

ADDITIONAL SPECIFIC CONDITION OF CONTRACT

AND

SPECIFICATIONS

(B) RELATING TO CIVIL, PLUMBING & fire fighting WORKS

1.0 General

1.1 The following Additional Specific Conditions and specification shall be read in conjunction with General Conditions of Contract and Specific Conditions of Contract. If there are any provisions in these Additional Specific Conditions which are at variance with the provisions in the above mentioned documents, the provisions in these Additional Specific Conditions shall take precedence.

1.2 These additional specific conditions and specification shall be considered as an extension and not as a limitation of obligation of the preference.

* The CPWD General Specification for Electrical works: Part V Down Comer System for fire fighting-latest issue. Termination used in the bid shall also be accordance with CPWD.

* For items not covered in CPWD Specification, the work shall be done as per the latest relevant IS Code of practice.

* For item not covered by any of the above the installation shall be done as directed by the Engineer and as per sound engineering practices.

2.0 Scope of Contract

2.1 The scope of work covers the supply, erection, testing and commissioning of the Civil, Plumbing, Fire Fighting & Electrical Systems, Air- conditioning & Landscaping works which also includes design & preparation of structural and all other detailed shop drawings, testing and commissioning of components and accessories.

* Civil works, plumbing & Fire Fighting works, Fire Alarm System.

* Electrical works.

- 2.2 The work shall be carried out in conformity with the plumbing drawings and the requirement of architectural, electrical, structural, and other specialised service drawings by the agency approved by Engineer..
- 2.3 The Contractor shall make provision of hangers, sleeves, structural openings and other requirements well in advance to hold up progress of the construction schedule.
- 2.4 The said Contract comprises of furnishing of all materials, equipment, labour & transportation etc. necessary to render the installation fully operational as per the intent of specification and drawings, including any necessary adjustment or corrections. The installation shall be all in conformity with local laws covering such installation.

3.0 Contract Drawings

- 3.1 The drawings issued with the Bid are diagrammatic only and indicate the extent and general arrangement of the installation. Drawings shall not be scaled.
- 3.2 The Contractor shall follow the Bid drawings for preparation of his detailed sanitary, plumbing & fire fighting & Shop drawings and for subsequent installation work. He shall check the drawings of other services to verify spaces in which his work will be installed. The Contractor shall examine all Architectural, Structural, Plumbing and other services drawings before starting the work and report to the Engineer any discrepancies and obtain clarification. Any changes found essential to coordinate installation of this work with other services, shall be made with prior approval of the Engineer.

4.0 Shop Drawings

- 4.1 With in two weeks after Award of the Contract, the Contractor shall furnish for approval of the Engineer, three sets of detailed sanitary, plumbing, fire fighting (external & internal), Pump room & Shop drawings of all equipment and materials required to complete the work as per specifications. These drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics, and capacity of all items of equipment, as also the details of all related items of work of other trades. All shop drawings to be made in accordance with latest fire safety norms & to be got approved by the authorities before it is finally approved by Engineer before start of work.

- 4.2 All drawings necessary for assembly, erection, maintenance, repair and operation of the equipment shall be furnished and different parts shall be suitably numbered for identification and ordering of spare parts.
- 4.3 When the Engineer makes any amendments in the above drawings, the Contractor shall supply fresh sets of drawings with the amendments duly incorporated, along with the drawings on which corrections were indicated.
- 4.4 No material or equipment may be delivered or installed at the job Site until the Contractor has in his possession, the approved Shop drawings for that particular material or equipment.
- 4.5 After approval of the drawings by the Engineer, the Contractor shall further furnish six sets of Shop drawings for the exclusive use of and retention by the Engineer.
- 4.6 Approval of drawings by the Engineer shall not relieve the Contractor of any part of his obligation to meet all the requirements of the Contract or of the correctness of his drawings. The Engineer's approval of specific item shall not mean the approval of the assembly of which it is a component. The Contractor shall be responsible for and is to bear the cost for all alternations of the works due to discrepancies or omission in the drawings or other particulars supplied by him, whether such drawings have been approved by the Engineer or not.
- 4.7 Where the work of the Contractor has to be installed in close proximity to, or will interfere with the work of other trades, the Contractor shall assist in working out the space conditions to make a satisfactory adjustment. If so directed by the Engineer, the Contractor shall prepare composite working drawings and sections to a suitable scale not less than 1:50, clearly showing how his work is to be installed in relation to the work of other trades. If the Contractor installs his work before coordinating with other trades, or so as to cause any interference with the work of other trades, he shall make all the necessary changes without extra cost.
- 4.8 All shop drawings and detail drawings will be made as per requirements of local authorities and tender drawings incorporating all latest regulations and requirements. No separate drawings will be, issued for making shop drawings.

5.0 Samples and Catalogues

5.1 Prior to ordering any equipment/ material/ system, the Contractor shall submit to the Engineer, the catalogues, along with samples from approved list of manufacturers. No material shall be procured prior to the approval by the Engineer.

5.2 Approval of Materials

All materials used on the Works shall be new and of the best quality available, conforming to the relevant specifications and as per good Engineering practice. Prior approval shall be obtained in writing from the Engineer for all materials proposed and when necessary, approved sample duly identified and labelled shall be deposited with the Engineer and shall be kept at Site. List of approved make indicates make / manufacturer generally acceptable but final choice of make / manufacturer of material & models shall be with the Engineer.

6.0 Material and Equipment

6.1 All material and equipment shall conform to the relevant Indian Standards.

6.2 Where interfacing occurs, equipment shall be mutually compatible in all respects.

6.3 Where an item of equipment, other than as specified or detailed on the drawings, is approved by Engineer, requires any re-design of the structure, partitions, foundation, piping, writing or any other part of the mechanical, electrical or architectural layout, all such re-design, and all new drawings and detailing required therefore, shall be prepared by the Contractor at his own expense and approval obtained by the Engineer.

6.4 All similar equipment, materials, removable parts of similar equipment etc. shall be inter-changeable with one another.

7.0 Conformity with Statutory Acts, Rules and Standards

7.1 The installation shall be in conformity with the Bye-laws Regulations and Standards of the local authorities applicable to the installations. But if the specifications and drawings call for a higher standard of materials and/or workmanship than those required by

any of the above regulations and those required by any of the above regulations and standards, then the specifications and drawings shall take precedence over the said Regulations and Standards.

7.2 However, if the drawings or specifications required something, which violates the Byelaws and Regulations, then the Bye-laws and Regulations shall govern the requirement of this installation.

7.3 Indian Standards : The System / Components shall conform to relevant Indian standards wherever they exist and to the national Building Code Amended up to date.

7.4 Nothing in these Specification shall be constructed to relieve the contract of his responsibility for the design. Manufacture and installation of equipment with all its accessories in accordance with applicable statutory regulations and safety codes in force.

8.0 Technical Data

8.1 Deleted

9.0 Manufacturer's Instructions

9.1 Where manufacturers have furnished specific instructions relating to the materials and equipment used, covering points not specifically mentioned in these documents, manufacture's instructions shall be followed.

10.0 Training and Operating Instructions

10.1 If required by the Engineer, the Contractor shall at no extra cost train members of the maintenance staff either at his or the subcontractor's workshop or at such other place or places as may be considered suitable by the Engineer.

10.2 Upon completion of all work and all tests, the Contractor shall furnish the necessary skilled labour and helpers for operating the entire installation for a period of fifteen (15) working days. During this period, the Contractor shall instruct and train the Engineer's representative in the operation, adjustments and maintenance of all equipment installed.

10.3 The Contractor shall submit to the Engineer a draft copy of comprehensive operating instructions and maintenance schedule

for all systems and equipment including in this Contract. This shall be supplemented, not substituted, by manufacturer's operating and maintenance manuals. Upon approval of the draft, the Contractor shall submit to the Engineer four (4) complete bound sets of operating and maintenance schedules along with manufacturers printed literature.

