विनयलता एस.
VINAYALATHA S.
कुलसचिव
REGISTRAR

गणितीय विज्ञान संस्थान
THE INSTITUTE OF MATHEMATICAL SCIENCES
(परमाणु ऊर्जा विभाग, भारत सरकार का एक स्वायत्त संस्थान)
(An Autonomous Institution under Dept. of Atomic Energy, Govt of India)
CIT CAMPUS, TARAMANI, CHENNAI - 600113

TECHNOLOGIES FOR NEW INDIA@75
आज़ादी का अमृत महोत्सव

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Ref : IMSc / Civil / QUT /04-2025-26

08.07.2025

To

Sub: Rust proof painting works on the puff roof sheet in the hostel building at IMSc Guesthouse campus at Taramani. – Inviting sealed quotations – Reg.

Sir/Madam,

Sealed Quotations are invited by the Registrar, IMSc, Taramani on behalf of the Director, IMSc for **" Rust proof painting works on the puff roof sheet in the hostel building at IMSc Guesthouse campus at Taramani"** You are requested to fill up the same and send to us so as to reach on or before **21.07.2025** at 15.00 hrs at Main building, IMSc, in a sealed cover superscribing the quotation no. The Institute reserves the right to reject any or all the quotations or to allot parts of the work to different agencies without assigning any reason.

Vinayalatha. S.
8.7.2025

Registrar,
For and on behalf of the Director, IMSc

Tenderers are advised to take note of the following points into consideration while quoting.

1. E - mail/ fax quotations will not be accepted.
2. The rates are inclusive of all taxes, labour charges and materials etc. nothing will be paid extra.
3. The period is to be **02 (Two) Months.**
4. The payment shall be made after completion of the work and as per the actual measurement at site..
5. Late quotations will not be considered.

Enclosed : Blank Schedule and safety code & rules for Contractor are enclosed.

THE INSTITUTE OF MATHEMATICAL SCIENCES

C.I.T CAMPUS , TARAMANI

Name of Work: Rust proof painting works on the puff roof sheet in the hostel building at IMSc Guesthouse campus at Taramani.

Note: The rates quoted by the tenderer in the schedule shall be inclusive of Goods and Service Tax (GST) and any other Tax applicable. GST and any other tax applicable in respect of this contract shall be payable by the Contractor and Institute will not entertain any claim whatsoever in respect of the same

Estimated cost Rs: 3.90 Lakhs

Schedule of Quantities

S. No	Description of Item	Qty	Unit	Rate in Rs. P	Amount in Rs. P
1	Removing the rust on the **G.I puff roof sheet** by **scraping** using Emery paper sand paper, metal prush and cleaning the surface neatly including water wash. Complete at 3rd floor sloped roof (+13meter lvl) including cost of all required cleaning materials, labour, required safety equipments preparing the surfaces, taxes. All as per specification and as directed by the Engineer- in- charge.	727.00	Sqm		
2	Providing and applying **Rust Shield PU enamel Painting** on GI roof sheet, with Two or more Coats (Asian or approved equivalent) at 3rd floor sloped roof (+13 meter lvl) over a old surface including one coat **Zinc chromite primer,** cost of all materials, labour, required safety equipments, preparing the surfaces, taxes. All as per specification and as directed by the Engineer- in- charge. **Note:** The proper coverage area is to be followed as per the paint manufacturer guidelines.	727.00	Sqm		
3	Providing and fixing double Tubular scaffolding system using H-Frames / APS system or (cup lock type) on the exterior side upto seven story height made with 40mm dia M.S. tube 1.5m centre to centre horizontal and vertical tubes joining with cup and lock system with M.S. tubes, M.S. tube challies, M.S clamps and M.S staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it thereafter. The scaffolding system shall be stiffened with bracings, runners, connection with building etc. wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and as approved by the Engineer -in-charge. The elevation area of the scaffolding shall be measured for payment purposes. The payment shall be made once irrespective of duration of scaffolding .and as directed by the Engineer-in-charge.	437.00	Sqm		
				Total Amount in Rs.	

