

# Safety Guidelines for Electrical Work Contractors

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# Safety Guide line for Electrical contractors

## Objective

Objective of this document is to mandate Safety requirements that shall be followed by Electrical contractors while working at Pipavav Port to achieve safe work.

(220KV switch yard & control room, All 11 KV substation & 11 KV RMU ,Lights -High mast ,road ,warehouse ,office etc )

## Disclaimer

This is not an absolute guideline and contractor/s using this guideline to ensure that they periodically upgrade the knowledge and skill of their staff and ensure that best practice shared by port and other best practices gathered by contractor from other industries/sources may be adopted to create a safe working environment at their work site.

## Responsibilities

Contractor shall be solely responsible for the safety and security of his employee, visitors, assets, environment etc at Pipavav Port.

## Applicability of Licenses/Permit

Contractor should obtain all the applicable statutory licenses and permissions related to their scope of work (L.T, M.V, H.V, H.T) and activity being undertaken by him.

Contractor should periodically check and verify the validity of the licenses and permission obtained from the statutory authorities.

Contractor should obtain insurance policy for all working team person. (As per scope of work)

## Contractors Activities

Before commencement of work Contractor should understand the scope of work, (Risk assessment) related hazards ,standard operating procedures (SOP)and established controls specified by Port.

## Recommended Safety Standard/Procedures

### Safety Training for employees of the Contractor

- Contractor should ensure that
  - All employees undergo Port Safety Training before entering port area.
  - All employees are carrying valid Port Safety Pass at all times.
- Before start of any job, Contractor should train all employees. The content of the training program may include the following:
  - Use of personnel protective equipment (PPE) in general and any special PPE specific for a particular job.
  - Emergency preparedness plans specific to job site.
  - Safety standards and procedures for carrying out the jobs.
  - Special precaution specific for a particular site based on its hazard perception.
  - First aid trained (two people in each shift)
  - Extinguishers operation trained -All staff

### Maintaining Records

- Contractor should maintain records of:

- All the licenses and permissions from statutory bodies;
- Inspections by authorities
- Employee database
- Employee health records
- Employee working hours (8 hrs)
- Employee Training records
- Incident and accident

### Personal Protective Equipment

- All necessary personal protective equipment (PPE) as considered adequate as per work should be kept available for the use of the persons employed at the site and maintained in condition suitable for immediate use.
- Contractor should provide only BIS/ISI or equivalent international standard certified PPEs to employees.
- Employees should be trained on the selection and use of personal protective equipment.
- People working should always wear the high visibility clothing, hard helmet and safety shoes. special PPE specific for a particular job.
- Contractor should provide boiler suits (Blue colour) of appropriate size and high visibility to all the workers.
- Seasonal wears (rain/winter) should also be provided of high visibility type.

### Reporting of Incidents

- Contractor should report all cases of injury (including first aid) and near miss incident to the contract owner/in-charge and Port HSE officer immediately after the incident.
- Contractor should assist Port in investigate all the incidents.
- All incidents of fire shall be immediately informed to Port Fire station.
- Emergency phone numbers of Port Fire station, Security and Contract owner/in-charge should be shared with all the workers.
- It is Contractors responsibility to report the Incident to appropriate authorities as per applicable laws and regulations.

### Safety Committee Meetings

- The contractor should attend monthly Port Safety committee meetings and encourage his workers for participation.

### Daily Tool Box Meetings

- A Toolbox meeting is an informal safety meeting that focuses on safety topics related to the specific job, such as workplace hazards and safe work practices.
- Contractor should ensure that his workers are participating in daily tool box meetings.

### Selection of Workers

- Workers should only be engaged following an appropriate selection process, in accordance with national legislation.
- No person under 18 years of age should be employed in port work.
- Age limit of 20 to 45 years; age and experience relaxation will be allowed in case of highly experience and skill person
- The criteria for selection should include the following, which are essential for safe port work, especially for Electrical works:
  - a. a worker needs to be physically capable to perform the job assigned;

- b. good eyesight;
- c. good hearing;
- d. normal reflexes;
- e. the ability to comprehend and communicate in the working language of the port;
- f. the ability to follow safety instructions.

Whereas Point a, b and c are covered under Pre-employment health check-up, contractor needs to ensure that he is verifying the other capabilities by assessing the worker.

- Further training is necessary after selection if the worker is not already appropriately trained and fully competent for the type of work to which he or she is to be assigned.
- Worker should be able to work in teams. It should be recognized that:
  - their acts and behaviour will have a direct influence on those of other port workers;
  - the safety and output of other workers will depend on their own vigilance, work and knowledge;
  - the safety of others may be dependent on their own safety.