11.0 Inspection and Testing

- 11.1 The Engineer reserves the right to request inspection and testing at manufacturer's Works at all reasonable times during manufacture of items for this Contract.
- 11.2 The Engineer or his authorised representative shall have full power to inspect the materials and workmanship at the Contractor's Works or at any place from which the materials or equipment is obtained. Acceptance by the Engineer of any material or equipment shall in no way relieve the Contractor of his responsibility for meeting the requirements of the specifications. All incident expenditure like travelling, boarding and lodging etc shall be born by the contractor.
- 11.3 Routine and typical tests for the various items of equipment shall be performed at the Contractor's Works and test certificates furnished. If required by the Engineer, the Contractor shall permit the authorised representative of the Engineer to be present during any of the tests.
- 11.4 After installation has been virtually completed, the Contractor shall carry out under the direction and in the presence of the representative of the Engineer such tests and inspections as have been specified, or as the representative shall consider necessary to determine whether or not the full intent of the requirements of the drawings and specifications have been fulfilled. In case the work does not meet the full intent of the drawings and specifications and further tests are considered necessary, the Contractor shall carry them out and bear the expenses thereof.
- 11.5 The Contractor shall provide all necessary instruments such as Theodolite, Dumpy level, steel tapes, weighing machine, plumb bobs, spirit levels, hammers, micrometers, thermometers, hydraulic testing machine, smoke test machine and labour for testing. The Contractor shall make adequate records of the test procedures and readings, shall repeat any tests requested by the Engineer and shall provide test certificates signed by an properly authorised person. Such test certificates shall cover all Works. All such

equipments shall be tested for calibration at any approved laboratory.

11.6 If test fail to demonstrate the satisfactory nature of the installation or any part thereof, then no claims for the extra cost of modifications, replacement or retesting will be considered. The decision of the Engineer shall be regarded as final as to what constitutes a satisfactory test.

11.7 The above general requirements as to testing shall be read in conjunction with any particular requirements specified elsewhere.

12.0 Test Certificates

The contractor shall submit test certificates for all the materials / systems. These shall be issued by a government recognized inspection office certifying that all Equipment, Materials, Construction and function are in agreement with the requirements of these specification and accepted standards.

13.0 Performance Guarantee/Retention Money

13.1 It is clearly understood that the specifications, drawings, schedule of quantities for fire fighting system are for bidder's guidance only. The bidder shall carry out necessary calculation and provide alternative equipment required to achieve the specified level of fire fighting required for human safety. Complete sets of Architectural Drawings are available at site in the Engineer's office and reference may be made to these drawings as required for calculations or for other details. The contractor shall also guarantee that performance of various equipments, individually, shall not be less than, the quoted ratings.

14.0 Quiet Operation and Vibration

14.1 All equipment shall operate under all conditions of load without any sound or vibration, which is objectionable in the opinion of the Engineer. In case of rotating machinery, sound or vibration noticeable outside the room in which it is installed or annoyingly noticeable inside its own room, shall be considered objectionable. Such conditions shall be corrected by the Contractor at his own expense.

15.0 Accessibility

15.1 The Contractor shall locate all equipment, which must be serviced, operated or maintained in fully accessible positions. The exact location and size of access panels, required for each valve or other devices requiring attendance, shall be finalised and communicated well in time, to be provided in the normal course of work, failing this, the Contractor shall make all the necessary repairs and changes at his own expense.

16.0 Electrical Installation

16.1 The electrical installation shall be in total conformity with the control wiring drawings prepared by the Contractor and approved by the Engineer & shall be connected and tested in the presence of an authorised representative of the Contractor and of the Engineer.

16.2 It is to be clearly understood that the final responsibility for the sufficiency, adequacy and conformity to the Contract requirements of the electrical installation work lies solely with the Contractor.

17.0 Completion Certificate

17.1 On completion of the installation, a certificate shall be furnished to the Engineer, by the Contractor, countersigned by the licensed supervisor under whose direct supervision the installation was carried out. This Certificate shall be in the prescribed form as required by the local authority. On the basis of this certificate, the Contractor shall arrange for inspection of installation by the concerned local authorities.

17.2 The Contractor shall be responsible at his own cost for getting the installation duly approved by the Authorities concerned.

18.0 Completion Drawings

18.1 At the completion of the work in all respects, the Contractor shall at his own cost submit to the Engineer 4 (four) sets of layout drawings drawn at the approved scale indicating the installation. These drawings shall clearly indicate the complete plant layouts, and piping layouts, location wiring, exact location of all the concealed piping, valves, controls, wiring and other services. The Contractor shall also submit 4(four) sets of consolidated control diagrams, technical literature on all automatic controls and complete technical literature on all equipment and materials. The Contractor shall frame under glass, in the plant room all consolidated control diagrams and all piping diagrams.

19.0 Rates

19.1 Quoted rate includes any materials, equipment, appliances and incidental work not specifically as being furnishing or installed, but which are necessary and customary to make a complete installation.

19.2 The Contractor shall check at all stages and supervise at the point of connection the associated civil, electrical and plumbing works like underground and overhead tanks, power supply and installation of makeup water connection, drain connection in the fire fighting tanks and vicinity of plant room etc. In case of any discrepancy, all rectifications etc, required as a failure to do so, shall be carried out by the Contractor at his own expenses.

20.0 Check List

20.1 The Contractor shall provide to the Engineer 4(four) copies of a comprehensive maintenance checklist and shall post a copy of it in the Plant Room. The checklist shall be a list of each piece of equipment in this Contract, and shall provide a space for each of the next fifty-two weeks to record the maintenance provided to and status of various equipment. Each month at the time of inspection, the Contractor shall certify on this check list that he has examined each piece of equipment and that, in his opinion, it is operating as intended by the manufacturer, and that all necessary intention has been performed.

21.0 Repairs

All equipment that requires repairing shall be immediately serviced and repaired. During the maintenance period, all parts and labours shall be furnished at no extra cost to the Engineer.

22.0 Control System

During the maintenance period, once each month the Contractor shall check all controls in various areas to ensure that these are functioning as designed. This shall apply to all pressure switches and pressure gauges, contactors, relays, controller switches, high and low pressure cut-outs etc.

23.0 Reference Points

23.1 Contractor shall provide permanent bench marks, flag tops and other reference points for the proper execution of work and these shall be preserved till the end of Works.

23.2 All such reference points shall be in relation to the levels and locations, given in the Architectural and plumbing drawings.

24.0 License and Permits

24.1 Contractor shall hold a valid plumbing, electrical, HVAC license issued by the Municipal Authority or other competent authority under whose jurisdiction the work falls.

24.2 The contractor has to take all the approvals of local bodies for all the addition/deletion over the approved building plans. The documents/drawings to be prepared and submitted in the manner desired by them after the same is approved by HSCC. Contractor has to take approvals of entire/Part works if required before start of works. Contractor will be held responsible if any work at site is carried out without having approval of municipal or local bodies.

24.3 Contractor shall keep constant liaison with the competent Municipal or other authority and obtain approvals and connections for all drainage and water supply works carried out by him.

24.4 Contractor shall obtain from the competent Municipal Authority completion certificates with respect to his work as required for occupation of the building.

24.5 Before start of HVAC, Electrical, ATT, Water proofing, Fire Fighting, Fire alarm system, PA System, EPABX System, Horticulture Works, aluminium works, stainless steel works, signages works etc. The contractor must take approval of agencies from engineer.

24.6 Any fees deposited in connection with the work on behalf of the Client in Statutory bodies, Corporations, Government departments, etc. shall be paid by the Contractor and the same shall be reimbursed on production of original vouchers. Necessary endorsement / application if required shall be arranged from the Employer by the Engineer.

25.0 Cutting and Making Good

25.1 No structural member shall be chased or cut without the written permission of the Engineer.

26.0. Operation and Running of entire system

The contractor shall pay for and arrange for operation & running of entire sanitary, plumbing and fire fighting system including pumps and RO plant,

solar water heating system etc. for a minimum period of one month after satisfactory completion of work as desired by Engineer. Cost of operation & running of entire system including required material e.g fuel, consumables, tools & tackles, requisite manpower etc. shall be deemed to be included in the contract price and nothing extra shall be paid.

C) RELATING TO ELECTRICAL INSTALLATIONS

1.0 General

1.1 The following Additional Specific Conditions shall be read in conjunction with General Conditions of Contract and Specific Conditions of Contract. If there are any provisions in these Additional Specific Conditions which are at variance with the provisions in the above mentioned documents, the provisions in these Additional Specific Conditions shall take precedence.