Rupees in words:

Signature of the Tenderer :

Address with seal:

SECTION III A

SAFETY CODE FOR CONTRACTORS

1.GENERAL SAFETY PROVISIONS

1.1 The Contractor shall take all safety precautions during the execution of awarded work and shall maintain and leave the site safe at all times. At the end of each working day and at all times when the work is temporarily suspended, he shall ensure that all materials, equipment and facilities will not, cause damage to existing property, personal injury or interfere with the other works of the Project or Station. The contractor shall comply with all applicable provisions of the safety regulations, clean up programme and other measures that are in force at the site.

1.2 The Contractor. shall provide and maintain all lights, guards, fencing, warning signs, caution boards and other safety measures and provide for vigilance as and where necessary or as required by the Engineer or by any duly constituted authority for the protection of workers or for the safety of others. The caution boards shall also have appropriate symbols.

1.3 Adequate lighting facilities such' as flood lights, hand lights and area lighting shall be provided by the Contractor at the site of work, 'storage area of materials and equipment and temporary access roads within his working area. The contractor shall obtain written approval of the Engineer to the lighting scheme and place of tapping prior to its installation.

1.4 The contractor shall plan his operations so as to avoid interference with the other Institutional works, other contractors or Sub-Contractors at the site. In case of any interference, necessary coordination shall be sought by the contractor from the Institute for safe and smooth working.

1.5 The Contractor and his sub-contractor, if any shall comply with the instructions given by the Safety Engineer or his authorized nominee regarding safety precautions, protective measures, house keeping requirements, etc. The Safety Engineer with due intimation to Engineer shall have the right to stop the work of the Contractor, if in his opinion proceeding with the work Will lead to an unsafe and dangerous condition. Engineer shall get the unsafe condition removed or provide protective equipment at the contractors cost. The contractor can employ his own safety Engineer or nominate one of his officers for liaison with Institutional Safety Engineer for ensuring compliance of all safety rules. Contractor shall ensure that all his workmen are aware about the nature of risk involved in their work and have adequate training for carrying out their work safely.

1.6 The contractor shall be held responsible for non-compliance of any of the safety measures and delays, implications, injuries, fatalities and compensation arising out of such situations of incidents.

2. TRAFFIC

2.1 The contractor shall conduct his operations so as to interfere as little as possible with the use of existing roads at or near locations where the work is being performed.

2.2 When interference to traffic is inevitable, notice of such interference shall be given to the Engineer well in advance (at least 48 hours) with the details of start of the work and time required, storage of materials, and details of the proposed methods of providing the required facilities for safe and continuous use of roads and obtain his clearance.

2.3 The contractor shall, at his own expense, make such approved temporary provisions as are required to maintain at least one lane of traffic by bridging the excavation, providing ramps over surface obstructions or providing suitable temporary bye-pass around the obstructions. The Contractor shall exercise full care to ensure that no damage is caused by him or his workmen, during the operation, to the existing water supply, sewerages, power or telecommunication lines or any other services or works. The contractor shall be required to provide and erect before construction, substantial barricades, guard-rails, and warning signs. He shall furnish, place and maintain adequate warning lights, signals, etc., as required by Engineer.

3. SAFE MEANS OF ACCESS

3.1 Adequate and safe means of access and exit shall be provided for all work places, at all elevations. Using of scaffolding members (avoiding a ladder) for approach to high elevations shall not be permitted.

3.2 Suitable scaffolds shall be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short duration work as can be done safely from ladders. Ladder shall be of rigid construction having sufficient strength for the intended loads and made either of good quality wood or metal and all ladders shall be maintained well. For safe working condition an extra mazdoor shall be
engaged for holding the ladder if ladder is not securely fixed. If the ladder is used for carrying materials as well, suitable foot holds and hand holds shall be provided on the ladder. The ladder shall be given an inclination
not steeper than 1 in 4 (1 horizontal and 4 vertical). Ladders shall not be used 'for climbing & carrying materials in hands. While climbing both the hands shall be free.

