate pressure.</p> <table border="1" data-bbox="1375 478 2154 858"> <thead> <tr> <th>S. No.</th> <th>Area</th> <th>Class of Fire</th> <th>Classification of Occupancy</th> <th>System Proposed</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Control Room</td> <td>A, B & C</td> <td>Ordinary Hazard</td> <td>Dry powder stored pressure confirming to IS: 13849. Pressurized by nitrogen gas with inbuilt pressure gauge to indicate pressure.</td> </tr> </tbody> </table> <p>The firefighting system, fire detecting & alarm system shall be designed & implemented by the bidder as per the code & norms with conformity with the norms of as applicable (applicable govt norms).</p> <p>7.2 FIRE WARNING AND ACTIVATION SYSTEM 7.2.1 Automatic fire detection and alarm system Selection, installation and maintenance of automatic fire detection and alarm system shall be based on IS 2189 (2008). 7.2.2 Heat sensitive fire detectors Specification for heat sensitive fire detectors for use in automatic fire alarm system shall be based on IS 2175 (1988). 7.2.3 Smoke detectors</p>	S. No.	Area	Class of Fire	Classification of Occupancy	System Proposed	1	Control Room	A, B & C	Ordinary Hazard	Dry powder stored pressure confirming to IS: 13849. Pressurized by nitrogen gas with inbuilt pressure gauge to indicate pressure.
S. No.	Area	Class of Fire	Classification of Occupancy	System Proposed										
1	Control Room	A, B & C	Ordinary Hazard	Dry powder stored pressure confirming to IS: 13849. Pressurized by nitrogen gas with inbuilt pressure gauge to indicate pressure.										

				<p>Specification for smoke detectors for use in automatic electrical fire alarm system shall be based on IS 11360 (1985).</p> <p>7.2.4 Protection of electronic data The protection of electronic computer/data processing equipment from damage by fire. The system shall be installed as per the IS 12456 (2004).</p>
General				
1	<p>Topography Survey, Bathymetry, Bore hole data, Condition of existing lock, Structural condition, DPR</p>		<p>Bidder requests the employer to provide the topographical survey of the land side of U/S and D/S of the existing lock Bidder requests the employer to provide the bathymetry survey of the U/S and D/S of the existing lock. Bidder requests the employer to provide the bore hole data (geo technical investigation report) for</p> <ol style="list-style-type: none"> a. Upstream / downstream slope protection area b. Residential building area / new building area c. Existing Main lock area <p>Bidder requests the employer to provide the information about existing concrete wall condition. Request you to kindly provide a report on the structural condition and structural stability of the lock structure. Request you to kindly provide detailed project report on the existing structure for better understanding on the renovation and modernization.</p>	<p>The Condition survey report and available soil investigation report etc. shall be provided on request. The components to be dismantled are mentioned in BoQ. The replaced (civil, hydro-mechanical, electrical, etc having salvage value) items shall be stacked at designated place within 500m from project site.</p>
2	<p>Coffer dam location,</p>		<p>Bidder requests the employer to provide the location of the coffer</p>	

	As built drawings, On site measurement		<p>dam in the upstream and down stream location.</p> <p>Bidder requests the employer to provide the as built drawing (civil, mechanical, electrical and instrumentation) of the existing lock.</p> <p>Bidder requests the employer to provide on site measurement of all gate seatings, hinges, drives.</p>	<p>The bidder to assess the suitable location & alignment of Cofferdam u/s and D/s of main lock.</p> <p>The bidder can undertake site visit prior to the bid submission. IWAI shall provide all assistance in this regard.</p>
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