2.0 Regulations and Standards

2.1 The installations shall conform in all respects to Indian Standard Code of Practice for Electrical Wiring Installation IS : 732-1989 and as per latest CPWD General Specification for Electrical Works (Part I, II & IV). It shall also be in conformity with the current Indian Electricity Rules and regulations in so far as these are applicable to the installations. Wherever these Additional Specific Conditions calls for a higher standard of material and/or workmanship than those required by any of the above regulations, then this Additional Specific Conditions shall take precedence over the said Regulation and Standards. External works & fire detection & alarm system works to be done as per CPWD specification & relevant IS codes.

3.0 Rates

3.1 The rates bided shall be for complete items of work inclusive of all taxes, statutory charges and all other charges for items contingent to the work, such as, packing, forwarding, insurance, freight and delivery at Site for the materials to be supplied by the Contractor, watch and ward of all materials for the Internal & external, Electrical Installation testing & commissioning work including water & power for successful installation, testing & commissioning work at Site and getting approvals & permanent electricity connection from concerned local body(s) etc.

4.0 Completeness of Bid

All sundry fittings, assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections as required, and all other sundry items which are useful and necessary for proper assembly and efficient working of the various

components of the work shall be deemed to have been included in the Bid rates and prices, whether such items are specifically mentioned in the Bid documents or not.

5.0 Works to be done by the Contractor

5.1 Unless and otherwise mentioned in the Bid documents, the following works shall be done by the Contractor, and therefore their cost shall be deemed to be included in their rates and prices:

- i. Foundations for equipments and components where required, including foundation bolts
- ii. Cutting and making good all damages caused during installation and restoring the same to their original finish
- iii. Sealing of all floor openings provided by him for pipes and cables, from fire safety point of view, after laying of the same
- iv. Painting at site of all exposed metal surfaces of the installation other than pre-painted items like fittings, fans, switchgear/ distribution gear items, cubicle switch board etc. and erection, shall however be rectified to the satisfaction of the Engineer
- v. Testing and commissioning of complete installation

6.0 Tools for Handling and Erection

6.1 All tools and tackles required for handling of equipments and materials at Site of work as well as for their assembly and erection and also necessary test instruments shall be the responsibility of the Contractor.

7.0 Terminology & Scope

7.1 Terminology & scope for this project shall be as per CPWD Specification for Electrical Works (Part I - Internal) - latest & External Works - Part II - latest.

7.2 Measurement

Measurement shall be as per CPWD specifications Part – I (Internal) & Part - II (External) unless otherwise specified in the technical specifications / BOQ.

8.0 Drawings

- 8.1 The drawings indicate the extent and general arrangements of the fixtures, controlling switches, wiring system etc. and are essentially diagrammatic. The drawings indicate the points of termination of conduit runs and broadly suggest the routes to be followed. The Contractor shall submit six sets of working electrical drawings based on tender drawing including reflected ceiling plan coordinating other essential building services for HSCC approval. Contractor has to make necessary changes if any as per comments given by HSCC before execution. The work shall be executed as indicated in the approved drawings, however any minor changes found essential to co-ordinate the installation of this work with the other trades shall be made without any additional cost of owner. The drawings are for guidance of the contractor and exact locations, distance and levels shall be governed by the building. The Contractor shall examine all architectural, structural, plumbing and sanitary & electrical drawings before starting the work and report to the Engineer any discrepancies, which in his opinion appear on them and get it clarified. Contractor shall not be entitled to any extras for omissions or defects in electrical drawings or when they conflict with other services work.

9.0 Conduit/ Trunking Layout

- 9.1 Prior to the laying of the conduits and trunking, the Contractor shall examine/ study drawings and report to Engineer in case he desires to make any changes from Consultant proposed conduit layout plan and shall get the same approved from HSCC.

10.0 Shop Drawings

- 10.1 The Contractor shall prepare and submit to the Engineer for his approval detail shop drawings of Main & Sub Distribution Boards, Distribution Boards, special pull boxes, light & fan switch boards, telephone distribution boards, FDA system and lightning protection system and other equipment to be procured/ fabrication by the Contractor within 15 days of signing of the above items required to complete the electrical installation in all respect.

11.0 Manufacturer's Instruction

11.1 Where manufacturers' have furnished specific instructions, relating to the materials used in this job, covering points not specifically mentioned in these documents, these instructions shall be followed in all cases.

12.0 Materials & Equipment

12.1 All materials and equipment shall be ISI marked and shall be of the approved make and design. Unless otherwise called for, only the best quality of materials and equipment shall be used. The Contractor shall be responsible for the safe custody of all materials till these are taken over by client and shall insure as against theft, damage by fire, earth quake etc. A list of items of materials and equipment, together with a sample of each shall be submitted to the Site office.

13.0 Scale

13.1 Drawings shall be prepared to the scale as required for proper explanation and shall indicate the size and location of all equipments and accessories herein. The Contractor shall obtain all dimensions preferably at the building (Site of work) and check those plans for interference with the building structure and other equipment.

14.0 Brochures and Data

14.1 The Contractor shall submit four copies of all brochures / manufacturer's description data and similar literature.

15.0 Approval of Shop Drawings

15.1 The Engineer's approval of shop drawings, schedule, brochures etc. shall be an approval of general details and arrangements only and shall not relieve the Contractor from responsibility for deviation from drawings or specifications unless he has in writing called Engineer to such deviations at the time of submission nor shall it relieve the Contractor from responsibility for errors or omissions of any kind in the shop drawings when approved.

16.0 Samples & Catalogues

For HSCC approval, Contractor shall submit the samples & catalogue of the material, which are used at Site as per the approved makes.

17.0 Approval of Materials

17.1 All materials used on the Works shall be new and of the best quality available, conforming to the relevant specifications and as per good Engineering practice. Prior approval shall be obtained in writing from the Engineer for all materials proposed and when necessary, approved sample duly identified and labelled shall be deposited with the Engineer and shall be kept at Site. List of approved make indicates make/ manufacturer generally acceptable. Contractor shall submit the detail drawings for HSCC approval.

18.0 Inspection, Testing and Inspection Certificate

18.1 HSCC and authorised representative of HSCC shall have at all Reasonable times access to the Contractor's premises or Works and shall have the power at all reasonable time to inspect and examine the materials and workmanship during its manufacture or erection or if the part of works is being manufactured or assembled at other premises or works.

18.2 The Contractor shall arrange all the materials and labour required for inspection of equipment or for any testing to be carried out at his/ manufacturer's works or at Site. Notice for such inspection/ presence for testing shall be given to the Engineer by the Contractor at least fifteen (15) days in advance together with the routine test certificates of the equipments/ materials given by the manufacturer.

18.3 Notwithstanding approval of tests or equipment by the Engineer, the Contractor shall be required to perform site tests and prove the correctness of ratings and performance of equipment/ machinery and materials supplied and installed by the Contractor as per the Contract specifications and conditions. Engineer shall have full power to order the material or work to be tested by an independent agency at the electrical Contractor's expense in order to prove soundness & adequacy.

19.0 Schedule & Manner of Operation

19.1 Time being the essence of this Contract, Contractor shall be expected to furnish all labour & material in sufficient quantities at

appropriate time, expedite and schedule the work to meet the Engineer's requirement and so manage the operations that the work shall be completed in time as stated else where. In case of shut down of power supply, Contractor shall coordinate with Engineer and shall carry out essential works during the shut down period allowed by the Engineer. In case Engineer allows for such period during night or early morning hours, Contractor shall make all provisions to avail such account. Contractor shall not be entitled for any extra claims on such account. Contractor shall programme his work in such a way that items of work requiring presence of Engineer are carried out between 9 A.M. & 5 P.M. on working days.

20.0 Performance Guarantee

20.1 All equipment shall be guaranteed for a minimum period of 12 (Twelve) months from the date of handing over of installation to the Engineer against unsatisfactory performance and/or break down. The equipment or component or any other part of installation so found defective within the guarantee period shall be replaced / repaired by the Contractor free of cost to the satisfaction of the Engineer. The normal guarantee and or warrantee provided by the manufacturer will have to be submitted along with all the test certificates from manufacturer.

21.0 Conformity with Statutory Acts, Rules and Standards

21.1 The installation shall be in conformity with the Bye-laws, Regulations and Standards of the local authorities applicable to the installations. But if the specifications and drawings call for a higher standard of material and/or workmanship than those required by any of the above Regulations and Standards, then the specifications and drawings shall take precedence over the said regulations and standards.

21.2 However, if the drawings or specifications required something which violates the Bye-laws and Regulations, then the Bye-laws and Regulations shall govern the requirement of this installation.

