राष्ट्रीय कोशिका विज्ञान केंद्र
NATIONAL CENTRE FOR CELL SCIENCE
(जैवप्रौद्योगिकी विभाग, भारत सरकार की स्वायत्त संस्था)
An Autonomous Institution of the Department of Biotechnology, Govt. of India
सावित्रीबाई फुले पुणे विश्वविद्यालय परिसर, गणेशखिंड, पुणे-411007
Savitribai Phule Pune University Campus, Ganeshkhind Pune 411007

भाग- I /PART- I (तकनीकी बिड/TECHNICAL BID)

DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING (SITC) AND VALIDATION OF PREFABRICATED BSL-3 LAB IN CONTAINER ON "TURNKEY EPC BASIS" IN COMPLIANCE WITH WHO, BMBL & NATIONAL GUIDELINES ISSUED BY DBT & ICMR IN SEPT. 2024 (WITH LATEST AMENDMENTS/REVISIONS) AT NCCS, PUNE

प्रस्तुत करने की नियत तारीख/DUE DATE FOR SUBMISSION: 13/12/2024 @ 15 HRS

प्रेषित करने के लिए पता/ TO BE SUBMITTED TO:
निदेशक/The Director (Add. Charge)
राष्ट्रीय कोशिका विज्ञान केंद्र/National Centre For Cell Science
सावित्रीबाई फुले पुणे विश्वविद्यालय परिसर/ Savitribai Phule Pune University Campus,
गणेशखिंड/ Ganeshkhind**, पुणे/**Pune 411007 (**महाराष्ट्र, भारत/**MAHARASHTRA, INDIA)

बिडर का नाम एवं पता/NAME AND ADDRESS OF BIDDER:_____

TENDER COST: NIL

अनुक्रमणिका / INDEX

2. समाचार पत्रों में प्रकाशन हेतु जारी की जानेवाली मुद्रणालय सूचना/ PRESS NOTICE TO BE ISSUED FOR PUBLICATION IN NEWSPAPERS

राष्ट्रीयकोशिकाविज्ञानकेंद्र
NATIONAL CENTRE FOR CELL SCIENCE
Savitribai Phule Pune University Campus, Ganeshkhind, Pune 411007

NOTICE INVITING TENDER

The Director NCCS, Pune invites sealed tender in two bid system for following works

Sr. No.	NIT No.	Name of Work	Estimated Cost	EMD	Time of Completion
1	NCCS/I&M/BSL-3 /461 /2024-25	Design, Supply, Installation, Testing, Commissioning & Validation of Prefabricated BSL-3 on "Turnkey EPC Basis" in compliance with WHO, BMBL & National Guidelines issued by DBT & ICMR in Sept. 2024 (with latest amendments)	Rs. 690 Lakh	Rs. 14 Lakh	180 Days (Six Months)

Detail tender document can be downloaded from our website **www.nccs.res.in** and **https://eprocure.gov.in**. All further information, instructions, corrigendum/addendum or notices will be published on website only.

 SEAL AND SIGN. OF THE BIDDER

राष्ट्रीय कोशिका विज्ञान केंद्र
NATIONAL CENTRE FOR CELL SCIENCE
(जैवप्रौद्योगिकी विभाग, भारत सरकार की स्वायत्त संस्था/
An Autonomous Institution of the Department of Biotechnology, Govt. of India)
सावित्रीबाई फुले पुणे विश्वविद्यालय परिसर, गणेशखिंड, पुणे-411007
Savitribai Phule Pune University Campus, Ganeshkhind Pune 411007

3. SHORT TENDER NOTICE

NCCS/I&M/BSL-3/461/2024-25 23/11/2024

National Centre for Cell Science (NCCS) is a Premier Research, an Autonomous Institute under Department of Biotechnology, Govt. of India having office at Savitribai Phule Pune University Campus, Ganeshkhind, Pune -411007.

The Director NCCS Pune invites sealed tender from eligible and experienced OEM (Original Equipment Manufacturer) OR OEM's Authorized Agency/Dealer for "**Design, Supply, integration, Installation, Testing, Commissioning (SITC) and Validation of one unit of Prefabricated container based Biosafety level (BSL)-3 Lab with fitting and accessories in approximate Total Area 1280 sq ft (40x8ft x x 4 Container) on "Turnkey EPC Basis" in compliance with WHO, BMBL and National Guidelines issued by DBT & ICMR in Sept. 2024 (with latest amendments), erected on stilt structure at NCCS, Pune including comprehensive operation and Maintenance of whole work for a period of 5 years after the completion of warranty period,** as per terms & conditions specified in the tender document, which is available on NCCS website **www.nccs.res.in** and CPP Portal **http://eprocure.gov.in/eprocure/app**.

Description of the Work	Estimated Cost (Rs.)	EMD (Rs.)	Time for Completion
Design, Supply, Installation, Testing, Commissioning (SITC) and Validation of Prefabricated BSL-3 Lab in 40x8ft 3+1 Container on "Turnkey EPC Basis" in compliance with WHO, BMBL and National Guidelines issued by DBT & ICMR in Sept. 2024 with latest amendments/revisions at NCCS, Pune	**Rs.690 Lakh**	**Rs.14 Lakh**	**Total 6 Months** (5 Months for design, supply and installation + 1 Month for testing, commissioning and validation)

3.1 IMPORTANT DATES OF TENDERING PROCESS:

1	Tender available on website	23/11/2024 to 13/12/2024
2	Pre-bid Meeting	04/12/2024 @ 11:00 Hrs
3	Tender Submission due date	13/12/2024 @ 15:00 Hrs
4	Opening of Technical Bid	13/12/2024 @ 15:00 Hrs
5	Opening of Commercial Bid	Will be communicated later

(Note-Pre-bid meeting will be in both online and offline mode. A web link will be displayed on our website www.nccs.res.in , one day before the pre-bid meeting)

3.2 MINIMUM ELIGIBILITY AND PREQUALIFICATION CRITERIA:

3.2.1 Similar Work Experience: Experience of having successfully completed similar work of prefabricated type BSL-3 Laboratory (containerized/mobile BSL-3 laboratory) for Central/State Government organization/Central Autonomous body/Central Public Sector Undertaking / Universities and Institutes, during the last seven years ending last day of the month previous to the one in which tenders are invited, as follows:

One similar BSL-3 work costing not less than Rs. 552 Lakh

OR

Two similar BSL-3 works each costing not less than Rs. 345 Lakh

OR

Three similar BSL-3 works each costing not less than Rs. 276 Lakh

Note: Only containerized/mobile type completed BSL-3 Laboratory works shall be considered under similar work. Documentary evidence in the form of Work Order/Agreement/Purchase order indicating the nature and value of along with reference/contact person & address, telephone/ Email details should be submitted for verification. The Completion Certificate of the job issued by the respective client is necessary. The experience certificate and statement showing the value of existing commitments and on-going works as well as the stipulated period of completion, remaining for the each of the works listed shall be issued by the firm. The experience of completed works shall be in the name of Bidder/OEM Company. Experience of completed works in Subsidiary/Group Company, Joint Venture Company or as sub-contractor shall not be considered and accepted.

3.2.2 **Turnover**: Average annual financial turnover should be **Rs. 345 Lakh** during the immediate **last three** financial years ending 31st March, 2024. The turnover should be of the Bidding Company and not for Group Company or subsidiary company etc. Copy of duly certified Audited Balance sheets bearing the CA registration number and ITRs for the last three financial years to be submitted. The multiplication factor of 7% per annum at simple rate is applicable on the Annual financial turnover figures.

3.2.3 **Profit/loss**: The bidder should not have incurred any loss (Profit After Tax should be positive) in more than two years during the last Five years ending FY 2023-24). This should be duly certified by the Chartered Accountant with his seal / signatures and firm registration number.

3.2.4 The Bidder shall have solvency of **Rs. 276 Lakh** certified by the Bidder's Bank. Solvency certificate (as per attached format) of **Rs. 276 Lakh** shall be submitted from any Nationalized / Commercial/ Scheduled Bank.

3.2.5 The bidder shall have at least one completed work of BSL-3 Laboratory certified by the Department of Biotechnology (DBT). Submit copy of work order and DBT certificate for the same.

3.2.6 The Bidder should be a firm registered in India and should have valid GST, PAN, ESIC & PF Registrations with relevant authorities. Copy of Registration Certificates shall be submitted.

3.2.7 Bidder shall have at least two on-going **contract for operation and maintenance services of BSL 3 facilities in India.** Certificate of satisfactory operation and maintenance services should be submitted along with copies of work orders from the client.

3.2.8 The Bidder should be OEM (Original Equipment Manufacturer) OR OEM's Authorized Agency/Dealer. In case Bidder is Authorized Agency/Dealer, manufacturer's authorization form must be submitted along with the Bid.

3.2.9 The Bidder shall submit a DD OR Bank Guarantee (BG) of **Rs. 14 Lakh (Rupee Fourteen Lakh only)** drawn on any Nationalized / Commercial/ Scheduled Bank in the favour of the Director, National Centre for Cell Science, Pune payable at Pune towards Earnest Money Deposit (EMD). BG should be valid for minimum of 8 months. The MSME firms registered in NSIC are not exempted from payment of EMD for this work.

3.2.10 The Bidder should submit an undertaking that their firm / organization has never been blacklisted by any Govt/ Semi Govt Organizations/ Institutes/ PSU's etc as per attached format in the tender.

Director (Add. Charge)
NCCS, Pune

3.3 TECHNICAL EVALUATION / SHORTLISTING / SELECTION PROCESS:

The selection will be through competitive bidding which will be single submission and have 2 stages of evaluation process viz., Pre-qualification, Technical Evaluation & Qualification and Financial Proposal Evaluation. The method of bid evaluation of the proposals/offers is detailed in the tender document.

Tender document of those bidders shall be considered for technical evaluation who has submitted the required EMD and fulfill the given Prequalification Criteria as mentioned under Clause No.3.2. The evaluation shall be based on the documents submitted by the Bidders.

Tender document of only those bidders shall be considered for opening of price bids who obtain a minimum of total 70 marks in the technical evaluation of proposals as mentioned in Clause Sr No. 5.6.4.

3.4 MODE OF BID ISSUE AND SUBMISSION:

The interested bidders can download the tender document from website **www.nccs.res.in** and **https://eprocure.gov.in** (CPPP) which is available at free of cost. However in case of downloading of tender documents from website, it will be the responsibility of bidders /applicants / firms to ensure that complete tender documents have been downloaded. Required documents dully sealed & signed as stated in the above shall be sent it by sealed envelope super-scribing "**Design, Supply, Installation, Testing, Commissioning (SITC) and Validation of Prefabricated BSL-3 Lab on "Turnkey EPC Basis" in compliance with WHO, BMBL & National Guidelines issued by DBT & ICMR in Sept. 2024 with latest amendments/revisions at NCCS, Pune**" and the envelope shall be submitted duly addressed

To,

The Director (Add. Charge)
National Centre for Cell Science,
Savitribai Phule Pune University Campus,
Ganeshkhind, Pune 411007.

Technical bid:

The '**Technical bid**' should consist of the following documents:

a) Application form along with documents relating to pre-qualification criterion (Forms).
b) Bid Security (EMD) - DD or BG.
c) Copy of valid registration
d) Copy of GST registration certificate
e) Copy of PAN of the firm
f) Copy of Audited balance sheets and ITR for last 5 years
g) Copy of work order along with completion certificate of similar BSL-3 laboratory work/s, not older than 07 years.
h) Power of attorney of person authorized to sign the Bid
i) Complete Tender Document duly signed and stamped.

Price bid:

The 'Price bid' should contain the following documents:
a) As per the prescribed format (Part-II: Commercial / Price bid).

The tender document should be submitted intact in a sealed cover either in person or by post without tampering with any of the pages and drawings thereof and duly filled in, signed and seal at the bottom of each page and drawings, by the Bidder or his / their authorized representative and it shall reach at NCCS, Pune as per scheduled date and time mentioned above. The tender received after the scheduled time on due date will not be considered. The bid should be valid and open for acceptance for a period of 90 days from the date of opening the technical bid.

The Director, NCCS, Pune reserves the right to amend or withdraw any of the terms and conditions contained in the tender document before accepting the tender or to reject any or all the tenders without giving any notice or assigning any reason. The decision of the Director, NCCS, Pune, in this regard shall be final and binding on all.

Director (Add. Charge)
NCCS, Pune

4. DEFINITIONS AND TERMS:

In this document the following words and expressions shall have the meaning hereby assigned to them

4.1 ***Employer*** shall mean National Centre for Cell Science, Pune and shall include his successors and assign, as well as his authorized officers or representatives. National Centre for Cell Science shall be known as "NCCS."

4.2 ***Engineer-in-Charge (E-I-C)*** shall mean Director, NCCS, Pune authorized any officers or representatives who will execute the said project on behalf of NCCS.

4.3 ***Bidder*** shall mean the Proprietor / Individual, Partnership firm, Company / Corporation, Society; they shall be, for the purpose of this contract.

4.4 ***Contractor*** shall mean the person or the persons, firm or company whose tender has been accepted by the NCCS and shall include his/their heirs, and legal representatives, the permitted assigns and successors.

4.5 ***Contract*** shall mean the Articles of Agreement, General and Special Terms & conditions, Schedule of Quantities and Specifications attached hereto and duly signed.

4.6 ***Site*** shall mean the site of the contracted works at "**National Centre for Cell Science, Savitribai Phule Pune University Campus, Ganeshkhind, Pune 411007**".

4.7 ***Work*** shall mean the works to be executed and recorded in accordance with the Contract and shall include all extra or additional altered or substituted works as required and recorded for the performance of the Contract.

4.8 ***This Contract*** shall include the notice inviting Tenders, the Articles of Agreements, the General Conditions of Contract, the Special conditions of contract, the Schedule of Quantities, Specifications for Materials, Work-Sheet and mode of measurements and drawings pertaining to the work. All sections of this Contract Document are to be read together. Further such correspondence between the NCCS and Contractors as admitted by the NCCS before award of work and thereafter shall also form part of contract documents.

4.9 ***Drawings*** shall mean the drawings referred to in the specifications, description of items etc. and any modifications of such drawings approved in writing by the NCCS and such other drawings as may from time to time be furnished or approved in writing by the NCCS.

5. INSTRUCTIONS TO THE BIDDERS:

5.1. METHOD OF APPLICATION:

5.1.1. If the Bidder is an individual, the application shall be signed by him above his full type- written name and current address.

5.1.2. If the Bidder is a proprietary firm, the application shall be signed by the proprietor above his full typewritten name and the full name of his firm with its current address.

5.1.3. If the Bidder is a firm in partnership, the application shall be signed by all the partners of the firm above their full typewritten names and current addresses or alternatively by a partner holding power of attorney for the firm. In the latter case a certified copy of the power of attorney should accompany the application. In both cases, a certified copy of the partnership deed and current addresses of all the partners of the firm should accompany the application.

5.1.4. If the Bidder is a limited company or a corporation, the application shall be signed by a duly authorized person holding power of attorney for signing the application accompanied by a copy of the power of attorney. The Bidder should also furnish a copy of the Memorandum of Articles of Association duly attested by a Public Notary.

5.1.5. Joint Ventures are not allowed for this work.

5.1.6. Conditional tenders will not be accepted.

5.1.7. Bidder should ensure that all the required and essential documents are attached as per Technical Bid and Check list and all pages of documents are signed and stamped. Failure to do so shall lead to the rejection of bids.

5.1.8. Bidder should submit their details as per attached all Forms with self-attested documents.

5.1.9. Overwriting should be avoided. Correction, if any, should be made by neatly crossing out, initialing, dating and rewriting, Pages of the qualification document are numbered. Additional sheets, if any added by the Bidder, should also be numbered by him. They should be submitted as a package with signed letter of transmittal.

5.1.10. References, information, certificates and work completion reports from the respective clients certifying suitability, technical knowhow or capability of the Bidder should be signed by an authorized person or officer. It should be on client's letter head.
Any information furnished by the Bidder found to be incorrect either immediately or at a later date, would render him liable to be debarred from tendering /taking up of work in NCCS.

5.1.11. The purchaser requires that the bidder's suppliers and contractors observe the highest standard of ethics during the procurement and execution of such contracts. In pursuit of his policy, the following are defined:

a) “Corrupt practice” means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution.

b) “Fraudulent practice” means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract.

c) “Collusive practice” means a scheme or arrangement between two or more bidders, with or without the knowledge of the purchaser, designed to establish bid prices at artificial, non-competitive levels; and

d) “Coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract.

e) The purchaser will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question.

f) Certificate of code of Integrity should be submitted.

5.2. BIDDER TO VISIT SITE:

The bidder must visit/examine the site and it’s surrounding on pre bid meeting for the proper assessment of prospective assignment (scope of works). No claims later on shall be entertained.

The bidder is advised to acquaint himself with the work involved, visit the Site and examine site conditions, assess the site preparatory works required to be carried out, the requirement and availability of space for erection of AC plant, air handling units, exhaust blowers, chillers, shower tank, electrical panel etc., The bidder shall also examine the climatic conditions, availability of labour, power, water, material, local transportation, communication facilities, environmental regulations, laws and bye-laws of statutory bodies, and collect all information that will be necessary for preparing the bid and, if awarded the work, entering into a contract for successful execution and completion of the work.

The cost of visiting the Site and collecting information for the purpose of submission of the bid shall be borne by the bidder. The site shall be handed over in its present existing condition, to the successful bidder for execution of the works. Any existing fittings/fixtures and items to be dismantled shall be handed over to NCCS, Pune.

The bidder and any of his personnel or agents will be granted permission by the Employer to enter upon the site for the purpose of such inspection, but only upon the condition that the bidder, his personnel or agents will release and indemnify the Employer and Employer's Personnel from and against all liability in respect thereof for personnel injury (Whether fatal or otherwise), damage, loss, costs and expense however caused, to the bidder, his personnel or agents.

5.3. PRICE:

5.3.1. The rate(s) and amounts must be quoted in INR Rupees only. The total amount should be written both in figures and in words.

5.3.2. The rates for all tendered items shall be inclusive of GST, all taxes, duties, levies, transportation, transit insurance, cost of the materials, equipment/item, stores, freight, transit insurance, loading unloading including mathadi charges, packing & forwarding, clearance charges for imported goods, inspection/inspective certificate charges any contingency charges etc. and including all other incidental charges whichever is applicable for the equipment/item supply, erection, installation, testing and commissioning with all men, material, tools & tackles complete in all respect.

5.3.3. The GST is payable as per the prevailing rates and it will be revised as per Government of India orders from time to time in this regard.

5.3.4. In the event no rate has been quoted for any item(s), leaving space in figure(s) and amount blank, it will be presumed that the contractor has included the cost of this/these item(s) in other items and rate for such item(s) will be considered as zero and work will be required to be executed accordingly.

5.4. CLARIFICATION OF BID:

5.4.1. To assist in the examination and comparison of Bids, the NCCS, Pune may, at its discretion, ask any Bidder for clarification of his Bids. The request for clarification and the response shall be in writing or by email / fax, but no change in the price or substance of the Bid shall be sought, offered, or permitted.

5.4.2. Any effort by the Bidder to influence the NCCS's Bid evaluation, bid comparison or contract award decisions, may result in the rejection of his bid.

5.4.3. Corrigendum/amendments etc., if any, will be notified only on the NCCS web site and no separate advertisement will be made for the same. All prospective bidders are therefore advised to regularly visit the NCCS web site (**www.nccs.res.in**) for any future information or update.

5.5. BID OPENING:

On the due date as specified in tender, NCCS Pune will first open the technical bid of all bids received in the presence of the bidders/ their representatives who wish to attend.

5.6. DESCRIPTION OF SELECTION PROCESS

5.6.1. Initially bidders will be shortlisted as per Prequalification (eligibility) criteria laid down in the tender document. NCCS may at any time after opening of the technical bid or presentation, depute a team of its' officials to the site / work place / office of the Bidder to get the credentials of the information furnished by the Bidder and to verify the status, workmanship & quality of the work / services rendered by them. The tender of the bidder shall be liable for rejection in case of

i. Any information furnished by the Bidder is found incorrect.
ii. The quality of the work and workmanship is found unsatisfactory

5.6.2. The Evaluation of Bids will be based on the details and information submitted by the Bidder and the Compliance and conformance of their Technical Bid to the Technical Requirements and Specifications given in the Bid Documents. It may be noted that merely copying the Tender Specifications as compliance shall not be accepted.

5.6.3. The Bidders will be called for a Technical Presentation to demonstrate the compliance of their Bid to the Technical Requirements and Specifications given in the Bid Documents and evaluated by the Internal Technical Committee.

5.6.4. **Evaluation of Technical Proposals**:

Sr. No	Description	Criteria / Mark	Max. Mark
1.0	**Similar Work Experience:** Experience of having successfully completed similar work of prefabricated type BSL-3 Laboratory (containerized/mobile BSL-3 laboratory) for Central/State Government organization/Central Autonomous body/Central Public Sector Undertaking / Universities and Institutes Doc. Proof – copies of work order and completion certificates issued by client		
	Meeting minimum eligibility criteria	08	10
	Twice or more of the minimum eligibility criteria	10	
2.0	**DBT Certification:** Completed BSL-3 Laboratory (containerized/mobile BSL-3 laboratory)certified by DBT Doc. Proof – copies of work order along with completion certificate from client and certificate of BSL-3 Lab issued by DBT		
	Meeting minimum eligibility criteria	08	10
	Twice or more the minimum eligibility criteria	10	
3.0	**Financial Strength of the Bidder**: Average Annual Turnover in last three financial years ending 31st March 2024 Doc. Proof – Copy of audited balance sheets of last three financial years indicating CA registration number and ITR of last three years		10
	Meeting minimum eligibility criteria	8	
	Twice or more of the minimum eligibility criteria	10	
4.0	**Valid Registrations**: Doc. Proof – Copy of valid registration with respective authorities		10
	ROC (Registrar of companies)	2	
	PAN	2	
	GST	2	
	ESIC	2	
	PF	2	
5.0	**Experience of Operation & Maintenance Services**: Ongoing Operation and Maintenance Service Contract for BSL-3 Laboratories Doc. Proof – Copy of AMC orders and certificate from customer of satisfactory services		
	Meeting minimum eligibility criteria	8	10
	Twice or more of the minimum eligibility criteria	10	
6.0	**Technical Presentation by Bidder**		
	Design Capabilities – Bidder to present his experience of designing similar BSL-3 Laboratories and present layout and designs of similar completed BSL-3 lab works	10	50
	Bidder to present proposed design concepts of NCCS BSL-3 Laboratory (HVAC system and Air-flow schematics, Effluent management and decontamination, shower system, containment perimeter outlay, barrier autoclave and other critical biosafety components and systems)	10	

	Bidder Manufacturing Capability – Bidder to present details of inhouse manufacturing facilities owned by the Bidder, manufacturing capacity, staff strength and the items/equipment manufactured in-house by the Bidder for BSL-3 Laboratory.	10	
	Project Implementation Strategy to demonstrate the compliance of the submitted Bid to the Technical Requirements and Specifications for the proposed facility establishment along with the BAR/PERT chart.	10	
	Bidder's establishment and setup in Pune for long term services and maintenance support to NCCS	10	
	Total Mark		**100**
Note- The presentation will be arranged at the risk and cost of the bidder at NCCS Pune and NCCS will not pay any charges for the same. As it is turnkey project every bidder will present their technical proposal and details to the technical evaluation committee of NCCS. The presentation time for each Bidder will be approximately of 30 minutes covering the capabilities, design/technical proposals only as outlines above, no financial details are to be disclosed during the presentation.			

