

ANNEXURE – XX

GENERAL CONDITIONS FOR ERECTION AND CIVIL AND STRUCTURAL WORKS

A. GENERAL CONDITIONS FOR ERECTION WORKS

1.0 GENERAL

- 1.1 The following shall supplement the conditions already contained in the other parts of the specifications and documents and shall govern that portion of the work of the Contract to be performed/undertaken at the project site.
- 1.2 The Contactor upon signing of the Contract shall, in addition to a Project Coordinator, nominate another responsible officer as its representative at site suitably designated for the purposes of overall responsibility and co-ordination of the Works to be performed at site. Such person shall function from the site office of the Contractor during the execution of Contract. This representative shall have full technical capability and complete administrative and financial powers to expeditiously and efficiently execute the work under the Contract.
- 1.3 The Contractor shall proceed with the work to be performed under the Contract and each and every part and detail thereof, in the best and most workman like manner by engaging qualified, diligent and efficient workers, and undertake the several parts thereof, at such time and in such order as agreed in the contract , and finish such work in strict conformity with the plans, drawings and/or specifications, and any changes, modifications or amplifications thereof made by the Purchaser/Consultant.
- 1.4 The Contractor shall not sell, assign, mortgage hypothecate or remove equipment or materials or materials which have been installed or which may be necessary for the completion of the Contract, without the written consent of the Purchaser.

2.0 REGULATIONS OF LOCAL AUTHORITIES AND STATUTES

- 2.1 The Contractor shall ensure compliance with all statutes, laws, rules and regulations of the Central or State Government or any other authority such as the Workmen's Compensation Act 1923, Payment of Wages Act, Minimum Wages Act 1948, Employees State Insurance Act, Employees Provident Fund Act, Contract Labour (Regulation) Act, Interstate Migrant Workmen Act, Building and other contract workers Act etc. and any and all statutory modifications thereof in connection with employees engaged by him or his Sub-Contractors in performance of the work.
- 2.2 The Contractor shall conform to the provisions of Indian Boiler Regulation, State Government Factory Laws, Indian Electricity Act and rules made there under, and any other acts of legislature relating to the work and to the regulations and bye-laws of any national or local authority and of any water, lighting and other companies and/or authorities with whose systems the plant/structure is proposed to be connected and shall before making any variations from the drawings or specifications that may be necessitated by so conforming, giving to the Purchaser/Consultant written notice, specifying the variations proposed to be made and the reason for making it any apply for instructions thereof.
- 2.3 The Contractor shall arrange to give all notices required by the said Acts, Regulations or Bye-laws to be given to any Authority or to any Public Officer and pay all fees that may be properly chargeable in respect of the works and lodge the receipts with the Purchaser/Consultant, unless otherwise, specified in the specification. Obtaining all permits and licenses required there upon is the responsibility of the Contractor.
- 2.4 All registration and statutory inspection fees, in respect of the work pursuant to the Contract shall be to the account of the Contractor. However, any registration, statutory inspection fees lawfully payable under the provisions of the Indian Boiler Regulations and any other statutory laws and its amendments from time to time during erection in respect of the plant and equipment ultimately to be owned by the Purchaser shall be to the account of the Purchaser. Should any such inspection or registration need to be re-arranged due to the fault of the Contractor or its Sub-Contractor, the additional fees for such inspection and/or registration shall be borne by the Contractor.

3.0 CONTRACTOR'S HEALTH AND SAFETY PROGRAM

Refer Technical specification and also Annexure-XIX of this Volume –IB for safety code.

4.0 PURCHASER'S LIEN ON EQUIPMENT

The Purchaser shall have lien on all equipment including those of the Contractor brought to the site for the purpose of erection, testing and commissioning of the plant. The Purchaser shall continue to hold the lien on all such equipment throughout the period of Contract. No material brought to the site shall be removed from the site by the Contractor and/or its Sub-Contractor's without the prior written approval of the Purchaser/ Consultant.

5.0 INSPECTION, TESTING AND INSPECTION CERTIFICATES

5.1 The provisions of the clause entitled Inspection, Testing and Inspection Certificates shall also be applicable to the erection portion of the works. The Purchaser / Consultant shall have the right to re-inspect any equipment (though previously inspected and approved by him, at the Contractor's works) before and after the same are erected at Site. Inspection will be carried out as per the approved QAP for shop manufactured items. After receipt of the materials / equipments at site, in case of doubt, the Purchaser may ask for re-inspection after mutual discussion and agreement with the contractor as per the approved QAP for the materials / equipment to perform as per the contract within the contract price. If by the above inspection, the Purchaser / Consultant rejects any equipment, the Contractor shall make good for such rejections either by replacement or modifications / repairs as may be necessary, to the satisfaction of the Purchaser / Consultant. Such replacements will also include the replacements or re-execution of such of those works of other Contractor's and/or agencies, which might have got damaged or affected by the replacements or re-work done to the Contractor's work.

5.2 Any work, which proves faulty, shall be corrected by the Contractor without undue delay. The fact that the Purchaser / Consultant or their representatives have not pointed out faulty work or that which is not in accordance with plans and

specifications, shall not relieve the Contractor from correcting such work as directed by the Purchaser / Consultant, without additional compensation.

5.2.1 In the event finished/completed work is 'dismantled' for the purpose of re-inspection due to damage (arising due to transportation and storage at site), in case of doubt, the Purchaser may ask for re-inspection after mutual discussion and agreement with the contractor as per the approved QAP for the materials / equipment to perform as per the contract within the contract price.

5.3 The Purchaser / Consultant, their representatives and employees shall, at all reasonable times, have free access to the works and/or to the workshops, factories or other places where materials are being prepared or constructed in performance of the Contract and also to any place where the materials are lying or from where they are being obtained, and the Contractor shall give every facility to the Purchaser / Consultant and his representatives for inspection and examination and test of the materials and workmanship even to the extent of discontinuing portions of the work temporarily, or of uncovering or taking down portions of finished work after mutual agreement.

6.0 ACCESS TO SITE AND WORKS ON SITE

6.1 Suitable access and possession of the site shall be provided to the Contractor by the Purchaser in reasonable time.

6.2 The Purchaser shall make ready the necessary foundations to be provided by it ready, as per the agreed schedule, for the execution of the individual phases of works.

6.3 In the execution of the works, no persons other than the Contractor or its duly appointed representative, Sub-Contractor and workmen shall be allowed to undertake work on the site, except by the special permission, in writing by the Purchaser / Consultant or its representative.

6.4 Access to the site at all times shall be accorded to the Purchaser / Consultant and other authorized officials and statutory Public Authorities. Nevertheless, the

Contractor shall not object to the execution of the work by other Contractors or tradesmen whose names shall have been previously communicated in writing to the Contractor by the Purchaser / Consultant and afford them to coordinate for the execution of their several functions simultaneously with his own.

7.0 CONTRACTOR'S SITE OFFICE ESTABLISHMENT

- 7.1 The Contractor shall establish a Site Office at the site and keep posted an authorized representative for the purposes of the Contract. Any written order or instruction of the Purchaser / Consultant or his duly authorized representative, shall be communicated to the authorized representative for the purposes of the Purchaser / Consultant or his duly authorized Contractor at the Site Office and the same shall be deemed to have been communicated to the Contractor at his legal address.
- 7.2 The Contractor shall employ at least one competent representative whose name or names shall have previously been communicated in writing to Purchaser/Consultant by the Contractor, to supervise the erection of the plant and to carry out the work. The said representative or if more than one shall be employed, then one of such representatives shall be present at the site during working hours, and any written orders or instructions which the Purchaser/Consultant may give to the said representatives of the Contractor shall be deemed to have been given to the Contractor. It is essential that the supervisory personnel shall be capable of speaking and writing in English language and preferably conversant with the local language – Hindi.

8.0 CO-OPERATION WITH OTHER CONTRACTORS

- 8.1 The Contractor shall cooperate with all other Contractors or tradesmen of the Purchaser, who may be performing other works on behalf of the Purchaser and the workmen who may be employed by the Purchaser and doing work in the vicinity of the works under the Contract. The Contractor shall also so arrange to perform its work as to minimize, to the extent possible, interference with the work of other Contractors and its workmen. Any injury or damage that may be sustained by the employees of the other Contractors and the Purchaser due to the Contractor's work shall promptly be made good at its own cost. The Purchaser/Consultant shall

determine the resolution of any difference or conflict that may arise between the Contractor and other Contractors or between the Contractor and the Workmen of the Purchaser in regard to their work.

If the works of the contractor is delayed because of any acts or omissions of another contractor, the contractor shall have no claim against the Purchaser on that account.

- 8.2 The Purchaser/Consultant shall be notified promptly by the Contractor of any defects in the other Contractor's works that could affect the Contractor's works. The Purchaser/ Consultant shall determine the corrective measures, if any, required to rectify this situation after inspection of the works and such decisions by the Purchaser/Consultant shall be binding on the Contractor. If a part of the Contractor's work depends, for proper execution, upon the work of any other Contractor, the Contractor shall inspect and promptly report in writing to the Purchaser/Consultant any defect in such work of other Contractors that render it unsuitable for proper execution of the work under the Contract. Failure to so inspect and report shall constitute an acceptance of 'Others' work as fit and proper for the reception of his work, except as to defects which may develop in the work of 'Others' after the proper execution of the work. To ensure proper execution of his sub-subsequent work, the contractor shall inspect work already in place and shall at once report to the Purchaser/Consultant any discrepancy between the executed work and the drawings.

9.0 DISCIPLINE OF WORKMEN

The Contractor shall adhere to the disciplinary procedure set by the Purchaser/Consultant in respect of its employees and workmen at site. The Purchaser/Consultant shall be at liberty to object to the presence of any representative or employee of the Contractor at the site, if in the opinion of the Purchaser/Consultant such employee has misconduct himself or be incompetent or negligent or otherwise undesirable and then the Contractor shall remove such a person object to and provide in his place a competent replacement at his own expense.