21.3 Indian Electricity Act and Rules : All electrical works in connection with installations of the system shall be carried out in accordance with the provision of the Indian Electricity Act, 1910 and the Indian Electricity Rules 1956, both amended upto date.

21.4 CPWD Specification :The Electrical installation work shall conform to CPWD General specifications for Electrical Works Part I

(Internal) I and Part II (External) latest issues , both amended upto date.

21.5 Indian Standard : The system / components shall conform to relevant Indian Standards wherever they exist and to the latest National Building Code-1983.

21.6 Nothing in these specifications shall be construed to relieve the Contractor of his responsibility for the design, manufacture and installation of the equipment with all its accessories in accordance with applicable Statutory Regulations and safety codes in force.

22.0 Completion Drawings (As Built Drawings)

22.1 On completion of the work and before issue of certificate of virtual completion, the Contractor shall submit to the Engineer completion plan drawn to a scale in tracing cloth with ink indicating the following, along with three blue print copies of the same:

- a. Run and size of conduits, inspection boxes, junction boxes and pulls boxes
- b. Number of size of conductors in each conduit
- c. Location and rating of sockets and switches controlling the light and power outlets
- d. Location and details of main & sub distribution boards, distribution boards indicating the circuit number controlled by them
- e. Type of fitting viz. fluorescent, pendants, brackets, bulkhead etc., including their rating & type of lamp, fans and exhaust fans
- f. A complete wiring diagram as installed and schematic drawings showing all connections for the complete electrical system
- g. Location of telephone outlets, junction boxes and sizes of various conduits and number & sizes of wire drawn
- h. Layout of telephone cables

- i. Location of all earthing stations, route and size of all earthing conductors, manholes etc.
- j. Layout and particulars of cables & sub mains
- k. Schematic drawing for telephone system
- l. Layout of conduits for computer outlet points
- m. Layout and details of fire detection & alarm system consisting of manual call points, fire alarm hooters, smoke & heat detector, FDA control panel including details of conduits and number of wires drawn
- n. Layout and details of lightning protection system
- o. Insulation tests and earth test results
- p. PA System drawings
- q. Fire System drawings
- r. Disc Antenna drawings
- s. Equipment drawings
- t. Cable route layout of HT, LT & other cables
- u. External lighting drawing with road layout

23.0 Confirmation of Quantities

23.1 All quantities indicated in BOQ are tentative which may vary as per site conditions. Contractor has to verify quantities before procuring the material. No payment shall be payable for quantity brought to site but not used.

24.0 Terms of Payment (Only for items of major electrical equipments)

For purposes of estimating the contract value of work executed for certificate of payment under clause 32(d) of section II the following norms shall be followed.

- a. 80% of BOQ rate on receipt of equipment against receipt of complete material at site & test certificates in accordance with clause 33(l) of SCC.

- b. 10% of BOQ rate on erection and installation of equipment.
- c. 10% after successful completion of all works including all testing, commissioning & taking over.

25.0 Training of Personnel

The Contractor shall arrange to train the Employer's personnel prior to provisional take over of the project for the following:

- a) Lift
- b) Telephone Exchange
- c) All other Equipments like DG sets, pumps, panels etc.
- d) Adjustment of setting for controls and protective devices
- e) Preventive maintenance
- f) Operation of all electrical panels including their interconnectivity and interlocking scheme
- g) Fire detection system

26.0 Completion Certificate

26.1 On completion of the installation, a certificate shall be furnished to the Engineer, by the Contractor, countersigned by the licensed supervisor under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as required by the local authority. On the basis of this certificate, the Contractor shall arrange for inspection of installation by the concerned local authorities.

26.2 The Contractor shall be responsible at his own cost for getting the installation duly approved by the authorities concerned.

27.0 Check List

27.1 The Contractor shall provide to the Engineer 4(four) copies of a comprehensive maintenance checklist and shall paste a copy of it in the Substations & Plant Room. The checklist shall be a list of each piece of equipment in this Contract, and shall provide a space

for each of the next fifty-two weeks to record the maintenance provided to and status of various equipment. Each month, at the time of inspection, the Contractor shall certify on this check list that he has examined each piece of equipment and that, in his opinion, it is operating as intended by the manufacturer, and that all necessary tests have been performed.

28.0 Repairs

All equipment that requires repairing shall be immediately serviced and repaired during the maintenance period. All parts and labours shall be furnished at no extra cost to the Engineer.

29.0 Safe Custody and Storage

Safe custody of all machinery and equipment dismantled, shifted & supplied by the Contractor shall be his own responsibility till the final taking over by the Employer. The Contractor should, therefore, employ sufficient staff for watch and ward at his own expenses. The Employer may, however, allow the Contractor to use the building space for temporary storage of his equipment, if such space is ready and available.

30. Testing and Commissioning

The Contractor shall pay for and arrange without any extra cost, all necessary balancing and testing equipment, instruments, materials, accessories, power, water, fuel and the requisite labour for testing. Any defects in materials and/or in workmanship detected in the course of testing shall be rectified by the Contractor entirely at his own cost, to the satisfaction of the Engineer. The installation shall be tested again after removal of defects and shall be commissioned only after approval by the Engineer. All tests shall be carried out in the presence of the Engineer or the Engineer's representative.

31. Operation and Running of entire system

The contractor shall pay for and arrange for operation & running of entire electrical system including DG sets, lifts and other equipment for a minimum period of one month after satisfactory completion of work as desired by Engineer. Cost of operation & running of entire system including required material e.g fuel, consumables, tools & tackles, requisite manpower etc. shall be deemed to be included in the contract price and nothing extra shall be paid.

32. Layout of all services , operating and maintenance instructions. DO's and Don't's etc

for all the plant rooms, AHU's machine rooms, sub stations, pump room, toilets, control panels etc must be equipped with coloured layout of services for the each floor . Operation and maintenance manual of the respective services, Do's and Don't's for all the plants, machinery & services to be installed with every individual units.

(D) RELATING TO HVAC WORKS AND SPECIALIZED EQUIPMENTS & SYSTEMS/SERVICES

1.0 General

1.1 The following additional specific conditions and specifications shall be read in conjunction with General conditions of Contract, Specific Conditions of Contract and Technical Specifications. If there are any provisions in these additional specific conditions and specifications which are at variance with the provisions in the above mentioned documents, the provisions in these additional specific conditions and specification shall take precedence.

2.0 Scope of Contract

2.1 The scope of works covers supply, installation testing and commissioning of HVAC Works and Specialized Equipments & Systems/Services like Building Management System, Surveillance System (CCTV), Door Interlock System, Sterilizers, Steam Generation system etc. complete in all respect as per approved drawings and specifications

3.0 Stores and Materials

3.1 The contractor shall provide everything necessary for the proper execution of the work according to the approved designs and drawings and technical Specifications.

4.0 Supply of Equipment

4.1 The contractor shall submit the designs, drawings, technical details, catalogues, fabrication drawings, installation drawings etc. for every equipment and system to the Engineer for approval. No equipment or material shall be delivered without prior approval of the Engineer.

4.2 At the time of delivery, the contractor shall submit manufacturers test certificates for equipments and materials.

4.3 The contractor shall submit the Factory Gate passes/ Challans from manufacturer's factory/works clearly bearing the batch numbers/serial number/lot number for identification and date of despatch.

5.0 Shop Drawings

5.1 The Contractor shall within 60 days of signing of the contract prepare and submit to the Engineer for approval, 3 sets of detailed shop drawings of HVAC system and other specialized systems and services, equipment details, fabrication

drawings, installation drawings etc. as per specifications and as required by the Engineer. The contractor shall arrange for proof checking of the drawings from accredited and approved agency at no extra cost.

5.2 These drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics, and capacity of all items of equipment, as also details of all related items of work by other disciplines.

5.3 If the Engineer makes any amendment in the above drawings, the Contractor shall supply two fresh sets of drawings with the amendments duly incorporated, along with the drawings on which corrections were made. After final approval has been obtained from the Engineer, the Contractor shall submit a further six sets of shop drawings for the exclusive use of and retention by the Engineer.

5.4 The shop Drawings shall be submitted for approval sufficiently in advance of planned delivery and installation of any material, to allow Engineer ample time for scrutiny. No claims for extension of time shall be entertained because of any delay in the work due to failure to produce shop drawings in time.