5.7. AWARD OF CONTRACT:

The NCCS, Pune shall award the Contract to the Bidder whose Bid is substantially responsive to the bidding document, whose evaluated offer/Bid has been found to be the technically suitable with high quality standards and who has quoted the lowest Bid Price considering Life Cycle cost (sum total of Part-A Project Amount & Part-B COAMC of Commercial/Price Bid), provided further that the Bidder is found to be qualified and competent to execute the contract satisfactorily. The selected Bidder shall be called for technical and financial discussion if required.

The Director, NCCS reserves the right to accept or reject any bid or all the bids at any time, without thereby incurring any liability to the affected bidder or specifying the grounds for the same. The work to be carried out under the Contract shall, except as otherwise provided in these conditions, include all labour, materials, tools, plants, equipment and transport which may be required in preparation of and for and in the full and entire execution and completion of the works. The descriptions given in the Schedule of Quantities shall, unless otherwise stated, be held to include wastage on materials, carriage and cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labour necessary in and for the full and entire execution and completion of the work as aforesaid in accordance with good practice and recognized principles.

On acceptance of the tender, the name of the authorized representative(s) of the contractor who would be responsible for taking instructions from the E-I-C shall be communicated in writing to the E-I-C. The Contractor shall prepare a BAR/PERT Chart for the execution and completion of the work showing clearly all activities with sequence from the start of the work to the completion, with details of manpower, materials, equipments and machinery required for the fulfillment of the contract within the stipulated period or earlier and submit the same for approval of the E-I-C, NCCS within ten days of award of the contract /issue of LOI.

6. GENERAL CONDITIONS OF CONTRACT:

6.1 PRE-BID CONFERENCE-

6.1.1. The objective of PBC is to provide a platform for clarifying issues and clearing doubts, if any, about the specifications and other allied technical/commercial details of the bid document. Bids should be submitted only after the PBC so as to take care of the change, if any, made in the bidding document. Bidders are requested to send their written queries, doubts, clarifications, if any, well in advance on following email, minimum two days before pre-bid meeting.
Email: pmtamhane@nccs.res.in & prasadabnave@nccs.res.in

6.1.2. The Minutes of the pre-bid meeting will be uploaded on the NCCS website. All Bidders are requested to formulate their bids accordingly.

6.2 VALIDITY OF OFFER:

Bidder/s shall keep his / their offer valid for a period of at least Six Months (180 days) from the date of opening of the Technical Bid. If any Bidder withdraws or amends impairs or derogates from the tender in any respect within the period of validity of his offer, the EMD is liable to be forfeited.

6.3 RIGHT TO ACCEPT OR REJECT TENDER:

The Director, NCCS reserves the right to amend or withdraw any of the terms and conditions contained in the tender document before accepting the tender or to reject any or all the tenders without giving any notice or assigning any reason. The decision of the Director, NCCS in this regard shall be final and binding on all.

The Director NCCS reserves the right to delete items, reduce or increase the scope of work without the contractor claiming any compensation for the reduction in the scope of work. Contractor has bound to carry out the reduced or increased quantity of work at the quoted rates.

6.4. ABNORMALLY HIGH RATE (AHR) & ABNORMALLY LOW RATE (ALR) ITEM:

If the bid of the successful bidder is seriously unbalanced in relation to the estimate of the cost of work to be performed under the contract, the NCCS may require the bidder to produce detailed price analysis for any or all items of the Scope of work/Bill of quantities to demonstrate the internal consistency of these prices with the working method and the schedule proposed.

6.5. ESCALATION:

Escalation is not applicable for this work and no price escalation shall be paid by NCCS under this contract.

6.6. PERFORMANCE BANK GUARANTEE (PBG)-

- The Successful Bidder shall submit an irrevocable Performance Bank Guarantee of **5% (Five percent) of the contract amount** for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period of ten days from the date of issue of letter of Intent as per attached format of any Nationalized / Commercial/ Scheduled Bank.

- After receipt of Performance Bank Guarantee from the successful Bidder, formal work order will be issued.

- If he / she / they decline/s or fail/s to submit the PBG within the stipulated time, without prejudice to NCCS's right to rescind the contract and other rights and remedies warranted by the law.

- In the event of refusal to carry out work within fifteen days by the successful Bidder on any grounds, its Performance Bank Guarantee shall be forfeited.

- The Performance Bank Guarantee shall be valid for the entire period of contract plus entire period of warranty. **If the BSL-3 Laboratory facility after handing over fails to clear DBT committee inspection and certification due to poor workmanship/lack of compliance, the contractor shall incorporate all such remarks/observations given by the DBT committee in a time bound manner without any additional cost. If the contractor fails to incorporate the remarks/observations given by the DBT committee, the performance security shall be forfeited.** In case the time for completion of work gets extended, the contractor, at his own cost, shall get the validity of PBG extended to cover such extended period for completion of work. The original PBG will be returned to the contractor upon successful completion of the warranty period, on written request by contractor. No interest shall be paid to the contractor on PBG.

- The Engineer-in-Charge shall not make a claim under the PBG except for amounts to which NCCS is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

  i) Failure by the contractor to extend the validity of the PBG as described herein above, in which event the Engineer-in-Charge may claim the full amount of the PBG.
  ii) In the event of the contract being determined or rescinded under provision of any of the Condition of the agreement, the PBG shall stand forfeited in full and shall be absolutely at the disposal of the NCCS.

6.7. SIGNING OF THE CONTRACT:

- The successful Bidder shall be required to execute an agreement with NCCS as per the General Conditions / Special conditions enumerated in the tender documents and as per attached format, on a Non-Judicial Stamp Paper of **Rs.500/- (Rupees Five Hundred only)** within 15 days from the date of receipt of the notice of acceptance of tender. In the event of failure on the part of the successful Bidder to sign the agreement within the above stipulated period. The NCCS reserves the right to forfeit the PBG and cancel the contract.

- Until the Agreement is formally signed, the Letter of Intent/ Work Order of Tender issued to the successful Bidder and accepted by him shall be operative and binding on the NCCS and the Contractor.

- No payment for the work done will be made unless contract is signed by the Contractor.

6.8. INDEMNITY BOND:

The Contractor shall at all times hold NCCS harmless and effectively indemnified as per attached format on a Non-Judicial Stamp Paper of **Rs.500/- (Rupees Five Hundred only)** within 15 days from the date of receipt of the notice of acceptance of tender. This clause shall survive the termination of this contract.

The Contractor shall indemnify, protect and save NCCS against all claims, losses, costs, damages, expenses, action suits and other proceedings, resulting from infringement of any patent, trademarks, copyrights etc. or such other statutory Infringements in respect of all the equipments, installations etc. supplied by him under this contract.

6.9. PAYMENT TO CONTRACTOR:

6.9.1. Payment will be made in Indian Rupees only. Request for making Payment in any other currency will not be accepted.

6.9.2. No advance payment will be paid against this work order.

6.9.3. Payment in maximum three RA bills, subject to each RA bill raised shall not exceed 25% each as per actual work carried out at site and such RA bills amount will be certified for payment based on the bill of quantity in respect to bar chart provided by the bidder.

Final bill amount will be certified for payment after completion of tendered work in all respect including testing, commissioning, documentation and validation and submission of operation/user's manual, and guarantee/warranty cards, validation report etc.

10% Security Deposit will be deducted from each bill payable to the contractor.

6.9.4. Payments will be made online by RTGS / NEFT.
6.9.5. TDS will be deducted as per Prevailing Rules.

6.10. SECURITY DEPOSIT:

Security Deposit (10%) will be refunded after twelve months of warranty/defect liability period from the date of completion of work. In case of unsatisfactory performance by the Contractor Security Deposit will be forfeited.

6.11. PERFORMANCE BANK GUARANTEE FOR COAMC PERIOD:

Contractor should submit fresh irrevocable Performance Bank Guarantee equal to COAMC amount for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period of ten days from the date of issue of work order. The Performance Bank Guarantee shall be valid for the entire COAMC period of contract plus sixty days.

The original PBG will be returned to the contractor within sixty days of satisfactory completion of COAMC period, on written request by the contractor, without any interest.

6.12. DISCIPLINE:

Contractor shall carry out the works hereunder with due diligence and in a safe and workman like manner according to good Contractor's employees and shall abide by and conform to all rules and regulations promulgated by the NCCS governing the operations.

6.13. SAFETY CODE:

The Contractor shall take adequate precautions to ensure that the tendered works not at all affects the working of the NCCS. He shall take adequate measures to barricade the work sites so that unauthorized persons do not enter the work site. All the safety codes and the preventive measures for this type of work shall be strictly followed. All the personnel and staff shall be under the Contractor's authority and it shall be the responsibility of the Contractor for all insurance, accident claims etc. at the site. The Contractor shall strictly abide by the labour laws in force from time to time and comply with the same and will co-ordinate directly with the concerned authorities. Contractor should follow CPWD safety code norms and IE norms applicable for this work at his own risk and cost.

6.14. QUALITY OF WORK:

The quality of work at all stages should be as per the standards laid down, as per NIT and explained to the Contractor by NCCS, Pune. It is made clear that there cannot be any compromise in the material quality and workmanship of work. It shall be the responsibility of the Contractor to ensure that the standards laid down from time to time are strictly maintained. Contractor should use approved brands of materials only and get approved sample of each material from Engineer in charge before use. In case of any deviation from the approved design, specifications, makes, model or inferior workmanship, the Contractor should replace at his own cost without impacting the timelines.

6.15. DATE OF COMPLETION:

- Time is the essence of the Contract.
- The successful bidder shall complete the works in 06 (Six) Calendar months from the date of approved drawings by NCCS.
- In order to complete the work on top priority within the time limit, the contractor has permitted to work from day and night including all holidays.

6.16. WARRANTY/DEFECT LIABILITY PERIOD:

The Warranty/Defect Liability Period for the work is twelve month from the date of the handing over the facility to NCCS. During the warranty/DLP, the contractor will be responsible for rectifying any defects in working caused due to bad workmanship and/or poor quality of materials etc. This will be rectified by the contractor at his own expenses otherwise SD (10%) will be forfeited.

The expression "Defects Liability Period" shall be for 1 year (One year) and shall mean the specified period calculated from the date of completion and acceptance of the Works and issuance of Taking-Over Certificate. The Contractor shall rectify and execute all such work of remedying defects, shrinkages or other faults, excluding fair wear and tear accepted, as the Employer may instruct the Contractor to execute, during the Defects Liability Period or within 14 days after its expiration, as a result of an inspection or observation made by the NCCS. All the installations, equipment/s, items, systems and services executed by the Contractor shall remain under Guarantee and Defects Liability for a period of one year, for delivering the design and approved performance of individual equipments and systems and the complete facility as a whole.

Any defect or damage due to faulty material or improper workmanship, whenever notified during the Guarantee and Defects Liability period to the Contractor, shall be repaired and rectified by the Contractor to the satisfaction of the NCCS, at his own cost. If the contractor fails to timely rectify and execute any such instructed work of remedying defects, the Employer shall reserve the right to proceed and get all such work executed by another agency and debit the entire cost to the contractor and recover the amount from the money due or will become due for payment to the contractor.

Contractor should deploy required qualified manpower for daily operation and maintenance of the BSL3 facility during the warranty period at his own cost.

In addition, if the BSL-3 Laboratory facility after handing over fails to clear DBT committee inspection and certification due to poor workmanship/lack of compliance, the time lost in getting the certification should be added to the actual warranty period.

6.17. COMPENSATION FOR DELAY:

If the contractor fails to maintain the required progress or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the NCCS on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the Engineer in Charge of NCCS (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day/month (as applicable) that the progress remains below that specified in Clause- Time and Extension for Delay or that the work remains incomplete.

Compensation for delay of work @ 3% per month of delay to be computed on per day basis provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the contract value of work. The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this contract with the NCCS or the security deposit will be forfeited.

6.18. WHEN CONTRACT CAN BE DETERMINED:

Subject to other provisions contained in this clause, the Engineer-in-Charge may, without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and/or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the cases as mentioned or elaborated General condition of Contract, reference shall be made to CPWD Manual or Amended upto date .

6.19. TIME AND EXTENSION FOR DELAY:

The time allowed for execution of the Works as specified in the NIT or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from such time period as mentioned in NIT or from the date of handing over of the site whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, Director NCCS shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money & performance guarantee absolutely.

As soon as possible after the Contract is concluded, the Contractor shall submit a Time and Progress Chart for each mile stone and get it approved by the Engineer-in Charge. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the Contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds the time period to complete the work as per mile stones given in NIT.

6.19.1. IF THE WORK(S) BE DELAYED BY:-

- force majeure, or
- abnormally bad weather, or
- serious loss or damage by fire, or
- civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or
- delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in executing work not forming part of the Contract, or
- Any other cause which, in the absolute discretion of the Engineer-in-Charge is beyond the Contractor’s control.

Then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.

6.19.2. Request for rescheduling of Milestones and extension of time, to be eligible for consideration, shall be made by the Contractor in writing of the happening of the event causing delay on the prescribed form to the Engineer-in Charge. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

6.19.3. In any such case the Engineer-in Charge may give a fair and reasonable extension of time and reschedule the milestones for completion of work. Such extension shall be communicated to the Contractor by the Engineer-in Charge in writing after receipt of such written request. Non application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-in Charge and this shall be binding on the contractor.

6.20. MEASUREMENTS OF WORK DONE:

All measurements shall be taken jointly by the Engineer-in-Charge/ Expert or his authorized representative and by the contractor or his authorized representative after completion of the work and such measurements shall be signed and dated by the Engineer-in-Charge and the contractor or their representatives in token of their acceptance. The contractor shall submit all the bills in the shape of the computerized MB in pages of A4 size as per the standard format as instructed by EIC and shall act as per clause CPWD GCC.

6.21. CONTRACTOR TO KEEP SITE CLEAN:

On completion of the work, all rubbish materials related to contract works shall be removed by the contractor(s) at his/their own expenses and the site cleaned and handed over to the NCCS and shall intimate officially of having completed work as per contract.

If it is noticed that the Contractor does not clean the place of work, then NCCS. Pune reserves the right to get the area cleaned and unilaterally debit the cost of cleaning to the Contractor or deduct the cost incurred, from the Contract amount as deemed fit.

6.22. DISMANTLED MATERIAL NCCS PROPERTY:

The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work, etc. as NCCS property and such materials shall be handed over to NCCS after completion of work.

6.23. INCONVENIENCE TO NCCS ACTIVITIES:

The Contractor shall not deposit materials on any site which will seriously inconvenience to any of the NCCS activities. The Engineer in charge may instruct the Contractor to remove such materials which are considered by him to him by the dangerous or inconvenient to the activities of the NCCS.

6.24. WORK TO BE EXECUTED IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS AND ORDERS ETC:

The contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer-in-Charge and the contractor shall be furnished free of charge copy of the contract documents together with specifications, designs, drawings and instructions as are NIT.

The contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods for execution of the works.

6.25. DEVIATION / VARIATION – EXTENT & PRICING:

The Engineer-in-Charge shall have power to make any alterations in, omissions from, additions to or substitutions for, the original specifications, drawings, designs and instructions that may appear to him to be necessary during the progress of the work and the contractor shall carry out the work in accordance with any instructions which may be given to him in writing signed by the Engineer-in-Charge, and such alterations, omissions, additions or substitutions shall not invalidate the contract and any altered, additional or, substituted work which the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work. The time for the completion of the work shall be extended in the proportion that the altered, additional or substituted work bears to the original contract work, and the certificate of the Engineer-in-Charge shall be conclusive as to such proportion. Over and above this, a further period to the extension shall be allowed to the contractor. The rates for such additional, altered or substituted work under this clause shall be worked out in accordance to the prevailing market rate analysis.

6.19. It shall be the responsibility of the Contractor to meet transportation, food, medical and any other requirements in respect of the workers engaged by him at NCCS. Pune and NCCS shall have no liabilities in this regard.

6.20. The NCCS will not be responsible for any damages, losses, theft, claims, financial or other injury to any workers deployed by service providing Bidder in the course of their performing the functions / duties, or for payment towards any compensation.

6.21. <u>For elaboration of any items of the General condition of Contract, reference shall be made to CPWD Manual or Amended upto date. The Contractor shall in advance seek clarification on any elaboration</u>.

6.22. It is mandatory for bidders to quote items having local content minimum 20% or amended upto date.

Refer revised Public Procurement (Preference to Make in India), Order 2017, No. P-45021/2/2017-PP (B.E- II) dated 16.09.2020 issued by DPIIT, Ministry of Commerce and Industry, Govt. of India. (Submit duly filled Make in India Form XII for the same). The Form XII once submitted in the Technical Bid will be final. Submission of Revised Form XII will NOT be accepted.

As per O.M. of DPIIT, Ministry of Commerce and Industry, Govt. of India No. P-45021/102/2019- BE-II- Part (1) (E-50310) Dated 04.03.2021, Bidders offering Imported products will fall under the category of Non-Local Suppliers. They cannot claim themselves as Class-I or Class –II Local Suppliers by claiming the services such as Transportation, Insurance, Installation, Commissioning, Training and After Sale Service Support like AMC/ COAMC etc. as Local Value Addition.

Also please note that for tender, amended guidelines upto date should be followed.

7. SPECIAL CONDITIONS OF CONTRACT:

7.1. For Technical data and specifications if in doubt / unclear / mismatch, the same are to be clarified with the Engineer in Charge.

7.2. The bills of quantities indicated in this tender are approximate and are liable to change at the discretion of the NCCS. Any variation in quantities will not be applicable for change/modification in quoted rates.

7.3. The nomenclature of the item given in the schedule of quantities gives in general the work content but is not exhaustive i.e. does not mention all the incidental works required to be carried out for complete execution of the item of work. The work shall be carried out , all in accordance with true intent and meaning of the specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and / or described in the specifications, provided that the same can be reasonably inferred there from. There may be several incidental works, which are not mentioned in the nomenclature of each item but will be necessary to complete the item in all respect. All these incidental works / costs which are not mentioned in item nomenclature but are necessary to complete the item shall be deemed to have been included in the rates quoted by the contractor for various items in the schedule of quantities. No adjustment of rates shall be made for any variation in quantum of incidental works due to variation / change in actual working drawings. Also, no adjustment of rates shall be made due to any change in incidental works or any other deviation in such element of work (which is incidental to the items of work and are necessary to complete such items in all respects) on account of the directions of Engineer-in-Charge. Nothing extra shall be payable on this account.

7.4. Unless otherwise provided in the Schedule of Quantities, the rates quoted by the Contractor shall be inclusive of carrying out the works at and / or upto all heights, lifts, leads and depths. The contractor shall make all arrangements for the same. Nothing extra shall be payable on this account.

7.5. All ancillary and incidental facilities required for execution of work like labour camp, stores, fabrication yard, offices for Contractor, watch and ward, temporary ramp, temporary structure for plants and machineries, installation etc. if required for execution of the work, etc., protection works, barricading, testing facilities / laboratory at site of work, facilities for all field tests and for taking samples etc. during execution or any other activity which is necessary (for execution of work and as directed by Engineer-in-Charge), shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities. Nothing extra shall be payable on these accounts.

7.6. PROCEDURE FOR APPROVAL OF MATERIALS, SHOP FLOOR DRAWINGS AND COMMENCEMENT OF WORK

Within prescribed time period as per the mile stone the contractor shall visit the site and submit following documents for approval

1. List of makes & Model numbers of all items of equipment and accessories.
2. Catalogues of the equipment to be supplied along with design details, technical specification, safety certifications etc. as required for each product.

3. Shop floor drawings of each work/package shall be submitted separately for approval. It is the responsibility of the tenderer to get the makes, models and shop floor drawings approved by the department. The makes and models offered should be as per the specification and BOQ of the NIT. The decision of Engineer-in –charge is final in this regard. The materials can be brought to site only after the due approval of drawings, makes, models from the department.

7.7. The Contractor shall be responsible for the due and proper execution of all the works as per the terms and conditions. The contracting agency should study the design details and understand clearly, prior to quoting. The responsibility of performance shall be with the Contractor.

7.8. The debris arisen during the period of work of execution will have to be cleared then and there to keep the site / surroundings clean and tidy. Such debris shall be cleared at Contractors risk and cost.

7.9. The contractor should use additional supports, scaffoldings, materials, accessories, equipments, crane for lifting & shifting loading & unloading, hardware, labour, insurance etc. for proper execution of the work and performance of the work. No additional cost will be paid for this.

7.10. The NCCS reserve the right to call explanations and rate analysis from any bidder, regarding the calculations / clarifications on any details. They may also visit the office of the bidder / various works carried out by him. The necessary co-operation in this regard is envisaged form the bidder.

7.11. The NCCS or their representatives shall have access to the workshop /Manufacturing facilities of the bidder and or successful contractor so as to assure themselves of the quality of the material and workmanship.

7.12. The Bidder should have adequate technical, quality control and quality assurance staff for the contract. Designation, Name of the Person and Total Years of relevant Experience in the current firm should be provided for the following posts:

Head - Execution,
Head Design – Technical,
Project manager – Technical,
Manager – Quality & Planning,
Project Engineers – Execution,
Safety Engineer,
Site Supervisor and Technicians,
Validation Engineers,
Documentation Engineer and Service Engineer.