10.0 CONTRACTOR'S FIELD OPERATION

- 10.1 The Contractor shall keep the Purchaser/Consultant informed in advance regarding his field activity plans and schedules for carrying out each part of the works. Any review of such plan or schedule or method of work by the Purchaser/Consultant shall not relieve the Contractor of any of his responsibility towards the field activities. Such reviews shall also not be considered as an assumption of any risk or liability by the Purchaser/ Consultant or any of his representatives and no claim of the Contractor will be entertained because of the failure or inefficiency of any such plan or schedule or method of work reviewed. The Contractor shall be solely responsible for the safety, adequacy and efficiency of plant and equipment and his erection methods.
- 10.2 The Contractor shall have the complete responsibility for the conditions of the work site including the safety of all persons employed by him or its Sub-Contractor and all the properties under his custody during the performance of the work. This requirement shall apply continuously till the completion of his 'Contract' and shall not be limited to normal working hours. The construction review by the Purchaser/ Consultant is not intended to include review of Contractor's safety measures in, on or near the work-site, and their adequacy or otherwise.
- 10.3 The work so far as it is carried out on the Purchaser's premises/the project site, shall be carried out at such time as the Purchaser may approve consistent with the construction schedule and so as not to interfere unnecessarily with the conduct of the Purchaser's business and the Purchaser will give the Contractor all reasonable facilities for carrying out the work.

11.0 PHOTOGRAPHS AND PROGRESS REPORT

Refer relevant clause of Section-10 of Volume -IB, Draft Contract.

12.0 MANPOWER REPORT

- 12.1 The Contractor shall submit to Purchaser/Consultant on the first day of every month, a Manpower Report for the upcoming/next month, detailing the manpower scheduled/

proposed/ planned to be deployed for the month, skill-wise and area-wise.

- 12.2 The Contractor shall also submit to the Purchaser/Consultant on the first day of every month, a manpower report of the previous month detailing the number of persons planned to have been deployed to that and actually deployed, skill-wise and the areas of employment of such labour.

13.0 PROTECTION OF WORK

- 13.1 The Contractor shall have total responsibility for protecting his works till it is finally accepted by the Purchaser/Consultant. No claim will be entertained by the Purchaser/ Consultant for any damage or loss to the Contractor's works and the Contractor shall be responsible for the complete restoration of the damaged works to its original condition to comply with the specifications and drawings. Should any such damage to the Contractor's works occur because of another party not under his supervision or control, the Contractor shall make and take-up its claim directly with the party concerned. If disagreement or conflict or dispute develops between the Contractor and the other party or parties concerned regarding the responsibility for damage to the Contractor's 'works' the same shall be resolved as per the provisions of above Clause-8 titled 'Cooperation with other Contractors'. The Contractor shall not cause any delay in the repair of such damaged 'Works' because of any delay in the resolution of such disputes. The Contractor shall proceed to repair the work immediately and no cause thereof will be assigned pending resolution of such dispute.
- 13.2 The Contractor and his Sub-Contractors shall be responsible, during execution, for protection of the work, which has been completed by Others. Necessary care shall be taken to see that no damage to the same is caused by its own personnel during the course of execution of their work
- 13.3 All other work completed or in progress as well as machinery and equipment that are liable to be damaged by the Contractor's work shall be protected by the Contractor and such protection shall remain and be maintained until its removal is directed by the Purchaser.

- 13.4 The Contractor shall effectively protect all the works from action of weather and from damages or defacement and shall cover finished parts where required for their thorough protection. Face work shall be perfectly clean and free from defects.
- 13.5 The work shall be carried out onto completion without damage to any work and property adjacent to the area of his work, to whomsoever it may belong, without interference with the operation of their existing machines or equipment.
- 13.6 The Contractor shall provide the necessary temporary roadways, footways, guards as may be rendered necessary by reason of his work, for the protection and accommodation of foot passengers of other traffic of the Purchaser or occupier of adjacent property and of public. The Contractor shall at the times provide sufficient temporary barriers, notice boards and lights to protect and warn the public and post necessary watchman to guard the site and equipment. He shall take all precautions necessary and shall be responsible for the safety of the work to be performed by him. The Contractor shall also observe and display Safety First signs and shall have proper safety and fire protection equipment.
- 13.7 Adequate lighting at and near all the storage, handling, fabrication, pre-assembly and erection sites for properly carrying out the work and for safety and security shall be provided by the Contractor. The Contractor's work area shall be adequately lighted during night time too. The Contractor should also engage adequate electricians/wiremen, helpers, etc., to carry out and maintain these lighting facilities. If the Contractor fails to provide all the above listed facilities, the Purchaser may provide such facilities as it may deem necessary and charge the cost thereof to the Contractor. In any case the Contractor shall be liable for any damages and consequences arising out of its neglect in this regard.

14.0 EMPLOYMENT OF LABOUR

- 14.1 The Contractor/Sub-Contractors is expected to employ on the work skilled employees with experience of his particular work. No person below the age of eighteen years shall be employed.



- 14.2 The Contractor shall furnish details of the qualifications and experience of his senior supervisors and Consultants assigned to the work, including their experience in supervising erection and commissioning of plant and equipment of comparable capacity.
- 14.3 All travelling expenses including provisions of all necessary transport to and from site, loading allowances and other payments to the Contractor's employees shall be the sole responsibility of the Contractor.
- 14.4 The hours of work on the site shall be decided by the Purchaser and the Contractor shall adhere to it. Working hours for each employee will normally be 8 (eight) hours per day.
- 14.5 The Contractor's employees shall wear suitable identification badges while on work at site clearly indicating his name, designation, Employer etc., among other essential details.
- 14.6 The Contractor shall ensure that it pays its personnel/workmen regular wages, overtime and other compensations. The attendance register and the wage register shall be submitted to the Purchaser for verification at regular intervals. The Contractor shall also furnish the Purchaser at fortnightly intervals a certificate that he has paid all the dues to his workmen. In case such payment is not made regularly by the Contractor, the Purchaser will be in his right to make such payments and deduct the same from the Contractor's progress payments.
- 14.7 In case the Purchaser becomes liable to pay any wages or dues to the labour or to any Government agency under any of the provisions of the Minimum Wages Act, Workmen's Compensation Act or any other law due to act of omission of the Contractor, the Purchaser may make such payments and shall recover the same from the Contractor's bills.
- 14.8 None of the Contractor's superintendents, supervisors, Consultants or labour may be withdrawn from the work without due notice being given to the Purchaser/Consultant. Further, no such withdrawal shall be made if, in the opinion of the Purchaser/Consultant, it will jeopardize the required pace of progress and/or the

successful completion of the work.

- 14.9 In connection with the performance of work under this Contract, the Contractor shall not discriminate on the basis of race, religion, colour or national origin. It is also expected that the Contractor in his selection of personnel will give due regard to their ability to co-operate with the Purchaser/Consultant. Suggestions and recommendations made by the Purchaser/Consultant relating to the work and coordination thereof are to be carefully and courteously considered.

15.0 FACILITIES TO BE PROVIDED BY THE PURCHASER

~~15.1 Space~~

~~Refer Section 2 of this Volume-IB, Draft Contract~~

~~15.2 Electricity~~

~~Refer Section 2 of this Volume-IB, Draft Contract~~

~~15.3 Water~~

~~Refer Section 2 of this Volume-IB, Draft Contract~~

~~15.4 Construction Tools and Equipment~~

~~Refer Section 2 of this Volume-IB, Draft Contract~~

16.0 FACILITIES TO BE PROVIDED BY THE CONTRACTOR (Refer Section-2 of Volume-IB)

16.1 Tools, Tackles and Scaffoldings

- 16.1.1 The Contractor shall provide at its own cost & expense, all the construction equipment, false work, erection tools, machine tools, power tools, tackles, hoists, cranes, derricks, cables, slings, skids, scaffolding work benches, tools for rigging,

cribbing and blocking, welding machines preheating and stress relieving equipment, X-ray and all associated protective equipment, instruments, appliances, materials, and supplies required for unloading, transporting, storing, erection, testing and commissioning that may be required to accomplish the work under the Contract unless otherwise specifically provided for. Adequacy of such tools will be subject to final determination of the Purchaser/Consultant. He shall submit a list of all such materials to the Purchaser / Consultant before the commencement of pre-assembly at site. These tools and tackles shall not be removed from the site without the written permission of the Purchaser/ Consultant.

16.1.2 The Contractor shall also furnish all necessary expandable devices like anchors, grinding and abrasive wheels, raw plugs, hacksaw blades, taps, dies, drills, reamers, chisels, files, carborundum stones, oil stones, wire brushes, necessary scaffolding, ladders, wooden planks, timbers, sleepers and consumable material like welding electrodes, oxygen, acetylene, argon, lubricating oils, greases, cleaning fluids, cylinder oil, graphite powder and flakes, fasteners, gaskets, temporary supports, stainless steel shims of various thickness as required, cotton waste, cheese cloth and all other miscellaneous supplies of every kind required for carrying out the work under the 'Contract'.

16.1.3 The Contractor shall provide all reasonable facilities including tools, personnel, etc. and ensure coordination with the Purchaser / Consultant and the sub-Contractor's erection supervisors to enable them to carry out all supervision, measurements, checks, etc. in a satisfactory manner.

16.1.4 The Contractor shall not dispose of, transport or withdraw any tools, tackles, equipment and material provided by him for the 'Contract' without taking prior written approval from the Purchaser/Consultant, and the Purchaser/Consultant at all times shall have right to refuse permission for disposal, transport or withdrawal of tools, tackles, equipment and material if, in his opinion, the same will adversely affect the efficient and expeditious completion of the 'Project'.

16.2 Communication

The Contractor will make its own arrangement for all his communication needs such

as telephone, email etc. at its Site Office. The Purchaser will assist or facilitate the Contractor in obtaining the above facilities, if requested.

16.3 First-Aid

The Contractor shall provide necessary first-aid facilities for all its employees, representatives and workmen at the site.

