

ODISHA POWER GENERATION CORPORATION LIMITED (OPGC)

IB THERMAL POWER STATION

BANAHARPALI, JHARSUGUDA, ODISHA

EM-4/61 (Part-B)

SAFETY, HEALTH & ENVIRONMENT (SHE)

RULES & REGULATIONS FOR CONTRACTORS

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1. INTRODUCTION

The purpose of this standard is to specify the requirements for managing safety when contracting work. This safety standard is based on the best practices for managing contractor safety in the utility industry.

CONTRACTOR shall perform all work required by his Contract in a safe, healthy and environment friendly manner. During work, the CONTRACTOR is directly responsible for; shall comply with; and enforce all laws, rules; regulations of OPGC are relevant to the work being performed. CONTRACTOR will manage all subcontractors on site and will be accountable for subcontractor performance with respect to Environment, Health & Safety and (EHS).

Prior to the start of any work, the Contractor shall survey and plan the work. The contractor shall review Contractor's SHE Program and submit their safety plan to the OPGC's concerned Project Manager.

2. SCOPE

This program lays down the SHE related requirements and guidelines and provides advice based on local experience and legal requirements for safe working practices for all activities of the project involved with high risks. This SHE management program also applies to all personnel involved in Company projects. All parties are required to comply with this safety program as well as all National, State and Local regulatory guidelines.

3. OBJECTIVE

This procedure has been developed to assist both OPGC and Contractor Managements to control these hazards and ensure that high standards of safety have been maintained at OPGC's work site. The procedure shall be provided at a minimum to all high contractors with other bid documents. Contractors participating in the bidding shall go through the procedure carefully & submit an undertaking in the format given as in **Appendix-2**.

4. ENVIRONMENT, HEALTH & SAFETY POLICY OF OPGC:

Contractor (s) shall strictly follow OPGC EHS Policy guidelines. The spirit of the EHS Policy shall be reflected during contract execution by implementing the minimum EHS expectation of OPGC as declared in the Policy objective. Refer OPGC EHS Policy as enclosed as enclosure.

5. RESPONSIBILITIES

OPGC Project Manager - OPGC personnel directly responsible for the project work execution and implementation of applicable EHS rules and regulations on the project involved.

OPGC Site Safety Manager - Person designated to coordinate and support Project Managers to enforce safety policies of OPGC on the project.

Contractor's Site Manager - Person designated as the senior site manager by the Contractor chosen for the project.

Contractor's Safety Manager/Officer/Supervisor - person designated to carry out, monitor, and enforce agreed safety rules and regulations. policies of the Contractor on the project, in compliance with the project agreements OPGC policies.

Supervisor - Lead field labor supervisor or foreman for the Contractor/Subcontractors.

Personnel – Individuals performing the labor tasks for the Contractor/Subcontractors.

6. DEFINITIONS AND INTERPRETATIONS

In the Contract, the following words and phrases have the meaning hereby assigned to them, except where the context otherwise requires.

Contractor – A person or company contracting with OPGC to provide services.

Sub-Contractor - A person or company employed by the prime or general contractor who is contracting with OPGC to provide r services.

Contractor Pre-qualification – This process is an assessment of contractors wishing to work OPGC. The process is independent of individual contracts and is carried out to ensure that only contractors with acceptable past safety performance and appropriate safety programs are awarded work.

Contract Administrator – An OPGC person assigned responsibility for administering contracts, including preparation of the contract tender or request for proposal (RFP) documents, arranging pre-bid meetings, coordinating the bid/ proposal evaluation process and recommending the awarding of the contract.

Project Manager – An OPGC person who is given the overall responsibility and authority for the successful completion of a project. His/ her responsibilities include the assignment of the contract monitor, conducting the pre-construction site meeting, resolving contractor safety performance issues, final inspection of the work, conducting the closing meeting with the contractor and completing the contractor evaluation.

Contract Monitor (Engineer In Charge/EIC) – An OPGC person who reports to the Project Manager and is responsible for monitoring the contractor's safety performance and providing feedback to the Project Manager. The Contract Monitor will compare the contractor's work and work methods with the standards and expectations defined in the contract.

OPGC Contact Person- The EIC of the Contract is termed as the OPGC contact person for that contract only.

Contractor Safety Orientation – A meeting at the start of each contract involving all contractor employees to discuss AES safety standards and the specific safety requirements for the contracted work.

High-Risk Work – Refer OPGC’s list of high-risk activities (Appendices-1). Work that exposes people to hazards that, should an incident occur, may result in a lost time injury (LTI), fatality or permanent disability.

Low-Risk Work – Work that exposes contractor’s employees to hazards that, should an incident occur, may result in a minor injury but not a lost time injury; examples include but are not limited to, training, consulting, office equipment maintenance, office cleaning.

Hazard Assessment – An assessment of the contracted work to identify and document the hazards inherent to the work site and facility. The hazard assessment is provided to the bidders as part of the bid/request for proposal documents.

Daily Job Safety Plan – A process that individual employees and working crews must follow to assess and document the critical safety issues pertaining to the day’s work. That can be JSA/Method Statement/SOP/SMP

Shall/Will: The word 'shall' be understood as mandatory

Should: The word 'should' be understood as strongly recommended

May: The word 'may' be understood as indicating a possible course of action

Restricted Areas: A Restricted area is defined as that area over which OPGC exercise control of all movements and operations and where entry is granted only with permission from OPGC.

Hazardous Areas: An area in which there exists or may exist flammable or other hazardous atmosphere.

7. PROGRAM REQUIREMENT & IMPORTANT GENERAL SAFETY INSTRUCTIONS:

The goal of this program is to complete the project with zero incidents. This goal can only be achieved when everyone commits to error-free performance. The commitment to achieve this goal will result in increased productivity and the prevention of job-related losses.

Active participation and personal cooperation of all supervision and employees, and a positive coordination of their efforts carrying out the following:

- Stop Work Authority program. It is both the right and responsibility of all EMPLOYEES, be they OWNER, CONTRATOR or SUB-CONTRACTOR to stop any work activity that currently has or has the potential to develop into an unsafe situation. Work must stop immediately after an unsafe situation is identified, regardless of the job’s priority or importance. Work shall resume only when the unsafe situation has been remediated. Never hesitate to stop work – it doesn’t matter if it’s later determined that invoking the work stoppage was an error. A person will not suffer retribution or

negative consequences of any sort for stopping work for safety reasons. Establish and maintain a system for early detection and correction of unsafe practices and conditions.

- Contractors on OPGC site must obey OPGC safety rules, signs and instructions.
- All contract employees have a responsibility for their own safety and the safety of others.
- The Contractor shall not charge or back charge OPGC for any delays, work stoppage, or scheduling issues resulting from enforcement of the OPGC Safety Rules.
- Contractors are responsible for establishing control measures to protect employees under their control from exposure to hazards.
- Contractor shall furnish, erect, and maintain warning notices, signs, signals, lights, protective guards, enclosures, platforms, barricades and other devices as necessary to adequately protect all personnel on site; including but not limited to employees, subcontractors, other contractors, OPGC people and the public.
- If the scope of work requires the removal of existing guardrails, handrails, floor grating or other physical barrier, contractor shall have written permission from OPGC Project Manager/EIC. Barriers that have been removed to facilitate work must be properly replaced as soon as the work is completed. Unguarded openings must be attended always.
- If covers are required to protect floor openings, excavations, trenches, pits, then the contractor must ensure the cover can support, without failure, at least twice the weight of any employee, equipment and/or material that may be imposed on the cover at one time.
- Chemicals must be handled in authorized manner. Handling of chemical must be carried in accordance with Material Safety Data Sheet (MSDS) regulation and EIC /Officer In charge/supervisor's guideline.
- Establish and implement safety education programs designed to stimulate and maintain the interest and active participation of all personnel involved with the project. Such programs should include:
 - Safety meetings and safety communications;
 - Use of incident trends and causal analysis to preclude reoccurrence of similar incidents;
 - Use of proper work procedures, personal protective equipment, and mechanical guards;
- Safety instruction to individual employees and group safety training programs; and managing records, incidents, claims, losses, and development of incidence/loss experience summaries.

ESSENTIAL DUTIES:

- (i) Use effective verbal and written communication skills.
- (ii) Listen to directions and suggestions from Project Manager/EIC/Supervisor/EHS officers regarding safe and proper work practices.
- (iii) Work up to a 12-hour shift. Never work beyond 12 hours unless otherwise OPGC Project Manager/EIC allows to do so.
- (iv) Climb and maintain balance on steel framework, stairs, ladders and scaffolds.
- (v) Identify workplace safety hazards and take all necessary corrective action to eliminate or minimize them.
- (vi) Understand and respond appropriately to all safety hazards and warning devices (i.e. back-up alarms, smell of smoke, different colored warning tags, warning sirens).
- (vii) Understand and implement lockout/tag out procedures in a safe manner.
- (viii) Participate in the jobsite Safety meetings as required.

8. OPGC SAFETY CARDINAL RULES/ZERO TOLERANCE ISSUES:

“Cardinal Safety Rules” are OPGC rules that, if violated, have a high probability of resulting in a serious adverse outcome. Contractors must ensure that employees working under their control do not violate these Cardinal Safety Rules. Failure to comply with Cardinal Safety Rules will result in immediate corrective action for the employee and, if OPGC determines it appropriate, the Contractor, up to and including termination from the current job and removal from consideration for future OPGC contracts. The OPGC Cardinal Safety Rules are:

- (i) Personal Protective Equipment (PPEs) as applicable to a given task must be used at all times.
- (ii) All high or medium risk jobs must be performed with valid Job Safety Analysis (JSA) followed by pre-job briefing.
- (iii) No entry to ITPS plant premise or no permission to do any work at ITPS under the influence of alcohol or drugs.
- (iv) Do not walk or work under a suspended load & use only tested & certified lifting tools & tackles on the job.
- (v) Do not handle and operate equipments unless authorized & licensed to do so.
- (vi) Do not tamper or remove guards, hand rails and other safety systems unless authorized to do so.
- (vii) Ensure energy isolations, lock-out-tag-out (LOTO) and strictly follow work permit instructions.
- (viii) Never work of & above 06 feet (1.8 meters) without fall protection.
- (ix) All injuries & near misses must be reported.
- (x) Illegal handling or disposal of hazardous materials not allowed.

(Note: - Deviation/lapses from the above cardinal rules but not limited to these are treated as major safety violation.)

9. HYGIENIE, GENERAL PRACTICES / UTILITIES FOR REST & FOOD INTAKE:

The Contractor shall ensure that its personnel shall maintain the highest standards of hygiene in connection with the performances of any contract for works or services it may have with OPGC.

The only safe source of drinking water is a drinking fountain/taps. Other sources shall not be used.

- Do not use air, gas, water, electricity, fuel or other site facilities/utilities unless the source of supply has been designated & authorized by OPGC.
- Contractor personnel must not enter any building or area not required by their work. Wandering about the plant is prohibited.
- Contractor personnel are permitted for taking food in designated places either in OPGC Canteen or in any other designated site.
- Contractors shall take rest in designated rest sites. Taking rest in work places is prohibited.
- Taking rest & food in unauthorized sites will be treated safety rule violation;

11. SITE ENTRY PROCEDURE

The Contractor must comply at all times with the requirements of OPGC Site Security rules. The contractor for all personnel requiring admission to the Site, a Security gate pass request must be processed in advance.