7.13. The Contractor shall depute Site Engineers & skilled workers as required for the work. He shall submit organization chart along with details of Engineers and supervisory staff. It shall be ensured that all decision-making powers shall be available to the representatives of the Contractor at site itself to avoid any likely delays on this account. The Contractor shall also furnish list of persons for specialized works to be executed for various items of work. The Contractor shall identify and deploy key persons having qualifications and experience in the similar and other major works, as per the field of their expertise. If during the course of execution of work, the Engineer-in-Charge is of the opinion that the deployed staff

is not sufficient or not well experienced; the Contractor shall deploy more staff or better-experienced staff at site to complete the work with quality and in stipulated time limit.

7.14. The main Contractor has to associate approved specialized agencies for the Civil, E&M components etc, as listed in tender documents

The contractor shall ensure that the all the specialized agencies under him shall fulfill all the conditions of previous clause (Supervision of work) for the entire period of the contract.

7.15. Necessary protective and safety equipment shall be provided to the Site Engineer, workers & Supervisory staff by the Contractor at his own cost for use at site.

7.16. The contractor shall execute the whole and every part of the work in the most sound and substantial and workmanlike manner, and in strict accordance with the specifications both as regards materials and workmanship. The contractor shall also conform exactly, fully and faithfully to the designs, drawings and instructions in writing relating to the work signed by the NCCS / Consultant.

7.17. In case of conflict in specifications or terms, between tender, general engineering practice, National and International Codes, more stringent among all will be applicable.

The order of preference in case of any discrepancy as indicated to be read as following:

a) Nomenclature of item as per Price Bid.
b) Additional specifications, particular specifications & special conditions.
c) General Conditions.
d) Tender drawings and specifications mentioned in drawings.
e) Tender specifications.
f) Indian Standard specifications of BIS.
g) WHO and National Guidelines issued by DBT&ICMR for BSL-3
h) Sound engineering practice as per directions of NCCS / Expert/Consultant.
i) Manufactures specifications.

A reference made to any Indian Standard specifications in these documents reference to the latest version of that standard, including such revisions /amendments as issued by Bureau of Indian standards up to last date of receipt of tender. The contractor shall keep at his own cost all such publications of relevant Indian Standards applicable to the work at site.

7.18. The NCCS shall have a right to increase or delete any item of work from the scope of contract and contractor shall not make any extra claim on this account.

7.19. The time for supply of items is very important factor to the NCCS. Only those Tenderers, who are confident and willing to supply the requested items to NCCS within the prescribed time period after the receiving of confirm work order from NCCS are requested to participate in this Tender.

7.20. The submission of tender shall be deemed to be an admission on the part of the bidder that it has fully acquainted with the contract terms and no claim other than what stated in the tender shall be paid in the event of award of Contract.

7.21. The successful tenderer is responsible to provide the required manpower with qualified persons to meet the requirements of the maintenance of the installation during the guarantee period or AMC. The contractor shall provide any materials required. Tools required for the maintenance shall be arranged by the contractor.

7.22. The staff to be engaged on this work shall have full knowledge and experience of the work in which they are engaged. The electrician shall have valid licenses for corresponding trades.

7.23. No subletting or subcontracting of the work will be permitted.

7.24. The contractor shall not assign the contract or any part thereof without the written consent of the NCCS. The whole of the works included in the contract shall be executed by the contractor except where otherwise provided in the contract and he shall be responsible for the acts, defaults and neglects of sub-contractor.

7.25. SAFETY, HEALTH AND ENVIRONMENT

i. The Contractor(s) shall take all precautions to avoid accidents by exhibiting necessary caution boards. He shall be responsible for all damage and accidents caused to existing/new work due to negligence on his part. In case of any accident of labour / contractual staff the entire responsibility will rest on the contractor and any compensation under such circumstances if becomes payable shall be entirely borne by the contractor.

ii. Appropriate personnel protective equipments such as helmets, gloves, googles, aprons, safety belts etc. shall be provided to the workers employed at the work site.

iii. All hazardous materials shall be labeled with the name of the materials, the hazards associated with its use and necessary precaution to be taken.

iv. Contractor shall ensure that during the performance of the work, all hazard to the health of personnel, have been identified, assessed and eliminated.

v. The contractor has to keep a record of all the workers employed at site, mark daily attendance along with the location of the work. All the labour record shall be made available for inspection and verification as and when required.

7.26. QUALITY ASSURANCE:

i. The contractor shall establish, document and maintain an effective quality assurance system as outlined in the specifications and various codes and standards.
ii. The bidder shall understand scope of the work, drawing, specifications and standards etc. attached with the tender or to be followed and shall seek clarification, if any before submission of the tender
iii. The quality assurance system plans / procedures / method statement to be followed shall be furnished in the form of quality assurance manual. It should cover quality assurance, plan procedure, specifications, frequency of the inspection, testing, acceptance criteria, method of sampling, testing etc. to be followed for quality.

iv. The approval of quality assurance does not absolve the contractor of the contractual obligations towards executing the work as laid down in the specification of the work.

v. The contractor shall produce quality control records in the formats approved by Engineer-in-charge / Consultant in the quality assurance plan.

vi. The contractor shall ensure the enforcement of quality assurance plan as approved. The NCCS reserves the right to inspect, witness, review any stage of the work at shop / site as deemed necessary for quality assurance and / or timely completion of work.

vii. The contractor shall procure required materials in advance so that there is sufficient time for testing of the materials and clearance of the same before use in the work. The contractor shall provide at his own cost suitable measuring arrangements at site for checking the dimensions as may be necessary for execution of work.

7.27. TESTING OF MATERIALS

All the required tests as per Technical Specification should be conducted at the cost of the contractor, unless specifically mentioned otherwise. All materials which are to be tested at the manufacturer's works shall satisfactorily pass the tests in the presence of the authorized representative of NCCS / Consultant before being used in the work. In case all requisite testing facilities are not available at the manufacturer's premises, such testing shall be conducted at the approved laboratory. The charges for such testing shall be borne by the contractor.

The contractor shall arrange carrying out all relevant field tests mentioned in the list of mandatory tests given in CPWD Specifications 2019 Vol. 1 & 2 through the laboratory as approved by the Engineer-in-Charge and shall bear all charges in connection therewith including charges for testing for all materials. Nothing extra shall be payable to him on this account.

Tests registers for tests to be carried out at construction site or in outside laboratories shall be maintained by the contractor.

7.28. MATERIALS AND WORKMANSHIP

Unless some special Warranty/Guarantee clause has been stipulated elsewhere in the invitation to the tender or any it's annexure, the following warranty shall form part of the contract placed on successful tender: -

a) Contractor shall fully warrant that all the equipment and components supplied under the order shall be new and of first quality according to the specifications and shall be free from defects (even concealed fault, deficiency in design, materials and workmanship).

b) Should any defects be noticed in design, material and/or workmanship within 15 months from the date of shipment/dispatch of last consignment or 12 months from the date of commissioning and handing over of the equipment whichever is later, NCCS shall inform Contractor and Contractor shall immediately on receipt of such intimation, depute their personnel as soon as practicable but use reasonable efforts to commence such work in no event later than 7 days to investigate the causes of defects and arrange

rectification /replacement/modification of the defective equipment at site without any cost to NCCS within a reasonable period. If the Contractor fails to take proper corrective action to repair/replace the defects satisfactorily within a reasonable period, this Organisation shall be free to take such corrective action as may be deemed necessary at Contractor risk and cost after giving notice to the Contractor.

c) If in an emergency warranty service situation exists, the Contractor and NCCS determines On-site Technical assistance is necessary, the Contractor shall dispatch emergency service personnel to the site to attend to the problem and rectify the defect as promptly as practicable. The Contractor shall maintain a Technical assistance centre and shall have technical support available to NCCS in accordance with the requirement.

d) If the Contractor subcontracts any part of the system or any of the services to a Third party the Contractor is still liable for the Warranty /guarantee of the equipment/services so subcontracted as per the above clauses.

e) Damage to the machinery and/or equipment due to incomplete and erroneous instructions issued by Contractor will be responsibility of the Contractor and will be treated according to the provisions of Warranty clause. Normal wear and tear shall not come under purview of this clause.

f) In case defects are of such nature that equipment shall have to be taken to Contractor works for rectification etc. Contractor shall take the equipment at his cost after giving necessary undertaking or security as may be required by NCCS.

g) Equipment or spare parts thereof replaced shall have further warranty for a period of 12 months from the date of putting into beneficial use.

h) The Contractor shall guarantee that they will supply spare parts if and when required on agreed price. The agreed price should include but without any limitation to agreed discount on the published catalogue price or on agreed percentage or profit on the landed cost.

i) The Contractor will Warranty that before going out of production for any of spare parts, they will give adequate advance notice to the purchaser so that the latter may undertake to procure, if necessary, the balance of the life time requirements.

j) If the repairs, replacement or modification referred are of such nature as may affect the efficiency of the equipment NCCS. shall have the right to give to the Contractor within one month of such replacement/renewal notice in writing to carry out test as may be required for acceptance of the equipment.

k) If the Contractor fails to honour his obligation to repair or replace defective goods/services within a reasonable period of time, or if Contractor refuses to carry out work under the guarantee clause and implied guarantee condition, if danger is anticipated or in case of severe urgency, NCCS shall be entitled to carry out, at Contractor cost and risk, repair work or replacement deliveries or have it done by a third party. In case not all goods /services have been delivered by supplier, this Organisation is entitled to procure the remaining goods/services at Contractor cost and risk. This does not relieve Contractor of any of his guarantee obligations. Taxes and duties of any kind whatever imposed by the authorities of the country of the Contractor or his sub-Contractors until delivery shall be borne by Contractor.

7.29. REJECTION

If the NCCS finds that the goods supplied are not in accordance with the specification and other condition stated in the order or its sample(s) are received in damaged conditions (of which matters NCCS will be the sole judge), NCCS shall be entitled to reject the whole of the goods or the part, as the case may be and intimate to the Contractor the rejection without prejudice to other rights and remedies to recover from the Contractor any loss which it may be put to, also reserving the right to forfeit the security deposit/performance bond if any made for the due fulfillment of the contract. The goods shall be removed by the Contractor and if not removed within 7 days of the date of communication of the rejection NCCS will be entitled to dispose-off the same on account and at the risk of the Contractor and after recovering the storage charges at the rate of 5% of the value of goods of each month or part of month and loss and expense if any caused to NCCS and pay balance to the Contractor.

7.30. INSPECTION/TESTING OF MATERIAL

The inspection of stores/services/works will be carried out by the authority specified in the purchase order. The stores/works will be accepted only after the same has been found satisfactory after inspections and duly marked and sealed by the inspection authority.

The Contractor shall ensure that the stores/services/works to be delivered against this order shall be individually inspected, tested and analyzed in terms of the specifications attached to the tender and the relevant codes and practices specified therein by expression or implication. Necessary test reports shall be provided as required.

The Contractor should make available to NCCS and any other individual/ agency authorised by them for the purpose of inspection all its record and results in respect of inspection, test and analysis conducted by it as part of their manufacturing and testing operation under the applicable codes and practices specified by expression or implication in the tender.

Inspection tests and analysis shall be carried out/conducted at the Contractor works by the authorised representative of NCCS and the cost of such inspection tests and analysis including the cost of to and fro fare and accommodation and cash allowances payable shall be borne by NCCS.

The Contractor shall provide and deliver free of charge for tests/analysis by an independent authority at any such place or places as NCCS or its authorised inspector may reasonably require, such raw material(s) used or intended to be used for the contracted work by the Contractor as the Organisation/Inspector shall consider necessary. The cost of such tests/analysis shall be borne by the Contractor.

NCCS shall be entitled at all times, whether prior to, during or after the completion or inspection by itself and/or through inspectors appointed by the Organisation at the Organisation's cost, to inspect, test and/or analyse and/or to direct the Contractor in all respect of any store(s) or materials processes used or proposed to be used in the fabrication of the product of any of them. The said inspection, tests and analysis as far as required, is to be conducted in the presence of the

inspectors. The Contractor shall ensure that the inspecting personnel referred to above are given free access to all the required places and information connected with their work, besides working facilities to carry out their function.

Should the Contractor fail to comply with any of the provisions aforesaid relating to inspection, testing and analysis, NCCS shall be entitled by itself and/or through inspectors to conduct or have conducted the inspection, test and/or analysis at the risk and expense of the Contractor in all respects.

For false calls for the cases where material is rejected on inspection, the Contractor will bear the actual cost of inspection incurred/suffered by the Organisation.

No rejected raw materials shall be used for the contracted work or re-tendered for inspection and/or test except with the prior permission of concerned Inspectors.

Unless otherwise specifically authorized by NCCS in writing, the Contractor shall not ship or dispatch for shipment under the contract entered into, any material which has not been properly inspected/tested marked and in respect of which a certificate of quality has not been issued or signed by the inspectors.

In addition to the general conditions of the inspection stated above, the Contractor shall also satisfy all the specific conditions of inspection as enumerated in the specification attached.

7.31. SUB-STANDARD MATERIAL/REPLACEMENT OF REJECTED GOODS

If the NCCS finds that STORES/MATERIAL supplied/SITC/SETC executed are not of the correct quality or not according to specification required or otherwise not satisfactory owing to any reason of which the Organisation will be the sole judge, the Organisation will be entitled to reject materials/works, cancel the contract and buy its requirement of the Stores/SITC/SETC in the open market at the risk and cost of Contractor, reserving always to itself.

The right to forfeit the security deposit/performance bonds placed by the supplier for the due fulfillment of the contract. Rejected goods should be removed and replaced within 14 days of the date of communication of rejection.

In case this tender document does not contain a provision or terms for dealing with a situation that may arise during the execution of the works, the relevant provisions contained in the CPWD manual amended upto date or any other laws/rules shall be followed in such cases and the same will be binding on the Contractor.

7.32. The contractor shall be given water and power supply free of cost at one point. The contractor has to make his own arrangement for taking it up to using place at his own expense. The contractor shall make further arrangements at his own cost, ensuring safety of instruments and persons at all time.

7.33. It shall be the responsibility of the Contractor to meet transportation, food, medical and any other requirements in respect of the workers engaged by him at NCCS Pune and NCCS shall have no liabilities in this regard.

7.34. The NCCS will not be responsible for any damages, losses, theft, claims, financial or other injury to any workers deployed by the service providing Bidder in the course of their performing the functions / duties, or for payment towards any compensation.

7.35. The Contractor should have the requisite license for running their own establishment from authorities such as Local Authority, State / Central Departments etc., at its' own cost. The NCCS shall not be responsible in any way for any breach of these rules and regulations by the Contractor.

7.36. The Contractor shall comply with all the statutory requirement in respect of engaging the personnel, their service condition, rules and regulation and all liabilities under the various labour law and other statutory obligations like PF, ESIC, Bonus, workmen's compensation, gratuity and also comply with the provisions of Minimum Wages Act, Payment of Wages Act etc. shall be that of the Contractor, and NCCS., Pune shall in no way be responsible or liable in case of any dispute, prosecution or awards made by court of law or other authorities.

7.37. CERTIFICATE OF COMPLETION OF WORKS:

The Contractor shall report in writing to the Engineer in charge, as and when the works are completed in all respects. The Engineer in charge shall after the joint verification and measurement of the works with the Contractor/ Consultant. The defect liability period shall commence only from the date of final bill.

7.38. PERFORMANCE GUARANTEE:

Contractor shall guarantee that the performance of the EQUIPMENT/MATERIAL supplied under the order shall be strictly in conformity with specification and shall perform the duties specified under the ORDER.

The Contractor shall guarantee that the materials/equipment that shall be purchased from the sub-Contractor(s) shall be such as to fulfill the requirements laid down above and shall undertake to ensure fulfillment of these requirements.

7.39. WARRANTIES AND GUARANTEES:

The following Warranty will form part of the contract placed on the successful Bidder: -

a) Except as otherwise provided, the Contractor hereby declares that the services, stores articles sold / supplied to NCCS under this contract shall be of the best quality and workmanship and new in all respects and shall be strictly in accordance with the specification and particulars contained/mentioned in contract. The Contractor hereby ensures Guarantee that the said service/goods would continue to conform to the description and quality aforesaid for a period of 12 months from the date of handing over of the said services/goods to the NCCS., if during the aforesaid period of 12 months the said services/stores be discovered not to conform to the description and quality aforesaid not giving satisfactory performance or have deteriorated, and the decision of the NCCS in that behalf, shall be final and binding on the CONTRACTOR and the NCCS. shall be entitled to call upon the CONTRACTOR to rectify the services/stores or such portion thereof as is found to be defective by the NCCS within 12 months, or such specified period as may be allowed by the NCCS. In his discretion on application made thereof

by the CONTRACTOR, and in such an event, the above period shall apply to the services/stores rectified from the date of rectification mentioned in warranty thereof, otherwise the Contractor shall pay to the NCCS. Such compensation as may arise by reason of the breach of the warranty therein contained.

b) NCCS reserves the right to declare any defect/short comings as critical to the extent that Contractor will replace the item rather than rectifying.

7.40. **RESOLUTION OF DISPUTES**:

Any dispute arising out of this contract including any clarification as to the intent or interpretation of any of the provisions of these terms and conditions, the same shall be first referred to /sought from the Director, NCCS, whose decision in the matters shall be final and binding on the Contractor. Any other matter relevant to but not covered in the contract shall also be decided by making reference to the Director, NCCS whose decision will be final and binding on the Contractor.

If the dispute is not resolved through the reference made to the Director, NCCS, a reference of the same shall be made to an Arbitrator to be appointed by the Director NCCS Pune for adjudication of the same in accordance with the provisions of Arbitration & Conciliation Act-1996 and any statutory modification there under from time to time. There shall be no objection if the Arbitrator to be appointed is a Competent Officer of NCCS in the discretion of the Director NCCS Pune.

LEGAL JURISDICTION: If any dispute is not resolved by Arbitration will be referred to the Court of Pune Jurisdiction only.

8.0. SCOPE OF WORK & TECHNICAL DETAILS:

THE FOLLOWING TENDER DOCUMENTS ARE ATTACHED AS A PART OF NIT REQUIREMENT: -

1.	**PART- A**	**:**	**TENDER SPECIFICATIONS & APPROVED BRANDS**
2.	**PART- B**	**:**	**GENERAL LAYOUT/ DRAWING**

Material approval Sheet for all items including Technical Data Sheet, Catalogues and literatures will be provided by Contractor based on Tender Documents which will be scrutinized and approved by NCCS/Expert/Consultant.

General layout/ drawing will be provided by the NCCS. Shop drawings including coordination for all the services mentioned above based on the site requirements will be prepared and submitted by the contractor which will be scrutinized and approved by NCCS/Consultant.

"AS BUILT DRAWINGS" will be prepared by contractor which is checked and approved by NCCS/ Consultant submitting drawings and all the installation, systems and services provided in this facility for reference and records to NCCS both in hard copy drawings and digital mode.

The Contractor or his engineer shall attend project review meetings with NCCS/Experts/Consultants at site / online for the execution and completion of the project as per the instruction of NCCS / Consultant till the completion of the project and handing over.

Contractor shall prepare project planning and submit it to NCCS. The Contractor shall prepare an integrated bar chart for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, material and equipment required for the fulfillment of the contract within the stipulated period or earlier and submit the same for approval within ten days of award of the contract.
The programme chart should include the following:

1. Descriptive note explaining sequence of the various activities.
2. Network (PERT / CPM / BAR CHART).
3. Programme for procurement of materials / equipment / labour by the contractor.

If at any time, it appears that the actual progress of work does not conform to the approved programme referred above, the contractor shall produce a revised programme showing the modifications to the approved programme to ensure completion of the work. The modified schedule of programme shall be approved by the Engineer in charge.

The submission for approval of such programme or the furnishing of such particulars shall not relieve the contractor of any of the duties or responsibilities under the contract. This is without prejudice to the right of NCCS to take action against the contractor as per terms and conditions of the agreement.

The Contractor should coordinate with NCCS/Experts/Consultants at all stages of the project as and when required.

The Contractor should supply all the drawings and documents to NCCS / Consultant for review and approval as listed below:-

Sr No	Description	No of Sets	
1	WHO and National Guidelines issued by DBT&ICMR in Sept. 2024, Compliant Facility approval from Authorities, Validation, reports etc.	2 Sets	Contractors
2	As Built Drawings (Hard & Soft copies)	2 Sets + USB	Contractors
3	Manual	1 Sets	Contractors
4	SOP's for engineering installations and manuals, SOP’s for operation of facility	2 Sets	Contractors

All drawings (Architectural and services) shall be prepared by using CAD software and the scale of the drawings shall be indicated above or as decided by NCCS.

PART A– SCOPE OF WORK & TENDER SPECIFICATIONS

1.0 SCOPE OF WORK

The scope under the contract shall cover and include the following works:

a) Design, Supply, Installation, Testing, Commissioning (SITC) and Validation of Prefabricated BSL-3 Lab in 4 Nos. 40' x 8' container on Turnkey EPC basis in compliance with WHO, BMBL & DBT Guidelines (with latest amendments) at NCCS, Pune, including the following:

- Designing and detailing of the Proposed BSL-3 Laboratory in Pre-Fabricated Modular Type 40' x 8' (4 Nos.) Container.
- Complete internal construction and finishes including Internal partition walls, ceiling, flooring, doors and other finishing works as per requirement and specifications.
- Complete PHE works including drain piping, water distribution piping, water storage tanks, pumps etc. complete as per requirement and specifications.
- Wiring for lighting, power points, networking, communication/intercom, fire alarm system, CCTV and access control system etc. in the facility complete as per requirement and specifications.
- Providing light fittings and fixtures, switches, sockets, power distribution boards including MCB's, ELCB's etc., and main power supply LT panel.
- Providing Fire Alarm system, CCTV system, Access Control system, EPABX for internal communication, LAN system with Internet Connection and telephone handsets complete as per requirement and specifications.
- Providing UPS for Access Control system, CCTV, Fire Alarm system and Building Management System complete as per requirement and specifications.
- Air cooled DX type condensing units (n+1) including foundations etc. complete as per requirement and specifications for Lab Air-Conditioning
- Providing Air handling units including refrigerant piping connections with DX Unit, piping insulation and refrigerant gas charge complete as per requirement and specifications.
- Providing Laboratory Exhaust system including exhaust blowers and motors, foundation, duct connections etc. complete as per requirement and specifications.
- Providing supply and exhaust ducting with insulation, diffusers & grilles, volume control dampers, isolation dampers, VAV's, fire dampers etc. complete as per requirement and specifications.
- Providing Containment housing with HEPA filters for BSL-3 Lab supply and exhaust air complete as per requirement and specifications.
- Providing Building management system for complete Laboratory system functioning and monitoring including pressure sensors, temperature & Rh sensors, VFD's for AHU's and Exhaust blower motors, control wiring and BMS Control Panel with PLC and customized and HMI touch screen panel for operational parameter display at Lab entrance
- Providing Walk-Thru Type Prefabricated Shower module with shower water tanks, water heating system, interconnecting piping, batch controller for shower, shower pumps and shower control panel etc. complete as per requirement and specifications.
- Providing Steam Type Biological Liquid Effluent Decontamination (BLED) System with boiler, interconnecting piping, valves and control system with facility

to record each decontamination batch operational parameter and take printouts to ensure batch validation complete as per requirement and specifications.