#### Matrix for minimum experience and qualification

- **Contractor must have an electrical license. (Statutory authority approved)**
- Supervisors/Wireman **license** minimum 70% require of electrical contract staff.
- Qualified electricians/supervisors will be deputed having minimum 2 to 6 year's post Qualification experience in electrical field and within age limit of 20 to 45 years; age and experience relaxation will be allowed in case of highly experience and skill person.
- Qualified person & contractor having work experience in 11kv to 220kv online transformer oil filtration work should be allotted work.
- Qualified person & contractor having work experience in health checking in 11KV & 220 KV

#### Health and Medical Check-up of Manpower

- Contractor shall ensure that all contract employees undergo pre-employment fitness examination & produce Medical Fitness Certificate as per applicable laws and regulations.
- Contract employees completing Twelve months should undergo periodic medical examination.
- In addition to general health check-up, all the contract employees working at height should undergo Medical fitness test for working at height.

#### Safe work procedures for Electrician

- Wear PPE, such as a hard hat, reflective vest, steel toe shoes and gloves.
- Beware of trip hazard at work.
- Safety harness must be used by workers when working at height.
- Only BIS/ISI marked Ladders/cage for maintenance must be used by contractor.
- Standard and sound conditions, Tools, tackles must be used by Contractor.
- Report defective gear tools & tackles immediately to the supervisor so it may be taken out of service.
- Tools without required insulation should not be used.
- Strictly follow port Work permit system (All the non-routine activity)
- Strictly follow Isolating Procedure LOTOTO means Lockout-tag out test out. LOTOTO is used to overcome the hazards of auto power re-closure.



- Do not switch OFF or ON power until permission of GPPL authorised person (Minimum - Supervisor)

➤ **Isolating Procedure (11 KV)**

- Minimum two persons are required to carry out 11KV RMU maintenance work.
- Take permission of authorized Electrical person (Having license of government approved category of electrical supervisor / wireman or electrical manager of concern department).
- Communicate with Eng. Operation & working agency.
- First of all, confirm feeder/equipment for required isolation.
- Ensure Breaker status/Equipment, open/close condition or check output load.
- Take Isolation permit.
- Ensure with crane control OFF.
- Put SF6 circuit-breaker in OPEN condition with push button/Operating Handle.
- Put Isolator in OPEN condition with Operating Handle.
- Verify isolation with indication electrically & mechanically (Indication lamp & “O” Type Indication on breaker panel).
- Earth switch in CLOSE condition with operating handle.
- Apply LOTOTO as per requirement on earth switch/Isolator
- Issue Work permit to working agency after Confirming above isolation procedure.
- Adequate signages and boards should be displayed at work site for caution to all.
- All lifting appliances should be examined by a competent person as per Dock Safety once in 12 months and certificate of inspection to be made available to port Safety on demand.

➤ **Isolating Procedure (220 KV)**

- Written communication for isolation with GETCO and ultra tech control room, in emergency case -verbal communication.
- GPPL will create demand, to GETCO control room for switch off power of define line.
- GETCO will create pass word after communication.
- After that work permit will be issued for 220KV work.
- Discharge 220KV line by grounding its earth switch.
- Work start after 220 KV earth switch.

**Restore**

- Inform to GETCO for work completion.
- Written work permit.
- Remove earth switch.
- Close 220KV isolator.
- Demanding of closing code, provided by GETCO control room.
- On line communication with GETCO and close the circuit breaker.



### Supervisor Responsibilities and Reinforcement:

- Conduct Tool box talk prior to each shift about the various hazards associated with electrical work.
- Communicate specific safety issues noted with the equipment.
- Constantly monitor work activities.
- Immediately correct any unsafe behaviour /activities.

### Housekeeping

- It will be contractor's responsibility to keep his working area clean.
- Contractor should assure that:
  - at all times keep his work spot, site office and surroundings clean and tidy from rubbish, scrap, surplus materials and unwanted tools and equipment.
  - No materials on any of the sites of work should be so stacked or placed as to cause danger or inconvenience to any person or the other people working in area.
  - Incompatible materials should be stored separately with sufficient safety distance/barrier.
  - Proper lighting in working area.
  - Floor to be dry and free from slip, trip and fall hazard.
  - Emergency exit marked and free from obstruction.
  - Fire fighting arrangements in place.
  - Working area should always be kept clean and free of any hazard which may result into an accident.
  - Waste generated from the work place should be disposed as per port garbage management system



COLOR CODED GARBAGE BINS