

SAFETY GUIDELINES

The contractor shall provide Personal Protective Equipments (like helmet, shoes, safety glass, nose mask and earplug etc.) as required to all his workmen strictly otherwise they will not be allowed to work.

Standard of personal protective equipments to be provided by the Contractor to their employees are indicated below.

1. HDPE/ABS Safety Helmet conforming to BIS 2925 and preferably fitted with inner strap of nylon webbing and 4/6 point suspension. Adjustable chin strap and ratchet both together ensures good grip on head while using. Sweat band of good quality having adequate absorbing capacity gives comfort to user for prolonged use at work area. Both the features should be available in Safety helmet and that must be ensured before issue.
2. Safety shoes conforming to required BIS
3. Dust mask conforming to required BIS
4. Full body Harness along with Lifeline and fall arrestor conforming to standards.
5. Optically correct Safety glasses conforming to standard. Lightweight safety glasses with side shield to protect against wind & ultraviolet ray with adjustable side arms for personalized fit.
- 6.1 Ear muff conforming IS: 6229
- 6.2 Ear plug or Ear seal (Unique closed cell polyester from smooth tapered surface similar to ear canal swells slowly to fit individual Ear canal.) (Any one item out of three types of ear protection device should be issued)
7. Flame-Water-Oil-Acids & alkali resistant work wear (made of 100% cotton fabric)
8. Safety gloves of Kevlar or equivalent (high temp. resistance)
9. Face shield (conforming IS: 8521 part I type-I)
10. Electrical hand gloves 440v & 33 KV conforming IS: 4770 or equivalent
11. Hand gloves for chemical laboratory made from pure latex Acid and Alkali proof
12. Hand gloves for concentrated chemicals made from superior PVC inside cotton reinforce for better grip
13. Split chrome leather hand gloves for handling rough object.
14. Canvas hand gloves for handling smooth object & doing light work with it.
15. Flip up goggles with stationery frame fitted with ophthalmic grade zero power toughened lens and fitting frame, Blue lens for furnace, Green shade No.4 for gas cutting, dark green No.11 for glasses for ARC welding whenever is required.
16. Panoramic type safety goggles for acid & alkali whenever is required.

Contractor shall ensure proper use of personal protective equipment by their workmen and supervisor on duty. Before issue of the above PPEs depending on the need of the area of work the sample of the same must be provided to LANCO, Safety Officer for inspection & approval.

The Contractor shall be issued entry pass for their employees after due verification of the quality of the standard PPEs and imparting necessary safety induction training in advance by Safety Officer, LANCO.

- None of the Contractor's employees shall be allowed inside the plant premises without valid gate pass, safety shoes, and helmet.
- Contractor shall ensure that all his employees use proper PPEs inside the plant premises as per the work & site requirement.
- During the course of execution of the work the contractor must ensure use of appropriate tested tools by their workmen. Safe working practice must strictly be followed, e.g. use of proper plug & socket for electrical connections, right size & standard spanner, right capacity and tested lifting & pulling equipment etc.
- The Contractor must ensure tidiness of the work place during & after completion of the work.
- In case of any doubt relating to safety guidelines, the Contractor should seek advice of Engineer-in-charge / Safety Officer immediately for clarification.
- The contractor must provide adequate first aid boxes at different locations and maintain a register to this effect.
- The contractor should follow proper fire fighting procedure while executing the work.
- The contractor must provide proper barricades for excavations & other hazardous areas with proper marking even during nighttime.
- The contractor should use proper & safe scaffoldings wherever required.
- The contractor should take utmost care & precaution while handling inflammable gases, compressed gases & explosives.
- Proper hand trolleys should be provided for gas cylinder handling.
- It is recommended to provide flash back arrestor on all the gas cutting sets (On Cylinder side and torch side) to avoid back fire.
- Double pressure gauge should be provided on the regulator to know and Control the cylinder pressure and pressure at the cutting torch.
- Preferably D.A. cylinder should be used.
- The persons working on gas cutting should be provided with safety goggles and safety hand gloves.
- It should be ensured that everybody working at height should anchor the Knob/hook of full body harness to a rigid support above D`ring of the belt. If there is no provision for anchoring, then it should be made.
- It is recommended to use safety net in the areas where lot of material Handling is being done and people are working below
- It must be ensured to barricade the area where the material is being lifted at height.

- The contractor should use proper fall protection equipments while working at height and guard the bottom area.
- The contractor should not use any non-standard ladder inside Plant premises.
- The contractor should use proper electrical & lifting tools having periodic testing & inspection.
- The contractor should follow Plant PTW procedure. Before starting any work the contractor \ should obtain the required clearance from the concerned authority.
- The contractor should follow all safety standards, codes, rules, regulations & acts as in force.
- The contractor must engage only experienced and qualified manpower to prevent any safety lapses during execution of the work.

17. The contractor shall compulsorily provide personal protective equipment's (PPEs) to his employees & in the event of his not providing the same by date specified by EIC or as mentioned in contract, it will be provided by LANCO at contractors risk & cost. The cost of such PPEs provided by LANCO shall be recovered from contractor's bills at 'Double rates' as a measure of penalty.