16.4 Cleanliness

16.4.1 The Contractor shall be responsible for proper house-keeping the entire area allotted to him, clean and free from rubbish, debris etc. during the period of 'Contract'. The Contractor shall employ sufficient number of special personnel to thoroughly clean his work area at least once in a day. All rubbish and scrap material shall be identified, stacked or disposed in a place to be identified by the Purchaser / Consultant. Materials and stores shall be so arranged to permit easy cleaning and upkeep. In areas where equipment might drip oil and cause damage to the floor surface, a suitable protective cover of a flame resistant, oil-proof sheet shall be provided to protect the floor from such damage.

16.4.2 Similarly, the offices of the Contractor shall be kept clean and neat to the satisfaction of the Purchaser/Consultant. Proper sanitary arrangements shall be provided by the Contractor in the work areas and offices of the Contractor.

17.0 LINES AND GRADES

17.1 All the works shall be performed to the lines, grades and elevations indicated on the drawings. The Contractor shall be responsible to locate and layout the works. Basic horizontal and vertical control points will be established and marked by the Purchaser/Consultant at site at suitable points. These points shall be used as datum for the 'Works' under the Contract. The Contractor shall inform the Purchaser / Consultant well in advance of the times and places at which he wishes to do work in the area allotted to him, so that suitable datum points may be established and checked by the Purchaser / Consultant to enable the Contractor to proceed with its works. Any work done without being properly located may be removed and/or

dismantled by the purchaser/ Consultant at Contractor's expense.

17.2 Where the Purchaser/Consultant had already established the base lines and bench marks adjacent to the various sections of work, the same must be carefully preserved by the contractor, and in case of their unnecessary destruction by him or any of his employees, these will be re-established by the Purchaser/Consultant at the Contractor's expense.

17.3 The Contractor shall be responsible for the accuracy of all dimensions within the various sections of the work according to the figures of dimensions in the drawings.

~~18.0 FIRE PROTECTION – NOT APPLICABLE~~

~~19.0 SECURITY~~

~~Refer Section 2, Cl 2.3.4 (iii) of this Volume IB, Draft Contract~~

20.0 CONTRACTOR'S AREA LIMITS

The Purchaser/Consultant will clearly demarcate the boundary limits of access roads, parking, spaces, storage and construction areas and the Contractor shall not trespass areas not so marked out for him. The Contractor shall be responsible to ensure that none of its personnel move out of the areas marked out for its operations. In case of such a need for the Contractor's personnel to work out of the areas marked out for him, the same shall be done only with the written permission of the Purchaser/Consultant.

21.0 CONTRACTOR'S COOPERATION WITH THE PURCHASER

21.1 In cases where the performance of the erection work by the Contractor affects the operation of the system facilities of the Purchaser/Consultant such erection work of the Contractor shall be planned to be performed only in the manner stipulated by the Purchaser/ Consultant and the same shall be acceptable at all times to the Purchaser/ Consultant. The Purchaser/ Consultant may impose such restrictions on the facilities provided to the Contractor such as electricity, water etc. as he may think

fit in the interest of the Purchaser and the Contractor shall strictly adhere to such restrictions and co-operate with the Purchaser/ Consultant. It will be the responsibility of the Contractor to provide all necessary temporary instrumentation and other measuring devices required during start-up and operation of the equipment systems, which are erected by him. The Contractor shall also be responsible for flushing and initial filling of all the oil and lubricants required for the equipment furnished and erected by him, so as to make such equipment ready for operation. The Contractor shall be responsible for supplying such flushing oil and other lubricants unless otherwise specified elsewhere in these documents.

21.2 The Contractor at all times shall work in coordination with the Purchaser's Consultants and offer them all reasonable facilities to become familiar with the erection, operation and maintenance of the equipment.

21.3 In respect of observations of local rules, administrative orders, working hours and the like, the Contractor and his personnel shall cooperate with the Purchaser.

22.0 COMMISSIONING

The 'Commissioning' of the equipment supplied and erected by the Contractor shall be the responsibility of the Contractor as detailed in Tender specification. The Contractor shall provide in addition, test instruments, calibrating devices etc. and the labour required for the successful performance of these tests. If it is anticipated that the above tests may prolong for a long time, the Contractor's workmen required for the above tests shall always be present at site during such tests.

23.0 MATERIAL HANDLING AND STORAGE

23.1 All the equipment furnished under the Contract and arriving at site shall be promptly received, unloaded and transported and stored in the storage spaces by the Contractor.

23.2 The Contractor shall be responsible for examining all the shipment and notify the Purchaser/Consultant immediately of any damage, shortage, discrepancy etc. for the purpose of Purchaser's / Consultant's information only. The Contractor shall submit to

the Purchaser / Consultant every week a report detailing all the receipts during the week. However, the Contractor shall be solely responsible for any shortages or damage in transit, handling and/or in storage and erection of the equipment at the site (Any demurrage, wharfage and other such charges claimed by the transporters, railways etc. shall be to the account of the Contractor).

- 23.3 The Contractor shall maintain an accurate and exhaustive record detailing out the list of all equipment received by him for the purpose of erection and keep such record open for the inspection of the Purchaser/Consultant at any time.
- 23.4 All equipment shall be handled very carefully to prevent any damage or loss. No bare wire ropes, slings etc. shall be used for unloading and/or handling of the equipment without the specific written permission of the Purchaser/Consultant. The equipment stored shall be properly protected to prevent damage either to the equipment or to the floor where they are stored. The equipment from the store shall be moved to the actual location at the appropriate time so as to avoid damage for such equipment at site.
- 23.5 All electrical panels, control gears, motors and such other devices, shall be properly dried by heating before they are installed and energized. Motor bearings, slip rings, commutators and other exposed parts shall be protected against moisture ingress and corrosion during storage and periodically inspected. Heavy rotating parts in assembled condition shall be periodically rotated to prevent corrosion due to prolonged storage and shall also be periodically inspected.
- 23.6 All electrical equipment such as motors, generators etc. shall be tested for insulation resistance at least once in three months from the date of receipt till the date of commissioning and a record of such measured insulation values shall be maintained by the Contractor. Such records shall be open for inspection by the Purchaser/Consultant.
- 23.7 The Contractor shall ensure that all the packing materials, and protection devices used for the various equipment during transit and storage are removed before the equipment are installed.



- 23.8 The consumables and other supplies likely to deteriorate due to storage must be thoroughly protected and stored in a suitable manner to prevent damage or deterioration in quality by storage.
- 23.9 All the materials stored in the open or dusty locations must be covered with suitable weatherproof and flameproof and flame proof covering material wherever applicable.
- 23.10 If the materials belonging to the Contractor are stored in areas other than those earmarked for him, the Purchaser/Consultant will have the right to get it moved to the area earmarked for the Contractor at the Contractor's cost.
- 23.11 The Contractor shall be responsible for making suitable indoor storage facilities to store all equipment which require indoor storage. Normally all the electrical equipment, such as motors, control gears, generators, exciters and consumables like welding electrodes, lubricants, etc. shall be stored in the closed storage space. The Purchaser/Consultant in addition, may direct the Contractor to move certain other materials which in his opinion will require indoor storage, to indoor storage areas which the Contractor shall strictly comply with.
- 23.12 The Contractor shall arrange for periodic inspection of material/equipment in his custody until taken over by the Purchaser and shall carry out all protective and preservative measures required thereupon.
- 23.13 The Contractor shall also keep a check on the deliveries of the equipment/material covered in his scope of erection and shall advise the Purchaser well in advance regarding possible hold-ups in his work due to expected delays in delivery of equipment, to enable the Purchaser to expedite the deliveries if Supplier is different from the Contractor.
- 23.14 All materials of Contractors should be received only during normal working hours. Damage of any of the roads due to movement of heavy trucks, trailers, crane and other equipment of the Contractor shall be made good by the Contractor. Otherwise same shall be got rectified by the Purchaser at the risk and cost of the Contractor.

- 23.15 All C&I electronic equipment shall be stored in Air-conditioned storage facility under the specified temperature and humidity conditions.

24.0 CONSTRUCTION MANAGEMENT

- 24.1 The field activities of the Contractors working at site, will be coordinated by the Purchaser/Consultant and the Purchaser/ Consultant's decision shall be final in resolving any disputes or conflicts between the Contractor and other Contractors of the Purchaser regarding scheduling and co-ordination of work. Such decision by the Purchaser/ Consultant shall not be a cause for extra compensation or extension of time for the Contractor.
- 24.2 The Purchaser/Consultant shall hold weekly meetings of all the Contractor's working at site, at time and a place to be decided by the Purchaser/Consultant. The Contractor shall attend such meetings and take notes of discussions during the meeting and the decisions of the Purchaser / Consultant and shall strictly adhere to those decisions in performing his 'Works'. In addition to the above weekly meetings, the Purchaser / Consultant may call for other meetings either with individual Contractors or with selected number of Contractors and in such a case the Contractor, if called, will also attend such meetings.
- 24.3 Time is the essence of the 'Contract' and the Contractor shall be responsible for performance of its works in accordance with the specified construction schedule. If at any time, the Contractor is falling behind the schedule, he shall take necessary action to make good for such delays by increasing his work force or by working overtime or otherwise accelerate the progress of the work to comply with the schedule and shall communicate such action in writing to the Purchaser / Consultant satisfying that his action will compensate for the delay. The Contractor shall not be allowed any extra compensation for such action.
- 24.4 The Purchaser / Consultant shall however not be responsible for provision of additional labour and/or materials or supply or any other services to the Contractor except for the co-ordination work between various Contractors as set out earlier.

24.5 HINDRANCES

24.5.1 Events that caused hindrance to proceed and progress with the work shall be recorded daily and signed by the Construction Dept. and the Contractor. The Project Coordination Committee shall take these data for settling the issues.

A record of events shall be maintained by the contractor as under with the Signature of the Contractor and the Purchaser against each case.