11.1.“Gate Entry Pass” will be issued by the OPGC site administration and contractor person/people need to proceed to the OPGC contact person directly to follow the safety induction procedures. Gate Pass will be issued after site safety induction/training and fulfillment of other statutory requirements and duly certified by EIC on the gate pass entry request application. After imparting safety trainings, the gate passes will be stamped/ marked as ‘Safety training imparted’. No contractor and their employees shall be allowed to enter inside the Plant for carrying out jobs unless the safety training has been given to them and duly stamped as above

OPGC may issue to the Gate Entry Passes” for the admission of contractors and “Visitor Gate Passes” to the normal visitors.

These passes are to be returned on the demand of OPGC and in any case at the completion of the contract.

All Contractors’ staff must enter and leave the site via the Security Gate.

All Contractors’ staff will have to produce their gate entry pass if asked by Security when entering AND leaving site. .

If any of the Contractor's or Sub-contractor's staff is found unjustifiably outside the working areas, then they will be removed from Site.

Ensure your name is recorded on the appropriate Contractors daily attendance page.

11.2. The contractor shall furnish to EIC the list of materials such as lifting tools and tackles, power tools, T & Ps (testing status to be maintained), gas cylinders, and any hazardous chemicals along with MSDS to be mobilized before commencement of work. All these materials shall be checked at Plant gate by Security, EIC & EHS for no objection. Contractor at no situation shall enter untested or substandard or unapproved tools, equipment or vehicles. Tested and approved tools, equipment & vehicles only can be entered into Plant Premises. Unauthorized entry of hazardous substance is strictly prohibited from Plant gate. Contractor materials shall be entered inside Plant with valid Security Certification on recommendation of EIC. Violation of the OPGC site entry rule shall be treated major safety violation. Strong disciplinary step will be booked against the violation.

12. PROJECT SAFETY PLAN & DAILY JOB SAFETY PLAN:

After knowing the detail hazard information of high-risk jobs, contractor shall provide a comprehensive project safety plan fulfilling minimum Safety expectation of OPGC. This is applicable for construction of new projects or prolonged outages (> 20 days) or complex works.

Daily Job Safety plan shall be prepared by the Contractor in advance before commencement of a particular day's job in consultation to concerned OPGC EIC. Work Permits, Resource Planning & JSA all together can be considered as daily job safety plan.

The project safety plan & its suitability/ appropriateness for the Contract job shall be verified & approved by the Project Manager. This is one of the important Contractor's job planning activity.

13. HEALTH & FITNESS

The Contractor shall ensure that all its employees engaged in the work are medically fit and healthy. Any medical disabilities including such disabilities which Contractor may consider will not adversely influence the employee's ability to perform his role in the work should be reported to OPGC prior to the start of the Work. Contractor shall provide health certificates in compliance with Odisha Factory rule for their personnel at the time of applying gate entry pass. No contractor personnel will be issued gate entry pass without the submission of health & fitness certificate in the prescribed form. Contractors will closely monitor the requirement of health checkup at a maximum interval of one year or less for their employees in line with Odisha Factory Rules and based on their employees prevailing health condition.

14. WORK PERMIT

Work Permits will be issued in accordance to OPGC PTW procedures before performing any activity/function such as entry inside confined space, inside tank/vessel, excavation, work involving radiation sources etc, work at height, working with machineries & equipment's. Specific permit for

hot work e.g. cutting, welding, grinding, chipping or sand blasting shall also be issued. During such activities the contractor shall ensure that a fire watch is deployed, and the person must clearly understand his duty & responsibility. Project manager/ EIC or his authorized representative supervising the job shall be responsible for obtaining & clearing the permit with the knowledge and consent of the contractor or his representative. It shall be the responsibility of the contractor to see that none of his employees start the job until, an appropriate permit has been issued with proper isolations followed by Pre-job briefing and job safety awareness by the EIC and the contractor or his safety coordinator.

15. HOUSE KEEPING & CLEAN SITE

The Contractor shall ensure that the site of the works is kept free of surplus, waste or redundant materials or items and shall maintain a clean and tidy site throughout the duration of the work. Access ways and emergency exits shall be kept clear from obstruction at all times. Combustible scrap and debris shall be removed at regular intervals during the course of project. All solvents shall be kept in approved, properly labeled containers. Contractors' bill payment will be held up unless otherwise housekeeping of their job site is maintained.

16. SITE OFFICE AND STORES

The Contractor will be allowed a working area on the site which shall be maintained by the Contractor for his site offices etc and on completion of the contract shall reinstate this area at his own expense, to the satisfaction of OPGC. The Contractor will also be given access to any reasonable area around the site.

17. SAFETY EQUIPMENT

The Contractor shall, at its own expense, provide adequate safety equipment of an approved type and amount as is required for the execution of the contract works. The Contractor shall maintain this equipment in a professional manner as dictated by legal and industry standards. In addition, the Contractor shall keep up-to-date records of all said equipment.

17.1. PROTECTIVE PERSONNEL CLOTHING AND EQUIPMENT

The Contractor shall, at its own expense, supply its personnel employed at the site of the works with adequate protective personal clothing and other protective equipment which shall be maintained in good condition or replaced, and shall be worn on all relevant occasions as specified by OPGC and good practice. It is the responsibility of the contractor to provide adequate instruction/training for the correct usage and maintenance of these equipment & PPEs, inspection & suitable storage of their Personal Protective Equipment. The Contractor is also responsible for ensuring that the PPE is used and maintained in accordance with the manufacturer's specifications.

In the event that the Contractor fails to supply or provide adequate safety equipment or PPE, OPGC reserves the right to issue such safety equipment/PPE to the workforce provided by the

Contractor and back charge the same from the Contractor with one and half times of the cost of item as administration fee and penalty for every item issued.

PPEs shall meet the following minimum standard and shall be maintained in good condition to give desired level of protection to wearer. Contractor has to assess the quantity of PPE required considering the job hazard and nature of job.

SPECIFICATION & SELECTION OF PPES:

A. SAFETY HELMET/HARD HAT-

IS/ CE/ ANSI certified

Material- HDPE and ABS Plastic

Colour- **DARK YELLOW** with name of contractor mentioned in front portion.

All safety helmets shall have textile chin strap, padded head band & of Plastic or Cotton cradle.

Make & Brand- Karam/ MSA/Venus/ Udyogi/ or any other equivalent brand approved by OPGC EHS

B. SAFETY GLASS/ SAFETY GOGGLES - IS/CE/ANSI certified

Polycarbonate, UV protected, Anti scratch, Anti fog

Colour- Colourless for all time and strictly in low light areas and night time. Grey may be used in day time within areas with adequate visibility.

Make & Brand- 3M/ Uvex/ Udyogi UD 61/ Karam-ES005/Venus- G-203-CHC or any other equivalent brand approved by OPGC EHS

Prescription glasses users shall use cover the glass.

C. SAFETY SHOE:

IS/ CE/ ANSI certified

Leather with Steel Toe

Anti-Static, Anti Skit, Anti Shock, Oil & Acid resistant with shock absorber

Make & Brand- Bata / Liberty/ Jaypee 1217/ SG Security- Concord or Black night/ Udyogi-Tango, Mallcom- Tiger/ ACME Fabrick- Atom/ or any reputed brand approved by OPGC EHS

D. DUST MASK-

IS/ CE/ ANSI certified

Venus V4 20 SLV- FFP2/ 3M with Fine particle filtration efficiency greater than 94%.

E. EAR PLUG/EAR SEAL/EAR MUFF-

IS/CE/ ANSI certified

3M/ Venus/ Karam/ Equivalent

F. HAND GLOVES -

IS/ / ANSI certified

Material (Heavy Duty)- Finger Chome leather, 05 fingers provision

Material (Light Duty)- PVC dotted type of reputed brand

Make- Kaybee/ Udyogi/ Karam/ any reputed brand

Besides the above, for electrical, chemical handling or for any other special type activity, appropriate rating IS/CE/ANSI certified hand gloves shall be used.

G. WELDING FACE SHIELD ATTACHABLE TO HELMET -

IS/ CE/ ANSI certified /UV & IR protected, Superior quality

Make- Karam -ES 71, Unicare, Udyogi/ any other reputed brand

H. FALL ARREST SYSTEMS (SAFETY HARNESS, ANCHORS, FALL ARRESTORS, LIFELINES ETC)

Shall be IS/EN/ ANSI Certified with CE marking. Make- Karam/ Udyogi/MSA or any reputed brand finally approved by OPGC Safety Officer.

Life lines shall be EN 795, Class B of Karam Polyester webbing type or Polypropylene 16mm dia synthetic rope or 8mm standard wire rope 5000lbs (22KN) rating.

Refer section-41 (Fall Protection) for details.

Rest of the PPEs as appropriate to a particular hazard or as mentioned in MSDS (Material Safety Data Sheet) shall be provided to the persons engaged for the job by the Contractor in accordance with relevant BIS/ANSI/EN standards.

17.2. PPE ZONES & PPE EXCUSE ZONES

SI No	PPE type	Area of Use	Excuse areas/locations
1	Helmet	Compulsory from Plant Gate. Two-wheeler riders & pillion riders must use crash helmet while driving	Offices, Office Corridors, Control rooms, Canteen,
		Compulsory while working in other facilities outside plant viz, Ubuda Coal loading point, Ash Pond, Ash brick plant, Sewage Treatment Plant and Colony premise.	hospital & Service Building front while people are with no work or with office work activities with no risk to head from external source.