3.3 Scaffolding or staging more than 3.5m above the ground Ol" floor, swung or suspended from an overhead support or erected with stationary support shall have a standard guard rail properly attached, bolted, braced or otherwise secured at least 1.Orn high above the floor or platform of such scaffolding or staging. The guard rail shall extend along the entire exposed length of the scaffolding with only such opening as may be necessary for the delivery of materials. Standard railing shall have posts not more than 2m apart and an intermediate rail halfway between the floor and platform of the scaffolding and the top rail. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure. Scaffolding and ladder shall conform to relevant IS specification (IS: 3696 1966). TimberjBam.boo scaffolding shall not be used.

3.4 Working platforms of scaffolds shall have toe boards at least 15cm in height to prevent materials from falling down.

3.5 A sketch of the scaffolding proposed to be used shall be prepared and approval of the Engineer obtained prior to start of erection of scaffolding. All scaffolds shall be examined by Engineer before use.

3.6 Working platform, gangways and stairways shall be so constructed that they shall not sag unduly or unequally and if the height of the platform or gangway or stairway is more than 3.5m above ground level or floor level, they shall be closely boarded, shall have adequate width for easy movement of persons and materials and shall be suitably guarded as described in 2.3 above.

3.7 The Planks used for working platform shall not project beyond the end supports to a distance exceeding four times the thickness of the planks used. The planks shall be rigidly tied at both ends to prevent sliding against slippage. The thickness of the planks shall be adequate to take load of men and materials and shall not collapse.

3.8 Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing, the minimum height of which shall be
1.0m and 15 cm high sheet obstruction at floor level along the railing.

3.9 Safe means of access shall be provided to all working platforms and other elevated working places. Every ladder shall be securely fixed. No single portable ladder shall be over 9m in length. For ladders up to 3m in length the width between side rails in the ladder shall in no case be less than 300rnm. For longer ladders this width shall be increased by at least 20mm for each additional meter of length. Step spacing shall be uniform and
shall not exceed 300 mm

3.10. Adequate precautions shall be taken to prevent danger from electrical lines and equipment. No scaffolding, ladder, working platform, gangway runs, etc. shall exist within 3 meter of any un insulated electric wire. Whenever electric power and lighting cables are required to run through, (pass on) the scaffolding or electrical equipments are used, such scaffolding structures shall have minimum two earth connections with earth continuity conforming to IS code of practice.

4. EXCAVATION, TRENCHING AND EARTH REMOVAL

4.1 All Trenches 1.2 m or more in depth shall at all times be supplied with at least one ladder for each spacing of 30m in length or fraction thereof. Ladder shall be extended from bottom of the trench to at least 1m above the surface of the ground.

4.2 The sides of the trench which are 1.2m or more linear depth shall be stepped back to give suitable slope (factor of repose) or securely held by timber bracing, so as to avoid the danger of sides from collapsing. The excavated material shall not be placed within 1.5m of the edges of the trench or half of the depth of the trench, whichever is more. Cutting shall be done from top to bottom. Under no circumstances mining or under-cutting shall be done.

4.3 The Contractor shall ensure the stability and safety of the excavation, adjacent structures, services and the works.

4.4 Open excavations shall be fenced off by suitable railing and warning signals installed at night at well places so as to prevent persons slipping or falling into the excavations. All blasting operations shall be carried out on the basis of procedures approved by Inspector of Explosives. All works in this connection shall be carried out as per IS code of Practice. Barricades, Warning Signs etc. shall be placed on the roads/open area. Prior approval of such operation shall be obtained from Safety Engineer / Engineer of works.

a) For removal of earth from an earth bound a written permission shall be obtained from the Engineer of the work and Engineer of the earth bound.

b) As far as practical, earth shall be removed mechanically.

c) Wherever Individual removal of earth is involved, earth shall be removed from the top by maintaining the proper slope equal to the angle of re-pose of the earth.

d) Such work shall be constantly supervised by the Contractor's responsible person and frequently inspected by the Institutional representative to ensure that no under-cutting is done.

