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Revisions: Refer to record of revisions	Prepared by :	Checked by :	Approved by :	Date :
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1.0 INTRODUCTION


- 1.1 BHEL is looking for a competent Licensor and Engineering Sub-Contractor (LESC) qualified as per the requirements specified under clause no 5.0 of this TCC, to assist BHEL by providing Supply of Process of License/s, Basic Design and Detailed Engineering (including 3D Modelling, HAZOP and SIL study) for the **LSTK-2 PACKAGE OF SYNGAS PURIFICATION UNIT for Coal Gasification Plant owned by Bharat Coal Gasification and Chemicals Limited (BCGCL), Lakhanpur, District- Jharsuguda, Odisha (India)**, for which BHEL intends to bid as the EPC contractor.
- 1.2 The intent of this TCC is to specify the minimum requirements of LESC to be eligible to associate with BHEL for the subject job both for Pre-bid Engineering and Post-Order detailed Engineering (if BHEL gets order from BCGCL in above referred LSTK-2 Tender). This document provides details to be used as input by the bidders for submitting their competitive offer.

2.0 LEGEND

BCGCL	Bharat Coal Gasification and Chemicals Limited (OWNER)
BHEL	Bharat Heavy Electricals Limited (EPC Contractor)
PE&SD	Project Engineering & Systems Division, Hyderabad (unit of BHEL)
PMC	Project Management Consultant
ESC	Engineering Sub contractor
BQC	Bidder Qualification Criteria
WO	Work Order
LOI	Letter of Intent
LSTK	Lumpsum Turnkey
LESC or ESC	Licensor(L) and Engineering Sub-Contractor (ESC)

3.0 PROJECT DETAILS

- 3.1 Coal India Limited (CIL) and Bharat Heavy Electricals Limited (BHEL) have formed a Joint Venture Company in the name of **BHARAT COAL GASIFICATION AND CHEMICALS LIMITED**, hereinafter also referred to as "OWNER" with its registered office at Bandhabahal Old PO Belpah, BIT Colony, MCL (In front, Bandhbahal Colony, Lakhanpur, Jharsuguda- 768211, Orissa).
- 3.2 Projects & Development India Ltd. (PDIL) has been appointed by OWNER for Preparation Detailed Feasibility Report (DFR) for setting up of High Ash coal-to-Ammonium Nitrate Plant at Lakhanpur area of Mahanadi Coalfields Limited, Jharsuguda district, Odisha
- 3.3 Projects and Development India Limited (PDIL) on behalf of OWNER has invited eligible bidders to submit Bid for "Syngas Purification Plant" for Setting up of High Ash Coal to Ammonium Nitrate Plant at Lakhanpur area of Mahanadi Coalfields Limited, Jharsuguda district, Odisha on a Lumpsum Turnkey (LSTK) basis on single point responsibility as per Technical Specifications, Commercial Conditions and details laid down in the NIT.
- 3.4 **BRIEF SCOPE OF LSTK CONTRACTOR'S WORK:** The Scope of work of the LSTK Contractor shall include License, Basic and detailed engineering, Procurement, Supply, Fabrication, Inspection by Third Party Inspection Agency (TPI) as applicable, Expediting, Route survey for Over Dimensional Consignments (ODCs), Insurance, Transportation of equipment / materials to work site, Storage, construction and erection of all civil, mechanical, electrical and instrumentation works, assembly and Installation, obtaining all necessary statutory approvals, Testing, Mechanical Completion, Pre-Commissioning, Commissioning, Sustained Load Test Run, Operator Training, Performance Guarantee Test Run (PGTR) including Total Project Management and handing over of the plants and facilities under contractor's scope of work duly completed on single point responsibility basis.

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4.0 SCOPE OF WORK OF LESC

Scope of Licensor and Engineering Sub-Contractor (LESC) is to provide Process License (s) & transfer of Technical Information for CO Shift, Rectisol & Liquid Nitrogen Wash Systems, Preparation of BEDP, License proprietary equipment, Residual Process Design Engineering support during Pre-bid stage of tender and Detailed Engineering during Post order stage (if BHEL bags the order as LSTK) for subject package and SRU package.