2	Safety Shoe	Compulsory from Plant Gate	Places other than the areas specified.
		Compulsory while working in other	
		Facilities outside plant viz, Ubuda Coal loading point, Ash Pond, Ash brick plant, Sewage Treatment Plant and Colony premise.	
3	Safety glass	Compulsory in all work areas	Main road from Plant Gate to CHP Track hopper, Other roads except the roads inside Boiler area, Offices, Office Corridors, Control rooms, Canteen, Hospital while people are with no work or with office work activities with no risk to eye from external source.
		Compulsory while working in other facilities outside plant viz, Ubuda Coal loading point, Ash Pond, Ash brick plant, Sewage Treatment Plant and Colony premise.	
4	Ear Plug/Seal/ Ear Muff	In all high noise areas greater than noise level 85 dBA	Places other than high noise areas
5	Hand Gloves	Compulsory during all field works, material handling, working where risk of injury to hand prevails	Office activities
6	Dust mask	In all dust generating areas (ESP hopper cleaning, Dry Ash handling, Cleaning, Sweeping, Soil excavation, Asbestos/Asbestos containing material handling, Coal Handling Plant, Painting work, visible fugitive emission in Boiler and other areas etc)	Excuse for non-dust generating Areas
7	Welding face shield	During welding operation only	Non-Specified activities
8	Cutting glass	During cutting operation only	

9	Chemical respirators	During fuming Chemical handling or hazardous gas handling. Atmosphere with Chemical fumes, hazardous gas fumes. During welding operation.
10	Chemical Suit/Apron	During hazardous Chemical/ substance handling, Lead acid Battery maintenance
11	PVC/Rubber hand gloves	During hazardous chemical/substance/waste handling & Lead Acid battery maintenance.
12	Chemical Goggle/ Face shield	During hazardous chemical/substance/waste handling & Lead Acid battery maintenance.
13	Encapsulated suit for Chlorine	In Chlorine atmosphere greater than 50 PPM
14	Self-Contained breathing apparatus	Toxic gas atmosphere (Chlorine, Ammonia, Carbon monoxide, Acid fumes) where chemical respirator is not recommended, Confined Space with hazardous fume or gases
15	Arc flash Suit with boot and hood of suitable rating	During Electric Panel Breaker & MCC modules Operation
16	Electrical hand gloves of suitable rating	Working with live electrical power sources
17	High temperature hand gloves & jacket	Working with Steam lines
18	Hard toe rubber gumboot	Working in Mud, Sludge, Water, dense wild grass areas, other place taking Safety Officer's approval
19	Lead laminated coverall	Working with radiographic substances
20	Reflected jacket	As advised by OPGC Project Manager/EHS
21	Cotton Boiler Suit	Working inside Boiler / and as advised by OPGC Project Manager/EHS

22	Full body harness	Working above 5.9 ft without fall protection	
23	Welding jacket/suit & hand gloves	Standard flame-resistant welding jacket/suit & heat resistant leather hand gloves	

17.3. CONTROL ON PPE: The samples of PPE to be used by contractor at site shall be submitted to OPGC Safety Officer in advance for approval. On approval, the Safety officer will retain the sample. The approved quality PPE (Make/Brand and colour) shall be used by contractor at worksite throughout the job. Any unauthorized change of model/ brand/ colour of PPE from the sample shall be considered as Safety violation and may lead to disciplinary action. On completion of work, the sample shall be returned to the contractor. The specification given above for different types of general PPEs is minimum quality standard. Contractors are free to provide better quality PPEs but such PPEs quality shall be approved from OPGC Safety Officer prior to use inside OPGC premises.

18. TRAINING

18.1. SAFETY ORIENTATION

The Contractor shall ensure that all its personnel have been given the necessary safety and job related training required by OPGC regulations and good practice prior to starting work.

Contractors will be responsible for providing their employees and any subcontract employee with all safety information provided to it by OPGC including, but not limited to:

Project-specific occupational health and safety expectations;

Exposure to atmospheric health, serious physical or chemical hazards; and Precautionary measures and procedures for performing the work.

18.2. PRE- JOB BRIEFINGS

Contractors shall conduct pre-job briefings and toolbox talk/ safety talks with employees under their control prior to work each day. Additional job briefings shall be held if significant changes occur during the course of the work that might affect the safety of the employees.

19. COMPETENCY OF CONTRACT EMPLOYEES.

Contractor shall assign competent employees as per the requirement of the job. Supervisors should be so qualified that he can clearly communicate with his team members. Besides, Supervisors shall be able to communicate in English. All high skilled & semiskilled employees must have job specific competence. OPGC will evaluate/verify competence and will reject employees who are not found with inadequate competency.

20. RESTRICTED AREAS

All Contractors must receive authorization from the OPGC Contact Person before performing work in areas posted “DANGEROUS” or “HAZARDOUS” or “RESTRICTED” or some other warning signs. Contractors shall install warning tape for areas that require additional warning because of the work being performed there.

21. ALCOHOL AND DRUGS

The Contractor shall ensure that its personnel do not at any time, during the performance of the work, partake of or be under the influence of any alcohol, drug or other intoxicating substance, while on duty, other than for bonafide medical reasons certified by qualified medical practitioner. Person found with violation of this rule will be immediately removed out of OPGC site and appropriate disciplinary action will be imposed to the contractor.

22. DRIVING & PARKING

All heavy vehicles and other related machinery required in connection with the work shall be fit for purpose, prior to and during the period of the work.

The Contractor shall ensure that only permitted personnel (by way of valid OPGC Driving License) are able to operate vehicles as per the classification of vehicle.

Contractor shall strictly comply with Speed limit of 20Kmph in all areas inside the plant for passenger vehicles. Heavy vehicles speed shall not exceed 10kmh at any point of time.

Parking of Vehicle is allowed only in the designated areas. Deliveries of materials, tools and/or equipment shall be coordinated with OPGC contact person and Security. After the delivery is made to the job site, the delivery vehicle must be parked in the designated parking area or must exit the job site.

Operators of mobile equipment must wear hard hats and safety glasses unless the equipment has a fully-enclosed cab. Seat belts must be worn when operating equipment. No Contractor shall permit earthmoving or compacting equipment that has an obstructed view to the rear to be used in reverse gear unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or unless a contractor-designated employee signals that it is safe to do so.

The Contractor undertakes to ensure that all drivers comply with the following basic rules:

- Always wear a seat belt;
- Always observe traffic rules, especially speed limits;
- Never drive after consuming alcohol/drugs;
- Never drive when very tired;
- Never overload the vehicle;

- Drive carefully;
- Be sure that before starting the vehicle the area near and under the vehicle/trailer is free from persons asleep.
- Vehicles are PUC certified with validity of expiry.
- Heavy vehicles are provided with fire extinguishers

CRASH HELMET USE – Riding two wheelers without the use of crash helmet from plant gate is prohibited. Contractor shall ensure, the crash helmet is all times being used by his people riding two-wheeler.

23. SAFETY MEETINGS

The Contractor shall be responsible for maintaining and enhancing the safety awareness of its personnel including arranging its own safety meetings and participating as appropriate in safety meetings held by OPGC.

24. SAFETY INSPECTION / AUDIT

The Contractor shall inspect the work site, equipment and tools on regular basis for compliance with these rules and regulations, and shall be obliged to take the necessary measures to correct unsafe conditions and unsafe practices.

The Contractor shall allow OPGC representative access at any time to plant, equipment, personnel and records when requested, to enable OPGC to inspect aspects of Contractor's operations relevant to safety and working environment.

25. REPORTING AND INVESTIGATION

The Contractor shall report all near misses, incidents or accidents to OPGC contact person or central control room immediately.

The Contractor shall allow OPGC representative access at any time to plant, equipment, personnel and records when requested, to carry out formal investigations to find out the root causes and there by identify the required corrective actions to avoid the reoccurrences.

Upon completion of the Work under contract and/or on a monthly basis, whichever is more frequent, the Contractor shall prepare a summary report of its safety performance together with accident statistics and submit to OPGC.

26. INJURY MANAGEMENT

Basic Life support facility (first aid) is available in OPGC. Contractor supervisors should be trained with first aid.

In case of an injury to some contract worker, please inform immediately available OPGC personnel or first aid center or central control room using **(phone 248/222/06645 222222).**

Only trained and certified people shall provide first aid to the injured.

In case of doubt, injured personal shall not be moved or transport improper vehicles because it may complicate the injury more and some cases may lead to death.

Only Designated vehicles (Ambulance) shall be used for transportation of patients.

27. JOB SAFETY ANALYSIS (JSA) & JOB SAFETY BRIEFING (JSB)

- The Contractor shall adopt the OPGC JSA & JSB practice/advice.
- The Contractor shall ensure that its supervisors and are fully conversant with OPGC JSA & JSB Process/ System.
- Under no circumstances must work be started until the appropriate JSA has been prepared and complete the Pre-job briefing.
- Competent person from the contractor and in-charge of the work from OPGC shall conduct the Pre-job briefing to all members.
- Competent person from the contractor and in-charge of the work from OPGC shall make available a copy of the safety document at site.
- Sample Job Safety analysis in prescribed format is furnished in appendix below.

28. EMERGENCY PROCEDURES

The Contractor shall follow the OPGC Emergency Response Plan (ERP) during the period of the work and shall ensure that its staff are fully familiar with the actions to be taken in case of an emergency.

28.1. EMERGENCY PLANNING:

Contractors must inform his people on the actions to be taken in the event of fire, explosion, personnel injuries or other emergencies. The contractor shall also keep abreast & acquaint of his persons regarding “Emergency Response Plan” of ITPS, assembly points, DO’s & DON’Ts during emergencies at regular intervals in monthly EHS meeting.

28.2. EVACUATION PROCEDURE:

Identify the escape routes available to you before you commence work. Know the assembly points and directions to reach there in case of emergency.

When the emergency siren sounds, immediately leave the area by your nearest evacuation route to Emergency Assembly Point. If you are using power equipments or vehicles you must switch it off and make it safe before evacuating.

DO NOT RUN AND DO NOT STOP TO COLLECT YOUR BELONGINGS.

Report to the emergency assembly Points as per the instructions given on loud speakers/ public address system.

Obey instructions given by the OPGC contact person staff and assembly point coordinator.

Remain at the assembly point until instructed otherwise. Do not re-enter evacuated areas until the ‘**all clear**’ announcement is made by the Main Control Room.

Emergency Siren test is carried out every Saturday at 11:00 hours for two minutes and require no action.

28.3. REPORTING EMERGENCY:

If you discover a fire, or any other serious incident/emergency phone **222/233/244** using the site telephones, this will connect you to the **Plant Main Control Room. Other**

Emergency Contacts are-	Intercom	P&T
Fire Station	777	0664522257
Ambulance	277/248	0664522216
Hospital	666	0664522243

Give your name, location, and the details of the emergency. Follow any instructions given.

Only take emergency action if competent to do so, e.g. resuscitation, first aid, firefighting etc.

If safe to do so remain in the vicinity to give relevant information to the assistance when it arrives. **Never** endanger **your** safety.

29. SAFETY SUPERVISOR

If the numbers of contract workers are more than or equal to 50 (fifty), the Contractor shall be required to provide full time safety supervisor who will be responsible for ensuring the work is performed in accordance with the applicable safety requirements. For every 50(fifty) employees thereafter there shall be one Safety Supervisor/Officer. The On-Site Contractor Safety supervisor/officer(s) must have appropriate knowledge and skills, to ensure job site safety. For contractor worker less than 50(fifty) in job, the work supervisor can be utilized for safety supervision but in case the Project Manager find ineffective supervision, the contractor may be asked to provide independent safety supervisor.

Contractor Safety Supervisors should be qualified & experienced enough to deliver their assigned jobs effectively as per expectation of OPGC Project Manager/EIC & EHS. Before their work assignment, Contractor has to provide the list of their safety professional along with Safety In charge stating name, qualification, and experience & contact number to the Project Manager & EHS. The supervisors’ competency will be evaluated by OPGC EHS prior to issue of gate pass. Only OPGC EHS competence certified Safety supervisors will be permitted for Safety Supervision at Contractor work sites. Competency certification may vary depending on the nature & risk level involved with the contracted job. Contractors are not permitted to execute job without deployment of Safety

Supervisor(s) as specified under this condition. Contractor Safety Supervisors performance will be monitored by OPGC EIC & EHS and the instruction & advice of OPGC shall be implemented promptly. OPGC will impose appropriate penalty if the Contractor fails to implement OPGC's safety expectation satisfactorily.

