CPCL	**SPECIFICATION FOR CLOSED LOOP SAMPLING SYSTEMS IN REF-I, REF-II, REF-III, RESID, LEB & DHDS** **CPCL-MISC-CLS-0001**	**Rev.1**

LIST OF CONTENTS

1.0 DESCRIPTION OF ITEM

The purpose of this sampling system is to provide sampling cylindersf and their corresponding handling station for taking samples of a designated process stream by allowing a slipstream of process fluid to pass through the sample cylinder while the plant is on stream without exposingthe operator or environment to the contents of the process stream.

1. Location : CPCL Manali, Chennai.
2. Units : Ref- I, Ref-II , Ref-III, LEB DHDS.
3. Quantity : **53 Nos.**

Sl.No	Quantity	Tag.Nos	Requirement
1.	53 Nos	Refer data sheet attached	Sampling Collection System for Process fluids

4. List of documents attached to this requisition: Refer list of attached annexure / documents.

2.0 INSTRUCTIONS TO VENDOR

2.1 Bidding Instructions

2.1.1 Bidders to note that no correspondence whatsoever shall be entered into or entertained after the bid submission.

2.1.2 Bidder shall furnish quotations for supply strictly as per MR specifications including fulfilment of Bidders Qualification criteria.

2.1.3 If the offer contains any technical deviations other than those agreed, and or if the offer does not include complete scope and technical/performance data required to be submitted with the bid, the offer shall be summarily rejected.

2.1.4 The submission of prices by the bidder shall be construed to mean that he has confirmed compliance with all technical specifications of the corresponding item(s).

2.1.5 It is understood that the quoted price includes for the details and dimensions under “HOLD” in accordance with details indicated on respective equipment Engineering Drawing.

2.1.6 Transportation of sampling system shall be in a single piece.

2.1.7 Workmanship and materials, in vendor’s scope of supply, shall be guaranteed.

2.2 General Instructions

2.2.1 Raw material procurement may proceed prior to approval of vendor drawings on the basis of Purchase Requisition.

2.2.2 Purchase requisition shall be issued within two weeks of Fax of intent.

2.2.3 If any discrepancy is found during design and fabrication stages, the fabricator shall inform CPCL immediately and shall obtain necessary clarification/approval before proceeding with that portion of the job any further.

2.2.4 Review of fabricator's drawings and documents by CPCL must not be considered as a check and shall not relieve the fabricator of his responsibilities to supply equipment as per requisition. Fabricator shall remain responsible for conflicts between his drawings/documents and CPCL drawings/documents.

2.2.5 English language and metric units shall be used in all documents. Drawings shall be prepared in prescribed size as standardized by bureau of Indian standard (BIS) and shall be preferably in the sizes such as 210 x 297, 297 x 420, 420x 597, 597 x 841, 841 x 1189 mm.(A4, A3, A2, A1 & A0)

2.2.6 All fabricator's drawings submitted to CPCL shall be based on material requisition and shall bear reference number and revision of corresponding CPCL drawings. In addition, it shall indicate item number, Item description, client's name, project name, fabricator's name, purchase order number, purchase requisition number, drawing number, drawing description, revision number, revision details with date etc. all in the lower right hand corner. All revisions shall be clearly marked by encircling with revision marks.

2.2.7 Submission of required drawings/documents shall be the responsibility of fabricator. In the event of fabricator's failure to meet this requirement, the supply of equipment shall be considered as incomplete.

2.2.8 Drawing index shall be prepared for each item giving serial number, description of drawing, drawing number and revision number. Updated index shall be forwarded along with each submission.

2.2.9 All drawings shall be submitted in pdf format. Drawing will be commented by emark up on soft copy. Same will be forwarded to vendor.

2.2.10 All drawings shall be thoroughly checked and duly signed by fabricator. Unchecked drawings and drawings without revisions clearly marked shall be returned without review. After incorporating all comments by fabricator, drawings submitted shall be checked only for the comments given earlier and any changes by CPCL. Drawings and documents returned to fabricator for revision shall be resubmitted preferably within ten working days of receipt. Fabrication drawings shall be submitted as follows:

a. General arrangement drawing indicating design data, general notes, nozzle schedule, supporting arrangement, main weld seam,etc.
b. Details of all nozzles, accessories etc
c. Bill of material for each item showing part size, quantity, material specification, scope of supply and weight etc

2.2.11 After receipt of order, fabricator shall submit to CPCL, the planning of fabrication which shall indicate the details and scheduled date of:

a.Sub orders.

This planning shall be established to extend from purchasing of equipment components to the end of fabrication and delivery of equipment.