5. CONCRETING

Shuttering and supporting structures shall be of adequate strength and approved by Engineer. This shall be ensured before concrete is poured. The procedure approved by Engineer shall be followed *for* mixing, transporting and pouring of concrete.

6. DEMOLITION

Before any demolition work is commenced and also during the progress of the work:

a) All roads and open area. Adjacent to the work site shall either be closed or suitably protected. Appropriate Warning signs shall be displayed for cautioning approaching persons.

b) Before demolition operations begin, the Contractor shall ensure that the power on all electric service lines is shut off and the lines cut or disconnected at or outside the demolition site. If it is necessary to maintain electric power during demolition operation, the required service lines shall be adequately protected against damage. Persons handling heavy materials / equipments shall wear safety shoes.

c) No floor, roof or other part of the building shall be overloaded with debris or materials as to render it unsafe.

d) Entries to the demolition area shall be restricted to authorized persons only.

7.PERSONAL PROTECTIVE EQUIPMENT:

All necessary personal protective equipment as considered necessary by the Engineer shall be kept available by contractor for the use of the persons employed on the site and maintained in a condition suitable for immediate use. Also the contractor shall take adequate steps to ensure proper use of equipment by those concerned. The personal protective equipments are to be provided by the contractor.

(a) All persons employed at the construction site shall use safety helmets. For other types of works, persons working in that area shall also use safety helmets, if advised by safety Engineer /Engineer.

(b) Workers employed on mixing asphaltic materials, cement and lime mortars shall use protective goggles, protective footwear and hand gloves. Use of proper respirators shall be an advantage.

(c) Persons engaged in welding and gas cutting works shall use suitable welding face shields. The persons who assist the welders shall use suitable goggles. Protective goggles shall be worn while chipping and grinding.

(d) Stone breakers shall use protective goggles. They shall be seated at sufficiently safe intervals of distance.

(e) Persons engaged in or assisting in shot blasting operations and cleaning the blasting chamber shall use suitable gauntlets, overalls, dust-proof goggles, boots and protective hood supplied with fresh air at the minimum rate of 9 m3/hr.

(f) All persons working at heights more than 4.5m above ground or floor and exposed to risk of falling down shall use safety belts, unless otherwise protected by cages, guard railings, etc. In places where the use of safety belts is impractical, suitable net of adequate strength fastened to substantial supports shall be employed.

(g) All powered two-wheeler motorcycle and scooter drivers and their pillion riders shall wear crash helmets inside the project/plant sites.

(h) When workers .are employed in sewers and inside man-holes which are in use, the contractor shall ensure that the man-holes are opened and are adequately ventilated atleast for an hour. After it has been well-ventilated, the atmosphere inside the space shall be checked for the presence of any toxic gas or oxygen deficiency and recorded in the register before the workers are allowed to get into the man-holes. The man-holes opened shall be cordoned off with suitable railing and provided with warning signals or caution boards to prevent accidents. There shall be proper illumination in the night.

8. PAINTING

8.1 The Contractor shall not employ women on the work of painting with products containing lead of any form. Only men above the age of 18 years shall be employed on the work with lead paint. The following precautions shall be taken during the work.

- Supplied air respirators shall be provided for use by the workers when paint is applied in the form of spray, or a surface having lead paint is dry rubbed or scraped.
- Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the painters to wash at the cessation of work.
- All painting jobs, especially those in which lead paints are used shall be kept under industrial hygiene surveillance.

8.2 Smoking, open flames or sources of ignition shall not be allowed in places where paints and other flammable substances are stored, mixed or used. A caution board, with the instructions written in national/regional1anguage, "SMOKING - STRICTLY PROHIBITED" shall be displayed in the vicinity where painting is in progress or where paints are stored. Symbols shall also be used for caution boards.

Suitable fire extinguishers/ sand buckets shall be kept available at places where flammable paints are stored, handled or used.

When painting work is done in a closed room or in a confined space, adequate ventilation shall be provided. If adequate ventilation cannot be provided, workers shall wear suitable respirators.