HINDRANCE RECORD REGISTER

Name of work:				Value of Contract:			
Name of Contractor:				Scheduled date of Completion:			
Sl. No.	Description of Hindrance	Duration	Over lapping Period (if any)	Remedy	Delay by Contractor/ Purchaser	Signature of the	
						Contractor	Purchaser

24.5.2 The details on Battery limit and the date of release of front for various items of work may also be entered in the Register.

24.5.3 The details of Hindrance Register along with the relevant factors will be taken into consideration for determining extension of time to the contract /LD.

25.0 FIELD OFFICE RECORDS

25.1 The Contractor shall maintain at its site Office up-to-date copies of all drawings, specifications and other Contract Documents and any other supplementary data, complete with all the latest revisions thereto. The Contractor shall use only 'Approved-For Construction' drawings on the field, showing the approval stamp & category (Approval by Purchaser/ Consultant). The Contractor shall also maintain, in

addition, the continuous record of all changes, approval (by Purchaser/Consultant) status to the above Contract Documents, drawings, specifications, supplementary data, etc. effected at the field and on completion of his total assignment under the Contract shall incorporate all such changes on the drawings and other Consultant data to indicate as-built conditions of the equipment furnished and erected under the Contract. Such drawings and Engineering, data shall be submitted to the Purchaser / Consultant in required number of copies. A record of all readings taken during the alignment of the equipment shall be maintained by the Contractor. This shall be signed by the erection supervisor and the Purchaser/Consultant as a token of their acceptance of the same. All such records shall be handed over to the Purchaser on completion of the works.

26.0 CONTRACTOR'S MATERIAL BROUGHT TO SITE

- 26.1 The Contractor shall bring to site all equipment, components, parts, materials including construction equipment, tools and tackles for the purpose of the works under intimation to the Purchaser/Consultant. All such goods shall, from the time of their being brought vest in Purchaser, but may be used for the purpose of the works only and shall not on any account be removed or taken away by the Contractor without the written permission of the Purchaser/Consultant. But the Contractor shall nevertheless be solely liable and responsible for any loss or destruction thereof and damage thereto.
- 26.2 The Purchaser shall have a lien on such goods belonging to the Contractor for any sum or sums, which may at any time, be due or owing to him by the Contractor, under, in respect of or by reasons of the 'Contract'. After giving a 30 (thirty) days notice in writing of his intention to do so, the Purchaser shall be at liberty to sell and dispose of any such goods, in such manner as he shall think fit including public auction or private treaty and to apply the proceeds in or towards the satisfaction of such sum or sums due as aforesaid.
- 26.3 After the completion of the works, the Contractor shall remove from the site under the direction of the Purchaser/Consultant the materials such as construction equipment, erection tools and tackles, scaffolding, etc. with the written permission of the Purchaser / Consultant. If the Contractor fails to remove such materials, within 30

(thirty) days of issue of a notice by the Purchaser/Consultant to do so, then the Purchaser/Consultant shall have the liberty to dispose of such materials as detailed under Clause 16.4 above and credit the proceeds to the account of the Contractor.

- 26.4 On completion of the work, all rubbish, kilns, vats, tanks materials and temporary structures of any sort or kind used for the purpose or connected with the construction/erection work are to be removed by the Contractor and all pits and excavations filled up and the site handed over in a tidy and workmanlike condition to the original graded level and no final payment or settlement of the account for the said work shall held or due shall be made to the Contractor till such site clearance shall have been effected by him and such clearance shall be made by the Purchaser at the expense of the Contractor in the event of his failure to comply with this provision within 7 (seven) days after receiving notice in writing from the Purchaser to that effect. If it becomes necessary for the Purchaser to have the site cleared as indicated above at the expense of the Contractor, the Purchaser shall under no circumstances be held liable for any losses of damages to such of Contractors property as may be on such site due to such removal there from, which removal may be effected by means of public sale of such materials and property in such a way as deemed fit and convenient to the Purchaser.
- 26.5 The Contractor must take sufficient care in moving his construction/erection plant and equipment from one place to another so that they may not cause any damage to the property of the Purchaser, particularly of the existing structures and overhead and underground services and in the event of the Contractors failure to do so, the cost of such damages shall be borne by the Contractor.

27.0 PROTECTION OF PROPERTY AND CONTRACTOR'S LIABILITY

- 27.1 The Contractor shall be responsible for any damage resulting from his operations. He shall also be responsible for protection of all persons including members of public and employees of the Purchaser and the Purchaser/Consultant and the employees of other Contractors and Sub-Contractors and all public and private property including structures, buildings, other plants and equipment and utilities either above or below the ground.

27.2 The Contractor will ensure provision of necessary safety equipment such as barriers, signboards, warning lights and alarms, etc. to provide adequate protection to persons and property. The Contractor shall be responsible to give reasonable notice to the Purchaser/Consultant and the Owner of public or private property and utilities when such property and utilities are likely to get damaged or injured during the performance of his 'Works' and shall make all necessary arrangements with such owners, related to removal and/or replacement or protection of such property and utilities.

28.0 PAINTING

All exposed metal parts of the equipment including piping, structures, railings, etc. after installation, unless otherwise surface protected, shall be first painted with at least one coat of suitable primer which matches the shop primer paint used, after thoroughly cleaning all such parts of all dirt, rust, scales, greases, oils and other foreign materials by wire brushing, scraping or sand blasting, and the same being inspected and approved by the Purchaser for painting. Afterwards, the above parts shall be finished with paints as specified in the technical specification. The quality of the finish paint shall be as per the standards of ISI or equivalent and to be of the colour as approved by the Purchaser/Consultant.

~~29.0 INSURANCE~~

~~Refer Clause Insurance under Section 10 of Volume IB~~

30.0 UNFAVOURABLE WORKING CONDITIONS

The Contractor shall confine all his field operations to those works which can be performed without subjecting the equipment and materials to adverse effects, during inclement weather conditions, like monsoon, storms, etc. and during other unfavorable construction conditions. No field activities shall be performed by the Contractor under conditions which might adversely affect the quality and efficiency thereof, unless special precautions or measures are taken by the Contractor in a proper and satisfactory manner in the performance of such works and with the

concurrence of the Purchaser/Consultant. Such unfavorable construction conditions will in no way relieve the Contractor of his responsibility to perform the 'Works' as per the schedule.

31.0 PROTECTION OF MONUMENTS AND REFERENCE POINTS

- 31.1 The Contractor shall ensure that any finds such as relic, antiquity, coins, fossils, etc. which he may come across during the course of performance of 'Works' either during excavation or elsewhere are properly protected and handed over to the Purchaser/Consultant. Contractor will be entitled for extension of time and cost compensation in case any work performed in relation to the monument, relic, coins, fossils under this provision.
- 31.2 Similarly the Contractor shall ensure that the bench marks, reference points, etc., which are marked out either with the help of Purchaser/Consultant or by the Purchaser/Consultant shall not be disturbed in any way during the performance of his 'Works'. If any work is to be performed which may disturb such references, the same shall be done only after these are transferred to other suitable locations under the direction of the Purchaser/Consultant. The Contractor shall provide all necessary materials and assistance for such relocation of reference points, etc.

31 WORK & SAFETY REGULATIONS

Refer Technical Specification and also Annexure-XIX of this Volume- IB, Draft Contract.

32 ELECTRICAL SAFETY REGULATIONS

Refer Technical Specification and also Annexure-XIX of this Volume -IB, Draft Contract.

33 FOREIGN PERSONNEL

Refer Section-7 of this Volume-IB, Draft Contract.

34 PURCHASER'S INSTRUCTIONS

The Purchaser/Consultant may, in his absolute discretion, from time to time, issue further drawings and/or written instructions, details, directions and explanations, which are collectively referred to as “Purchaser’s Instructions”, in regard to :

- 1) Any additional drawings and explanations to exhibit or illustrate details.
- 2) The variation or modification of the design, quality or quantity of work or the additions or omission or substitution of any work.
- 3) Any discrepancy in the drawings or between the Schedule of Quantities and/or specification.
- 4) The removal from the site of any materials brought thereon by the Contractor and the substitution of other materials thereof.
- 5) The removal and/or re-execution of any work executed by the Contractor.
- 6) The dismissal from the work of any persons employed thereupon.
- 7) The opening up for inspection of any work covered up.
- 8) The amending and making good of any defects.
- 9) The Contractor shall comply with and duly execute any work covered in such ‘Purchaser’s Instructions’ provided always that verbal instructions, directions, and explanations given to the Contractor or his foreman upon the work by the Purchaser/ Consultant shall, if involving a variation, be confirmed in writing by the Purchaser/ Consultant within 7 (seven) days.
- 10) If compliance with the ‘Purchaser’s Instructions’ as aforesaid involves work and scope beyond that contemplated by the ‘Contract’, unless the same were issued owing to some breach of this ‘Contract’ by the Contractor, the Purchaser shall pay to the Contractor the price of the said work as hereinafter provided.

- 11) If the Contractor after receipt of written notice from the Purchaser/Consultant requiring compliance, with such further drawings and/or 'Purchaser's Instructions' fails to comply with the same within 15 (fifteen) days the Purchaser may employ and pay other agencies to execute any such work whatsoever, as may be necessary to give effect thereto, and all costs incurred in connections therewith shall be recoverable from the Contractor by the Purchaser on a certificate by the Consultant as a debt or may be deducted by the Purchaser from any money that may become due to the Contractor.

35 RIGHTS OF THE PURCHASER/CONSULTANT

35.2 Right to Illustrate and Explain Plans

35.2.1 The various parts of the 'Contract' are intended to be complementary to each other but should any discrepancy appear or any misunderstanding arise as to the import of anything contained therein, the explanation of the Purchaser/Consultant shall be final and binding.

35.2.2 The correction of any errors or omissions of the Drawings and Specifications may be made by the Purchaser / Consultant, when such correction is necessary to bring out clearly the intention which is indicated by the reasonable interpretation of the Drawings and Specifications as a whole.