18. All necessary personal safety equipment as considered adequate by the engineer-in-charge or the safety officer of LANCO should be made available at contractor's cost for use by the persons employed on the site and be maintained in a condition suitable for immediate use. The contractor should also give sufficient safety training and instructions to his workmen and ensure proper use of safety equipment by those concerned.

19. The contractor and their workers shall follow all safety rules while working so that there should not be any accident, which may cause loss of life or damage to LANCO's property. Contractor shall be fully responsible for accident occurred in the absence safety conditions mentioned herein & informed by EIC time to time. Contractor shall also take insurance cover for workmen compensation for the workers employed by him at his own cost.

20. The contractor has to make his own arrangement for T&P safety appliances and consumable required for the above job if not specifically mentioned otherwise.

21. PRE-EMPLOYMENT MEDICAL CHECK-UP

Contractor shall arrange for medical checkup of all employees before employment and shall ensure that no person with any of the following diseases is employed by him at the LANCO site.

- Epilepsy
- Colour blindness/Night blindness
- Deafness

Eye-sight of the employees in the following category shall be examined every six months.

- Crane operators
- LMV/HGV drivers
- Heavy earth moving equipment operators.

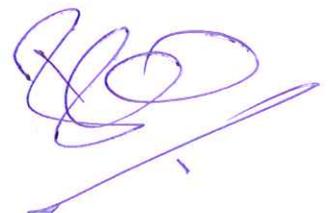
Records of such medical checkup shall be maintained and made available by contractor for inspection of LANCO at any time.

ANNEXURE – III

SPECIAL SAFETY GUIDELINES

SITE SAFETY DISCIPLINE

- A. THE CONTRACTOR SHALL MAINTAIN STRICT DISCIPLINE ON SAFETY MATTERS WHILE PERFORMING WORKS AT PROJECT SITE. THE CONTRACTOR SHALL ADHERE TO THE FOLLOWINGS:
- SMOKING IS STRICTLY PROHIBITED INSIDE THE SITE. WORKERS WHOSE WHO NEED TO SMOKE SHALL REACH TO THE SMOKING AREAS LIKE CANTEEN ETC.
 - PHYSICAL FITNESS OF WORKMEN TO UNDERTAKE DANGEROUS OPERATIONS SUCH AS WORKING AT HEIGHT, CRANE OPERATION ETC. SHALL BE ENSURED BEFORE ENGAGING THE PERSON ON WORK.
 - ALL PERSONNEL WORKING AT OR IN EXCESS OF TWO-METER HEIGHT (FROM WHERE THEY ARE LIKELY TO FALL) SHALL WEAR A FULL BODY SAFETY HARNESS ANCHORED TO A FIRM SUPPORT.
 - ALL EXCAVATIONS SHALL BE BARRICADED USING MS PIPES, CLAMPS AND REFLECTIVE TAPES.
 - ADEQUATE ILLUMINATION AT WORK PLACES SHALL BE ENSURED IN ADVANCE IF PLANNING TO UNDERTAKE JOB AT NIGHT.
 - THE WORKER'S MINIMUM AGE SHALL BE 18 YEARS, NO CHILD LABOUR SHALL BE EMPLOYED
 - ALL DANGEROUS MOVING PARTS OF THE PORTABLE/FIXED MACHINERY BROUGHT BY THE CONTRACTOR SHALL BE ADEQUATELY GUARDED.
 - PILING ZONES, ERECTION ZONES AND DISMANTLING ZONE SHALL BE BARRICADED AND NOBODY SHALL BE ALLOWED TO STAND UNDER SUSPENDED LOADS.
 - HORSEPLAY IS STRICTLY PROHIBITED AT WORKPLACES.
 - MATERIAL SHALL NOT BE THROWN TO AND FROM HEIGHTS; PROPER AND SAFE MEANS OF SHIFTING SHALL BE EMPLOYED.
 - ONLY LICENSED ELECTRICIANS ARE ALLOWED TO CARRY OUT ELECTRICAL CONNECTIONS, REPAIRS ON ELECTRICAL EQUIPMENT
 - OR OTHER JOBS RELATED THERETO.
 - INSERTING OF BARE WIRES FOR TAPPING THE POWER FROM ELECTRICAL SOCKETS IS STRICTLY PROHIBITED.
 - ALL THE DISTRIBUTION PANELS ARE TO BE PROVIDED WITH MCB'S AND ELCB'S.
 - GOOD HOUSEKEEPING TO BE MAINTAINED. DEBRIS, SCRAP AND OTHER MATERIALS TO BE CLEARED FROM THE WORKPLACE FROM TIME TO TIME. MATERIAL SHALL NOT BE STACKED TO SUCH HEIGHTS AFFECTING ITS STABILITY.
 - CONTRACTOR TO ENSURE STRICT COMPLIANCE WITH ALL APPLICABLE HSE LEGAL REQUIREMENTS APPLICABLE TO HIS SCOPE OF WORK WHILE WORKING FOR LANCO AT HIS OWN EXPENSE.
 - IN CASE THE CONTRACTOR IS REQUIRED TO WORK DURING NIGHT HOURS, A DEDICATED SAFETY SUPERVISOR SHALL BE DEPLOYED BY THE CONTRACTOR.
- B. CONTRACTOR SHALL SECURE VALID TEST CERTIFICATES FROM THE COMPETENT AGENCIES FOR ALL LIFTING TOOLS AND TACKLES AND SUBMIT THE SAME TO THE CONCERNED ENGINEER IN-CHARGE AND COPY TO SAFETY DEPARTMENT, LANCO FOR VERIFICATION ON THEIR ARRIVAL AT THE SITE. IF ANY LIFTING TOOLS/TACKLES ARE FOUND NOT HAVING A VALID TEST CERTIFICATE OR NOT SUITABLE FOR WORK INTENDED, THE SAME SHALL BE IMMEDIATELY REPLACED BY THE CONTRACTOR. THE REJECTED TOOLS AND TACKLES SHALL BE FORTHWITH WITHDRAWN FROM SERVICE AND REMOVED FROM LANCO PREMISES. RIGGING OF LOADS IN EXCESS OF 5 TONS AND/OR MORE THAN 15 METER LIFT HEIGHT SHALL REQUIRE "LIFT PLAN" APPROVED BY A STRUCTURAL OR MECHANICAL ENGINEER OF LANCO.
- C. "O&M CONTRACTOR WHOSE NUMBERS OF WORKERS ARE 50 OR MORE SHALL DEPLOY DEDICATED QUALIFIED AND EXPERIENCED SAFETY SUPERVISOR (ONE FOR EVERY 50 PERSONS). IN CASE THE JOB INVOLVES HIGH RISK THE NUMBER OF EXPERIENCED SAFETY SUPERVISOR/S TO BE DEPLOYED (IRRESPECTIVE OF NUMBERS) BY THE CONTRACTOR SHALL BE ENSURED AS PER THE DECISION/ INTERVENTIONS BY THE ENGINEERING IN-CHARGE/ SAFETY HEAD BASED ON THE RISK CRITERIA'S.
- a. HE/ THEY SHALL REPORT TO CONTRACTOR SITE IN-CHARGE FOR TAKING CORRECTIVE ACTION AND KEEP INFORMED LANCO SAFETY.
 - b. THE MAJOR O&M CONTRACTOR WHO IS DEPLOYING NUMBER OF AGENCIES UNDER HIS CONTROL SHALL APPOINT AT LEAST ONE QUALIFIED SAFETY OFFICER.
- IN CASE THE CONTRACTOR DOES NOT COMPLY WITH THIS CONDITION, LANCO WILL HIRE THE EXPERIENCED SAFETY SUPERVISOR AND DEDUCT THE MONEY FROM CONTRACTORS BILL.



LANCO POWER LIMITED (O&M) - CONTRACTOR SAFETY MANAGEMENT

SAFETY TERMS & CONDITIONS FOR WORKING IN PLANTS

A. INTRODUCTION:

In this document, the minimum standards pertain to the safe practices and working conditions are prescribed which are binding on all contractors/ sub-contractors to comply with.

This document shall be issued during the bid inviting process and also when the service contract/ work order is awarded to the CONTRACTORS who are selected based on the evaluation criteria (as given in annexure-7).

B. HSE POLICY OF LANCO:

Contractors shall strictly follow LANCO HSE Policy (as given here) and the guidelines in the form of other policies, procedures and work instruction. The spirit of the HSE Policy shall be reflected during the course of contract execution by implementing minimum expectation of LANCO.



Corporate Occupational Health, Safety & Environment Policy

We are committed to safeguarding the health and safety of all our employees and protect our Environment through:

- Institutionalising of HSE Management process, with HSE organization
- Regularly communicating, educating & imparting training on safety, health, hygiene and environment to all employees, contractors, contractor's staff and consultants or visitors
- Specifying and ensuring high standards of Safety & Environment at our site during construction & operation of our power plants etc.
- Evaluating the HSE performance of our employees & contractors against the HSE requirements
- Foster continual improvement, benchmark our HSE performance through adopting best practices with commitment to compliance of all applicable legal & other requirements.
- Committed to conserve our natural resources & minimizing potentially harmful effects resulting from our operations and to Implementing improvements associated with the prevention of pollution, injury and illness
- Conducting Periodic Audit & Risk assessment by competent team.
- Making the HSE Policy widely known to all employees, contractors & interested parties and periodically reviewing the same for improvement.

This Health Safety and Environment Policy will be applied throughout LANCO group via a set of documented company-wide and local policies and procedures.

Upon request, the policy will be made available to the public. We dedicate ourselves to the continual improvement in the HSE performance of our plant and make it an integral part of our work culture.

L. Madhusudhan Rao
EXECUTIVE CHAIRMAN
Date : 15.04.2011

C. Duties and Responsibilities of Contractor:

It is the duty of the Contractor to have knowledge of the relevant Health and Safety legislations and LANCO Safety rules to take account of it in the planning and executions of the contract works at LANCO site.

The Contractor shall ensure that, his sub-contractors are well aware of and comply with the requirements of this document. The necessary contractor pre-qualification process of LANCO is to be followed with while engaging a subcontractor under concurrence of Safety personnel in-charge and Contract Manager.

LANCO Access Process:

a. Contractor:

The contractor before entering into the site premises shall have the documents like valid work order, age and experience proof of its workmen, labour license, insurance documents to perform works at site and do the followings before actual work begins:

- a) The Contractor shall allow only its workmen, directly connected with the work to enter LANCO work sites, each such employee shall carry gate pass to be provided by Security department of the site, which will only be issued after a workman undergo safety orientation and qualify the oral quiz at the end of orientation.
- b) Safety officer/ safety supervisor of contractor shall conduct class room safety orientation training including safety video to all contractor's employees for 3 hours
- c) LANCO safety person will evaluate each workman the effectiveness of training by way of oral question answers, only successful employees will be issued the permanent gate pass.
- d) List of Skills to undergo Skill specific Safety training and clearance (not limited to the following skills:

- Crane Operator
- Fork lift Operator
- Riggers and Rigging supervisors
- Staging and Scaffolding supervisors
- Truck mounted lift operator
- Electricians
- Welders
- Blasters
- All P&M operators like fitters/ welders

The safety orientation training for the above mentioned skills shall be arranged by LANCO's Safety department at the reporting site and an internal certificate shall be issued to successful operators along with permanent gate pass.



b. Visitors:

Visitors shall be given the temporary gate pass and shall go through Safety Induction training at the gate.

D. Site Safety Discipline:

The contractor shall maintain strict discipline on Safety matters while performing works at project site. The contractor shall adhere to the followings:

- Smoking is strictly prohibited inside the Site. Workers those who need to smoke shall reach to the smoking areas like canteen etc.
- Physical fitness of workmen to undertake dangerous operations such as working at height, crane operation etc. shall be ensured before engaging the person on work.
- All personnel working at or in excess of two-meter height (from where they are likely to fall) shall wear a full body safety harness anchored to a firm support.
- All excavations shall be barricaded using MS pipes, clamps and reflective tapes.
- Adequate illumination at work places shall be ensured in advance if planning to undertake job at night.
- All dangerous moving parts of the portable/fixed machinery brought by the contractor shall be adequately guarded.
- Pilling zones, erection zones and dismantling zone shall be barricaded and nobody shall be allowed to stand under suspended loads.
- Horseplay is strictly prohibited at workplaces.
- Material shall not be thrown to and from heights; proper and safe means of shifting shall be employed.
- Only licensed electricians are allowed to carry out electrical connections, repairs on electrical equipment or other jobs related thereto.
- Inserting of bare wires for tapping the power from electrical sockets is strictly prohibited.
- All the distribution panels are to be provided with MCB's and ELCB's.
- Good housekeeping to be maintained. Debris, scrap and other materials to be cleared from the workplace from time to time. Material shall not be stacked to such heights affecting its stability.
- Contractor to ensure strict compliance with all applicable HSE legal requirements applicable to his scope of work while working for LANCO at his own expense.
- In case the contractor is required to work during night hours, a dedicated safety supervisor shall be deployed by the contractor.

E. Human Rights:

The contractor shall comply with the requirements of LANCO's Human Rights effort within the site by complying with the following requirements:



1. The worker's minimum age shall be 18 years, no child labour shall be employed
2. The contractor shall not engage himself in forced labour deployment at site
3. The contractor shall not discriminate any labour w.r.t. age, caste, religion etc. while working with LANCO

F. Legal Requirements:

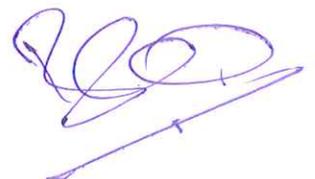
The contractor shall comply with all applicable legislation and Indian statutory requirements listed below but not limiting to:

1. Indian Electricity Act 2003 and Rules 1956
2. Central Electricity Authority Notification-2011
3. National Building Code, 2005
4. Factories Act, 1948, and Rules there under.
5. Motor Vehicles Act as amended in 1994 and The Central Motor Vehicles Rules, 1989.
6. Indian Road Congress Code IRC: SP: 55-2001 'Guidelines on Safety In Road Construction Zones.
7. The Petroleum Act, 1934 and Rules 1976
8. Gas Cylinder Rules, 2003
9. Indian Explosives Act. 1884, along with the Explosives substance Act 1908 and the Explosives Rules 1983
10. The (Indian) Boilers Act, 1923
11. The Public Liability Insurance Act 1991 and Rules 1991
12. Minimum Wages Act, 1948 and Rules 1950
13. Contract Labour Act, 1970 and Rules 1971
14. Child Labour (Prohibitions & Regulations) Act, 1986 and Rules 1950
15. Environment Protection Act, 1986 and Rules 1986
16. Air (Prevention and control of Pollution) Act, 1981 and Rules thereunder
17. Water (Prevention and Control of Pollution) Act, 1974 and Rules thereunder
18. The Noise Pollution (Regulation & Control) Rules, 2000
19. Notification on Control of Noise from Diesel Generator (DG) sets, 2002
20. Recycled Plastic Usage Rules, 1998
21. Notification, Central Ground Water Board, Act January 1997
22. Manufacture, Storage & Import of Hazardous Chemicals Rules, 1989
23. The Hazardous Waste (Management & Handling) Rules, 1989
24. Hazardous Waste Management Rules 1989 (as amended in 1999)
25. Batteries (Management and Handling) Rules.

G. LANCO Work Permit System:

The contractor shall ensure that an authorized work permit is obtained from the competent authority of Lanco before starting of any of the following work:

- Working at Height
- Excavation
- Hot work
- Hazardous Chemical Area Work Permit



- Confined space
- Isolation/ Electrical Work

The Permit to Work (PTW) will be valid for only eight (8) hours and for the particular activity. If the contractor requires to work beyond eight hours the permit shall be renewed for another 8 hours or less as the case may be. An approved copy of the permit must be kept available at the job site for review of LANCO Officials.

For routine activities like welding and gas cutting carried out at designated hot work locations (such as workshops) a Hot Work Permit is not required. However, pre-use inspection of the equipment and the work location shall be undertaken using the relevant Checklists before commencement of work.

The contractor is expected to be aware of all the requirements of the PTW system and is also responsible to make all its employees aware of the same. In case any clarification is required regarding the PTW system, the Contractor shall contact the Engineer in-charge.

H. Vehicles Movement and Parking at LANCO Site

Contractors are required to observe all traffic regulations prescribed by the LANCO at all times while inside LANCO premises. All vehicles and equipment (i.e. air compressors, generators, welding equipment, forklifts, cranes, etc.) owned, rented, or leased by the Contractor and its sub-contractors shall be properly identified and have a valid Vehicle/ Equipment Entry Pass issued by the Security Department prior to entering the LANCO premises.

All vehicles/equipment shall have permanent markings (12" X 10") indicating the Contractor's name or logo and the contact details of the Concerned Contractor personnel.

Failure to properly mark the equipment/vehicle will result in its removal from the Company premises.

All the contractor vehicles shall follow the speed limit in the plant/ at the site i.e. 20 KM/Hour.

Contractor using the transport vehicle shall comply with the requirements of Indian Motor Vehicle Act, 1988 and Rules there under. The said vehicle(s) shall be parked only at the designated area only if allotted to the contractor. If the contractor is not allowed a parking place, the vehicle shall be kept outside the project premises.

I. Tools and Tackles:

Contractor shall secure Valid Test Certificates from the Competent Agencies for all lifting tools and tackles and submit the same to the concerned engineer in-charge and



copy to Safety Department, LANCO for verification on their arrival at the Site. If any lifting tools/tackles are found not having a valid test certificate or not suitable for work intended, the same shall be immediately replaced by the Contractor. The rejected tools and tackles shall be forthwith withdrawn from service and removed from LANCO premises.

Only personnel holding appropriate Driving License and relevant LANCO authorization shall operate forklifts, industrial trucks, cranes and other construction equipment. Transporting of personnel on forklifts, industrial trucks and cranes is strictly prohibited.

Contractor shall furnish the training certificate of their riggers and equipment operators from Competent Third Party Agencies or in their own Official Letter Head (in case of in-house trainings). Such certificates shall include the details such as the modules covered, the hours spent etc.

Rigging of loads in excess of 5 tons and/or more than 15 meter lift height shall require "Lift Plan" approved by a Structural or Mechanical Engineer of LANCO.

J. GENERAL CONDITIONS OF WORK CONTRACT

1. The contractor shall comply with the provisions of The Factories Act 1948 and must comply with the latest codes and regulations of OSHA & other safety and occupational health standards applicable to them in their scope of work. The contractor shall strictly follow the policies, procedures and guidelines as described in O&M safety manual.
2. The employees employed by the contractor shall be skilled, trained and competent in accordance with the job requirements to the satisfaction of Engineer in-charge. The contractor shall employ sufficient number of supervisors to ensure adequate supervision of his work at all times.
3. All employees of the contractors (including workmen/ supervisor shall undergo a detailed safety induction program (which will be conducted by LANCO Safety person). Gate pass will be issued subject to successfully completion of induction training and test.
4. No person shall be allowed to carry any flammable/ explosive substance, arms/ ammunitions, drugs etc.
5. The contractor shall make arrangements for ensuring safety and absence of risks to the health of workers. The Contractor will satisfy with "Permit to work" requirements and ensure sufficiency in isolations and safety precautions taken in "Permit to work".
6. The contractor shall ensure that a good housekeeping is maintained throughout the work and at the end of each shift, all the debris, waste, scrap etc. is removed from work site and disposed at appropriate location. The job shall not be considered to



complete, unless all the waste, debris, scrap is removed from work site and disposed at appropriate location as per the site procedure.

7. The contractor shall ensure that the equipments/ electrical installations/ facilities provided by him are compliant to the standards and statutory requirements. He shall also ensure the testing/ examination of the equipments/ tools/ tackles in accordance with the provision of the factories Act & State Rules. The records of such testing shall be kept at the site, which are verifiable by LANCO official.
8. The contractor shall not remove any part of the equipment (like guards, fencing etc.). Wherever any guard or other part is removed for some justified cause/s the same shall be provided back to its original position before operation or use of such equipment.
9. The Engineer In-charge/ a safety person/ or any parson of LANCO shall have right at his sole discretion to stop the work if in his opinion the work is being carried out in such a manner that it may cause accidents and endanger the safety of persons and/or property and/or equipments.
10. The contractor shall not commence the work unless he has obtained an appropriate work valid work permit/s which is/are applicable for the job.

H. SCAFFOLDINGS AND WORK PLATFORMS

1. The contractor shall follow the procedure for scaffold erection and safe working platforms as provided in LANCO O&M Safety Manual. The scaffold and working platform shall be inspected by LANCO safety person and declared safe to use. Scaff-Tag shall be put accordingly.
2. The contractor shall take all precautions to prevent any accidental collapse of scaffolding or working platforms. Daily inspection by Contractor shall be done before starting work.
3. The contractor shall ensure that scaffold erection/ repairs are done under competent supervision.
4. No bamboo scaffold are permitted, the scaffold material shall meet with the required strength and should be without corrosion/damage. The material used for scaffold/ work platform should confirm to BIS standard.
5. No scaffolding shall be made in the vicinity of any live electrical installation such as switchyard, transformer yard etc.
6. Barricading
 - † All specific work areas must have barricades around them and only authorized workers shall be allowed to get inside the work area. In Excavations, holes etc. the barricade must have guard railing provided with a top-rail at 1.2 meters, mid rail at 0.7 meters and toe-board of 0.2 metres height.



MS pipes, clamps and tape shall be used for constructing barricade. Use of "Rebars" for barricading is prohibited. The barricade shall be constructed so that it is well able to support the loads being imposed on it.

I. CONFINED SPACE

1. The contractor shall strictly follow the Procedure for Working in Confined Space as provided in LANCO Safety Manual and obtain the necessary work permit from the authorized person.
2. No person shall be allowed to enter any chamber, tank, pit, pipe, flue gas ducts unless the manhole of required size is provided and the presence of any harmful/ flammable gas, vapour, dust, mist, fumes is tested and declared safe by a competent person of LANCO and the concentration is well within the safe limit for eight hours exposure. The Contractor person will measure atmospheric condition in the confined space periodically as decided by LANCO safety person and in case of any abnormality; he will promptly evacuate people from the confined space and inform his supervisor and Engineer In Charge of LANCO.
3. The contractor shall measure/ take reading of Oxygen (O₂), Carbon Monoxide (CO) and Sulphur Di-oxide (SO₂) in each shift.
4. The contractor shall take effective measures to remove any gas, fume, vapours, dust, mist etc and the continuous ventilation to be ensured.
5. No portable electric light or any other electrical appliance of voltage exceeding 24 volts shall be permitted to use inside any confined space.
6. The contractor will maintain a register at site to keep a log of people for their entry and exit.
7. The manhole or access door shall be kept open and locked to prevent inadvertent closing of access door.
8. The contractor shall depute a supervisor for whole watch and trained rescue persons (team) along with the rescue kits/ tools.
9. On completion of job, the contractor shall ensure that all the persons as per the log have come out and the same has been verified. This will be counterchecked and certified by a LANCO supervisor.

J. OPENINGS

1. The contractor shall ensure that vessel, sump, tanks, pit or opening in ground or in a floor which by reason or its depth, situation, construction or may be a source of danger at his work place shall be either securely covered or fenced. Based on the situation all measures for person's fall protection to be ensured.



2. In addition, the necessary measures for protection against falling material/objects shall be taken by the contractor in his scope of work.

K. ELECTRICAL HAZARDS

1. The contractor shall ensure that all electrical installations/ equipment used in O&M work area comply with the requirements of latest electricity act/ rules.
2. The contractor shall obtain the specific work permit from concerned authority before commencing the job and shall ensure that electric isolation is done.
3. He shall take all suitable and adequate measures to prevent any worker from coming in to physical contact with any electrical equipment, apparatus, machine or live circuit which may cause electrical hazards.
4. The contractor shall provide sufficient ELCBs for all the portable equipment, electrical switchboards, distribution panels etc. To prevent electrical shock to the workers.
5. In addition the suitable and adequate personal protective equipment shall be provided by the contractor.
6. The contractor should ensure the use of single/ double insulated/ plastic body hand tools for protection of workers. Always maintain a safe distance from live electrical systems. No metallic object which can infringe safety distance shall be carried to live electrical installation. In this regard the following minimum and safe distance shall be maintained from any live installations, high voltage conductors.

Safe Minimum Distance to be maintained from high voltage conductor/ installation:The following minimum safety working clearances shall be maintained for the bare conductors or live parts of any apparatus.

High system Safety working

<u>Voltage (KV)</u>	<u>Clearance (Metres)</u>
12	2.6
36	2.8
72.5	3.1
145	3.7
245	4.3
420	6.4
800	10.3



7. The contractor shall ensure proper earthing of system while working on system having voltage >1000V.

L. LIFTING TOOLS AND TACKLES

1. The contractor shall use the lifting appliances (including crane/ hydra etc), tools and tackles including fixed or movable that are in good condition and examined by the competent person and certified as per statutory requirements.
2. The Safe working load, inspection details shall be displayed of lifting machine/ lifting tools/ tackles etc. The contractor shall produce the evidences / certificate of competent persons as per the prescribed form given in the State factories Rules.
3. Before use of any lifting appliance, tools and tackles the contractor shall check through a check list (as given in LANCO Safety Manual and ensure that all controls are perfectly working.
4. All lifting appliances, tools, tackles shall be operated by a skilled, trained and certified person only.
5. For heavy load lifting the contractor shall submit his lifting plan and procedure for approval of LANCO safety department. After verification of lifting tools/ lifting machine/ lifting tackles, clearances, barricading etc. and competencies of operators, riggers and contractor supervisor the safety person of LANCO will approve the plan. Then only the contractor shall start lifting activities.

M. OVERHEAD PROTECTION

1. The contractor shall ensure that any area which has electrical lines/ conductor in such area the lifting machines like crane, hydra etc shall not be operated.
2. The contractor shall ensure that wherever there is a possibility of falling of any material, equipment or any load is being lifted the area should be cordoned off or otherwise suitably guarded to prevent inadvertent entry of any person/ vehicle etc.
3. Wherever there is a possibility of falling of any material, article or object or person while working at height, a suitable and adequate safety net shall be provided. The safety net should be in accordance with BIS standards.

N. WORKING AT HEIGHT

1. Before commencing any work at height (2 meters or more) the contractor shall obtain "Work Permit" from the concerned authority of LANCO.



2. All working platforms, ways and other places of O&M work area shall be free from accumulation of any material causing obstructions and tripping.
3. The contractor shall follow the standard procedure for erecting safe scaffold, safe access and working platform. The scaffold and working platform shall be inspected by Lanco safety person and declare it fit to use.
4. Every opening at elevated floor, through which a worker/material/equipment/tool may fall in O&M work area shall be covered and/or guarded suitably by the contractor to prevent such falls.
5. Where the workers are working at height of 2 meters or more, the contractor shall provide full body harness and suitable independent anchorage points (in case a worker is supposed to work at one specific location) and a life line of 8 mm diameter wire rope. In addition a safe access (ladders etc) shall be provided with fall arrester.
6. As passive fall protection, safety nets shall be installed. The safety nets shall conform to BIS standard.

O. HANDLING OF HAZARDOUS CHEMICALS AND HAZARDOUS WASTE.

1. The contractor shall ensure that the material/ waste characteristics and safe handling methods and precautions are very well communicated to all concerned workmen.
2. The contractor shall provide suitable personal protective equipments i.e. safety goggles, rubber hand gloves, apron/ full body chemical protection suit, safety shoes/ gum boots, helmet (as prescribed in procedure of Handling Hazardous Substances).
3. As a precautionary measure the contractor should keep the eye wash bottle.
4. The Contractor shall check availability of safety shower and eye washer system in the vicinity of work before working on hazardous chemicals and waste.

Use of Radioactive Substances:

Contractor shall comply with all legal requirements and take necessary precautions to carry out the activity involving radioactive materials in a safe and environmental friendly manner.

The contractors involved in activities utilizing hazardous radiation shall comply with the following:

- Appoint an on-site Radiological Safety Officer (RSO) certified by the competent Government Authority (Bhaba Atomic Research Centre) whose certification shall be verified by LANCO prior to engagement;
- Provide specific PPEs as advised by RSO to all the workers involved in radiation activity and are exposed to hazardous radiation;



- RSO authorized worker shall wear a personal radiation monitor that is issued to them by Contractor. This personal radiation monitor will be approved by RSO;
- Ensure that all the activities are undertaken in a safe manner and are as per the guidance of RSO;
- Provide a comprehensive training to all the workers involved in radiation activity as guided ; and If any worker or contractor observes any abnormal activity taking place or any incident occurred, shall immediately inform to LANCO Safety team and shall stop the work immediately.

P. Occupational Health

- Contractor shall make all arrangements for close adherence to Occupational Health requirements and guidelines issued by the Ministry of Labour, Ministry of Health and other Government Statutory Agencies as well as the Company **requirements**. Amendments issued from time to time in these requirements during the execution of the work shall be complied by the Contractor.
- Implementation of the above requirements may need qualified personnel, measurement devices and other resources which Contractor shall arrange at its own expense.
- In order to ensure that all the contractors' employees are fit while performing works at site, the contractor shall ensure that a detailed health check-up for the workers are carried out at his own cost before bringing to the work. The said health checks up to be in concurrence with the HSE personnel in-charge of the site.

Q. EYE PROTECTION

1. Depending up on the nature of hazards, the contractor shall provide suitable eye protection equipment to his workmen.
2. The contractor shall ensure that his workmen engaged in operations like welding, cutting, chipping, grinding, handling hazardous substances/ wastes etc. This may cause injury to his eyes.

R. FENCING OF MACHINERY

1. The contractor shall not bring any portable tool, concrete mixer, compressor any kind of equipment which has exposed moving parts and not securely guarded.
2. The contractor shall not allow any worker to examine any worker to examine any part of machinery/ equipment or to carry out the lubrication or adjusting operation while the machinery is in motion.



3. The workers working near the machinery in motion shall be provided with tight fitting cloths as required under The State Factories Rules.

S. SAFETY ORGANIZATION

- a. O&M Contractor whose numbers of workers are 50 or more shall deploy dedicated qualified and experienced safety supervisor (one for every 50 persons). In case the job involves high risk the number of **experienced safety supervisor/s** to be deployed (irrespective of numbers) by the contractor shall be ensured as per the decision/ interventions by the engineering in-charge/ Safety Head based on the risk criteria's.
- b. He/ they shall report to Contractor Site In-charge for taking corrective action and keep informed LANCO Safety Department.
- c. The major O&M contractor who is deploying number of agencies under his control shall appoint at least one qualified safety officer.

T. Stop Work Authority

If it is observed that the work being performed, in a manner, which is likely to result in imminent danger to life or property, the engineer in-charge or Safety Personnel in-charge may in writing, can STOP the affected work and prevail on the contractor to bring back the safe working conditions.

Further, failure to comply with any of the requirements specified in this document (or its associated documents), or any action or inaction by the Contractor that can cause or result in injury to personnel or damage to Company property may result in:

- Completion of the work by a third party at Contractor's expense and/or
- Termination of the contract.

If the work at the site is stopped by LANCO's HSE personnel In-Charge, for non-compliance with approved procedure, the delays due to stoppage of work shall be attributed to the contractor.

U. REPORTING OF INCIDENTS

1. In case of any near miss, injury case it shall be responsibility of the contractor that it is immediately reported to the concerned Engineer In-charge and safety department of LANCO.
2. The injured person shall be immediately taken to Plant Occupational Health Centre and will be given first aid. Based on the kind and extent of injury the injured person shall be referred to external hospitals and the contractor shall be solely responsible to ensure suitable and adequate treatment to the injured person.



3. In case of temporary/ permanent/partial/total disablement or fatality the contractor shall be responsible to provide the medical treatment and/or compensation as per The Workman Compensation Act.

V. PERSONAL PROTECTIVE EQUIPMENT

1. The contractor shall provide safety helmet and safety shoes (complying with the Indian Standard) to all his employees (including his sub-contractor employees).
2. Wherever any worker is engaged on a work at a place from which he is liable to fall more than TWO Meters shall be provided full body safety harness with the arrangement of lifelines which are well secured with firm anchorage points.
3. Where the workers are exposed to the noise level of more than 85 decibels, these areas are declared as hearing protection zones. In such areas the contractor shall provide ear plugs/ ear muffs based on the quantum of noise level.
4. Wherever, in any operation/ activity there is probability of eye injury due to foreign particles, chemicals and/or light radiations the contractor shall provide the suitable eye protection equipment i.e. safety goggle, face shield, welding shield etc.
5. In case a LANCO official find that the employees of the contractor working without use of appropriate Personal Protective Equipments (PPE), LANCO shall have a right to issue the PPEs to the concerned worker and deduct the cost and overhead charges from the bill of contractor.
6. LANCO may provide special protective gears like self containing breathing apparatus, safety nets, supplied air line breathing apparatus etc. On chargeable/ non-chargeable basis.

X. SAFETY COMMUNICATION & TRAINING

1. The contractor shall ensure that before starting any activity, Tool Box Talks are conducted by his supervisor and the hazards associated with the activity/operations and precautionary measures are communicated to all workers.
2. All the contractor supervisors and workers shall undergo safety orientation program which will be conducted by LANCO Safety Department.
3. The contractor shall have enough display regarding Dos/ Don'ts in his work area and ensure that his workers fully understand the same.
4. The contractor shall provide training on use of fire extinguishers and first aid to all his employees and records thereof shall be submitted to Engineer incharge and Head of Safety.
5. The contractor shall discuss in tool box meetings about the near miss incidents/ injury cases and their root cause and preventive measures.



6. LANCO may also conduct specific training module for the contractor staff.

Y. EXCAVATIONS

1. Digging / excavations are not permitted without a valid excavation permit. The contractor shall ensure that excavation work permit is obtained from competent authority of LANCO>
2. No scaffold shall be erected within two meters from the excavated edges.
3. The proper shoring of excavations shall be done and no top soil or any kind of load will be placed within one & half meters of the edges of excavation. Based on **the soil** texture and other properties, the safe distance may be increased by the supervisor/ engineer of LANCO.

Z. Documentation and Record Keeping

The contractor shall maintain the following records within the contract duration at the job site:

- Log of all first aid cases reported and treated, showing date, name of injured, job nature of injury and type of treatment given;
- All incident investigation report (i.e. injury, illness, traffic, property damage, environmental incident and as well as Near Miss Incidents);
- HSE meetings or toolbox meeting records or minutes showing date of meeting, who attended and the topics discussed;
- Job site inspection / Tool Inspection / audit reports and status of the action plans;
- Records to show dates, name of participants and subject of training programs;
- Lifting tools and tackles inspection records, 3rd party testing certificates;
- Infringement Reports and traffic violations;
- Waste Management Records;
- Work Permits;
- Job Safety Analysis; and
- Fire Fighting Equipment Inspections.

In case of any reportable incidents, occurred while being contracted by LANCO, the Contractor shall forthwith notify the details to LANCO Corporate Office in the legal/judicial proceedings. All documents including reports, communications, photographs etc. related to the incident shall be preserved by the Contractor till the closure of the case by the statutory/ judicial agencies. The Contractor shall furnish copies of any document mentioned above, if required by the company during the course of the legal/ judicial proceedings.

AA. PENELTIES



1. The Permanent Disablement shall be estimated as per The Workmen Compensation Act-1923. The penalty mentioned as above shall be in addition to the compensation payable to the workmen as per The Workmen Compensation Act-1923.

Annexure-1

List of PPEs as per LANCO's Standard Requirements

S No	Type of PPE	Standard
1	Safety Helmet	IS 2925: 1984 IS 2745:1983 (for fireman & fire staff)
2	Safety Shoe	IS 15298: 2002
3	Visibility Jacket	NA
4	Full body Harness	IS 3521: 1999
5	Fall Arrestor	EN353-2:2002
6	Goggles	EN166:2001
7	Welder's Glass	ANSI Z 87.1
8	Hand Gloves	NA
9	Nose Mask	IS 9473: 1980
10	Ear Plug	EN 352-2: 2002