8.3 Epoxy resins and their formulations used for painting shall not be allowed to come in contact with the skin. The workers shall use plastic gloves or suitable barrier creams.

Adequate ventilation shall be provided especially when working with hot resin mixes. Increased personal hygiene shall be -practiced to control inadvertent contact with the resin and eliminate its effects.

Workers shall thoroughly wash hands and feet before leaving the work. Work clothes shall be changed and laundered frequently.

9. LIFTING MACHINES AND TACKLES

9.1 Use of lifting machines and tackles including their attachments, anchorage and supports shall conform to the following standards or conditions.

(a) Lifting machines and tackles shall be of good mechanical construction, sound material and adequate strength and free from defects and shall be kept in good repair and in good working order.

Every rope used in hoisting or lowering materials or as a means of suspension shall be of good quality and adequate strength and free from any defect.

(b) Every crane operator or lifting appliance operator shall be properly qualified. No person under the age of 21 years shall be in charge of any hoisting machine or give signal to operator of such machine.

(c) In case of every lifting machine (and of *every* chain, ring, hook, shackle, swivel and pulley block used in hoisting or as means of suspension) the safe working load shall be ascertained and clearly marked. In case of a lifting machine having a variable safe working load, each safe working load and the conditions under which it is
Applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing. This shall be approved by the Safety Engineer.

(d) In case of Institutional machines, the safe working load shall be notified by the Engineer.As regards Contractor's machines, the contractor shall notify the safe working load of the machine to the Engineer whenever he brings any machinery to site of work and get it verified by the Engineer-in charge, supported by a valid test certificate by the competent person.

(e) Thorough inspection and load testing of lifting machines and tackles shall be done by a competent person at least once every 12 months and. records of such inspection and testing shall be maintained.

9.2 Motors, gearing transmission, couplings, belts, chain drives and other moving parts of hoisting appliances shall be provided with adequate safeguards. Hoisting appliances shall be provided with such means as will reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced or lowered.

10 WELDING AND GAS CUTTING

10.1 Welding and gas cutting operations shall be done only by qualified and authorized persons and as per IS Specifications and code of Practice.

10.2 Welding and gas cutting shall not be carried out in places where flammable or combustible materials are kept and where there is danger of explosion due to presence of gaseous mixtures.

10.3 Welding and gas cutting equipment including hoses and cables shall be maintained in good condition.

10.4 Barriers shall be erected to protect other persons from harmful rays from the work. When welding or gas cutting is in elevated positions, precautions shall be taken to prevent sparks or hot metal falling on persons or flammable materials.

10.5 Suitable type of protective clothing consisting of fire resistant gauntlet gloves, leggings, boots and aprons shall be provided to workers as protection from heat and hot metal splashes. Welding shields with filter glasses of appropriate shade shall be worn as face protection.

10.6 Adequate ventilation shall be provided while welding in confirmed space or while brazing, cutting or welding zinc, brass, and bronze, galvanized or lead coated materials.

10.7 Welding and gas cutting shall not be done on drums, barrels, tanks or other containers unless they have been emptied, cleaned thoroughly and it is made certain that no flammable material is present.

10.8 Fire extinguisher shall be available near the location of welding operations.
Fire safety permit shall be obtained for working at vulnerable areas and operating areas before flame cutting/welding is taken up.

10.9 For electric (Arc) welding the following additional safety precautions shall be taken:

i) When electrical welding is undertaken near pipelines carrying flammables, such pipelines shall not be used as part of earth conductor but a separate earth conductor shall be connected to the machine directly from the job.
ii) Personnel contact with the electrode or other live parts of electric welding equipment shall be avoided.

iii) Extreme caution shall be exercised to prevent accidental contact of electrodes with ground.

iv) The welding cables shall not be allowed to get entangled with power cables. It shall be ensured that the cables are not damaged by movement of materials.

11 GRINDING

11.1 All portable grinders shall be used only with wheel guards in position to reduce the danger from flying fragments should the wheel break during the use.