35.2.3 Whenever in the Specifications or on the Drawings which are a part of the 'Contract' or which may be furnished to the Contractor for directing this work, the terms and descriptions of various qualities of workmanship, material, structures, processes, plant or other features of the 'Contract' are described in general terms, the meaning or fulfilment of which must depend upon individual judgement, then in all such cases the question of fulfilment of such specifications or requirements shall be decided by the Purchaser / Consultant and said material shall be furnished, said work shall be done, and said structure, process, plant or feature shall be constructed, furnished or carried on in full and complete accordance with his interpretation of the same and to his full satisfaction and approval, provided such interpretation is not in direct conflict with the Drawings and Specifications and generally accepted good engineering

practice.

35.2.4 Details shown either on the Drawings or in the Specifications shall be done and furnished as if shown in both except where expressly except either in the Specifications or on the Drawings. Figured dimensions shall in all cases be taken in preference to scale measurements and detailed drawings consistent with general drawings shall be taken in preference to the general drawings of the same part of the work.

35.2.5 The contractor may, from time to time, prepare estimates of quantities or bills of materials required for the work. Copies of such estimates or bills of materials which may be given to the Purchaser/Consultant for his verification, or any lists, weights or quantities of materials or structures which may appear on the drawings may not be considered as finally correct, sufficiently complete or accurately covering any portion or all of the work to be done under the 'Contract'. Such bills or estimates may be carefully assembled and prepared but contractor is responsible for their accuracy.. They may not be accurate as to any particular details and are given only as the best information available at the time of issue of the information. It is understood that any such lists or estimates are furnished by the Contractor for his convenience only and not as lists or estimates of work to be done, and many necessary items of work might have been omitted but the contractor shall ensure the completion of the system successfully in all respects within the contract price.

35.2.6 Additional drawings and explanations to exhibit or illustrate details may be provided by the Purchaser / Consultant whenever necessary and if so provided, and if consistent with the Drawings and Specifications, it shall be binding upon the Contractor to take cognizance of the same. The written decision of the Purchaser / Consultant as to the true construction and meaning of the Drawings and Specifications and of such additional drawings and explanations shall be binding upon the Contractor.

35.3 Right to Direct Work

35.3.1 The Purchaser / Consultant shall have the right to direct the manner in which all work under this Contract shall be conducted, in so far as it may be necessary to secure the safe and proper progress and the specified quality of the work, and all work shall be

done and all material shall be furnished to the satisfaction and approval of the Purchaser / Consultant.

35.3.2 Whenever, in the opinion of the Purchaser / Consultant, the Contractor has made marked departures from the schedule of completion laid down in the Contract or when untoward circumstances force a departure from the said schedule, the Purchaser / Consultant, in order to assure the compliance with the schedule and the provisions of the 'Contract', shall direct the order, pace and method of conducting the work, which shall be adhered to by the Contractor.

35.3.3 If, in the judgement of the Purchaser / Consultant, it becomes necessary at any time to accelerate the overall plant erection work, the Contractor, when ordered and directed by the Purchaser / Consultant, shall cease work at any particular point and transfer his men to such other point or points, and execute such portion of his work, as may be required, to enable others to hasten and properly engage and carry on their work, all as directed by the Purchaser / Consultant.

35.3.4 Night work will be permitted only with prior approval of the Purchaser / Consultant. The Purchaser / Consultant may also direct the Contractor to operate extra shifts over and above normal day shift for the completion of 'Contract' on schedule if, in his opinion, such work is required.

35.4 Right to Order Modifications of Methods and Equipment

35.4.1 If at any time the Contractor's methods, materials or equipment appear to the Purchaser / Consultant to be unsafe, inefficient or inadequate for securing the safety of the workmen or the public, the quality of work or the rate of progress required, he may order the Contractor to ensure their safety and increase their efficiency and adequacy, and the Contractor shall promptly comply with such orders. If at any time, the Contractor's working force and equipment are in the opinion of the Purchaser / Consultant, inadequate for securing the necessary progress, as herein stipulated, the Contractor shall, if so directed, increase the working force and equipment to such an extent as to give reasonable assurance of compliance with the schedule of completion. The absence of such demands from the Purchaser / Consultant shall not relieve the Contractor of his obligations to secure the quality, the safe conducting of

the work, and the rate of progress required by the Contract, and the Contractor alone shall be and remain liable and responsible for the safety, efficiency and adequacy of his methods, materials, working force and equipment, irrespective of whether or not he makes any change as a result of any order or orders received from the Purchaser/Consultant.

35.5 Right to Perform

35.5.1 The Purchaser reserves the right to perform or have performed in and about the works during the time when the Contractor is performing his work hereunder, such other work as the Purchaser desires, and the Contractor shall make all reasonable effort to perform his work hereunder in such a manner as will enable such other work to be performed without hindrance and shall make no claim for damage against the Purchaser arising out of such other work to be performed against hindrance and shall make no claim for damage against the Purchaser arising out of such other work or interference there from. The Contractor shall work in harmony with such other Contractor's regardless of race, religion, colour or national origin and any dispute between Contractors shall be arbitrated by the Purchaser / Consultant.

36 MEASUREMENT OF WORK AND PROGRESS PAYMENTS

36.2 The Purchaser / Consultant may, from time to time, intimate the Contractor that he requires the works to be measured and the Contractor shall attend or send a qualified agent to assist the Purchaser / Consultant or its representative in taking such measurements and calculations and to furnish all particulars as may be required to effect the progressive payment as per the approved BBU.

36.3 Where the erection of equipment, vessels and structural steel is involved, the basis of such measurements and progress evaluation shall be weights specified in the shipping documents or invoices or drawings as decided by the Purchaser / Consultant. Should the Contractor not attend or neglect or omit to send such agents, then the measurement taken by the Purchaser / Consultant or approved by him shall be taken to be the correct measurements of the work. The Contractor or its Agent may, at the time of measurement, take such notes of measurements as it may deem fit.

- 36.4 When measurements are effected by conditions already established, the Contractor shall take field measurements notwithstanding scale or dimensions shown on the drawings.
- 36.5 The measurements so taken and certified correct by the Purchaser / Consultant shall be the basis for the progress payment to the Contractor. Where the break-up of 'Contract on unit basis Price' is difficult to arrive at, the Purchaser / Consultant and the Contractor shall work out at the commencement of the 'Contract', the weightages or the cost or the cost break-ups to arrive at a mutually agreeable basis for computation of the progress estimates.
- 36.6 To the value so arrived at on the basis of the Contractor's monthly progress evaluated, shall be added the amounts earned by the Contractor under supplemental Contracts and orders if any, till date of the progress estimate. From the total thus computed, all previous payments plus any amounts due to the Purchaser in accordance with the terms of this Contract shall be deducted. The remainder shall be paid by the Purchaser to the Contractor under Interim Certificates from the Consultant.
- 36.7 In case work is nearly suspended or in case only unimportant progress is being made, or in case it is apparent that Contractor is about to forfeit his 'Contract' or that the money yet due to him shall not complete his 'Contract', the Purchaser may at his discretion withhold any payment which may be due to the Contractor.
- 36.8 The Purchaser may withhold part or whole of any payment for erection claimed by the Contractor, which in opinion of the Purchaser, is necessary to protect himself from loss on account of :
- (a) Defective work not remedied or guarantees not met.
 - (b) Claims filed against the Contractor.
 - (c) Failure of the Contractor to make due payment for materials supplied or labor employed by him.

- (d) Damage to other Contractor's Purchaser's or Other's property.
- (e) Failure to meet the mutually agreed schedules.
- (f) When the grounds for withholding payments are removed, payments of the amount due to the Contractor shall be made by the Purchaser within a reasonable period.
- (g) The Contractor shall not demand nor be entitled to receive payment for the work of portion thereof, except in the manner set forth in this 'Contract' and only after the Purchaser / Consultant shall have given a certificate for such payment.

37 ADHERENCE TO MANUFACTURER'S INSTRUCTION

Adherence to instructions of the Manufacturer's supervisory Consultants is compulsory. The Contractor shall work under the guidance of the Manufacturer's supervisors to ensure that erection procedures adopted by the Contractor as well as completed erection of equipment is such as not to interfere with or prevent equipment from functioning as intended, as well as to the entire satisfaction of the Manufacturer's supervisor / Purchaser / Consultant. The Contractor shall also permit and provide all facilities for the Manufacturer's erection supervisors to carry out all checks that they may wish to, and approve any erection procedure and/or final setting and alignment of components, in order to satisfy themselves that erection has not been carried out as intended by them. This shall, however, in no way relieve the Contractor of his responsibility for providing adequate and competent supervision and quality workmanship.

38 MODIFICATIONS

The Contractor shall carry out all modifications at site as directed by the Purchaser / Consultant to complete the work covered in the Contract. It is the responsibility of the Contractor to get the prior approval for such modifications from the Purchaser / Consultant before such works are taken up. The Contractor shall also get the

estimates and the actual time sheets certified by the Purchaser/Consultant, and these certified time sheets will be the basis for processing his bills for such modification works which are required to be carried out for no fault of the Contractor.

39 DEFECTIVE WORK

If the work or any portion thereof shall be damaged in any way excepting by the acts of the Purchaser or if defects not readily detected by prior inspection shall develop before the final completion and acceptance of the whole work, the Contractor shall forthwith make good, without compensation, such damage or defects in a manner satisfactorily to the Purchaser / Consultant. In no case shall defective or imperfect work be retained.

40 WORK OF OTHERS

If any part of the Contractor's work depends, for proper execution, upon the work of any other Contractor, the Contractor shall inspect and promptly report in writing to the Purchaser / Consultant any defect in such work of other Contractors that render it unsuitable for proper execution of the work under the Contract. His failure to so inspect and report shall constitute an acceptance of the other Contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the work of other Contractors after the proper execution of the work. To ensure proper execution of his subsequent work, the Contractor shall inspect work already in place and shall at once report to the Purchaser / Consultant any discrepancy between the executed work and the drawings.