4.1 Scope of LESC shall be as per Cl.5.0 & 6.0 of CONTRACTORS SCOPE OF WORK Document No.: PC0288/E/001/P-II/ SEC-3.0.

4.2 **LESC shall execute and be solely responsible for, broadly, the following activities of the subject tender/project:**

4.2.1 Scope of **Basic and Detailed Engineering** shall be as per SECTION-3.0 CONTRACTORS SCOPE OF WORK Bidding Document Reference: PC0288/E/001/P-II/ SEC-3.0, for subject Package.

4.2.2 Submission of signed MOUs between BHEL and Process Licensor for technology tie up for the proposed Gas cleaning, Purification & Ammonia Synthesis Gas (N_2+3H_2) Generation unit along with CO_2 generation as the same need to be submitted along with the bid as part of tender documentation.

4.2.3 All the applicable sections of tender documents listed in Bidding Document Reference: PC-288/E/001 (Technical specification) to be complied with while designing the syngas Purification package and other facilities that are included as part of the tender.


4.2.4 Process Licensor shall provide license in line with the requirements outlined in the following tender specification PC0288/E/001, Part-II Technical.

4.3 LESC shall execute both **Pre-Bid Engineering Support** and **Post-Order Engineering**, if BHEL were to be successful in getting the Order.

4.3.1 **Pre-Tender & Basic Engineering:**

LESC shall support BHEL comprehensively during pre-bid stage and enable BHEL to submit a competitive bid. The following shall be submitted **as a minimum** during pre-bid stage:

- (i) Role of Process licensor shall be in line with the requirements outlined as per Clause No 5.0 in the tender doc: PC0288/E/001/P-II/ SEC-3.0 – CONTRACTOR'S SCOPE OF WORK.
- (ii) Scope of Basic Engineering Services shall be in line with the requirements outlined as per Clause No 6.0 in the tender doc: PC0288/E/001/P-II/ SEC-3.0 – CONTRACTOR'S SCOPE OF WORK.
- (iii) Provide required minimum inputs/documentation indicated in Annexure-1 to enable BHEL to quote for the tender.
- (iv) The detailed list of deliverables during the Pre-bid stage and during detailed engineering to be submitted along with offer.
- (v) Successful LESC in this enquiry shall sign the Memoranda of Understanding (MOU) with BHEL in connection as:
 - a) To provide process License and
 - b) Executing the residual process engineering & detailed engineering, engineering for procurement, Preparation/Approval of MR of equipment and Package items as defined in tender elsewhere, HAZOP/ SIL studies, 3D modelling, Technical & Construction Audit, Pre-commissioning/Commissioning and PGTR etc. as applicable. (Refer Section 8.0 of this document for details and procedure).
- (vi) Technical inputs for preparation of BHEL's Offer and inputs for various FORMS/ Data to be submitted as part of Bidding Document Reference PC0288/E/001/P-II/ SEC-13.0.


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- (vii) Detailed study of Owner's tender documents. Preparation of Pre-Bid Queries/ Questionnaire for seeking clarifications from Owner/PMC on tender documents.
- (viii) Preparation of offer for Process, indicating the License details, Process efficiency etc. as desired in the Tender Owner's documents.
- (ix) Support for Preparation of comprehensive consolidated Technical Offer inclusive of Scope of Supply & Services/ Terminal Points/ Exclusions, Technical Deviations & Clarifications on tender specifications, Filled-up Technical Schedules etc. as required.
- (x) Finalizing the optimized Performance Guarantees of the project considering bid evaluation criteria of tender specification.
- (xi) Provide broad specifications/ technical data sheets of applicable equipment / systems etc. and suggest suitable/ probable sub-vendors/ agencies for obtaining the budgetary quotations during proposal stage.
- (xii) Support during proposal stage activities for technical closure and acceptance of the bid including providing technical clarifications to Owner's queries, participation in pre-bid/ post bid-meetings as required.
- (xiii) Re-Engineering in case of change in specifications or amendments issued by customer shall be carried out by LESC at any stage during execution of pre-bid or Post order activities.
- (xiv) LESC shall also furnish the suggested Price to be quoted for the subject tender considering expected Market Level Prices. However, the final decision and responsibility of pricing will be by BHEL.
- (xv) Support BHEL w.r.t. technical queries, participation in meetings if required etc. up to price bid opening by BCGCL.
- (xvi) LESC to submit the broad L1 schedule for the scope of work along with bid to include the draw down schedule to be submitted by LEPC to Project owner.