- Providing Dynamic Pass Boxes complete as per requirement and specifications.
- Providing Laboratory Work stations with stools/ chairs complete as per requirement and specifications.
- Providing Double Door Autoclaves with Bio-Seal and with in-built Steam Generator complete as per requirement and specifications.
- Providing Ventilated Garment Cabinet for Inner Change Rooms complete as per requirement and specifications.
- Providing Garment Storage locker for Outer Change Room complete as per requirement and specifications.
- Providing Portable Fire Extinguishers in each zone (CO2 /Dry Powder type) complete as per requirement and specifications.
- Providing Water softener and water storage tanks complete as per requirement and specifications.
- Providing & laying of two run of LT Power cable from substation to LT panel of BSL3 and its termination as per requirement and specifications.
- Providing and fixing of LT panel for BSL3 complete as per requirement and specifications.
- Providing & fixing of G.I. Earthing with accessories complete as per requirement.
- Providing incoming water connections with water storage tanks complete as per requirement and specifications.
- Providing drain connections from BLED plant to existing nearest drain complete as per requirement and specifications.
- Providing foundation pillars and structural supporting arrangements for installation of Containerized BSL-3 Laboratory Unit complete as per requirement and specifications.
- Providing Sturdy fabricated Staircase units to access to the Prefabricated Lab unit including retractable canopy/awnings complete as per requirement and specifications.
- Providing suitable roofing in galvalume sheets with proposer structural supporting arrangements above the Prefabricated Lab unit with air ventilators for weather protection complete as per requirement and specifications.
- Foundation, staircase, roofing structure designs shall be got vetted from COEP/IIT/NIT and structural stability certificate with report shall be submitted to NCCS.
- Providing and fixing of CO2 distribution piping system for CO2 incubators inside BSL-3 Laboratory, comprising of distribution piping in welded SS316, isolation valves & non-return valves in all pipe branches, 2 no. CO2 cylinders with manifold and automatic changeover panel, quick connect coupling for end termination and piping connections with CO2 incubators, stand for cylinders etc. complete as required.
- Air Curtain at Main Doors
- Split AC for Service /Utility plant room

b) The Tender Drawings are provided for the purpose of understanding the proposed layout, general arrangements and work requirements.
c) All Site preparatory works shall be included in the scope of contractor.
d) The construction designs and drawings for foundations, pillar and roofing shall be done by qualified registered Structural Design Consultant and shall be got vetted from COEP/ IIT/NIT and structural stability certificate shall be submitted to NCCS and certified for structural stability and safety.

e) The firm shall take all precautions not to damage any part of the existing buildings, roads and other infrastructure. Any road cutting, chasing etc. done to complete the works shall be repaired by the firm to its original conditions at no extra cost to NCCS.
f) Testing and commissioning of all the equipment/s, items, systems and services supplied and installed in the BSL-3 Laboratory Facility and Validation of the BSL-3 Laboratory shall be carried out in the presence of representative/s of NCCS & Expert.
g) Submission of compiled testing, commissioning and validation report.
h) Preparation and submission of sets of 'AS BUILT DRAWINGS' as mentioned above.
i) Preparation and submission of sets of 'OPERATION& MAINTENANCE MANUAL AND INSTRUCTIONS' for all the installations as mentioned above.
j) Providing training to the Employer's staff on operation, servicing and maintenance of all engineering installations and handling of emergencies due to fire or engineering system failures.

2.0 SPECIAL DESIGN CONSIDERATIONS AND REQUIREMENTS FOR BSL-3 LAB

2.1 REFERENCE GUIDELINES FOR BSL-3 LABORATORIES

- National Guidelines issued by DBT & ICMR in Sept. 2024 (National Guidelines for the establishment and Certification of Biosafety Level-3 (BSL-3) containment facility, 2024)
- Laboratory Biosafety Manual of WHO (4^{th} edition)
- BMBL issued by CDC/NIH (6^{th} edition) guidelines, and other Standards, Guidelines, Codes and specifications as applicable.
- Provisions given in the above guidelines shall be incorporated in the designs.

2.2 GENERAL REQUIREMENTS:

- All the joints, penetrations, openings, cutouts etc. shall be sealed with non-shrinking material to prevent air leakage and ingress of air due to negative pressure of the laboratory rooms/zones.
- The HVAC system, BSL-3 laboratories, support areas Autoclave boiler, Effluent decontamination system boiler, hand wash and eye wash shall be provided with treated water supply.
- The required treated water quality for HVAC system and boilers for Autoclaves and Effluent decontamination plant shall be as per manufacturers recommendations. Any additional filtration system needed to ensure water quality for any specific equipment use shall be designed accordingly and shall be provided by EPC contractor.
- Water supply line for BSL-3 Lab must be isolated from other functional areas and protected with an approved backflow preventer installed outside of the containment area.
- Sinks and Faucets: Hand-wash sinks in BSL3 Labs and ABSL-3 Lab should be in stainless steel construction.
- Faucets within containment space shall have gooseneck-type spouts and shall be fitted with an integral vacuum breaker and laminar flow, non-aerating, non-splash outlet. The use of separate outlet taps for hot and cold water is not acceptable. Faucets shall be with fully hands-free operation.
- Emergency eye wash stations shall be provided in each BSL-3 & ABSL-3 Laboratory room with sensor-based or foot / elbow operated system.

- Showers: Showers in BSL-3 laboratory shall be provided with batch controller to enable program and adjust shower cycle and flow rate. Hand-held showers shall not be utilized and shall not accepted.
- Drain water from containment area of BSL-3 Lab like shower, hand wash sink, eye wash, dunk tank, autoclave chamber condensate etc. should be connected to the biological effluent decontamination plant and should not be disposed-off in municipal drain without decontamination treatment.
- Drain line vent in BSL-3 Lab drain shall be protected by HEPA filter, installed in housing with provision for filter decontamination before removal and filter testing.
- Cleanout plugs in BSL-3 drain piping shall be within the containment zone/area.
- Drain lines from dunk tank and autoclave chamber condensate drain shall be located inside containment space.
- Only decontaminated effluent from BSL-3 laboratory shall be discharged in normal drains.
- Drain out from BLED plant decontaminated effluent shall be mixed with cold water to lower the water temperature.
- No light or power DB's shall be located inside the containment area.
- IP 66 rated switches and sockets for light and power, complete with box, cover, plug top with threaded connection and flange cover shall be provided inside containment perimeter of BSL-3 Laboratory in consultation with NCCS & Expert.
- Minimum 20% spare power points shall be provided in BSL-3 Laboratory rooms in consultation with NCCS & Expert.
- Minimum two number power points in each BSL-3 Laboratory room shall be provided on UPS supply.
- Power supply point for BMS PLC, CCTV, Access Control, PLC's of Autoclave & BLED plant, EPABX shall be provided on UPS supply.
- All electrical conduits shall be sealed to prevent ingress of air due to room negative pressure.
- Light fixtures shall be surface mounted to minimize ceiling cutouts and each room shall be provided with min 20% lighting on emergency.
- Supply and Exhaust Fans of BSL-3 Laboratory shall be selected with min. 20% additional/higher capacity and shall be in N+1 (N is numbers operational + 1 standby) configuration.
- HVAC system operation sequence shall be interlocked such that the Exhaust Fan is first to Start and Last to Stop, to prevent positive pressurization of lab spaces.
- BSL-3 Lab systems shall be designed to allow selective independent operation of individual BSL-3 Laboratory areas.
- BSL-3 Lab systems HVAC system shall be designed for once through system (i.e. 100% fresh air system)
- BSL-3 Exhaust shall be in N+1 (N is numbers operational + 1 standby) configuration and provided with air-tight backdraft damper to prevent short circuiting of air.
- Fumigation/Decontamination Airlock supply and exhaust air ducts shall be provided with bubble tight isolation damper for room isolation and carrying out gaseous decontamination during material transfer.
- Each BSL-3 Lab rooms shall be provided with mechanical/digital display within the laboratory room indicating the room pressure to lab users.
- Exhaust Fans of BSL-3 shall be located at minimum 25 ft from AHU intake.
- Air velocity at exhaust discharge shall be 15-20 m/s (3000-4000 fpm) for BSL-3
- Pressure gradient to be maintained in the laboratory rooms/zones as provided in tender drawings. All given room/zone pressures shall be in reference to ambient atmospheric pressure.

- Supply and Exhaust HEPA filters shall be provided with gauges to indicate pressure drop across the filter. The pressure drop across HEPA filters shall also be displayed on BMS.
- All Supply air and exhaust air ducting within containment zone of BSL-3 Laboratory i.e. from supply air HEPA containment housing upto laboratory rooms and exhaust air ducting from rooms upto exhaust air HEPA containment housing, shall be leak tested and constructed in SS 304.
- BSL-3 Laboratory room/zone Air Flow Modulation shall be through VAV devices and VFD driven AHU's and Exhaust fan motors. The VAV shall be controlled through room/zone pressure and shall modulate supply and exhaust air quantity to maintain the room/zone pressure. The VFD of supply air AHU's and Exhaust Blowers of BSL-3 Laboratory shall be controlled through gross supply air and exhaust air quantities. The VFD shall modulate and control loss in supply and exhaust air quantities due to filter blockage and shall maintain the required gross system supply and exhaust air quantities.
- The containment barrier autoclaves shall be double door type, shall be with automated sliding doors and with bio-seal.
- After loading of waste from containment side in autoclave chamber, the unloading door shall not open unless the decontamination cycle has successfully completed.
- The Pass Boxes shall be dynamic type. The glass door of pass box shall be UV shielded and safe to protect lab workers/occupants from UV exposure.
- The Autoclave and Biological Effluent decontamination plant shall be provided with printer for taking batch cycle operation data printouts. Each decontamination cycle data shall also be archived on BMS.
- All the utilities and services like CO2, compressed air, power, water, drain etc. required for laboratory scientific equipment/s shall be planned, designed and provided by the EPC contractor.

3.0 TENDER DRAWINGS

3.1 The tender drawings of the proposed Prefabricated Containerized type BSL-3 Laboratory facility are attached for reference purpose and guidance to the Bidders to understand the proposed layout and scope of work. The Contractor firm shall check and verify the correctness of dimensions and existing site conditions. The work shall be executed as given in the tender drawings, scope of work and technical specifications on 'Turnkey Basis'. In case of any contradictions or ambiguity, the decision of NCCS shall be final and binding on the Contractor firm.

4.0 TECHNICAL SPECIFICATIONS - INTERNAL CONSTRUCTION & FINISHES

4.1 PREFABRICATED CONTAINER AND INTERNAL WALL AND CEILING PANELS

4.1.1 The outer shell of the unit shall be prefabricated container in ~ 50 mm total thickness. Standard containers of following sizes has been considered and shall be required for the proposed prefabricated BSL-3 Laboratory

40'x8' - 4 Containers

4.1.2 The outer skin and inner skin of the prefabricated container shall be in steel sheet with all joints seamlessly welded. The in-fill shall be in PUF/Polystyrene/Mineral wool to provide thermal insulation. The outer skin shall be corrugated for added

strength and shall be given 2 or more coats of weather proof paint with the logo of NCCS and contents printed/written, as approved by NCCS.

4.1.3 All the cuttings and openings made in the container for doors, view panels and services shall be done following proper workmanship, shall be in proper alignment and uniform manner, shall be without any blurs or sharp edges and shall be properly sealed. All welding works shall be provided with anticorrosive coating.

4.1.4 The container wall shall be internally lined with modular prefabricated walls. All the internal walls and ceiling construction shall be done in modular type prefabricated, panels in Powder Coating finish.

4.1.5 The internal modular type prefabricated wall and ceiling panels shall provide impervious and monolithic construction and chemical resistant surface finish suitable for gaseous fumigation/decontamination of the labs.

4.1.6 The internal modular type wall and ceiling panels shall be ~80 mm thick and shall be constructed in 0.8 mm thick GSS sheet on both sides, in-filled with PUF insulation (density approx. 40kg/m3) and finished with epoxy plaster powder coating, oven lacquered smooth to 60 to 80 micron thickness. All the joints between panels, cut-outs and openings shall be sealed using silicone sealant.

4.1.7 The wall and ceiling panels shall be supported on heavy duty aluminium profile supported by anchoring. The wall and ceiling corners shall be provided with ~70 mm aluminium coving in same colour of the wall and ceiling.

4.1.8 The corners shall be rounded at turn from X-Y direction, milled solid aluminium spheres shall be provided in the same colour at the 3-D (wall/ceiling/wall junction) and 2-D (wall/ceiling junction).

4.1.9 The conduits for providing wires and cables for light, power, data, voice and other services shall be factory inserted in the modular wall panels.

4.1.10 All the containers shall be externally painted in weather proof paint in writeup and with NCCS Logo, as approved by NCCS.

4.2 VIEW PANEL

The view panels shall be double glazed and designed to fit flush into the walls on both sides. Glazing shall be in 3 mm thick toughened glass. Glass shall be fixed onto the aluminium frame work with high performance double coated black colour structural glazing tape (3 M VHB or equivalent). Aluminium frames shall be in 2 mm thick sheet with epoxy powder coating of 60 to 80 micron thickness. The gap between the glazing glasses shall be anti-moisture with silica gel granules/molecular seive. Glazing shall be perfectly flush with the outer surfaces of the wall. All joints shall be sealed with silicon sealant.

4.3 DOORS

4.3.1 Door frames shall be fabricated in 1.25 mm thick galvanized steel sheet to the required profile and dimensions. The door shutters shall be manufactured in 0.8 mm galvanized sheets press formed to double skin hollow profile with lock seam

joints at stile edges. Shutters to have no visible screws or fasteners on either face. The door frames should match with the wall thickness. Frames and shutter shall have factory finish in thermo setting polyurethane aliphatic grade paint (35 micron DFT) or powder coated in approved color.

4.3.2 Frames and shutters to have factory finishes pre-punched cutouts to receive specific hardware's like hinges, lock etc.

4.3.3 Double glazed vision panel to be provided in door shutters with toughened float glass of 5 mm thickness. Glass to be fixed with high performance structural glazing tape (3 M VHB or equivalent)

4.3.4 The doors shall be provided with accessories like drop down gasket, door handle, heavy duty door closer, key lock, kick plate etc. complete as required.

4.3.5 **Biosafety Doors for BSL-3 Lab and BLED plan room Showers and Decontamination/Fumigation Airlocks, and shall comply to following specifications:**

a) The Biosafety Doors shall be in SS 316 no. 4 finish construction designed to maintain containment. Frames will be constructed in SS 316 no. 4 finish designed to accommodate flush mounting of access devices such as door access buttons, status lights, magnetic locks etc.

b) The Biosafety door shall be air-tight doors, provided with suitable gasketing arrangement and shall ensure perfect sealing when in closed position.

c) The doors shall be capable to withstand room differential pressure and pressure testing loads.

d) The door sealing gaskets shall be in high grade neoprene.

e) Each Biosafety Door shall be factory tested for air tightness and no leakage at +/- 250 Pa pressure before delivery at site.

f) Doors for Decontamination/Fumigation Airlocks shall be provided with sealed window of approx. 400 mm for viewing, complete with double glazed laminated tempered glass

g) All surfaces shall be free from rough edges, burrs, sharp corners or edges

h) Door shall be complete with all fitings and accessories like door closer, handles etc. All fittings and accessories shall be in stainless steel.

4.4 DRAINS AND WATER LINES

4.4.1 Floor traps/U-traps in BSL-3 Lab area shall provide double pass and shall be in SS and have approx. 3" W.C head. The effluent drainage piping from the BSL-3 Lab upto collection tank and from collection tank to BLED plant shall be in PN10 rated stainless steel chemical resistant grade material. All piping joints shall be argon welded and provided with anti-rust coating and shall be leak tested. The drain lines from the Containment area shall be segregated from drain lines of other areas.

4.4.2 The drain piping from containment zones/areas shall be connected to the drain collection tank and from the drain collection tank to the BLED plant, through pumps (1w+1s) installed in BLED plant room. The drain collection tank shall be Approx. 1500 Ltrs. capacity and shall be fabricated in stainless steel with anti-rust coating from inside.

4.4.3 The selection of fittings and assemblies shall be done considering the effects of steam/condensate from the autoclaves and corrosion effects of decontamination chemicals.

4.4.4 Proper slope shall be maintained in the drain lines and appropriate devices/non-return valve shall be provided to prevent backflow of drain into BSL-3 laboratory.

4.4.5 Water supply piping in BSL-3 Containment area:

a) The water supply piping inside BSL-3 Laboratory shall be provided in AISI 304 conforming to JIS G3448 standards.
b) The OD, thickness and bore of pipes shall be as under:

	Outer Dia/Thickness	Nominal Bore
SS PIPE Grade 304	15.88 / 0.8 mm	15 mm
SS PIPE Grade 304	22.22 / 1.0 mm	20 mm
SS PIPE Grade 304	28.58 / 1.0 mm	25 mm
SS PIPE Grade 304	34 / 1.2 mm	32 mm
SS PIPE Grade 304	42.7 / 1.2 mm	40 mm
SS PIPE Grade 304	48.6 / 1.2 mm	50 mm

c) The fittings for SS 304 piping shall conform to JWWA G116 standards.
d) The SS 304 piping system shall be capable for pressure upto 12 bar.
e) All the joints in the SS 304 piping system shall be press-fit type and O-ring/gaskets shall be in EPDM.
f) All clamps, supports in walls and ceiling inside the high containment areas shall be in SS 304.
g) The pipe installation shall not be installed flushed on wall and shall be projected with minimum 1.5-2.0 inch gap from the wall to enable cleaning of pipe surface.
h) After installation, the entire pipeline system shall be pressure tested at 10 bar to ensure that there are no leakages.
i) Suitable back-flow prevention devices/valves shall be provided in the the pipeline system at appropriate locations to prevent any back-flow from BSL-3 Laboratory.

4.4.6 Raw water storage tank (1 No.) of 500 Ltrs capacity and 1 No. Soft water storage tank in HDPE shall be provided, complete with all interconnecting piping system.

4.5 WELDED VINYL SHEET FLOORING

4.5.1 The flooring shall be in PVC, 3 mm thickness in approved shade.

4.5.2 All the joints shall be welded to render seamless floor.

4.5.3 The flooring to wall corners shall be coved in ~50 mm radius.

4.5.4 The flooring shall have dimensional stability, high abrasion resistance, indentation resistance and stain resistance suitable for easy cleaning and maintenance.

4.5.5 Should be chemical resistant to permit gaseous decontamination/fumigation of laboratory rooms.

5.0 TECHNICAL SPECIFICATIONS - HVAC SYSTEM

5.1 GENERAL

The BSL-3 Laboratory, shall be air-conditioned through a dedicated AC System comprising of DX type outdoor, air-cooled condensing unit, Air Handling Units, Exhaust System, Air Filtration System and Air Distribution System complete in all respect. The HVAC system shall be with standby and backup provisions capable to provide un-interrupted continuous operation of the BSL-3 Labs and suitable to achieve and maintain the required temperature, humidity, air-change rate, differential pressure gradient and air filtration conditions of the Lab.

The following design and performance conditions shall be maintained in the BSL-3 Laboratories and support areas:

- Inside Temperature : 22 +/- 2° C
- Relative humidity : less than 60%
- Negative Pressure gradient : As given in tender drawing
- ACPH in BSL-3 Lab : More than 12
- Filtration : HEPA Filter Supply Air in BSL-3 (with pre-filters and fine filters)
  HEPA Filter Exhaust Air in BSL-3
- Ventilation : 100% FA system for BSL-3
- Exhaust Fan location for BSL-3 : Minimum 25 ft from AHU intake
- Condensing Units : N (working)+1 (standby)
- AHUs : Separate AHU for BSL-3 Lab-1, Lab-2 & ABSL-3 Lab and support area, to enable selective operation
- Exhaust Blowers : Separate Units for BSL-3 Lab-1, Lab-2 & ABSL-3 Lab (1 Working + 1 Standby)

5.2 AIR COOLED CONDENSING UNIT

a) COMPRESSOR

The compressor shall be hermetic reciprocating/Scroll compressors. The compressor motor shall be hermetic, refrigerant gas cooled with inherent all phase protection and shall be suitable for 380-420 Volts, 3 Phase, 50 Hz operation.

b) AIR COOLED CONDENSER

The condenser coil shall be fabricated of seamless hard drawn copper tubes and Aluminum fins of 0.18 mm minimum thickness, fins spacing ranging from 3 to 5 fins per cm. The minimum wall thickness of tubes shall be 1.0 mm.

The coil shall normally be 2/3/4 rows deep unless otherwise as per manufacturers standard specification.

Suitable number and capacity of propeller type fans shall be provided for moving the air through the entire condenser coils. For more uniform flow over the condenser coil, the condenser shall be designed on the draw through principle.

c) CONNECTION AND ACCESSORIES

The unit shall be complete with interconnecting refrigerant piping, valves, safety devices and controls and refrigerant charge complete as required.

d) INSULATION

The Refrigerant lines shall be insulated with adequate thickness of foam rubber or equivalent insulating material to prevent frosting/condensation.

e) The complete unit shall be finished painted at factory after assembly.

5.3 DOUBLE SKINNED AIR HANDLING UNITS

a) **CASING**

The housing/ casing of the air handling unit shall be of double skin construction. The housing shall be so made that it can be delivered at site in total/ semi knock down conditions depending upon the conditions. The framework shall be of extruded aluminium hollow sections fitted with pre-formed insulated sections. All the members shall be assembled thru mechanical joints to make a sturdy and strong framework for various sections.