This clause comes into effect only in the case of interferences between the Contractor and Purchaser's other Contractors. In such a case the Purchaser / Consultant will discuss with all the parties concerned to reach a consensus in the overall interest of the Project.

B. GENERAL CONDITIONS FOR CIVIL & STRUCTURAL WORKS

- 1) The Contractor shall make its own arrangement for all labour, construction equipment, tools and tackles and construction materials. All temporary approach roads to the site for carrying out construction work shall be constructed and maintained by the Contractor at his own cost.
- 2) The Contractor shall take all necessary precautions to avoid damage to any property of the Purchaser or any third party. The Contractor shall also ensure that the progress of work of other Contractors in the adjoining areas is not hindered.
- 3) The Contractor shall take all precautions during execution, especially while excavating to avoid interference with or, damage to underground works, such as cables, pipe lines, drains etc. and provide all possible protection to these works and in case they are damaged, rebuild/divert them at his own cost.
- 4) The Contractor shall carry out necessary precision survey to set out and check the setting of all works including foundation & anchor bolts etc. to required tolerances using the grid reference points available in the plant site. The Contractor shall make and maintain proper bench mark and reference points and check lines and levels periodically.
- 5) Materials brought to the site shall not be removed from the site without the written consent of the Purchaser. The Contractor shall submit well in advance for approval, all samples and specimens as the Purchaser may demand from time to time. Any material brought to site and rejected by the Purchaser shall be removed by the Contractor from the site of work immediately within the time limit specified by the Purchaser. In case, a Contractor is not removing the rejected materials, the same will be removed by the Purchaser and cost there for shall be recovered from the bills of the Contractor.
- 6) The Purchaser may during the progress of work, order the removal of part or whole of the work executed, found not in accordance with the approved drawings/ specifications/ written instructions. No extra claims shall be entertained for removal & re-execution of such work.



- 7) No work shall be covered up or put out of view without the approval of the Purchaser. In the event of failing to do so, the Contractor shall uncover any part of the work or make openings in or through the works as the Purchaser may direct and they shall be made good with materials approved by the Purchaser and should match with workmanship of the surrounding work.
- 8) The Contractor shall dismantle and remove the staging's and other temporary facilities like stores, offices, etc. on completion of work, clear and clean the site where such temporary facilities were built and restore the same to original condition at his own cost.
- 9) The Contractor shall provide all necessary storage. At the site in specified areas for all materials such as timber, cement, lime and such other materials which are likely to deteriorate by the action of sun, winds, rain, coastal conditions or other natural cause due to exposure in the open in such manner that all such materials shall be duly - protected from damage by weather or any other cause. All such stores shall be cleared away and the whole site left in good order on completion of the contract. All materials, shall be stacked in such a manner as to facilitate rapid and easy checking of such materials. The Contractor will not be permitted to store any of his material in the buildings under construction or already constructed by him without prior approval of the Purchaser.
- 10) After completion of work, the Contractor shall carry out micro-levelling of the site within battery limit ensuring proper grades and slopes to achieve efficient drainage of the site. The Contractor shall remove all debris, surplus earth etc. and dump the same at places/place as directed by the Purchaser within a distance of 5 km from the site.
- 11) The Contractor shall be held responsible for proper performance for buildings and structures including all other civil work during the guarantee period. Any defect found during this period will be made good by the Contractor at his own cost failing which the Purchaser reserves the right to take remedial measures at the Contractor's risk and cost.

- 12) All excavated materials shall remain the property of the Purchaser. In case the Contractor wishes to utilise the boulders excavated by him during the excavation work at the site, the same may be issued to him at prevailing rates on cost recovery basis. Percentage of voids on stack measurement shall be mutually agreed. Contractor shall have to account for all excavated hard rock.
- 13) In respect of any portion of works which is to be embedded or covered up by other works, the Contractor shall submit them to Purchaser for technical inspection and have the necessary clearance certificates duly signed by the Purchaser and Contractor before letting such portion to be embedded or covered.
- 14) Wherever works are to be carried out in proximity or within existing facilities, contractor may have to adopt special methodology of construction suited to prevailing conditions. He shall make necessary schemes in advance and finalise the same with the approval of the Purchaser/Consultant.
- 15) On progressive completion of work, the Contractor shall submit to the Purchaser the following documents for the passing of the work:
 - (a) Certificate on control checking.
 - (b) A copy of each of the concerned working drawings showing thereon all approved additions and alterations, if any, in the process of execution.
 - (c) Clearance certificates for embedded/covered up works.
 - (d) Manufacturer's certificates, guarantees and test certificates, as relevant.
(Pour cards/Inspection formats shall be prepared and signed by both contractor and Purchaser/consultant before starting each site activities such as concreting, fabrication, erection etc.)
- 16) The Contractor shall carry out structural load check with structure test, ultra-sonic test for foundation & pedestal at locations specified by the Purchaser in accordance with the agreed QAP on any part of the building/structure at its own cost if so directed by the Purchaser.
- 17) As the works under the contract are to be carried out within the protected area, the Contractor shall abide by all the security regulations promulgated from time to time by the Purchaser/other concerned authorities.
- 18) Blasting with explosives or other means is not allowed at site.



- xi) The Contractor must take sufficient care in moving its construction plants and equipment from one place to another so that they may not cause any damage to the property of the Purchaser, particularly to the existing structures and overhead and underground services and in the event of Contractor's failure to do so, the cost of such damages shall be borne by the Contractor.

10.48.0 Labour

10.48.1 Labour Laws/rules

In respect of all labour directly or indirectly employed on the works by the Contractor, the Contractor shall comply with and implement all the provisions of the Contract Labour (Regulation and Abolition) Act 1970, or any amendment thereof, and all legislations and rules of the State and/or Central Government or other local authority formed from time to time governing the protection of health, sanitary arrangements, wages, welfare and safety of labour employed on the works and the Contractor shall be deemed to be the Principal purchaser for this purpose. The rules and other statutory obligations with regard to fair wages, welfare and safety measures, maintenance of register etc. shall be deemed to be part of the Contract. The Contractor shall get himself registered with the concerned statutory authorities as provided in the Act and shall be directly responsible to the authorities there under for compliance with the provisions thereof.

10.48.2 Provision of Minimum Wages Act and Payment of Wages

- i) The Contractor shall comply with the provisions of the Minimum Wages Act 1948. The minimum wages Central Rules 1950, the Payment of Wages Act 1936 or any other rules made there under by the Government of India in respect of all employees employed by him or his Sub-Contractor directly or indirectly for the purpose of carrying out the works. In the event of retrenchment of workers by the Contractor or Sub-Contractors employed by the Contractor during or after the completion of the work, the retrenchment compensation and other benefits shall be paid by the Contractor to the workers as per the Industrial Dispute Act, 1947.
- ii) If any money shall, as a result of any claim or application made under the said acts, be directed to be paid by the Purchaser, such money shall be deemed to be money payable to the Purchaser by the Contractor and/or failure by the Contractor to repay the Purchaser, any money paid by the Purchaser as aforesaid, latest within thirty (30) days after the same shall have been demanded from the Contractor, the Purchaser shall be entitled to recover the same from any money due or accruing to the Contractor under this or any other contract with the Purchaser, failing which such amount shall be considered as debt due from the Contractor to the Purchaser.



- iii) The Contractor shall comply with the provisions of bi-partite and tripartite agreement entered into by the Purchaser from time to time with the Labour Unions and/or the circulars issued by the Purchaser regarding payment of minimum wages and benefits applicable.

10.48.3 **Reporting of accidents to labour**

The Contractor shall be responsible for the safety of his and his Sub-Contractor(s)/Workmen and employees. All accidents at site are to be immediately reported to the required authorities. The Contractor shall be responsible for all such accidents.

10.48.4 **Provision of Workmen's Compensation Act**

The Contractor shall be liable for in respect of any damages or compensation payable by law in respect of or in consequence of any accident or injury to any workmen or other person in the employment of the Contractor or any of his Sub- Contractors and the Contractor shall save harmless and shall indemnify and keep indemnified the Purchaser against all such damages and compensation and against all claims, demands, proceedings, costs, charges and expenses, whatsoever, in respect thereof or in relation thereto. The Contractor shall at all times indemnify and keep indemnified the Purchaser against all claims for compensation under the provisions of the Workmen's Compensation Act 1948 or any other law for the time being in force by or in respect of any workmen employed by the Contractor or his Sub-Contractors / agencies in carrying out the Contract and against all costs and expenses of penalties incurred by the Purchaser in connection therewith. In every case in which by virtue of the provisions of Section-12, Sub-Section(I) of the Workmen's Compensation Act 1923, the Purchaser is obliged to pay compensation to a workmen employed by the Contractor or his Sub-Contractor/ agencies, the amount of compensation so paid and without prejudice to the rights of the Purchaser under Section-12, Sub- Section (2) of the said Act, the Purchaser shall be at liberty to recover such amount or any part thereof from the security deposit or from the sums due or to become due to the Contractor (whether under this Contract or any other Contract).

10.48.5 **Provisions of Apprentices Act - Deleted**

10.48.6 **Labour Returns**

The Contractor shall submit daily statements of labour employed by him/Sub-Contractor(s) in the proforma prescribed by the Purchaser.