11.2 Grinding wheels of specified diameter only shall be used on a grinder portable or pedestal in order not to exceed the prescribed peripheral speed.

11.3Goggles shall be used during grinding operation.

12. ELECTRICITY

Guide lines for providing temporary power supply at the site and general safety procedures for using electricity are given in the enclosed Annexure.

13. HOUSE KEEPING

13.1 The contractor shall at all time keep his work spot, site office and surroundings clean and tidy from rubbish, scrap, surplus materials-and unwanted tools and equipment.

13.2 Welding and other electrical cables shall be so routed as to allow safe traffic by all concerned.

13.3 No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The Engineer may require the contractor to remove any materials which are considered to be of danger or cause inconvenience to the public. If necessary, the Engineer may cause them to be removed at the contractor's cost.

13.4 At the completion of the work, the Contractor shall have removed from the work premises all scaffolding's, surplus materials, rubbish and all huts and sanitary arrangements used/installed for his workmen on the site.

13.5 The Engineer has the right to stop work if the Contractor fails to improve upon the housekeeping after having been notified.

14 FIRE SAFETY

All necessary precautions shall be taken to prevent outbreak of fires at the construction site. Adequate provisions shall be made to extinguish fires should they still break out.

(a) Quantities of combustible materials like timber, bamboos, coal, paints, etc., shall be the minimum required in order to avoid unnecessary accumulation of combustibles at site.

(b) Containers of paints, thinners mid allied materials shall be stored in a separate room which shall be well ventilated and free from excessive heat, sparks, flame or direct rays of the sun. The containers of paint shall be kept covered or properly fitted with lid and shall not be kept open except while using.

(c) Fire extinguishers as approved by the Engineer shall be located at the construction site at appropriate places.

(d) Adequate number of contract workmen shall be given education and training in fire fighting and extinguishing methods.

15 SAFETY WORK PERMIT

15.1 In order to ensure safety of work for hazardous operation (such as entry into confined spaces, welding/ cutting on equipment/pipes where explosion hazard is present, works on high voltage and main medium voltage lines, blasting etc.,) Special Safety work permits (SWP) shall be raised. The SWP's shall also to be obtained for any other work as recommended by Safety Engineer.

15.2 The Contractor shall strictly ensure all the safety conditions and requirements stipulated in the Safety work permit. The decision of the Safety Engineer shall be final in this regard.

16 WORKS IN AND AROUND WATER BODIES

When the work is done near any place where there is risk of drowning, all necessary rescue equipment such as life buoys and life jackets shall be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision shall be made for prompt first-aid treatment of all injuries likely to be sustained during the course of the work. Persons who do not know swimming shall not be engaged alone for any work where risk of drowning exists. Sufficient number of life buoys or life jackets shall be provided.

17 MEDICAL FACILITIES

17.1 The contractor shall arrange adequate facilities for medical aid and treatment for his staff and workers engaged on the work site including the first-aid facilities if they are not available at the project site.

17.2 First-aid appliances including sterilized dressing, cotton wool and antiseptic cream shall be made available at readily accessible places at every work site. These shall be maintained in good order under the charge of a responsible person.

17.3 At large work places where hospital facilities are not available within easy reach of the works, first-aid posts shall be established and be manned by a trained compounder. An ambulance shall be available during the entire period of work for attending to injury cases.

18. SAFETY OFFICER/SAFETY COORDINATOR

The contractor shall have a Safety Officer *or* a supervisor to be designated as a Safety Coordinator in order to specifically look into the implementation of different safety requirements of the contract work. The person thus designated will in general co-ordinate with the Engineer on matters of safety and in particular ensure that the Safety Guide is complied with fully. His name shall be displayed on the Notice Board at a prominent place at the work site.

19 REPORTING OF ACCIDENT

19.1 All accidents leading to property damage and/or personnel injuries shall be reported to the Engineer immediately who all informs to be followed up with detailed accident reports in prescribed form.