30. COMMUNICATIONS

30.1. COMMUNICATIONS WITH OPGC

The Project Manager or his authorized persons (EIC) and OPGC EHS shall be the point of communication for all EHS issues arising under this contract.

30.2. COORDINATION WITH OTHER OFFICIALS

Contractor is fully responsible for coordinating with the proper authorities for moving heavy equipment, location of underground utilities, erecting barricades, traffic control, and other safety measures, unless otherwise specified.

30.3. COMMUNICATIONS WITH MEDIA RESTRICTED

In the event of an accident or other condition on site, contractor shall not communicate with the media or any other entity without the expressed consent of OPGC.

31. EQUIPMENT CERTIFICATION

The Contractor shall, at its own expense, ensure that all Portable electrical appliances, lifting equipment or other equipment required inspection or calibration has been inspected/ certified by an authorized and a liable inspection/certification authority/company prior to its use in the works.

32. RESTRICTED ARTICLES

The Contractor shall be required to ensure that written approval signed by OPGC contact person has been obtained prior to taking dangerous items such as drugs, knives, radioactive, corrosive, poisonous or toxic materials onto OPGC premises.

33. PROHIBITED MATERIALS

Contractor is strictly prohibited from using any of the following types of materials in performance of the work:

- Asbestos, Asbestos Containing Material (ACM).
- Mercury containing material.
- Surface coating systems that contain lead, cadmium, chromium, barium or mercury.

34. HAZARDOUS SUBSTANCES

- Before delivery of any hazardous materials to OPGC site, Contractor shall provide Material Safety Data Sheets for all anticipated hazardous materials.
- All containers containing hazardous materials must be clearly labeled indicating their contents and appropriate hazard warning information.

- Hazardous materials must be stored in a secure location agreed with the **OPGC Contact person**.
- Don't dispose hazardous substances into drainage system and please inform any spill on the floor or on any personnel.

All operatives must understand the hazards of the materials they have to handle before use, some can be dangerous when used carelessly or when safeguards are overlooked. If in doubt, consult your own supervisor or OPGC Contact person for the relevant Hazard Data Sheet for specific health & safety information.

- Hazardous waste must not be dumped in general waste bins and the hazardous waste bins are provided around the plant premises.

35. SMOKING

Plant premises are no smoking zone. Smoking is prohibited inside plant premises. Persons observed smoking inside Plant will be removed from job with immediate effect. Smoking is permitted inside declared/authorized smoking zone(s).

36. SUB CONTRACTOR

The Contractor should ensure that sub-contractors shall be responsible for safety requirements as specified by OPGC. The Contractor shall regularly check sub Contractor's compliance with safety requirements

37. LIFTING MACHINERY AND EQUIPMENT

37.1. LIFTING TACKLE (ALSO KNOWN AS LIFTING/ LOOSE GEAR)

Any item used to connect a load to the lifting appliance, but which is not in itself, capable to lift, lower, transport or suspend the load, such as; Chain, wire rope and webbing slings, Rings, links, hooks, shackles, eye bolts, swivels, blocks, snatch blocks, Beam clamps and plate clamps, Lifting beams, frames, baskets, Waste bins, tool boxes, cargo nets, containers, pallets, etc.

37.2. STANDARD REQUIREMENTS

- All lifting tackle shall be tested and certified by approved competent person.
- The Contractor shall make available, as necessary, any certificates and inspection records.
- Lifting tackle shall not be issued or used without a current test certificate.
- All lifting tackles shall be visually inspected before use to identify any damage. Damaged or defective equipment shall be immediately removed from service.
- Only equipment, which has been properly tested and is clearly marked/labeled/coded, may be used. The SWL (Safe Working Load) or WLL (Working Load Limit) must be clearly marked on all equipment and must be adhered to.
- Makeshift lifting devices formed from bolts, rods or reinforcing steel shall not be used.

- Slings shall not be shortened with knots, bolts or other makeshift devices.
- Synthetic web slings shall be marked or coded to show the manufacturer, the rated capacities for each type of hitch and the type of material.

Synthetic web slings shall be immediately removed from service if any of the following conditions are present:

- Acid or caustic burns
 - Melting or charring of any part of the sling surface
 - Snags, punctures, tears or cuts
 - Broken or worn stitches
 - Distortion of fittings
- No heavy loads or excessive strain may be placed on ropes.
 - Rope should not be driven over, ground into cinders or mud, wrapped around sharp or abrasive objects or burned by “snubbing off” too fast.
 - Wire ropes or wire slings, shall not be used for raising, lowering or as means of suspension if any fraying, kinking or broken wires are apparent.

37.3. LIFTING EQUIPMENT OR APPLIANCES

Is a generic term - “Lifting equipment “shall mean any machine, driven by manual or mechanical power which is able to raise, lower, suspend or transport loads and includes the supporting structure and all Plant, Equipment appliance, structures. This may include but not limited to Continuous mechanical handling devices (i.e. conveyors). Cranes (mobile, tower, pedestal, etc.), Wall/pillar cranes, derricks, Runway beams, pad eyes, gin pole and gin wheels Winches, hoist (air and electric), crabs, teller hoists, Powered working platforms, Elevators and Lifts, overhead cranes.

37.4. STANDARD REQUIREMENTS

- At no circumstances, rear seated hydra crane shall be used for any sorts of OPGC activity irrespective of site locations (inside or out side plant premises)
- Lifting machinery and equipment shall be retested by an approved competent person after any major alteration or repairs thereto.
- Lifting machinery and equipment shall not be issued or used without a current test certificate.
- EOT crane operation shall be carried out by personal with valid rigger certificate with familiarization to operate the EOT cranes.

- All lifting operations are to be suitably planned and carried out with trained and qualified personnel. It shall be the duty of the Contractor to ensure that all employees under its control know and are able to apply hoist signals and their uses.
- One qualified person shall direct the rigging operation. This person shall give signals for the group. No crane operation will take place without an appointed and identifiable "SIGNAL MAN".
- All lifting equipment shall be visually inspected before use to identify any damage. Damaged or defective equipment shall be immediately removed from service.

Only equipment, which has been properly tested and is clearly marked, may be used. The SWL (Safe Working Load) or WLL (Working Load Limit) must be clearly marked on all equipment and must be adhered to.

- All lifting operation should be carried out in the barricaded area; no one should be allowed to walk underneath of suspended load.
- It is the Contractors responsibility to satisfy the OPGC Contact Person that all lifting equipment and machinery conforms to the relevant statutory provisions.
- All lifting machinery and equipment and all parts and working gear thereof, both fixed and mobile shall be of good construction, sound material and free from patent defect and shall be maintained and operated to comply with OPGC standards.
- Every dangerous moving part of lifting machinery should be guarded.
- The hoisting mechanism of a crane shall not be used for any purpose other than lifting a load vertically.
- Cranes shall not be used to transport loads, unless specifically designed for this purpose. The hook of a crane shall be secured to prevent it swinging when the crane is in "Transit".
- Mobile Jib Cranes, side booms and "A" frames shall not work in the vicinity of overhead Power lines unless a safe working distance of total Length of the Jib + 10 feet is maintained.
- Cranes with more than one ton lifting capacity shall be fitted with a safe working load indicator, and a crane capacity chart displayed inside the operator's cabin.
- Contractor shall not operate the cranes of OPGC without permission from OPGC Contact person.
- Critical lift plans must be developed by a qualified person, and then submitted to the OPGC Contact person for review and approval.
- Contractor shall designate a person to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means.

- Cranes with fixed or derricking jibs should be fitted with effective automatic safe load indicators which should be provided with appropriate visual and audible signals, properly maintained and tested by a competent person after the erection or installation of the crane.
- Vehicular equipment, if provided with outriggers, shall be operated with the outriggers extended and firmly set as necessary for the stability of the specific configuration of the equipment. Before lowering outriggers, the contractor must verify the surface is firm and will support the weight of the equipment and operation to be performed. The Contractor shall place outrigger pads if conditions require.

While extending, lowering outriggers and retracting the outriggers, the operator shall visually inspect the area to verify it is clear of all personnel and obstacles.

- Instructions issued by the manufacturer, specifying weather and wind speed conditions which would be likely to affect the safety of the operation, lifting appliance should either not be used or used subject to limitations, should be followed.

37.5. MULTIPLE LIFTS

The simultaneous use of more than one lifting appliance to raise, suspend, support or lower a single load should be avoided. Where the simultaneous use of more than one lifting appliance is unavoidable; contractor shall perform the lifting only with OPGC approved Risk assessment, Method statement and Rigging plan.

37.6. PERSONNEL BASKETS AND MAN HOIST

- Personnel baskets should be of good design construction, sound material, and adequate strength, free from obvious defect and certified and clearly marked with the maximum number of persons permitted.
- Where a man hoist is operated by means of a winch, or where person is carried in a cage, skip or similar plant or equipment designed to lift persons, the winch should be so constructed that the brake is automatically applied at all times except when the controls are in the operating position.
- No winch should be fitted with a pawl and ratchet gear on which the pawl has to be disengaged before the platform or cage can be lowered.

37.7. INDUSTRIAL FORK LIFT

- Industrial fork lift trucks shall not be used to lift a load greater than the maximum safe working load permitted for the truck.
- Passengers are forbidden to ride on vehicles, mobile plant or forklift trucks not specifically designed or fitted out for passengers use.
- The Forklift operator shall have a valid operating certificate from a recognized authority and a valid OPGC driving license.

37.8. CONTAINERS

- Every container for raising, suspending, supporting or lowering articles, tools, equipment, and other materials should be of good construction, sound material, and adequate strength, free from obvious defect and suitable for the purpose for which it is required.
- Provided with adequate and suitable arrangements for securing the container to the lifting appliance or to lifting gear, as appropriate;
- Marked with its tare weight and the weight of the load which it may carry with safety;
- So constructed as to prevent the accidental displacement of its load.

Loose materials or articles that could be displaced should be secured or covered to prevent such displacement.

38. HAND TOOLS

- Tools shall not be placed on any type of energized equipment or where a tool might fall and become a hazard.
- Unacceptable placement includes on ladders, stairs, railings, mobile equipment, lying on the floor, on the scaffold, in walkways or cluttering work benches.
- Tools shall not be placed next to open trenches, manholes or vault openings.
- Tools, materials and parts used in elevated work locations shall be tied in place or kept in containers secured so that nothing can accidentally fall.
- Select the right tools for the job.
- Train your workers to select the right tools for each job and ensure that the tools are available.
- Inspect the tool and ensure that it is in good condition and keep it in good condition.
- Unsafe tools include wrenches with cracked or worn jaws; screwdrivers with broken tips, or split or broken handles; hammers with chipped, mushroomed or loose heads and broken or split handles; mushroomed heads on chisels; dull saws; and extension cords or electrical tools with broken plugs, improper or removed grounding systems, or split insulation.
- Use all tools correctly.
- Keep tools in a safe place.
- Carry the tools to and from the work site in a tool box, cabinet, or other appropriate tool holder or pouch.
- Store the tools in the proper storage area.