10.48.7 **Labour Camps**

The Contractor shall, at its own expense, make adequate arrangements for housing, electricity, road, supply of drinking water and provision of latrines and urinals for its staff and labour, disposal of sewerage and sullage and for temporary creche (bal mandir) where 50 or more women are employed at a time. ~~Drinking water and power supply shall be provided at a single point near the colony by the Purchaser (Further distribution shall be by the Contractor). However, power consumption shall be charged at the appropriate rate.~~

10.48.8

Preservation of Peace

The Contractor shall take requisite precautions and use his best endeavour to prevent any riotous or unlawful behaviour by, or amongst its workmen and/or others employed on the works by him or his Sub-Contractor(s) and for the preservation of peace and protection of the inhabitants and security of the property in the neighbourhood of the works/site. In the event of the Purchaser requiring the maintenance of a special police force at or in the vicinity of the site during the tenure of the Contract in consequence of the riotous or unlawful behaviour by, or amongst the Contractor's or his Sub-Contractor(s)/Workmen and/or others staff employed by him/them, all expenses thereof and costs of all damages due to such riotous or unlawful behaviour shall be borne by the Contractor and if paid by the Purchaser, shall be recoverable from the Contractor from any money due or that may become due to the Contractor by the Purchaser.

10.48.9

Payment of Wages

- i) The Contractor shall make regular and prompt payment of wages to its workmen engaged in the work and in no case shall the payment be delayed more than seven days following the period for which the wages are due. The Contractor shall send a certificate to the Purchaser to this effect every month. If it is found that workers are not paid regularly, the Contract is liable to be terminated.
- ii) The Purchaser shall have the right to enquire into and decide against any complaint alleging that the wages paid by the Contractor to any labourer for the work done by such labourer is less than the wages paid for similar work in the neighbourhood.
- iii) As a number of Contractors may be working at the same time in the erection of different parts at the Project site, there is need for pursuance of a coordinated policy in regard to employment, wages and other conditions of work. The Contractor shall consult the Purchaser on all such matters to arrive at mutually agreed settlements.

10.48.10

Sanitary arrangements

The Contractor shall comply with all local sanitary rules in force and carry out all sanitary measures and permit inspection of all sanitary arrangements at all reasonable times by the Purchaser/local bodies.

10.48.11

Infectious/Contagious diseases

The Contractor shall employ such persons as are found to be free of contagious diseases and shall produce, if required by the Purchaser, certificate of fitness of all its employees working at site. The Contractor shall, if required by the Purchaser, subject all its employees to regular medical check up and produce satisfactory evidence of their being free from any contagious disease.

The Contractor shall remove from its labour camp such labour and their families who refuse protective inoculations and vaccination when called upon to do so by any competent authority.

10.48.12 **Medical Facilities at Site**

The Contractor shall provide reasonable medical facilities like First Aid Centre, Ambulances etc. at the site as per laws in force in relation to the strength of the Contractor's staff and workmen deployed at site.

10.48.13 **Use of intoxicants**

The use or sale of ardent spirits or other intoxicating beverages, within the works or in any of the buildings, boarding houses, encampments or other tenements owned, occupied by or within the control of the Contractor or any of its employees or his Sub-Contractor is strictly forbidden and the Contractor shall ensure strict compliance.

10.48.14 **Age limits of labour**

The Contractor shall not employ, for the purpose of the work, any person below the age of eighteen (18) years as it is statutorily forbidden. The Purchaser reserves the right to dis-allow any labourer, whom he considers to be underage, to be employed by the Contractor. The Contractor shall submit periodical statements to the Purchaser, of labour employed by him.

10.48.15 **Provident Fund**

- iv) The Contractor shall be solely responsible for deduction and contributions under the Employees' Provident Fund Act 1952 and Family Pension Act 1971 and the scheme made there under as amended from time to time. He shall be solely responsible for the maintenance of records for payment of contributions and submission of returns in accordance with the said act and scheme.
- v) In case the Contractor fails to make payments under the above act and the scheme made there under and as amended from time to time, the Purchaser reserves the right to make such payment on behalf of the Contractor on demand from the authorities under the act and recover the same from the payments due to the Contractor. Further, the Contractor shall indemnify and keep indemnified the Purchaser against any loss or damage whatsoever that may be suffered by the Purchaser as a result of any claims, damages, penalties for any failure, non- compliance on his part with the provisions of the aforesaid act and the scheme framed there under.

10.48.16 **Observance by Sub-Contractor(s)**

The Contractor shall also be responsible for the observation of all the above clauses by his Sub Contractor(s).

10.49.0 Care of Works

From the commencement to the completion of provisional take over, of respective unit, the Contractor shall take full responsibility for the care of works and for all temporary works and in case any damage or loss shall happen to the works or to any part thereof or to any temporary works from any cause whatsoever, the Contractor shall at his own cost replace or repair and make good the same.

10.50.0 Restriction of Visitors

The Contractor shall not allow any visitors on the works except with the prior written approval of the Purchaser.

10.51.0 Possession Prior to Completion

The Purchaser shall have the right to take possession or use any completed or partially completed work. Such possession or use shall not be deemed to be an acceptance of any work done not in accordance with the Contract. However, any damage to such work solely due to such provision or use shall be to the Purchaser's account.

10.52.0 Work Permit, Passport, Etc..

The Contractor shall be responsible for arranging and obtaining at his own cost, the necessary work permits, passports, visas, police permits and expenses and for other effects of any personnel employed or engaged by him for work, which are non-resident of India.

10.53.0 General

No Director or Official or Employee of the Purchaser shall in any way be personally bound or liable for the acts or obligations of the purchaser under the contract or answerable for any default or omission in the observance or performance of any of the acts, matters or things or conditions which are herein contained.

10.54.0 General Liability Provision

The rights and obligations of the parties are finally and conclusively defined in this Contract.

10.54.1 Limitation of Liability

Except in case of Criminal Negligence or Wilful Misconduct,

- i) The Contractor shall not be liable to the Purchaser, whether in Contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Contractor to effect Price Reduction and pay liquidated damages to the Purchaser, and,

- ii) The aggregate liability of the Contractor to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Purchaser with respect to Patent infringement.

10.55.0 Transfer of Titles

10.55.1 Imported Items

Title of ownership and Property to all imported equipment, materials (including imported components to be further processed in India), drawings & documents to be delivered by the Contractor in terms of the contract shall pass to the Purchaser in accordance with the 'Incoterms 2010' and transfer of ownership and property to the Purchaser shall be simultaneous at the time of delivery to the carrier, provided however, such passing of title of ownership & property to the Purchaser shall not in any way absolved, or dilute or diminish the responsibility and obligations of the Contractor under this contract including loss or damages and all risks, which shall vest with the Contractor till the successful commissioning as per this contract.

10.55.2 Self Manufactured Indigenous Items

Ownership of equipment supplied under the supply portion of the contract shall vest with Purchaser as soon as they are dispatched ex-works/place of dispatch, in respect of indigenous items. However for executing the erection portion of the contract, Contractor shall take over, all such equipment from purchaser and further shall take full responsibility for safe custody, transportation to site, handling at all intermediate points and at site, storage, erection, testing and commissioning of equipment and for their exclusive use for purposes specified in this contract. Contractor's liability under the contract shall not be over till the plant is successfully commissioned and taken over by purchaser. The dispatch document consigned in the name of the Purchaser, shall be endorsed by the Purchaser, in favour of the Contractor for receipt of goods and then for storage, erection testing and commissioning. Purchaser's responsibility shall be limited to endorsement of dispatch documents in Contractor's favour to enable the Contractor to carryout services under the erection portion of the contract.

10.55.3 Bought out items

The procedure described in the above clause covers the self manufactured items of the Contractor. For bought out items directly consigned to purchaser's site, from approved sub-supplier, the consignee shall be the Purchaser.

10.56.0 Indemnity Bond

For the equipment handed over to Contractor, for performing the work under this contract, Contractor shall execute a custody cum indemnity bond in favour of Purchaser as per Annexure- XVI. The endorsement and handing over of dispatch documents by purchaser to Contractor shall be construed as

having handed over and entrusted to the Contractor all the equipment covered in such dispatch documents. The Contractor shall hold the equipment handed over to him by Purchaser, as trustee on behalf of the Purchaser without having any lien or charge against the equipment at any stage. For any loss or damage to the equipment and material till these are finally taken over by Purchaser, the Contractor shall immediately replace/repair the loss or damaged equipment entirely at his cost irrespective of the extent and/or time of realisation of claims by him from the insurer/underwriters.

The title of ownership and property to all goods materials equipment etc.. originating in India shall pass to the purchaser as per the terms and conditions of this contract after the Contractor has effected the dispatch of the same to Project Site and the Contractor has prepared necessary documentation for handing over the same to Purchaser's authorised representative provided however, such passing of titles of ownership and property to the Purchaser shall not in any way absolved, dilute or diminish the responsibility and obligations of the Contractor under this Contract including loss or damage and all risks which shall vest with the Contractor till the successful commissioning as per this Contract.

10.57.0 Safety

The Contractor shall abide by the Safety Code for Contractors which is annexed as Annexure-XIX.

10.58.0 General Conditions for Erection & Civil works

The Contractor shall abide by the General Conditions for Erection & Civil Works, which is annexed to this Volume as Annexure-XX.

10.59.0 Public Procurement (Make in India Policy):

The bidder shall take note of the following orders of the ministries as outlined in CI 3.9.3 of Section-3 of Vol-1A

10.60.0 Other Conditions

- 1) Construction of labour colony is the first milestone and at the end of the contract it should be the responsibility of the contractor to dismantle the colony and dispose the same. Facilities in the labour colony shall be in place in order to have comfortable living by the workforce. All amenities like disposal system, drainage, adequate water & power supply, provision for markets & community hall should be planned in the colony in addition to hospital & dispensaries with facilities for ambulances.
- 2) The Contractor is responsible to provide necessary compensation in line with the benchmark already established in respect of any fatal accident or accident involving injury. In the event of any fatal accident, in addition to monetary compensation, the Contractor shall be responsible to provide for

employment to the family of the deceased.