19.2 Contractor shall also submit a monthly statement of accidents to Engineer by 4th of every month showing details of accident, nature of injury including disability, days lost, treatment required, etc., and the extent of property damage.

20. PUBLIC PROTECTION

The Contractor shall make all necessary provisions to protect the public. He shall be bound to bear the expenses for defense of every action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of any precaution required to taken to protect the public. He shall pay any damage and cost which may awarded in any such suit, action or proceeding to any such person, or the amount which may be fixed as a compromise by any such person.

21. OTHER STATUTORY PROVISIONS

Not withstanding the above clauses from 1 to 20 there is nothing in these to exempt the Contractor from the provisions of any other Act or Rules in force in the Republic of India. In particular all operations involving the Transport, handling, storage and use of explosive shall be as per the standing instructions and conform to the Indian Explosives Act, 1884 and the explosive Rules, 1983. Handling, transport, storage and use of compressed gas cylinders and pressure vessels shall conform to the Gas cylinder Rules 1981 and Static and Mobile pressure vessels (Unfired) Rules 1981. In addition, the Indian Electricity Act 1910 and Indian Electricity Rule 1956, The Atomic Energy Act 1962, The Radiation Protection Rules, 1971, Radiation Protection Manual of Nuclear facilities and the Atomic Energy (Factories) Rules, 1988 and various rules and Act related to mining, shall also be strictly complied with.

ADDITIONAL SAFETY RULES

1.0 The contractor shall follow the safety regulations as prescribed in the tender and Indian Standards. He shall provide necessary safety appliances to his employees as instructed by the Engineer-in-charge / Safety Officer deputed by the Project depending upon the nature of the work.

2.0 In case of an accident resulting in any rest or disability to the workmen the same should be immediately reported to the Safety Officer.

3.0 Any person found under the influence of alcohol or any intoxicating drugs on duty is unfit for duty and should not be allowed to work. His work permit should be confiscated and he should be sent out of the premises of the work.

4.0 Drums or other make shifts must not be used in the place of ladders or work benches or supports on any job.

5.0 First aid kits or boxes and stretchers should be readily accessible at all times with the contractor.

6.0 For all work that cannot be done from the ground level or from part of any permanent structure or from other available means of support, soundly constructed scaffolding's of adequate strength shall be used as a safe means of access to places of work.

7.0 All scaffolding's shall be securely supported or suspended and wherever necessary be properly braced to ensure stability.

8.0 Defective scaffolding's or make shift must never be provided. All scaffolds must be inspected by a competent person in charge before commencement of work.

9.0 Chains, ropes or other lifting materials used for the suspension of scaffolding must be of adequate strength and suitable quality and shall be of tested quality.

10.0 The platforms of a suspended scaffolding shall be sufficiently wide. Suspended scaffolding shall have hand rail of about one meter height from the floor of the platform. Such scaffolding or staging shall be fastened to prevent it from swaying away from the structure.

11.0 All sides of the platform from which a person is liable to fall shall be provided with guard rails to a height of at least one metre with the toe boards of at least 15 cms high so as to prevent the fall of the materials and tools from the platform.

12.0 Every ladder shall be securely fixed at top and bottom. A ladder more than 5 meters long shall have a prop.

13.0 Spacing between the side rails of the ladder shall not be less than 45cms. uniform step spacing shall not exceed 30cms.

14.0 Whenever it is necessary to work at elevated places not adequately protected by railing, safety belts with life lines securely tied to some firm structure or other support which is independent of the equipment on which the person is working, must be worn.

15.0 Nobody should be allowed to work at elevated places without wearing safety belts. As an additional precaution, safety nets made of coir rope or nylon or any other suitable material should be hung at suitable elevation to prevent people and equipment falling below.

16.0 Dropping or throwing materials from roof structures or other elevated places is prohibited.

17.0 Where work is going overhead, the area below should be cordoned. If it is not possible to cordon the area, place caution sign 'CAUTION-MEN WORKING ABOVE' – or depute responsible person to warn passerby.