Double skin panels (each not exceeding 750mm wide) shall be made of 0.60mm pre-plasticised coated Galvanised sheet steel and 0.60mm galvanised sheet inside with minimum 43mm thick P.U. insulation of 38 Kg/Cu.M injected between the panels.

The panels shall be bolted from inside on to the framework with soft rubber gasket in between to make the joints airtight. Suitable doors with powder coated hinges and latches shall be provided for access to various panels for maintenance.

The Fan and the motor arrangement shall be mounted on to the extruded aluminium framework. The entire housing i.e. The Air Handling Unit shall be mounted on GI Base channel framework.

Drain pan shall be constructed of 18 gauge SS sheet with 25 mm thick 38 Kq/Cu.M. nitrile foam insulation. The K-value shall not be more than 0.014 Kcal/hr-sq.mtr-°C/M at 10°C mean temperature. The pan shall have necessary slope to facilitate for fast removal of condensate. The coil shall be mounted on the rollers in order to facilitate easy removal of the coil from the drain pan for cleaning. Outlet shall be provided on both the sides of drain pan.

b) **DAMPER**

Dampers shall be opposed blade type. Blades shall be made of double skinned aerofoil aluminium sections with integral gasket and assembled within a rigid extruded aluminium alloy frame. All linkages and supporting spindles shall be made of aluminium or nylon, turning in Teflon bushes. Manual dampers shall be provided with a Bakelite knob for locking the damper blades in position.

c) **MOTOR AND DRIVE**

Fan motors shall be energy efficient (IE-3) and shall be 415±10% volts, 50 cycles, three phase, totally enclosed fan-cooled class F, with IP-55 protection. Motors shall be especially designed for quiet operation and motor speed shall not exceed 1440 rpm. Drive to fan shall be provided through direct drive arrangement with EC plug fan.

d) **FAN**

Fans shall be centrifugal type. Fans driven by variable frequency drive shall be backward inclined irrespective of static pressure value. Fan casing shall be made of galvanised steel sheet. Fan wheels shall be made of galvanised steel. Fan shaft shall be grounded C40 carbon steel and supported in self-aligning Plummer block operating less than 75% of first critical speed, grease lubricated bearings. Fan wheels and pulleys shall be individually tested and precision balanced dynamically. Fan motor assembly shall be statically and dynamically balanced to G6.3 grade as per relevant ISO/AMCA standard.

Motors shall be mounted inside the AHU casing on slide rails and be totally enclosed, EFF1 fan cooled, to be class `F' insulation. Motors shall be direct driven coupled with fan, drive selected at 110% of motor horsepower. Both fan and motors assemblies shall be mounted on a deep section aluminium alloy or galvanized steel (depending on size) base frame.

Combination spring and rubber anti vibration mounts shall be provided for isolating the unit casing. Frame retardant, waterproof silicone rubber impregnated flexible connection shall be provided at the fan discharge.

e) **DX COOLING COILS**

Cooling coils shall have 12.5mm (1/2") to 15mm (5/8") dia. tubes minimum 0.5 mm thick with aluminium fins firmly bonded to copper tubes assembled in a zinc coated steel frame. Face and surface areas shall be such as to ensure rated capacity from each unit and such that the air velocity across each coil shall not exceed 150 meters per minute. The coil shall be pitched in the unit casing for proper drainage. Each coil shall be factory tested at 21 Kg./Sq.cm air pressure under water. Tube shall be hydraulically/mechanically expanded for minimum thermal contact resistance with fins. Fins spacing shall be 11 to 13 fins per inch (4 to 5 fins per centimetre). The cooling coils shall be ARI certified

f) **FILTER SECTION**

Each unit shall be provided with a factory assembled filter section containing washable synthetic type air filters having anodised aluminium frame. The filter shall have minimum 90% efficiency down to 10 microns. The media shall be supported with HDPE mesh on one side and aluminium mesh on other side. Filter banks shall be easily accessible and designed for easy withdrawal and renewal of filter cells. Filter framework shall be fully sealed and constructed from aluminium alloy.

g) **VIBRATION ISOLATORS**

Vibration isolators shall be provided with all air handling units. The fan and motor framework shall be isolated from the AHU framework by means of spring type vibration isolators. The AHU shall be installed using neoprene mats of size 150mmx150mm in two layers with 20g G.S.S. sheet sandwiched in between.

h) AHU's for BSL-3 Laboratories shall be provided with one set of standby motor and blower, for uninterrupted operation.

5.4.1 **SHEET METAL DUCT WORK**

5.4.1 All supply and exhaust duct work for BSL-3 Laboratory within the containment barrier (i.e. from HEPA filter to room on supply side and from room to HEPA Filter on exhaust side) shall be done in SS304. The duct work shall be as per SMACNA standards.

5.4.2 The thickness of sheet for SS ducting shall be as per IS 655 (For medium and high pressure duct)

5.4.3 All SS 304 duct work shall be in welded construction and shall be factory tested at +1000 Pa and soap bubble tested to ensure no air leakage before commissioning of BSL-3 laboratory.

5.4.4 Duct work in non-containment areas shall be done in best quality cold annealed, flat galvanized sheet steel (galvanized to specifications of IS : 277 (latest edition). The grade of coat for GS sheet shall be 120 gm / sq m (table 2 of IS 277-1992).
The joints shall be finished straight and neat. The duct work shall be supported / secured from roof slab or any other building member using angles, rods as may be required. Thickness of sheets shall be as shown in the tables given below:

Maximum size of Rectangular Duct (in m)	**Round Duct dia (mm)**	**Thickness of Sheet in mm**
Upto 750	Upto 600	0.63 (24 G)
751 to 1500	601 to 750	0.80 (22 G)
1501 to 2250	750 to 900	1.00 (20G)
2251 & above	901 & above	1.25 (18 G)

The fabrication of duct shall be done as per IS : 655 (latest edition). Transverse joints, connections, bracing, seam etc. shall be as per IS : 655.All the ducts over 300 mm in either dimension shall be cross broken except those on which rigid board insulation is applied. Stiffening angles shall be black structural steel and riveted to the duct work. The longitudinal seam on all ducts may be Pittsburgh seam hooked and hammered. Ducts of size 600 mm and above shall be reinforced

between the joints. Where drive-slips are used, angles shall be riveted to the ducts 50mm from slips.

5.5 FIRE DAMPERS

The fire dampers shall be fabricated out of 1.6 mm galvanized sheet steel and shall be multi leaf type. The damper blades shall be provided on both ends using chrome plated spindles in self-lubricating bushes. For preventing smoke leakage side seals shall be provided. The fire dampers of at least one and a half hour rating.

5.6 VOLUME CONTROL DAMPERS

Volume Control Dampers shall opposed blade type and shall be provided in the duct work for proper control and balancing of air distribution. Dampers shall have an easily accessible operating mechanism. The operating mechanism shall consist of links, levers and quadrants as required for proper control and setting in a desired position. The position of the handle of Damper operating mechanism shall be clearly visible and it shall indicate the position of the damper. Dampers, splitters and their operating mechanism shall be fabricated of GS sheets of two gauges heavier than duct piece.

5.7 DIFFUSERS & GRILLES

All the diffusers and grilles shall be of powder coated aluminum. Diffusers and grilles shall be provided with sponge rubber gasket between flanges and wall or ceiling. The shade of Grills and Diffuser shall match the Building finish and got approved by NCCS.

5.8 FILTERS & HEPA CONTAINMENT HOUSING

a) PRE-FILTERS

Air flow	As required for specific system
Frame	Aluminium anodised, cassette type made of 2.00 mm thick sheet
Medium	Polypropylene non-woven supported by anodised aluminium mesh on one side HDP mesh on other side, 11 folds per feet of face area
Sealing of media	By means of ductile epoxy resin
Efficiency	90 % down to 10 micron particle size (minimum)
I.P.D.	<3mm wg at rated cfm
F.P.D.	6 mm wg (maximum)
Thickness	50mm
Filter face velocity	500FPM (maximum)

b) MICRO VEE (FINE FILTER)

AIR FLOW	As required for specific system
FRAME	Aluminium anodised, flanged type made of 2 mm sheet
Medium	Polypropylene non-woven supported by anodised aluminium mesh on one side HDP mesh on other side 11 folds per feet of face area
Sealing of media	By means of ductile epoxy resin

Efficiency	99.9 % down to 5 micron particle size (minimum)
I.P.D.	<8mm wg at rated cfm
F.P.D.	15 mm wg
Thickness	305mm or as specified in schedule of quantities
Filter face velocity	500 FPM (maximum) for 305 mm thick
Gaskets	Rubber gasket on flange.
Packing	Each filter shall be packed in a polythene bag and then placed in carton box.

c) HEPA FILTER (ABSOLUTE)

AIR FLOW	As required for specific system
FRAME	Aluminium anodised, flanged type made of 18G sheet
Medium	Micro Fibre glass paper, Borosilicate.
Sealing of media	By means of ductile epoxy resin
Efficiency	99.97 % down to 0.3 micron particle size (minimum)
I.P.D.	<15mm wg at rated cfm
F.P.D.	40 mm wg
Separators	Corrugated aluminium
Thickness	305 mm or as specified in schedule of quantities
Filter face velocity	500 FPM (maximum) for 305 mm thickness
Gaskets	Rubber gasket, 6 mm thick to be fixed on flange and sealed on internal edges with epoxy resin.
Packing	Each filter shall be packed in a polythene bag with either face protected by flat hard board/ ply. Assembly to be packed in strong cardboard cartons printed with handling and opening instructions.

d) **CONTAINMENT HOUSING FOR BSL-3 LAB HEPA FILTERS**

The HEPA Filter Containment Housing shall be made in SS 304 (14 gauge) with air tight and leak proof construction. All joints shall be seamlessly welded, buffed and polished. The HEPA Containment Housing shall have provision to carry out on site HEPA filter scanning, testing and validation, Magnehelic gauge to monitor pressure drop across the HEPA filter, fumigation ports to allow IN-SITU decontamination of HEPA filters and Bag-In-Bag-Out facility for filter change.
The HEPA containment housing shall have the following fittings and features:

1. **Differential Pressure Ports** – Differential pressure ports along with Magnehelic Gauge to monitor the pressure across upstream and downstream of HEPA filter
2. **Aerosol Injection Port** – Port for injecting aerosol at upstream side and downstream side of HEPA filter
3. **Manual Scanning** – A scanning facility towards HEPA Filter downstream side for manual scanning and testing of filter
4. **Bag In-Bag Out** – Bag in-Bag Out facility for filter replacement
5. **Isolation dampers** – Bubble tight Isolation dampers at Containment Housing inlet and outlet, leak tested to ensure a 'bubble tight' seal at a differential pressure of 10 inches water gauge.

Components like doors, filter locking and seal arrangements shall be in SS 304. Each Containment Housing shall be factory assembled and shall be tested in accordance with ANSI/ANSE-N510-1995 at +/- 10" wg pressure.

e) BUBBLE TIGHT ISOLATION DAMPERS

The damper construction shall meet the following specifications:

1. Construction - SS 304
2. Frame - Flanged, round/square (as per duct)
3. Blade - SS 304, round
4. Blade seal - Silicone
5. Axle seal - Double gland seal
6. Bearings - Ball bearings

The damper performance shall meet the following specifications:

1. Maximum pressure - 10” wg
2. Maximum velocity - 3900 fpm
3. Maximum leakage - Zero at 10” wg
4. Each Isolation Damper shall be factory tested for leakage in accordance with AMCA 500-D, before supply to ensure bubble-tight performance.

5.9 CENTRIFUGAL TYPE EXHAUST FANS

5.9.1 Exhaust Fans shall be Aerofoil, forward or backward curved, SISW or DIDW type, selected for 150 mm static pressure or as per design requirement.

5.9.2 Fan should be of G.S.S., the Steel sheet should be JFE Galva zinc (Base metal cold rolled), JIS G3302, SGCC with Z22 (minimum coating weight on both sides @ 220 g/m2) zinc coating & Zero Spangle, skin passed, chromated and dry.

5.9.3 Fans housing shall be of an appropriate thickness to prevent vibration and drumming. The fan scroll shall be attached to the side plate by means of continuous lock seam or intermittent spot welding. The wheel and inlet cone shall be aerodynamically designed and constructed to provide maximum performance and efficiency as published by the manufacturer.

5.9.4 Shafts shall be made of carbon steel (C45) machined and polished to tolerance of standard ISO 286-2 - grade g6. Protective coat of anti-rusting shall be applied to all bare surfaces of the shafts at the factory.

5.9.5 Bearings shall be of self-alignment (concentric) type, shall be maintenance free with permanently lubricated sealed ball bearing type. Bearing life shall be at least 75,000 hours based on basic rating life, L10 of ISO 281 standard.

5.9.6 Motor installed shall be of a minimum 130% of the fan power absorbed (Brake horsepower) and shall have sufficient torque available for starting and continuous operation.

5.9.7 The fan and motor drive arrangement shall be direct driven type.

5.9.8 Fan outlet velocity shall not exceed 10% of the main duct air velocity designed (0.1” per 100 ft or 1 Pascal per meter duct length).

5.10 INSULATION

5.10.1 Thermal insulation material for Duct & Pipe insulation shall be closed cell Aluminium faced Elastomeric Nitrile Rubber. The duct insulation shall have self-adhesive backing with a peal-off cover for easy installation at site. Thermal conductivity of the insulation material shall not exceed 0.038 W/moK or 0.212 BTU / (Hr-ft^2-^{o}F/inch) at an average temperature of 30^{o}C. Density of the nitrile rubber shall be 40-60 Kg/m^3. The product shall have temperature range of –40 ^{o}C to

105^{o}C. The insulation material shall be fire rated for Class 0 as per BS 476 Part 6 : 1989 for fire propagation test and for Class 1 as per BS 476 Part 7, 1987 for surface spread of flame test. Water vapour permeability shall be not less than 0.024 per inch (2.48 x 10-14 Kg/m.s. Pa i.e. μ>7000: Water vapour diffusion resistance).

5.10.2 The insulation thickness for duct work shall be as follows:

a) Supply Air duct - 19 mm
b) Return/exhaust Air duct - 13 mm

6.0 TECHNICAL SPECIFICATIONS - BUILDING MANAGEMENT SYSTEM

6.1 A customized Building Management System shall be provided to operate and monitor the laboratory operating parameters, critical equipments and HVAC system in the BSL-3 Laboratory.

6.2 The function of the BMS shall be, but not limited to, as given hereunder:

- Monitoring and control of Room/Area/zone pressures of BSL-3 lab areas
- Monitoring and control of Room/Area/zone temperature & RH in BSL-3 lab areas
- Monitoring of ambient temperature & RH
- Monitoring and control of condensing units, AHU's and Exhaust Blower operation
- Monitoring, control and modulate VFD's and monitor VFD status
- Monitoring, control and modulate VAV's and monitor VAV status
- Monitoring of Pressure Drop across each HEPA Filter
- Monitoring and controls of OPEN/CLOSE dampers of AHU's & Exhaust blowers
- Monitoring and control of supply & exhaust air quantity in each BSL-3 Laboratory room/zone.
- Monitoring and control of outdoor condensing units
- Complete HVAC System Operation and Shutdown in Auto Mode through BMS
- Operation and control of Isolation dampers in BSL-3 Lab, Fumigation Airlock and HEPA containment housing for carrying out gaseous decontamination
- Archiving of Autoclave decontamination cycle data
- Archiving of BLED plant decontamination cycle data
- Allow to sequence each outdoor condensing unit through BMS to maintain equal run time

6.3 The major components of BMS system shall include:

- Operator and engineering workstation comprising of latest configuration desktop PC with all required hardware and software
- Field devices (pressure, temperature & humidity sensors & transmitters etc.), complete as required
- Power and control cabling, complete as required
- PLC based BMS control panel complete with controllers as per requirement
- VAV devices for BSL-3 Laboratory supply air and exhaust air for controlling and management of laboratory room pressures
- VFD's for AHU motors and Exhaust blower motors of BSL-3 Laboratory
- Customized software with graphics display of complete system operation and monitoring

- HMI Touchscreen panel at BSL-3 Lab entry interfaced with BMS system to display laboratory area/zone pressures and operating conditions
- Desktop PC with colour monitor and printer
- Any other component to complete the BMS work

6.4 The Building Management System shall allow START/STOP operation of the Complete HVAC system in AUTO Mode. The system shall also have the provision to over-ride the parameters (password protected).

6.5 The BMS shall generate alarm in case of HVAC system failure, collapse in room/zone pressure and/or disruption in other operating parameters from the set limits.

6.6 The HVAC system START and STOP sequence shall be interlocked to prevent reverse positive pressurization of the BSL-3 laboratory.

6.7 The BMS control panel shall be powered through UPS. Upon restoration of power after a power failure, the BMS shall start the HVAC system automatically without any human interface and shall restore the normal operational set points of the system.

6.8 The BMS graphics shall have the ability to display real time field data and change colour of symbols based on field conditions. For example a fan could be green when 'ON', white when 'OFF', red when 'IN-ALARM' conditions

6.9 All components and controllers shall be true "peer-to-peer" communicating devices. Components or controllers requiring "polling" by a host to pass data shall not be acceptable.

6.10 The Contractor shall submit complete BMS architecture with list of I/O's and BMS system configuration for approval before proceeding with the BMS work.

7.0 TECHNICAL SPECIFICATIONS – ELECTRICAL AND ASSOCIATED WORKS

7.1 CONDUIT SYSTEM & WIRING:

a) The complete wiring system shall be installed and tested in accordance with the latest revision of the Indian standards and the BS/IEC standards including the standards for PVC Conduit and Fitting Accessories :IS-9537/1983 (Part-III)/BS6099 & BS4607

b) All the wiring installation shall be as per IS: 732 with latest amendment.

c) The conduit system must be installed free of obstructions and sharp corners before any cables are drawn in. Conduits shall be thoroughly cleaned to remove dirt immediately prior to the drawing in of cables.

d) Cables shall be continuous throughout conduit lengths and no joints are permitted. There shall be no kink in cables, neither any cut, abrasion or chink in the cable insulation.

e) Cables for power and lighting circuits and extra low voltage systems shall not be drawn into the same conduit. Lighting and power circuits shall run in separate conduits except, where an adopter box is employed as final distribution point, a number of final circuits are grouped together in larger conduits between the distribution board and the adopter box provided that all final circuits in one

conduit are of the same phase. In the case of three phase circuits, all three phases including neutral, if any, shall be drawn into the same conduit.

f) Flexible conduits shall have a separate earthing conductor installed within the tubing and connected at conduit ends. Flexible conduits in general shall not be used for more than 3m length.

g) Maximum number of PVC insulated 650/1100V grade/copper conductor cable shall conform to IS:694-1990.

h) The wires shall be single core PVC insulated 1.1 KV grade stranded wires as per IS specifications.

i) The wires shall be color coded - (red, yellow, blue) for Phases, black for Neutral and green for Earth.

7.2 All LT cables for normal power/control circuits shall be XLPE insulated and PVC sheathed Aluminium conductor and control cables shall be PVC insulated and PVC sheathed copper conductor respectively.

7.3 Cables in service duct, open trench, direct-laid underground in soil shall be by means of armoured cables. Non-armoured cables shall only be laid in conduits, trunkings or tray/ladder for mechanical protection.

7.4 SWITCHES& SOCKETS

a) Lighting switch inside BSL-3 Lab containment area shall be IP 66 rated (Schneider CLIPSAL or equivalent).

b) 16/20 AMP Power Switch & Socket inside BSL-3 Lab containment area shall be IP 66 rated. The IP rating shall not be compromised when the sockets are in plugged-in condition.

c) The Switch socket outlets outside containment area shall be modular type as per BS: 1363 single pole 6Amp 3round pin.

7.5 MINIATURE CIRCUIT BREAKER

The MCB shall be suitable for manual closing, opening and automatic tripping under overload and short circuit. The MCB shall be rated for 10KA fault level. The MCB shall generally conform to IEC/ IS: 60898.

7.6 EARTH LEAKAGE CIRCUIT BREAKER

ELCB shall be 4 pole 415 volts 50Hz, 30-300mA sensitivity. The rating of the ELCB shall be as required. These shall be suitable for manual closing and opening and for automatic tripping under earth fault circuit of 30-300 mA. The enclosure of the ELCB shall be moulded from high quality insulating material. The material shall be fire retardant, anti-tracking, non-hygroscopic, and impact resistant and shall with stand high temperature. All parts of switching mechanism shall be non-greasing, self-lubricating material so as to provide consistent and trouble free operation. Operation of ELCB shall be independent of mounting position and trip free type.

7.7 LIGHTING/ POWER DISTRIBUTION BOARDS

Distribution boards shall be of standard make with MCBs. Distribution boards shall be of steel sheet construction double door all welded enclosure of IP42 protection and powder coated painted. The MCB shall be mounted on high grade rigid

insulating support and connected by electrolytic copper bus bars. Distribution boards shall be recessed in wall or mounted on surface of wall with necessary mounting arrangement. Distribution board shall be provided with proper circuit identification name plate and danger sticker/plate as per requirement. All the distribution boards shall be provided with engraved name plates with 'lighting', 'power' or 'UPS' with DB Nos., as the case may be. Each DB shall be provided with circuit list giving details of each circuit. All the outgoing circuit wiring shall be provided with identification ferrules giving the circuit number &phase. Each distribution board shall have separate neutral and earth connection bar mounted within the DB.

7.8 MAIN LT PANEL

Main LT Panel shall be in sheet steel clad cubicle pattern, free floor standing type, totally enclosed, compartmentalized design having multi-tier arrangement of the incomers and feeders as per requirements and shall conform to the requirements of the latest addition of IS and shall be suitable for 415 V, 3 phase AC supply or 230 V single phase AC supply as required.

The panel shall be free standing type, shall have a bus bar chamber at the top and the cable compartment at the bottom. Where panels have to be installed with very little access space at the rear, the cable terminations shall be carried out in suitable cable alleys provided on the front of the panel. All the live parts shall be properly shrouded with Bakelite barriers. All the equipment shall be accessible from the front. However, protection relays, KWH meters, etc. may be mounted on the rear side/front side. Arrangements and marking of bus bars, main connections and wiring shall be in accordance with latest IS code. The structure of the panel shall be robust and provided with adequate bracings to withstand the operation of the equipment and stresses due to system short circuit. The panels shall be fabricated out of best quality heavy gauge sheet steel. The panel shall be machine pressed with punched openings for meters, indicating lamps etc. The enclosure system shall be Modular in nature with bolted on construction. Enclosure parts/kits shall be interchangeable to reduce downtime during modification or maintenance work. Enclosure system and switchgear components shall be from same manufacturer.