5.5 Approval rendered on shop drawings shall not be considered as a guarantee of measurements or of building conditions. Where drawings are approved, said approval does not mean that drawings have been checked in detail nor does it in any way relieve the Contractor from his responsibility of furnishing materials or performing work as required by the Contract.

6.0 Completion Drawings

6.1 Following "AS BUILT" drawings shall be submitted by the contractor on completion of the work in 4 sets.

- a. Plant installation drawings giving complete details of the entire equipments including foundations.
- b. Ducting drawings showing all sizes, damper locations and sizes of all air outlets and intakes, for all floors.
- c. Electrical drawings showing cable sizes, equipment capacities, control components and control wiring.
- d. Schematic control drawings giving detailed sequence of operation and notes to explain the operation of the control circuit.

- e. Piping drawings showing all pipe sizes, valves and fittings.
- f. Schematic drawings of all specialized systems and services
- g. Any other drawings to be supplied as per instructions of the Engineer.

The Drawings shall be cross checked and approved by the Engineer before acceptance.

7.0 Operation and Service Manuals

7.1 The contractor shall submit 4 sets of operation and service manuals in respect of the HVAC System and Specialized Equipments and Systems.

Following minimum details shall be furnished:

i) Detailed equipment data as approved by the Engineer.

ii) Trouble shooting

iii) Operation

Instructions

iv) Servicing and Maintenance

instruction. v) Approved test readings.

The contractor shall also submit four (4) sets of technical literature on all automatic controls and complete technical literature on all equipment and materials.

8.0 Inspection at Contractor's Premises

8.1 The Engineer and his representatives shall at all reasonable time have free access to the contractor's premises/works. The contractor shall give every facility to the Engineer and his Representative and necessary help for inspection and examinations and test of the materials and workmanship.

8.2 The Engineers's Representative shall have full powers to inspect drawings of any portion of the work or examine the materials and workmanship of the plant at the contractor's works or at any other place from where the material or equipment is obtained. Acceptance of any material or equipment shall in no way, relieve the contractor of his responsibility for meeting the requirement of the specifications.

8.2 All the expenditures incurred for inspection and testing of equipments and materials at the contractors/manufacturers

premises shall be borne by the contractor and shall be deemed to have been included in the quoted rates.

9.0 Sub - Contracting

The contractor shall subcontract part of the works only with the written approval of the Engineer but subcontracting of any works shall not relieve the contractor from the responsibility of supplying the equipments/materials and giving the performance of the HVAC system and Specialized Equipments and Systems/Services as per the approved design conditions and the overall responsibility of the contractor for compliance with the contract terms does not alter by subcontracting.

10.0 Material Submittals

The contractor shall submit submittals for all equipment and machinery for the written approval of the Engineer before placing orders. The material submittals shall comprise of at least the following :

- a. Manufacturer's technical catalogues and brochures giving technical data about performance and other parameters.
- b. Manufacturers drawings/ sketches showing construction, dimensional and installation details.
- c. Rating charts and performance curves clarifying rating of equipment selected and proposed.

11.0 Samples and Prototypes

The contractor shall submit samples of items such as grilles/ diffusers, pipes, valves, insulation, controls , sensors and/ or any other parts or equipment as required by the Engineer for prior approval in writing before placing the order. The contractor shall also construct prototype or samples of work as laid down in the contract or as instructed by the Engineer. Such samples and prototypes after approval shall be retained by the Engineer and shall serve as the standards to be achieved in final construction.

12.0 Testing and Commissioning

- 12.1 Upon completion of installations, all the equipments and systems shall be tested for their operation, capacities, performance etc. Relevant Standards and Specifications shall be followed.

The complete HVAC system shall be put for a run test for two days and all the operating parameters shall be checked and tested for satisfactory operation.

12.2 The initial tests for the HVAC works and other equipments and system shall include but not be limited to the following :

- a. To operate and check the proper functioning of all electrically operated components viz., compressor motor, pumps, blowers, air handling units, rotating machine, fans, boilers, etc.
- b. To operate and check the proper functioning of all electrical panels, switch gears, safety and other controls.
- c. To adjust and balance air, water, steam and gas quantities to provide the designed flow rates by adjusting valves, dampers, diverters etc.
- d. To check the systems against leaks in different circuits, alignment of motor, 'V' Belt adjustments etc.
- e. To check the vibration and noise levels of the equipment.
- f. Setting of all control and all such other tests which are essential for smooth functioning of the plant.

All adjustments should be made prior to these tests so that proper conditions/working are achieved during this testing.

12.3 The Contractor shall pay for and arrange without any extra cost, all necessary balancing, testing and measuring equipment, instruments, materials, accessories, power, water, fuel and the requisite labour for testing and commissioning. Any defects in materials and/or in workmanship detected in the course of testing shall be rectified by the Contractor entirely at his own cost, to the satisfaction of the Engineer. The installation shall be tested again after removal of defects and shall be commissioned only after approval by the Engineer. All tests shall be carried out in the presence of the Engineer or the Engineer's Representative.

13.0 Taking Over

13.1 After completion of the installation of the HVAC System and other specialized equipments and systems and upon satisfactory passing all the tests and validation, the contractor shall notify the Engineer and same shall be taken over by the employer.

13.2 Final Performance and capacity Test and Validation

13.2.1 The installation as a whole shall be balanced and tested upon completion, and all relevant information, including the following shall be submitted to the Engineer.

13.2.1 Air volume passing through each unit, duct, grilles, apertures.

13.2.2 Pressure in each room/zone as per the design and Differential pressure readings across each filter, fan and coil, and through each pump.

13.2.3 Static pressure in each air duct.

13.2.4 Electrical current readings, in amperes of full and average load running, and starting, together with name plate current of each electrical motor.

13.2.5 Continuous recording over a specified period, of ambient wet and dry bulb temperatures under varying degrees of internal heat loads and use and occupation, in each zone of each part of the building.

13.2.6 Daily records should be maintained of hourly readings, taken under varying degrees of internal heat load and use and occupation, of wet and dry bulb temperatures, upstream "on-coil" of each cooling coil. Also suction temperatures and pressures for each refrigerating unit. The current and voltage drawn by each machine.

13.2.7 Any other readings shall be taken which may subsequently be specified by the Engineer.

13.2.8 Performance testing of the equipments/systems and complete A/C plant and HVAC system to check the following parameters with respect to design as minimum.

- Performance and Capacities of Chillers
- Performance and Capacities of Air Handling Units
- Performance and Capacities of Pumps
- Performance and capacities of Exhaust Blowers
- Room inside temperatures and RH
- Air quantity at each outlet
- Air Changes in each room/zone with respect to the designed condition

- Pressure in each room/zone with respect to designed conditions
- Operation of electrical panels and its switchgears
- Testing of power cabling, earthing etc.

- Operation of Volume Control Dampers, Fire Dampers, Isolation Dampers etc.
- Filter Integrity / DOP test for all HEPA and Fine Filters
- Operation of all valves and controls
- Operation of Control Desk/Panel
- Any other test deemed required by the Engineer to check the performance of the HVAC equipments and system

In addition to the above testing, final performance and capacity tests of the HVAC System shall also be carried out during the defects liability period as follows :

- a. Peak summer/ monsoon test during the period from 15th may to 31st July. The installations should be able to maintain the specified inside conditions within the tolerance limits permitted in the contract.
- b. Peak winter test during the period from 1st December to 15th February. The installations should be able to maintain the specified inside conditions within the tolerance limits permitted in the contract.
- c. During the performance testing, the critical parameters such as temperature, relative humidity, relative pressure etc. shall be tested and the capacities of various equipments shall be tested.

If the contractor is unable to give peak summer/monsoon and winter test of the HVAC system during this period, the defect liability period for the HVAC system shall be extended till the satisfactory completion of the above tests

14.0 Operation of Plant

14.1 The user shall have the right to operate the equipments and systems, if in operating condition, whether or not such equipments, have been accepted as complete and satisfactory. Repairs and alterations shall be made at such time as directed by the Engineer. In special circumstances user may have to use the plant to Air condition some areas

even before the completion of whole work. The contractor shall Co-operate fully under such circumstances.

15.0 Guarantee and Defects Liability Period

15.1 All the equipments including HVAC System and Specialized Equipments & Systems shall be guaranteed for its performance and against any manufacturing defect. This guarantee shall be valid for the complete defect liability period.