18.0 Helmets made of fibre glass or any other suitable material must be used by all employees working in shuttering or staging jobs, material handling jobs or where the chances of falling objects are present or where there is the possibility of a person striking against projecting objects, etc.

19.0 All necessary personnel safety equipment such as face masks, safety helmets, safety boots, gloves, safety goggles, etc. as considered adequate by the Engineer-in-charge have to be kept available by the contractor for the use of persons employed at the site of work and maintained in condition suitable for immediate use and contractor shall take steps to ensure proper use of equipment by the workers.

20.0 The contractor shall furnish along with the tender the type of staging, form work, type of access for men, materials and the construction technique he proposes to use for the work.

21.0 The contractor shall use only tubular steel for scaffolding for all heights more than 5metre height as approved by the Engineer.

22.0 The areas where painting work is being done shall be kept adequately ventilated by the agency executing the work and shall meet the approval of the Engineer.

V - POWER AND ELECTRICAL SAFETY

1. The Department will not provide any power supply to the contractor and it is contractor responsibility to get new 415 V, 3 phase, 4 wire LT supply from TNEB for their use of entire construction work till the completion of civil projects with their own cost.

2. The Contractor will make arrangements for receiving the power supply. He will have a distribution switchboard with one number incomer switch with HRC fuses and sufficient number of outgoing feeders, properly with HRC fuses protection. Sub-distribution boards may be provided and wired from the distribution board by the Contractor. Cabling from the meter and supply point to the distribution board will be done by the Contractor. The distribution board and other locations shall be provided with danger boards with skull mark.

3. Single phase loads will be connected such that the loads and the 3 phases are balanced.

4. All distribution boards and sub-distribution boards will be properly grounded with 2 ground connections and each board will have one independent pipe earth electrodes.

5. All electrical equipment like switches, motors and power outlets shall be properly grounded and shall be well protected from weather (rain and dust)

6. Equipment with electric prime movers will be installed in permanent manner as far as possible with fixed cabling.

7. Portable lights and equipment (limited to unavoidable tools like vibrators, drills and polishing machine) will be connected using metal clad sockets and plugs to avoid mechanical damage.

8. **Insertion of wires in sockets will not be permitted.**

9. All portable appliances shall be properly grounded.

10. All portable electrical tools will be tested and certified by authorized staff, Contractor's Electrical Supervisor may be authorized for the work by the Department at its discretion.

11. Cabling and wiring will be run underground with proper mechanical protection or overhead beyond normal human reach so as to avoid hindrance to movement of men and materials. Cable route indicators shall be provided as directed by Engineer-in-Charge wherever cables are run underground.

12. For electrical connections 3 Core Insulated and sheathed cables will be used for single phase and 4 core insulated and sheathed cables will be used for 3 phase wiring. Armored cables will be preferred.

13. Unarmored cables will not be tied to metal supports using metal wires.

14. All wires used shall be healthy and joints shall be minimum. The joints shall be properly insulated and shall be approved by Departmental Engineer. Joints shall be properly supported and positioned above normal human reach. Joints shall not be permitted in wet areas. Loose wiring will not be allowed over floor. Extra length of wires and cables shall be properly coiled and kept in safe position.

15. Electrical works including temporary connections and extensions will be carried out by licensed electricians only. All electrical installations will be energized only after approval by the Department.

16. List of electrical staff to be posed at site will be furnished by the Contractor before the commencement of Contract.

17. Adequate area lights will be provided by the Contractor to ensure safe working.

18. Contractor's qualified staff will maintain the Contractor's electrical installations.

19. The Contractor will allow free access to departmental safety engineers for inspection of electrical connections and distribution systems and abide by their decisions, in the interest of safety of personnel. The contractor also will avail the industrial safety and related training being provided by the department, free of cost and ensure that most of the field staff is trained adequately.

20. THE CONTRACTOR WILL PROVIDE ELCB FOR ALL 3 PHASE AND SINGLE PHASE LOADS, AT HIS MAIN DISTRIBUTION BOARD. THE ELCBS WILL HAVE A SENSITIVITY OF 100 MILLI AMPS.