INTERLOCKING

The panels shall be provided with the following interlocking arrangement.

a. The door of the switch-fuse compartments is so interlocked with the switch drive or handle that the door can be opened only if the switch is in `OFF' position. De-interlocking arrangement shall also be provided for occasional inspection.
b. It shall not be possible for the breaker to be withdrawn when in `ON' position.
c. It shall not be possible for the breakers to be switched on unless it is either in fully inserted positions or for testing purposes in fully isolated position.
d. The breaker shall be capable of being raked in to `testing' `isolated' and `maintenance' positions and kept locked in any of these position.
e. A safety latch to ensure that the movement of the breaker as it is withdrawn, is checked before it is completely out of the cubicle shall be provided.

PROTECTION & INTSRUMENTATION

Protection and instrumentation shall be as per standard specifications. All ACBs, MCCBs of Main LT Panel and Incomer MCCBs shall have inbuilt Earth Fault Protection

CONTROL WIRING

The control wiring of all the panels will be done with PVC single core flexible copper wires of cross section 1.5 sq. mm and 2.5 sq. mm. All the wiring involving current transformers or circuits with currents of more than 5 Amps will be wired with 2.5 sq. mm cross section wire and the others with 1.5 sq. mm. Similarly all the interconnecting between the incoming bus and the outgoing of 100 Amps and above rating shall be done by insulated copper strips of suitable sizes and equipment below 100 Amps rating shall be wired with insulated copper conductors. All of the control wiring will be done by properly dressing all the wires in a laminar manner either in a PVC duct of liberal size or bunched together by PVC strapping tapes at a distance not exceeding 150 mm. Each wire will terminate with a copper ferule crimped to the wire.

SURFACE TREATMENT

Each part of the fabricated panel will be subjected to seven tank treatment and all sheet metal accessories and components of power control centers and switchboard panels shall be thoroughly cleaned, degreased, de-rusted and hot dip phosphatized before red oxide primer is applied. The panel shall be stove enameledgray shade finish and the Interior surfaces of the panel shall be painted to an off-white shade.

ENCLOSURE

The panel enclosure shall be totally dust and vermin proof and shall be suitable for indoor installation. All the cubical will be adopted with front located, outward openings, lockable doors having hidden hinges and a bolted back cover both using no deteriorating neoprene rubber gasket. Enclosure design shall be in accordance with degree of protection IP 54 as per latest IS code. All the nut bolts handles, meters, knobs etc. appearing from outside of the panel should be in symmetry so as to give a neat appearance.

NAME PLATE

The panel as well as the feeder compartment doors shall be provided with name plate giving the switchboard/feeder descriptions as provided.

7.9 EARTHING

A complete earthing network comprising cables, copper tapes, electrodes and earth bonding of all relevant necessary non-current carrying metal parts of equipments/ apparatus shall be connected as required. The Earthing shall conform to IS 3043. All earthing conductors shall be of high conductivity copper/ G.I. and able to protect against mechanical damage as per requirement. The cross-

sectional area of earth conductor shall not be smaller than half that of the largest current carrying conductor.

Earth Strip

Earth strips/grids shall be of bare GI/ Copper strips of 25 mm x 3 mm as specified. Earth strips shall be riveted or joint with proper connector to earth electrodes. In order to minimize the mutual inductance between strips, earth strips shall be positioned at a distance not less than 6m apart unless otherwise specified.

7.10 LIGHT FIXTURES AND FITTINGS

The Laboratory rooms shall design to provide 400-450 lighting Lux level. All the Light Fixtures shall be LED and surface mounted type constructed in CRCA Powder coated housing, powder coted bottom frame, LED panel with suitable driver. The construction shall be in slim panel.

Light Fixtures in BSL-3 Lab containment area shall be IP 65 rated or better.

a. Performance:

- Color temperature (K) - More than 5500
- LED Life with L70 criteria - More than 48000 Hrs
- Input voltage range - 150 – 270 V
- Electrical insulation - Class I

Light fixture installation and wire/cable penetrations shall be sealed after installation, to prevent ingress of air.

7.11 FIRE DETECTION AND ALARM SYSTEM

The complete BSL-3Laboratory and support areas shall be provided with Fire Detection and Alarm System conforming to relevant NBC/BIS code. The Fire Detection & Alarm System shall be complete with Smoke detectors, Heat detectors, Fire Alarm Panel, manual call points, response indicators, power and control wiring and cabling etc. complete in all respect.

7.12 COMMUNICATION FACILITY (INTERCOM & LAN)

The intercom and LAN shall be fully wired in CAT 6 cable, as per approved drawings. The system shall be complete with required conduit and wiring and RJ outlets.

1. The telephone handset/instrument inside BSL-3 containment area shall be suitable for true handsfree operation, flushed wall mounted, with complete unit in stainless steel housing.
2. The Data and LAN system shall be complete and wired in CAT6 cable laid in separate conduit.
3. All the rooms and locations indicated and as approved by the Engineer-in-charge, with voice points shall be provided with telephone handsets/instruments.
4. The Data system shall be complete with following system components, complete as required:
   Data outlets, RJ45

4 pair UTP Cat 6 data cable
Uplink using either Cat 6 as per design
Patch panels
Ethernet switches
LIUs
Single mode OFC

5. A suitable EPABX shall be provided for upto 2 incoming lines and 10 outgoing lines. The incoming telephone lines and internet shall be arranged by the NCCS. All the rooms, Labs, interlocks etc shall be provided with intercom connection and telephone instrument set.

7.13 DOOR INTERLOCK & ACCESS CONTROL SYSTEM

The door interlock and access control system shall be provided with combination of proximity card based, numerical key pad lock based and push button based system. The system shall be complete with access logic controllers, door electromagnets, proximity cards and card reader/s, numerical keypad locks, door release push buttons, emergency door release buttons, PC communicator, control and power wiring and cabling and other required accessories, hardware, and software.

A suitable software shall be programmed/loaded on the computer to allow perform the following operations.

- Assign the access rights to the individual proximity cardholder/s
- Create database for bio-metric readers for the authorized persons and assign them access rights.
- Enable/disable access for specified time periods (for visitors etc.)
- Record the transactions and generate transaction reports

Access Control Software shall be suitable to operate on latest Windows OS. Proximity Card Reader and Access Logic Controller shall in general meet the following specifications:

No. of doors control per controller	- Minimum 4
Recognition of holidays	- Yes
Anti pass back system	- Yes (system to refuse exit unless there is valid entry)
LCD display on the controller to show status	- Yes
Frequency	- 125 KHZ
Card Reading Time	- Less than 1 second
Output interface	- RS-232 / RS-422 / RS 485
Baud rate	- More than 19000 bps
Power	- 12 to 24 VDC
ID Number	- 1 to 10 digits from keypad or card
Use capacity	- Not less than 100

The electromagnetic lock shall conform to the following specifications as minimum.

Holding Force	- Atleast 650 Lb per door
Operating Voltage	- 12/24 VDC or 12/24 VAC
Protect against corrosion	- The electromagnetic lock and its accessories shall be in anticorrosive material/finish
Residual Magnetism	- There should be no residual magnetism after release of Electromagnetic lock

The access control system shall be powered through UPS supply for uninterrupted operation even during mains power failure.

Access Control system in following configuration shall be required:

1 Door System	- To control Entry/Exit for restricted access.
2 Door System	- To provide interlocked doors with restricted access
3 Door System	- To provide interlocked doors with restricted access
4 Door System	- Generally for Change-Shower-Change with restricted access

Note: All systems for Change-Shower-Change shall be provided with a privacy switch such that if a person enters the inner or outer change and activates the privacy switch, the channel shall not allow access from either side, till the person deactivates the privacy switch and exits the channel.

7.14 CLOSED CIRCUIT TV SYSTEM (CCTV)

CCTV System shall be provided as per drawing and shall be complete with wall/ceiling mounted high resolution color cameras, multiplexer cum NVR, LED color monitor 40" size, associated power and control cabling etc. and required hardware and software. The output of the CCTV system cameras shall be displayed on a 40" LED monitor, to be installed in Plant Room. The CCTV system shall provide remote access as well thru networking at other desired locations by NCCS.

The cameras shall be high resolution color cameras and shall be suitable for indoor and outdoor installation as per requirement and shall be equipped with varifocal lenses to enable adjustment for best view. The cameras shall also have auto Iris lens to control the aperture according to the light fluctuations. The cameras inside BSL-3 Labs shall be suitable to exposure of chemicals during laboratory fumigation.

The multiplexer cum NVR shall be suitable for saving up-to 16 channels analog data, with play back feature. The NVR memory/Hard disk capacity shall be 2 TB or higher. For convenient backups the NVR shall be compatible with Windows based OS so that it can be backed up through a PC. The NVR shall allow remote access to the CCTV system.

8.0 TECHNICAL SPECIFICATIONS - EQUIPMENTS AND SYSTEMS

8.1 DYNAMIC PASS BOX

8.1.1 The Pass Box shall be constructed in SS 304 (18 gauge). The corners inside the Pass Box chamber shall be coved for easy cleaning. The pass box chamber

dimension shall be approximately 610 mm x 610 mm x 610 mm or as required. The unit shall be complete with HEPA filters, blower, motor, door electromagnets, door interlock, UV Lamp with timer and hour meter, necessary wiring, controls and all other accessories. etc. complete.

8.1.2 The Pass Box doors shall be in UV shielded toughened glass and interlocked by providing suitable electromagnet, so that both the door cannot be opened simultaneously. The interlock shall provide visual indicator for door open/close conditions.

8.1.3 The blower motor of Pass Box shall of suitable rating and shall be dynamically and statistically balanced. Magnehelic differential pressure gauge shall be provided to indicate the pass box chamber pressure.

8.1.4 The pass box shall be provided with UV light and shall be interlocked with the pass box doors. The UV Light shall be provided with timer to indicate hours of UV light usage. UV light operation shall be provided through a 24 Hr timer switch.

8.1.5 The Supply Air velocity across the terminal HEPA filter in Pass Box shall be approximately 0.45 m/sec. Noise level shall be less than 70 dB. The pass box shall be installed flushed with the wall on BSL-3 Lab side with sealed diaphragm and projected on the other side. The projected side shall be provided with SS coving at the pass box and wall junction.

8.1.6 The Pass Box shall be complete with following filters :
Pre-filter : 95% efficiency down to 5 microns
Final Filter : HEPA Filter with 99.97 % efficiency down to 0.3 microns

8.1.7 The blower motor shall of suitable rating and shall be dynamically and statistically balanced. The blower shall be interlocked with door electromagnet such that if any door is opened, the blower should stop running.

8.1.8 Magnehelic differential pressure gauge shall be provided to indicate Pressure drop cross the HEPA filter

8.2 DUNK TANK

Dunk tank shall be provided at approved locations in the final design. The dunk tank shall be constructed in SS 316 L (16 gauge) suitable for active use of disinfectant chemical like NaOH, Sodium Hypo-Chloride Solution. Approx size of dunk tank shall be 550x550x900 mm. The drain outlet of the dunk tank shall be provided towards the containment side. Water supply arrangement shall be provided for re-filling the dunk tank.

8.3 SHOWER SYSTEM FOR BSL-3 LABORATORY AND BLED PLANT ROOM

8.3.1 The shower system shall comprise of pre-fabricated cubicle module for each entry/exit channel constructed in SS 304 (16 gauge) of approximately 0.9m x 0.9m size (or to suit available space).

8.3.2 All the joints shall be argon welded and perfectly buffed and shall be free from any blurs and sharp edges. The shower cubicle shall be provided with supply & return air diffusers and light fixture.

8.3.3 The shower cubicle door shall be biosafety door in SS 304 of approximately 750 width.

8.3.4 The shower drain shall be seamlessly connected to the floor drain and terminated to the BLED system. The drain connections shall be tested to ensure there is no leakages.

8.3.5 The shower system shall include a water heater/calorifier for supply of heated water to the showers at controlled temperature (30-35 Deg. C) during winters. The shower system shall be complete with a separate shower water storage tank, insulated water distribution/recirculation piping, water distribution pumps (1W+1S), valves, flow meters, batch controllers (to set each shower cycle and shower volume), hot water generator, control panel and all other necessary controls, wiring, piping etc. complete as required.

8.3.6 The shower system piping shall be in AISI SS 304 grade as per JIS 3448 standards and fittings as per JWWA G116 standa.

8.4 AIR COMPRESSOR

The system shall include providing 1 No. oil injected rotary screw compressor, skid Mounted and air-cooled type. The air compressor shall be complete with in-built compressed air reservoir, oil and particulate removal filters, starter controls, pressure regulating valves, ball valves, compressed air distribution piping system etc. complete in all respect.
Expected Capacity:

Motor	- 5 hp
Max. Pressure	- 10 bar
Air delivery	- Approx. 27.5 cfm
Air receiver capacity	- Approx. 200 Ltrs.
Noise level	- 65 dB (A)

The air compressor shall be complete with in-built compressed air reservoir, oil and particulate removal filters, starter controls, compressed air distribution piping, pressure regulating valves, ball valves etc. complete in all respect, for supply of compressed air to point of use.

The compressed air piping shall be done in heavy SS 304 grade pipes with isolation valves fitted to enable maintenance and service of distribution line. The compressed air outlet points shall be provided at the required locations for operation of pneumatic valves.

8.5 VENTILATED TYPE GARMENT STORAGE CABINET

a) The Garment Storage Cabinet shall be constructed in SS 316 L and shall be ventilated type.

b) The front panel shall be constructed with SS 316 L frame and 3 mm toughened UV shielded toughened glass panel

c) The garment storage cubicle shall conform to BS 5295-76

d) The garment storage cubicle shall be complete with motor blower assembly, recirculatory plenum, heater with thermostat, fluorescent light, UV germicidal lamp, Prefilter, HEPA filter, Activated carbon filter for odour neutralization, control switches, indications etc.

e) The garment storage cubicle shall meet the following operational requirements :

Approx. Dimensions (external)	: 700 mm (W) x 450 mm (D) x 1500 (H)
Air Flow	: Shall be 0.45 m/sec to 0.65 m/sec
Cleanliness Level	: Class M 3.5
Noise Level	: Less than 70 dBA
Vibration Level	: Less than 2.5 microns
Power requirement	: 230 V AC, 50 Hz, 1 Phase

8.6 POWERED AIR PURIFYING RESPIRTAOR (PAPR) STORAGE AND BATTERY CHARGING STATION

PAPR storage and battery charging station constructed in stainless steel 304 shall be provided for upto 3 PAPR Units.

8.7 LABORATORY WORK STATION, STOOLS & GARMENT LOCKER

The BSL-3 workstations and tables shall be provided as indicated in the Layout Plan. The work stations shall be provided with the most optimum utilization of space in the laboratories. Hand wash sinks shall be provided integrated with the work station. Taps shall elbow operated laboratory taps.

The workstations in BSL-3 Laboratory shall be constructed in SS 304 (16 gauge). The workstation shall be ergonomically designed with under counter storage space and shelves.

The Garment locker for outer change room shall be constructed in SS 304, shall be approx. 1200 mm W x 450 mm D x 1500 mm H. The locker shall be provided with 6-8 Compartments with numerical lock arrangement for individual use.

Each work station and Bio-safety cabinet shall be provided with a laboratory chair. The chair in BSL-3 Laboratory shall be in SS frame and seat (fabric and non-leather finish seats shall not be accepted).

8.8 BIOLOGICAL EFFLUENT DECONTAMINATION SYSTEM (STEAM BASED SYSTEM)

Supply, installation, testing and commissioning of fully modular skid mounted biological liquid waste decontamination system, including and comprising of :

a) Two nos. cook tanks having capacity of ~300 Ltrs, in which the decontamination cycle will start once the level of collected liquid effluent reaches ~250 Ltrs. The tank and all contact parts will be in SS 316 L. The vessel will be horizontal/vertical design with external insulation duly cladded in aluminum finish for both tanks as well the piping. The system will include interconnected piping to integrate both cook tanks, Steam supply to cook tanks with pressure reducing station and moisture separator.

b) Integrated effluent transfer and control system.

c) Automated liquid effluent release and bypass system into the cook tanks trough SS 316 automated ball valve which will be activated once the effluent level reaches ~250 Ltrs. and the level sensor signal is activated.

d) Level sensor system in both the cook tanks to sense the liquid effluent on its reaching approx. 250 Ltrs.

e) A set of PT 100 temperature sensors in each cook tank - 1 for control of the jacket steam solenoid valve and other in the chamber to monitor the temperature of the liquid effluent

f) The steam, supply and discharge from the jacket will be fitted with accessories such as steam traps, non-return valve, safety valve, solenoid actuated valve etc.

g) The chamber of each cook tank shall be fitted with safety valve/s, rupture disc (both enclosed in a separate chamber) such that the vent liquid discharge is sent back to the supply piping through the adjacent cook tank and the vapour generated along with the main vapour from within the chamber generated during the decontamination cycle is piped to a common independent vapour handling mini-skid located above the cook tanks, fitted with absolute vent filters for safe exhaust of gaseous vent to the ambient, all fitted with safe change using standard filter decontamination techniques.

h) A drainage system to discharge effluent from the cook tanks, at the end of the decontamination cycle.

i) The entire system shall be controlled from an independent control panel The control panel shall be complete with PLC with required software/program, fully programmed multiple cycles, wired, with full BMS capability to archive the batch cycle parameters.

j) One Electrical Steam Generator for the above Cook Tanks, constructed in accordance with ASME Code. The boiler shall be with compatible steam output capacity. The steam boiler installation shall be complete with steam distribution piping with insulation upto the cook tanks, pressure reducing station, necessary valves and accessories complete as required.

k) **OPERATING AND PERFORMANCE PARAMETERS**

i) Operating temperature for decontamination cycle shall be 121o C as per programmed cycle for upto 45 minutes.

ii) The decontamination cycle should give Log 6 reduction when tested using biological indicator (Bacillus stearothermophilus spores using vials or spore strips)

8.9 AUTOCLAVE

The autoclave shall be rectangular, steam operated, high pressure high vacuum, double door type, suitable for horizontal loading and unloading of materials/waste, with automated sliding doors, with Bio-Seal suitable for installation and use in BSL-3 Laboratory.

The autoclave shall be free standing type, the chamber drain shall be located on the containment side and connected to the Effluent Decontamination system.

Double Door Type Approx. Chamber Size 600x600x900mm (to be customized as space availability)

a) **CONSTRUCTION**

- The chamber shall be constructed of heavy-duty SS of 316 with full argon welding. The chamber material and construction shall meet ASME standards for unfired vessels. The chamber shall be duly reinforced with the help of carbon steel.

- Doors and jacket shall be constructed of stainless steel sheet of 304 grade. Doors must be provided with automatic safety locking and unlocking devices. All doors gaskets shall provide high temperature seal.

- Chamber and doors must be designed for working under positive pressures upto 31 psig at temperature upto 135^{o} C.

- The autoclave shall be insulated with 50 mm thick resin bonded glass wool to minimise heat loss and restrict the skin temperature within reasonable limits so as not to cause burn due to accidental touch.

- Pipes and fittings shall be of stainless steel and bronze. Valves shall be ball type, self cleaning type.

- Key locked main power switch should be provided for additional safety and security.

- The autoclave shall be provided with a vacuum pump of required capacity. The chamber vacuum line shall be protected with HEPA filter with in-situ filter decontamination arrangement of filter before removal for filter change.

- The autoclave shall be complete with steam generator compatible with the autoclave. The steam generator shall be fabricated from SS 316 L with industrial immersion heater of reputed make. The immersion heaters shall be heavy duty type in stainless steel construction. The heater shall be of suitable capacity so as to give the required operating temperature and pressure in less than 30 minutes of

switching it on and should be capable of maintaining the pressure and temperature thereafter during various load cycles of the autoclave. The steam generators should have automatic pressure control and other safety features like low water cut off to safeguard heaters etc. The steam generator should be complete with all accessories, inlet, outlet, drain connections etc. Shall be electrical operated, shell and tube type and should be compatible with the autoclave.

- The autoclave chamber shall be tested to 1.5 times of the working pressure, sterilization jacket to twice the working pressure. The test pressure will be maintained for a minimum of 2 hours.

- The vacuum line, blow down valve, rupture disk etc. shall meet biosafety requirements with suitable protection

b) **CONTROLS**

The autoclave shall be fully programmable type with microprocessor and designed to control and monitor a wide variety of sterilizing cycles, depending upon the load to be sterilized. A manual operation facility shall also be provided as a standby in case of control failure. The automatic control shall have following features (but not limited to) :

- Indication Alarm in case of any cycle interruption or cycle failure
- Print information during the cycle operation such as temperature,
- pressure, cycle time etc
- Cycle parameters should be adjustable with restricted access code to prevent un-authorized use
- Following safety features to prevent the opening of door in following instances (but not limited to).

    * When the chamber is pressurised
    * When the sterilization cycle has not completed

c) **ACCESSORIES**

The Autoclave shall be complete with following accessories :

- Jacket Steam Valve
- Chamber Steam Valve
- Safety Valve Exhaust to Drain
- Pressure Reducing Valve
- Jacket and Chamber Steam inlets
- Moisture separator
- Rupturing Disc
- Non return valves and strainers
- Steam Filter
- Solenoid Valve/s
- Vaccum break valve
- Vacuum break filter
- Compound Gauge
- Pressure Gauge
- Safety Valves

- Steam Trap
- Jacket drain valve
- Digital Thermometer
- Electrical Control Console/Panel with printer to record cycle parameter at defined frequency

d) **BIOSEAL**

A Diaphram with Bioseal shall be provided at the Autoclave Interface with the Laboratory wall on Containment side.

The bio-seal system must be durable and airtight, capable of expansion and contraction. All the penetrations through the barrier flange shall be fully potted to prevent air leaks.

Testing of Bio-seal – After installation, the bio-seal shall be tested on-site by performing DOP test and there should be no air ingress through the bio-seal at at twice the lab operating pressure.

e) **OPERATING AND PERFORMANCE PARAMETERS**

i. The autoclave shall give three vacuum cycles to purge the autoclave of air.
ii. Operating temperature shall be 121^{o} C for upto 45 minutes cycle.
iii. The autoclave decontamination cycle should give Log 6 reduction when tested using biological indicator (Bacillus stearothermophilus spores using vials or spore strips).
iv. The steam condensate shall meet EU WFI Specifications.

f) **INSTALLATION**

The autoclave shall be installed/ mounted on a sturdy tubular frame of stainless steel

8.10 WATER SOFTENING PLANT

The HVAC system, the steam boiler, the laboratory room sinks and showers shall be supplied with soft water. A water softener of required capacity shall be supplied and installed. The contractor shall get the existing water quality tested from laboratory and provide the system accordingly.