- 3) The Contractor is mandated to provide digital identity of the workers deployed and the access of the data shall be required to be made available to the HR executives of the purchaser, in order to ensure all the compliances as per the statutory requirements are fulfilled by the Contractor.
- 4) The Contractor is also be required to monitor/manage the entry & exit of its workforce & materials through a digital software in order to map / monitor the movements of workers and materials at the site and the access of the software shall be made available to the Purchaser.
- 5) In the event it is found that the required quantum of Labour has not been deployed by the Contractor, the Company in the interest of the Project, shall reserve the right to hire & deploy the required labour force, even at a higher cost, on the risk & cost of the Contractor.
- 6) Although the payment is linked to milestone achievements, the sequential of material/ supplies should be ensured as per the project plan. The material received at the site shall be coded through a software in which all the details viz., specifications, warranty, testing certificate etc., shall be captured and that the movements of the material shall be monitored through the Software, the access of which shall also be given to the Purchaser.
- 7) The contractor's payment is regulated through a separate bank account and there should be a provision for converting the said account as an escrow account in the event of any crisis affecting the progress of the Project. The Contractor is also mandated to provide his estimated cash flow at the time of tender itself in order to ensure reasonable control.
- 8) The List of sub vendors are to be provided to the Purchaser and a monthly confirmation to be furnished by the sub-vendors that they are getting their regular payments from the EPC Contractor.
- 9) The EPC Contractor is mandated to give a monthly progress report of the progress of the project, in a detailed manner, duly signed by the senior executive mentioning the milestone deviations, progress, shortfall, reasons,
- 10) Catch-up plan, along with an executive summary highlighting the major developments, major issues, drawings submitted & approved and yet to be approved, drawings yet to be submitted, delay and disputes envisaged by them etc., are to be covered by the Contractor in the monthly progress report.
- 11) Monthly review meetings to happen in which one week before the copy of the presentation to be given by the Contractor highlighting the areas of concern, issues to be discussed, duly signed and received by email from a senior level



officer and that executives participating from their side in the meeting shall also to be pre-defined.

- 12) The manpower deployment in the site to be clearly mentioned with enough qualified engineers, supervisors, workers, and the manpower requirement on month to month basis to be projected in the tender document itself and the contractor should report the actual man-power deployed at the site as per the manpower plan in their monthly progress report.
- 13) The EPC Contractor should have proper security mechanism, digital cameras, lighting, fencing, everything at site before hand so that security issues are not faced and proper security deployment is also ensured in such a way that there is no theft or trespassing.
- 14) The Contractor should ensure adequate lighting in order to have three shift working.
- 15) There should be a proper insurance policy covering all aspects of material, workers safety, compensation etc, in the event of any loss the claim has to be credited to the company and based on the processing of the proposal, necessary reimbursement to the contractor will be done.
- ~~16) Water and power arrangement is in the scope of the contractor.~~
- 17) Appropriate accommodation for their own executives, and Purchaser's executives, to be made available beforehand.
- 18) The contractor has to engage Project Affected Persons (PAPs) in contracts like horticulture, site grading, water supply, vehicle hiring , maintenance of the colonies etc., to the extent possible and agreeable to the EPC contractor which can be made as part of the EPC contract.
- 19) The possibilities to enhance the local employment by way of establishing the manufacturing facilities nearer to the site to be explored.
- 20) Safety aspects is to be well defined including the best plan and the practices, compliances and the requirement to have periodical safety audits by reputed agencies.
- 21) The Contractor has to facilitate for submission of drawings to the engineering team of the Purchaser by the sub-vendors of the Contractors simultaneously.

SECTION-11

QUALITY ASSURANCE

11.0.0 QUALITY ASSURANCE

Quality System for Inspection & Testing of Plant & Equipment at Manufacturer's Premises

11.1.0 General

- i) Inspection & testing of plant & equipment shall be carried out by NLCIL at the works of successful Bidder (Contractor/Sub-Contractor) during manufacturing and on final product to ensure conformity of the same with acceptable criteria of technical specifications, approved drawings, authenticated manufacturing drawings and reference national / international standards.
- ii) This specification is in addition to provisions laid-down elsewhere in Purchaser's Draft Contract and special instructions to tenderers, if any.
- iii) Contractor must recognise the importance of quality and follow defined quality programme in all manufacturing and quality control activities of the product. Contractor must define and implement the tasks and controls that shall provide needed assurance in case manufacturing of product is sub contracted either partly or fully and/or for the procured components of the product.
- iv) Purchaser/ Consultant reserve the right to verify the quality programme and entire product characteristics to assure the intended and specified quality of the product.
- v) The inspection, examination or testing carried out by the purchaser shall not relieve the Contractor from any of his obligation under this contract. The inspection procedure shall be discussed and finalised.

11.2.0 Quality Assurance Plan (QAP)

- i) Inspection and test requirements shall be decided with due consideration of factors like safety, duty cycle, operating conditions, equipment life, environmental conditions, place of installation and statutory regulations, as applicable, for a particular equipment.
- ii) Detailed QAP shall be prepared by Contractor in consultation with Sub- Contractors / Manufacturers to avoid any complication later.
- iii) QAP shall clearly indicate the followings:
 - (a) Range of inspection & tests to be done by Manufacturers and

cross checked by Contractor during manufacture of equipment from raw materials to finishing stage.

- (b) Suggestive check/ hold points for Purchaser's Inspection and witnessing of tests during the manufacturing and final product inspection.
- (c) Inspection documents to be furnished by Contractor/ Manufacturers to Purchaser for reference during inspection.

11.3.0 Internal Inspection by Contractor / Manufacturer

- i) Inspection and tests shall be carried out by Contractor/ Manufacturer in accordance with approved drawings, Tender Specification, Contract Agreement, and approved QAP. Contractor/ Manufacturer shall maintain record of each inspection and test carried out and signed documents shall be submitted to purchaser for verification.
- ii) Contractor shall carry out their internal inspection & obtain clearance from statutory bodies e.g. IBR, CCE, TAC, Weights & Measures, safety, IE rules etc..However, Purchaser shall carry out inspection as agreed in approved QAP prior to Contractor offering the equipment for statutory clearance.
- iii) All the measuring & test instruments shall be calibrated by manufacturers and record of the same shall be maintained for purchaser's scrutiny. Contractor shall ensure use of appropriate calibrated measuring & test instruments during their internal inspection, as well as, make available the same for purchaser's inspection and tests. Calibration standard shall be national standard, if existing. Otherwise, manufacturers' own standard & calibration procedure shall be accepted. Valid calibration certificates traceable to national/ international standards shall be submitted to purchaser during / prior to inspection.
- iv) Contractor/ Manufacturers shall identify all the inspected equipment/component/raw materials & shall maintain the record of status of inspection viz. inspected & found acceptable, require rectification/rework, rejected etc..
- v) The Contractor shall establish and maintain procedures to ensure that product that does not conform to specified requirements, is prevented from inadvertent use or installation. The description of non-conformity that has been accepted subsequently by Designer / Purchaser by concession and/or of repairs, shall be recorded and forms part of the subsequent drawings / schedules relevant to the products.
- vi) Repaired and reworked product shall be offered for re- inspection to purchaser along with records of corrective action taken.
- vii) Contractor / Manufacturer shall not dispatch any equipment till receipt of dispatch clearance from purchaser.

11.4.0 Method of Undertaking Inspection & Testing By Purchaser

11.4.1 Agency Responsible

Inspection/Waiver of equipment shall be undertaken by purchaser.

11.4.2 Method of Issuing Inspection Call to Purchaser

Inspection call shall be given only on readiness of the equipment/ assembly/ sub- assembly and approval of all relevant drawings and QAP. In case, equipment/ assembly/ sub-assembly offered for inspection are found not ready, all the cost of visit of purchaser's engineer shall have to be borne by the Contractor.

11.4.3 Obligations of Contractor

- i) Contractor shall provide all facilities and ensure full and free access of the Inspection Engineer of purchaser to the Contractor's or their Sub-Contractor's premises at any time during contract period, to facilitate him to carry out inspection & testing of the product during or after manufacture of the same.
- ii) The Contractor shall delegate a Representative / Co-ordinator to deal with purchaser on all inspection matters. Also, Contractor's Representative shall be present during all inspection at Sub-Contractor's works.
- iii) The Contractor shall comply with instructions of the Inspection Engineer fully and promptly.
- iv) The Contractor / Sub-Contractor shall provide all instruments, tools, necessary testing & other inspection facilities to Inspection Engineer free of cost for carrying out inspection.
- v) The cost of testing welds by ultrasonic, radiographic and dye penetration tests etc..in the fabrication workshop shall be borne by the Contractor.
- vi) The Contractor shall ensure that the equipment / assembly /component of the plant and equipment required to be inspected, are not dismantled or dispatched before inspection.
- vii) The Contractor shall not offer equipment for inspection in painted condition unless otherwise agreed in writing by purchaser.
- viii) The Contractor shall ensure that the equipment and materials once rejected by the Inspection Engineer, are not re-used in the manufacture of the plant and equipment. Where parts rejected by the Inspection Engineer have been rectified as per agreed procedures laid down in advance, such parts shall be segregated for separate inspection and approval, before being used in the work.

11.4.4 Stamping and issue of inspection documents

i) Inspection Memo

For stage inspection and for rejected items/items which do not conform to Technical specification in one or more quality characteristics requiring rectification/rework, Inspection memo shall be issued in standard form indicating therein the details of observation and remarks. All the non- conformities with respect to specification of the product shall be indicated in the inspection memo for further control by manufacturer.

ii) Inspection Certificate

On satisfactory completion of final inspection and testing, an inspection Certificate in standard form shall be issued by the Inspection engineer for the accepted items.

iii) Inspection Waiver Certificate

For the inspection waiver category of items identified in the approved QAP, Purchaser shall issue Inspection Waiver Certificate.

11.5.0 General Clauses

- i) Inspection & tests carried out by purchaser shall not absolve the responsibility of the Contractor/ Manufacturer to provide acceptable product nor shall it preclude subsequent rejection.
- ii) Purchaser reserves the right to inspect any product at any stage of manufacturing without prior notice to Contractor/Manufacturer beyond pre- identified stages & hold points of approved QAP. The inspection mentioned in this clause is meant for Purchaser getting apprised of status of manufacturing and not to obstruct the manufacturing program of the Contractor.