- Tools should not be carried up or down ladders by hand. Appropriate pouches shall be used. Where pouches are not available, tools shall be lifted and lowered by hand lines.
- Tools should not be thrown from one level to another, nor should they be thrown from one location to another on the same level.
- Spark proof tools should be inspected regularly to ensure that there are no steel splinters.

39. PORTABLE ELECTRICAL APPLIANCES.

- All appliances should be tested and identified; records of test/re-test dates should be available.
- Equipments which do not have the test detail label will not be permitted inside OPGC Premises.

Any equipment which is in poor condition will not be permitted inside the OPGC premises.
- Where any portable hand tool requires a supply above 110Volts A.C obtain permission from your OPGC Contact Person. If permission is granted, a residual current device (RCD) must be connected in the circuit.
- Joining of cable is allowed only with industrial male and female sockets of IP67 rating. No twisting or taping of conductors is allowed.
- Bare cable/ conductors shall not be inserted to sockets.
- Contractors must ensure that electric equipment connected by cord and plug in good condition.
- Each employee must be properly trained before using tools or equipment requiring special instruction or training (e.g., power tools, vacuum equipment, etc.).
- Extension cords used with portable electric tools shall be of the 3-wire type unless the tool or appliance is double-insulated or operated from an isolated power service. The ground wire must either be permanently connected to the tool frame for grounding means.
- Extension cords lay across walkways or driveways must be covered by protection or warning devices to prevent pedestrian or vehicle hazards.
- Ground Fault Circuit Interrupters (GFCIs) are to be used whenever a portable electric tool is used.
- Electrically-powered tools may not be used on energized conductors.
- Compressed air hose connections shall be secured with a safety clip or retainer before use.
- If a machine guard is removed in order to work on equipment, it shall be replaced before the equipment is placed back in service. Lockout/Tagout procedures shall be followed.
- Power tools should be used, in accordance with the manufacturer's instructions.

- Where sparking or heat generated by the use of pneumatic tools, an approved coolant shall be used.
- Only patent pneumatic hose, couplings and fittings of the correct rating shall be used when using pneumatic tools.

40. TEMPORARY WIRING

These provisions apply to temporary electrical power and lighting wiring methods. Temporary wiring shall be removed immediately upon completion of construction or the purpose for which the wiring was installed.

40.1. TEMPORARY POWER PROGRAM PROCEDURES

- i. Only authorized and qualified people for electrical work shall work on the installation, wiring, troubleshooting or repair of electrical equipment.
- ii. All persons dealing with & handling electrical equipment shall be trained to apply the correct treatment for electric shock.
- iii. All portable tools, hand lamps & other apparatus must be connected to the system by means of appropriate rating plugs & sockets type.
- iv. All joints must be both electrically & mechanically sound. No twisting of conductors or tapping is permitted.
- v. Supplies to welding equipment must be specially arranged & the connections must be sufficient in size for the duty to be performed & properly protected against mechanical damage & electrical hazards.
- vi. All lamps for general illumination shall be protected from incidental contact or breakage. Metal-case sockets shall be grounded. Damaged cages/lamps shall be corrected upon notice.
- vii. Temporary lights shall not be suspended by their electric cords unless cords and lights are designed for this mean of suspension.
- viii. Portable electric lighting used in wet and/or other conductive locations, for example drums, tanks, and vessels shall be operated at 24 volts or less. However, 120 volt lights may be used on approval if protected by a GFCI.
- ix. Flexible cords and cables shall be protected from damage. Sharp corners and projections shall be avoided. Flexible cords and cables may pass through doorways or other pinch points, if protection is provided to avoid damage.
- x. Extension cord sets used with portable electric tool and appliances shall be of three-wire type and shall be designed for hard or extra-hard usage. Flexible cords used with temporary and portable lights shall be designed for hard or extra hard usage.
- xi. Electrical equipment shall not be opened, adjusted, repaired, or otherwise handled until it is de-energized and locked-out according to the lock-out policy.
- xii. De-energized equipment shall be tested before anyone works on it.

- xiii. All metal panels, boxes, covers, conduit, etc., that are part of electrical system shall be grounded.
- xiv. All splices and repairs shall be made inside an approved box or approved splice kit. Tape alone is not acceptable.
- xv. Metal ladders shall not be used for electrical work.
- xvi. All electrical equipment that is exposed to flammable gases or vapors, combustible dust, or ignitable fibres must meet hazardous location requirements in order to prevent explosions.
- xvii. Extension boards must have GFCI/RCCB protection with main power on/off switches. GFCI/RCCB should not be used as power on/off switching.
- xviii. Circuit breakers that protect hand tool receptacles shall have a maximum rating of 20 amps. Waterproof connectors shall be used as necessary.
- xix. All holes in panel boxes and gaps where circuit breakers are missing shall be securely plugged with a fireproof material.
- xx. Circuit breakers shall be matched as closely as possible to the electrical needs they supply.

41. FALL PROTECTION

All persons, on any project that requires them to wear a personal fall arrest or restraint system, will follow these guidelines. A full body harness will be used whenever there is the potential for a fall from a height of 6 feet or more.

41.1. PERSONAL FALL ARREST SYSTEMS (PFAS) & FULL BODY HARNESS:

A personal fall-arrest system is generally required whenever an individual is at risk of falling 1.8 meter or 5.9 ft or more ft from an elevated position. A properly designed system should include three components:

- A. An **anchor points** capable of supporting a minimum of 5,000 lbs (22.2 kN) per attached worker; will serve as a secure connection point for lifelines, lanyards or deceleration devices.
- B. A **full-body harness** designed to distribute fall-arrest forces over thighs, pelvis, waist, chest and shoulders; if a fall occurs, D-ring located in centre of the back will hold worker in an upright position until rescued.
- C. A **connecting device** such as a lanyard, deceleration apparatus, lifeline or a combination of these items with locking snap hooks. Must have a minimum breaking strength of 5,000 Lbs.

WARNING:

The maximum arresting force an individual is permitted to sustain while wearing a harness is limited to 1,800 lbs (8kN). To stay below this impact force, workers should keep the free fall distance as short as possible (max. 1.8 meter) and consider the use of deceleration devices or shock absorbing lanyards.

During fall, the worker shall not come in contact any lower level and bring the worker to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 m).

Each worker shall be attached to a separate lifeline and lifelines shall be protected against being cut or abraded.

FULL BODY HARNESS APPLICATION GUIDELINE-

Deceleration apparatuses (shock absorbers) attached double lanyard type harnesses shall be used only at height with fall distance of 6 meter or more.

For fall distance of less than 6 meter or more than 06-meter, self-retractable type full body harness shall be used.

Full body harness after one free fall shall not be used again, it shall be condemned.

Harness shall be checked/ inspected for wear/tear or any damage or expiry before use.

41.2. ANCHORAGE CONNECTORS AND POINTS

An anchorage connector or point must be capable of supporting 5000lbs. per attached worker. This can be accomplished in a number of ways and must be engineered to ensure the point has that capability.

Only anchorages designed by a fall protection equipment manufacturer must approved by OPGC. Anchorage Points in concrete or attached to wooden structures must be approved by both the Contractor's Qualified Person & EIC.

The anchorage point must be installed at dorsal D-ring (shoulder) height or higher. An anchorage point at feet level is unacceptable for fall arrest application and will not be allowed.

41.3. AUTHORIZED FALL PROTECTION SYSTEMS/EQUIPMENT

Only fall protection equipment approved by the OPGC will be used on OPGC projects.

STORAGE

The equipment should be stored and hung up freely by the back D-ring in a cool, dry place until needed. If materials appear to be faded or it tags and labels are illegible, consult the equipment manufacturer to determine if replacement is necessary.

41.4. TIPS FOR FALL PROTECTION

- Make sure the harness fits snugly. Tighten all straps.
- Use an anchorage point above your head. Do not tie-off at your feet unless there is no other place to tie-off.
- Use two lanyards for 100% tie-off. One lanyard must be attached at all times and when moving from position to position.
- Never hook two lanyards together to get extra reach.
- Except with specific lanyards, hooks may not be tied back into the lanyard itself.

- Use cheaters only when your lanyard will not reach a tie-off point. Cheaters will not be used while tied off to the inside of a man basket.
- Shock absorbing lanyards may not be used in conjunction with retractable lanyards.
- Never tie a knot in your lanyard to reduce its length

41.5. ACCESS

Stairways and stair towers with complete hand and guardrails do not require fall protection.

Fall protection is not required while using a ladder as a means of access as long as the climbing distance is less than 10 feet. Once a worker has climbed 10 feet a ladder climbing device is required or an enclosed cage must be present.

If the worker stops at any point to conduct work from a ladder, and the worker's feet are more than 6 feet above the adjacent surface, fall protective equipment is required. A three-point contact must be maintained with a ladder regardless of the height a worker is above an adjacent surface.

42. SCAFFOLDING

All scaffolds and staging shall comply with OSHA standards. Prior to using any scaffolding, it shall be approved by OPGC. A "GREEN SCAF-TAG" indicating OPGC acceptance will be attached to the scaffolding, the scaffolding is not to be used until the approval is given. The scaffolding shall meet the following minimum requirements:

- Timber uprights and ledger shall not be used.
- Metal parts used for scaffolds shall be in good condition and free from corrosion.
- All poles, planks and general materials, used for scaffoldings, shall be kept in good condition and be inspected by a competent person appointed by the Contractor on each occasion before being used for erection.
- No materials, other than those specifically designed for the purpose, shall be used for scaffolding.
- A scaffold shall be erected only by men trained and certified in the job, working under the immediate supervision of a competent foreman, who knows the purpose of the scaffold and how it should be constructed to carry the loads which will be placed upon it.
- Scaffolds shall be securely supported or suspended and where necessary braced to ensure stability. Unless constructed as an independent scaffold, it shall be rigidly connected to the building or structure.
- In the case of partially erected or dismantled scaffolds still capable of being used, access thereto should be effectively blocked, and prominent warning notices shall be posted with a "RED SCAF-TAG".

- All platforms, scaffolds and other workplaces, from which persons may fall more than 1.8m (6 ft) shall have edge protection which consist of an upper rail not less than one meter (3 ft 3 inches) in height above the walkway and have at least one intermediate rail.
- Toe boards shall be fitted to all scaffolding.

When permanent hand rails have to be removed from elevated platforms, rope or wire hand rails shall be fitted in their place.

- Any load-bearing scaffolding should be constructed to a design previously submitted to and approved by an OPGC contact person.
- Parts of staging, tools and other articles and materials shall be properly lowered and shall not be thrown down from a height. They shall be raised by rope or other suitable means and not carried on the person.
- The Contractor's Representative shall ensure that no loose articles and materials are left lying about in any place from which they may fall on persons working, or passing beneath.
- While erecting the scaffolding a RED SCAFF-TAG need to be hung until erection is finished

42.1. REQUIREMENTS FOR BOARDS AND PLANKS

- Boards of 51 mm (2 inch) minimum thickness shall be used. These shall be at least 210 mm (8 inches) wide.
- The spacing of board supports shall depend on the thickness of the boards used and the load to be carried. There shall be at least three supports. Support for 51 mm (2 inch) boards shall not be more than 2.5 m (8 feet 6 inches) apart. All boards shall be supported at the ends.
- Boards shall be end-buttet and close boarded throughout. Overhanging of boards of any thickness shall not exceed four (4) times their thickness and not less than 50 mm.