The water softening system shall be complete with filters (sand filter, ion filter, carbon filter, as required), interconnecting piping, pumps and piping upto the soft water storage tanks.

8.11 TESTING, COMMISSIONING AND VALIDATION

a) After completion of the construction and installation works, all the equipment, systems and services shall be commissioned and tested to check the operation and performance of each of the equipment and system.

b) Once all the equipment and systems are found to be working satisfactory, the Validation of the BSL-3 Laboratory shall be carried out by the Contractor in the

presence of authorized representatives/committee of NCCS. During the validation process, operation and functioning of complete installations shall be checked to verify that the equipment and systems are delivering the desired and approved performance results. It will be checked to ensure that all the biosafety and biosecurity requirements are met, are in place and are functional.

c) The Contractor shall submit a detailed validation document giving details of validation checks and tests to be performed, the acceptance criteria as per the designs and relevant standards/guidelines and the formats for recording the check and test results.

g) Validation of BSL-3 and BSL-2 Laboratory shall be carried out in accordance with the National Guidelines issued by DBT & ICMR in Sept. 2024, as applicable. During the validation process, operation and functioning of all the equipment, systems and complete installations shall be checked to verify that the equipment and systems are delivering the desired and approved performance results. It will be checked to ensure that all the biosafety and biosecurity requirements are met, are in place and are functional.

h) The Validation Tests and Checks for BSL-3 Laboratory, BSL-2 Laboratory and Animal Facility shall include, but not limited to, the following:

- Testing of Containment Barrier Integrity
- Testing of Autoclaves (Min 5 cycles)
- Testing of BLED Plant (Min. 5 Cycles)
- Testing and Validation of Dynamic Box
- Testing and Validation of all the HEPA Filters
- Testing of Safe Change of HEPA Filters
- Leakage Testing of Containment Housing
- Testing of Room & Zone Pressure Gradient
- Testing of Supply & Exhaust Air Quantity and calculation of ACPH
- Testing of Room Temperatures
- Testing of Access Control System
- Testing and validation of shower system
- Testing of Biosafety doors
- Testing of ventilated garment cabinets
- Operation of Decontamination cycle in Fumigation Airlock
- Testing and validation of complete HVAC system operation
- Testing and Validation of complete Electrical system operation
- Testing and validation of Supply and Exhaust Fan interlock
- Testing and Validation of Fire Alarm System
- Validation of Normal to Emergency and Emergency to Normal power shift
- Any other check & tests to ascertain that there is no breach in biosafety

i) All the testing equipment/s and instruments used for on-site testing shall be calibrated and calibration reports shall be submitted by the contractor. For conducting on-site testing the contractor shall:
   - either have ISO/IEC 17025/BIS/QCI/NABL accreditation/certification.

- shall engage ISO/IEC 17025/BIS/QCI/NABL accredited/certified agency.

g) After completion of the validation process, the Contractor shall compile the validation results and submit to NCCS.

h) The Contractor shall provide all the test and measuring instruments, tools, tackles, manpower etc. required for the Testing, Commissioning and Validation Process.

8.12 BSL-3 LABORATORY CERTIFICATION BY DBT

After successful completion, validation and handover of the completed works, NCCS shall apply to DBT for BSL-3 Laboratory certification. The contractor shall extend all support and shall provide all the test and measuring instruments, tools, tackles, consumables, manpower etc. during DBT certification process, as and when requested by the Client, at no extra cost.

8.13 DOCUMENTS & DETAILS TO BE SUBMITTED ON COMPLETION

a) On Completion of the works, the Contractor shall submit the following documents to NCCS, in three sets:
- Complete Set of 'AS BUIT DRAWINGS'
- Operation and Maintenance Instructions & Manuals for individual Equipment and Systems
- Recommended List of Spares and Consumables
- Preventive Servicing and Maintenance Schedule

b) The Contractor shall submit the Technical Specifications and Data sheet for all the equipment/s and systems supplied and installed.

c) The Contractor shall submit a written undertaking that spares and after sales services for all the equipment, systems and services installed in the facility shall be made available for a period of at least five years from the date of handing over the facility. The after sales services may be availed by the Employer from the executing Contractor under a separate Operation and Maintenance Contract.

8.14 COMPREHENSIVE ANNUAL OPERATION & MAINTENANCE SERVICES

8.14.1 After Completion of warranty / defect liability period, the Contractor firm shall provide Comprehensive Operation and Maintenance services for a period of 5 years at the quoted and pre-approved rates invited in the tender, and enter into a contract for comprehensive annual operation and maintenance services with the Contractor.

8.14.2 The order for Annual Comprehensive Operation and Maintenance Contract (COAMC) will be issued on yearly basis & based on the performance with request letter from contractor.

8.14.3 The Comprehensive Operation and Maintenance Services to be provided by the Contractor shall include:
- Providing qualified, experienced and trained manpower for handling operation of the Laboratory Facility on day-to-day basis on all working days including holidays.
- To maintain desired facility temperatures and humidity as per guidelines.

- To carry out routine and preventive servicing quarterly and maintenance of the equipment, system and services like Condensing Units, AHUs, Exhaust Blowers, Autoclaves, Biosafety Cabinets, Pass Boxes, Access Control System, BMS, Building Electrical System, Fire Alarm system etc., installed in the facility.
- Free up-gradation of software (all update & upgrades) during the period.
- Attend to and carry out any breakdown maintenance works required from time to time, as and when it occurs and notified by the NCCS.
- Maintain daily Log Sheet of laboratory operating parameters
- Providing Spares and Consumables for various equipment, systems and services like BMS, Access Control System, Gaskets (for Doors and Pass Box), Filters, Valves, Light Fittings, spare switches and sockets etc. and maintain suitable inventory at site during the period.
- Maintenance of electrical system, services and construction works executed by the contractor.
- Diagnose repair/ replace the faulty items/ equipment/ system/ component/ peripherals/ software and all new versions, releases and updates installed using its own resources and equipment within given time frame to make system operational. During the support period, Contractor should maintain the product or specified hardware/software required for this system. It should include repair & maintenance of all parts of the system. NCCS shall not be liable to make any payment over and above the maintenance cost in any case.
- Annual Validation of the Laboratory Facility and submission of reports.
- Payment will be made quarterly after providing satisfactorily services with reports.

8.14.4. The following works and consumables shall not be included and covered in the scope of Contractor in the Comprehensive Operation and Maintenance Services:

a) Supply of power, water and fuel
b) External Painting of the facility
c) Chemicals/reagents for use in laboratory for Fumigation/ Decontamination
d) Water and Power
e) Change of batteries for UPS
f) General Housekeeping works including associated consumables
g) Maintenance of any external works or roads
h) Maintenance of equipment and items supplied directly by NCCS.
i) Damage or loss of item/equipment caused due to fire and theft

8.14.5 **PENALTY CLAUSE DURING COAMC**:

During the COAMC period, it is expected that the Contractor shall carry out routine servicing, preventive maintenance and attend the breakdown and rectify the fault/s promptly with minimum possible downtime. The maximum permitted DOWNTIME shall be 48 Hours from the time the intimation is given by the user. If the repair/rectification is not carried out by the Contractor within the maximum permitted DOWNTIME, the NCCS shall charge penalty, for each breakdown instance, subject to a maximum of 10% of the Annual Contract Value, as follows:

(i) Above 48 hours & Below 96 hours - Penalty of 1% of the Annual Contract Value
(ii) Above 96 hours & Below 192 hours - Penalty of 1.5% of the Annual Contract Value

(iii) Above 192 Hours - Penalty of 2% of the Annual Contract Value and get the work repair/rectification done from third party at the Contractor's Risk and Cost.

8.14.6. In case the performance of the Contractor during the Comprehensive Operation and Maintenance Services is found to be un-satisfactory, NCCS may terminate the Contract by giving one month notice to the Contractor, forfeit the security deposit and proceed to appoint a new agency.

8.15. OUTPUT OF THE WORK:

The output of the work and any other details envisaged under this tender shall be supplied as specified in the following table:

S No	SCOPE DEFINITATION	CONTRACTOR	NCCS
1	BSL/ABSL-3 LAB GENERAL LAYOUTS	√	
2	REVIEW & APPROVAL OF THE PROPOSED FACILITY LAYOUT		√
3	DETAIL ENGINEERING & DETAILED LAYOUT DRAWINGS	√	
4	FACILITY LAYOUT & DETAIL ENGINEERING	√	
5	STRUCTURAL AND ARCHITECTURAL LAYOUT DETAILING OF CIVIL FOUNDATION & MS SHED & DRAWINGS VETTED FROM COEP	√	
6	STORAGE SPACE AT SITE		√
7	HVAC, ELECTRICAL & BMS DETAIL DRAWING	√	
8	INTERIORS & CLEAN ROOM	√	
9	HVAC SYSTEM INCLUDING HIGH SIDE & LOW SIDE WITH 100% STANDBY ARRANGEMENT	√	
10	ELECTRICAL POWER DISTRIBUTION SYSTEM WITH LOAD DATA	√	
11	FIRE DETECTION, ALARM & SUPRESSION SYSTEM	√	
12	MAN & MATERIAL ACCESS CONTROL SYSTEM	√	
13	ALL UTILITIES INCLUDING CIVIL, INTERIOR & CLEAN ROOM, HVAC SYSTEM, ELECTRICAL SYSTEM, BMS & AUTOMATION, UPS etc.	√	
14	UTILITY DISTRIBUTION PIPING, HVAC DUCTING, ELECTRICAL CABLING, WASHING, STARILIZATION & DRAIN	√	
15	BSL 3 LAB EQUIPMENTS AND FURNITURES AS SPECIFIED IN TENDER	√	

16	BIOSAFETY COMPLIANCE AND PROTOCOL STATEMENT	√	
17	LAB PROCESS EQUIPMENTS LIKE PASS BOXES AND AUTOCLAVE, DG SET AS PER SPECIFICATION	√	
18	SUPPLY OF 3 PHASE POWER FROM SUB-STATION TO MAIN MCC PANEL AND FACILITY INTERNAL INSTALLATIONS.	√	
19	SITC OF WASTE WATER TREATMENT SYSTEM AT SITE	√	
20	COMMISSIONING & TESTING OF FACILITY	√	
21	VALIDATION & TESTING INCLUDING DOCUMENTATION WITH ISO-17025 CERTIFIED 3RD PARTY CERTIFICATION	√	
22	COMPLETE DOCUMENTATION	√	

LIST OF PROPOSED APPROVED MAKES / MANUFACTURERS

ITEM		APPROVED MAKES /MANUFACTURER
Modular wall and ceiling panels	:	Nicomac/I-Clean/GMP
View Panels	:	Nicomac/I-Clean/GMP
Laboratory Doors	:	Nicomac/I-Clean/GMP
Epoxy Coating	:	Dr. Beck / Apurva / Fosrok
Chiller	:	Voltas/Blue Star /Carrier/York/ TRANE/DAIKIN
Condensing Unit	:	Voltas/Blue Star /Carrier/York/TRANE/DAIKIN
Double skin type AHU	:	Zeco/ Flakt/ Airvision/VTS/System Air
AHU Cooling Coils	:	ARI Certified
AHU Fan	:	Kruger/Nicotra/Comferi (AMCA Certified)
Motors	:	Crompton/Siemens/ Bharat Bijlee/ ABB
Centrifugal Blowers	:	TCF/Kruger/Nicotra/System Air
Isolation Damper	:	Trox/Camfil/YIT
VAV	:	Trox/ Aldes/Celmec/Tek-Air (Accutrol)
HEPA Filters	:	AAF/Camfil/Klenzaids/Thermadyne equivalent
Containment HEPA Filter housing	:	Camfil/YIT/Klenzaids equivalent
VFD	:	ABB/Seimens/AllenBradley/Danfoss
Pressure sensor & transmitter	:	Honeywell/Dawyer/Danfoss/Siemens
Temperature sensor & transmitter	:	Honeywell/Dawyer/Danfoss/Siemens
Humidity sensor & transmitter	:	Honeywell/Dawyer/Danfoss/Siemens
BMS system	:	AllenBradley / Siemens /ABB
PLC	:	AllenBradley/Siemens
Magnehelic Gauges	:	Dawyer
Grilles/Diffusers	:	Ravistar/System Air/Airvision
Biosafety Cabinet	:	Esco/Nuaire/Klenzaids/ThermoFisher/ equivalent
Autoclave	:	Pharmalab/Klenzaids/Machinfabrik/ Periclave

Pass Box	:	Esco/Klenzaids/I-Clean /Fabftech/ GMP
Fire Alarm System	:	Honeywell/System Sensor/GST/Siemens
Door Interlock & Access Control	:	HID/LG/ESFL
UPS & Inverter	:	Tata Emerson/APC/Sukam/Liebert/Luminus
CCTV Camera	:	LG/Hikvision/CP Plus
LED for CCTV display	:	Samsung/LG/Sony/Panasonic
Butterfly Valves	:	Advance/Audco/ C&R/ Castle/ Arrow/Intervalve
NR Valves	:	Advance /C&R/ Castle/ Arrow/ Univass
HVAC Control valves	:	Honeywell/ Johnson/ Danfoss
Modulating Motors	:	Honeywell./Jhonson/Siemens/Danfoss/Belimo
G.I. Sheet	:	Sail/Tata/Jindal
Stainless Steel sheet	:	SAIL/ Jindal/Tata
Volume Control & Fire Damper	:	Ravistar/Caryaire/Airvision
Nitrile Rubber Insulation	:	Armacell/Armaflex/SupremeA-Flex/Thermaflex
LT Panel	:	CPRI approved manufacturer
Electrical Switch Gears/MCCB	:	L&T/ABB/Siemens/Schneider
Starters.	:	L & T/Siemens/ABB
Distribution Board	:	Legrand/L7T/ABB/Havells/Schneider
Diesel Generator Set	:	Kirloskar/Cummins/Volvo Penta/GMMCO
Copper Conductor/wires	:	Polycab/Havells/RR Kabel/KEI/L&T
LT Cables	:	Polycab/Univversal//Havells/Gloster/KEI
CAT6 cables	:	AT&T/KABEL/LUCENT/LAPP/Digilink
PVC Conduit and accessories	:	BEC/AKG/Polycab/Precision
MCB/ELCB/RCCB	:	Legrand/L&T/Hager/Schneider/Siemens/ABB
Light Fixtures	: POLYCAB/CROMPTON/LEGRAND/WIPRO/PHILLIPS/ HAVELLS	

Switch & sockets	:	CLIPSAL (Schneider) IP 66 rated for BSL-3 Lab Modular - Legrand/Schneider/Crabtree
Protection Relays	:	ABB/L&T/Siemens/Schneider
Single phase preventor	:	L&T / Minilec
Air Compressor	:	Atlas Copco / Ingersoll Rand
WORK STATION/ Computer	:	DELL / LENOVO / HP// EQUIV. APPROVED BY NCCS
EPABX SYSTEM	:	CORAL/ MATRIX/ EQUIV. APPROVED BY NCCS
TELEPHONE INSTRUMENT	:	PANASONIC/ BEETEL/ EQUIV. APPROVED BY NCCS

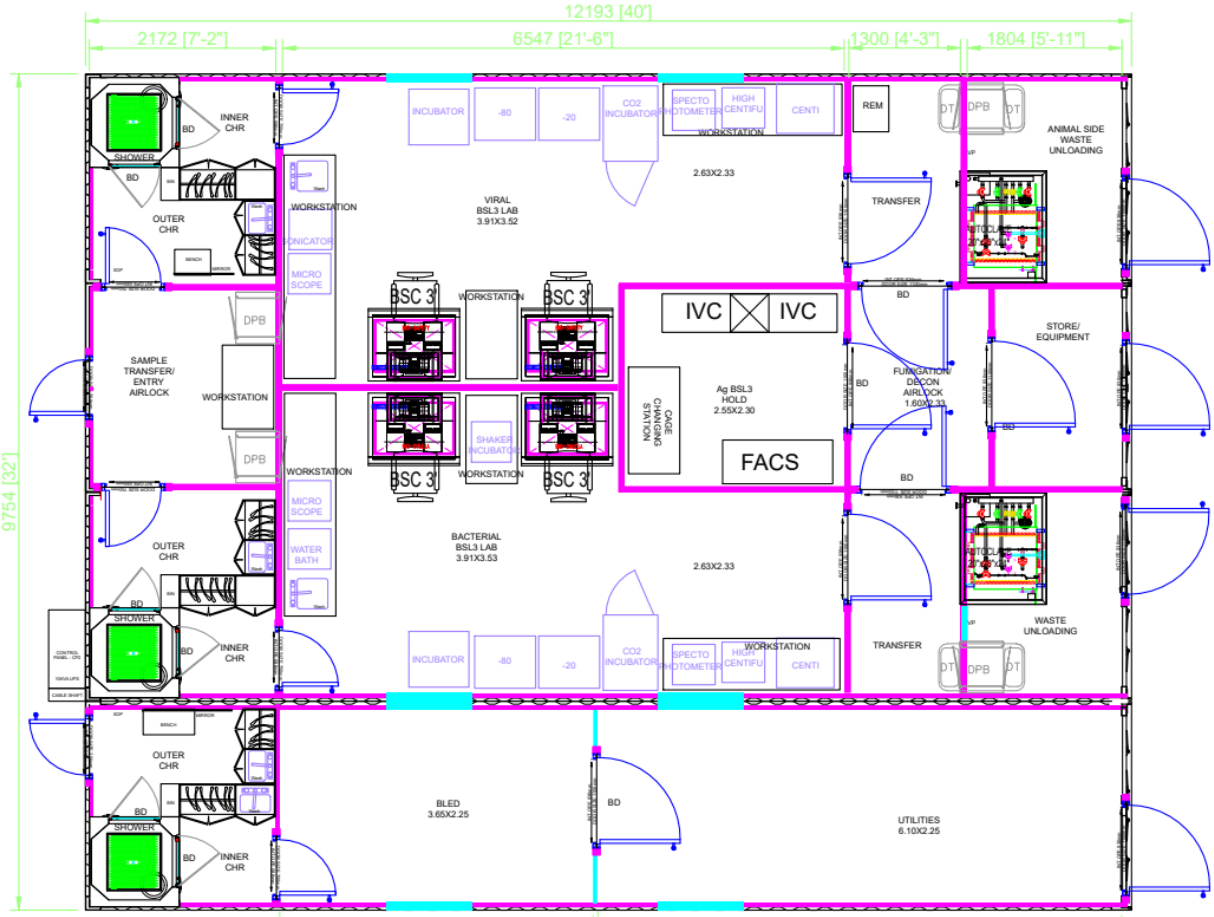
Any item not included above shall conform to the relevant BIS specifications, wherever applicable. Equivalent makes installed in BSL-3 lab certified by DBT may be accepted subject to inspection and verification of satisfactory performance and compliance to BSL-3 requirements.

NCCS & CONSULTANT RESERVE THE RIGHT TO INSIST ON ANY PARTICULAR MAKE IN THE ALTERNATIVES MENTIONED IN ABOVE LIST. IT IS DEEMED THAT RATES QUOTED ARE FOR ANY OF THE ALTERNATIVES MENTIONED FOR EACH ITEM.

a) ANY OTHER MAKES NOT MENTIONED IN THE ACCEPTED MAKE MAY BE CONSIDERED WITH PRIOR TECHNICAL DISCUSSION & APPROVAL.

b) PROPER MATERIAL SUBMITTAL SHOULD BE MADE FOR ALL ITEMS & APPROVALS SOUGHT BEFORE ORDERING THE MATERIALS.

PART B- GENERAL REFERENCE LAYOUT FOR PROPOSED BSL-3 (4 CONTAINER)



 SEAL AND SIGN. OF THE BIDDER

9. FORMS AND ANNEXURES:

FORM –I

9.1. INFORMATION REGARDING ELIGIBILITY LETTER OF TRANSMITTAL

[Note: On the letterhead of the bidder including full postal address, email address, telephone no.]

To,
The Director
National Centre for Cell Science
Savitribai Phule Pune University Campus,
Ganeshkhind
Pune- 411007.

Subject: Submission of bids for the "Design, Supply, Installation, Testing, Commissioning (SITC) and Validation of Prefabricated BSL-3 Lab in container on "Turnkey EPC basis" in compliance with WHO, BMBL & National Guidelines issued by DBT & ICMR in Sept. 2024 (with Latest Amendments/Revisions) at NCCS, Pune."

Ref.: NIT No. NCCS/I&M/BSL-3/461/2024-25; dt. 23/11/2024

Dear Sir,

Having examined the details given in tender notice and bid document for the above work, I/we hereby submit the relevant information.

1. I/we hereby certify that all the statement made and information supplied in the enclosed forms and accompanying statement are true and correct.

2. I/we have furnished all information and details necessary for eligibility and have no further pertinent information to supply.

3. I/we also authorize Officer of NCCS to approach individuals, employers, firms and corporation to verify our competence and general reputation.

4. I/we submit the following certificates in support of our suitability, technical knowledge and capability for having successfully completed the following works:

Name of work :
Certificate from :
Enclosures :
Seal of bidder
Date of submission :

Signature of Bidder.

FORM -II

9.2. GENERAL INFORMATION

1	Name of firm	:	
2	Head office address	:	
3	Name of Authorised Person		
4	Telephone No.	:	
5	Mobile No.	:	
6	Fax	:	
7	E-mail No.	:	
8	Place of incorporation/ registration Year of incorporation/ registration	:	
9	PAN Registration No.		
10	GST Registration No.		

Seal and sign of the bidder

FORM -III

9.3. FINANCIAL CAPABILITIES/ INFORMATION

Financial Analysis – Details to be furnished duly supported by figures in balance sheet/ profit & loss account for the last five years duly certified by the Chartered Accountant, as submitted by the Bidder to the Income Tax Department (Copies to be attached).

Sr. No.	Details	Financial Year				
		2019-20	2020-21	2021-22	2022-23	2023-24
1	Annual Turnover as per Audited Balance Sheet					
2	Net Profit					
3	Loss if any					

Note : The above data is to be supported by audited balance sheets.

Attach copies of audited balance sheets duly certified by the chartered accountant for all five years (2019-20 to 2023-24). Audited Balance sheet should mention the membership number of chartered accountant issued by ICAI along with full address.