2.2.12 Vendor shall submit a list of those drawings, which are to be submitted for review to CPCL along with the submission dates for each drawing within 15 days of placement of FOI. Vendor shall strictly adhere to this drawing submission schedule.

2.2.13 All drawings shall be drawn in AUTOCAD 2010 latest version. No hand drawn drawings shall beaccepted.

2.2.14 All residual calculations shall be computerized.

2.2.15 Documents and letters shall be furnished in electronic format. The software used shall be MS OFFICE, ADOBE ACROBAT and AutoCAD.

2.3 Additional Requirements

2.3.1 All temporary attachments, wedges if any, provided for transportation shall be removed at site by Owner / Owner's agency under the supervision of the Vessel supplier.

2.3.2 Liquid penetrant test shall be done at all local removal points. All loose internals (if any) which have been shipped loose with sampling system shall be erected by Owner/Owner's agency under the supervision of the sampling system supplier. Bidder shall furnish list of loose internals, if any along with the bid.

3.0 GENERAL REQUIREMENTS

3.1 Complete closed sampling system shall be designed, detail engineering, fabricated, inspected, tested, certified, documented and supplied in accordance with the material requisition and applicable specifications.

3.2 Raw material shall be sourced from approved Indian/European/American/Japanese mills only.

3.3 All material shall be supplied with mill test Certificates.

3.4 Stage-wise and final inspection of equipment and its components shall be carried out by CPCL approved third Party Inspection Agency. TPI charges to be borne by vendor and shall be included in base price.

3.5 Stage-wise and final inspection of indigenous equipment and its components including internals (if any) shall be carried out as per clause no:7.0.

3.6 Bidder shall not submit any additional technical offer along with the bid. If there is any deviation same shall be specified in the deviation format submitted along with the bid. Except these deviations it is understood that bidder's offer is in complete compliance with this MR.

3.7 Vendor shall indicate separate delivery weight for sampling system along with the offer.

4.0 TECHNICAL REQUIREMENTS

4.1 For the purpose of this Material Requisition following definition shall hold:

Specifications, Instructions, Data Sheets, Standards, Drawings, and all other pertaining documents are defined as “Documents”

The word “shall” in the Documents is to be understood as mandatory

The word “should” in the Documents is to be understood as non-mandatory, i.e. advisory or recommended.

Buyer / Owner: shall mean **Chennai Petroleum Corporation Ltd.**

VENDOR: shall mean **VENDOR** is one who shall Design, Engineer, Manufacture, supply, Erect, Prove Performance Guarantees of closed sampling system.

4.2 In case of any discrepancy / conflict among various documents, the following order of precedence shall govern :

A. Material Requisition

B. Engineering Design Basis

C. Codes & standards

In case of any queries, VENDOR shall contact M/s. **CPCL**

4.3 Mechanical design guarantee shall be by vendor for newly supplied items. Vendor shall guarantee materials and workmanship for newly supplied items.

4.4 Hydrotest shall be carried out at shop. As per applicable codes and standards and datasheet.

4.5 Vendor shall coordinate with **CPCL for drawing approval** and other activities

4.6 Vendor shall follow / comply with following:

1) Tie-in list indicating all the incoming/outgoing connections with location and elevations, size, rating etc.
2) Inspection and Testing Plan.

4.7 VENDOR to ensure that all spares and special tools are dispatched to site with proper tagging and the packaging properly labeled.

4.8 VENDOR's compliance to specification does not relieve him of responsibility to provide equipment and accessories of proper design to meet the operations, maintenance and safety requirement of supplied material.

4.9 The test requirement given in the indicative test plan are minimum and any additional tests mentioned elsewhere in other documents / codes / standards shall be carried out by VENDOR.

4.10 All flanges to be covered with a steel blind plate during packing and transport.

4.11 After completion of manufacture / fabrication, final inspection and release for dispatch, VENDOR shall submit in requisite number, as specified in VENDOR data requirement schedule, "AS BUILT" drawings, data sheet duly signed by final inspection authority for inclusion into operation manual for the project to be compiled by purchaser.

4.12 VENDOR will ensure the dispatch of equipments to site in a properly packed condition as discussed in General Engineering Specification for Pressure vessel

4.13 A consolidated list of all deviations raised and approved by purchaser and / or their authorized representatives during execution of order shall be submitted prior to dispatch of equipment.

4.14 The scope of supply defined in this document shall include, but not limited to the services listed for the proper functionality/suitability of the total system for revised operating conditions.