4.3.2 Post-Order Engineering:

The roles, responsibilities and scope of work of LESC shall include the following, as a minimum, for the Detailed Engineering of Syngas Purification and SRU package.

- (i) Comprehensive study of Owner's tender documents and Preparation of Detailed Scope of Supply, including scheduling/ planning of the design activities, identifying and defining the detailed engineering deliverables during contract stage execution.
- (ii) Carry out the detailed residual process design including process design calculations, sizing of various equipment and systems, finalising process flow diagrams, detailed P&IDs/Process Schematics, control and operation write-ups, process and electrical utility requirements, chemicals consumption requirements, O&M consumable requirements etc.
- (iii) Preparation of Mechanical and Electrical layouts (Plant/ Buildings/ Equipment/ Area/ Piping etc.)
- (iv) Detailed Electrical and C&I engineering.
- (v) Detailed Civil, Architectural and Structural engineering.
- (vi) Procurement engineering including identifying all the bought outs, identifying probable suppliers in the market, preparation of suitable technical material purchase specifications (MR) for RFQs, evaluation of technical offers from the vendors in all sub-systems (Electrical/ Mechanical/ C&I) and review/ approval of vendor drawings/ documents.
- (vii) Provide Quality support in getting the Quality documentation approved by Owner/PMC, including Participation in technical/Quality discussions with them as required.
- (viii) Provide engineering support in getting the engineering documentation approved by Owner/ PMC, including participating in technical discussions with them as required.
- (ix) Assisting BHEL in review and approvals of engineering/technical, Quality related documentation of Sub-vendors/Suppliers, as applicable.
- (x) Assistance in Preparation of Plant Performance Guarantee Test Procedure and in conducting the Plant Performance Guarantee Tests.
- (xi) Finalize the requirements of O&M consumables & chemicals along with the BOM and technical specifications.
- (xii) Preparation of Plant Operations and Maintenance Manuals, Plant operation procedures for effective and efficient operation of plant.

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- (xiii) Deputation of Engineering Experts to project site for resolving engineering and technical issues, as required during execution of the project.
- (xiv) Identifying the vendors/suppliers, floating of enquiries, receipt of offers, Techno-commercial evaluation, placement of PO, expediting, change orders, closure of PO/order, etc. shall be in scope of BHEL.
- (xv) Wherever the term CONTRACTOR is mentioned for / in the context of the Detailed Engineering related activities and responsibilities in the Owner's Bidding Document, same shall be the scope and responsibilities of Licensor and Engineering Sub Contractor (LESC). Accordingly, the bidder shall interpret their scope as per the Owner's Bid Document while submitting their offer against Project Specific Tender for finalization of LESC.
- (xvi) HAZAN & HAZOP Study as defined in Tender specification.
- (xvii) Plant 3D Modelling and 30%, 60% & 90% Model Reviews of the 3D model developed
- (xviii) Technical Support in Technical & Construction Audits
- (xix) Documentation for Statutory Approvals.
- (xx) Technical Support in Mechanical Completion, Pre-commissioning, Commissioning and PGTR.

NOTE:

- a) The above is a typical minimum activity to be carried out by "Licensor and Engineering Sub-Contractor (LESC)" as part of Post Order Detailed Engineering. However, LESC shall carry out detailed engineering as per "Drawings and documents" of Bidding Document Reference: PC-288/E001/Sec-9.
 - b) In general, it is expected that the LESC shall maintain high standards of engineering, quality in deliverables submitted and accuracy in documentation submitted meeting the intended contractual requirements.
 - c) If the Bidder is in JV/corporation with the principal firm, all the drawings submitted by the bidder/LESC shall be vetted by the competent person in principal firm before submitting the deliverables to BHEL.
 - d) The deliverables of LESC shall be submitted to BHEL only, unless instructed otherwise.
 - e) BHEL will review the deliverables and furnish its observations, comments, if any to LESC for their incorporation and resubmission to BHEL.
 - f) LESC shall clarify, with all supporting details on any queries raised by BHEL on their deliverables.
- 4.4 LESC shall provide Process License (s) & transfer of technical information for CO Shift, Rectisol and Liquid Nitrogen Wash systems.
- 4.5 LESC shall supply following items:
- a) license proprietary equipment,
 - b) Spares for Pre-Commissioning, Commissioning and 05 Years Operation & Maintenance and list of the same shall be furnished along with the offer. Mandatory Spares for applicable items of scope of work shall be referred as per PC-288/E001/Sec-10 document.
 - c) Consumables, lubricants and chemicals for Pre-Commissioning, Commissioning and PG Test.
- 4.6 LESC shall provide supervision for E&C and during performance guarantee of License proprietary equipment.
- 4.7 LESC shall provide Annual **Maintenance Contract** for the License proprietary equipment supplied by them for a total period of 4 years after defect liability period.
- 4.8 LESC shall provide training as per PC0288/E/001/P-II/ SEC-12.0 for owner's and operation's personnel.

5.0 BIDDER (LESC) QUALIFICATION CRITERIA

5.1 Technology Criteria:

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The bidder shall satisfy the requirement indicated Cl. 2.1 of Owner's Bidding Document No: PC288/E/001/P-I/ Appendix-1.

5.2 Financial Criteria

1.2.1 The average annual financial Turnover of LESC during any of the preceding five financial years i.e., 2023-2024, 2022-2023, 2021-2022, 2020-2021 & 2019-2020 or financial year ending 31.12.2023, 31.12.2022, 31.12.2021, 31.12.2020 & 31.12.2019 from the date of NIT publication shall be equal to or more than **Rs 45 Crs.**

1.2.2 Audited financial statement have to be submitted for all the five years as indicated against clause 5.3.1 above. If financial statements are not required to be audited statutorily, then instead of audited financial statements, financial statements are required to be certified by chartered accountant. Published Annual Report available in the public domain shall also be acceptable.

1.2.3 In case audited Financial statements have not been submitted any of five years as indicated above, then the applicable audited statements submitted by bidders against the requisite three years, will be averaged for three years i.e. total divided by five.

5.3 LESC shall not be under banned or blacklisted or de-listed or put on Holiday by any Government / Quasi-Government / Public Sector Undertaking / Private Firm / Financial Institutions on due date of submission of bid.

6.0 DOCUMENTATION FOR BIDDER QUALIFICATION CRITERIA:

6.1 The bidder shall submit the supporting documents as per Cl. 2.1.1 of Owner's Bidding Document No: PC288/E/001/P-I/ Appendix-1 such as:

- Copy of Work Order/ relevant Extract of Work Order/Contract Agreement/relevant Extract of Contract Agreement shall clearly indicate the LOA/Work Order/Contract/Agreement number, Name of Project, Scope of Work, Contract/Investment Value, Contract Period etc.
- The Completion / Acceptance Certificate shall clearly indicate the LOA/Work Order/Contract/Agreement No., Name of Project, Scope of Work, Contract Value, Contract Period , Executed/Investment Value , Actual date of completion. Documentary proof of satisfactory commercial operation for a minimum period of at least one year issued by plant owner.

6.2 All documents in support of Technical PQC furnished by the BIDDERS shall be verified and certified by any one of the independent third party inspection agency as mentioned in Cl 2.4 of Owner's Bidding Document No: PC288/E/001/P-I/ Appendix-1. The same shall be furnished along with bid.


7.0 NON-DISCLOSURE AGREEMENT & CONFIDENTIALITY AGREEMENT

NDA is to be signed as per the format.

8.0 BID EVALUATION CRITERIA

Bid shall be evaluated based on Price-bid format. **No deviation shall be permitted.**

8.1 The bid evaluation shall be on Lumpsum L1 basis as per the Lumpsum Price in the attached Price Bid Format. Quotations submitted in partial will be summarily rejected. BHEL will not entertain any other expenses/ assumptions written separately elsewhere other than those specified in the price bid format.

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- 8.2 To facilitate evaluation and comparison of prices, the OWNER will convert all bid prices expressed in foreign currency into Indian rupees at reference rate of the concerned foreign currency, available on RBI website, on the date of opening of price bids. If the bid opening date happens to be a bank holiday then the rate of previous working day would be considered.
- 8.3 Successful Bidder shall be awarded the PO/LOA for execution of work during Pre-Bid Scope. Memorandum of Understanding (MoU) will be signed on non-judicial stamp paper of Rs. 200/- by BHEL for Post-bid Scope with L-1 Bidder after submission of Bid Bond for 1% value of the finalized price as per attached draft (**Annexure-4**). The MoU shall be converted into contract after BHEL wins the order from M/s BCGCL. BHEL will intimate the MoU partner for entering into the contract once the order is received from the customer.
- 8.4 LESC shall not have any claim whatsoever on the Post-Order component, if BHEL is not successful in winning the Contract.

9.0 ENGINEERING GUARANTEE

- a) Since process Licensing, Residual Process Design and Detailed Engineering is within LESC's scope and the work shall be executed and UNIT established based on the Engineering performed, it shall be the prime responsibility of LESC to carry out such design and engineering in accordance with good and sound engineering practices using International Standards and Indian Codes & Regulations wherever applicable to such design and/or engineering.
- b) In case any error or omission in design or engineering within LESC's scope i.e. the residual process design or detailed engineering requires re-engineering, which results in any new requirements for equipment/ materials, the same shall be supplied and/or re-engineering shall be carried by the LESC within the scope of relative work and/or supply and within the contractual period without extra cost to the OWNER or entitlement of extension of time.
LESC shall guarantee that the system design for the Unit / Plant shall meet and comply with the Licensor's package, if so applicable, and;
- the equipment selected
 - the site criteria
 - the Engineering specifications, standard and design guides
 - the Front-end engineering data as mentioned in Bidding document.
- c) LESC shall check and satisfy themselves with Process Package, Front End Engineering Data for its accuracy, correctness and completeness to meet the agreed guarantees and in case of deficiency, LESC shall inform BHEL/OWNER/PMC the modifications proposed to be carried out to overcome the deficiency and rectify the same at no extra cost. LESC, if required, shall carry out corrective technical studies and engineering as may be required without any extra cost to the BHEL/OWNER. Before proceeding with the re-work, Licensor approval, if applicable, shall be obtained.

10.0 PERFORMANCE GUARANTEE

- a) LESC is responsible for the Performance & Guarantee Tests as per Tender document PC0009/E/001P-II, Section 8.
- b) LESC guarantees its Engineering as set forth in clause 10.0 (a). If the UNIT does not achieve the results set forth in the LICENSOR's process guarantees due to defect(s) or deficiency (ies) in LESC's Engineering, LESC shall within scope of their work and responsibilities, carry out re-engineering and bear the cost of repair and/or replacement of such defective product(s).
- c) LESC's guarantees shall also cover the mechanical performance of such equipment/ materials and their efficiencies affected primarily due to defective engineering by LESC. LESC shall bear the cost of replacement or alteration or repair in parts or components or wholly (including dismantling, transportation, erection, hook-up, commissioning and performance test) of such Equipment which does not perform to the guarantees, primarily due to defective

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engineering by LESC, within the relative scope of supply and/ or services at no extra cost to BHEL and without entitlement of extension of time to LESC.

- d) After 3 (three) failed Performance Tests as specified at Technical, Section-8.0 of Document: PC0009/E/001P-II for reasons attributable to the LESC, the OWNER shall have right to proceed with the encashment of Contract Security Cum Performance Guarantee and other provisions also take all action as per contract.

11.0 OTHER INSTRUCTIONS

- 11.1. Since speedy completion of project is essential for a tight project schedule, it shall be responsibility of LESC to ensure timely delivery of all milestones.
- 11.2. LESC shall familiarize fully with the standard/ procedures/ practice of BHEL/OWNER, to avoid any dispute at later date and after order placement.
- 11.3. BHEL shall not pay any amount, other than the fee specifically agreed, towards any cost incurred by LESC by way of salaries to their employees (income and taxes), insurance of any nature, benefits/ bonus to the employees, etc. BHEL's liability is limited to the amount contracted for the services to be rendered under the scope of work defined.
- 11.4. LESC shall not commit any expenditure on behalf of BHEL without BHEL's consent in writing, during the execution of the work defined in the scope.
- 11.5. LESC shall bear all expenses/ fee penalties if it infringes on patents/ licenses of any persons/ organizations or in case of suits, court proceedings, damage claims etc., due to any reason whatsoever.
- 11.6. LESC shall ensure that it possesses the latest revisions of various national and international standards, codes of practices, statutory & environmental regulations etc. as applicable, for execution of the work. BHEL shall not provide any such documents to LESC. Engineers of LESC assigned for this project shall have familiarity on relevant documents as mentioned above for their use and applications.
- 11.7. LESC shall maintain at their own cost the personal accidents policy, life insurance and / or any such insurance required in respect of their personnel deputed to outstation visits for the given contract.
- 11.8. BHEL reserves the right to terminate or suspend the contract or withdraw part of the scope of the work at any stage of its execution, if it is found that LESC has not met its obligation for the performance / progress is not up to the expected standards and overall work is likely to suffer. In such an event, BHEL shall give 15 days' notice in writing. In such case all costs incurred accordingly by BHEL to complete any work forming part of the contract shall be recovered from LESC. In case of such premature termination of contract, BHEL reserves the right to claim damages from LESC including the initiation of judicial proceedings.
- 11.9. LESC shall keep all information/data/drawings etc. related to the work as confidential information and shall not divulge or use the information indirectly or directly in any way detrimental to the interest of BHEL. All drawings, documents, manuals, design calculations including all originals prepared or obtained during the work shall remain the property of BHEL and shall be handed over to BHEL on demand.
- 11.10. LESC shall comply with the laws and regulations of the country, the state and territories concerned, during the progress of the work.
- 11.11. LESC shall submit progress report on the status of the work entrusted to them periodically and as mutually agreed upon.
- 11.12. LESC shall ensure optimal & economic design while executing the work, but without sacrificing the customer specification requirements/ Statutory regulations/ code provisions/ safety aspects.
- 11.13. Termination of the contract can be initiated by BHEL or LESC in following cases:
 - i. Contract is not awarded to BHEL by its end customer.
 - ii. Tender got cancelled entirely by BHEL's end Customer without retendering
 - iii. Bankruptcy proceedings being initiated against either of the Parties
 - iv. Mutual agreement between the "Parties"

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- v. A prolonged suspension affects the whole of the Works;
BHEL or LESC is found, based on reasonable evidence, to have engaged in corrupt, fraudulent, collusive or coercive practice at any time in relation to the Works or to the Contract.

12.0 DELIVERABLES TO BE SUBMITTED DURING PRE-BID AND POST BID STAGE

- 12.1. For minimum deliverables in the scope of LESC in Pre-Bid Stage, refer **Annexure-1** of this TCC.
- 12.2. For deliverables in the scope of LESC in Post-Order Stage, LESC shall carry out detailed engineering as per "Drawings and documents" of Bidding Document Reference: **PC-288/E001/Sec-9**.
- 12.3. In general, it is expected that the LESC shall maintain high standards of engineering, quality in deliverables submitted and accuracy in documentation submitted meeting the intended contractual requirements.
- 12.4. The detailed list of deliverables during the Pre-bid stage and during detailed engineering to be submitted along with offer.
- 12.5. The deliverables of LESC shall be submitted to BHEL only, unless instructed otherwise.
- 12.6. BHEL will review the deliverables and furnish its observations, comments, if any to LESC for their incorporation and resubmission to BHEL.
- 12.7. LESC shall clarify, with all supporting details on any queries raised by BHEL on their deliverables.

13.0 Delivery Schedule & Contract Period:**13.1. Pre-bid Engineering**

Contract Period for Pre-Bid Engineering shall be **One Month** from the date of commencement. Date of commencement shall be a mutually agreed date between BHEL & LESC after issue of work order.

LESC to submit the documents as per **Annexure-1** progressively to enable BHEL to prepare cost estimates and complete proposal activities in time.

13.2. Post Bid Engineering

Delivery schedule for **Post-Order Detail Engineering** Work shall be mutually agreed between BHEL and LESC to meet the L2 network for project execution, after receipt of order by BHEL.

- 13.2.1. BHEL will review the deliverables and furnish its observations, comments, if any within 14 working days to LESC for their incorporation and resubmission to BHEL.
- 13.2.2. LESC shall revise and resubmit the revised documents within 7 working days of receipt of comments from BHEL/ end customer. **Vendor is responsible for completion of approval cycle and minimizing number of revisions.**
- 13.2.3. Project Delivery Schedule is 42 (Forty-Two) Months) including Commissioning]

Project Milestones shall be as per the clause 6.0, Part I: Commercial Section-1.0, Instructions to Bidders of BCGCL's bidding document PC288/E/001/P-I/1.0.



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13.2.4. Contract Period for Post-Bid Engineering works shall be 42 (Forty-Two) Months) from the date of commencement. Date of commencement shall be a mutually agreed date between BHEL & LESC after issue of work order.

13.2.5. Project Milestones:

Sl. No.	Milestones for completion of	Duration
1.	Process and Basic Engineering documents like P&IDs, Preliminary Plot plan, Operation and Control philosophy, Electrical load list, SLDs, Design basis etc.	Six (6) Months from commencement of Work.
2.	Layout and Detailed engineering	Twelve (12) Months from commencement of Work.
3.	Specification for Bought out items	Fifteen (15) Months from commencement of Work.
4.	Sub-vendor Documents review	Twenty one (24) Months from commencement of Work.
5.	Hazop, Hazid, SIL study & other safety studies as applicable	Twenty four (27) from commencement of Work.
6.	Review of 3D Modelling	Twenty eight (30) from commencement of Work.
7.	RFC drawings and erection documents	Thirty six (33) from commencement of Work.
8.	As-built documents	Forty two (42) from commencement of Work.

13.3. Proprietary items, Spares, catalyst, Consumables, Lubricant, chemicals as per Scope:

The proprietary items shall be supplied within 30 months from the date of PO/ work order. The engineering, procurement and manufacturing schedule shall be furnished to BHEL on monthly basis. The engineering for LESC supplied items are to be completed within 12 months and procurement activities shall be completed within a further period of 6 months, manufacturing, inspection, testing and dispatch to site shall be completed within a further period of 12 months. The pre-commissioning, commissioning shall be done by the bidder, whenever they are called after site readiness.

Bidder shall supply all the necessary commissioning spares, Mandatory/Insurance/Bidders recommended spares as per their respective scope of supply.

Bidder shall be responsible for COMMISSIONING after PRECOMMISSIONING activities have been completed giving due regard to safety of EQUIPMENT according to sound international practice. Customer shall provide experienced trained operating and maintenance personnel who shall work under the supervision and direction of Bidder. The COMMISSIONING activities shall include the following:

- Introduction of raw materials, utilities, lining-up of various sections of PLANT leading to production of final product as per Technical.
- Stabilizing PLANT and stepping up production to full plant capacity.
- Demonstrating and Conducting sustained load test and Guarantee Test as per Scope.

RECORD OF REVISIONS

Rev	Date	Revision Details	Revised By	Checked By	Approved By
00	14-06-2024	First issue	CG	AKS	KS
01	26-12-2024	Revised	MPK	AKS	SPB
01A	01-01-2025	Milestone added	MPK	AKS	SPB