Signature of Chartered Accountant with Seal

FORM -IV

9.4. EXPERIENCE OF COMPLETION OF PROJECTS OF SIMILAR NATURE

(During last seven years ending last day of month previous to the one in which applications are invited)

SR No	Name of work / project and location	Type of work, size and qty	Cost of Work (Rs.)	Date of Commencement	Stipulated date	Actual date	Name and Contact number of the Officer to whom reference may be made

Note: Please attach supporting documents (completion certificates along with order copies should be on client's letter head) for the above information.

SIMILAR WORKS IN HAND

SR No	Name of work / project and location	Type of work, size and qty	Cost of Work (Rs.)	Date of Commencement	Stipulated date	Name and Contact number of the Officer to whom reference may be made

Note: Please attach supporting documents (order copies) for the above information.

FORM -V

9.5. SOLVENCY CERTIFICATE FROM BANKERS

This is to certify that to the best of our knowledge and information M/s./Sri._____ having marginally noted address_____, a customer of our Bank are / is respectable and can be treated as good for any engagement upto a limit of Rs. ___ (Rupees ____ only).

This certificate is without any guarantee or responsibility on the Bank or any of the officers and valid for one year from date of issue.

(Authorized Signature)

For the Bank

NOTE –

(1) Banker's certificates should be on letter head of the Bank, sealed in cover addressed to tendering authority.

(2) In case of partnership firm, certificate should include names of all partners as recorded with the Bank.

FORM –VI

9.6. PROFORMA OF AFFIDAVIT FOR NON-BLACKLISTING

(**Affidavit to be furnished on a "non-Judicial" stamp paper worth Rs.100/-)**

Date.....

To,
The Director (Add. Charge)
National Centre for Cell Science,
Savitribai Phule Pune University Campus,
Pune 411007.

Subject: Submission of bids for the "Design, Supply, Installation, Testing, Commissioning (SITC) and Validation of Prefabricated BSL-3 Lab in container on "Turnkey EPC basis" in compliance with WHO, BMBL & National Guidelines issued by DBT & ICMR in Sept. 2024 (with Latest Amendments/Revisions) at NCCS, Pune".
Ref.: NIT No. NCCS/I&M/BSL-3/461/2024-25; dt. 23/11/2024

Dear Sir/ madam,

I / We ..... hereby confirm that our firm has not been banned or blacklisted by any Government organization/Financial institution/Court /Public sector Unit /Central Government.

In case the above statement made by us are found to be false or incorrect, you have right to reject our bid at any stage including forfeiture of our PBG and / or cancel the award of contract.

Signature of Bidder :
Name :
Designation :

Place :
Date :

Seal

FORM -VII

9.7. DETAILS OF TECHNICAL & ADMINISTRATIVE PERSONNEL

SR No	Name	Designation	Qualifications	Professional experience	How these would Be involved in this work
1	2	3	4	5	6

Signature of Bidder

FORM -VIII

9.8. DETAILS OF PLANT AND EQUIPMENT

SR. No	Name of equipment	Qty	Capacity or Type	Remark
1	2	3	4	5

Signature of Bidder

FORM-IX

MANUFACTURERS' AUTHORIZATION FORM

To,
The Director (Add. Charge)
National Centre for Cell Science,
Savitribai Phule Pune University Campus,
Pune 411007.

Subject: Design, Supply, Installation, Testing, Commissioning (SITC) and Validation of Prefabricated BSL-3 Lab in container on "Turnkey EPC basis" in compliance with WHO, BMBL & National Guidelines issued by DBT & ICMR in Sept. 2024 (with Latest Amendments/Revisions) at NCCS, Pune.
Ref.: NIT No. NCCS/I&M/BSL-3/461/2024-25; dt. 23/11/2024

Dear Sir/ Madam:

We _____ who are established and reputable manufacturers of _____ having factories at _____ (address of factory) do hereby authorize M/s. _____ (Name and address with contact details like Tel. No(s)/ Fax/ E-mail etc. of Agent/Sub-Agent) to submit a bid, negotiate and receive the order from you against your Tender Notice No……/ dated ……..

No company or firm or individual other than M/s_____ is/are authorized to bid, and conclude the contract in regard to this business.

We hereby extend our full guarantee and warranty as per the condition of the above tender/WO (issued if any) for the goods and services offered by the above firm(s).

Thank you.

Yours faithfully,

Authorized Signatory
(Having the power of Attorney on behalf of the Manufacturer)

Note: This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. In case of foreign manufacturer, scan copy can be accepted if supported by copy of the original valid normal authorization to local distributor and is submitted along with above format.

FORM-X

WARRANTY COMPLIANCE UNDERTAKING

(To be submitted in Manufacturer's/Bidder's Letter Head)

To,
The Director (Add. Charge)
National Centre for Cell Science,
Savitribai Phule Pune University Campus,
Pune 411007.

Subject: "Design, Supply, Installation, Testing, Commissioning (SITC) and Validation of Prefabricated BSL-3 Lab in container on "Turnkey EPC basis" in compliance with WHO, BMBL & National Guidelines issued by DBT & ICMR in Sept. 2024 (with Latest Amendments/Revisions) at NCCS, Pune" vide your above tender notice if we get the contract order from you.

Dear Sir/ Madam,

This bears reference to our quote no. _____dated_____

1) We warrant that everything to be supplied by us shall be brand new, free from all defects and faults in material, workmanship and manufacture and shall be of the highest grade and quality and consistent with the established standards for materials specification, drawings or samples if any, and shall operate properly. We shall be fully responsible for its efficient operation.

2) Alternative equipment/goods shall be provided free of cost to the Institute within two weeks in case of major defects arising in the existing equipment/goods/machine in the comprehensive warranty period of ___ year(s) or Extended Warranty period of _____year(s) and CAMC period of _____year(s) from the date of installation of the equipment/goods.

3) We also accept free up-gradation of software (all update & upgrades) within warranty as well as in CAMC period of 5 years from the date of satisfactory installation if supplied with the equipment/goods/ article.

Yours faithfully

Signature with Seal of the Manufacturer/ Bidder
Place:
Date:

FORM-XI

MANUFACTURERS (OEM) UNDERTAKING TO PROVIDE SPARES & SERVICE FOR AT LEAST 10 (TEN) YEARS FROM THE DATE OF SUPPLY & INSTALLATION

(To be submitted in Manufacturer's letter head)

Letter Ref. No.: …… **Date:**

To,
The Director (Add. Charge)
National Centre for Cell Science,
Savitribai Phule Pune University Campus,
Pune 411007.

Subject: "Design, Supply, Installation, Testing, Commissioning (SITC) and Validation of Prefabricated BSL-3 Lab in container on "Turnkey EPC basis" in compliance with WHO, BMBL & National Guidelines issued by DBT & ICMR in Sept. 2024 (with Latest Amendments/Revisions) at NCCS, Pune". Put name of the equipment/goods with model no(s)……..which is/ are manufactured by us through our authorized sales & service agent in India.

M/s……...
Tel.: …… Fax No.: ……
e-mail:……to your organization vide your Tender Notice No……/ dated ……., quoted vide Proforma Invoice /Quotation No(s) ……/ dated by our above agent.

Undertaking: Being the Original Equipment/goods Manufacturer (OEM) of the above product , the company hereby agrees to provide spares & after sales service as & when required through the above authorized agent for at least 10(ten) years from the date of successful installation of the above equipment/goods at NCCS, Pune. We hereby confirm and accept not to withdraw the authorization or dealership for the sales & service of the above equipment/goods up to at least 10(ten) years from the date of the successful installation at your organization.

In case, it happens for the reason whatsoever the company also agrees to take the responsibility for providing the service with spares itself or through its other dealer or agent in India at the same terms & conditions and price submitted by our above current agent or dealer. In case of defaulting, we will be penalized under the Laws of Union of India.

Authorized Signatory

(Having the power of Attorney on behalf of the Manufacturer)
Name:
Designation:
Name of the Company/ Firm:
Complete Postal Address:
Telephone no(s):
Fax:
E-mail:
Website:

FORM-XII

DECLARATION OF LOCAL CONTENT

(To be submitted in Manufacturer's letter head)

To,
The Director (Add. Charge)
National Centre for Cell Science,
Savitribai Phule Pune University Campus,
Pune 411007.

Subject: Declaration of Local Content for tender Design, Supply, Installation, Testing, Commissioning (SITC) and Validation of Prefabricated BSL-3 Lab in container on "Turnkey EPC basis" in compliance with WHO, BMBL National Guidelines issued by DBT & ICMR in Sept. 2024 (with Latest Amendments/Revisions) at NCCS, Pune.
Ref.: NIT No. NCCS/I&M/BSL-3/461/2024-25; dt. 23/11/2024

Dear Sir/ Madam,

1. Country of Origin of Goods being offered: ____
2. We hereby declare that items offered has ____% local content
3. Details of the Location at which the Local Value Addition is made __
4. Details of Local Content ___

"Local Content" means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of the imported content in the item (including all customs duties) as a proportion of the total value, in percent.

Bidders offering Imported products will fall under the category of Non-Local Suppliers. They cannot claim themselves as Class-I or Class –II Local Suppliers by claiming the services such as Transportation, Insurance, Installation, Commissioning, Training and After Sale Service Support like COAMC etc. as Local Value Addition.

"*False declaration will be in breach of Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151(iii) of the General Financial Rules along with such other actions as may be permissible under law."

Yours faithfully,

(Signature of the bidder, with Official Seal)

Note: It is mandatory for bidders to quote items having local content minimum 20%. Refer revised Public Procurement (Preference to Make in India), Order 2017, No. P-45021/2/2017-PP (B.E-II) dated 16.09.2020 issued by DPIIT, Ministry of Commerce and Industry, Govt. of India. (Submit duly filled Annexure VIII for the same). *The Form XII once submitted in the Technical Bid will be final. Submission of Revised Form XII will NOT be accepted.*

9.10. FORM OF BANK GUARANTEE

In consideration of the Director (herein after called "National Centre for Cell Science, Pune") having offered to accept the terms and conditions of the proposed agreement between_____ and _____ (Hereinafter called "the said Contractor(s)") for the work_____ (Hereafter called "the said agreement") having agreed to production of an irrevocable Bank Guarantee for Rs.__. (Rupees_____ only) as a security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We__(Hereinafter referred to as "the Bank") hereby (Indicate the name of the Bank) undertake to pay to the National Centre for Cell Science, Pune an amount not exceeding Rs.__. (Rupees_____ only) on demand by the National Centre for Cell Science, Pune.

2. We__ do hereby undertake to pay the amounts due (indicate the name of the Bank) and payable under this Guarantee without any demure, merely on a demand from the National Centre for Cell Science, Pune stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.__. (Rupees_____ only).

3. We, the said bank further undertake to pay to the National Centre for Cell Science, Pune any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s) shall have no claim against us for making such payment.

4. We __further agree that the guarantee herein (indicate the name of the bank) contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the National Centre for Cell Science, Pune under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-Charge on behalf of the National Centre for Cell Science, Pune certified that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor(s) and accordingly discharges this guarantee.

5. We__ further agree with the National Centre for Cell Science, Pune that (indicate the name of the bank) the National Centre for Cell Science, Pune shall have the fullest liberty without our consent and without effecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) from time

to time or to postpone for any time or from time to time any of the powers exercisable by the National Centre for Cell Science, Pune against the said contractor(s) and to for bear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said contractor(s) or for any forbearance, act of omission on the part of the National Centre for Cell Science, Pune or any indulgence by the National Centre for Cell Science, Pune to the said Contractor or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).

7. We__ lastly undertake not to revoke this (indicate the name of the bank) guarantee except with the previous consent of the National Centre for Cell Science, Pune in writing.

8. This guarantee shall be valid upto__ unless extended on demand by National Centre for Cell Science, Pune. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs.__. (Rupees_____ only) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Dated the__ day of__ for__.

(Name of Bank)

ANNEXURE -II

9.11. ARTICLES OF AGREEMENT

(***ON NON-JUDICIAL STAMP PAPER OF RS. 500/-***)

This Contract Agreement made on this____day of___20__ w.e.f.___ day of _____20__ for the work of _____ Between

M/s._____ (refer note) in the town of _____hereinafter called "THE CONTRACTOR" (which term shall unless excluded by or repugnant to be subject or context include its successors and permitted assigns) of the ONE PART

AND

National Centre for Cell Science, a society registered under the Societies Registration Act and having its office at Savitribai Phule Pune University Campus, Ganeshkhind, Pune 411007 hereinafter called the "NCCS" (which term shall unless excluded by or repugnant to the subject or context include its successes and assigns) of the OTHER PART.

WHEREAS

a. The NCCS is desirous that the Works of _____NCCS, Pune (Tender Ref. No. _____dt._____) should be executed as mentioned, enumerated or referred to in the tender including Press Notice Inviting Tender, Detailed NIT, General Conditions of the Contract, Special Conditions of the Contract, Specifications, Drawings, Plans, Time Schedule of completion of jobs, Schedule of Quantities and Rates, Agreed Variations, other documents, Pre bid minutes, has called for Tender.

b. The contractor has inspected the site and surroundings of the work specified in the tender documents and has satisfied himself by carefully examination before submitting his tender as to the nature of the surface, strata, soil, sub-soil and grounds, the form and nature of the site and local conditions the quantities, nature and magnitude of the work the availability of labour and materials necessary for the execution of work, the means of access to site, the supply of power and water thereto and the accommodation he may require and has made local and independent enquiries and obtained complete information as to the matters and things referred to or implied in the tender documents or having any connection therewith, and has considered the nature and extent of all the probable and possible situations, delays, hindrances or interferences to or with the execution and completion of the work to be carried out under the contract, and has examined and considered all other matters, conditions and things and probable and possible contingencies, and generally all matters incidental thereto and ancillary thereof affecting the execution and completion of the work and which might have influenced him in making his tender.

c. The tender documents including the NCCS's Press Notice Inviting Tender, Detailed NIT, General conditions of contract, Special Conditions of Contract, Schedule of Quantities and rates, General obligations, Specifications, Drawings, plan, time schedule for completion of work, Pre bid minutes, TCD Negotiation if any. Letter of Acceptance of tender, Work order, all correspondence related this work and any statement of agreed variations with

its enclosures copies of which are hereto annexed form part of this contract though separately set out herein and are included in the expression Contract wherever herein used.

d. Contractor shall not claim any escalation in contract rate for rise in prices of materials/labour etc. during the completion of work and shall complete the work at contracted rate which shall be valid for period ___ month from the date of issue of Work Order. In case of extension in the time period for execution of the contract beyond period ____ month, for any reasons of delay, he shall not be eligible for escalation and the NCCS decision in this respect shall be final and binding on the contractor.

AND WHEREAS

The NCCS accepted the tender of M/s._____ (refer note__) (CONTRACTOR) for the Works of_____ at NCCS, Pune and issued work order letter Ref. No._____ dated ___at the total cost of Rs.__ (Rupees ____) as rates stated in the Schedule of quantities for the work and accepted by the NCCS (hereinafter called the Schedule of Rates) upon the terms and subject to the conditions of the contract.

NOW THIS AGREEMENT WITNESSTH & IT IS HEREBY AGREED AND DECLARED AS FOLLOWS.

1. In consideration of the payment to be made to the contract for the work to be executed by him, the contractor hereby convenient with the NCCS that the contractor shall and will duly provide, execute, complete and maintain the said work and shall do and perform all other acts and things in the contract mentioned or described or which are to be implied and there from or may be reasonably necessary for the completion of the said works and at the said times and in the manner and subject to the terms and conditions or stipulations mentioned in the contract, AND

2. In consideration of the due provisions execution, completion and maintenance of the said work, the NCCS does hereby agree with the contractor that the NCCS will pay to contractor the respective amounts for the work actually done by him and approved by the NCCS at the Schedule or Rates and such other sum payable to the contractor under provision of the contract, such payment to be made at such time in such manner as prescribed for in the contract.

3. It is specifically and distinctly understood and agreed between the NCCS and the contractor that the contractor shall have no right, title or interest in the site made available by the NCCS for execution of the works or in the building, structures or works executed on the said site by the contractor or in the goods, articles, materials, etc. brought on the said site (unless the same specifically belongs to the contractor) and the contractor shall not have or deemed to have any lien whatsoever charge for unpaid bills will not be entitled to assume or retain possession or control of the site or structures and the NCCS shall have an absolute and unfettered right to take full possession of site and to remove the contractor, their servants, agents and materials belonging to the contractor and lying on the site.

4. The dispute or difference if any, relating to this agreement or any document appended hereto shall be settled by arbitration under the provisions of Indian Arbitration & Conciliation Act, 1996 or any rules and regulations framed there under within the Jurisdiction of Pune and the Jurisdiction of Arbitration shall be the city of Pune only.

In Witness whereof the parties hereto have here-into set their respective hands and seals in the day and the year first above written.

Signed and delivered for and on behalf of NCCS	Signature and delivered for and on behalf of the contractor
NCCS, Pune	CONTRACTOR
Address : Date : Place :	Address : Date : Place :

In presence of following witnesses

1	Signature	:	1.	Signature	:
	Name	:		Name	:
2	Signature	:	2.	Signature	:
	Name	:		Name	:

{NOTE:
FOR PROPRIETORY CONCERN
Shri……s/o……r/o……carrying on business under the name and style of……at…… (Hereinafter called the said Contractor which expression shall unless the context requires otherwise include his heirs, executors, administrators and legal representatives).

FOR PARTNERSHIP CONCERN
M/s ……a partnership firm having its registered office at …… (Hereinafter called the said Contractor which expression shall unless the context requires otherwise include his heirs, executors, administrators and legal representatives). The partners of the firms are:
i) Shri …….s/o……, And
ii) Shri ……s/o……etc.

FOR COMPANIES
M/s ……a company duly incorporated under the Indian Companies Act, 1956 and having its registered office at ……in the state of …… (Hereinafter called the said Contractor which expression shall unless the context requires otherwise include its successors and assign). }

ANNEXURE- III

9.12. INDEMNITY BOND

(ON NON-JUDICIAL STAMP PAPER OF Rs.500/-)

This deed of Indemnity is made this _____day of___20__ between

M/s._____, (hereinafter called "The Contractor" which expression shall unless repugnant to the context or meaning Thereof include its successors and assigns) of the FIRST PARTY and

Director, National Centre For Cell Science, Pune, an Institute having its Registered Office at Savitribai Phule Pune University Campus, Ganeshkhind, Pune 411007 (hereinafter called the "NCCS" which expression shall unless repugnant to the context or meaning thereof include its successors and assigns) of the SECOND PARTY.

WHEREAS the Contractor has, interalia, agreed with the Institute to execute the work _____on the Terms & Conditions contained in the Notice Inviting Tender No: ____between the Institute and the Contractor.

Whereas the Contractor has to furnish an Indemnity of the said Agreement. It is now agreed by and between the Parties hereto as follows:

1. In accordance with the said Agreement, on the Contractor furnishing this Indemnity, the Contractor hereby undertakes to indemnify the Institute and keep the Institute indemnified from time to time against any loss caused due to mishandling, mis- operating or improper maintenance etc. or damage caused to or suffered by the Institute by reason of any breach or breaches on the Contractor's art of any of the Terms & Conditions contained in the said Agreement and in the event the contractor shall make any default or defaults in carrying out any of the works under the said Agreement or otherwise in observance or performance of any of the Terms & Conditions relating thereto in accordance with the true intent and meaning thereof, the Contractor shall forthwith on demand and without demur pay to the Institute such sum or sums as may be claimed by the Institute as losses, damages, costs, charges or expenses by reason of such default or defaults on the Contractor's part.

2. Notwithstanding anything to the contrary in these presents or in the said Agreement The Institute's decision as to whether the Contractor has made any default or defaults or the amount or amounts to which the Institute is entitled by reason thereof will be binding on the Contractor for the purpose of this Indemnity and the Contractor shall not be entitled to ask the Institute to establish its claim or claims under this Indemnity but will pay the same on demand without any objection provided always the mutual rights under the said Agreement shall not in any way be prejudiced by reason of such demand by the Institute and payment by the Contractor under this Indemnity and the claims under the said Agreement (which Shall be settled in accordance with the said Agreement) without prejudice to the Institute's rights to demand immediately under this Indemnity and the Contractor's liability to pay the same.

3. This Indemnity shall continue and hold good until it is released by the Institute in writing on the Contractor's application after expiry of relative Guarantee period of the said Agreement and after the contractor has discharged all his obligations under the said Agreement and submitted a “NO DEMAND CERTIFICATE” from the Institute under the said Agreement. The Indemnity Bond shall be valid for a minimum period of CONTRACT PERIOD and renewable thereof (Claim Period).

4. The Institute will have the fullest liberty from time to time to enforce or forbear to enforce any of the Terms & Conditions of the said Agreement and the Contractor shall not be released from his / their liability under this Indemnity by the exercise of the Institute 's liberty with reference to the matters aforesaid or by reason of any time being given to the Contractor or any forbearance, act or omission on the Institute's part or any indulgence by the Institute to the Contractor or by any variations or modifications of the said Agreement or any other act, matter or thing whatsoever on the Institute's part.

5. This Indemnity and the powers and provisions herein contained are in addition to and not by way of limitation or substitution for any other guarantee, indemnities hereto before given to the Institute by the Contractor and this indemnity does not revoke or limit such indemnities or guarantee.

IN WITNESS WHEREOF the Parties hereto have executed these presents the day the year First hereinabove written.

Name and sign of the Contractor

Engineer in Charge
NCCS., Pune

In the presence of following Witness

1. _____

2._____

SEAL AND SIGN. OF THE BIDDER

8. CHECK LIST OF DOCUMENTS SUBMITTED:

Sr No.	Particulars	Submitted (Yes No)	Remark
1	Two separate bids i.e. Technical and Commercial submitted in single envelope dully sealed.		
2	Earnest Money Deposit (EMD)		
3	Copy of Registration certificate of firm (Shop Act/ Company Registration)		
4	Copy of GST Registration		
5	Copy of PAN card		
6	Copies of IT return and balance sheets for last five years		
7	Copies of similar supporting work orders / Agreement with completion certificate		
8	List and clients indicating quantum of work executed with them		
9	Form- Letter of Transmittal		
10	Forms / Annexures		
11	Seal signed copy of Pre-bid meeting minutes		
12	Detailed tentative BAR Chart		

 SEAL AND SIGN. OF THE BIDDER