15.2 The contractor shall guarantee that all equipments and materials shall be free from any defect due to the defective materials and bad workmanship or any other cause and that the equipment shall work satisfactorily and that the performance and efficiencies of the equipment shall be not less than the guaranteed values. Any parts found defective during the guarantee/defect liability period shall be replaced by the contractor at his own expense. The services of the contractor's personnel, if requisitioned during this period for such work, shall be made available free of any cost to the Employer.

15.3 If the defects are not remedied within a reasonable time mentioned in the written notice, the Employer may proceed to do so at the contractors risk and expenses without prejudice to any other rights. Joint inspection report shall also be deemed as written notice for this purpose.

16.0 Measurement of Works

16.1 The works shall be measured from time to time only for the purpose of making interim payments in the monthly Running Bills of the contractor. The works shall be measured in accordance with the units specified/approved and the Price Breakups approved by the Engineer.

16.2 The Engineer may from time to time intimate to the contractor that he requires the works to be measured and the contractor shall forthwith attend or send a qualified agent to assist the Engineer or the Engineer's Representative in taking such measurements and calculations and to furnish all particulars or give all assistance required by either of them. Should the contractor not attend or neglect or omit to send such agent, then the measurements of the works, carried out by the Engineer or his Representative shall be taken to be the correct measurements of the works, in

accordance with the standard method of measurements, as in prevalent use.

The contractor or his representative may at the time of measurement take such notes and measurements as he may require. The contractor shall submit Running bills supported by detailed measurement sheets.

17.0 Variation in Quantities

17.1 The quantities, if any, given in the BOQ are only for the purpose of guidance to the bidders. The work shall be carried out on "Turnkey Basis" as per the Design and Detailing finalized and approved.

18.0 Maintenance

18.1 The contractor shall carry out routine servicing and maintenance of the HVAC System and Specialized Equipments & Systems during the operation and maintenance period. The contractor shall carry out all routine and special maintenance of the equipments and systems and attend to any defects that may arise during operation.

19.0 Performance Guarantee

19.1.1.1 The contractor shall submit a performance guarantee certificate that the equipments and the complete systems shall maintain the operating parameters within +/- 5 % of the specified parameters. The Contractor shall also guarantee that the capacity of various components as well as the whole system covered under scope of work, approved designs and technical data etc. shall not be less than the specified capacities. The guarantee of the specific equipment supplier alone with regard to the performance of the system shall not be acceptable. However, this does not alter the overall responsibility of the contractor for compliance with the contract terms and conditions.

20.0 Painting

20.1 All equipment and ancillary items such as pipes, supports etc., will be painted in approved manner, using standard colour scheme as approved by the Engineer.

21.0 Safe Custody and Storage

21.1 Safe custody of all machinery and equipments supplied by the contractor shall be his own responsibility till the final taking over by the Employer. He should, therefore, employ sufficient staff for watch and ward at his own expenses. The Employer may, however, allow the contractor to use the plant room/other rooms, etc., for temporary storage of his equipment if such spaces are ready and available.

22.0 Terms of Payment

For purposes of certificate of payment under clause 5.0 Specific Conditions of Contract (Volume-I, Section-V) the following norms shall be followed for items/works covered under this section.

- a. 50% of BOQ contract rates on receipt of equipments/items at site and after inspection and passing.
- b. 40% of BOQ contract rates on erection and installation of equipment.
- c. 5% after successful completion of running tests and taking over.
- d. 5% after successful final performance testing of the equipment/system or successful completion of defect liability period wherein all defects pointed out have been satisfactorily removed, whichever is later.

However after taking over of the equipment/system, the above 5% shall be released on submission of Bank Guarantee of equal amount from any National/Scheduled bank in the format acceptable to the Engineer and valid atleast till the completion of defect liability period.

23.0 Training of Personnel

The contractor shall arrange to train the Employer's personnel on the following aspects of the HVAC System and other specialized equipments and systems :

- a) Operation of HVAC Plant and all other equipments and systems.
- b) Gas charging and pumping down of the system.
- c) Adjustments of settings for controls and protective devices.
- d) Servicing and Preventive maintenance.
- e) Disassembling and assembling of equipment/ system parts including identification and replacement of worn out parts.

ANNEXURE - A

FORM OF AGREEMENT

This Agreement made the _____ day of _____ 2013 _____ between *National Research Centre on Equines (NRCE), Hisar- Haryana for the Construction, testing, commissioning and, validation of Bio-safety level 3 (BSL-3)Laboratory & associated works on "Turnkey Basis" at National Research Centre on Equines (NRCE), Hisar- Haryana in compliance with CDC, USA guidelines as minimum and its maintenance during the defect liability period* (hereinafter called "The Employer") represented by M/s HSCC (India) Limited; E-6(A), Sector-1, NOIDA (U.P)- 201301 who enters into this Agreement of the one part and M/s (hereinafter called "The Contractor") of the other part.

Whereas the Employer is desirous that certain works should be executed by the Contractor, viz _____ ("the Works") and has accepted a Bid by the Contractor for the execution and completion of the works and the remedying of any defects therein.

Now this Agreement witnessed as follows :

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz :
 - (a) The Letter of Award;
 - (b) The said Bid;
 - (c) The General Conditions of Contract;
 - (d) Prequalification document
 - (e) Instructions to Tenderers and Specific Conditions of Contract;
 - (f) The Specification;
 - (g) The Drawings;
 - (h) The Priced Bill of Quantities;
 - (i) Any other relevant documents referred to in this Agreement or in the aforementioned documents
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects

therein the Contract Price or only such other sums as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

In Witness whereof the parties hereto have caused this Agreement to be executed the day and year first before written.

Signed, Sealed, and Delivered by the Said

Binding Signature of [HSCC] for and on behalf of NRCE-HISAR

Binding Signature of Contractor

In the presence of

Witness (1) :

Witness (2) :

ANNEXURE - B

PROFORMA FOR PERFORMANCE BANK GUARANTEE

(On a stamp paper of appropriate value from any Nationalised Bank or Scheduled Bank)

To,

M/s HSCCdia) Ltd.,
Plot No. 6(A), Block E, Sector 1,
NOIDA - 201 301.

Dear Sir,

In consideration of the *National Research Centre on Equines (NRCE), Hisar-Haryana for Construction, testing, commissioning and, validation of Bio-safety level 3 (BSL-3)Laboratory & associated works on "Turnkey Basis" at National Research Centre on Equines (NRCE), Hisar- Haryana in compliance with CDC, USA guidelines as minimum and its maintenance during the defect liability period* which expression shall include his successor and assignees represented by his Consultant, M/s. HSCC(India) Ltd., Plot – 6 (A), Block - E, Sector - I, Noida, Uttar Pradesh - 201 301 (hereinafter called HSCC) having awarded to M/S _____ (hereinafter referred to as the said Contractor or 'Contractor' which expression shall wherever the subject or context so permits include its successors and assignees) a Contract No _____ in terms inter alia, of the HSCC Letter No. _____ dated _____ and the General Conditions of Contract and upon the condition of the Contractor's furnishing Security for the performance of the Contractor's obligations and discharge of the Contractor's liability under and in connection with the said Contract upto a sum of Rs. _____ (Rupees _____ only) amounting to _____ percent of the total Contract value.

1. We, _____ (hereinafter called 'The Bank' which expression shall include its successors and assignees) hereby jointly and severally undertake to guarantee the payment to the Employer in rupees forthwith on demand in writing and without protest or demur or any and all moneys payable by the Contractor to the Employer in respect of or in connection with the said Contract inclusive of all the Employer's losses and damages and costs, (inclusive between attorney and client) charges and expenses and other moneys payable in respect of the above as specified in any notice of demand made by the Employer to the Bank with reference to this guarantee upto an aggregate limit of Rs. _____ (Rupees _____ only).
2. We _____ Bank Ltd. further agree that the Employer shall be sole judge of and as to whether the said Contractor has

committed any breach or breaches of any of the terms and conditions of the said

Contract and the extent of loss, damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by the Employer on account thereof and the decision of the Employer that the said Contractor has committed such breach or breaches and as to the amount or amounts of loss, damage, costs, charges and expenses caused to or suffered by the Employer from time to time shall be final and binding on us.