42.2. WORKING PLATFORM

- All working platforms should be close boarded, and all boards should be lashed or secured.
- Widths of platforms vary according to scaffolds purpose.
- As a general rule, if the platforms are to be used only as a footing, they shall be at least 610 mm (24 inches) wide. If small quantities of materials have to be put on them, the platform width shall be increased to 813 mm (32 inches) wide.

42.3. MOBILE TOWER

- The height of a mobile tower should never exceed three times the length of the shortest side.
- There should be only one working platform on a mobile tower.
- Mobile scaffolds should only be used on ground which is firm and level.

- Moving the tower should only be done by pushing or pulling the base.
- The working platform must be clear of men and materials when the tower is being moved.
- Wheels should be turned outwards and brake must be on and locked before use.
- It is advised to tie the tower to the structure whenever possible.
- Never ride on a scaffold that is being moved.

42.4. INDEPENDENT TOWERS

- The tubular scaffold used most often is the independent tower. The independent tower apart from necessary ties stands completely free from buildings or structures and is used mainly for access pipe bridges or high maintenance jobs where only a small working area is required.
- The foundation must be capable of carrying the weight of the tower, equipment and men.
- Base plates must be placed under all standards and if there is any danger of lateral movement they must be securely fixed, substitutes must not be used.
- Special precautions must be taken to provide stability on soft soil, or surfaces likely to be damaged.
- Standards must be vertical and joints must be staggered. The distance between standards must be no more than 2.5 m (8 feet 6 inches).
- Ledgers must be horizontal and fixed to the standards with load bearing clips.
- Generally, ledgers will be vertically spaced at about 2 m centers for easy erection; also providing ample headroom if an intermediate working platform is required.
- Diagonal bracings must be fitted on all lifts on all sides and a cross bracing should be fitted at the base and at other levels where necessary to keep the tower rigid, but at least every alternative lift.
- If the height of the tower is more than 3 1/2 times the length of the shortest side it must be adequately tied.
- It is good practice to tie scaffolds to the adjacent structure whenever possible irrespective of height.

42.5. LADDERS

- All ladders used in the plant except in scaffoldings shall be made of Glass Reinforced Plastic (GRP) / FRP. No metallic / wood ladders are allowed in OPGC premises.
- Shall be factory made and shall be of sound construction.
- No ladders with treads nailed to the stringers or which are in any other way faulty or unsound shall be used.

- Unless OPGC has granted prior written consent, no ladder shall exceed 3.7 m (12 ft) in height.
- Ladders shall not be painted. Clear varnish or polyurethane is acceptable.
- All ladders shall only be used for the purpose for which they were designed.
- The Contractor shall ensure all ladders under their control are inspected for safe, clean and proper working parts before they are used.
- Defective ladders shall not be used, but instead shall be tagged and made inaccessible for use.
- Ladders should be placed upon a level, firm, solid and safe base and leaned against or hung from a solid, safe structure.
- When it is necessary to place a ladder on a non-level, smooth or slick surface, the base of the ladder shall be tied, blocked in place or held by another worker.
- The base of a straight or extension ladder shall be placed back from the wall at a distance equal to one-fourth of the ladder's working length.
- The top of an extension ladder shall be tied off when possible.
- No one shall go up or down a ladder without the free use of both hands.
- If material must be lifted, a hand line must be used.
- Employees shall face a ladder while ascending or descending.
- A ladder used to transfer to a landing must have side rails that extend at least 3 feet above the landing.
- Contractors shall ensure employees under their control are properly trained in ladder safety.
- Where ever the chance hitting ladder with moving traffic or some other equipments exists, adequate protections to be provided with warnings

43. ACCESS TO TRANSFORMERS / SWITCH GEAR ROOMS/SWITCHYARD AND OTHER RESTRICTED AREAS

Contractor will remain outside of all fenced electrical transformer, switchgear rooms, switchyard or any other high voltage areas and restricted areas unless authorized by the OPGC Contract person to enter. If it becomes necessary to enter these areas, the Contractor must notify the OPGC Contract person so that arrangements can be made to secure a safe work area.

44. FIRE PROTECTION:

Fire hydrants, extinguishers, hose racks, and other emergency equipment shall not be covered or blocked, and fire equipment lanes must always be kept clear.

All fires must be investigated and reported to OPGC regardless of duration or extent.

All contractor persons should know the method of raising alarm & operation of first aid firefighting appliances. Nobody should misuse the fire appliances, extinguishers etc.

45. HOT WORK

Any activity which involves naked flames or can produce heat energy or spark shall be considered as Hot Work. e.g. Welding, Burning, Grinding, Cutting.

- The Contractor must coordinate hot work activities with the OPGC Contact person.
- All welding, burning, or other hot work will be carefully planned and safely executed by completion of a Hot Work Permit from OPGC.
- Welding machines and its accessories must be approved type & safe to use. Power supply cable should be of proper rating, joint free, copper and cut resistance type.
- When 'Hot Work' is in progress precautions must be taken as per the Hot Work Permit issued by OPGC to minimize the risk to other persons, particularly from fire.
- Appropriate fire extinguishers shall be made available for the duration of the specific activities as mentioned in the Hot Work permit.
- ***The Contractor shall provide fire watches during hot work activity & shall ensure firewatchers are trained on the use of fire extinguishers and other appropriate fire fighting gear. Fire watchers during fire watching cannot be assigned with other task.***
- The Contractor shall ensure that firewatchers are equipped with appropriate equipment and dedicated only to the duties of the fire watch.
- The Contractor shall ensure that adequate guards and barriers (fire blanket, fire proof sheets) are used to ensure sparks and hot slag are confined to the immediate area and do not contact flammable or combustible materials.
- All open areas and floor grating/ wall openings shall be protected so that sparks or slag cannot reach flammable or combustible materials at any lower level.
- Hot work areas must be barricaded to prevent people from coming into contact with sparks and slag from hot work activities.
- The Contractor must store flammable and combustible chemicals where they are not subject to hot work or other sources of ignition.
- Use appropriate PPE for the job.

46. CONFINED SPACES:

A *Confined Space* is any space of an enclosed nature which is not designed for continuous human occupancy and presents a risk of death or serious injury from hazardous substance or dangerous conditions.

- The Contractor must coordinate Confined Space Entry work activities with the OPGC Contract person.

Confined Space Entry Permit shall be obtained to enter any Confined Space for any kind of work inside.

- Contractor shall perform no duties that might interfere and disturb the accepted safe working conditions in a confined space.
- Contractor shall maintain all safety barriers around the *Entry Point*.
- Appropriate PPE as per the Confined Space Entry Permit shall be used.
- Appropriate dust mask shall be worn by the *Entrant* if significant quantities of dust are present within the *Confined Space*.
- Head and eye protection shall be worn at all times by the *Entrant* unless specified otherwise by the *Control Room Engineer*.
- A body harness may be required by the *Entrant* if work is to be performed above ground level. An air purifying respirator and cartridge or Self Contained breathing Apparatus (SCBA) shall be used by the *Entrant* if *Entry* into a *Confined Space* containing a *Hazardous Atmosphere* is required and it is not physically possible to entirely remove the *Hazardous Atmosphere*.
- Contractor shall use the safety equipment as per the Confined Space Entry Permit.
- Fire extinguishers suitable for the type of fires those are appropriate to the hazards that may be present in the *Permit Required Confined Space*.
- ***Contractor shall deploy trained Confined Space Watcher/Hole Watcher to take control over the Confined Space entry & exit points during the period of work. Confined space opening either will be closed or entry prohibited through warning tape or barrier while no work is taking place inside the confined space. Contractor will not assign task other than Confined space watching to the watchers as long as they are performing the watching.***
- Contractor shall comply strictly with the following **Electrical safety precautions**
- Electrical equipment supplied from the mains should only be used where there are no practicable alternatives. Battery powered electrical equipment or pneumatic powered equipment shall be used whenever possible.

- If there are no practicable alternatives to using electrical equipment supplied from the mains, then they should be 24V. If this is not possible then they should be 110V supplied through a centre tapped transformer with the centre tap earthed.
- Electrical equipment supplied from the mains should contain Ground Fault Circuit Interrupters / Residual Current Devices.
- Electrical equipment supplied from the mains shall have a valid test certificate.

47. HIGH PRESSURE WATER/ SERVICE AIR CLEANERS

Improper use of water jets/ Service Air can cause serious injury. The contractor may only use high pressure washing apparatus with the permission of the OPGC Contact Person.

The contractor must satisfy the OPGC Contact Person as to the training of the operators, the arrangements for the place of work and a safe system of work.

48. SCRAP/WASTE DISPOSAL:

Waste Bins are provided on site for General Housekeeping materials, metal scrap, Hazardous and Oily wastes and Chemical Wastes. Special or Hazardous Materials must not be dumped in general housekeeping bins and metal scrap bins. Please consult with OPGC Contact person for more details.

49. GAS CYLINDERS

The following regulations apply to all industrial transportable gas cylinders including containers for dissolved acetylene.

49.1. CYLINDER IDENTIFICATION

Gas cylinders shall be colour coded in accordance with relevant BIS code or applicable Gas Cylinder rule.

Full and empty cylinders must be clearly distinguished and stored apart.

49.2. STORAGE OF CYLINDERS

- No flammable materials shall be stored on the site with them, or in the immediate vicinity. Cylinders must be kept at a safe distance from any heat source.
- Cylinders shall be stored in such a manner that they can be readily removed in the event of fire.
- They shall be adequately secured to prevent falling over.
- Cylinders shall be stored vertically and secured.

49.3. HANDLING AND MOVEMENT OF CYLINDERS

- Cylinders shall not be subjected to rough usage, or excessive shock, or used as rollers, or supports.
- Cylinders shall not be dropped from a height.

- A proper carriage, or platform and not a sling, shall be used for moving cylinders, whether empty or full.
- When cylinders are being transported, they shall be loaded and firmly wedged to prevent violent contact when the vehicle moves.
- On no account shall cylinder trolleys be towed by motor transport. The transportation of any gas filled cylinder shall always be in a proper rack, regularly maintained and properly inspected at least biannually.

The Contractor shall ensure that cylinders with faulty valve joints, immovable valve spindles, or valve leakage are immediately removed from the site.