5.0 SPECIAL INSTRUCTIONS TO VENDOR

5.1 Vendor to consider activities at site in his scope as specified in material requisition.

5.2 All welding shall be GTAW process.

5.3 If any discrepancy is found during design and fabrication stages, the fabricator shall inform CPCL immediately and shall obtain necessary clarification / approval before proceeding with that portion of the job any further

5.4 All fabrication drawings shall be submitted to CPCL for review. The comments (if

any) shall be incorporated by Vendor without any time and cost implication.

6.0 SCOPE OF SUPPLY

Design, Engineering, Fabrication, Inspection, Testing and Supply (including spares) of **Stand with Board Mounted Sampling Systems** as per material requisition.

Supplier to note that the sketch represented in Drg. No: 00-D-31634 Rev.0 is only indicative in nature, all the necessary requirements and accessories which are required for the proper collection of the sample and functioning of the sampling system should be included in the final supply.

The following notes w.r.t. the scope of supply of sampling systems has to be considered by the vendor:

a) All tie-in flange connections to be as per ASME B16.5,

b) The piping specification is attached with this material requisition which is required for the corresponding design and operating conditions and also for the other piping related items required for the closed sampling system.

The sample stream is connected to the process inlet connection, flows through the sample cylinder and is routed to flare via the outlet connection.

c) PMI shall be done by vendor for all SS parts.

d) Vendor shall procure all components from sub-vendors listed in the Vendor list attached elsewhere in this Material Requisition. In case for any component(s) sub-Vendor's names are not provided in the list, Vendor shall submit such list of Vendor's for these components to CPCL for their approval before procurement

e) Vendor's compliance to material requisition does not relieve him of responsibility to provide equipment and accessories of proper design to meet the operations, maintenance and safety requirement of supplied material.

f) Vendor should supply all necessary spares as mentioned in Serial NO:8.0.

g) Vendor should supply anchor bolts, nuts and necessary items required for entire system mounting.

h) Additional items (including mechanical, electrical and instrumentation and controls) not specified in this enquiry but recommended by Vendor for safe, reliable, smooth and efficient operation of complete sampling system is in vendor's scope of supply.

7.0 INSPECTION AND TESTING

The vendor shall be fully responsible for completing all the in-house testing and test reports. The same shall be submitted to CPCL minimum 15 days before inspection.

Following tests shall be offered as a minimum. Vendor shall obtain approval from CPCL for the appointed TPI. Percentages indicated are for each lot offered for inspection. These are indicative only and the quantity of instruments selected as well as the inspection procedure followed, shall be at the sole discretion of CPCL approved TPI. The inspecting authority may, if desired, request for additional tests over and above those listed below or decide to waive the inspection.

TPI required for imported items. PMI is in vendor's scope and is applicable for all SS parts.

SR.NO.	Description	INSPECTION		Remarks
		VENDOR	TPI (witness)	
1	Physical inspection for quantity,tagnumber, general conformity with specification and supply of accessories etc.	100%	100%	
2	Hydro test on complete system at apressure equal to 1.5 times the design pressure.	100%	100%	

SR.NO.	DESCRIPTION	INSPECTION		REMARK
		VENDOR	TPI	
3	Checks on process connection for accessories:	100%	10%	
A.	With thread for screwed type.			
B.	Dimensional checks for flange type.			
4	Chemical properties	100%	Document for review	
5	Mechanical properties	100%	Document for review	
6	Inter-granular corrosion test for all Austenitic stainless steel	100%	Random Sample per heat . Heat treatment lot	
7	Dye Penetrant/ Magnetic Particle Testing for all welded, machined or heat affected zones ASME section VIII Div1, mandatory appendix 8	100%	Random	
9	Ferrite Number check for all SS Weld deposits.	100%	Document for review	
10	Positive material identification test on all stainless steels – materials and welds	100%	100%	

8.0 SPARES

Vendor to ensure that all spares are dispatched to site with proper tagging and the packaging properly labeled.

Spares for the sampling systems to be provided by Vendor as per below list

1. Male and Female parts of quick release coupling	:	Qty= 11 nos
2. Sampling bomb isolation valves (inlet & outlet)	:	Qty= 11 nos
3. Flexible Hoses	:	Qty= 11 nos
4. Sample bomb	:	Qty= 11 nos

9.0 GUARANTEES

Vendor to guarantee the following:

a) Material of Construction.
b) Workmanship
c) Design / Performance

10.0 QUALITY ASSURANCE REQUIREMENTS

10.1.0 Quality Assurance

10.1.1 The VENDOR and sub-VENDOR shall have a documented Quality Management System in place that ensures that requirements for design, procurement, materials, testing and services specified for the project are met. If bidders have a Certificate of Approval (e.g., ISO 9001-2000 etc.), then only this is to be submitted, if not, a QA manual should be submitted. Bidders without a formal QA manual may submit a written description of their QA system. The purchaser reserves the right to evaluate bidder's QA system documentation and to decide whether the system meets the requirement of this project.