3. The Employer shall be at liberty without reference to the Bank and without affecting the full liability of the Bank hereunder to take any other Security in respect of the Contractor's obligations and liabilities hereunder or to vary the Contract or the work to be done there under vis-a-vis the Contractor or to grant time or indulgence to the Contractor or to reduce or to increase or otherwise vary the prices of the total Contract value or to release or to forbear from enforcement of all or any of the Security and/or any other Security(ies) now or hereafter held by The Employer and no such dealing(s) reduction(s) increase(s) or other indulgence(s) or arrangements with the Contractor or release or forbearance whatsoever shall absolve the bank of the full liability to the Employer hereunder or prejudice the rights of the Employer against the bank.
4. This guarantee shall not be determined or affected by the liquidation or winding up, dissolution, or change of constitution or insolvency of the Contractor but shall in all respects and for all purposes be binding and operative until payment of all monies payable to the Employer in terms thereof.
5. The bank hereby waives all rights at any time inconsistent with the terms of this guarantee and the obligations of the Bank in terms hereof shall not be anywise affected or suspended by reason of any dispute or disputes having been raised by the Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to the Employer in terms hereof.
6. The amount stated in any notice of demand addressed by the Employer to the Bank as liable to be paid to the Employer by the Contractor or as suffered or incurred by the Employer on account of any losses or damages or costs, charges and/or expenses shall be conclusive evidence of the amount so liable to be paid to the Employer or suffered or incurred by the Employer as the case may be and shall be payable by the Bank to The Employer in terms hereof.

7. This guarantee shall be a continuing guarantee and shall remain valid and irrevocable for all claims of the Employer and liabilities of the Contractor arising upto and until midnight of _____.
8. This guarantee shall be in addition to any other guarantee or Security whatsoever that the Employer may now or at any time anywise may have in relation to the Contractor's obligations/or liabilities under and/or in connection with the said Contract, and the Employer shall have full authority to have recourse to or enforce this Security in preference to any other guarantee or Security which the Employer may have or obtain and no forbearance on the part of the Employer in enforcing or requiring enforcement of any other Security shall have the effect of releasing the Bank from its full liability hereunder.
9. It shall not be necessary for the Employer to proceed against the said Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding that any Security which The Employer may have obtained or obtain from the Contractor shall at the time when proceedings are taken against the said bank hereunder be outstanding or unrealised.
10. We, the said Bank undertake not to revoke this guarantee during its currency except with the consent of the Employer in writing and agree that any change in the constitution of the said Contractor or the said bank shall not discharge our liability hereunder.
11. We _____ the said Bank further that we shall pay forthwith the amount stated in the notice of demand notwithstanding any dispute/difference pending between the parties before the arbitrator and/or that any dispute is being referred to arbitration.
12. Notwithstanding anything contained herein above, our liability under this guarantee shall be restricted to Rs. _____ (Rupees _____) and this guarantee shall remain in force till _____ and unless a claim is made on us within 3 months from that date, that is before _____ all the claims under this guarantee shall be forfeited and we shall be relieved of and discharged from our liabilities there under.

Dated _____ day of _____ 20

For and on behalf of Bank.

Issued under seal :

PROFORMA FOR BID SECURITY BANK GUARANTEE

(To cover payment of Bid Security and Conditions of Contract)

(On a stamp paper of appropriate value from any Nationalised Bank or Scheduled Bank)

To

M/s HSCC (India) Ltd.,
Plot No. 6(A), Block E, Sector 1,
NOIDA - 201 301.

Dear Sir,

In consideration of your agreeing to accept Bank Guarantee for Rs.

.....
(Rupees) in
lieu of payment from M/s
having its /their registered office at

.....
(hereinafter called the Bidder) towards Bid Security in respect of your Tender no.

.....
..... calling for Tender for

.....
at and for due fulfilment of the terms and
conditions of the said Tender, we hereby undertake and agree to indemnify and
keep you indemnified to the extent of Rs (Rupees
.....
.....).

In the event of any loss or damages, costs, charges or expenses caused to or
suffered by you by reason of any breach or non observance on the part of the
Bidder of any terms and conditions of the said Tender, we shall on demand and
without cavil or argument, and without reference to the Bidder, irrevocably and
unconditionally pay you in full satisfaction of your demand the amounts claimed
by you, provided that our liability under this guarantee shall not at any time
exceed Rs

(Rupees).
This guarantee herein contained shall remain in full force and till you finalise the
Tender and select the Tender as per your choice and it shall in the event of the
said Bidder being selected and entrusted with the said work, continue to be
enforceable till the said Bidder executes the Agreement with you and
commences the work as stipulated under the terms and conditions of the said
Tender have been fully and properly carried out by the said Bidder and
accordingly discharges the guarantee.

We also agree that your decision as to whether the Bidder has committed any
breach or non observance of the terms and conditions of the said Tender shall be
final and binding on us.

We under take to pay the Consultant any money so demanded by the Consultant notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceedings pending before any Court or Tribunal relating thereto, our liability under this present being absolute and equivocal.

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 a payment.

This guarantee shall continue to be in full force and effect for a period of 180 days from the date of submission of Bid.

We shall not revoke this guarantee during its currency except with your previous consent in writing. This guarantee shall not be affected by any change in Constitution of our bank or of the Bidder firm. Your neglect or forbearance in the enforcement of the payment of any money, the payment whereof is intended to be hereby secured or the giving of time for the payment hereto shall in no way relieve us our liability under this guarantee.

Dated this day of

Yours faithfully,

For

Signature & seal of the Bank (Authorised Signatory)

ANNEXURE – D

APPENDIX TO TENDER

Important Clause	Clause No.	Volume	Remarks
Amount of Performance Security	10.1	I	5% of the Contract Price
Minimum amount of third party Insurance	23.2	I	Rs. 500000=00 for Any incident, no. of incidents Unlimited.
Amount of Liquidated damages	47.1	I	0.5% of Contract price per week of delay
Limit of Liquidated Damages	47.1	I	5% of Contract Price
Defect Liability Period	49.1	I	12 Months
Percentage of Retention	33 (g)	II	5% of Contract Price
Programme of work and updated progress reports	39.6	III	Programme updated monthly, progress reported weekly
Time of Completion	43.1 / 1.4	II / III	Within Twelve calendar month
Mobilization Advance	60.7/33 (a) (b), (C), (g)	II/III	5% of Contract Value.

ANNEXURE - E

PROFORMA FOR RETENTION MONEY BANK GUARANTEE
(On a stamp paper of appropriate value from any Nationalised Bank or
Scheduled Bank)

To,

M/s HSCC (INDIA) Ltd.,
Plot No. 6(A), Block E, Sector 1,
NOIDA - 201 301.

Dear Sir,

In consideration of *National Research Centre on Equines (NRCE), Hisar-Haryana* for the *Construction, testing, commissioning and, validation of Bio-safety level 3 (BSL-3) Laboratory & associated works on "Turnkey Basis" at National Research Centre on Equines (NRCE), Hisar- Haryana in compliance with CDC, USA guidelines as minimum and its maintenance during the defect liability period* which expression shall include his successor and assigns represented by his Consultant M/s. HSCC (INDIA) Ltd., Plot - 6 (A), Block - E, Sector - I, Noida, Uttar Pradesh - 201 301 (hereinafter called HSCC) having awarded to _____ (hereinafter referred to as the said Contractor or 'Contractor' which expression shall wherever the subject or context so permits include its successors and assigns) and the General Conditions of Contract and upon the condition of the contractor's furnishing guarantee for the retention of the contractor's obligations and discharge of the contractor's liability under and in connection with the said contract upto a sum of Rs. _____ (Rupees _____ only) amounting to 2.5% of the total contract value.

1. We, _____ (hereinafter called 'The Bank' which expression shall include its successors and assigns) having its branch office at _____ (a Company under the provisions of the Companies Act 1913 hereby jointly and severally undertake to guarantee the payment to the Employer in rupees forthwith on demand in writing and without protest or demur or any and all moneys anywise payable by the contractor to the Employer under in respect of or in connection with the said contract inclusive of all the Employer's losses and damages and costs, (inclusive between attorney and client) charges and expenses and other moneys anywise payable in respect of the above as specified in any notice of demand made by the Employer to the Bank with reference to this guarantee upto an aggregate limit of _____ Rs. _____ (Rupees _____ only).
2. We _____ Bank Ltd. further agree that The Employer shall be sole judge of and as to whether the said contractor has committed any breach or breaches of any of the terms and conditions of the said contract and the extent of loss, damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by

The Employer/HSCC on account thereof and the decision of The Employer that the said Contractor has committed such breach or breaches and as to the amount or amounts of loss, damage, costs, charges and expenses caused to or suffered by The Employer from time to time shall be final and binding on us.