- Only standard valve keys shall be used.
- Only standard automatic pressure regulators and pressure gauges shall be fitted to cylinders.
- Regulators and gauges shall be checked to ensure they are functioning properly and damaged gauges or regulators shall be removed from service.
- RED hose shall only be used for Acetylene and BLACK hose shall be used for Oxygen and Nitrogen.
- Hoses shall be pressure tested and examined to ensure that they are free from cuts, cracks, burns and excessive wear.
- Only secured hose connectors shall be used.
- It is strictly prohibited to bind hose connections with wire.
- All Oxy-acetylene sets which are portable shall be wheeled on a trolley.
- When not in use, blow-pipes and hoses shall not be left in confined spaces or enclosed areas.
- Where this cannot be done, the Oxygen and Acetylene connections shall be disconnected at the cylinders situated outside. Merely closing the valve is not a disconnection.
- Empty cylinders and cylinders no longer required shall be removed from the Site as soon as practicable, caps shall be in place.
- Flashback arrestors (ESAB or any other ISI approved type) shall be fitted at the outlet of the regulator and at inlet of the cutting torch.
- When not in use, all cylinders shall have protecting caps screwed on.
- Cylinder valves shall be closed immediately when gas is not required, or when the cylinder is empty and the hose depressurized.

50. RADIOGRAPHY AND RADIO ACTIVE SUBSTANCES

- Radiography shall be done only after achieving a valid safety document. Proper barricading of the area and paging on the loud speakers should be done
- All operations involving the use of radioactive substances shall be supervised by the Contractor to ensure that protective measures are properly maintained and to check the extent of the protection afforded in practice.
- The Contractor is required to provide OPGC with a list of radioactive sources held by the Contractor and all employees who use or store these radio-active sources on OPGC's property.
- The Contractor shall be responsible for the supply, operation and regular testing of all necessary monitoring equipment and to ensure that all protection barriers
are placed and altered as a result of survey radiation level readings in accordance with internationally acceptable levels.
- All radioactive substances not in use shall be kept securely in a dedicated storage place. The storage place should be clearly marked with the warning sign and the wording: "DANGER - RADIOACTIVE MATERIAL" in clear and indelible print. Its access hatch or door should be provided with a lock, the keys of which should be kept by the authorized radiographer.
- Only authorized personnel should handle radioactive sources.
- Before any radiography work is started, the Contractor shall be required to establish procedures dealing with accident/incidents and foreseeing an emergency.
- The procedure shall clearly define responsibilities and actions/measures to be implemented.
- The emergency procedures shall be submitted to OPGC Contact person for review and approval.
- The Contractor shall also ensure that all personnel involved have been carefully instructed.

50.1. During transport, radioactive substances should be kept in sealed sources for radiography with the exposure container should be kept inside a lead-lined box which has the radiation warning sign on the outside.

50.2. HANDLING PROCEDURE AND PERSONAL PROTECTION

- Keep maximum distance from the source.
- Provide maximum shielding
- Keep exposure time down.
- A radiography permit shall be obtained on each occasion radiological work is carried out.
- A barrier shall be erected around each area where the source is exposed so that the level of radiation at the barrier does not exceed 0.75 Micro Seiverts per hour in air.

- Suitable warning notices for display at barriers shall have the wording "*RADIATION - DO NOT ENTER*". The notices shall also include the radiation symbol.
- All persons using radioactive substances shall be trained and certified in the use of such substances.
- The perimeter of the area shall be patrolled during the period of source exposure.
- An exposed source must be immediately returned to its safe container on the request of the operating personnel, or in the event of a fire or other emergency occurring

Any worker liable to be exposed to ionizing radiation shall wear on the appropriate part of his body a film badge to measure the amount of radiation accumulated.

51. EXCAVATION

- The Contractor shall ensure that no Excavation work shall be carried out without the issue of an appropriate Safety Document.
- Any buried cables or pipelines unexpectedly encountered during excavation work shall be reported immediately to the OPGC Central Control Room and the work shall cease.
- Where, because of the nature, shape and slope of the excavation, material is liable to fall more than 1.3 meters (4 ft.) onto a person working, the sides of the excavation must be adequately shored.
- Shoring shall be rigid and without holes or opening and be properly braced with support structure.
- The shoring of every excavation where men are to work shall be examined each day by the Contractor's Representative.
- Excavated earth shall not be stored close to the trench edges and a minimum distance of at least one and a half times the depth of the trench shall be observed.
- No load, plant or equipment should be placed or moved near the edge of any excavation where it is likely to cause the collapse of the side of the excavation.
- Excavations in which persons are working and into which a person is liable to fall shall be suitably or protected by a barrier.
- If the excavation is to remain open after dark, warning lights shall be placed around the excavation to warn others of its presence.
- Temporary crossings over the trench shall be at least 609 mm (2 feet) wide and sufficiently strong with a railing on one side.

- The Contractor shall be responsible for the provision of all barricades, roping off and the provision of flashing lights as is required for the safety of persons and vehicles.

52. SURPLUS MATERIALS

Unless otherwise directed through written instructions issued by OPGC, Contractor shall promptly remove all excess surplus material from the jobsite. Final payment for performance of the work shall not be due and payable until such materials are removed from the jobsite. If surplus materials are not removed from the job site within fifteen (15) days of completion of the Work, OPGC may dispose of the materials and offset the cost associated with disposal against the unpaid balance of the Contract Price.

53. SUSPENSION OF WORK AND LIMITATION OF LIABILITY

OPGC reserves the right through the project contract to suspend all or any portion of the work being performed in violation of these provisions. OPGC shall not be liable in contract, tort (including without limitation negligence and strict liability) warranty or under any other legal theory for damages, costs or expenses related to any suspension or stoppage of work, loss of business, or other special, incidental, consequential or punitive damages in connection with any failure on the Contractor's part to establish, enforce, or adequately monitor its Health and Safety Program.

54. TEMPORARY BUILDING:

Temporary buildings and material storage areas shall only be allowed upon written approval of the concerned Project Manager/EIC. They shall not be set up under power lines or pipe ways.

55. UNSAFE AND/OR INAPPROPRIATE BEHAVIOR, DISCIPLINARY ACTION

Any Contractor employee who appears unable to perform his job in a safe manner or exhibits any type of behavior inappropriate for the work place will be reported to the Contractor's on-site supervisor for evaluation and possible removal from the site. OPGC will not tolerate at any time any conduct that threatens, intimidates or coerces an OPGC person, another Contractor or any member of the public.

55.1. DISCIPLINARY ACTION AND PENALTY AGAINST SAFETY RULES VIOLATION

- Unsatisfactory safety performance will go against the contractor in future bids.
- OPGC reserves the right to even terminate unsafe Contractor from Contract with notice.
- In addition to the above disciplinary action, additional penalty for Safety Violation shall be applicable.
- The penalty system is divided into two categories, Minor and Major. OPGC EHS shall decide about the minor or major safety penalty based on type of violations & risk involved with the violations

55.2. EXAMPLES OF SAFETY VIOLATIONS

- Not wearing / improper wearing of personal protective equipment (PPE) as per OPGC PPE rule.
Example- Safety Shoe, Helmet, Safety glass, Earplug, Hand gloves and other PPEs.
- Using grinder without wheel guard
- Taking electrical connection without using ELCB.
- Using damaged welding cable, faulty joints in cable
- Non-use of flash back arrester in oxy acetylene cutting set
- Non-availability of standby person (hole watch) on man hole during entry into
- Confined space
Not responding to emergency sirens as per emergency handling procedure.
- Working overhead on road/ pathway without barricading
- Dumping excavated earth on edge of excavation
- Non-reporting of Near Miss, accident, fire and/or explosion and property damage incident.
- Improper housekeeping. Leaving work area with debris/ waste/ scrap material haphazardly
- Unauthorized disposal of hazardous substance (waste Oil, Grease, Chemical, Toxic Substance)
- Leaving excavated soil on road
- Spillage of waste on roads & work places
- Smoking inside plant premises.
- Unauthorized carrying of weapon inside Plant Premises. ☐ Working without valid work permit.
- Not complying with written instruction on the work permit
- Working without Job Safety Analysis(JSA) for high & medium risk jobs
- Working without Job Safety briefing for high & medium risk jobs ☐ Not providing fire extinguisher for hot work and fire watch.
- Use of none testing/ certified lifting machine, tools and tackles
- Use of substandard scaffold (such as substandard platform in terms of access, guard rail, toe guard & gaps on platform surface, non-use of soleplate/base plate, sagging scaffold etc.)
- Use of above 24V light fittings in confined space without approval
- Working above 5.9 ft height without fall protection

- Working without rigging & slinging safety measure □ Persons working under suspended load in barricaded area □ Abuse of safety equipment/ facility/ emergency equipment.
- Blocking access of emergency equipment or exits.
- Mishandling of gas cylinders
- Handling & disposal of hazardous substances in unauthorized manner.
- Violating OPGC any of the environmental guideline attached in separate sheet.

The following penalties shall be imposed on the contractor with the charge of safety violation by OPGC and shall be deducted from the Contractor's running/ final bill. Penalty can be imposed by E-I-C/Dept Heads & TIs/ Safety Officer/ EHS Manager/Safety Rovers or any officer authorized by the OPGC management.

- For first instance of Safety rule violation, counseling and verbal warning with punching of yellow spot on I Card
- On observation of second instance of Safety rule violation, counseling and strong verbal warning with punching of blue spot on I Card
- On observation of 3rd Safety rule violation, punching of red spot on I Card with duty suspension or permanent removal from site
- For major Safety Violation for one instance also, there may be direct punching of red spot in I card with permanent removal/ termination of the Contractor employee(s) responsible for that violation.
- Inadequate Safety Supervision leading to repeated minor or medium risk type safety violation- Fine/Penalty of Rs.2000/- (Rs. two thousand only) and I card punching of responsible contractor Supervisor.
- Inadequate Safety Supervision leading to repeated major risk type safety violation- Fine/Penalty of Rs.2000/- (Rs. two thousand only) and I card punching of Contractor Supervisors with suspension or even termination of responsible contractor supervisor.

56. GENERAL GUIDELINES FOR ENVIRONMENTAL PROTECTION

The Contractor shall pay due regard to the environment by acting to preserve air, water, human life, animal and plant life from adverse effects resulting from its work or operation and to minimize any nuisance which may arise from such work or operations.

1. Uncontrolled releases of OPGC regulated materials, hazardous wastes, special wastes, and PCB or PCB contaminated materials from OPGC locations into the environment are prohibited.
2. All spills of OPGC regulated material, hazardous waste, special waste and PCB or PCB contaminated material must be cleaned up and waste residues generated disposed of properly.

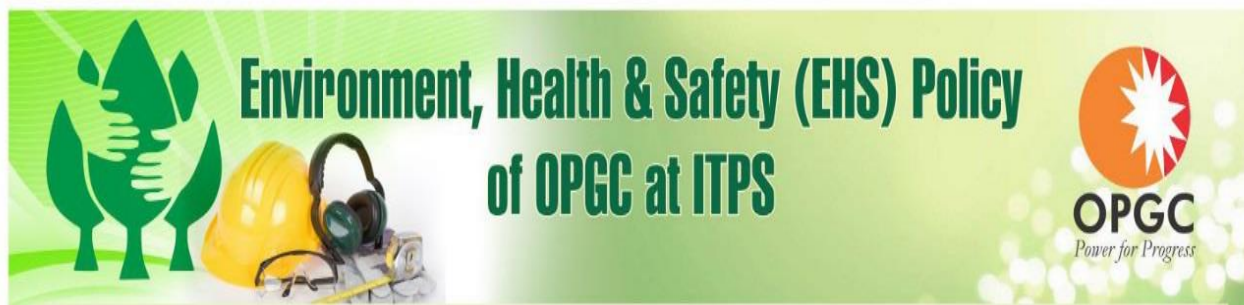
Planning must begin immediately and clean up must be initiated within 72 hours of discovery of the spill.

3. Use of PCB (Poly Chlorinated Biphenyl) containing products/ materials is prohibited.
4. Used oil & lubricants generated during work shall be collected in containers provided with lid and shall be placed at designated transit storage shed. This shall be subsequently sent to warehouse for storage in the designated shed in front of Store Shed No. 3 and final disposal to authorized recyclers / re-processors. Waste oil/lubricant spilled on the floor shall be contained and collected by the use of spill protection kit.
5. Used lead acid batteries shall be sent to Warehouse for storage at designated shed and final disposal to authorized recyclers / re-processors. Spilled lead acid shall be contained and collected by the use of spill protection kit. New lead acid batteries shall be procured against return of damaged used batteries to Supplier.
6. E- Wastes and used Ni-Cd batteries, fluorescent lamps, mercury vapour lamps are also treated as hazardous materials. These are to be collected and stored in identified places on impervious floor and under shed to avoid contamination. These shall be disposed in authorized manner.
7. Oil contaminated scraps, cotton wastes and other oil contaminated wastes shall be collected in specified collecting bins (designated as oil contaminated waste collecting bin) that are to be kept near work area and shall be sent to Warehouse for storage in specified collecting bin and final disposal to authorized recyclers/reprocessors, if possible. Otherwise the wastes shall be disposed off by warehouse in lined impervious covered pits.
8. Onsite work areas shall not be stored with improper and/or excessive amounts of scraps and debris.
9. Lead waste & other Non-ferrous metal wastes like, zinc, brass, copper, nickel and electronic wastes etc shall not be thrown around. It shall be collected in collecting bins and sent regularly to warehouse for storage in designated bins/shed and final disposal to authorized recyclers/re-processors.
10. Spent Resins shall be collected in barrels, provided with lids and shall be disposed as per authorized disposal means.
11. Acid/alkali / any other hazardous chemical contaminated scraps/wastes shall be collected in designated collecting bins to be placed near the work area and shall be returned to Warehouse for storage in designated collecting bin and final disposal to authorized recyclers/re-processors or else, these scraps can be disposed of by Ware House in lined impervious covered pits. Similarly, acid/alkali/ any other hazardous chemical contaminated barrels/jars shall be returned to Warehouse for disposing it back either to the supplier (as per the condition of Purchase Order) or to the authorized recyclers.
12. Materials that yield Hazardous Substances shall be identified prior to their initial purchase.
13. Ample spill response materials shall be available to deal with any potential hazardous and special waste releases.
14. All containers used and stored on the site must have proper labels.

15. Debris and solid wastes generated during any activity shall be collected & disposed regularly at the designated place and the combustible materials shall be controlled fired under direct supervision of OPGC Fire or Safety Officer. It shall not be dumped /thrown here and there.
16. Tree trimming and pruning wastes shall be kept sufficiently away from plant. Steps shall be taken to dispose these to outside agencies to avoid unwanted fire.
17. Carry bags made of virgin or recycled plastic, which are less than 20 microns thick, are not allowed to be used in ITPS.
18. Energy efficient products (eco marked products) will be preferred for use inside ITPS.
19. Goods packing material shall be bio degradable and environmental friendly material.
20. All chemicals shall be procured with its material safety data sheet (MSDS). The MSDS shall remain with the chemical for its entire period of stock inside OPGC.
21. Hazardous chemicals or substances in bulk transport will come with MSDS, TREM Card, hazard labeling of the lorry and containers. The transporters staffs/ staff shall be properly trained on emergency handling of the chemical.
22. Emergency preparedness shall be in place to handle chemical emergency or any other hazardous material emergency so as to prevent risk to environment.
23. Vehicular emission and noise shall be minimized in work zones by restricting use of defective vehicles, machineries and Tools & Plants.
24. Vehicles shall be certified with valid pollution under control certificate.
25. Source air emissions shall be controlled so as to meet regulatory norms. In case of incidental higher emission level, immediate control measure shall be taken on priority. Continuous emission monitoring for Stack SPM, NO_x, SO₂ shall be made available all time except the period of planned maintenance. Alternative offline monitoring shall be in practice during the period of on line equipment maintenance.
26. Fugitive emission shall be controlled in work places (CHP, AHP, ESP, Ash Pond & Dry ash storage silo areas). These places shall be tested for dust concentration periodically to ensure taking step to reduce dust emission level to acceptable state. People working in these areas shall use dust mask to prevent inhaling dust.
27. Sufficient water spraying shall be ensured in haul roads and working areas to reduce fugitive emission during earth work by mechanical means.
28. While painting any structural materials on ground, the structural materials shall be kept on any impervious barrier so as to avoid land contamination by paints.
29. Use of Ozone Depleting Substance (ODS) like CCL₄, CFC-11, CFC-12, Halon and other ODS based substances shall be phased out in phased manner. Venting of ODS gas to atmosphere is forbidden. During phasing out process of these substances, these ODS shall not be released to atmosphere. These gases shall be handled as per local regulation guideline. CFC containing equipment like refrigerators and hydrogen driers shall be replaced with non CFC refrigerant containing equipment.

30. SF₆ consumption shall be managed in such way that there will be no waste or/ and release to atmosphere. The user shall maintain a consumption record covering the equipment name in which the gas is used, quantity and date of use.
31. Asbestos ropes and packing shall not be used in any work. No new asbestos sheets shall be used in any work. Before cutting/handling old asbestos sheets, the sheets shall be made wet and handled by using nose mask and hand gloves. Waste asbestos pieces shall be disposed in lined impervious covered pits.
32. During construction and maintenance works, melting of Bitumen should be done by using fuel oil / fire wood. In no case burning of rubber tyres will be allowed.
33. Smoking is prohibited inside plant.
34. Optimum utilization of water, energy and raw materials shall be ensured by minimizing the loss in any activity.
35. Spitting on walls is prohibited.
36. Preference shall be given for using eco-friendly materials/packing and technology, wherever it is techno-economically viable.
37. Special care shall be given for good housekeeping.
38. Non-biodegradable solid wastes like plastic pouches/packing materials shall be disposed in lined impervious covered pits.
39. Empty paint drums, brushes shall not be thrown around. It shall be the responsibility of the contractor to dispose it outside ITPS as per the provision of Hazardous Wastes (Management & handling) rule.
40. Waste water generated inside plant and sewage effluent shall be reused
41. Ground water and surface water adjacent to ash disposal area and coal pile area shall be tested periodically so as to ensure no adverse impact on environment.
42. Spillage and disposal of any liquid or solid waste into storm water drains is prohibited.
43. Spillage of Chemical or OPGC regulated material shall be reported to Manager (Environment) within 01 hour of the incident occurs.
44. For safe Handling and Transportation of Hydrogen, Chlorine, Petroleum Products and other Chemicals please MSIHC rule.
45. Any noisy operation more than 85dBA shall be carried with the use of appropriate noise abatement barrier. Wherever barrier cannot be provided, the person nearby must have ear protection.
46. Environmental monitoring equipment that has been originally designed and installed must be satisfactorily maintained and continually operated (with the exception of standard downtime for planned or unplanned maintenance).
47. Any abnormal environmental incident observed/ noticed shall be communicated to EHS

APPENDICE-1



Odisha Power Generation Corporation Limited., at Ib Thermal Power Station (ITPS), Banharpali, Jharsuguda, commits to have continual improvement in the Environment, Health and Safety standard in all its activities related to Power generation at all times;

To achieve this, the objectives envisaged for commitment are to-

1. Provide the appropriate resources to ensure that all our people have the means to work safely and its surrounding environment is protected.
2. Minimize impact on the environment through control and prevention of Pollution.
3. Conserve all natural resources used as input.
4. Minimize fugitive emission & improve work zone condition.
5. Manage solid & hazardous waste in a safe and eco-friendly manner.
6. Believe "Put Safety First at OPGC" & "All Occupational Incidents are preventable".
7. Minimize risk due to hazards associated with its activities and prevent injury and illhealth to all persons working at ITPS.
8. Adopt Zero Tolerance on OPGC Safety Cardinal Rules and be responsible and accountable for Safety of all persons working at ITPS.
9. Empower to stop & report any work when there is a reasonable belief that the work poses imminent risk of injury.
10. Be responsible for own Safe Behaviors & those of co workers.
11. Reward outstanding Environment, Health & Safety performances & discourage at risk behaviours.
12. Comply with applicable Environment, Health & Safety regulations and other requirements.
13. Have on-site emergency plan & preparedness for handling various emergency situations related to Environment, Health & Safety.
14. Build Environment, Health & Safety awareness among all persons working for or on behalf of ITPS through training & awareness campaigns.
15. Communicate this Policy to all persons working at ITPS, contractors, suppliers, visitors and other interested parties.

Alok Mukherjee

Occupier & Director (Operation), OPGC

Date: 16.11.2015

Last Reviewed on 17.11.2018

APPENDICES- 2
OPGC High Risk Activities

	Activity
1	Activities on or near equipment with the potential to cause Arc Flash
2	Activities in a road way with potential to be struck by vehicles (Does not include driving or travelling on a public road way.)
3	Activities with drowning potential
4	Activity involving work at height above 1.8 meters (6 feet) and any pole climbing
5	Handling of hazardous substance which can cause acute injury, exposure to ionization sources or potential to cause explosion
6	Activities with potential for live voltage exposure ≥ 50 Volt
7	Activities on or around pressurized safety valves or other energized energy relief devices where there is the possibility of exposure to the stored energy if released
8	Hoisting and Rigging
9	Hot Work outside of its designated locations
10	Activities involving Confined Space entry or potential for entrapment/engulfment such as work inside a trench, tunnel, etc.
11	Tree trimming and related activities with the potential to cause injury by tree trimming equipment and / or hit by falling tree or limb
12	Activities involving operation of or working in the vicinity of operating plant equipment
13	Activities in potential explosive areas due to accumulation of combustible dust or vapor
14	Activities on or near rotating, rolling or moving equipment or its parts having the potential to cause cut, entrapment, crushing or caught by injuries
15	Activities with the potential to cause a hit by falling objects

APPENDICES- 3

UNDERTAKING

FOR OPGC HSE RULES AND REGULATIONS FOR CONTRACTORS

I hereby undertake that:

- (1) I have received a copy of, and read, these regulations;
- (2) I agree to execute the work under all provisions contained herein;
- (3) I understand & will make my entire project team understands the applicable rules & regulations;

Signature: _____

Name : _____

Date: _____

Contract Company: _____

APPENDICES- 4

EHS Violation Record for Contractor	Date:
Ib Thermal Power Station, Banaharpali	

Name of Violator: _____	
Location of Violation: _____	
Type of Violation: _____	
Contractor's Name _____	Signature-----
Observer's Signature Name _____	Signature _____