10.1.2 The VENDOR or their representative reserves the right to carry out appraisals and quality audits of VENDOR's and their sub- VENDOR's quality management system, at any time during the period of the contract, to verify compliance with and maintenance of the quality system and contract requirements.

10.2.0 Content of the Quality Plan:

10.2.1 The VENDOR shall prepare a contract specific quality plan for the manufacture of the product or provision of the service that is specific to the purchase order. The quality plan shall be submitted within the time period specified elsewhere in this requisition.

10.2.2 The contract specific quality plan shall include, as a minimum:

10.2.2.1 Purchaser's project number and applicable requisition number.

10.2.2.2 Description of material certification types and material traceability, which shall be generally in accordance with DIN 50049/ EN 10204, type 3.1.

10.2.2.3 Where VENDOR's internal documents constrain the acceptance criteria for activities or tasks listed in the quality plan, those documents shall be provided with the plan to enable a thorough review and understanding of control of the referenced activities.

10.2.2.4 Test and inspection frequency and acceptance criteria shall be provided.

10.2.3 Any deviation from technical document and attached specifications needs prior approval from CPCL. The scope of supply defined in this document shall include, but not limited to the services listed for the proper functionality/suitability of the system.

11.0 TECHNICAL DETAILS

1. Total No of closed sampling system required: 53 as per Datasheet attached in the tender.

2. Sampling system scheme - Refer Drg. No :00-D-31634 Rev.0

3. Volume of each sample cylinder: 300 ml

4. MOC for sample cylinder: SS316L (PMI shall be done for all SS parts by the vendor)

5. Refer Datasheet SAMPLING SYSTEM for the following:

   a. Design pressure and Design temperature for each sampling system
   b. Operating pressure and temperature for each sampling system

6. End connection: As shown in Drg. No : 00-DD-31634 Rev.0

7. Refer Datasheet SAMPLING SYSTEM for the following:

   a. MOC for process side for each sampling system

8. Inlet & outlet Flange rating: Refer Datasheet for individualSampling system)

9. Hydrogen service is applicable for Tag.Nos : 201-SC-104 & 209-SC-103

12.0 ADDITIONAL REQUIREMENTS

Following additional requirement shall be considered in scope of supply

1. Each system shall be complete with 300 ml sample cylinder, shutoff valves.

2. For each system, use quick connects (quick release couplings) suitable for operating pressure as per attached datasheet.

3. Each handling station shall have its own valves, independent of the cylinder valves, for controlling flow, venting, and isolating the system from the process.

4. Each station shall have a flexible metallic braided hose connection for the sample cylinder inlet and outlet. Quick disconnect connections shall be used and shall be capable of self-sealing with the ability to withstand at least 10.6 kg/cm2 (g) internal pressure when disconnected from the cylinder.

5. The system shall include provisions for flow bypassing of the cylinder and for de-pressuring the system before cylinder removal.

6. The system shall include provisions for securely holding the sample cylinder during sampling.

7. The system shall bear a label indicating the maximum allowable operating pressure, which is defined as the lesser of the equipment rating.

8. The sampling system should be fixed on SS panel mounted on 3 mm thick powder coated MS stand. Sample bomb, valve connections should be on front side and other tubing connections should be on the backside of board.

TABLE-1 : DETAILS FOR SAMPLING SYSTEM

Sr. No.	Description	Size	MOC
1	Sampling system inlet	3/4”	Refer attached datasheet and Drg. No:00-D-31634
2	Sample cylinder/bomb inlet	1/2” or 1/4”	
3	Sample cylinder/bomb outlet	1/2” or 1/4”	
4	Sampling system outlet	3/4”	

13.0 DOCUMENTATION:

Number of copies:

1) Documents for Quotation	-	1 soft copy in PDF format
2) Documents for 'approval'	-	1 soft copy + 3 hard copies
3) Review Documents for information	-	1 soft copy in PDF format

Documents for 'final documentation

1) Documents for mechanical catalogue	-	1 soft copy + 6 hard copies
2) Documents for operating and maintenance manual	-	1 soft copy + 6 hard copies
3) Documents for QA record book	-	1 soft copy + 6 hard copies

14.0 List of Attachments:

Sl.No	Description
1	General Arrangement drawing for Closed loop Sampling Systems (00-D-31634) -Tender Purpose
2	Final Datasheet
3	PMS and VMS attachments
4	CPCL approved Vendor list