3. The Employer shall be at liberty without reference to the Bank and without affecting the full liability of the Bank hereunder to take any other security in respect of the Contractor's obligations and liabilities hereunder or to vary the contract or the work to be done thereunder vis-a-vis the Contractor or to grant time or indulgence to the Contractor or to reduce or to increase or otherwise vary the prices of the total contract value or to release or to forbear from enforcement of all or any of the security and/or any other security(ies) now or hereafter held by The Employer and no such dealing(s) reduction(s) increase(s) or other indulgence(s) or arrangements with the Contractor or release or forbearance whatsoever shall absolve the bank of the full liability to The Employer hereunder or prejudice the rights of The Employer against the bank.
4. This guarantee shall not be determined or affected by the liquidation or winding up, dissolution, or change of constitution or insolvency of the Contractor but shall in all respects and for all purposes be binding and operative until payment of all monies payable to The Employer in terms thereof.
5. The bank hereby waives all rights at any time inconsistent with the terms of this guarantee and the obligations of the Bank in terms hereof shall not be anywise affected or suspended by reason of any dispute or disputes having been raised by the Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to The Employer in terms hereof.
6. The amount stated in any notice of demand addressed by The Employer to the Bank as liable to be paid to The Employer by the Contractor or as suffered or incurred by The Employer on account of any losses or damages or costs, charges and/or expenses shall be conclusive evidence of the amount so liable to be paid to The Employer or suffered or incurred by The Employer as the case may be and shall be payable by the Bank to The Employer in terms hereof.
7. This guarantee shall be a continuing guarantee and shall remain valid and irrevocable for all claims of The Employer and liabilities of the contractor arising upto and until midnight of _____.
8. This guarantee shall be in addition to any other guarantee or security whatsoever that The Employer may now or at any time anywise may have in relation to the Contractor's obligations/or liabilities under and/or in connection with the said contract, and The Employer shall have full authority to have recourse to or enforce this security in preference to any other guarantee or security which The Employer may have or obtain and no forbearance on the part of The Employer in enforcing or requiring enforcement of any other security shall have the effect of releasing the Bank from its full liability hereunder.
9. It shall not be necessary for The Employer to proceed against the said Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding that any

security which The Employer may have obtained or obtain from the contractor shall at the time when proceedings are taken against the said bank hereunder be outstanding or unrealised.

10. We, the said Bank undertake not to revoke this guarantee during its currency except with the consent of The Employer in writing and agree that any change in the constitution of the said contractor or the said bank shall not discharge our liability hereunder.
11. We _____ the said Bank further that we shall pay forthwith the amount stated in the notice of demand notwithstanding any dispute/difference pending between the parties before the arbitrator and/or that any dispute is being referred to arbitration.
1. Notwithstanding anything contained herein above, our liability under this guarantee shall be restricted to Rs. _____ (Rupees _____) and this guarantee shall remain in force till _____ and unless a claim is made on us within 3 months from that date, that is before _____ all the claims under this guarantee shall be forfeited and we shall be relieved of and discharged from our liabilities thereunder.

Notwithstanding anything contained herein,

- a) Our liability under this bank guarantee shall not exceed Rs. _____ (Rupees _____).
- b) This bank guarantee shall be valid up to _____
- c) We are liable to pay the guarantee amount or any part thereof under the Bank Guarantee only & only if you serve upon us as a written claim or demand on or before _____.

Dated _____ day of _____ 20

For and on behalf of Bank.

Issued
under
seal :

ANNEXURE - F

PROFORMA FOR ADVANCE BANK GUARANTEE

(On a stamp paper of appropriate value from any Nationalised Bank or Scheduled Bank)

To

M/s HSCC (India) Ltd.,
Plot No. 6(A), Block E, Sector 1,
NOIDA - 201 301..

Dear Sir,

1. In consideration of the
(hereinafter called as The Consultant) having agreed under the terms & conditions of Contract No. _____ dated _____
(hereinafter called the Contract or the said Contract) to make at the request of ("the Contractor" or "the said Contractor") the Contractor thereunder a lumpsum advance of Rs. _____ for utilising it for the purposes of the said Contract on its furnishing a guarantee acceptable to HSCC.
2. We, the _____ Bank having its branch office at _____
(hereinafter referred to as the Bank or the said Bank) a Company under the Companies Act 1956 and having our registered office at _____ do hereby guarantee the repayment and recovery of the said advance together with interest thereon as provided according to the terms and conditions of the said Contract. If the Contractor fails to utilise the said advance for the purposes of the said Contract and/or the said advance together with interest thereon as aforesaid is not fully recovered by The Consultant, we _____ Bank hereby unconditionally and irrevocably undertake to pay to the Consultant on demand and without demur or protest to the extent of the said sum of Rs. _____ with interest any claim made by the Consultant on us against non-utilisation/misutilisation of the said advance and/or by reason of The Consultant not being able to recover in full the said sum of Rs. _____ with interest as aforesaid.
3. We, _____ Bank further agree that the Consultant shall be the sole judge of and as to whether the Contractor has utilised or not utilised the said advance or any part thereof for the purposes of the said Contract and/or as to whether the advance or any part thereof with interest has been recovered or not and the finding of the Consultant in this regard shall be final and binding on us.

4. We, the said Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract and till the said advance has been fully recovered and its claims satisfied or discharged and till The Consultant certifies that the said advance with interest has been fully recovered from the Contractor.
5. The Consultant shall have the fullest liberty without affecting in any way the liability of the said Bank under this guarantee or Indemnity from time to time to vary any of the terms and conditions of the said Contract or the advance or to extend time of performance by the Contractor or to postpone for any time and from time to time any of the powers exercisable by it against the said Contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said Contract or the advance or securities available to The Consultant and the said Bank shall not be released from its liability under these presents by any exercise by The Consultant of the liberty with reference to the matter aforesaid or by reason of time being given to the said Contractor/or any other forbearance, act or omission on the part of The Consultant or any indulgence by The Consultant to the said Contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the said Bank from its said liability.
6. The Bank hereby waives all rights at any time inconsistent with the terms of this Guarantee and the obligations of the Bank in terms hereof shall not be in any way affected or suspended by reason of any dispute or disputes having been raised by the Contractor (whether or not pending before any arbitrator, Tribunal or court) or any denial or liability by the Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to The Consultant in terms thereof.
7. The amount stated in any notice of demand addressed by The Consultant to the Bank as liable to be paid to The Consultant by the Contractor, shall be conclusive evidence of the amount so liable to be paid to The Consultant by the Bank.
8. This guarantee/undertaking shall be in addition to any other guarantee or Security whatsoever that The Consultant may now or any time may have in relation to the Contractor's obligations or liabilities under and/or in connection with the said Contract, and The Consultant shall have full authority to have recourse to or enforce this Security in preference to any other guarantee or Security which The Consultant may have or obtain and no forbearance on the part of The Consultant in enforcing or requiring enforcement of any other Security shall have the effect of releasing the Bank from its full liability hereunder.
9. It shall not be necessary for The Consultant to proceed against the said Contractor before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank notwithstanding that any Security which the Consultant may have obtained or obtain from the Contractor shall at the time when proceedings are taken against the said Bank hereunder be outstanding or unrealised.

10. We, _____ the said Bank undertake that we shall pay forthwith the amount stated in the notice of demand notwithstanding any dispute/difference pending between the parties before the arbitrator and/or that any dispute is being referred to arbitration.
11. We, the said Bank undertake not to revoke this guarantee during its currency except with the consent of The Consultant in writing and agree that any change in the Constitution of the said Contractor or the said Bank shall not discharge our liability hereunder.
12. This guarantee/undertaking shall be a continuing guarantee/undertaking and shall remain valid and irrevocable for all claims of The Consultant and liabilities of the Contractor arising upto and until midnight of _____.
13. Notwithstanding anything contained herein above, our liability under this guarantee shall be restricted to Rs. _____ alongwith interest due thereon (Rs. _____) with interest and this guarantee shall remain in full force till _____ and unless a claim is made on us within 3 months from the date i.e. before _____ all the claims under this guarantee shall be forfeited and we shall be relieved of and discharged from our liabilities hereunder.

Dated _____ day of _____ 20

for and on behalf of Bank

Issued under seal: